

A treatise on the teeth : wherein an accurate idea of their structure is given, the cause of their decay pointed out, and their various diseases enumerated; to which is added, the most effectual method of treating the disorders of the teeth and gums, established by a long and successful practice / by the Chevalier Ruspini.

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THE
DISORDERS OF THE TEETH AND GUMS,
Established by a long and successful Practice,
BY THE CHEVALIER RUSPINI,
SURGEON DENTIST TO HIS ROYAL HIGHNESS THE
Prince of Wales.

THE TENTH EDITION.

In this Treatise, the Chevalier Ruspini has added an Account of his extraordinary BALSAMIC STYPTIC SOLUTION, with a List of the Letters which he has received from Persons of the first Character and Respectability, as well as Gentlemen of the Faculty, all uniformly testifying to its good Effects, in internal and external Bleedings, and in many other Complaints.

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TREATISE

THE TEETH:

AN ACCURATE TREATISE OF THEIR STRUCTURE

IN CHILDREN

AND OF THE CAUSES OF THEIR DISEASES

WITH A FULL DESCRIPTION OF THE

METHODS OF PREVENTING AND CURE

OF THE DISEASES OF THE TEETH AND GUMS

BY J. C. WHITE, D.D.

OF THE UNIVERSITY OF CHICAGO

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TO THE

FIRST EDITION.

IT is needless to usher in this performance to the world by a Preface in the common form, proving the importance of the subject to be treated of, and the necessity of taking it up at this time; both are sufficiently felt and acknowledged: it will therefore suffice, that I briefly explain my intention in the following sheets, submitting it to the candid Public, whether the execution is answerable or not to the design.

I purpose *first* to give a distinct and accurate idea of the Anatomy of the Teeth, and the adjacent parts, to prevent as much as possible, those accidents which arise from the ignorance of unskilful practitioners in this point; who, unacquainted with the structure of the parts, never fail to expose their patients to unnecessary pain, and frequently to dangerous consequences.

Secondly, To point out the more immediate Causes of the Diseases of the Teeth; and to shew how they may be mitigated, and, in some measure, prevented.

And, *thirdly*, To introduce and recommend a more general attention than has hitherto prevailed, to the preservation of the Teeth, so useful to the purposes of life, and so ornamental in that part of the Creation where Beauty seems to have fixed her peculiar seat.

A long, extensive, and, I believe I may say, successful practice, has enabled me to acquire the knowledge which I here pretend to communicate to the world. The subject is, in some degree, new in this country; I therefore hope for indulgence, and claim no absolute merit, but in my intention. Whatever share I may be further entitled to from the performance itself, depends entirely upon the judgment of the Reader to bestow, and to whom I submit it, without reserve.

TREATISE

ON THE

TEETH:

TEETH are given us by Nature, in order to cut, break, and grind the necessary aliments, and to give a stronger and a more articulate found to the voice.

What is chiefly to be considered in the Teeth, is their texture, number, and figure; their exact order and arrangement, and the time they begin to appear.

In the Teeth we may distinguish three parts, namely, the body, or crown, of the Tooth, which appears out of the gums; the middle, comprehending the space covered by the gums, and called the neck or collar of the Tooth; and lastly, the root, which lies buried in the socket.

We find in a Tooth three different substances. The first surrounds and covers the body or crown of the Tooth; it is thin,

thin, but grows thicker by degrees, as it draws near to the extremity of the crown. This substance is so close and hard, that no impression, either with a file, or any other sharp instrument, can be made on it but with great difficulty and trouble; its colour is that of a pearl white, almost peculiar to the Teeth.

This cortical substance is what we call the enamel, or vitreous part, and it forms itself before the Tooth comes out; it grows stronger and finer until the age of about twenty, after which time it begins to wear off, by continual use; and so liable is it to decay, that we often see persons of a middle age without the least enamel on their Teeth: such a thing frequently happens in old people. But although the enamel be lost, or destroyed, still the Tooth is not so liable to decay as one may imagine; for we find many Teeth firm and sound in their internal substance, notwithstanding they have been deprived of their outward coat for many years: however, when once it is gone, the Tooth lies more exposed to the impression of heat and cold, and to be acted upon by any thing acid and sharp: and, as for the enamel, the loss of it can never be repaired.*

The second substance is not so close as the former, and consequently less hard; it is of a dusky white colour, and of the same nature as that of all human bones, although
somewhat

* Ruysh, the anatomist, declared he could trace the arteries into the hardest part of the Teeth: Lewenhoeck believed the fibres of the enamel to be so many vessels; Monro asserted he had frequently injected the vessels of the Teeth in children, so that the inside of the cortex appeared perfectly red.—But the ingenious Mr. John Hunter, and other late writers, are of opinion, that the enamel is not vascular, and that no injection can ever reach it.

somewhat harder: it begins immediately under the enamel, in the body of the Tooth, and covers the neck, together with the whole root.

The third is that which forms the internal part of the Teeth, and is called the BULB: it is soft in regard to the former, but very close and firm, if we compare it to the marrow of the other bones.

The outward covering or enamel, and the bony part of the Tooth, are not susceptible of the least sensation.

The reason why Teeth are affected by something acid or sharp, is owing to a certain tremor that communicates, and, as it were, thrills through the nerve in the inward part. If this nerve is left uncovered by a caries of the bony substance, then we are tormented by the most excruciating pain.

Men at twenty, and about three years after, have generally twenty-eight Teeth, fourteen in each mandible, or jaw. This number encreases to thirty-two, when the four Teeth, called *dentes sapientiae*, appear; but as those in some persons come out sooner, in others later, and in some never, we may justly say, that the number of Teeth, at a medium, is thirty. Some writers were formerly of opinion, that men had thirty-two Teeth, and women twenty eight; but inspection may plainly evince the absurdity of this notion.

All the Teeth that exceed the number of thirty-two, may be reduced as supernumerary; they generally push out between the *incisores*, or fore Teeth, of the upper jaw; and in such case the *incisores* are encreased in their number. These supernumerary Teeth resemble very much the lateral *incisores* of the upper jaw. And it happens that the *incisores* also

also of the lower jaw, and the *molars*, or grinders, themselves, have been multiplied by intervening supernumerary Teeth.

Teeth are generally divided into three classes, viz. the *incisores*, or cutting Teeth; the *canini*, or dog Teeth, and the *molars*, or grinders.*

The *incisores* are eight in number; four in front of each mandible. They are called *incisores*, because their business is to cut the aliments; for which purpose their outward form, at the extremities, is peculiarly and wonderfully adapted. On the outer surface, next the lips, they are a little convex, and on that next the palate, concave. The two *incisores* in the middle of the upper jaw are longer, and often broader than those on each side, or any of the other *incisores*; for indeed the lateral upper *incisores* exceed the lower in magnitude. The two middle upper *incisores* may be called the greater; those on each side, the lesser; and the four of the lower mandible, the small *incisores*. These Teeth describe a kind of femicircle.

The *canini* are four in number;† they lie one at each side next the *incisores*, between them and the *molars*, in both jaws.

* Mr. Hunter varies this division. He retains the name of *incisores* to the four fore Teeth; but he distinguishes the *canini* by the title of *cuspидati*: the two next to these which have been called *molars* he names the *bicuspidates*, and allots the name of grinders only to the three last Teeth on each side. Vide Natural History of the Teeth, page 42, *et seq.* by John Hunter, F. R. S. Surgeon-extraordinary to His Majesty.

† The eminent practitioner, above quoted, remarks of these Teeth, that we may trace in them a similarity in shape, situation, and use, from the most imperfectly carnivorous animal, which we believe to be that of the HUMAN SPECIES, to the LION, which is the most perfectly carnivorous of the animal creation.

jaws. These Teeth are rather longer, more round, and less cutting than the *incisores*. Their use is to part things that are of a solid nature; in regard to their structure, they appear to be very proper, not only for cutting asunder any piece of solid food, but also for keeping it firm in the time of mastication. They are called *canini*, because they are very like the Teeth of a dog. The upper *canini* are also known by the name of eye-teeth, because it was anciently believed, that they had a kind of connection with the eyes, and that, by drawing any of them, the sight was endangered; but daily experience has clearly demonstrated, that such a connection and danger are merely imaginary.

Immediately after these come the *molares*, or grinders. They are twenty in number, five on each side of both jaws. The two first in each row, or the nearest to the *canini*, are the small grinders, and the others the large. They are so called, because they are thicker, blunter, and more flat at their extremities than the rest. They operate like mill-stones, to bruise and grind the food. Their figures are almost square. The broad end, or top of each grinder, is divided into several little eminences and cavities in such a manner, that when the jaws shut, the eminences of the upper grinders are received into the cavities of the lower, and so *vice versa*.

We cannot help admiring with astonishment the works of Providence, in the figure and exact disposition of all the Teeth, which can never be too closely examined.

In order, therefore, to form a better idea of this admirable contrivance, it will be necessary to observe, that the lower jaw is a kind of lever, resting itself at the extremity, where it joins by articulation to the temporal bones;

bones; the aliments are the resisting bodies, and the elevatory muscles are the acting powers to overcome that resistance, by raising the jaw.

The grinders, which are rather blunt, stand nearer the centre of the motion, and consequently press more forcibly than the rest; and this is the reason, that when we would bite something remarkably hard, we generally place it between the *molars*; the *canini* and the *incisores* can never act with so much force, being farther removed from the centre of motion, but their want of power is sufficiently compensated by their form.

In speaking of the name and characteristical figure of the Teeth, enough has been said concerning that part of the Teeth which appears out of the Gums, viz. the crown; therefore we shall proceed to their neck.

OF THE NECK OF THE TEETH.

The Neck is that part of the Tooth covered by the gums, and a bony substance, which, as we said before, is of a dusky white colour. In that part of the neck which joins to the gums, we find some little inequalities, or rather wrinkles, that cause some small vessels, belonging to the gums, to adhere more closely to it: by this means, not only saline particles are prevented from getting into the sockets, but the Tooth is also rendered so firm and strong, as to secure it from being shook or loosened.

OF THE ROOT.

The Root is that part which is buried in the socket, a continuation of the same substance and colour with that of
the

the neck. It is covered by a membrane exactly similar to that which lines the socket.—The root of each Tooth is generally longer than the body, and is thereby rendered more able to bear any strain or violent impression, occasioned sometimes by chewing, gnawing, or breaking bodies of a hard nature.

In every root we find, towards the extremity, a little hole, which is a passage to the internal substance, or the bulb of the Tooth.

There is also a little branch of an artery, a small vein, and a nervous filament. This hole is closed up in old age, and then Teeth lose their sensation. Various are the figures of roots, and in each species of Teeth there is a particular one.

In all the *incisores* there is but one root to each Tooth, which decreases gradually, and ends at last in a point. The *canini* likewise have generally but one root; but there are some with two, quite divided through all their extent, and others only at the extremities; such Teeth, however, are very uncommon. The side of the roots of the *incisores* and the *canini* are flat, and rest upon the partition of each socket: which mechanism fixes more firmly these Teeth in their sockets; their necks and bodies being also flat laterally, and applied to the contiguous Teeth, they receive mutually a strong and considerable support, by being so well adapted to each other. The small grinders, namely, those that come immediately after the *canini*, on each side of both jaws, have generally but one root; some are found with two, and some even with three; but such a case is very rare. The small grinders, that have but one root, have it always

flat on the sides, and therefore it supports itself in the same manner as the *incisores* and the *canini*.

The number of roots in the large *molares*, both in the upper and lower jaw, is very uncertain. There are some large grinders, with one or two flat roots, and each root seems to be formed out of two joined together, distinguished only by a little kind of channel, which rises immediately from the crown of the Teeth, and appears through all their extent, in order to mark out the division. In other large grinders, there are three, four, and sometimes five roots, quite separate from one another, extending themselves in a large compass; for which reason such Teeth are deeply rooted, and stick more closely to the socket. Hence it happens, that the *molares* are not so easily drawn out of their socket, whenever the adjoining Tooth is wanting.

The last grinders, otherwise called the *dentes sapientiæ*, have fewer roots than the two Teeth that precede them, and their body is not so thick. They have generally but two roots joined to each other, which very seldom appear separate in all their extent, or even at their extremities; there have been some, notwithstanding, with three, four, and even five roots, very plainly divided one from another; but this case is very rare.

The crown or body of these Teeth is almost all covered by the gums. Sometimes the roots of the large grinders are crookedly inclined towards the internal part of the socket, and sometimes towards the external. Some are in an undulating form, and some are bent one against the other, or laid across altogether, and therefore it is a very difficult task to draw a Tooth of this kind. For if ever one of these roots bend with a point quite opposite to another root that may be lodged in the little cell of the next socket, then

then these two roots will form, as it were, a pair of pincers, and gripe with their extremities the bony substance that parts one cell from another; and consequently, in drawing a Tooth with those roots, we are forced either to tear the bony partitions of the cells, or if this should resist, then either one or the other, and sometimes both these crooked extremities must break; and in both cases it may be of very bad consequence. There is also great danger in drawing the upper *molars*, lest you should tear with the Tooth the bottom of the socket, together with a very thin bony *lamina* or scale that parts it from a cavity, called the *maxillary sinus*; for then the mucous membrane is unluckily torn; and this gives occasion for inflammations and ulcers in that membrane, and may even produce a cancerous ulcer, as it has happened in many cases.

Every root has a hole that communicates with the cavity in the middle of the crown; which cavity in the grinders is divided into as many small *sinuses* as there are little eminences on the base, which is lined with a membrane that serves as a sheath to the small blood vessels and nerves, that are included in the internal part of the Tooth. At the extremity of each root there is, as we said before, one or more little holes that receive nerves, blood vessels, and perhaps absorbent vessels, which by their connection together, form what we call the chord of the Tooth. This chord passes through the cavity of the root, and conveys a proper nourishment to the substance of the Tooth; and as it draws nearer the crown it becomes thicker, by means of the membrane that lines the cavity.

The *incisores* and *canini* have their nerves from a branch of the fifth pair, called the upper maxillary, which insinuates itself into the orbital canal, from whence it comes out,

to

to be distributed on the face, and in its way sends off filaments for all the roots of these Teeth.

The *molars* likewise receive their nerves from the same branch through small holes, formed in the hinder part of external lateral surface of the upper maxillary bone.

The veins and arteries, as they always join with the nerves, communicate themselves in the same way to the Teeth. These arteries are branches of the external carotids and the veins of the jugular.

The nerves of the lower jaw are from another branch of the fifth pair, called the inferior maxillary, which enters into a canal on the inside of the angle of the lower jaw, and is continued on each side to the chin, a little below the roots of the Teeth. In passing along this bony canal, the nerve sends off filaments to the roots of each of the *molars* and *canini*, and is then divided into two branches, one of which comes out of a hole of the bone in the chin, called the mental hole, to be then distributed to the chin and muscles of the under lip.

The other branch passes on to the symphysis of the lower jaw, and is distributed to the roots of the *incisors* and *diploe* of the bone.—The arteries which are sent to the Teeth of this mandible have their rise from the external carotid, and follow precisely the course of the nerve through this bony canal, accompanying it through the whole of its distribution. The veins arise from the external jugular.

It therefore appears, from what has been said on this subject, that a tooth-ach in the *molars*, or grinders, must be more exquisitely painful than in any of the other Teeth;
for

for as the *molars* are furnished with a greater number of roots, and each root has its artery, vein, and nerve, it therefore follows, that a Tooth of five roots must have fifteen sensitive bodies; which, if exposed to heat and cold, by a caries of the bony matter, will, *cæteris paribus*, produce a greater quantity of pain, than that of a Tooth with a single root.

OF THE SOCKETS.

The sockets are cavities formed in the jaw-bones, for the receiving and fixing the Teeth; but these will be better understood by giving a previous idea of the mandibles in general, which have so great a share in forming the countenance; for if the Teeth be wanting in either jaw, the lower will be brought so much the nearer to the upper, by the strong action of the temporal muscles, as to make the chin and nose approximate one another, and spoil the beauty and symmetry of the face.

The mandibles may be considered as two bony arches, lying parallel to each other; the lower jaw moving on its condyles, and the upper, which is properly composed of two bones that are firmly united before, and along the palate, so as to form a considerable part of that bony arch. This mandible is firmly attached to the other bones of the face; it has a cavity on each side, directly above the roots of the grinders, which is sometimes opened by drawing Teeth with long roots, that have pierced into it.

The lower jaw is likewise composed of two bones, especially in the infant state; which are firmly united at the symphysis of the chin, so as to make but one bone in adults. This bone is remarkably hard in the lower part, although somewhat

somewhat spongy on its upper, in order to afford a more convenient bed for the Teeth: it has no cavity, save the alveolar canal, which runs under the roots of the Teeth, and transmits to them their blood vessels and nerves.

After this general idea of the structure of the mandibles, we shall now treat of Sockets in particular; which are cavities formed by the Teeth in the diploe, or spongy substance of the jaw bones, divided into as many little *fossule* as there are roots of each Tooth. These little cavities are lined with a thin, elastic, scaly substance, not so hard as the other parts of the bone, and sufficiently pliable to become a perfect mould for the Teeth, which, in cases of violent compression or shocks, gives way, so as to prevent, in some measure, the Teeth from being loosened or broke.

We do not find in the jaws of infants the sockets entirely formed; at least they do not appear so; for there are but ten or twelve in each mandible, and these not deep: all the sockets in thickness are not alike, for each species of Teeth have their particular ones.

The *incisores* of the upper jaw have their Sockets thinner than those of the other Teeth, and the *canini* have theirs stronger, consequently thicker than the *incisores*, or even the small *molars*. The first large grinder has its Socket stronger than the second, and last grinder.

In the *incisores* of the lower jaw we find their Sockets thinner than in all other Teeth of that mandible; and this is the reason that those Teeth are more liable to shocks, and it is likewise easier to draw them. The *canini* have their Sockets thicker than the *incisores*, and the small grinders; but the small grinders have theirs thicker than the *incisores* of
this

this jaw. The first large one of the *molars* has not the socket so thick as the second and third; which last one has it thicker, because of the *apophysis coronoides*; and that is the reason why it proves generally very difficult to draw.

These Sockets, when Teeth are drawn, or naturally fall, are generally destroyed in a very short time, insomuch that it is almost impossible to perceive any marks of them, as we daily see in examining the mandibles. But if ever, in drawing a Tooth, some part of the Socket was to be torn, then the sides would be found not quite so thick, nor so firmly joined in that place. The Sockets are outwardly covered, and lined inwardly, with a membrane, or *periosteum*, common with the root of the Tooth: it is a continuation of the *periosteum* that covers the other bones, and of the same membrane that lines the internal part of the mouth.

OF THE GUMS.

The fleshy part that furrounds the Socket, is called the Gums; these are made of a hard substance, rather fibrous than glandular. They are penetrated and moistened by different vessels, namely, by veins, arteries, and lymphatics. The texture of the Gums is of a coriaceous nature, with fibres interwoven like a hat's felt, very close and elastic, of a pale vermillion colour; all the border of the Sockets, in both inward and outward side of the jaw, is covered by the Gums, which insinuate between all the Teeth, and adhere so closely to the neck of each of them, as to prevent any biting acid or sharp from touching the Sockets. Before the Teeth come out, the Gums are all of a body, without the least separation; and as the Teeth begin to shoot out, they pierce the Gums, and make so many holes as there are Teeth in the mandibles.

The Gums are joined to the jaws by the periosteum, which they every where cover. The outward covering of the Gums extends itself from the crown or body of the Teeth over the cheeks and lips, and seems in every respect to be a continuation of the same membrane.

The inward Gums of the upper jaw go from the internal part of the neck of the Teeth, as far as the circumference of the roof of the palate; and those of the lower mandible, as far as the circumference of the basis of the tongue.

When a Tooth happens to fall, the Gum covers the orifice of the socket, which being soon shut up or destroyed, the external part of the Gum joins with the internal one, and they unite themselves very closely together, becoming so hard and firm a body, that we see men, who, after having lost all their Teeth, bruise the aliment with their Gums, although they cannot cut or mince with them: in this case the Gums re-assume the very same figure they had before the Teeth appeared.

The Gums, no doubt, are preservers of the Teeth, since they keep them quite firm in their sockets, and save them from being touched by any thing heterogeneous or pernicious, which might produce the most painful disorders in the Teeth, even to a total destruction of them.

The Gums, when properly ranged, contribute very much to the ornament of the mouth; for, as these are of a vermillion cast, and form a kind of a crescent, or half moon, around the enamel of each Tooth, they set off, in a more elegant manner, the whiteness of the Teeth, when we have occasion to shew them by laughing, singing, &c.

OF THE GENERATION OF TEETH.

Nature, in forming these bones, seems to deviate entirely from those laws that she has established in the production of all other bodies, and to choose a peculiar and uncommon method in this generation.

Natural productions most generally have their beginning in their roots; but a Tooth, on the contrary, does not begin to form its root till the body is perfectly finished. The first substance that begins to appear in this body is not the internal part, as one would imagine, but the external one, the farthest from the root, and what is called enamel. This substance, in its beginning, is nothing but a mucous, soft paste, which acquires insensibly so much firmness, that it becomes at last a bony part, and excels all other bones, (as we have shewn in its proper place) in point of hardness and whiteness. When once this scale or bony coat is formed, the Tooth assumes directly a proper figure, and its inward part begins to be filled.

The germ of the Teeth, like that of other bones before ossification, is composed of a tassellated mucous, separated and divided into a number of little cells, which are afterwards filled up with calcareous or bony matter, and this constitutes the solidity of the bone. This germ is contained in little lodges, or cells, of the socket, which it stretches in proportion as the bulk of the Tooth augments and spreads; at the same time its membrane increases, and takes hold of the roots, and forms the periosteum that surrounds it.

The body of the Tooth being quite finished, the root takes then its due form; and, as it grows stronger, it lengthens by degrees, until it becomes of a proper length: the extremities grow firm and bony, leaving, however, a free passage to the vessels that run through the cavity of its root, and penetrate with their nourishing juices to the very inward body of the Tooth. While the root grows thicker and stronger, finishing itself within the socket, the body of the Tooth rises towards the gum, and attempts to come out. It begins by dilating the partitions of the socket; and, being level with this bony border, it cuts immediately the membrane in which it is enclosed, then the other membrane that covers the socket, and at the last the gum. In this manner shoot forth the Teeth.

The partitions of the sockets will lengthen in proportion as the Teeth draw nearer the gums; but, although in lengthening they are compressed, and grow harder, still they have an elasticity, by which they render the Teeth safer and stronger against the impressions of any accident.

The same economy we find in the *molars*, that are furnished with more roots, and consequently have more cells in their sockets, which always multiply at the same time, when the roots appear, as was said before. It would be natural to think, that, in those Teeth that have but one root, their sockets should be found greater in diameter than the root itself, as the socket has taken the form and figure of the body of the Tooth, which is first of all formed in it, and is always of a larger diameter than the root; but it is never so, on account of the above mentioned elastic force belonging to the partition of the socket, inasmuch, that, as soon as the body of the Tooth is out of the socket, the socket contracts, and adapts itself, by degrees,
to

to the figure of the roots, holding the Tooth as firm as if it were fixed in a vice or screw.

OF THE ERUPTION OF THE TEETH.

Children, when they are brought into the world, have generally no Teeth; I say generally, because some have been found with two, three, and even four *incisores*; two in the upper jaw, and two in the lower one: but these cases are only exceptions to the general rule.

Teeth appear sooner or later, according to the weaker or stronger constitution of the child. There have been some of them who have cut their Teeth when they were two or three months old, and sometimes not before they were a year or fifteen months; but, with the generality, in the fifth, sixth, or eighth month after their birth, the first Tooth begins to appear. The two small *incisores* of the lower jaw are the first that come out.

The large *incisores* of the upper jaw appear almost at the same time; then two appear in the lower jaw, at the side of the former; and then two other in the upper jaw: this is the general order in which the *incisores* are seen. When the child is eleven months, or a year old, the lower *canini* appear almost always at the same time; and a few days after, the upper *canini* likewise shoot forth together, and these cause greater pain than the former.

When children are about sixteen or twenty months old, the two small lower grinders come out; and, in a few days after, the two other of the upper jaw: the other four *molars* do not generally appear until the child is two years old, the one at each side of the mandibles. These
make

make twenty in number, and are called Milk-Teeth; the child remaining in this situation till about the sixth year of its age.

The order which we have here described is not always exact; for, we often see the small grinders shoot forth sooner than the *canini*, and the *canini* more quickly than the lateral *incisores*. At the age of five or six years, the other four *molars* appear next to those lately come out in each mandible. Towards the eleventh or twelfth year, four other *molars* come out, in the same order, as do likewise four in the seventeenth or eighteenth, which in all make twenty-eight, *viz.* eight *incisores*, or fore-teeth; four *canini*; and sixteen *molars*, or grinders. With these Teeth, we generally continue, until the four last *molars* (called *dentes sapientiæ*) appear, the exact time of which is very uncertain, though usually it happens at the age of twenty-five, or even twenty-eight: nor are there instances wanting, of their not appearing before the age of fifty, when they are, for the most part, accompanied with tumours and defluxions on the neighbouring parts, which proceeds from the pressure caused by the crown of the Tooth on the sides of the socket, and on the fleshy and membranous point of the gum, which at that time of life is become more hard and obdurate. At the age of seven or eight years, the *incisores*, the *canini*, and the small *molars*, are shed in the same order as they first appeared. When these are gone, as many stronger and more beautiful Teeth take their place.

It is remarkable, that if one of the Milk-Teeth be drawn before it is loose, we find in it a root as firm as that of the second Tooth; but, on the contrary, if it is drawn when it is loose, there is no root at all. This has given
rise

rife to a variety of opinions concerning the deftination, or rather deftruction, of the roots of the Milk-Teeth. It is imagined by fome, that they are intirely confumed by a flux of acid humours, which abforb the calcareous matter of the roots, and fo decompose the conflituent parts; while others fuppofe that thefe roots are incorporated into the fubftance of the fecond Teeth. But, as thefe fuggeltions are not fupported by the leaft appearance of fact, we fhall not, therefore, take up the time of the reader, to prove the contrary, but fhall only obferve, that fuch an acid humour could not exift, without deftroying all the Teeth; and that fuch an incorporation into the fubftance of the fecond Tooth has never yet been found. It appears by feveral of the later difcoveries made in anatomy, that many parts neceffary to the body, in the embryo and infant ftate, are totally loft and obliterated in that of adults; and that thofe parts, which are become ufelefs and redundant in the fyftem, are abforbed, and taken up by the lymphatic veffels, to be afterwards thrown out at the different emunctories of the body. That this is in reality the cafe with the roots of the Milk-Teeth, may be fully afcertained by a variety of fimilar facts, which the nature of this work will not admit us to enumerate.

Sometimes, though feldom, the large *molars*, and even the *dentes fapientiae*, will fhed, as happened lately to a lady who was tortured with the moft exquisite pain in one of the *dentes fapientiae*, on the right fide of the lower jaw. I felt the Tooth quite loofe, which I drew with my fingers, but found no root to it. This I concluded to be owing to another Tooth lying under it; which I foon perceived, on further examining of the focket. As the excruciating pain ftill continued, the lady could not be perfuaded that there was another Tooth to come out, but that the root of the former

former was left behind; however, the appearance of a new Tooth, not long after, fully convinced her that the pain was intirely owing to the smallness and firmness of the socket, which retarded the egress of the young Tooth, and obliged it in a manner to grind its passage out.

An opinion prevails, that there is a very great risk in drawing Milk-Teeth, before they are loose; but, in reality, there is not the smallest danger. And, indeed, when they are carious, or in any other way painful, it is absolutely necessary to draw them, to prevent, as much as possible, an inflammation of the gums and adjoining parts, which might destroy the germ of the second Tooth.

It is sometimes necessary to draw those Teeth that lie across, or ride upon one another (a very disagreeable sight) in order to give a more exact and uniform arrangement to the rest. This defect of order, in the *canini* and *incisores*, in general, proceeds from an extreme narrowness of the jaws. But the operator must be very circumspect, in examining every circumstance relative to the Tooth and socket, before he draws a Milk-Tooth; for if a part of the socket should be broke, and give way, the second Tooth will always come out in an irregular manner.

DISORDERS INCIDENT TO CHILDREN IN TEETHING, AND THE MANNER OF TREATING THEM.

The eruption of Teeth, in Children, is often attended with the most fatal consequences, by exciting fevers, convulsions, gripes in the intestines, acidities in the stomach, and, finally, by introducing a great degree of irritability in their tender constitutions, so that they become more liable to a greater variety of disorders.

Children

Children suffer in teething; first, in proportion to the delicacy and sensibility of their constitutions; secondly, to the number and figure of the Teeth that push out at the same time; thirdly, to the state of the gums, which in some children is found to be more tense, and liable to inflammation, than in others.

Children who are originally of a delicate habit, or who have been rendered so by milk of an improper quality, or by any other cause that impairs their digestion, and produces acidities in their stomach and intestines, are extremely liable to convulsions in teething. On the contrary, children of a strong, robust make, whose food is converted into proper nourishment, are less subject to convulsive disorders, but are liable often to a degree of fever, which, in some measure, facilitates the eruption of the Teeth. The number and figure of the Teeth that shoot out at once, will greatly increase the pain; for, the blunt flat *molars* will meet with a much greater resistance, and a greater degree of laceration, than the sharp-pointed *incisors* or *canini*.

At the same time, the *canini* will prolong the pain, from their wedge-like figure, which is continually dilating the socket and gum, till the Tooth has completed its growth.

From this great difficulty the Teeth have to cut the gums, many mischiefs are frequently produced; for, as inflammation is always the consequence of laceration and pressure, by its going too far, it frequently occasions swelled glands about the throat and neck, which sometimes suppurate: and even ulcers in the gums and neighbouring parts have been produced. In order to mitigate, and in some measure prevent, the disorders arising from teething, it will be necessary to consider well what has been already said in

regard to the tendency of nature to inflammation, in strong and robust children, and to convulsions, gripes, and looseness, in the weak, tender, and delicate. In the first case, the degree of fever and inflammation may be lowered, by keeping the nurse upon a low diet, avoiding animal food, spices, or whatever tends to stimulate and increase the circulation: frequent, but small doses of rhubarb ought to be administered to the nurse, which will gently purge the child in the safest and most commodious manner. In the mean time, if the gums are much swelled, scarifying them with the point of a lancet, so as to make them bleed at several parts, will empty the distended vessels, and remove the tension from the inflamed gums; and, where the fever runs high, bleeding, with leeches or the lancet, will be of great service.

In the other case, where convulsions are so often the consequence, we must endeavour to prevent these frightful symptoms, by every method that may tend to strengthen and confirm the constitution; such as having a strong and healthy nurse, taking care that she lives on the most simple and nourishing food, giving the child a wholesome country air, with a good deal of exercise, and exhibiting small doses of aromatic infusions of the bark, powder of tin, or such like.

Where a looseness and gripes prevail, it becomes necessary to take every method to prevent that tendency to acidity which mostly takes place in infants, whenever digestion is any way disturbed. This is best done by giving frequent but small doses of the absorbent powders, conjoined with aromatics, and perhaps, rhubarb, or more astringent simples, with opiates, may be found necessary.

In

In Children of relaxed habits, whose gums are loose and flabby, there is very little tendency to inflammation. In that case, applying mild astringents (such as a decoction of rose-buds, in vinegar) to the gums, by the nurse's finger, will help greatly to brace up, and facilitate the eruption of the Tooth. But in all cases where the symptoms are troublesome, and the Tooth tardy in coming out, the only effectual means is to make a free exit for it by incision, and to cut the gum quite down to the Tooth. And, indeed, wherever a Tooth seems ready to appear, and the child is pining and suffering much, we ought to recur immediately to incision, and in that way remove the pain that is occasioned by the distraction of such sensitive parts.

Sometimes, where the gum has been already cut, and the Teeth very slow in growing, the parts unite, and a cicatrix is formed above it: here we should again cut the gum, so as to lay the Tooth quite bare.

In some strong and healthy children, a number of Teeth will push out at the same time; by which means the symptoms are greatly aggravated: here, also, we should give a free exit by incision, then gentle emollients should be applied to the gums, and every thing that is irritating should be avoided.

Particular attention should be paid to the least sore or ulcer that may be formed about these parts, lest they destroy the germ of the subsequent Tooth.

OF THE DISORDERS OF THE TEETH.

The Teeth are subject to a variety of disorders, which may be divided into those arising from internal or external

causes. The first have their rise from the juices being contaminated by scurvy, scrofula, venereal infection, or whatever induces a cachexy of the humours.

Also it is observed, that women are more liable to tooth-achs and fluxions upon the gums, during the time of pregnancy, than at any other; perhaps from the particular sympathy of nerves, that is so peculiarly shewn upon the stomach, &c. at that period.

All disorders in the gums infect the Teeth, and are the cause of long and painful suffering. Teeth generally fail by some of the above causes.

The external causes are also many. The general ones are:—the use of aliments too hot or too cold; the different impression of air; all shocks given to the Teeth, which affect the nerves; the vapours that arise from the stomach and lungs, and leave a noxious and disagreeable slime on the Teeth; any particles of food that stick between the Teeth and putrify; keeping the head uncovered, and exposed to the air; sleeping bare-headed; as, likewise, the excessive use of smoking and chewing tobacco; the many improper remedies, also, that are made use of to keep the Teeth clean; and the caustics, applied in order to mitigate the pain, are always sure to destroy those they unluckily touch. Hence we may see of what importance it is, never to make use of any remedies but what are approved of by a skilful person. Sugar, when used immoderately, is another enemy to the Teeth; but one of the most dreadful destroyers is mercury; one ought, therefore, to be extremely cautious in using it. All mineral exhalations are also very pernicious, as we see, by daily experience, in all those persons who work in any of the quicksilver, lead, or copper mines, &c.

Such

Such people generally have their Teeth corroded, divested of their enamel, and sometimes intirely wasted away by the corrosive particles exhaling from those minerals. Among the external causes, however, negligence may be reckoned the first; for let the lymph be ever so pure, and digestion ever so regular, there are always some viscid exhalations that are apt to settle upon the Teeth: these can easily be removed, but if neglected, may prove the cause of many mischievous disorders as we shall shew hereafter.

It is not my intention to give my reader a list (as many have done) of the various disorders incident to the Teeth, but to comprehend them under two single articles, namely, *erosion* and *caries*. And I shall take notice, likewise, of what is commonly called the *tartar*.

Erosion is a disorder that renders the Teeth rough, and worm-eaten: it affects only children, either when the first Teeth shoot forth, or when the second ones appear. The original causes of these disorders are, the small-pox, the measles, and all those disorders that contaminate the juices. It penetrates, more or less, according to the hardness and firmness of the Teeth; and therefore, if the disease should seize the child when its Teeth are not sufficiently firm and ossified, it must be attended with bad consequences, meeting with little resistance in the parts not sufficiently ossified.

But if it should come on when the Milk-Teeth are shedding, and the new ones appear, it will be of no harm to the Tooth that has not as yet come out.

Whenever this disorder appears, it can only be of detriment to the parts that are not sufficiently firm and ossified.

Children

Children that are affected *in utero* with the scurvy, the venereal disease, &c. will bring along with them the seeds of those disorders, so pernicious to the Teeth, if proper means are not made use of to prevent it. But if the original causes shall be thoroughly eradicated, the Milk-Teeth will only suffer, and those that succeed them will be found quite untouched.

In order to purify the constitutions of such children, it will be necessary to make use of those means which are proper to produce a good chyle, and to correct the state of the juices, which is the province of the physician.

It is necessary, likewise, to choose a good nurse, whose milk is not thick, for then it is not so easily assimilated by the infantile powers; nor too serous, for then it wants the proper substance, so necessary to form a good nutritious juice, the want of which prevents bones from growing in their natural form.

The child should be kept in a good and pure air, and all occasions taken to give it due exercise in the arms of the nurse, &c. These are precautions that will prevent this disorder from affecting children. It is worth observing, that if the erosion happens to come after the child is weaned, that is to say, when it is from two to six years of age, a methodical way of living, proper food, and good air, will be the means of preventing it. Many have thought, without reason, that this disorder could affect nothing but the body of the Tooth, and that the root was not susceptible of it. It is true that the roots do not appear so rough and worm-eaten as the body of the Tooth, but still they are shorter, more crooked, and of an imperfect form, which
they

they could never get but from this tendency of the humours to erosion, or from the rickets, which is a disease so fatal to children, and proceeds from the same causes as the erosion: it also proves very pernicious to the Teeth, and all other bones.

OF THE CARIES.

As soon as the Teeth make their appearance, the Caries begin to attack them, and consequently, they stand in need of proper assistance. One should think that their hardness would render them less susceptible of it, but they are even more subject to a Caries than all other bones: it is easy, however, to trace the causes of it. As Teeth are of a closer texture, their vessels are more compressed, and therefore, obstructions are more easily occasioned: and also when cold happens to strike them to a certain degree, or when the bony fibres suffer by some extraordinary effort. If the juices that circulate through the small channels of the Teeth are too thick, or are any way vitiated, the Teeth will thereby be more liable to be contaminated; but always in proportion to the impressions they shall receive.

Teeth that have been affected with the erosion at the same time they were forming, are more subject to be carious, on account of the bad condition of their vessels; and, therefore, are with more difficulty preserved.

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

of the Tooth, often the internal surface, sometimes the external, and even the inward cavity of the body.

Such a Caries is more difficult to be known than that which proceeds from external causes, chiefly when it attacks the root or neck of the Tooth; for, as the former is buried in the sockets, and the latter is covered by the gums, one cannot perceive it: and therefore, we can only conjecture that there is a Caries, from the torturing pains that are produced. But these conjectures are often false, for the pain may proceed from some irritation affecting the chord of the Tooth, or the periosteum that covers and lines the root. The consequences, therefore, arising from this sort of Caries, are very bad; for it is mostly necessary to draw the Tooth itself.

The Caries that proceeds from external causes is visible; and consequently, by admitting of the necessary operations, more easily removed. A Caries, the longer it is allowed to run on, the deeper it goes, and is, therefore, the more difficult to cure.

The soft and dry Caries are not dangerous, if their progress is quickly and properly stopped.

Every Caries of the Teeth is more or less difficult to be eradicated, according to the part it affects, as that renders the operation more or less difficult. Although Teeth begin to be affected with the Caries as soon as they appear, still it must be allowed, that the time, in which they are more subject to it, is from twenty-five to fifty years of age. It is worth remarking, that when a Tooth is affected by the Caries, on that side which rests on another Tooth, it also affects the contiguous one; from which we may argue, that the

the particles exhaling from the carious Tooth must be corrosive. This happens not only in the lateral, but also in the opposite Teeth; for, when a Caries appears on the upper surface of a Tooth, it is then applied to the surface opposite, and in the same manner affects it, as is particularly seen in the *molars*.

The Caries sometimes proceeds from fractures in the Teeth, but is generally caused by falls, and from violent efforts in breaking something, of a hard nature, with the Teeth. The fractured Tooth can never be repaired; however, it ought not to be neglected, but carefully examined, as it requires the greatest assistance of art; for the Tooth has sometimes, in the fractured part, small cutting points that will be of great detriment to the tongue, and be the cause of very painful and dangerous wounds: therefore, they must be immediately taken off, to prevent mischief to the tender parts that they touch.

Whenever the Caries appears, it must be opened, by a masterly hand, to the very bottom. If in so doing, the chord of the Tooth is discovered, the operation will prove very painful: but still it must be destroyed, either with an instrument, the actual cautery, or some caustic liquor. We ought to be very attentive in the operation: for, if we do not utterly destroy the said chord, but only prick it, the most raging pains will succeed, together with an inflammation, and the inevitable necessity of drawing the Tooth.

Such a cure cannot but be very torturing; for, not only the sensitive parts of the Tooth are to be exposed to the impression of the air, but also to be touched with an instrument, so as to be destroyed. The skilful operator must endeavour to assuage the pain of his patient, by the assistance of medicine.

When a Tooth, by the loss of its chord, is become insensible, it must be filled with lead, or gold, in order to prevent any acid or saline particles from getting through the hole, where the chord went into the socket, to hurt its delicate membrane; for then there could be no means of redress, by drawing the Tooth: hence, all the care that had been taken, and all the pain that had been endured, to render the Tooth insensible, would then be of no avail.

OF THE TARTAR.

We shall now proceed to treat of what is commonly called the *Tartar*. From whatever occasional or secondary cause the Tartar proceeds, the principal one is certainly negligence. It hath been called, by some, a cancer, because it corrodes the gums and the socket in such a manner, that the Teeth will fall out, for want of support. It is generated by the fragments of aliments that stick to the Teeth, by a vitiated saliva, or by an imperfect digestion, &c.

Whenever this viscid matter is allowed to stick to the Teeth, it grows hard, and degenerates into Tartar, and will augment by degrees, from new particles of aliments continually joining the old ones. But this would never happen, if the Teeth were carefully cleaned every morning, with something proper for that purpose. This Tartar is a kind of crust, not only disagreeable to the eye, but also productive of very foetid exhalations.

There are various sorts of Tartar, *viz.* the yellow, the whitish, the black, and even the green Tartar, which is the most pernicious, as it often destroys the enamel. The lower *incisores* are more subject to the Tartar, chiefly in their internal side, because of their vicinity to the tongue, and of the saliva, which runs mostly that way. Although persons grown in years are generally more liable to be troubled

troubled with the Tartar, yet we frequently see the Teeth of young people all covered with it.

Whatever is the cause that produces this Tartar, or whatever the time of its appearance, it ought to be removed as soon as possible, otherwise, the gums, by the compression, will swell, and obstruct the regular course of the fluids through the lymphatic and blood vessels, which will, therefore, be liable to putrify, and destroy, in a short time, the gum, the socket, and the periosteum of the root.

This is the reason why Teeth grow loose and painful.—If you were, even then, to cut off this heterogeneous body, it would be too late to hinder the loss of the Tooth, which is now left without any support from the gums, the periosteum, and the sockets.

The Tartar, sometimes, is even thicker than the body of the Tooth, to which it sticks so close that they seem to form one single body; therefore, it requires a dexterous and skilful hand to remove it. In such a case, we must endeavour to render the course of the humours free again to the gums, by restoring them with proper astringent and antiscorbutic medicines.

There are some persons who pretend to remove or dissolve this Tartar, by the use of strong mineral acids, and, as they state, without any injury whatever to the Teeth!—The public, however, cannot be too much on their guard against such empirical pretensions. Every professional man will at once agree, that the acid, which can dissolve the calcareous substance of the Tartar, must at the same time destroy the enamel of the Teeth. It is evident, therefore, that, whenever the Tartar has been suffered to accumulate,

there is no other remedy than that of scaling the Teeth, by the hand of a skilful operator.

Some Teeth, after having been freed of their Tartar, will shew a very beautiful enamel: which makes it evident, that such a Tartar is not of so acrid or corrosive a nature as the green kind generally is.

OF THE DISORDERS TO WHICH THE SOCKETS
ARE LIABLE.

The Sockets are also subject to caries, as well as the Teeth, although not so often. The causes, that produce such an effect in them, are the very same with those formerly stated as the internal cause of caries in the Teeth.—The Sockets are also liable to be destroyed, by degrees, in the same manner as the roots of the Milk-Teeth.

This fatal disorder proceeds from a stagnation of humours in the gums, where they putrify, or from any sharp or corrosive particles that may penetrate and corrode them insensibly. From a stagnation of the fluids in the serous, or blood-vessels of the gums, the Sockets and their partitions will sometimes grow soft, and become entirely of a fleshy consistence, which, therefore, leaves the Tooth without support. Old men generally loose their Sockets intirely, because the nutritious juices, that formerly served to nourish the gums, are now no longer distributed to them.

It is worth observing, however, that persons of a robust constitution are not so liable to lose their Sockets, and, consequently, their Teeth; for, we see people extremely old with all their Teeth, and their gums quite perfect: their Sockets, therefore, must be sound, and in good condition.

There

There is no other way to prevent those disorders, but by taking a particular care in cleaning the gums, never letting any corrosive particles, or any viscid matter that is likely to putrify, enter into the Sockets; so that the gums may become strong, and apply themselves closely round the necks of the Teeth.

OF THE DISORDERS OF THE GUMS.

Whenever the Gums are affected, they generally lose their colour, their firmness, and consequently, their adhesion to the Teeth; they will, at different times, appear pale, flabby, relaxed, rough, corroded, inflamed, and wrinkled. The lividity of the Gums proceeds from some defect in the circulation of the blood through them.

To remedy, as much as possible, so disagreeable a circumstance, it will be very proper to rub the Gums pretty often in the morning, and likewise to scarify them, in order to let out some blood, and in that way promote the circulation. If, after these means have been used, the complaint remains the same, it will be then necessary to have the physician's assistance, as the fault must be rooted in the constitution.

The Gums grow often so thick, that they in some measure resemble pin-cushions; and, by communicating their swelling to the lips, they will greatly deform the mouth and face. This disorder proceeds either from the compression of the tartar, or a local plethora. If it proceeds from the first of these, the tartar must be removed immediately; then scarify or prick the Gums, and administer proper antiscorbutic and astringent medicines.

But

But if the swelling proceeds from a plethora, which is easily known, a proper method must be taken to evacuate the vitiated humours, and to diminish the thickness of the Gums in the points that run in betwixt each Tooth, where the swelling more manifestly appears; then proper astringents should also be applied to prevent the complaint from recurring. The patient must live on a proper regimen, and submit to the necessary ablutions.

A swelling as big as a strawberry, sometimes appears in the Gums of young people, which is more unsightly and deformed, than dangerous; but it is necessary to disperse it as soon as possible. The same causes that swell the Gums, will also produce excrescences upon them. If these proceed from an external cause, the effect will cease, when once that is removed; but, where the cause is internal, all outward applications will be useless. Sometimes these excrescences will be greater than at other times. When they begin, they are never dangerous: but, if they are neglected, and increase, the Tooth soon becomes loose, and of course is soon lost. Absorbent remedies are to be applied in the beginning; but when the excrescence is arrived to a certain size, then it cannot be destroyed, but either by carefully cutting off the redundant part of the Gum, or by consuming it in some other way.

The substance of the Gums may be diminished, either for want of sufficient nourishment, or by being too tense and firm; for then they are apt to hinder the fluids from circulating properly; hence it happens, that the Teeth are deprived of their necessary support, and the Gums become a very disagreeable sight to the eye. The want of juices, and the contracted state of the vessels, which are the chief causes, may be removed by means of proper emollients, &c.
which,

which, by relaxing the parts that were too tense and firm, will promote the dilatation of the vessels, and consequently, the course of the humours will be more free, and their quantity augmented. We must not, however, delay the cure too long, for sometimes art comes too late.

The paleness of the Gums proceeds from the deficiency of the globular part of the blood; which may be occasioned, likewise, by the narrowness of the vessels. It is easy, by rubbing the Gums pretty often, to recall the blood, and consequently restore to them their natural colour.

Whenever the Gums are relaxed, and want that tensility and firmness which is so absolutely necessary for their being in a sound state, various complaints are generally the consequence; and therefore, proper antiscorbutic astringents must be made use of, in time, to prevent and remedy such fatal disorders.

The Gums are sometimes rough, as if spread all over with little grains, like millet-seeds, under the skin. These little tumours are hard and ugly, sometimes will come to a suppuration, and render the Gums very painful. These are, therefore, to be prevented, by applying very strong resolvents; then we must make use of detergents, and come, by degrees, to astringents.

Children who eat too much sugar, or sweetmeats, generally have their Gums corroded. Confectioners and Chymists are subject to this disorder, because the saline and corrosive particles that fly from the sugar and minerals, affect their Gums. This disease should by no means be neglected: and, first of all, the cause must be removed; then the proper astringent and sweetening medicines must
be

be administered, to purify the mass of blood; and it is very necessary to abstain from every thing too salt, spicy, high-seasoned, or what else may render the blood acid or sharp.

The inflammation of the Gums proceeds, for the most part, from the impression of cold air; the best remedy, therefore, is to keep them warm.

That the Gums are also subject to cancerous tumours, from the above causes, evidently appears; and they should always be speedily extirpated. Such a disorder must be considered as a local affection that has proceeded from some glandular or vascular part of the Gums being vitiated, together with an internal or predisposing cause in the habit: it requires, therefore, a very serious and mature consideration, before such a cure is undertaken, lest we should hurry on to the operation too precipitately.

Sometimes ulcers will affect the Gums. Their external causes are, rotten Teeth, the tartar, violent falls, blows, vitiated saliva, or any other injury offered to them. The scurvy, and vitiated humours, are the internal causes; and, therefore, a radical cure of the ulcers will never take place, except these are entirely got the better of. They are sometimes more, sometimes less, deep in the Gums; when they are not deep, astringents and antiscorbutics may be of use; but, when they are deep, they will even produce a swelling, and an excrescence in the Gums: and, therefore, we must take care to cut off the superfluity, and follow the method that was mentioned when we spoke of tumours and excrescences.

Ulcers are of different sorts, and vary greatly in their appearance; but, as they always proceed from the above causes

causes (and the nature of this work will not allow of prolixity), it will be unnecessary to describe them.

The abscesses, or imposthumes, that are formed in the Gums, proceed, for the most part, from some bad Tooth, or from some Tooth not drawn in time; or they may proceed from the intemperature of the air, from some violent blow, &c. as also from the extraction of a Tooth difficult to draw. When the cord of the Tooth is left uncovered, either by a caries, or some other cause, it swells and inflames, communicating the inflammation to the periosteum, that covers the root, and lines the socket and substance of the maxillary bones; the inflammation then proceeds to the socket, and so to the Gums, where the abscess is formed, from its being a much softer part. We must not neglect to examine the Tooth; and, if we find that to be the cause, it must be drawn immediately, even if there was a flux of humours upon the Gums; for, the corrupted matter, that stagnates in that place, might be very pernicious to the contiguous bony substance: then we must make use of those remedies that are prescribed in such cases, in order to make a perfect cure; for, if it were not speedily effected, it would prove destructive to the Gums, the sockets, and the contiguous Teeth.

The same causes, also, will produce fistulas in the Gums, which are more or less of a malignant nature. In order to remove them, it will be proper to make use of the same things that were prescribed for the abscesses, or of any thing else that the skilful practitioner will find necessary.

Little cancers, that appear sometimes in the Gums, may be destroyed by a caustic. Those that arise from some internal cause, are more malignant and stubborn. Sometimes they are very numerous, and small, of colour different

from other cancers, and almost always accompanied by ulcers somewhere else.

Those that proceed from the fluids being tainted by the venereal disease, are distinguished from those that arise from a scorbutic humour; for, the former are deeper, more painful, and full of blood, yielding a great quantity of foetid matter, and occasioning a great swelling in the lips. The second are of a milder nature, and not so inflammatory. Without purifying the vitiated humours internally, as was formerly hinted, all outward applications will be quite useless.

The Gums are also subject to suppuration; and, in this way, they are not only liable to be destroyed, but the Teeth also. I have remarked, that fat persons are more subject to this disorder than those of a meagre constitution, on account of their having a greater quantity of humours. The fore parts of the *incisores*, *canini*, and small grinders, towards the root, are most liable to be affected with it; they grow of a brownish colour; and, in proportion as the disorder either increases or declines, they assume a different appearance.

Suppuration frequently happens in those Gums where the sockets are wanting. The Gum, as well as the socket, being divested of the periosteum, and consequently not able to adhere, is, by being left to itself, and exposed to the air, affected with little ulcers, that will soon occasion suppuration; and, therefore, it becomes necessary, in order to avoid more dangerous consequences, to cut off that part of the Gum which is left unattached; and, likewise, to remove all other causes, such as the surcharge of humours, &c. by adhibiting medicines which may be adapted to answer that end.

CASES.

Regenerated Paper.

CASES.

CASE I.

ABOUT three years since, a Lady, from the county of Kent, having had one of the *dentes molares*, on the left side of the upper jaw, unskilfully drawn, applied to William Bromfield, Esq. Surgeon to her Majesty, and to St. George's Hospital (a gentleman not more distinguished by his masterly knowledge in his profession, than by his liberality and politeness), who, upon inspecting the seat of the complaint, desired I might be sent for. Her distress, we suspected, arose from matter contained in the hollow parts of the maxillary bones which form the sinus, called *antrum highmorianum*.* Upon acquainting the Lady with the little pain the operation would give her, she consented to its being performed; and in the presence of Mr. Bromfield, I made a puncture, with the usual instrument, through the bottom of the socket of the Tooth, which had been extracted, into the sinus, from whence a considerable quantity of very foetid matter, of a disagreeable colour, issued. The sinus was directly deterged, by means of a syringe, with my Tincture; which being repeated, every four or five hours, she perfectly recovered from her complaint in a few days.

* This sinus is not very properly named from Dr. Highmore, as it was evidently known, before his time, to the great Vesalius, and others. (See Palfin's Osteology, tab. 2, fig. 2 — Drake's Anatomy, tab. 18, figs. 1 and 2.)—Morgagni observes, these sinusses are sometimes wanting, though very rarely.—*Adversaria Anatomica*, vi.

CASE II.

A Gentleman, in a distinguished station in the East Indies, about the same period, returned to this Kingdom, in consequence of a complaint in his mouth, which arose from a broken point of one of the upper *incisores* irritating the gums.. A fleshy excrescence, the size of a large filbert, was formed between the upper lip and the *os maxæ*, which was attended with severe pain, and had a cancerous appearance. He consented to have the excrescence removed from the root; which I immediately performed with a small bistory. A slight hæmorrhage followed, which was stopped with a piece of lint dipped in my Tincture, with which the wound was constantly washed twice a-day; and, in less than a week, the patient was perfectly cured.

CASE III.

Some years since, Captain Nelson, of the Royal Navy, (whom I accidentally met with at Portsmouth), shewed me a similar fleshy excrescence, considerably larger than the former, which, whenever he was shaved, gave him uncommon pain. He applied to one of the surgeons at the Hospital, who assured him the case was venereal, and had prepared him to go through a mercurial course. I gave my opinion of the complaint; and the surgeon, upon a consultation, having no objection to its being extirpated, I removed it with a bistory, and the cure was completed, in a few days, without any other application than the Tincture.

I saw this gentleman two years afterwards, when his perfect state of health confirmed my prognostic, and convinced the Hospital-surgeon of his mistake.

CASE IV.

A Lady of distinction, about twenty-two years of age in the month of July, 1777, sent for me, in consequence of a very alarming complaint in her mouth. Her gums appeared greatly swelled, looked very florid, and were exceedingly painful; she complained of a brassy taste, and had some difficulty of swallowing any kind of solid food.

An apothecary in the neighbourhood had been applied to, the day before I saw her, and pronounced the disease an inflammatory sore throat, from cold. Though, at that time, I had some suspicion that her distress arose from another source, I had no objection to her continuing the use of an emollient gargle, with nitre, which had been ordered for her. The next day, all her symptoms were aggravated; when, being still farther confirmed in the conjecture I had at first formed, I requested an experienced surgeon might be consulted, and accordingly, Mr. Glover, Surgeon-Major of the Essex regiment, the following morning was called in. On inspecting the seat of the disorder, we found three of the lower *incisores* loose, the breath very foetid, and a great quantity of saliva secreted from the glands. The last-mentioned gentleman, on our retiring, declared, the Lady had been taking some preparation of mercury, which was the cause of the above symptoms.

As the matter was of so delicate a nature, and the other practitioner did not fall in with this opinion, though it intirely corresponded with that I had at first adopted, the utmost caution was observed in asking the necessary questions of the Lady, and her domestics. One of them, after a long enquiry, said, the hair-dresser had occasionally used a
small

small quantity of some mercurial pomatum. The man, who lived in the neighbourhood, was directly sent for; and after some hesitation, produced a box, which was found to contain about an ounce of the *Unguentum Neapolitanum*, not above half a drachm of which, it appeared, he had used in the dressing, in order to prevent a certain kind of animalculæ from breeding in the hair. By proper medical treatment, the Lady recovered her health in about ten days after; but her gums continued in a spongy, flaccid state, for some time, till they were brought to their natural beauty and firmness, by the repeated use of the Tincture, which I found, by experience, the best application, yet discovered, for strengthening the gums, and making them adhere to the Teeth, after they have been injured by the exhibition of mercurial medicines.

I have been the more particular, in the recital of the above case, as I think a ptyalism more frequently happens from this cause, than is generally imagined; and as it shews, in a striking manner, how soon some constitutions are affected by the smallest quantities of mercury, even externally applied. Two cases, which lately came under my inspection, though not attended with such severe symptoms, have corroborated this opinion.

CASE V.

I shall just lay before the reader another instance of the cause of a painful disorder being egregiously mistaken.

An Officer of the Guards, about twenty-three years of age, being, last autumn, upon a visit to his friends in Yorkshire, was seized with a violent pain on both sides of the face, which, according to his own words, “ran along the
upper

upper jaw, and terminated at the ear." His disorder was treated by a practitioner, said to be very eminent for his physical knowledge, as a rheumatic complaint; for which he was bled, and took a quantity of medicines. But, the pain continuing some days, with great violence, another physician was consulted, who declared the disease was of a nervous kind, and, accordingly, ordered him into the warm bath, and prescribed camphire and opium, in large doses. Receiving little benefit from this treatment, the gentleman came to town, and consulted me, on the very evening of his arrival.

On examining his mouth, I felt two of the *dentes sapientiae*, of the upper jaw, making their way through the gums, which I immediately lanced; and his complaint intircly left him, before ten o'clock that night.

Several cases, of a similar kind, have come under my inspection, in the course of my practice; but the above are sufficient to caution every sagacious practitioner from pronouncing, without the strictest examination, upon the nature of general symptoms, which have been too often called by the names of disorders that never existed.

CASE VI.

About the beginning of the year 1782, Richard Cary, Esq. (late of the Middle Temple), of a healthy habit, about twenty-six years of age, was afflicted with a violent heat, swelling, and bleeding in his gums, which prevented him from chewing his food, and which continued nearly three weeks, when he consulted an apothecary, who attended him for nearly two months; during which time, he took several medicines, was bled, and constantly gargled his mouth with

with a solution of honey of roses in distilled vinegar. The complaint, however, increased, and a surgeon of character, being called in, pronounced his case, "a wasting of the *alveolar* process, from a constitutional disease, which would probably destroy the gums, and occasion the loss of most of his Teeth."

Not satisfied with this melancholy prognostic, he applied to a celebrated dentist, who readily undertook to remove his complaint in a short space, by means of a lotion and opiate, which seemed, in the course of some weeks, only to increase the patient's distress.

In the month of July, 1783, Mr. Cary's gums appeared one common ulcer; and the necks of the *incisores* and *canini* of the jaws were entirely denuded.

When I first saw him, about the beginning of August following, there was a considerable discharge of matter from the inside of the gums, which appeared in puffs, all along the upper jaw, of a dark brown colour, hanging over the sockets of the Teeth, most of which were loose. I directly took off the ragged swellings of the gums, with a bistory, which gave him no pain, and scarified them between each Tooth, directing him to apply my Tincture, several times a-day, with a fine sponge, adding to each spoonful of it, fifty drops of the Thebaic Tincture of the London Dispensatory. He was ordered to live sparingly, with respect to rich animal soups, which he had been suffered to indulge in for a considerable time, and drink a pint of the strong decoction of Peruvian bark, twice a day.

In about ten days, I took off several more pieces of redundant flesh from the gums, both of the upper and lower jaw,

jaw, and had the great satisfaction to find fresh granulations, of a fine natural colour, sprouting round the necks of the Teeth which were loose.

In a week after, being disgusted with the bark, and in every respect better, he left it off, as well as the Tinct. Thebaic, using my Tincture only twice a day, morning and evening, keeping it in his mouth for ten minutes, or a quarter of an hour.

Mr. Cary being unexpectedly obliged to go to the Continent, I heard no more of him 'till last November, when I received the following letter:

“ SIR,

“ I think myself obliged, from a principle of gratitude, to return you my thanks, for the great advantages I have derived from your Tincture, which effectually removed my complaints in little more than five weeks, after I began to use it every morning and evening. My Teeth are now firmly fixed in their sockets, and my gums in a firm and healthy state. As I owe this salutary alteration to the efficacy of your valuable remedy, you are at liberty to publish an account of my case, which the Faculty have pronounced a very singular one, in the papers, or in any other manner you may think expedient.

“ I am, SIR, &c. &c.

“ R. CARY.”

“ *Spa, Nov. 6.*

“ *Mr. Ruspini, Pall-Mall, London.*”

CASE VII.

Chevalier RUSPINI, Surgeon-Dentist to His Royal Highness the Prince of Wales, having, in the course of his extensive practice, often met with cases wherein persons, from mistaken motives of economy, have incautiously been induced to use improper mixtures, either for cleansing or preserving their Teeth, or for remedying some trifling pain, and thereby produced quite the contrary effects, wishes to guard the public, and particularly such as are possessed of good Teeth, against this imprudence.

He is induced to make this caution public, from a recent circumstance, which occurred a few weeks ago, when a Lady applied to him for his advice, in consequence of having had a fine set of Teeth almost destroyed by the application of mineral acids, taken from an old family recipe. These compositions are the more dangerous, because, on first application, they render the Teeth beautifully white, and induce the acquaintance, of such as try the experiment, to fall into the same snare, which is discovered, in a short time, by a total change of colour, either to yellow or brown, and a destruction of the enamel; whereby the bony part of the Tooth becomes exposed to the air, and, in common with any other bone in like circumstances, to quick decay, attended with frequent excruciating pains. Many ladies, in this town, have reason to lament the irreparable loss of a once beautiful set of Teeth, by trying similar applications.

Instead of such dangerous experiments, the effects of which are not to be remedied, the Chevalier can safely recommend the use of his Dentifrice Powder and Tincture,
which

which have stood the test of nearly half a century's use, by the principal nobility and gentry in London, and other parts of Europe, as well as in the East and West Indies, and America, and are celebrated as the most effectual remedies for all disorders incident to the Teeth and Gums, rendering the former beautifully white, and preserving them sound and useful 'till old age, and clearing the latter from all scorbutic eruptions.

His Elixir, for the cure of the Tooth-ach, in cases where extraction is not necessary; and Styptic, for the immediate stoppage of bleeding, however violent, whether internal or external, to be had as usual.

RUSPINI'S DENTIFRICE AND TINCTURE.

This Tincture, which has, for so many years, been used and sanctioned by the first nobility and gentry, will be found most salutary during the present season, the effects of cold and damp air, on the Teeth and Gums, being repelled and counteracted by its balsamic and astringent qualities. Its most powerful use is to defend the nerves connected with the Teeth, which are now most liable to be affected, and often with the most excruciating pain.

For violent Tooth-achs, the Chevalier recommends his ELIXIR, which will, almost instantaneously, remove that anguish

These medicines (with his BALSAMIC STYPTIC, for the cure of hæmorrhages, both internal and external), are

to be had of him, in Pall-Mall, and of the venders under his special appointment.

The Chevalier is compelled, from the number of personal applications at his house, to restrict his out-door visits, unless in cases of particular necessity, to Tuesdays and Fridays only. On the other days of the week, he is to be found at home, and consulted, as usual, on all disorders which relate to the Teeth and Gums.

Pall-Mall, December 1, 1800.