An Essay on artificial teeth, obtusators, & palates : with the principles for their construction and application, illustrated by twenty-six cases and twenty-one plates / by Leonard Koecker.

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AN ESSAY

ON

ARTIFICIAL TEETH,

OBTURATORS, & PALATES,

WITH THE

RINCIPLES FOR THEIR CONSTRUCTION

AND

APPLICATION,

ILLUSTRATED BY

TWENTY-SIX CASES AND TWENTY-ONE PLATES.

BY

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ETC. ETC.

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PREFACE.

The time when a veil of craft and mystery was considered necessary to give importance or dignity to any science or profession has passed away in this enlightened country, and science, as well as humanity, seems to be most benefited by such kind of information as is intelligible to all, the uninitiated as well as the learned, the general, as well as the professional reader.

Impressed with this opinion, the author has written the following Essay on a part of his profession which of late has undergone very considerable changes, and which still appears to be generally less understood than any other of its branches. The object he has in view is two-fold—first, an endeavour to facilitate the labours of his professional brethren; and, secondly, to give that information to the general reader which will guard him from becoming the dupe of deception and imposture. Distinctness and simplicity are his particular aim; in furtherance of which he has considered

it a great advantage to introduce a series of Cases, which he deems important, and also the aid of drawings in illustration of his views.

In the first and second Chapters, the author has referred to some abuses in such terms as may be misconstrued into unjust severity; but the candid reader cannot doubt the sincerity of the author, whose only aim is to remove those abuses, by drawing the subject to the attention of the guardians of the medical and surgical Profession, as well as to obtain that protection for the Dental Profession which it justly claims at their hands, for the sake of humanity and science.

Should he succeed in attaining, to any extent, these objects, he will consider himself sufficiently rewarded for his labours.

Whatever may be the faults—and that there are many it is but natural to infer, the author being a foreigner; yet he trusts his good intentions will not be misunderstood nor misinterpreted, but that they will be viewed with that liberality and impartiality which distinguish the faithful critic and intelligent reader in every civilized country.

5, Conduit Street, Hanover Square,
June, 1835.

CONTENTS.

CHAPTER I.

CHAPTER II.

CHAPTER III.

CHAPTER IV.

CHAPTER V.

CHAPTER VI.

CHAPTER VII.

CHAPTER VIII.

CHAPTER IX.

CHAPTER X.

AN ESSAY

ON

ARTIFICIAL TEETH.

CHAPTER I.

ON THE USE AND ABUSE OF ARTIFICIAL TEETH.

That branch of general surgery which embraces the substitution of artificial for natural organs and members of the human body, has, of late years, made such considerable progress, that it may now be said to have reached nearly the summit of perfection.

The loss of an arm or a leg may now be supplied by ingenious mechanism, so perfect in external appearance and adaptation as to deceive a common observer. The nose, the eye, the chin, the lips, and even the tongue, may in like manner be imitated with exactness as to outward appearance, and all perform

more or less of the mechanical offices of the lost organ. In each of these cases, however, the wearer is conscious of deficiencies which perhaps no eye may detect, but which, in the loss of the natural function, will be felt, however perfect the simulation of outward form.

Artificial teeth, however, if judiciously and skilfully inserted, may be justly considered to afford greater advantages than all other mechanical substitutes in surgery; they may be rendered almost as useful as the natural teeth, not only from their capability of restoring and preserving the general health by their assistance in mastication, and the health of the remaining teeth and sockets by their support, but also for the aid they afford to a clear and distinct utterance, and, in an ornamental sense, the beauty they impart to the human countenance; in which last point of view, their importance may best be estimated by observing the disfigurement occasioned by the loss or mutilation of the natural teeth.

In all these properties, the artificial may be rendered nearly an equivalent substitute for the natural organ. But as no mechanical part

of any branch of surgery can be carried so near to perfection, so none demands greater skill and nicety, combined with a scientific knowledge in the practitioner. An injury done to the various parts of the mouth, by the insertion of one or more teeth upon erroneous principles, must render all future restorative efforts less useful; and it will often happen, that in correcting a small evil a much greater will be created. Thus, one tooth may be inserted upon so false a principle, and in so unskilful a manner, as to loosen all around it, and eventually to cause the loss of the entire set; this is by no means an imaginary evil. The process by which the injury is effected is slow but certain. The unhappy sufferer is conscious only of the effect—the cause, to all but the scientific observer, remains a mystery. The patient only knows that from year to year his teeth are failing him, and imputes to natural causes a gradual decay, which in truth is chargeable only upon the ignorance of some unskilful operator. A dentist who is competent to the discharge of his duties will not only supply the specific loss or remedy the

defect, but he will detect and remove the latent evil. It is as much a part of his duty to see that the cause which has occasioned the particular loss or injury brought under his notice shall not continue its destructive operation, as it is to supply the deficiency.

A comprehensive knowledge of the anatomy and physiology of the teeth, and all the adjacent parts with which they are in connexion, a minute acquaintance with all the irregularities and diseases to which they are subject, and the causes and cure of them, are indispensably necessary for the proper insertion of artificial teeth.

Indeed, the application of artificial teeth must be directed by great surgical knowledge as well as mechanical skill, and cannot be left with safety to the mere mechanical artisan alone, however great his skill may be, like that of an artificial leg or arm, or even of the eye, &c. Yet such a notion very extensively prevails, and is productive of the worst effects; indeed, the exclusive performance of properly preparing artificial teeth requires the highest degree of mechanical ingenuity and dexterity; and the

artist, exclusively devoting himself to this part of dentistry, with the necessary skill and attention, is highly deserving of the gratitude of the profession. Still, even with the best assistance of this kind, the conscientious dentist will be compelled to devote much attention and labour to the mechanical portion of his art, if he be determined to insert such artificial teeth only as shall be not merely ornamental and really useful, but also permanently harmless to the remaining natural teeth, and other parts with which they are connected.

So great have I found the difficulty of obtaining any satisfactory mechanical assistance, that I was compelled for a long period to attend to this laborious branch of dental surgery myself. It is in London and Paris, and a few other large European capitals only, where the scientific dentist may receive some useful assistance from the skilful mechanic.

It is greatly to be lamented, that the number of those dentists who combine the necessary mechanical skill with medical and surgical attainments is so very limited; while all parts of the civilized world more or less abound with

that class of operators who are not possessed of either the scientific or mechanical qualifications requisite to fulfil their professional duties.

Moreover, it is to be regretted that dental surgery, as a branch of the healing art, is yet a very obscure science; and, while it is at all events not less intricate and abstruse than any other of its branches, it is by far the least understood by medical men as well as by the public at large. It is also deprived of every protection by the medical or surgical faculty. It is principally from these causes that it has not acquired that importance to which its great difficulties and utility so justly entitle it, while it is overrun by those who degrade the very name of the profession, and endanger the health and comfort of the public.

These circumstances are particularly productive of the great difficulty existing to the public in drawing a just distinction between the ignorant and the skilful dentist; and if these facts are duly considered, we can no longer be surprised at the frequent occurrence of individuals, even of the most exalted stations in life, so much deluded by mistaken views and false

notions, as to apply to the uneducated practitioner, for the insertion of artificial teeth, at a period when the various diseases of their mouths require the most comprehensive treatment from the surgeon-dentist.

This sufficiently accounts for the frequent errors, and the destruction effected by the gradual loss of all the natural teeth after the insertion of a few mal-constructed artificial teeth, and the rare instances in which those beneficial effects, as above mentioned, of this beautiful part of surgical mechanism are either perfectly obtained, or experienced to any considerable extent. For while the small number of able dentists either prevent the necessity for the insertion of artificial teeth, by an early attention to the preservation of the health of the natural teeth and gums, or employ their insertion but seldom, and only in such cases in which it is evidently indicated, the treatment adopted by the great number of unskilful men tends greatly to impair the health or destroy the living teeth, and also to augment and produce diseases of the gums, periosteum, and sockets, by the injudicious and improper pre-

paration and application of artificial teeth, and thus destructive ravages are committed even on the general health.

The following case is at once a very complete illustration of the pernicious consequences resulting from their injudicious employment, and of their excellent and highly useful effects when they are applied with science and skill.

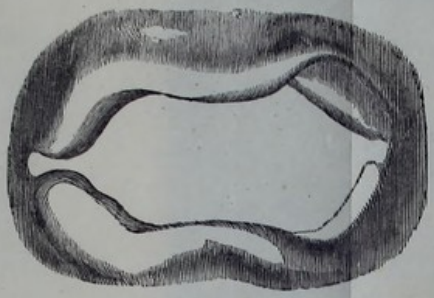
CASE I.

See Plate I., fig. 1, 2, 3, 4, 5.

Mr.——, of ——, a gentleman of great respectability and attainments, requested my professional assistance in the year 1820; his age was about 55, his constitution delicate, and greatly suffering from the mal-treatment of his teeth at various periods. According to the patient's own account, in consequence of the improper insertion of a few mal-constructed artificial teeth at an early period of life, and a constant neglect of proper attention to the restoration and preservation of his own, by a

PLATE I.—CASE I.

1.



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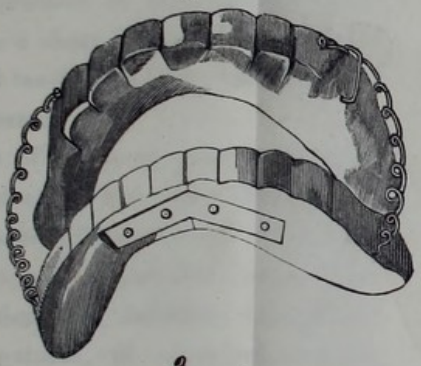

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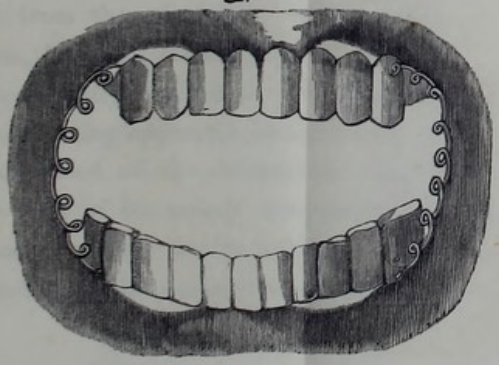

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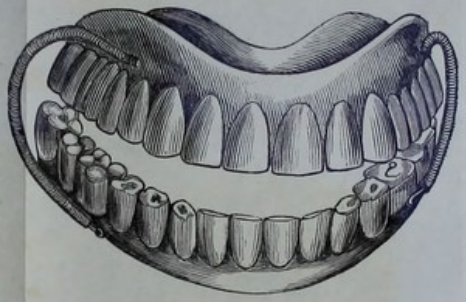

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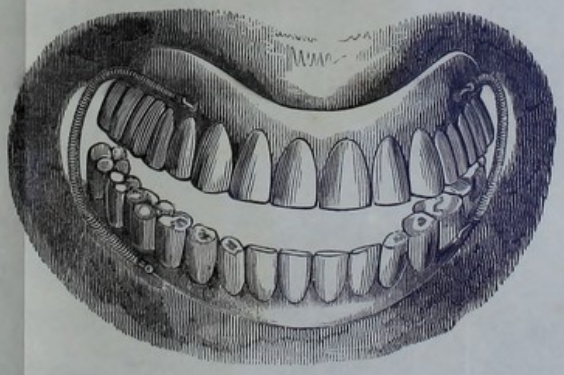

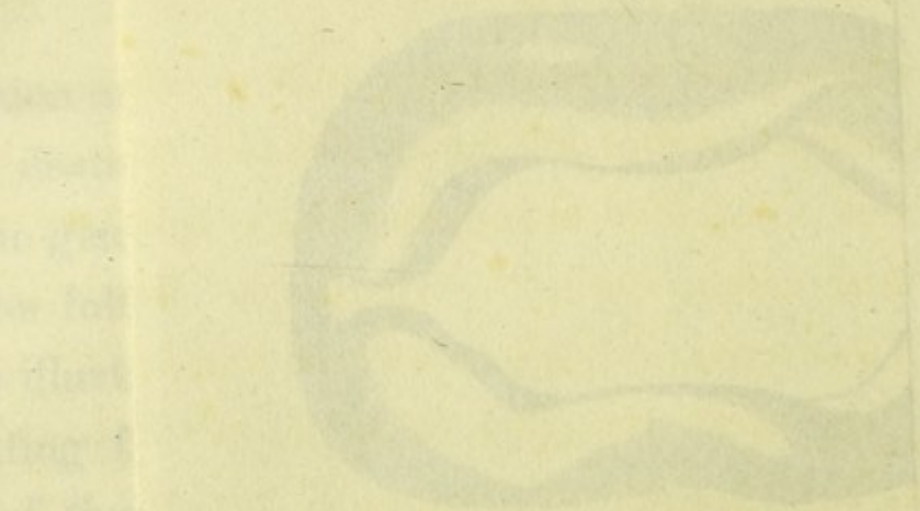

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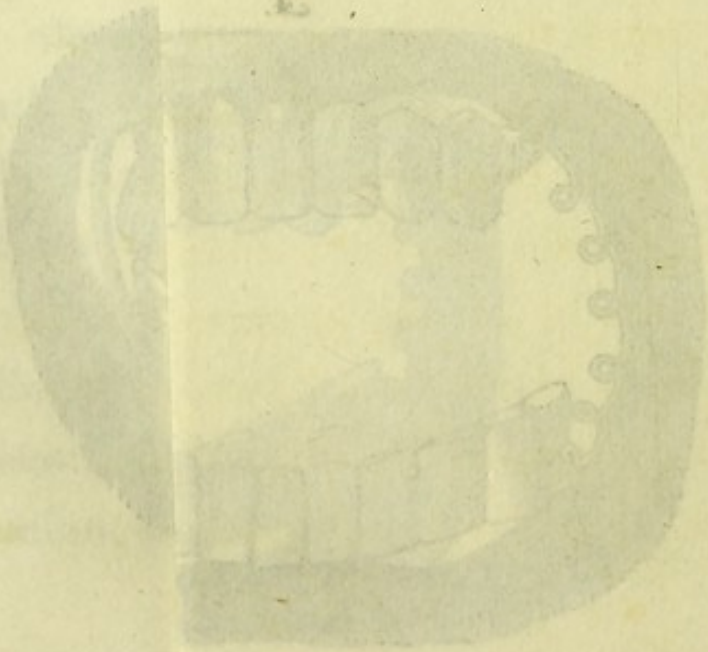

judicious treatment of the diseases affecting the various parts of his mouth, he had successively been compelled to increase the number of artificial teeth, until, in a period of from ten to fifteen years, all his own teeth had been lost.

He had, first, two artificial teeth inserted, with pivots upon the roots of two incisors; in a few years afterwards he required the use of another, and in a short time the fourth incisor and two cuspid teeth were lost, and replaced in the same manner.

The diseases of his teeth now rapidly increased; his gums became very sore and inflamed, and some of the roots of his incisors became unfit to hold the artificial teeth. The mode of insertion was, therefore, changed to the use of ligatures, ill-contrived springs, &c.; and from the mechanical pressure of these means, he was gradually losing his natural, and constantly compelled to increase his artificial masticating apparatus, until, at last, he became convinced of the destructive effects which the state of his mouth was producing upon his constitutional health, which induced him to insist upon the removal of all the dead

roots and stumps of teeth, and the few remaining loose or painful grinders, notwithstanding the opposing arguments of his dentist.

The teeth of this gentleman were objects which could not be viewed in too important a light, not less from the circumstance of his principal duties being those of a public speaker, and from the deep inroads which had been made upon his usually excellent flow of spirits, and upon his constitutional health, by the permanent effects of the previous repeated improper dental treatment, than from the consideration of his greatly impaired digestion, and, at the same time, his particular fondness for the good things of the culinary art; which rendered not only a frequent exhibition, but also an active application of his masticating apparatus very desirable, and highly necessary.

During and after the loss of his own, several double sets of artificial teeth had been successively prepared by his dentist, who had entirely neglected the preservation of his natural teeth; and so ill were they contrived, that they did not fulfil any of their offices in any way satisfactorily to the patient. Their appearance was

disgusting, and they were so ill adapted to his mouth, and so clumsily made, that they kept his mouth constantly sore; and not only greatly affected his speech, but also his mastication, and continued to impair his health and spirits.

A new set of artificial teeth for the upper and under jaw was prepared for him in the shortest possible time, which fitted quite comfortably to his gums, and properly assisted in speaking and mastication, and, by its perfectly natural appearance, gave the original and healthy contour to his face; and, indeed, the salutary effects of the new apparatus proved to be so successful as to restore the general health and vigour of the patient, and his usual exhilarated spirits.

The following plate will give a better illustration of the case.

EXPLANATION OF PLATE I. IN ILLUSTRATION OF CASE I.

Fig. 1 represents the appearance of the mouth after the loss of all the teeth.

Fig. 2—the last double set made use of before the case came under my care.

Fig. 3 represents fig. 2 inserted into the mouth, illustrating its mal-adaption to the gums.

Fig. 4 represents a complete double set for the upper and under jaws, prepared of natural teeth, mounted on plates carved of hippopotamus.

Fig. 5 represents the same complete double set, described by fig. 4, placed in its intended situation.

CHAPTER II.

ON THE DIFFICULTIES ACCOMPANYING THE JUDICIOUS INSERTION OF ARTIFICIAL TEETH.

It is a fact particularly worthy of consideration, that in all civilized countries the dental profession, more than any other branch of the healing art, has been from time immemorial, but perhaps never more than at present, abused by uneducated men, who possessed neither the scientific nor the mechanical principles for the fulfilment of their professional duties; and the public, not excepting individuals even of the first and most enlightened ranks of society, have been so often imposed upon and misled by false appearances and erroneous notions, from not being acquainted with the dental mechanism, as to treat this subject, so highly important to their physical and moral happiness, with the

greatest levity, and to give the greatest and almost unlimited encouragement to the most undeserving.

In most instances, no sooner is a tooth of some importance to appearance lost, than the restoration of such a defect by mechanical means, is considered an object of the highest moment, without the least attention being paid to the remaining teeth and the gums, which are either primarily or secondarily affected by the general morbid state of the mouth; and, like the most daring and desperate gambler, the patient entirely disregards common prudence, and puts at stake the whole of his remaining dental property, by his useless and erroneous attempts to recover by improper and injudicious means his lamented partial loss, and ultimately ruins his teeth and constitution by his own folly; rendering himself the most desirable prey of those impostors who are either by means of promising advertisements, or other less suspicious methods, intruding themselves upon the consideration of the unwary and credulous public, and who thrive by practising usury upon human health and happiness.

Dental Surgery having been, and being constantly practised without any restraint, and left open to the unworthy intruder equally with the deserving, the propagation of all kinds of prejudices and erroneous notions must be the unavoidable consequence, and these notions have now obtained with the public at large the greatest and most powerful influence, not only over all dental and surgical principles, but even over common sense and plain judgment. Indeed, it has almost entirely removed all good taste and judicious considerations, as it regards the general effects of artificial teeth, such as utility and appearance; and the absence of a tooth, which is but little observed, is sometimes considered a much greater evil than the most disgusting breath and disagreeable maladies of the mouth; and thus the destruction of the other teeth, as well as of the general health, is often occasioned or aggravated by the injudicious insertion of a single ill-contrived artificial tooth.

Moreover, these erroneous views, too often encouraged, and adopted even by a great number of practitioners, have obtained such an in-

fluence over the public mind, that the proper application of the dental art is accompanied with the greatest difficulties, and is the more opposed in the same ratio by the influence of such more immediate imaginary salutary effects, as it is founded on better and more just principles of medicine and surgery. And thus with some of the scientific professors of dental surgery, it has indeed, too frequently, overpowered their just professional principles, and though well possessed of the means of pursuing proper dental practices, they have neither the courage nor self-denial to proceed against the current of prejudice, or to sacrifice their immediate interest to their future permanent success and conscientious gratification, and they have been carried away and overpowered by the stream of general opinion, and have gradually fallen into and followed the path of their less informed brethren.

Nor have such principles and practices been publicly advocated and recommended only by the usual means of empirics—viz., advertisements and exhibitions—but authors, of book-making celebrity, have exerted their utmost to

advance the most absurd theories and practices, and have thereby given a certain kind of authority to the most palpable errors in the application of dental mechanism, while men of truly surgical eminence have generally omitted to enter on this part of dental surgery, either from want of experience or from the difficulties placed before them by the chaos of erroneous customs and prejudices which have presented themselves, and the fallacy of which would necessarily have required to be in some degree exposed and removed before the introduction of better principles.

Hence we look in vain for any information in those standard works which might be deemed capable of giving any scientific information on this important subject, and I believe very little that is useful has been written on this part of dentistry.

The celebrated John Hunter, in his "Natural History of the Human Teeth, &c.," has not investigated the subject of the mechanical part of dental surgery, and with respect to the restoration of lost teeth, he confines himself entirely to the one surgical remedy of trans-

planting living and dead teeth from the mouth of one individual to that of another, although this practice is far more dangerous than the insertion of any kind of artificial teeth. It is happily at present erased from the list of surgical treatments, and abandoned by every dental surgeon of judgment and integrity, and it needs therefore no further refutation.

I have nevertheless seen this treatment revived by various practitioners, particularly by one in Philadelphia, in 1818; and in four cases in which I was subsequently consulted, I had sufficient opportunity of observing the extensive ravages produced by this operation, not only upon all the remaining teeth and the parts connected with them, but also upon the general health of those who had fallen victims to the dental impostor: fortunately for the Philadelphian public, he was soon prosecuted for forcibly extracting a sound tooth from the mouth of a child, and he left the country to escape the consequent punishment.

I shall, however, not extend this essay by a minute detail of these cases, but beg only to refer the reader to a very distressing one, of the

transplanting of one tooth, which occasioned the most appalling and painful destruction of a young lady, related in "The Medical Transactions of the College of Physicians, of London," vol. 3, page 325, 338. This one instance, in addition to the cases before referred to, is quite sufficient to illustrate the above statement, and to prove the dangerous and fatal effects that must almost invariably follow this practice.

Mr. Joseph Fox, in his excellent work, "The Natural History and Diseases of the Human Teeth," says very little on artificial teeth, but so far as he dwells on the theory and practice of the subject, he sufficiently evinces that his investigation of the mechanical part of dentistry is founded on very general views, and I am not acquainted with any other English author who has treated on this subject in a manner deserving particular notice here.

Among the continental authors, may be noticed Angerman, Pfaff, Jourdan, Maggiolo, Bourdet, Fauchard, Gariot, Laforgue, Maury, and Dr. Delabarre. Of these the last has treated more extensively on the subject than any other dental writer. His "Traité de la

partie méchanique de l'art du Chirurgien Dentiste," in 2 vols., accompanied with 42 plates, is exclusively devoted to the mechanical part of dentistry.

But although Dr. Delabarre is very deserving of the gratitude of the manufacturers of artificial teeth for the great patience and research by which he has endeavoured to facilitate their labours, still he has, like all other authors who have preceded him, dwelled very little on the surgical principles under which the different artificial preparations should he adopted, although it cannot be denied that the advantages and disadvantages of all the methods of inserting artificial teeth, which he collectively describes, and with other authors recommends, must be greatly dependant on the good surgical and pathological principles under which they are applied.

CHAPTER III.

ON THE SURGICAL AND MECHANICAL PRINCIPLES FOR THE APPLICATION OF ARTIFICIAL TEETH—THEIR INDICATIONS, THE MODES AND MATERIALS BEST CALCULATED FOR THEIR PREPARATION AND INSERTION, AND THE MEANS OF THEIR ATTACHMENT.

HAVING in the preceding pages very generally stated the great advantages to be derived from artificial teeth, when applied with skill and under correct surgical principles, as well as their injurious consequences if inserted without judgment, I now beg to make a few particular remarks on those malpractices which are at present too commonly adopted, and to state, at the same time, those principles which have been my guide in the execution of my duty in the mechanical part of my practice.

During the greater part of my dental practice in America, I was obliged to perform the entire duty of the mechanical part, as well as that of the surgical treatment of the diseases of the mouth; and, having been compelled in a country which above all others affords the best practical school for the surgeon dentist, to bestow great attention upon this branch, more especially in all its bearings in connection with the curative and preventive treatment in dental surgery; I hope that in laying before the profession the principles which I have adopted in my own practice for many years, I may not be altogether unsuccessful in rendering myself useful to the public, and in obtaining the gratitude of the candid and deserving of my professional brethren.

After a due consideration of the subject, it must be perfectly evident that the good and bad effects resulting from artificial teeth, and any other artificial restorations of the mouth, must be mainly dependant on the previous surgical treatment of those parts which are to receive, and keep in proper action, the artificial apparatus; and the general and particular indications and counter-indications for its use, as

well as its future preparation and insertion, must be in a great measure dependant on the effects of such previous surgical treatment.

In the formation of the proper rules for the mechanical part of dental surgery it will therefore be best, for the sake of distinction, to take into particular consideration: 1st, such surgical treatment and practice as is injurious, as well as such as is proper and necessary, and to consider the effects of the various surgical treatments; 2ndly, all those circumstances which are either indicative or counter-indicative of the use of artificial teeth; and, 3rdly, such modes of manufacturing and inserting artificial dental preparations as must be considered, either positively or negatively, defective, as well as those which are most useful and effective.

ON THE SURGICAL TREATMENT OF THE WHOLE MOUTH PREVIOUS TO THE INSERTION OF ARTIFICIAL TEETH.

It must be evident to every surgeon, that, in a diseased state of the mouth, or its individual parts, as the jaws, sockets, periosteum, gums,

or the remaining teeth, the unavoidable bearing of the artificial apparatus cannot be supported without producing great aggravation of such diseases, and consequent gradual destruction of those parts to which the artificial teeth are connected.

Whether the morbid state of these structures is founded on natural causes only, or whether it is partly produced and aggravated by injudicious treatment, matters very little in point of fact, although the degree of disease must greatly differ, and may possibly be much more extensive and complicated under the latter than under the former circumstances; I have more minutely pointed out those modes of surgical treatment which I deem improper in my "Principles of Dental Surgery," and I have only to add, therefore, that in every instance, by the application of artificial teeth, the pernicious effects of such modes are considerably aggravated, and that under such treatment the artificial teeth are rendered an additional very great mechanical and chemical exciting cause of all the diseases already affecting the mouth.

The evil effects resulting from the omission of proper, or the application of injurious treat-

ment in the insertion of artificial teeth, can never fail to be more or less experienced by the patient who places himself under the care of an operator not perfectly well acquainted with the medical and surgical principles for regulating the remedies which the case requires; or when the patient, which is too commonly the case, allows himself to be misled by prejudice or vanity, and considers immediate deceptive appearance an object of much greater moment than permanent health and real lasting utility and beauty: an error which always carries with it its own punishment; for the very object which the patient so eagerly endeavours to gain by improper means, or at an improper period, is never permanently obtained, but is, in fact, constantly placed at a greater distance.

Such, however, is the propensity of the public for that erroneous view which I have just stated, that it generally requires the greatest persuasion to dispose the patient to submit to a permanently useful treatment; while almost invariably he wishes, and not unfrequently persists in desiring, the adoption of such maltreatment; and should the dentist yield to his request, the patient has one or two artificial

teeth inserted, and from refusing to submit to the treatment indicated by the state of his mouth, his teeth are gradually destroyed, until a whole artificial set becomes necessary, as in Case 1.

The injurious results of this practice must be perfectly apparent, not only to sound surgical experience, but also to common sense, by the following considerations:—There is, perhaps, not one case in a hundred requiring artificial teeth in which the other teeth are not more or less diseased, and the gums and alveoli also either primarily or secondarily affected. The mechanical and chemical bearing of the artificial teeth upon such diseased structures naturally becomes an additional powerful aggravating cause of the diseases already in a sufficient state of excitement, even if the teeth are mechanically well contrived and inserted; if, however, they are not well constructed, and are inserted with undue means or force, or held by too great or undue pressure, or by ligatures or other pernicious means for their attachment, the morbid effect is still more aggravated, and a general state of inflammation in

the gums and sockets, and particularly in the periosteum, very rapidly follows. The patient, moreover, finds it impossible to preserve the cleanliness of his mouth; and his natural teeth, as well as the artificial apparatus, in combination with the diseases of the other structures, become a source of pain and trouble, and the whole mouth is rendered highly offensive and disgusting to the patient himself, as well as to others. Indeed, that such is the fact I may confidently appeal to almost every individual who is now wearing a considerable number, or a whole set, of artificial teeth.

Thus, by the injudicious insertion of artificial teeth, the patient not only loses all the good and desired effects of this treatment, but also his own remaining teeth, exposing himself for a considerable period to all the consequent diseases of the mouth, as well as of the constitution; whereas, by a proper treatment, the whole mouth would have been rendered and preserved perfectly healthy, the further loss of teeth would have been almost completely prevented, and the defect so restored as to prevent the necessity of increasing the number of

artificial teeth for many years, and frequently during life.

The too early insertion of artificial teeth, after the surgical treatment of the whole mouth is completed, is also a consideration of no small importance, though too often entirely neglected. Indeed, even after the most judicious treatment of the whole mouth has been instituted, artificial teeth may be rendered a source of irritation and injury, if applied before nature has sufficiently produced those changes which always follow the extraction of teeth, by means of absorption in the sockets and gums; by producing immediate inflammation in the parts not yet perfectly recovered, and soon losing their adaptation to the form of the gums, they must become the cause of constant mechanical irritation.

Convinced of the truth of the above statement, I have made it an invariable rule during my practice in the application of artificial preparations, to bestow every necessary surgical attention upon each individual part of the mouth which the case required, so as to render the jaws, the gums, sockets, periosteum,

and every tooth perfectly free from disease, by the use of such means as I have more extensively stated in my "Principles of Dental Surgery," &c. page 122, and to which I beg to refer the reader for further information on the subject.

ON THE INDICATIONS AND COUNTER-INDICATIONS FOR THE USE OF ARTIFICIAL TEETH.

A correct decision for the application of artificial teeth is frequently dependant on very deliberate consideration, which can be estimated only by a perfect knowledge, founded on considerable experience and good judgment, of all the changes and effects which are the result of time, age, and mastication, as well as of the diseases and the natural curative powers of the teeth and of the parts in any way related to them. It requires, moreover, a perfect acquaintance with the immediate and remote effects, and every advantage as well as disadvantage of artificial teeth, under the most various circumstances and in the most opposite cases, joined to a pure

and unprejudiced taste and great mechanical dexterity and surgical judgment; the directions on this subject, therefore, must necessarily be general, and liable to some exceptions or modifications.

The use of one or more artificial teeth is properly indicated, and must be useful and necessary, if they can be applied without bearing too much upon the remaining teeth, and if they can be rendered an assistance in mastication, pronunciation, or the improvement of appearance. It is, however, not an uncommon occurrence that one or more artificial teeth are inserted without any necessity or proper indication, as in such instances where the loss of a tooth does not materially affect pronunciation, mastication, or appearance, or where the case is of such a nature that the insertion of artificial teeth, instead of restoring the loss, inevitably increases the evil which it is intended to remedy, of which the following instance will afford the best illustration.

CASE II.

See Plate 2.

Mr. A——, a medical gentleman of considerable celebrity, consulted me in August, 1827, about his teeth, some of which were loose from inflammation and great relaxation of their periosteum. On examination I found the gentleman had lost his first and second molar teeth on each side of the upper jaw, which were replaced by artificial teeth, carved in one piece of hippopotamus tooth for each side, fastened by clasps or springs to the bicuspid and wisdom teeth, which had thereby been rendered quite loose. Thus these artificial teeth, which were inserted without any proper indication, were evidently causing not only the rapid destruction of the contiguous teeth, but, instead of assisting in mastication, which was the only advantage that could be expected from the application of these molar teeth, as they could not be beneficial to either pronunciation or ap-

PLATE II.—CASE II.

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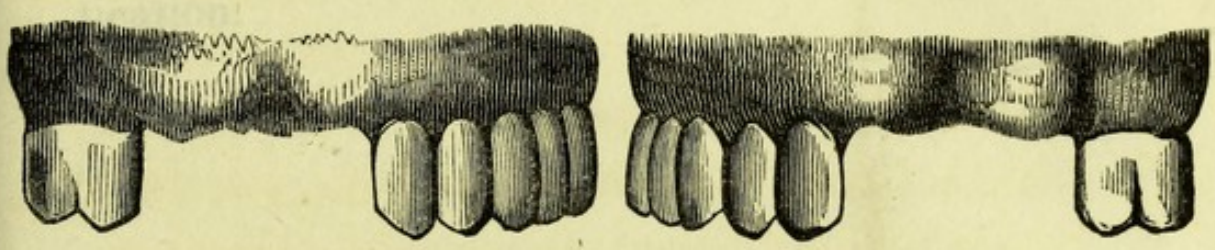

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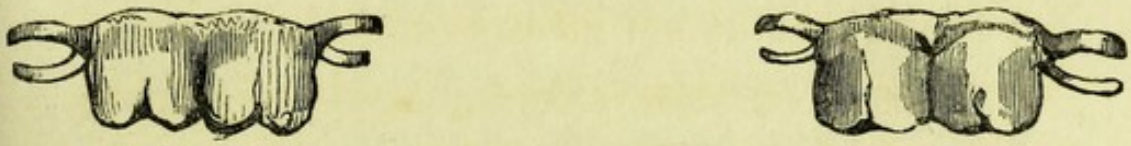

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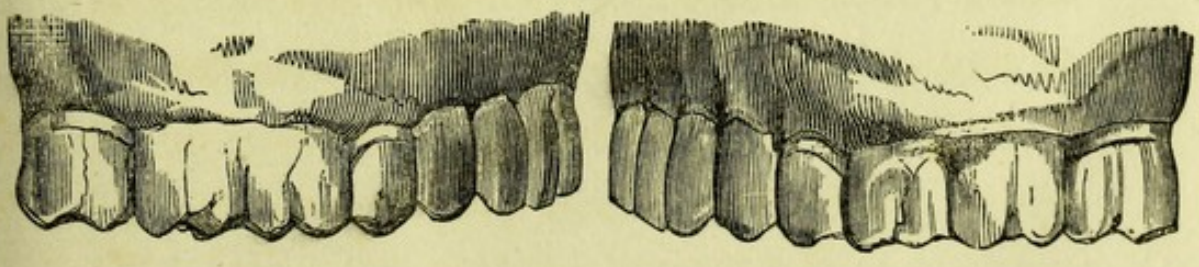
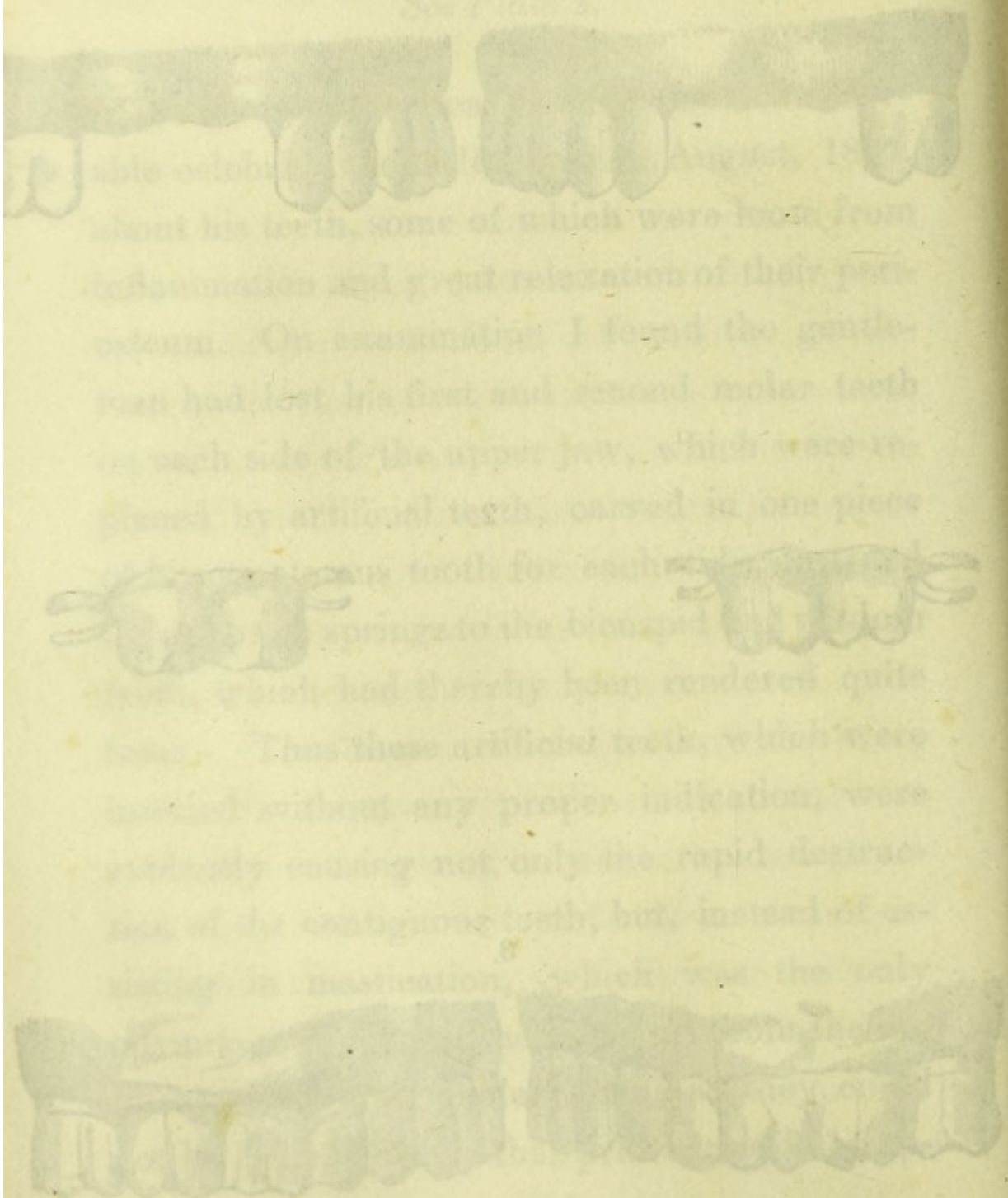




pearance, they positively interfered with the functions of the other teeth by their injurious mechanical bearing, and the irritation and pain which they necessarily produced during mastication.

EXPLANATION OF PLATE II., IN ILLUSTRATION OF CASE II.

Fig. 1. Two lateral views of the right and left section of the upper jaw, shewing the remaining incisor, canine, bicuspid, and wisdom teeth, and the defects of the first and second large grinder referred to in Case II.

Fig. 2. Two small sets of two artificial teeth, made of sea-horse tooth, with gold clasps.

Fig. 3, Represents *figs.* 1 and 2 united, or the artificial teeth in their intended places.

ON THE MATERIALS FOR THE CONSTRUCTION AND PREPARATION OF ARTIFICIAL TEETH.

Artificial teeth are frequently rendered a cause of injury by their being prepared of improper materials, such as are either too soft or too hard, or liable to chemical changes of various kinds.

If the materials are too soft they are liable to very early corrosion, in consequence of which they become disgusting to the sight by their discoloured appearance, and a cause of caries to the natural teeth and inflammation to the gums; and during their corrosion, being gradually mixed with the saliva and absorbed into the system, are even rendered a cause of morbid irritation to the general constitution.

Any kind of bone not harder than the tooth of the elephant, and artificial teeth made of ivory should therefore be avoided by every judicious dentist.

If, on the other hand, the dental apparatus is made of any substance which is so hard as not to permit its proper adaptation to the case for which it is intended, it must unquestionably

become a source of permanent mechanical irritation, and thereby produce pain and inflammation, and consequent injury of the gums and teeth, with which it is placed in permanent contact. The desired effect of artificial teeth is moreover lost, for such teeth are generally so clumsy and unnatural, and so productive of pain, that instead of assisting they greatly diminish the powers of mastication, and rather disfigure than improve the appearance.

Small sets of artificial teeth, made of one piece of a mineral or terro-metallic preparation, may justly be ranked in this class. Repeated attempts have been made in Paris, London, and Philadelphia, to render such preparations more perfect; but success, I fear, must be considered hopeless, from the simple fact that it would be founded on principles contrary to the laws of Chemistry; for such whole pieces being made of a soft paste, which is afterwards baked in the oven by a similar process to the manufacture of china, they are necessarily exposed to the changes in size and form which the heat produces. Moreover, the great hardness of such artificial teeth, and their

dissimilarity to the natural teeth, is injurious to the natural teeth of the opposite jaw with which they come in contact, and, if applied in double sets for the upper and under jaw, they produce a very disagreeable noise or chattering during mastication.

Under these circumstances, the only kind of artificial teeth, and the materials for their preparation, that I have used, and use at present, are the teeth of the sea-horse, human teeth, and single mineral or terro-metallic teeth, mounted in various ways upon no other metal than gold or platina.

All other metals, such as lead, tin, brass, copper, and even silver, should be rejected, from their liability to chemical changes, which renders them, on mixture with the saliva, not only destructive to the artificial teeth attached to them, but also highly injurious to all the structures of the mouth as well as to the general health.

ON THE PRINCIPLES FOR CONSTRUCTING, AND THE MEANS OF ATTACHING ARTIFICIAL TEETH.

The preparation and mechanical construction of artificial teeth, as I have already observed, is attended with considerable difficulty, and their proper adaptation, as well as attachment to the other teeth and gums, requires the combined qualification of mechanical skill and surgical judgment.

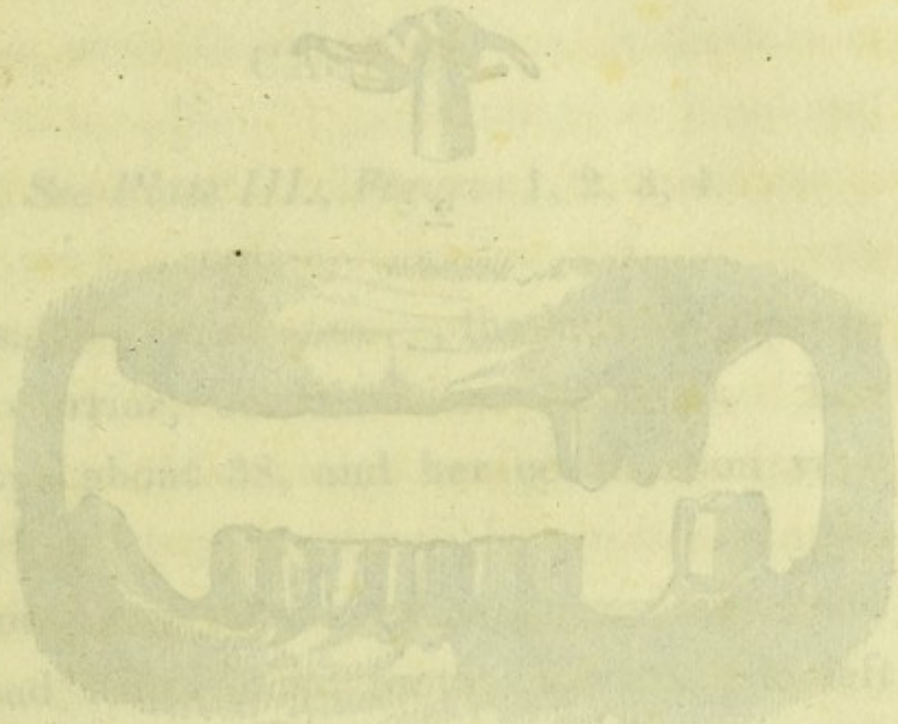
It is evident, therefore, that artificial teeth may be rendered very injurious by their unskilful mechanical preparation; if, for instance, they are not very well fitted to the gums, or if they bear upon such particular parts as are naturally more tender and irritable than others, such as the edges of the gums surrounding the necks of the teeth, or if they violently and irregularly strike against the remaining teeth, they cannot fail to become the causes of disease in the various structures of the mouth.

Of the various means for their attachment to the natural teeth, nothing can be more injudicious than the use of any kind of ligature, either of gold wire, silk cord, or any other materials

of the kind, for such ligatures, by their stress upon the teeth to which they are attached, must inevitably produce great relaxation and inflammation of their sockets and periosteum, by which the teeth are soon rendered so loose as either to drop out or require extraction. Their use for retaining artificial teeth is, therefore, under all circumstances, objectionable, and should be wholly rejected.

Even the best means for this purpose, namely, springs or clasps, if applied without correct pathological and surgical principles, which is too commonly the case, are liable to produce the same effect as ligatures, and be thus rendered the means of destruction to the teeth to which they are attached.

As a most impressive illustration of these facts, I wish to direct the attention of the reader to the following case.



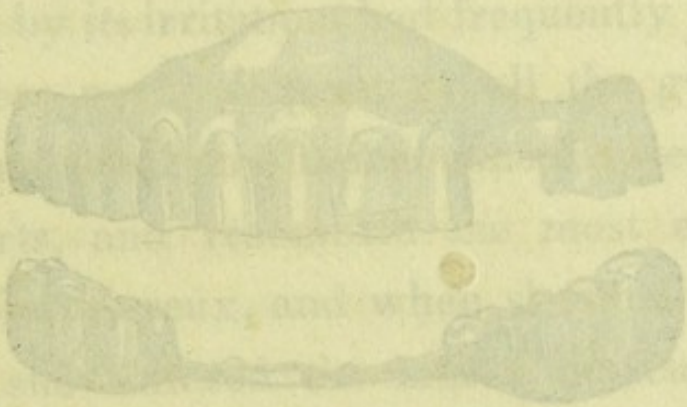


PLATE III.—CASE III.

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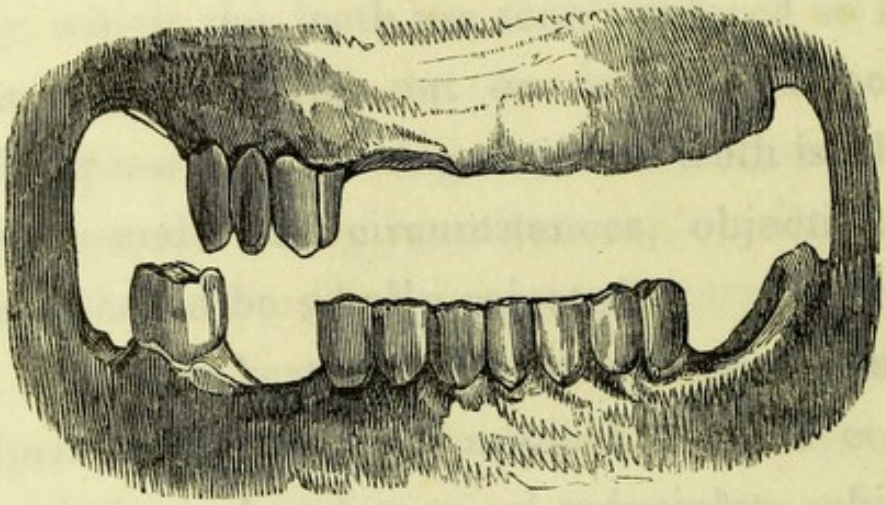

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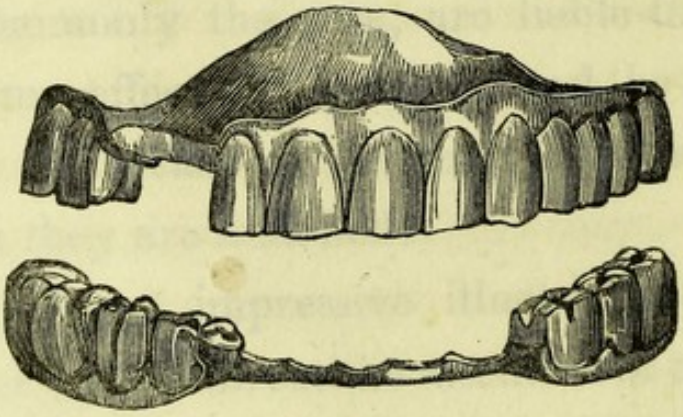

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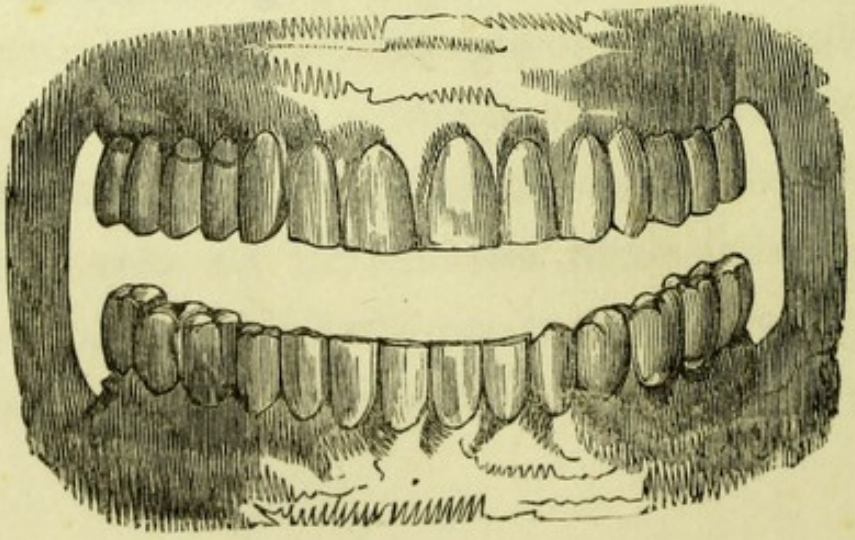

CASE III.

See Plate III., Figures 1, 2, 3, 4.

Mrs. ———, of ———, the lady of an eminent warrior, consulted me in 1826. Her age was about 38, and her constitution very good.

About three years previous to my seeing her she had an artificial tooth inserted, the left upper lateral incisor.—See plate 3, fig. 1.—This tooth, by its irritation, had frequently produced severe nervous pains in all the gums, which sometimes were more concentrated in certain parts, and resembled the most acute attack of tic doloreux, and when she first consulted me she suffered the most excruciating agony from a return of such an attack.

On examining her mouth, I found all the gums much swollen and in a state of violent inflammation, but particularly those near the artificial tooth, and from all of them there was a considerable discharge of fetid matter. The periosteum was exceedingly relaxed, and in

many places destroyed by suppuration and mortification, and all her teeth were more or less loose and painful.

On examining the artificial tooth and its mechanical construction, I found it very badly fitted, its springs very sharp and pointed, and so placed as to produce great and permanent irritation, which was considerably aggravated by mastication, and even by the natural motions of the tongue. It was, indeed, almost the sole cause of all the diseases and sufferings of the patient.

I immediately removed the offending artificial tooth, and by a further proper and most careful treatment I was able to keep the mouth free from inflammation and pain; but the devastations produced by the previous diseases upon the gums and sockets, and particularly the extensive destruction of the periosteum, by which the teeth had been rendered exceedingly loose, made the preservation of the greater part of her teeth impossible; and almost all her upper, and many of the lower teeth, were successively lost, notwithstanding my most strenuous exertions to restore the peri-

osteum to that healthy state which was necessary to retain the teeth in their sockets.

In the meantime, I provided the patient with a new artificial tooth, which for some time supported the remaining loose teeth; but with the gradual unavoidable loss of the natural, the number of artificial teeth was increased, and, some months ago, I was permitted to adopt proper means to restore the mouth to a perfectly healthy state, and to prepare two sets of artificial teeth for the upper and under jaws. See plate 3.

After wearing them for three days, the lady could make perfect use of them in mastication and speaking; her appearance was greatly improved, and her general health has ever since been admirably good.

EXPLANATION TO PLATE III., IN ILLUSTRATION OF CASE III.

Fig. 1 Represents a front view of a single artificial tooth, with gold plate and pointed springs, which, from its bad construction and injudicious application, became the principal cause of extensive and protracted diseases, and the gradual loss of nearly every tooth of the whole mouth.

Fig. 2 Represents a front view of the mouth after its restoration to perfect health.

Fig. 3 Represents a front view of an upper and under set of natural teeth, mounted on gold plates; the upper held in its place almost entirely by capillary attraction, and the under by means also of a gold cap, covering the last molar tooth.

Fig. 4 Represents a front view of the two artificial sets inserted in their respective places, exhibiting their natural appearance and useful formation.

CHAPTER IV.

ON THE PRINCIPLES FOR THE PREPARATION AND INSERTION OF SINGLE ARTIFICIAL TEETH.

HAVING thus far, in the preceding pages, considered generally the disadvantages as well as the great advantages derived from artificial teeth, it is now necessary to review the subject under particular circumstances. To obtain the greatest possible advantage from artificial teeth, and to prevent their injurious consequences, it will be requisite to adopt the following particular rules, and to insure the preservation of the remaining natural teeth, all such defects in the preparation and attachment of the artificial teeth as tend to endanger the health of the various structures of the mouth should be especially avoided. Now as different losses and defects require dif-

ferent kinds and modes of restoration, it will be proper to make some distinctions, which I think will be best understood under the following heads:—

1st, As single artificial teeth.

2ndly, Small sets of two or more teeth.

3rdly, Sets comprising a considerable part or the whole upper jaw.

4thly, Sets comprising a considerable part or the whole of the under jaw.

5thly, Whole sets for the upper and under jaws.

ON THE INDICATIONS FOR THE INSERTION OF SINGLE ARTIFICIAL TEETH.

Single artificial teeth are under no circumstances calculated to assist in mastication. The principal advantage they afford is the great improvement to appearance and pronunciation. I have therefore never considered it proper to insert a single molar tooth, as such a tooth is not essential either to speech or to appearance, but I have confined the operation principally

to the incisor and cuspid teeth, and occasionally to the small grinders, and the insertion of these teeth is often liable to exceptions, and occasionally even positively contra-indicted.

If, for instance, a young individual, under the age of twenty, loses one of the cuspid teeth or lateral incisors, either in the upper or under jaw, I have in most instances dissuaded the patient from having a tooth inserted, and the vacancy has generally at length become so occupied by the remaining teeth as to render the loss invisible, and an artificial tooth unnecessary. Should such a loss take place, however, at a later period of life, and the vacant space be not of uncommonly small dimensions, the insertion of an artificial tooth may be useful, and more frequently in the upper than in the lower jaw.

The upper central incisors being the most conspicuous teeth of the mouth, and their loss the greatest detriment to appearance and enunciation, the absence of one of them, even at an early period of life, is generally sufficiently indicative of the adoption of an artificial restorative; but should it be an under incisor, and

the patient have the advantage of youth, I would, in most instances, permit the remaining teeth to occupy the vacant place.

ON THE MATERIALS FOR SINGLE ARTIFICIAL TEETH.

As the best materials for the construction of single artificial teeth, I would recommend the application of either human teeth, or terro-metallic teeth only.

In the choice of these the dentist should be guided by the state of the mouth and the teeth to which the artificial tooth is to be attached; and should the remaining teeth and the general state of the mouth be strong and healthy, the choice may be left to the patient, but if otherwise, a human tooth would be more particularly indicated.

These teeth are to be mounted, by various means, on gold plates, which have been previously well fitted to the gums, and are to be retained in their places by gold springs or clasps attached to some of the remaining teeth. If such single teeth are well prepared, and at-

tached with the requisite minute surgical and mechanical judgment, they may be used for many years, and frequently during life, not only without producing any injurious effects upon the remaining teeth, but will at the same time tend greatly to improve pronunciation and appearance.

MODE OF PREPARATION AND ATTACHMENT.

Single artificial teeth should be intended for no other purpose than the improvement of appearance and pronunciation.

Their assistance in mastication is neither necessary nor attainable, for every hard pressure upon the artificial tooth in mastication, in whatever direction it may be made, always acts upon the other teeth and gums, either through the contact of the tooth, or the means by which it is fastened, in an injurious and unnatural manner; and to obtain the advantages and to obviate the above inconveniences, I have invariably adopted the following rules in their formation and attachment.

In mounting single artificial teeth on the

plate, I have taken care, 1st, to fit the basis or plate very exactly to the gum; 2ndly, not to permit the edges of the gum which surround the two neighbouring teeth to be pressed, or even touched, by the plate; 3rdly, to prevent the artificial tooth coming in contact with the two neighbouring teeth; 4thly, not to allow the artificial tooth to touch or strike, in any direction, against any of the opposite teeth when the mouth is shut.

And in their attachment I have invariably made use of no other means than two springs or clasps, fixed to such of the remaining teeth as seemed to me best calculated to retain the artificial tooth.

I have already stated the pernicious effects of such springs, as, from their injudicious preparation, produce unnatural or violent pressure upon the remaining teeth or gums, and shall now proceed to point out the consequences, and the means I have adopted for the prevention of these pernicious effects.

The usual way of fastening the springs to the two adjoining teeth renders it difficult, from their shortness, to give them the neces-

sary elasticity, they therefore produce violent pressure, and as they are too frequently made in such a clumsy manner as to act like a lever upon the natural teeth, they must necessarily cause all the injurious effects which have been previously stated upon the remaining structures; moreover, such teeth, from their close situation to the vacancy of the lost tooth, are, generally, from the tender state of their health, as well as of that of the gums and sockets, least calculated to fulfil, in addition to their natural functions, the mechanical labour of supporting their artificial neighbour.

I have therefore made it a point to avoid the tender teeth, by carrying the springs to some more distant, which, from their health and situation, are best calculated to support the artificial tooth, and which are at the same time not so important as the incisor teeth; I make it another rule not to let the springs bear upon the other teeth or the edges of their gums, but make them rest upon some part of the mouth better calculated to bear the pressure, and less irritable and predisposed to inflammation, or any other kind of disease. And

I also take particular care to prevent any violent pressure by proportioning the strength of the spring to the length and distance of its attachment.

To render the pressure by which the springs are attached to the natural teeth perfectly harmless, I contrive to apply it in such a manner that the teeth are pressed neither in one nor the other direction, which would inevitably cause relaxation and inflammation of the periosteum, sockets and gums, but that they rather grasp the tooth and press on two opposite sides, in such places as are perfectly sound. And I do not permit this pressure to be stronger than necessary, and take particular care to give such sufficient elasticity to the springs that the artificial teeth may be removed and replaced without giving any pain, or producing any undue irritation upon the natural teeth.

Lastly, I have made it my invariable practice to make all artificial teeth, whether single or in sets, in such a manner that the patient is enabled to remove and replace them at his own pleasure with facility. It is surprising that

this principle should be so often neglected, though founded on sound surgical judgment.

The following cases and plates will be more illustrative of the above statements.

CASE IV.

See Plate 4, *Figure* 1.

A GENTLEMAN of title, in 1832, was requested by Mr. Lawrence, the surgeon, to consult me about his teeth. His age was about forty-five, and although of an apparently very robust, yet of a nervous constitution. He was exceedingly tormented by a frequent, severe, and lancinating pain in the front and right side of his face, which he believed to be tic-doloreux. This pain became most severe after any over-excitement, such as taking more than his usual quantity of wine, or any particular bodily or mental exertion or fatigue. His digestion also seemed deranged, and his general health much impaired. By examining his mouth I found an artificial tooth, the left central incisor, constructed of a natural

PLATE IV.

CASE IV.

CASE V.

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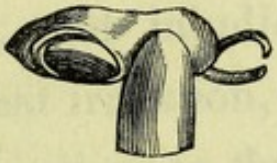

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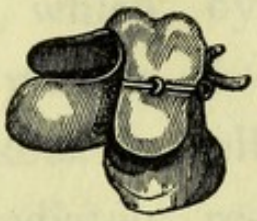

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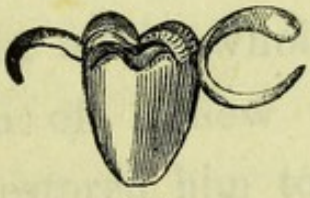

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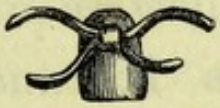

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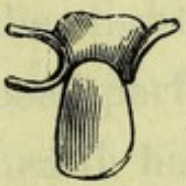

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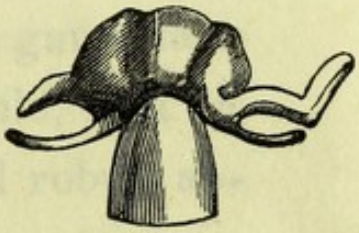

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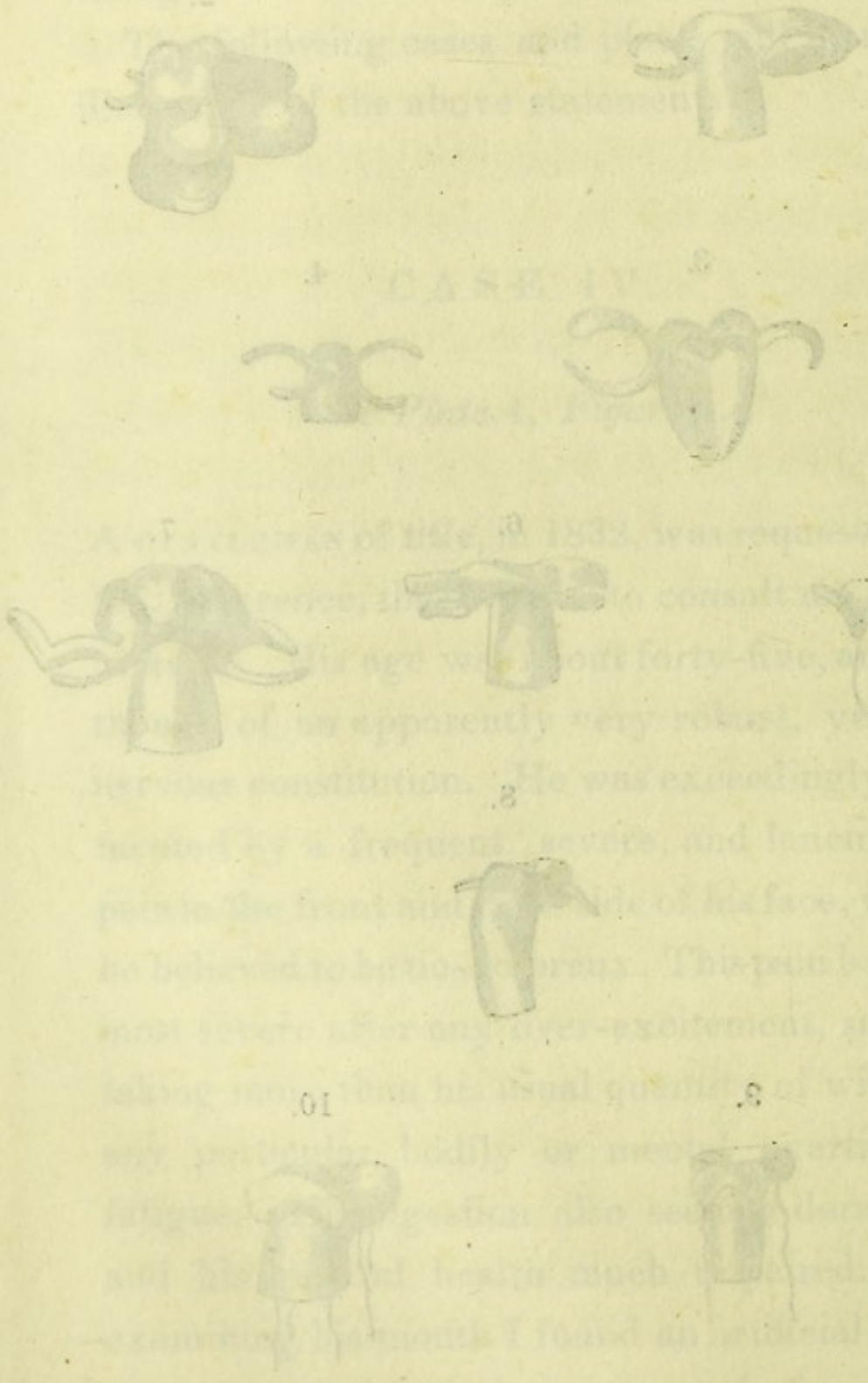

tooth, and mounted on a sea-horse plate with gold springs of a needle-like form, very badly made, and injudiciously inserted, which, by its great irritation, had produced various diseased actions in the gums and sockets, as well as the remaining teeth. I immediately removed the artificial tooth, and, by a proper treatment of the whole mouth, as well as the insertion of a new well-contrived artificial tooth, restored him to perfect health, and the gentleman has not only ever since been without the slightest pain, but his teeth and gums have been perfectly sound and comfortable, and his health has been equal to his natural robust appearance.

CASE V.

See Plate 4, *Figure* 2.

Lady ——, of ——, under the care of Dr. Scott, of Barnes, for her general health, was requested by that gentleman to consult me, and to place her teeth under my care.

She had been for some years previously

residing abroad, and, when in Paris, had had inserted an artificial tooth, the first large grinder in the right under jaw. Since that time her mouth and face had frequently been painful and swelled, and all her gums and teeth remained tender and exceedingly irritable, and her general health was suffering.

In June, 1829, when I examined her teeth, I found her mouth greatly suffering from the disease of the gums and sockets, which I have described under the name of the "Devastation of the Gums and Sockets," in the "Principles of Dental Surgery." Almost all the teeth in her mouth, but particularly those nearest to the artificial tooth, were exceedingly loose; her gums were very spongy and inflamed, and matter was oozing from various parts of the gums, sockets, and periosteum. In short, such had been the irritation produced by this single artificial tooth, inserted quite uselessly, without any proper indication whatever, and prepared and attached without any surgical judgment, that every part of her mouth was in a state of great inflammation and suppuration, and some parts even destroyed by mortification.

The first and most important step in the treatment was to remove the artificial offender, which was constructed of a mineral tooth, badly mounted on a platina frame, and inserted with exceedingly clumsy cramps or springs. My next object was to restore a perfect state of health to the whole mouth, which could not be obtained without the loss of some teeth which had been irrecoverably destroyed by the previous maltreatment. I had no difficulty in inducing the lady to abandon the old artificial tooth, and to dispense with so painful and destructive assistance in mastication, and I found it necessary to restore part of its ravages by providing her with a small set of three lower incisor teeth, constructed of natural teeth, and gold plate and springs, which, in combination with her own attentive care according to my directions, has ever since assisted in preserving the good health and appearance of her mouth, and also greatly improved her general health and appearance.

EXPLANATION OF PLATE IV., IN ILLUSTRATION OF CASES IV., V., &c.

This plate exhibits ten drawings of single artificial teeth, which, by their unnecessary application, or their injudicious construction and attachment, had all produced more or less extraordinary injury to the gums, sockets and periosteum, and teeth, as well as to the general health of the patient, who had thus been deluded either by the ignorance or avarice of those from whom they hoped to find relief.

They form a small portion of teeth of that kind which have been removed with my own hands to relieve the sufferers, and left with disgust and disappointment in my possession by the injured patients.

Fig. 1. A single central incisor tooth, constructed of a natural tooth mounted on a plate of bone, and attached by means of needle-like springs, which produced very severe pain, like tic-doloreux. Referred to in Case IV.

Fig. 2, Represents a molar tooth, made of a mineral tooth, mounted in a singularly bad and clumsy manner on a platina foundation, and fastened with the most heavy clasps to the two adjoining teeth of the right lower jaw, where, by its improper mechanical action, it had nearly destroyed all the gums and sockets, and ejected the teeth of that side. See Case V.

Fig. 3, Represents a mineral molar tooth with platina cramps, which I removed from the mouth of a gentleman, and which, by its bad construction and injudicious insertion, had produced almost all the evil effects and ravages which were committed by the one before mentioned, which I have more particularly treated in Case V.

Fig. 4. A natural tooth and gold springs. This represents the inside of a small right upper molar tooth, which, with an equally bad constructed

pivoted left upper incisor tooth, was removed from the mouth of a lady, who, though only twenty-five years old, had thereby lost so many teeth that she had only six upper teeth left; they had also greatly injured the health of the mouth and the constitution of the patient.

Figs. 5, 6, 7, Represent one upper lateral and two central incisors, mounted on gold plates, and attached by cramps or clasps, which had committed great injury and ravages on the health of the patients who had the misfortune to make use of them.

Fig. 8, Is a lower incisor tooth, carved of bone, and inserted by means of gold pins introduced in holes, which the barbarous operator had bored in the two adjoining teeth for that purpose. The injury and pain which such gross ignorance and temerity must have produced may be better conceived than described.

Figs. 9, 10, Represent two natural teeth

mounted on a bone plate, and tied to the adjoining teeth by silk cord The destructive effects of such teeth to the adjoining teeth is always so inevitable, and the general injury to all the other teeth so obvious, that the adoption of even one is generally a forerunner of the loss of all the natural teeth, and the consequent necessity of the application of an entire set of artificial teeth.

PLATE V.

CASE VI.

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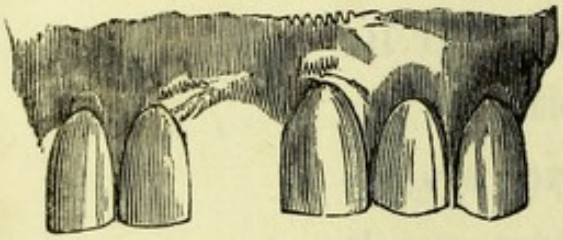

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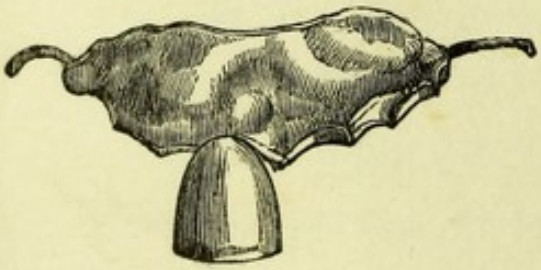

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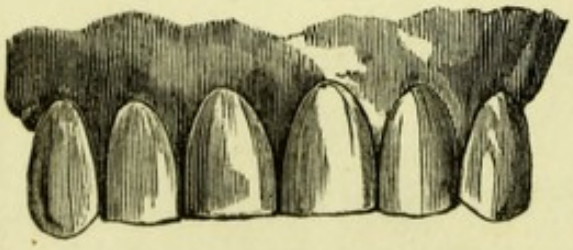

CASE VII.

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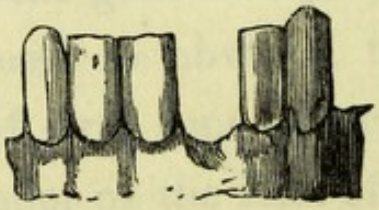

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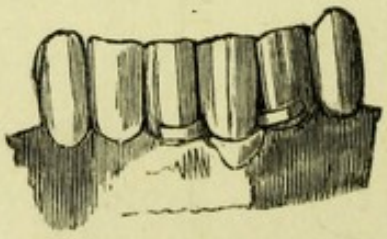

CASE VI.

See Plate 5, *Figures* 1, 2, 3.

The honourable Mrs. ——, of ——, aged about forty, and the mother of a numerous family, had generally enjoyed very good health, and was possessed of a complete set of teeth, which were entirely free from caries. By accident she lost one of the upper central incisors by a fall from a horse, which was supplied by a very celebrated dentist, but, notwithstanding all the advantages of such excellent health of the mouth, the artificial tooth, being injudiciously and unskilfully constructed of a natural tooth mounted on a gold plate with springs or clasps, soon loosened the two adjoining teeth, and threatened to injure the whole set.

I was consulted in 1828, and effected a restoration of perfect health to the teeth and gums by an immediate removal of the bad artificial tooth, and the further necessary treatment of the whole mouth. The lady was soon pro-

vided with a new artificial tooth, which assists in preserving the health and firmness of her own teeth, and is, in appearance, perfectly like its neighbour, the other central incisor, as is represented in Plate V.

CASE VII.

See Plate 5, *Figures* 4, 5, 6.

Mrs. ——, of ——, had for some time been supplied with an artificial tooth carved of sea-horse tooth, to supply the loss of the under left incisor, which was attached or tied to the two adjoining teeth by means of silk cords.

When I saw her about three years since, the artificial tooth, as well as all the other lower incisor teeth, were quite loose from the mechanical irritation produced by the artificial tooth and its bad attachments, as well as by the consequent great incrustation of tartar.

I immediately removed the mechanical offender, and, by further proper treatment, in about two months restored the whole mouth and teeth to perfect health and firmness.

A new tooth, made of a natural tooth, mounted on a very fine gold plate, supported by gold clasps, was immediately prepared and inserted, which has ever since answered every possible intention and expectation, and, by judicious care, the health of the whole mouth and teeth has been permanently preserved.

EXPLANATION OF PLATE V., IN ILLUSTRATION OF CASES VI. AND VII.

Fig. 1, Represents the gums and three incisor and two upper cuspid teeth of a lady, referred to in Case 6.

Fig. 2, Represents the right central incisor, constructed of a mineral tooth, mounted on a gold plate, and gold springs.

Fig. 3, Represents the artificial tooth inserted in its intended situation in the mouth.

Fig. 4, Represents the natural gums and three lower incisor and two canine teeth of a lady, referred to in Case 7.

Fig. 5, Represents a single under left incisor, constructed of a natural tooth, with gold plate and springs.

Fig. 6, Represents the artificial tooth in its intended situation in the mouth.

CHAPTER V.

ON THE PRINCIPLES FOR THE PREPARATION AND INSERTION OF SMALL SETS OF TWO OR MORE ARTIFICIAL TEETH.

ON THE INDICATIONS.

Small sets of two, or few artificial teeth, as well as single teeth, are rarely intended for mastication, and if made for this purpose principally will often tend rapidly to loosen the remaining teeth. This circumstance is too frequently disregarded by the dentist, as some of the cases above related sufficiently prove; their utility must, therefore, be considered to extend, in most instances, principally to the important improvement of pronunciation and appearance.

If only the molars are lost, without the absence of some of the bicuspid, or of the incisors or cuspid, there is not sufficient reason for the use of artificial teeth, for neither appearance nor pronunciation will

be materially benefited. Should, however, some of the incisors, or even but one of them, be part of the lost teeth, it may be proper to apply a set which substitutes all the lost incisors, cuspid and bicuspid, and frequently a molar tooth may be usefully included in the artificial apparatus.

ON THE MATERIALS.

As the best materials for the construction of small sets of two or more artificial teeth, the same rules as stated in reference to single artificial teeth may be considered most judicious, both as it regards their kind and their choice.

MODE OF PREPARATION AND ATTACHMENT.

Small sets of two or more artificial teeth are constructed and fastened also under the same principles as single artificial teeth, with such deviations only as the different circumstances of the case may require.

The instances, however, in which such arti-

ficial preparations are required and applied are so exceedingly various that it may require many years, even in a very extensive dental practice, to meet with two cases which should be deemed to bear a perfect resemblance to each other, and it is, therefore, impossible to make any positive rules for such cases; I beg, however, to observe that, while their application is the more important, and their utility the more extensive, when skilfully applied, all the inconveniences arising from the injudicious preparation, adaptation, and fastening of such teeth will be augmented in proportion to the extent of the set of artificial teeth, and that their prevention can only be obtained by the utmost attention to those principles which I have stated for the insertion of single teeth, and which I cannot too strongly impress upon the mind of the dental surgeon.

PLATE VI.

CASE VIII.

CASE IX.

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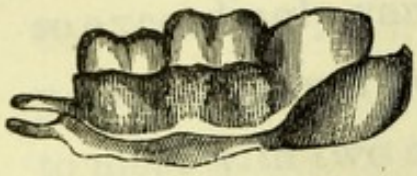

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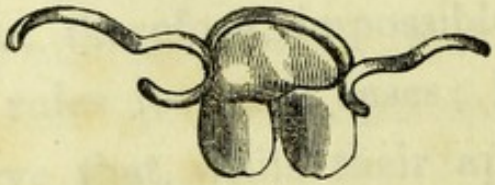

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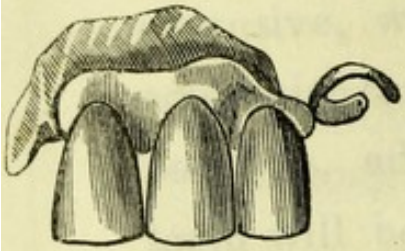

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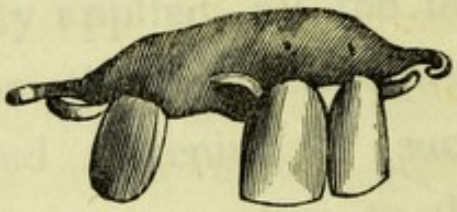

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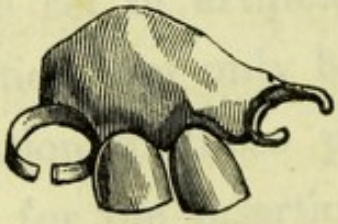

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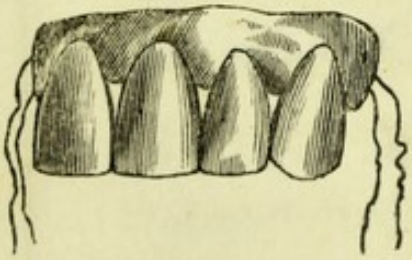

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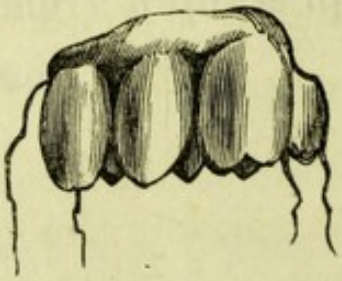

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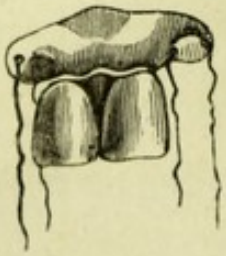

CASE VIII.

See Plate 6, *Figure* 1.

The Honourable Captain ———, R.N., consulted me, by the request of Dr. Johnson, in 1831. His age was about thirty-eight—his constitution of a very nervous and dyspeptic diathesis. He laboured under very great debility and general emaciation, various nervous and rheumatic pains, loss of appetite, and depression of spirits; his countenance was sallow and pallid, and his eyes sunk in the sockets. All these causes and symptoms of his constitutional disorder had already been greatly diminished by his physician, but the diseases and pains of the mouth and teeth seemed to baffle the best and most strenuous of his efforts.

By examining the mouth of the patient, I immediately discovered the original cause of all his local sufferings.

Some years previously, the gentleman had two artificial teeth inserted by one of the most eminent dentists in Paris, which were applied,

to my great surprise, not only without any indication and utility, but also without any science or skill. The apparatus was constructed of two large mineral teeth, to substitute the first and second large grinder of the left side of the lower jaw, and firmly fixed to the adjoining second small grinder and the wisdom tooth by heavy clasps.

The injury produced by this apparatus was the greater from the extreme irritation produced by the opposite grinders, which were, by mastication, compelled to bear most violently upon their artificial antagonists, thereby moving the adjoining teeth to which they were attached, and producing idiopathic and symptomatic inflammation and suppuration in the gums and periosteum, and other diseases of the osseous structures of the mouth, more or less distressing and painful in proportion to their greater or less proximity and nervous affinity to the parts immediately suffering from the injudicious application of the bad and injurious artificial teeth.

I immediately removed the destructive apparatus, and, by a minute and careful treat-

ment of all the parts which had been injured, the whole mouth was restored to a state of perfect health.

I advised the gentleman to discontinue the use of any artificial teeth, and he soon became convinced of their inutility in his case, when he found, that with his own remaining teeth, when kept in a proper state of health, he could masticate, not only much better and with more satisfaction, but without pain ; his general health was also much benefited, and he was relieved from all the consequent diseases and pains which accompanied the use of the destructive artificial teeth.

The gentleman has since remained in perfect health.

CASE IX.

See Plate 6, *Figure* 2.

Countess de ——, a lady of very high connexions in Germany and Russia, consulted me, by the request of Dr. Negri, in 1829. Her age was about forty-five, her com-

plexion extremely fair, and her constitution delicate. Her general health was very precarious, being very much disturbed, and the best medical treatment often counteracted and baffled by the diseases of her mouth.

Some years since, when in France, she had inserted a set of two natural teeth, mounted on a gold plate, and attached to the neighbouring teeth by gold clasps, to restore the loss of the left upper canine tooth and first small grinder.

The mechanical preparation of the apparatus was so decidedly bad and clumsy, and the insertion so exceedingly injudicious and unskilful, that I need only refer the reader to the drawing, Plate 6, Fig. 2, without any further comment.

But the great injuries and pain produced by it far exceeded the mechanical coarseness as well as the surgical ignorance which guided the preparation and application of the artificial teeth.

The whole mouth was under the influence of disease, such as inflammation and suppuration of the gums and periosteum, and partial mor-

tification and exfoliation of the sockets and teeth, all of which were of course greatly aggravated by her bad general health, and they had, for a long time, by pain and anxiety, distressed the mind as well as body of the patient.

By the immediate removal of the bad artificial apparatus, and further proper dental treatment, I had the great satisfaction to restore the whole mouth to perfect health, and greatly improve her appearance, by the insertion of two new properly constructed artificial teeth.

I frequently had the gratification of seeing this lady afterwards; her mouth continued perfectly healthy, and the artificial teeth fitted with perfect ease.

EXPLANATION OF PLATE VI., IN ILLUSTRATION OF CASES VIII. AND IX.

This Plate exhibits nine specimens of small sets of artificial teeth, all of which were more or less injurious and destructive to the gums and teeth to which they were applied, as well as to the general constitution of the respective patients.

Fig. 1, Represents two mineral grinding teeth mounted on a frame of very bad gold, and inserted by means of clasps to the natural teeth, which had committed great injury and destruction to the gums and teeth, as well as the general health of the patient, the subject of Case 8.

Fig. 2, Represents a small set of the left cuspid, and the first small grinder of the upper jaw, mounted on a gold

plate, and fastened by means of gold springs, so badly constructed and so injudiciously inserted, that the whole mouth was rendered diseased by the irritation produced by mastication, and even by speaking.

Fig. 3, Represents a set of two artificial teeth, constructed of two natural teeth mounted on a gold plate, and fastened with gold springs, which, from their improper pressure and bearing, had produced great local injury and pain of the mouth, as well as disturbance of the constitution.

Figs. 4, 5, *and* 6, Represent one set of two, and two sets of three, natural teeth, mounted on plates carved of sea-horse bone, and fastened by means of gold springs, all of which, by their improper application, had produced more or less injury to the gums and teeth to which they were connected, this being a kind of artificial dental preparation which,

under few instances only, is properly indicated.

Figs. 7, 8, *and* 9, Represent three small artificial preparations entirely carved out of hippopotamus' tooth, and fastened by means of silk cord, or gold wire, to the adjoining teeth. The injury produced by this kind of artificial teeth is always certain, and the use of one or more teeth of this kind is always a certain forerunner of the gradual destruction of all the natural teeth, and the consequent application of a whole double set of artificial teeth, if artificial teeth, prepared and inserted under better surgical principles, are not resorted to.

CASE X.

See Plate 7, Figures 1, 2, *and* 3.

Miss ——, of ——, about twenty-three years of age, consulted me about her teeth in 1831. Born and educated in the interior of England, she had been deprived of the advice and assistance of the skilful dentist, but very fortunately also protected from the quack and impostor.

From Fig. 1, it will be seen that she had sustained the loss of the right, left, upper, central, and lateral incisor tooth ; the restoration of which for a lady, young and beautiful, could not be considered an object of indifference.

After a short preparatory treatment of the whole mouth, a set of two mineral teeth, mounted on a gold plate, with a pair of almost invisible springs, was prepared, such as is represented in Fig. 2, and, when inserted, was so perfectly similar to her own teeth, which were very beautiful, that the artificial preparation could not be detected by the most expert judge of such preparations, unless previously informed of the fact.

PLATE VII.

CASE X.

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CASE XI.

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CASE XII.

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CASE XIII.

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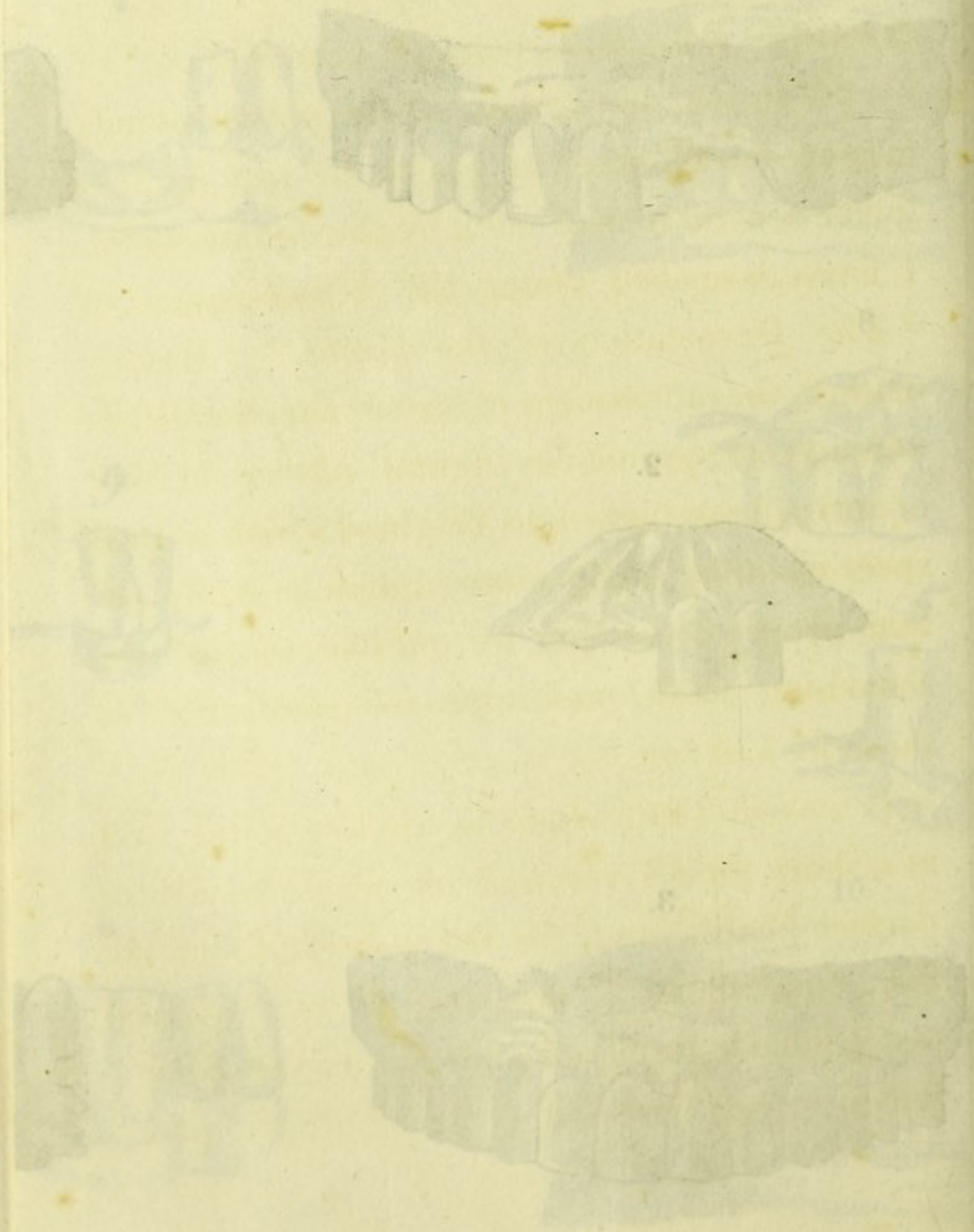

CASE XI.

See Plate 7, Figures 4, 5, and 6.

Admiral —— had spent the principal part of his life in the East Indies, where, notwithstanding his most excellent health, he lost his two lower central incisor teeth by the disease which I have described under the denomination of "The Devastation of the Gums." Having neither the advantage of good nor the disadvantage of pernicious dental advice in that country, he returned to England, with a prospect of losing many more, unless he could obtain proper treatment for the diseases of the remaining teeth, and a proper restoration of those he had lost.

It was in 1830 when he applied to me, and in a short time I restored his whole mouth to perfect health, and, for the restoration of the loss, constructed a small set of two mineral teeth, mounted on gold plate, with gold springs, which, when inserted in their proper place,

removed every defect and disadvantage produced by the loss of his natural teeth.

Both the natural and artificial teeth have been ever since a source of pleasure and satisfaction to the Admiral, and a great auxiliary means to the preservation of his general health and spirits.

CASE XII.

See Plate 7, Figures 7, 8, 9, and 10.

Mr. ——, of ——, aged about forty, of very dyspeptic habit, the effect of a sedentary occupation, had repeatedly consulted the dentists of the country where he resided, who advised him to do nothing to his teeth until they dropped out, and then have them replaced. This advice, however, he did not feel disposed to follow; but, at the request of a lady, consulted me in 1833. His mouth was in a very deplorable state. All the gums were exceedingly inflamed, suppurating and spongy, the periosteum of all the teeth exceedingly relaxed, the sockets enlarged and softened, and

his teeth were all so loose as to drop out by any accidental severe pressure. Two upper incisor teeth had already thus dropped out, and two more of the upper, and also two of the under row had become so much pressed out of their sockets as to appear an eighth of an inch longer than the other teeth.

I found it necessary to remove the two remaining upper and two under incisors; and, by very minute and careful dental treatment for about six weeks, I restored the whole mouth, and its gums and remaining teeth, to a perfectly healthy state, with the defect of four upper and the two under incisor teeth.

To remedy this defect, four natural upper and two under incisor teeth, mounted on gold plates, and provided with gold springs, were inserted in their respective situations.

CASE XIII.

See Plate 7, *Figures* 11, 12, *and* 13.

The Reverend Mr. B——, of ——, of very handsome appearance and robust constitution, about twenty-nine years of age, consulted me

in 1826. His teeth had been injudiciously treated by one of the most celebrated dentists of ——, and many of them had been lost. By a proper dental-surgical treatment, however, his gums and remaining teeth were re-established in a good state of health; and, notwithstanding the loss of several of his teeth, he dispensed with any artificial ones by my advice at that time.

In 1823, however, his professional avocations made it desirable to improve both the appearance and elocutive powers of his mouth; I consented, therefore, to prepare for him two mineral teeth, mounted on gold plate, and supplied with small springs, which were perfectly comfortable during mastication, and greatly improved his powers of enunciation and eloquence, as well as the appearance of his mouth.

EXPLANATION OF PLATE VII., IN ILLUSTRATION OF CASES X., XI., XII., AND XIII.

Fig. 1, Referred to in Case X, represents the gums and teeth of Miss —— when restored to a perfectly healthy state, with the defects of the right central and lateral incisor teeth.

Fig. 2, Represents two mineral teeth, mounted on gold plate, and provided with two almost invisible gold springs.

Fig. 3, Exhibits the above artificial teeth inserted in their intended place in the mouth, and the precision with which they are applied.

Fig. 4, Referred to in Case XI., represents the healthy gums and teeth of a gentleman, with the defect of the two lower central incisor teeth.

Fig. 5, Represents the interior view of two mineral incisor teeth, mounted on a gold plate, and provided with gold springs.

Fig. 6, Represents the artificial teeth placed in their proper situation.

Fig. 7, Referred to in Case XII., represents a front view of the upper and under gums and teeth of a gentleman, with the defect of the four upper and two under incisor teeth.

Fig. 8, Represents a set of artificial teeth, made of natural teeth, gold plate and springs, for the upper jaw.

Fig. 9, Represents a set of two artificial teeth, made of natural teeth, gold plate and springs, for the under jaw.

Fig. 10, Represents the above two sets of artificial teeth for the upper and under jaw, placed in their respective places, and shews the exactness with which they are inserted.

Fig. 11, Referred to in Case XIII., represents a front view of the remaining teeth and gums of a gentleman, and the visible defect of the left cuspid and the right bicuspid tooth.

Fig. 12, Represents a set of two mineral, the

left cuspid and the right bicuspid tooth, mounted on a gold plate, and provided with small gold springs.

Fig. 13, Represents the artificial set of teeth, placed in its intended situation, shewing the propriety and precision of its formation and insertion, as well as its great improvement to appearance.

CHAPTER VI.

ON THE PRINCIPLES FOR THE PREPARATION AND INSERTION OF SETS OF ARTIFICIAL TEETH, EMBRACING A CONSIDERABLE PART OR THE WHOLE OF THE UPPER JAW.

In considering dental preparations of this description, our attention is to be less directed to the number of the teeth than to the extension of the surface of the mouth which the set is to occupy; and it is on the extent of that surface that the extent of the utility of such sets is, in a great measure, dependant; and we are to consider, not only a set of teeth which occupies the whole upper jaw where every tooth is lost, but also every set which occupies the whole circle of the mouth, even where many of the remaining natural teeth are embraced by the artificial apparatus.

ON THE INDICATIONS.

Sets of artificial teeth for a considerable part or the whole of the upper jaw are sufficiently indicated, not only when all the upper teeth are lost, but often where some detached teeth are yet remaining. Such teeth are intended, not only for appearance and speech, but also, in a very great measure, for mastication; and, if they are, in every respect, judiciously constructed, the artificial apparatus will be found, not only to produce all the advantages just stated to the greatest extent, but will also promote the preservation of the remaining living teeth by its support, and preserve the natural antagonists in the lower jaw by the stimulus of its reciprocal action in mastication.

ON THE MATERIALS.

The materials for sets of artificial teeth for a considerable part or the whole of the upper jaw, and the mode in which they are constructed, must vary according to the circumstances in which they are applied.

If such an apparatus has to embrace some remaining living teeth of the upper jaw, which are in a good and healthy condition, it will be requisite to fit a gold plate to the gums to which either natural or mineral teeth are so attached as to substitute every lost tooth; if, however, every tooth of the upper jaw has been lost, and the gums are in a perfectly healthy state, and the teeth of the under jaw also healthy, it may be considered a matter of choice to the patient which kind of the following artificial teeth might be most agreeable to his wishes and circumstances; namely, an apparatus constructed of natural or mineral teeth, mounted on gold plate, or one carved of a single piece of hippopotamus tooth, with or without human teeth in part.

MODE OF PREPARATION AND ATTACHMENT.

In the preparation of sets of artificial teeth for a considerable part or the whole upper jaw, it is of great importance to consider that such teeth are intended, not only for appearance and speech, but also for mastication, the very

important function of preparing the food for digestion, and generally at a period of life when the functions of the digestive organs are not unfrequently impaired, and when utility and benefit to health should be deemed of greater importance than appearance.

Particular care should be taken to adapt the plate as exactly as possible to the gums, and so as not to press on the natural teeth, if any should remain; and, in those cases in which all the natural teeth are lost, I deem it preferable that all the upper teeth should meet the under by contact rather than in that direction in which the upper incisors lap over the under.

The set is to be retained in its place by means of two spiral springs, fastened to it by gold swivels at one extremity, and at the other to a gold frame, attached to the under teeth by means of gold hooks or caps; great care should be taken to place the springs in places where they are not seen, and in such a manner as to keep the apparatus in its proper place, without being thrust forwards or drawn backwards; and they should be neither too hard nor too soft, but of a sufficient power

to keep the apparatus in its place without causing either pain or inflammation. Various kinds of springs have been invented of a more or less complicated construction, which are so much surpassed in utility and simplicity by the spiral springs as not to deserve any notice.

Should there be sufficient indication for making use of a set, which is to be kept in its place by capillary attraction or by suction, it should be made, either of a gold plate mounted with natural or artificial teeth, or of one piece of hippopotamus' tooth, and the surface which rests upon the gums should be exactly fitted, and as broad as possible; and great care should be taken that, in shutting the mouth, the artificial teeth press equally upon all the under teeth. I have, by observing these cautions, been completely successful, in several instances, in the application of sets for the upper jaw in this manner, which is certainly, from its great simplicity and convenience, very desirable, when all circumstances sufficiently combine in the indication for its use.

Some dentists of advertising celebrity pre-

tend to be able to construct all kinds of artificial teeth in such a manner as to be retained in their places by capillary attraction alone; such pretensions can be viewed only in the same light as those which attribute the power of curing every human malady to one and the same patent medicine or nostrum.

CASE XIV.

See Plate 8, *Figures* 1, 2, 3, 4, 5, *and* 6.

A GENTLEMAN of rank, and a very prominent Member of Parliament, consulted me, in 1831, by the request of Mr. Lawrence. His age was about forty-eight, and his constitution very robust and active. He had repeatedly been under the treatment of various dentists in this country and France, but his mouth remained diseased, his teeth were gradually lost, and his artificial teeth were uncomfortable and produced great pain. He had for some time made use of a set of four incisor teeth carved out of one piece of bone, and mounted on a gold plate, which was attached to the two only

remaining teeth, the upper cuspid, by means of silk cords. He also occasionally wore a whole set of mineral teeth, mounted on platina, which he contrived to keep in its place by means of silk cords, fastened round his two upper canine teeth, and by spiral springs attached to a gold band placed round the under row of teeth, and fastened by a hank to the left under canine tooth.

Both these sets were exceedingly mal-constructed, ill-fitted, and ill-inserted, and produced very great injury, pain, and discomfort, and greatly impeded his powers of elocution.

By examining his mouth, I found also that the silk cords had loosened, and entirely destroyed the left, and nearly also the right cuspid, the only two teeth remaining in the upper jaw; they were surrounded by diseased and spongy gums, and periosteum, and carious sockets discharging fœtid matter.

The under teeth were also all more or less loose, and suffering greatly from inflammation and suppuration throughout the gums and sockets, which also discharged very offensive pus. I succeeded with great difficulty in about

PLATE VIII.—CASE XIV.

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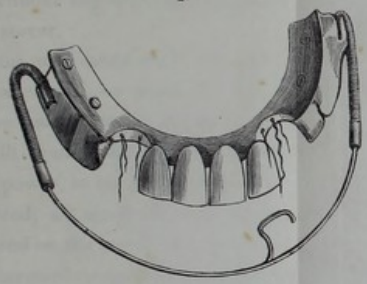

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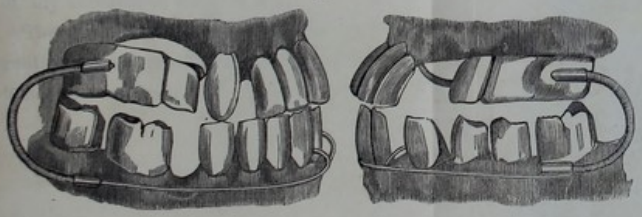

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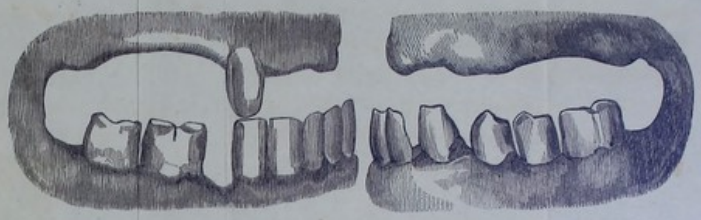

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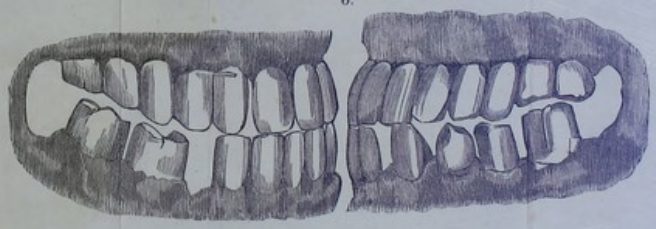

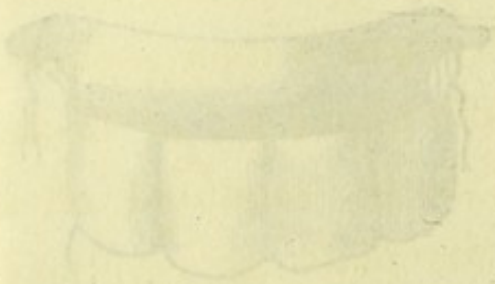

two months, but not without the loss of the left upper canine tooth, to restore the gums and all the remaining teeth to perfect health, and to render the latter perfectly firm in their sockets.

I then prepared a whole upper set of teeth, constructed of mineral teeth, mounted on a gold plate, and kept in its place by capillary attraction and slight attachment to the right canine tooth, without any spiral springs, band, or ligatures whatever.

This apparatus was made with very great precision and accuracy, so much so that, in a few days, the patient could not only masticate, but could again speak with his natural eloquence and power, in his parliamentary occupation. Indeed, so much did his comfort and duties depend on the use of this apparatus, that he soon afterwards requested me to furnish him with another set precisely similar, in case of any accident to the first set.

The appearance as well as the health of the gentleman also greatly improved, and has continued so ever since.

EXPLANATION OF PLATE VIII., IN ILLUSTRATION OF CASE XIV.

Fig. 1, Exhibits a set of four incisor teeth, very badly carved out of one piece of sea horse tooth, and rivetted to a gold plate provided with holes and silk cords, by means of which it had been attached to the two adjoining canine teeth, one of which had been entirely, and the other nearly destroyed by it.

Fig. 2. A whole upper set made of mineral teeth and platina plate, held in its place by means of silk cords, tied round the remaining two cuspid teeth, and by spiral springs attached to a gold wire placed round the under row of teeth, and steadied by a wire ring placed round the left canine tooth. The whole apparatus is exceedingly badly constructed, and produced very great injury.

Fig. 3, Exhibits a lateral view of a right and left section of the mouth, with the inserted artificial apparatus, and shews how ill adapted the set of teeth is to the gums, and the unavoidable injury and irritation it must consequently produce upon all the structures of the mouth.

Fig. 4, Represents a right and left section of the mouth after the extraction of the left upper canine tooth, and a restoration of perfect health to the gums and teeth of both the upper and under jaws.

Fig. 5, Represents the internal view of a set of mineral teeth on a gold plate, held in the mouth by means of suction or capillary attraction.

Fig. 6, Represents a right and left view of the above set placed in the mouth, and the exactness and precision with which it is prepared and made, and adapted to the upper gums as well as to the opposite under teeth.

PLATE IX.—CASE XV.

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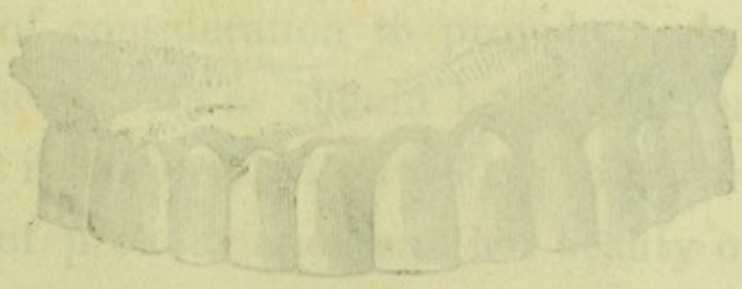

PLATE IX.—CASE XV.

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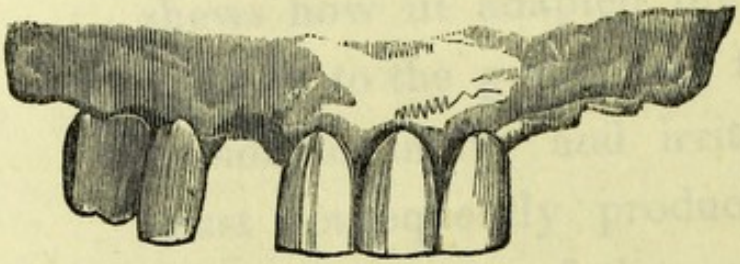

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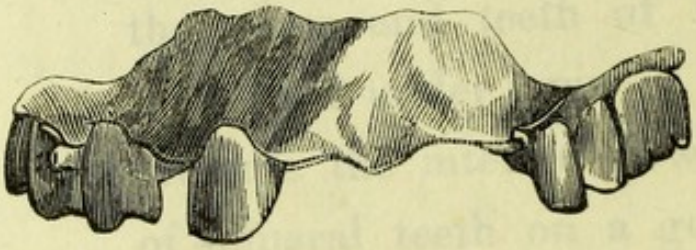

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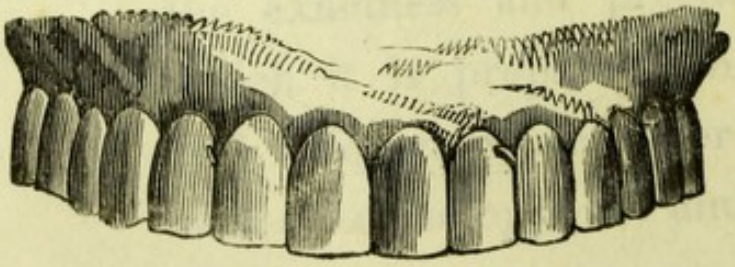

CASE XV.

See Plate 9, *Figures* 1, 2, *and* 3.

Miss ——, of ——, a young lady of great beauty, about twenty-two years of age, consulted me respecting her teeth in 1831.

Her general health was good, but her teeth were in a very deplorable state, although she had consulted various dentists in this country and on the Continent.

By the most careful treatment, I succeeded in preserving five of her upper, and the greater part of her lower teeth, the rest being only stumps and fragments at the time when I first examined her mouth.

After restoring the gums and other parts of the mouth to perfect health, it became next a matter of consideration to provide such a set of artificial teeth as should be well calculated to assist in mastication, as well as to restore her power of pronunciation and her beauty of appearance, and this was completely effected by a

set of nine natural teeth mounted on a gold plate, which embraced the whole circle of the upper jaw, and was principally retained in its place by capillary attraction or suction.

This was a very interesting cure, and the lady has enjoyed, up to the present time, all the advantages of the first set, which I made for her in 1831, and her gums and teeth continue in a state of perfect health and preservation.

EXPLANATION TO PLATE IX., IN ILLUSTRATION OF CASE XV.

Fig. 1, Shews a front view of the gums, and five remaining teeth.

Fig. 2, Represents a front view of a set of nine natural teeth mounted on a gold plate, embracing the whole upper jaw, and almost entirely held in its place by capillary attraction or suction.

Fig. 3, Represents a similar view of the whole circle of the upper teeth and gums after the insertion of the artificial teeth.

CASE XVI.

See Plate 10, *Figures* 1, 2, *and* 3.

A FOREIGN Lady of high rank consulted me in 1829. Her age was about thirty-nine, and her constitution generally was good. Her teeth were all free from caries; but, in consequence of that disease which I have described under the denomination of the "Devastation of the Gums and Sockets," the violent inflammation and suppuration produced in the gums, periosteum, and sockets, had more or less loosened all her teeth, and some of them had actually already been ejected by the disease, while one or two more were rendered so loose as to render their preservation quite impracticable.

In a short period, by proper treatment, I restored the gums and all the remaining upper and under teeth to perfect health and firmness.

I next prepared a set of five natural teeth, mounted on gold plate, provided with two

PLATE X.—CASE XVI.

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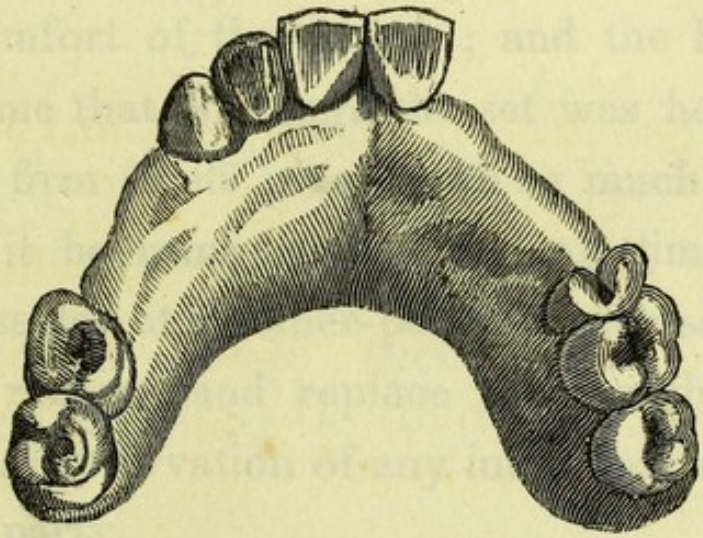

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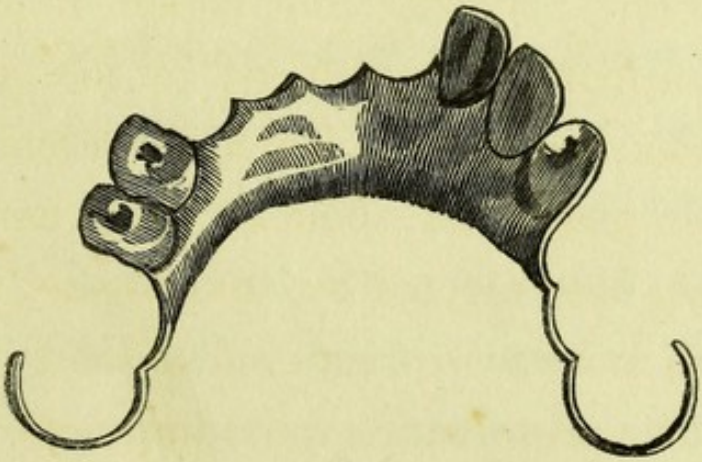

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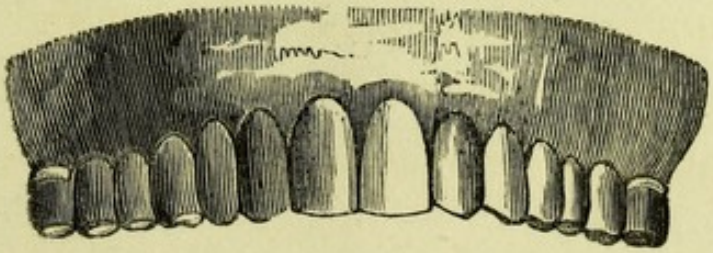

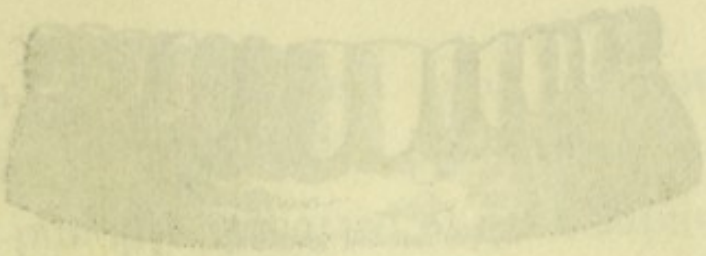

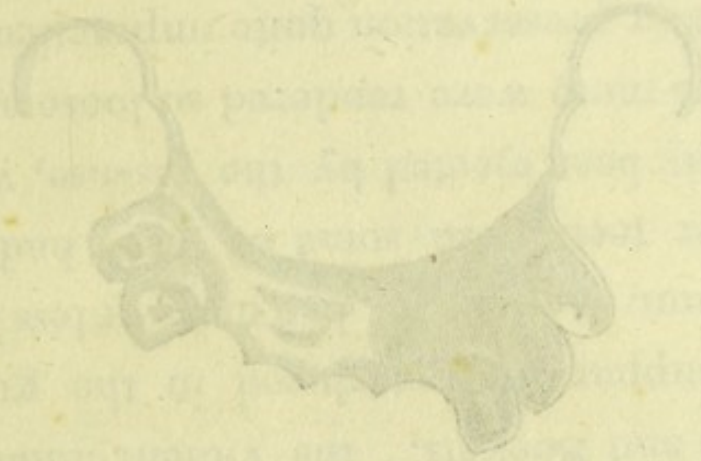

springs, by means of which the set was attached to the two last molars.

This set, when inserted, improved in every respect the health and appearance, as well as the comfort of the patient; and the lady assured me that, although the set was held perfectly firm in its place, with so much facility could it be removed, that at any time, even when seated at a dinner-party, if necessary, she could remove and replace them without the slightest observation of any individual member of the party.

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EXPLANATION OF PLATE X., IN ILLUSTRATION OF CASE XVI.

Fig. 1, Represents the internal view of the mouth.

Fig. 2, Represents a similar view of an artificial set of five natural teeth, mounted on a gold plate, and provided with gold springs.

Fig. 3, Represents a front view of the teeth and gums after the insertion of the artificial teeth in their intended situation; the precision and exactness of the adaptation, and remarkable improvement of the appearance are strikingly evident in this Case.

CASE XVII.

See Plate 11, *Figures* 1, 2, *and* 3.

Mr. ———, of ———, a Barrister, aged about twenty-eight, whose constitution was good and vigorous, consulted me, in 1832, respecting his teeth. He had been, from his early youth, under the dental care of one of the most celebrated dentists in ———.

When I saw him, he had lost the central incisor and first small grinder tooth of the right, and the two bicuspid teeth of the left upper jaw; all his teeth were suffering from the irritation of tartar, and of a few dead stumps in the under jaw.

The gentleman, being a member of the bar, and recommended to me by a friend of his, belonging to the same profession and a patient of mine, was deeply impressed with the value of his teeth, and was particularly desirous

PLATE XI.—CASE XVII.

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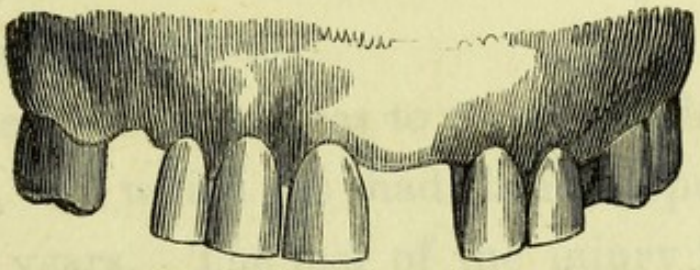

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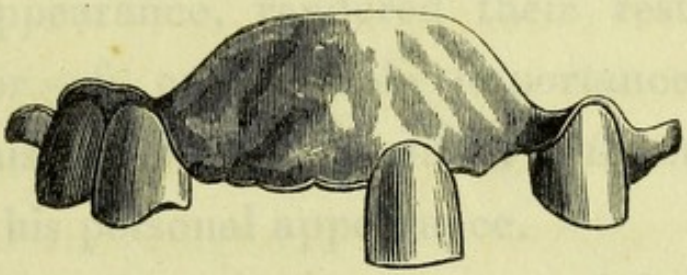

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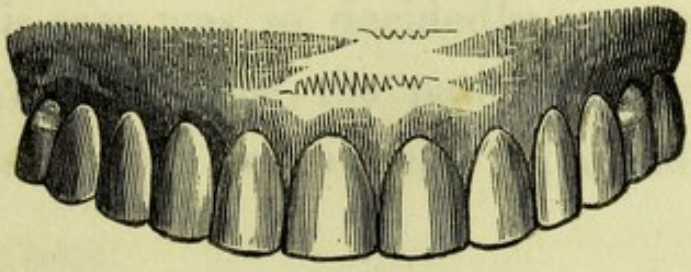

precisely like the first; and the teeth and gums of the gentleman have ever since remained in a state of perfect health and preservation.

EXPLANATION OF PLATE XI., IN ILLUSTRATION OF CASE XVII.

Fig. 1, Represents a front view of the gums and teeth.

Fig. 2, Represents a set of four mineral teeth, mounted on a gold plate, and provided with very small gold springs.

Fig. 3, Represents a front view of the mouth after the application of the artificial teeth.

CASE XVIII.

See Plate 12, *Figures* 1, 2, *and* 3.

Mrs. B——, of ——, a lady of great beauty and fortune, aged about 28, consulted me after her return from the East Indies in 1826. Her teeth had greatly suffered from the climate, as well as from the want of proper dental treatment.

After restoring her whole mouth to perfect health, she had but eight upper teeth remaining. Contented with perfect health, comfort, and a tolerable appearance, the lady for about five years abstained from artificial teeth; but, at length, in 1831, she became desirous to have an artificial preparation to assist mastication and to improve appearance, as well as to support the remaining teeth, and she was provided with a set of five natural teeth, mounted on a gold plate.

I have seen this lady frequently since that time, and have always found the health of her teeth and gums, as well as her general health, perfectly good.

PLATE XII.—CASE XVIII.

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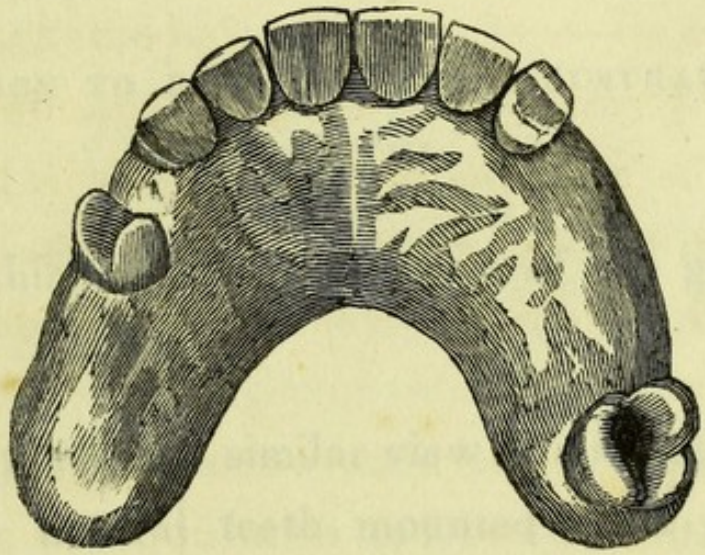

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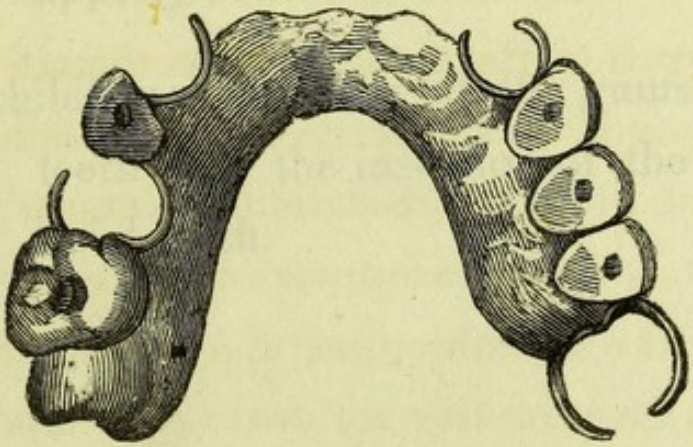

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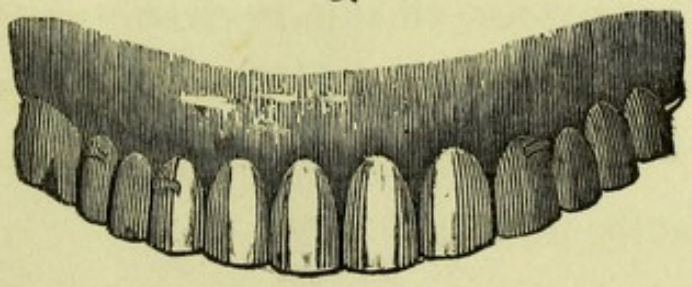

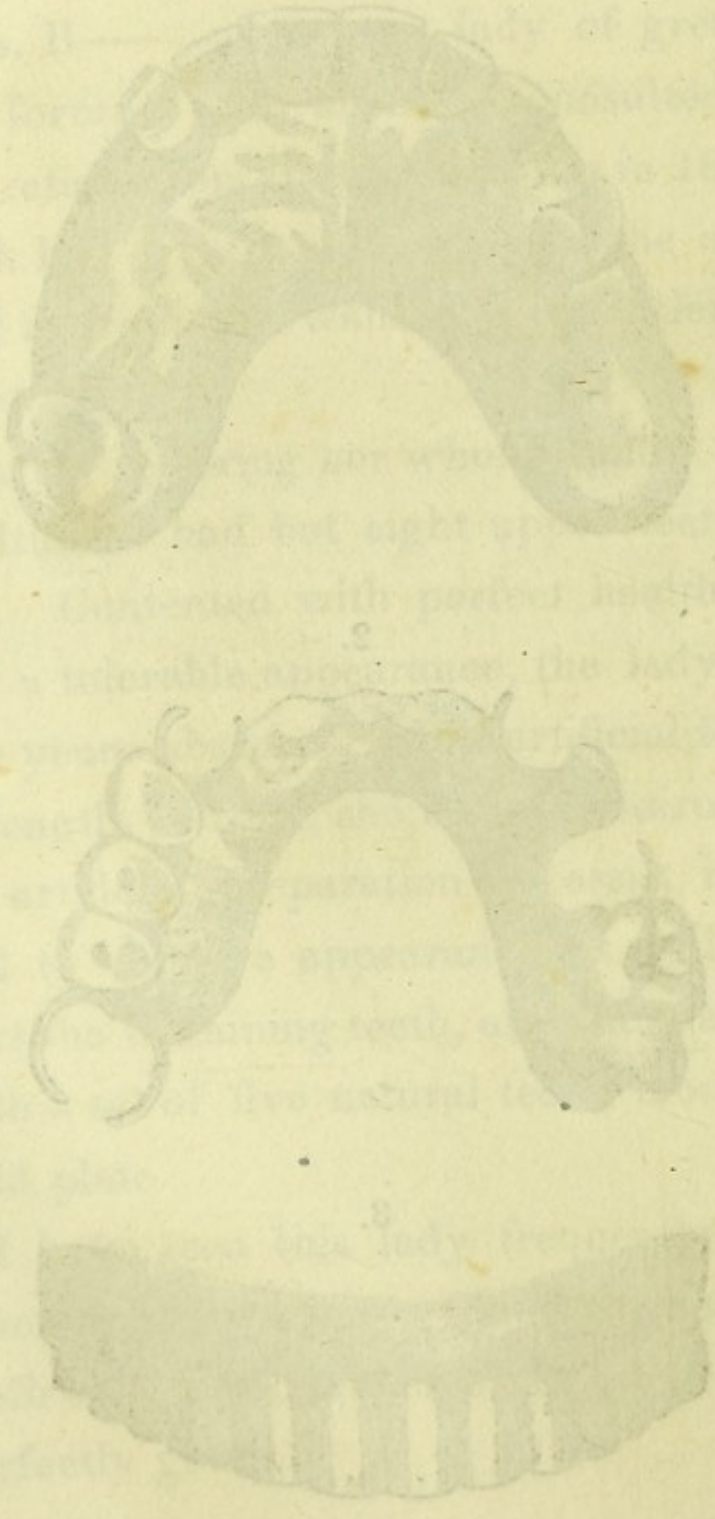

EXPLANATION TO PLATE XII., IN ILLUSTRATION OF CASE XVIII.

Fig. 1, Exhibits an internal view of the gums and teeth.

Fig. 2, Represents a similar view of a set of five natural teeth mounted on a gold plate, embracing nearly the whole upper jaw.

Fig. 3, Exhibits a front view of the gums and teeth after the insertion of the artificial teeth.

CASE XIX.

See Plate 13, *Figures* 1, 2, *and* 3.

Miss ——, of ——, aged about 23, consulted me by the request of Dr. Scott, of Barnes, in 1827. Her teeth were greatly injured by a small set of two artificial teeth attached to the adjoining teeth by means of ligatures. These two teeth were so much injured thereby, that the removal of them was unavoidable, the remainder, however, were restored to perfect health by a proper dental treatment.

She was next provided with a new set of mineral teeth, mounted on a gold plate and provided with gold springs, which when inserted gave support to the remaining natural teeth, and appeared perfectly natural.

A few months ago, the old set, which had been made nearly six years previously, was repaired, and the gums and teeth of the whole mouth were found in a perfectly healthy state, and free from the slightest defects, and at that time the drawings of Plate 13, accompanying this Case, were procured.

PLATE XIII.—CASE XIX.

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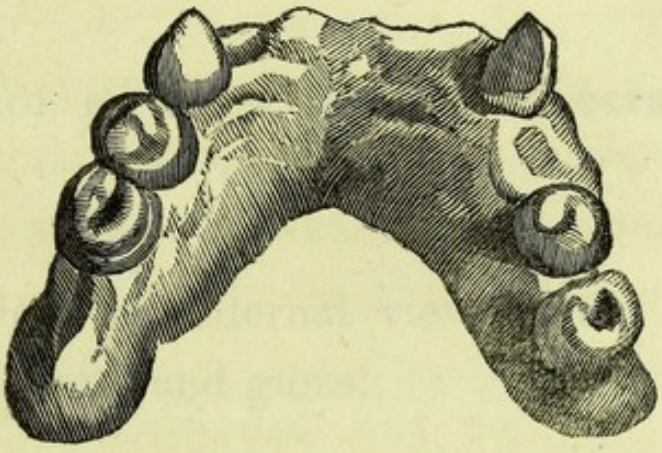

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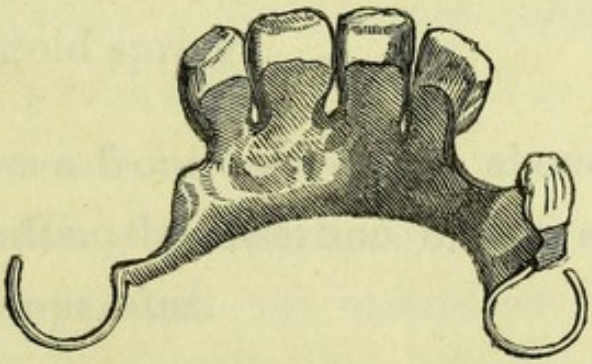

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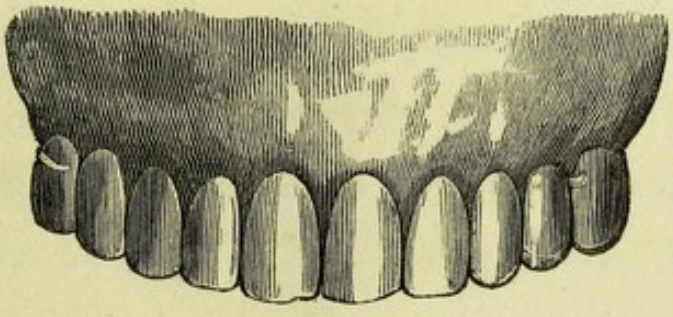

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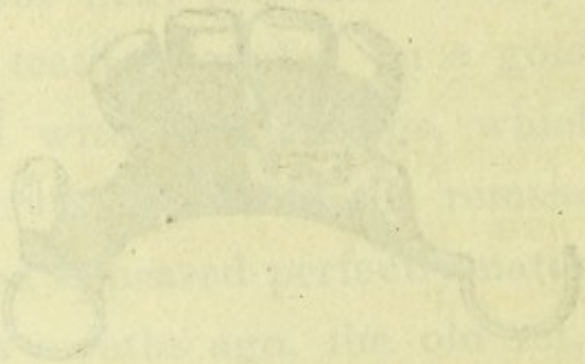

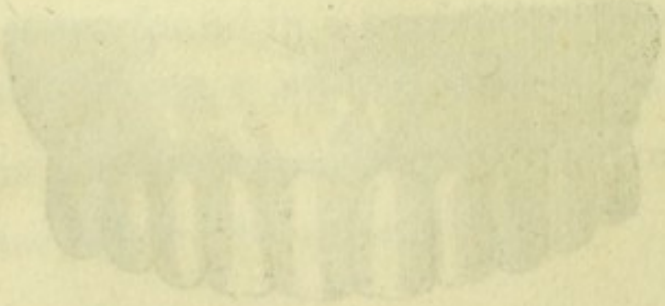

EXPLANATION OF PLATE XIII., IN ILLUSTRATION OF CASE XIX.

Fig. 1, Shews an internal view of the upper teeth and gums.

Fig. 2, Shews an internal view of a set of five mineral teeth mounted on a gold plate, and provided with two light gold springs.

Fig. 3, Shews a front view of the above mouth after the insertion of the artificial apparatus.

CHAPTER VII.

ON THE PRINCIPLES FOR THE PREPARATION AND INSERTION OF SETS OF ARTIFICIAL TEETH, EMBRACING A CONSIDERABLE PART OR THE WHOLE OF THE UNDER JAW.

ON THE INDICATIONS.

Sets of artificial teeth for a considerable part or the whole of the under jaw only, are less frequently required than for the upper jaw, for the loss of the teeth of the upper generally precedes that of the lower; if, however, the case occurs, either from accident or disease, a proper artificial substitute for the lost teeth is even more desirable, and more positively indicated for the sake of appearance, pronunciation, mastication, and health, than in the absence of the upper teeth; and all the advantages obtained by an upper set, may be expected to the greatest extent from an under set of artificial teeth, if well constructed.

Sometimes an apparatus may be required separately for both the upper and under jaw, as in Case III., and in such instances the indications for one are increased by those for the other, and, with care, considerable benefit may be obtained from the artificial preparations.

ON THE MATERIALS.

The materials calculated for sets of artificial teeth for a considerable part or the whole of the under jaw are the same as those for the upper. Each of the materials described may be applied, under similar circumstances, with equal convenience.

MODE OF PREPARATION AND ATTACHMENT.

Sets of artificial teeth for a considerable part of, or the whole of the under jaw, should be made and applied under the same principles as those for the upper jaw, but with the difference, that from their situation they never require any spiral springs for their attachment, for reasons too evident to require explanation.

In cases where some of the living teeth remain in the lower jaw, in order to increase the basis and lessen the pressure upon the gums in mastication, the application of gold caps over such teeth is often desirable, as they afford great support in mastication, and admit of hard pressure by the whole apparatus, without producing pain of the gums.

In cases where artificial teeth are required for both the upper and under jaws in detached sets, very minute attention should be paid to all the observations I have made concerning the preparation and insertion of these teeth. Of cases of this kind, Case III., Plate 3, affords a beautiful illustration, and the following case is one of the most interesting that ever came under my care of a whole set for the lower jaw only.

CASE XX.

See Plate 14, *Figures* 1, 2, *and* 3.

Miss ——, of ——, about 28 years of age, had been in an exceedingly delicate state of health for many years, but for the last five or six she

PLATE XIV.—CASE XX.

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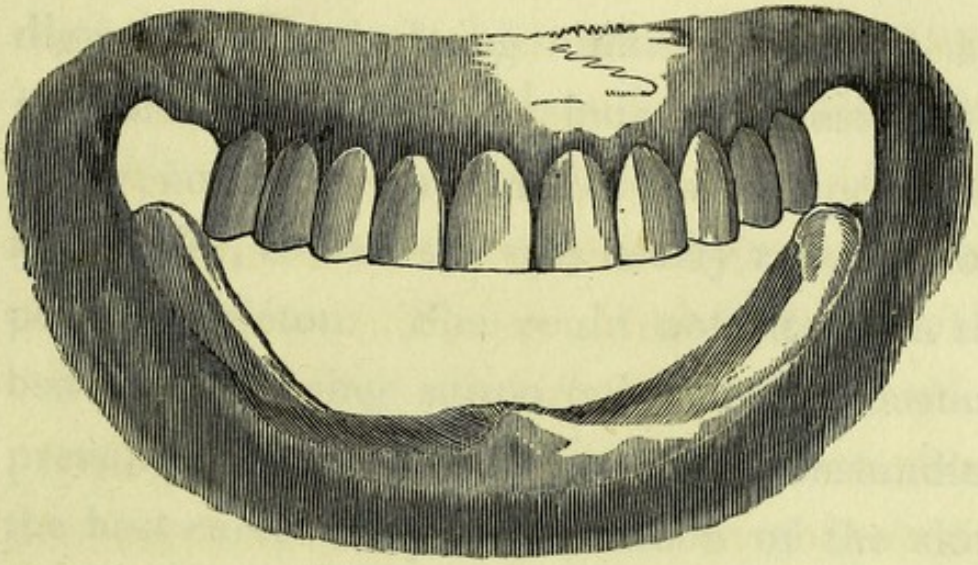

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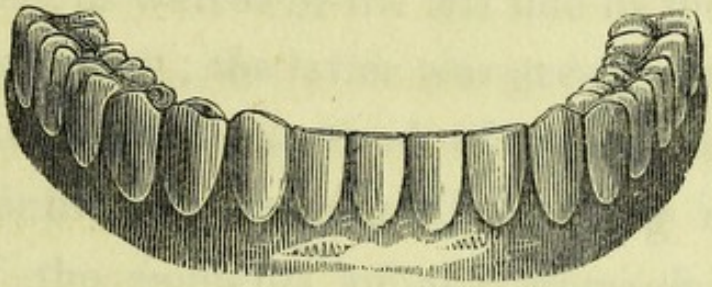

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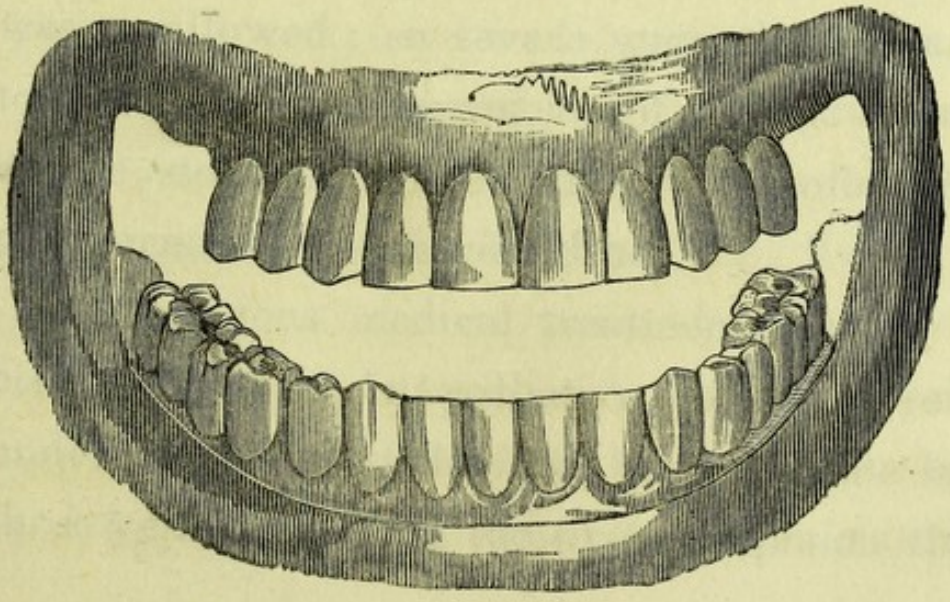
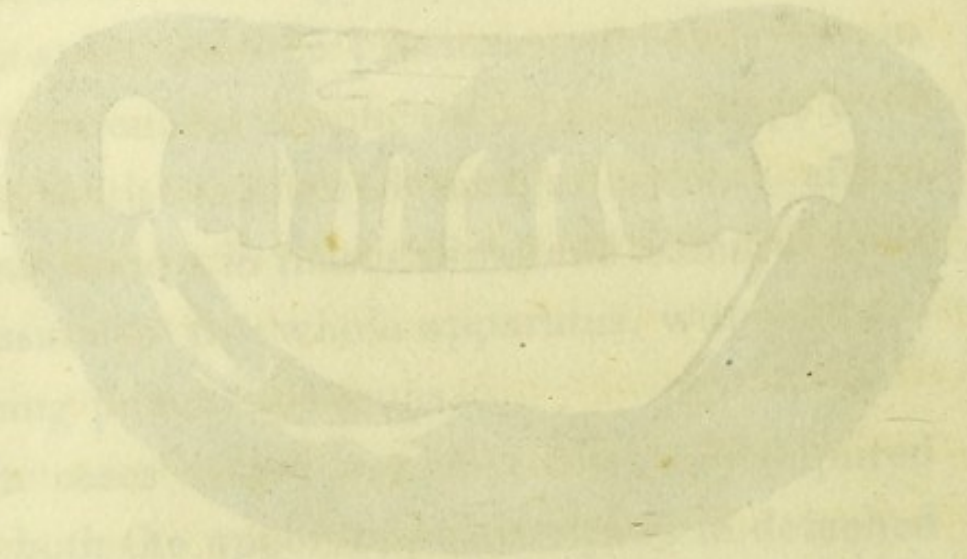
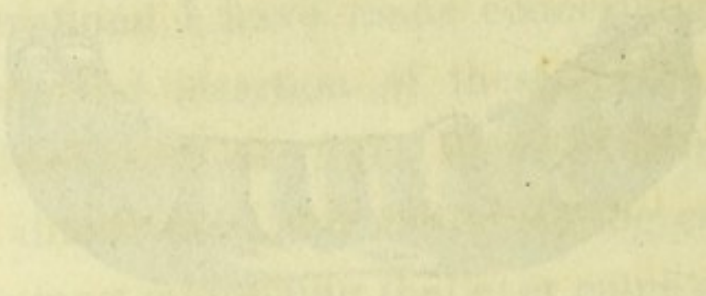






had been perfectly bedridden from the effects of a most extensive mercurial treatment. Her digestive powers being almost destroyed, her nourishment principally, indeed almost exclusively, consisted for years of tea, and occasionally coffee, so that she was nearly reduced to a perfect skeleton. She could not sit up in the bed without being supported, and the constant pressure had in many places, notwithstanding the best care, occasioned abrasion of the skin. She complained of violent pain of the back of the head, as well as of the left side in the region of the stomach; the latter was greatly increased by taking the least food of any description, and continued severe until vomiting relieved her of the contents of the stomach, which usually followed in a few minutes after the food was swallowed; so severe were these symptoms as to induce a suspicion of organic disease of the stomach in the mind of a professional gentleman who once visited her.

All previous medical treatment seemed at best to have been but palliative, and Mr. Greig, under whose care she had been for the last three years, was from the first of opinion that

her illness must chiefly be dependant on the state of her mouth and teeth, which were in a most deplorably diseased condition, and that, unless some relief could be obtained, she must inevitably sink in a short period under this accumulation of disease and pain, and deprivation of food and sleep.

Deeply impressed with this opinion, Mr. Greig had consulted with other medical men, but was invariably overruled by their opposite opinion, until the patient consented to abide by his advice alone. A new difficulty, however, now presented itself; he could find no dentist who would coincide with him, and afford his practical assistance; and after repeated ineffectual endeavours to obtain it, he abandoned all hope of saving the life of his patient, a hope on which his mind had been firmly fixed, a hope now turned into despair.

Accidentally, my "Principles of Dental Surgery" fell into his hands, the treatment which I have adopted for many years for such diseases became known to him, and he lost no time in requesting a consultation with me. When we saw the patient I found his statement of her

general health by no means exaggerated, but I was struck with her uncommon flow of spirits, and the bold eagerness and confidence with which she clung to the hope of relief, like the grasp of the sinking man at the floating straw. She implored me to relieve her from her suffering and save her life, assuring me of her strength and power to support any pain necessary for the purpose, and endeavouring to persuade me that she really possessed greater strength than she appeared to do. Knowing the great assistance afforded by hope, I encouraged her by an assurance that she should recover, if she would submit to my treatment, and I now requested to examine her mouth.

This was much impeded, not by her disinclination, but by the incapability of opening the mouth more than about a quarter of an inch, in consequence of adhesions which had resulted from ulceration of the gums, as well as on account of a great degree of nervousness, and of the excessive pain produced by the slightest effort she made to open her mouth. By the best examination I could make, I ascertained that she had all her teeth still in her mouth,

though almost every one of the under jaw was either partially or entirely deprived of its vitality, and some of the upper jaw were in a similar condition.

All the remaining parts of the gums were in a state of great inflammation and suppuration, a great portion of these structures having already been destroyed and removed by ulceration and mortification. The osseous parts also of the sockets of the upper and under jaws were in a state of mortification to a considerable extent, the whole inner circle of the lower jaw and part of the upper being perfectly black; while all the living structures were under the most powerful influence of the irritation consequent on such extensive disease. The most delicate and most careful examination of the mouth was occasionally accompanied by the most acute pain; and, although the patient seemed to be determined to bear it without the slightest complaint, the efforts of such forbearance were depicted in her face.

The discharge of matter, arising from this diseased state of the parts of the mouth, was extremely great, and the stench of it so dis-

gusting, that, although the windows were opened, and the room of the patient had been carefully fumigated, it was almost intolerable.

I need not say that, taking into consideration the extremely low and weak state of the constitution of the patient, and the information I obtained by my minute examination of the local disease of the mouth, my hopes for success were extremely faint. Sensible, however, that the weaker my hope was, the more encouragement was required for the patient, I left her in full spirits, without expressing my doubts to her, promising to see her again the next morning, and at once to relieve her, and to make preparation for a perfect cure of the diseases of her mouth, as well as a gradual, but sure recovery of her general health.

On September 30th, 1832, in company with Mr. Greig, I saw the patient agreeably to my promise of the day before. The lady had had some sleep, and hope and confidence had raised her spirits to a very surprising height.

She was placed on an arm-chair, and supported by Mr. Greig and her sister, for she had not sufficient strength to sit erect

without assistance; and, in about an hour's time, notwithstanding the many difficulties and obstacles I had to encounter from the mouth being so contracted, and in a state of so great sensibility and susceptibility of pain to the slightest touch, I had removed twenty-two teeth, all which I considered formed part of the cause of her local and general sufferings.

The patient was requested to use a simple antiseptic gargle.

On October 6th, a great portion of the bone forming the inner circle of the sockets was removed; her appetite and digestion was gradually improving. Four days afterwards, some more pieces of dead bone were removed by rinsing the mouth, and others by the fingers, and the powers of nature were active in restoring health to the remaining parts of the mouth.

In November, the treatment necessary to preserve the remaining teeth was adopted, and the patient's health was so rapidly improving, that she was able to walk across the room, and soon afterwards take airings in a carriage; and, in two or three months, we had the satisfaction of seeing our patient, not only entirely free

from danger, but perfectly cured of the painful diseases of her mouth, and almost also of her constitutional affliction.

The most important part remaining now was the artificial restoration of the loss of her under teeth; and a set of artificial teeth like the one shewn in Fig. 2, Plate 14, for the whole lower jaw, will effect that object, as soon as a few muscular adhesions shall have been removed, which yet, to a certain extent, impede the perfect motion of the jaw.

The patient has since gradually improved in general health in the same proportion as the healthy state of her mouth had advanced to perfection. Her constitutional strength is so far recovered, that she now is able to take every necessary exercise, even a walk of three or four miles in extent.

EXPLANATION TO PLATE XIV., IN ILLUSTRATION OF CASE XX.

Fig. 1, Represents a front view of the whole mouth, shewing ten upper remaining teeth and the gums of the lower jaw in a perfectly healthy state.

Fig. 2, Represents a front view of a set of artificial teeth for the whole under jaw.

Fig. 3, Represents a front view of Fig. 1, with the sets of teeth for the lower jaw applied.

CHAPTER VIII.

ON THE PRINCIPLES FOR PREPARING AND INSERTING DOUBLE SETS OF ARTIFICIAL TEETH FOR THE UPPER AND UNDER JAW.

All cases, in which both upper and under teeth are required to such an extent as to render it necessary to unite the piece for the upper with that for the under jaw by means of spiral springs, swivels, &c., in order to keep the whole apparatus in its proper place, whether some of the living teeth yet remain, or whether all of them are lost, are to be classed under this denomination.

ON THE INDICATIONS.

A whole set of artificial teeth for the upper and under jaws is properly indicated, not only when all the teeth are lost, but also when some

of them still remain. In every instance in which the deficiency of molar teeth is of such a nature as to deprive the two jaws of that necessary support by which they are kept in their proper situation, and at a proper distance from each other, a double set of teeth is very desirable. Thus when, for instance, the front teeth are still in a healthy condition, and the small and large grinders that remain in both jaws are in each without an antagonist, the whole weight of the two jaws must rest upon the front teeth ; these, in most instances, lap over each other, and, by this oblique pressure, must soon be rendered loose, and consequently be lost, unless they are supported by an artificial apparatus. But should this support of the upper and under front teeth be also absent, in addition to the loss of every antagonist of the remaining upper or under small and large grinders, the indication for a double set of artificial teeth is still more decisive, and the advantages, which have been stated to result from their judicious application in those cases in which whole sets for the upper or under

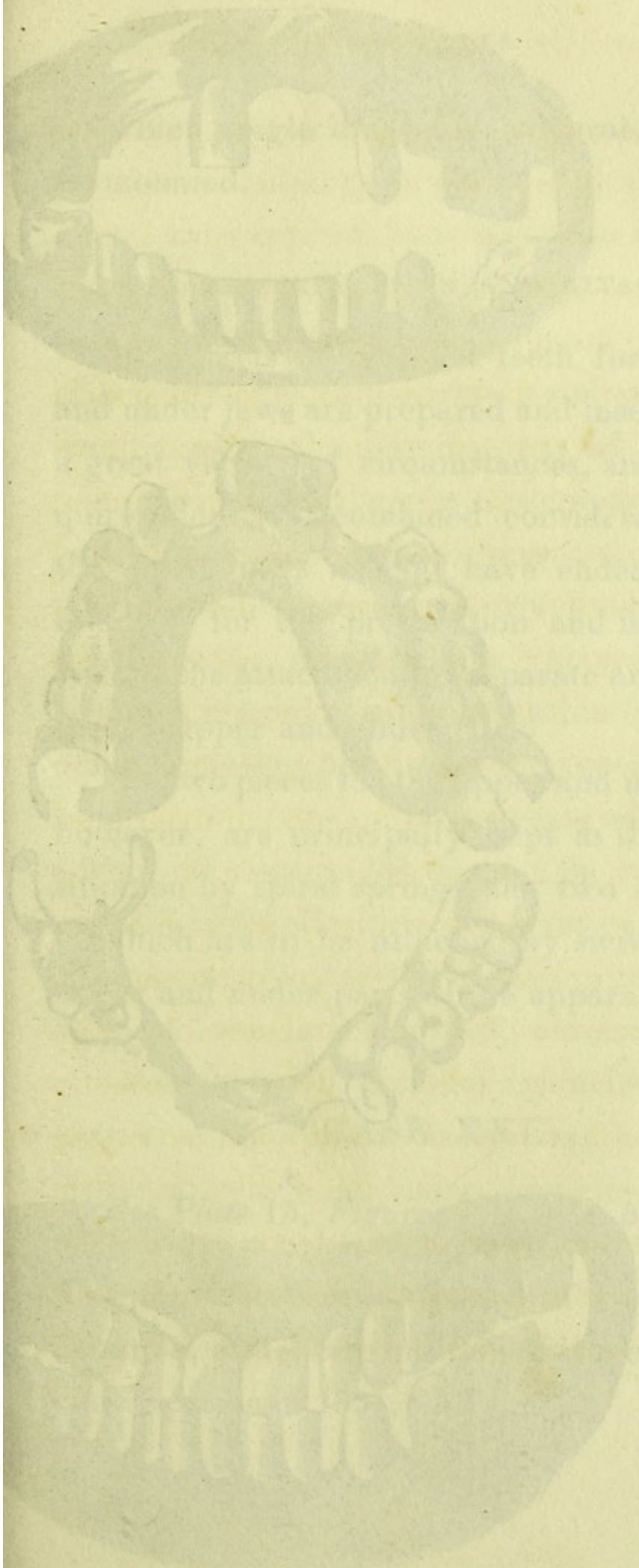
jaw are separately inserted, may be as fully expected in the present instance.

ON THE MATERIALS.

The materials best calculated for the preparation and insertion of whole double sets of artificial teeth for the upper and under jaw, as well as the modes of their preparation, must of course be similar to those before described for the application of single sets for the upper and under jaw, with the addition of spiral springs.

For such cases where all the upper and under teeth are lost, any one of the above-mentioned preparations may be adopted, although, for the first time, a set either entirely carved of sea horse, or furnished with six or eight natural teeth in front may be the most desirable, from the great facility afforded by this mode to a perfect adaptation of the apparatus to the gums.

If, however, some of the teeth remain, by which the continuation of the arch of the artificial set is interrupted, a gold plate is requisite,



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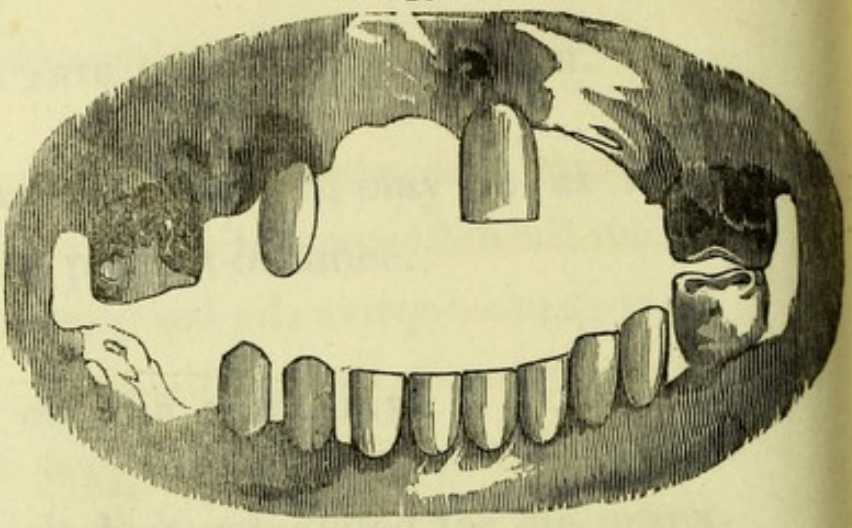

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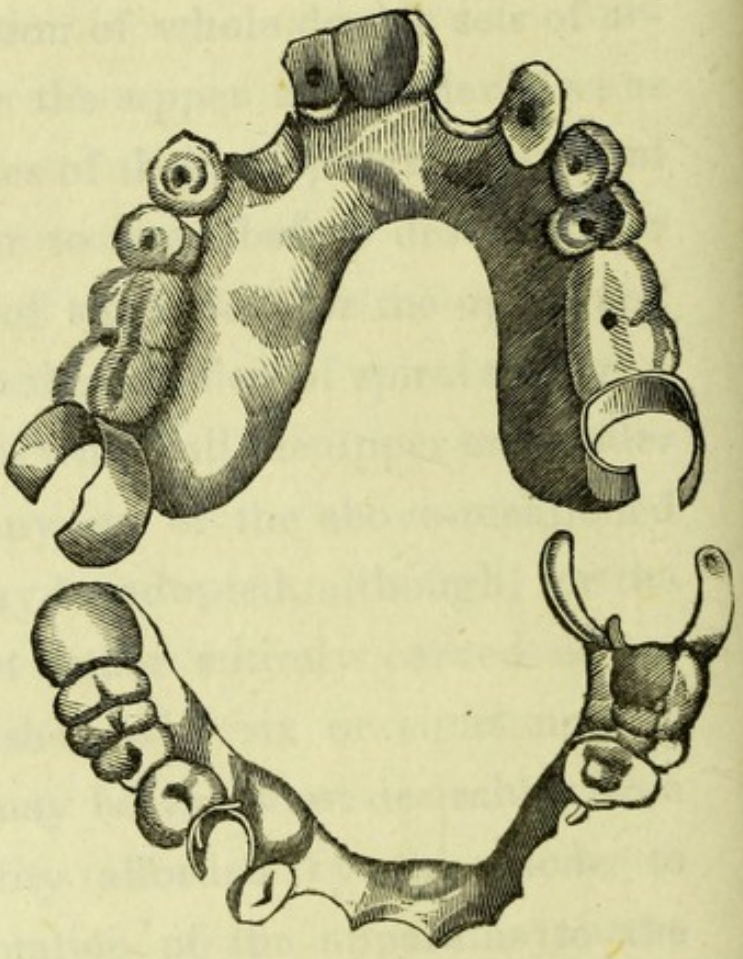

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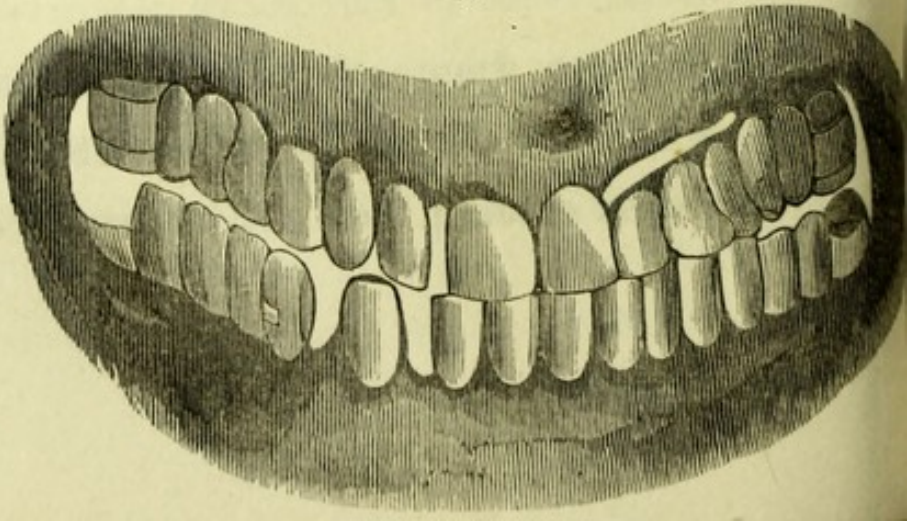

on which single human or mineral teeth may be mounted.

MODE OF PREPARATION AND ATTACHMENT.

Whole sets of artificial teeth for the upper and under jaws are prepared and inserted under a great variety of circumstances, and they require a judicious combined consideration of all those principles which I have endeavoured to establish for the preparation and insertion, as well as the attachment of separate artificial sets for the upper and under jaws.

The two pieces for the upper and under jaws, however, are principally kept in their proper situation by spiral springs, the two extremities of which are to be attached by swivels to the upper and under parts of the apparatus.

CASE XXI.

See Plate 15, *Figures* 1, 2, 3, 4, 5, *and* 6.

The Right Reverend ——, of ——, aged about 68, of delicate but tolerably good health, consulted me in 1831.

His mouth was very irritable, his gums inflamed and affected with gumboils, and his teeth, particularly those of the upper jaw, were all more or less painful, and some of them carious and loose.

For some time previous to my seeing this gentleman, he had made use of two badly constructed separate sets of teeth for the upper and under jaws, prepared of natural teeth mounted on gold plates and attached to the remaining teeth by clumsy springs; and, although the patient had not made use of them but on particular occasions only, they had produced considerable pain and disease.

My first object was to restore the whole mouth to a state of health, after which I prepared a complete double set of natural teeth, mounted on gold plates and supported by spiral springs, which was perfectly comfortable to the mouth, and gave great support to the remaining few teeth, and, what was a very important consideration also, they afforded every possible assistance in the execution of this gentleman's public duties, which were very numerous and important.

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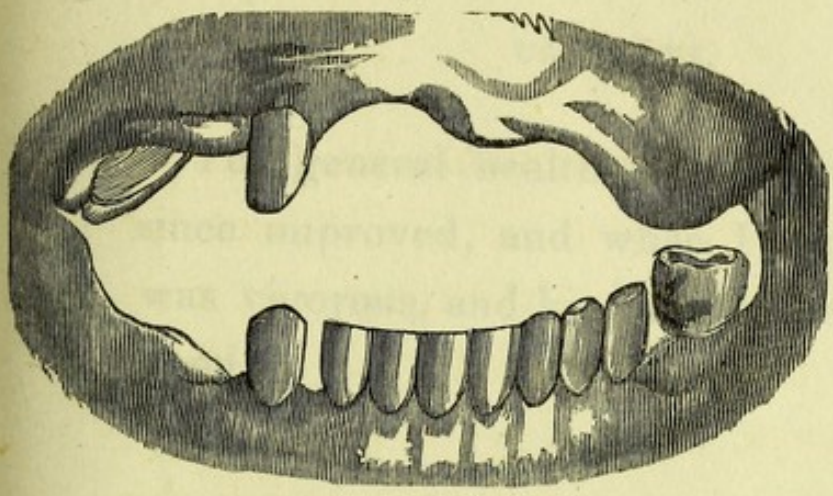

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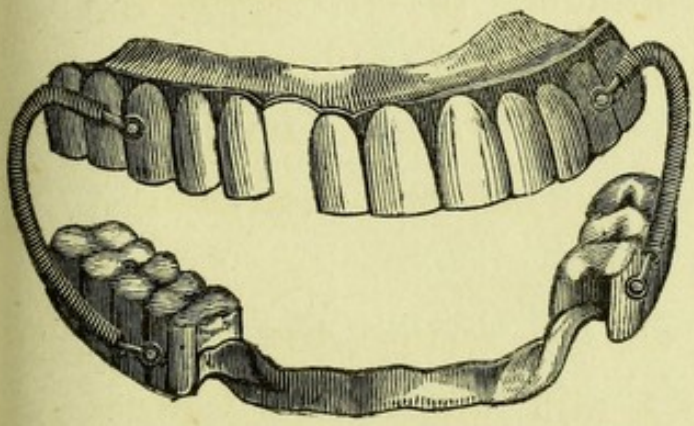

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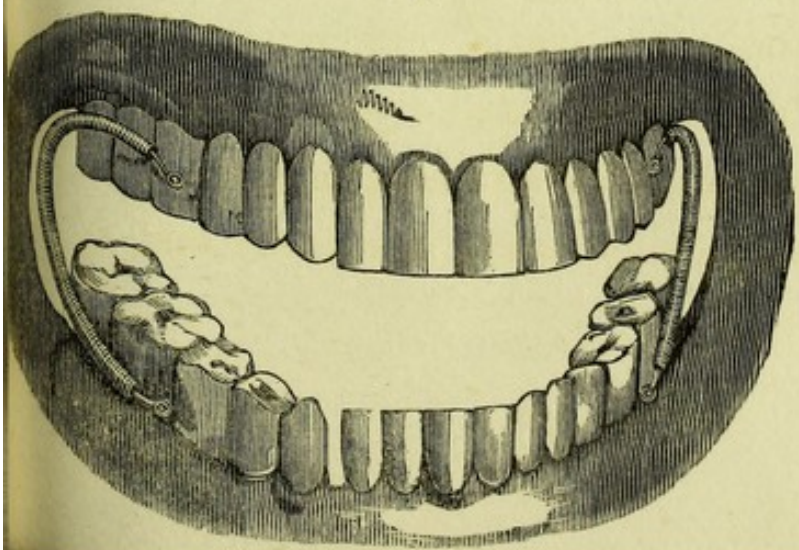
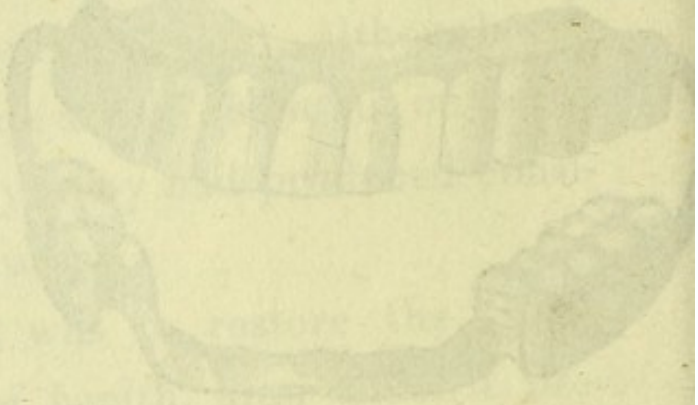
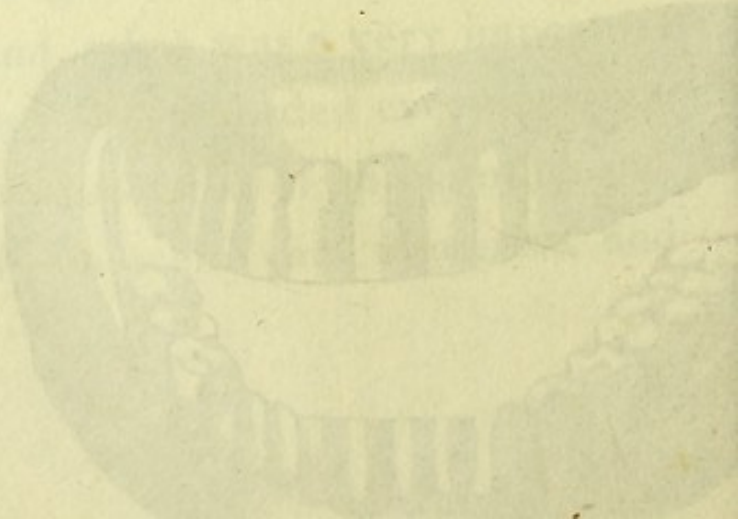






The general health of the patient has ever since improved, and when I last saw him it was vigorous, and his appearance surprisingly good.

EXPLANATION OF PLATE XV., IN ILLUSTRATION OF CASE XXI.

Fig. 1, Exhibits a front view of the whole upper and under jaws, in a state of disease, labouring under the irritation of tartar, and gumboils or abscesses of the gums.

Fig. 2, Exhibits an internal view of an upper and under set of artificial teeth very badly constructed.

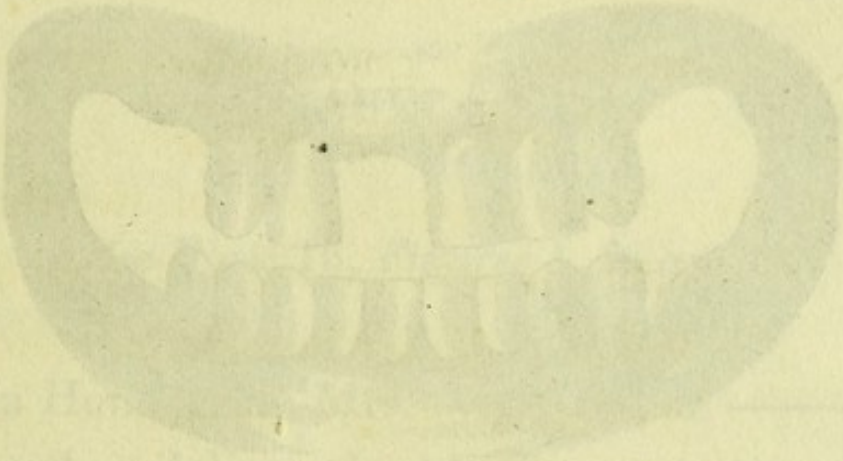
Fig. 3, Represents the above artificial teeth inserted in their intended places and fastened to the remaining teeth, by which the whole mouth was greatly irritated and the appearance but little improved.

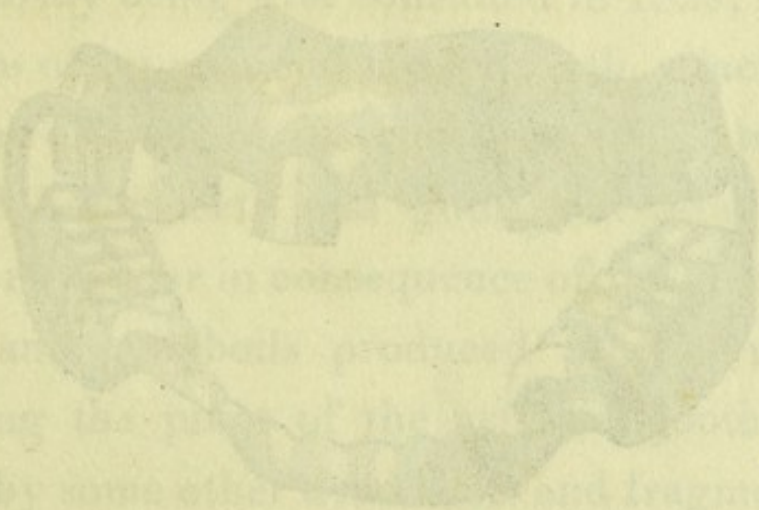
Fig. 4, Represents the same mouth in a healthy state after the removal of all the tartar, dead roots, and carious and painful teeth.

Fig. 5, Represents a front view of a whole

double set of natural teeth, prepared under the principles above stated, mounted on gold plates, and provided with spiral springs.

Fig. 6, Represents a front view of the above artificial set inserted in the mouth, and it is hardly necessary to direct the attention of the reader to a comparison of the two sets of teeth, whether on account of their adaptation, or their appearance.





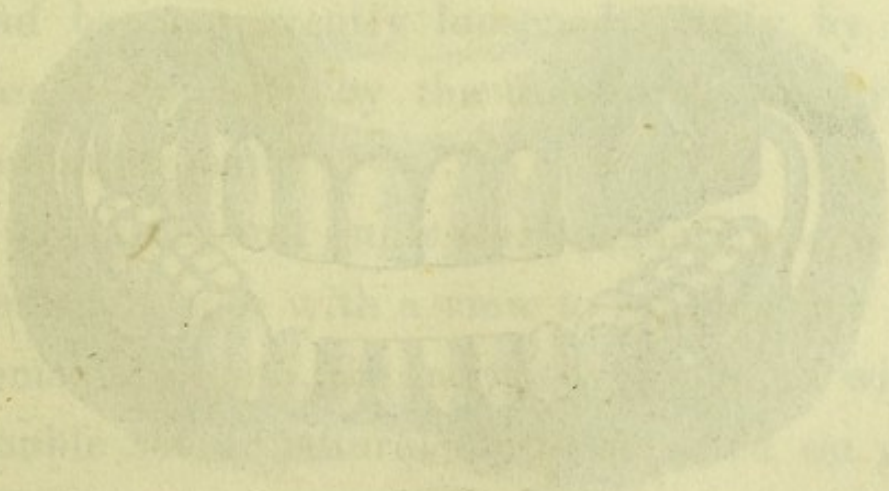


PLATE XVI.—CASE XXII.

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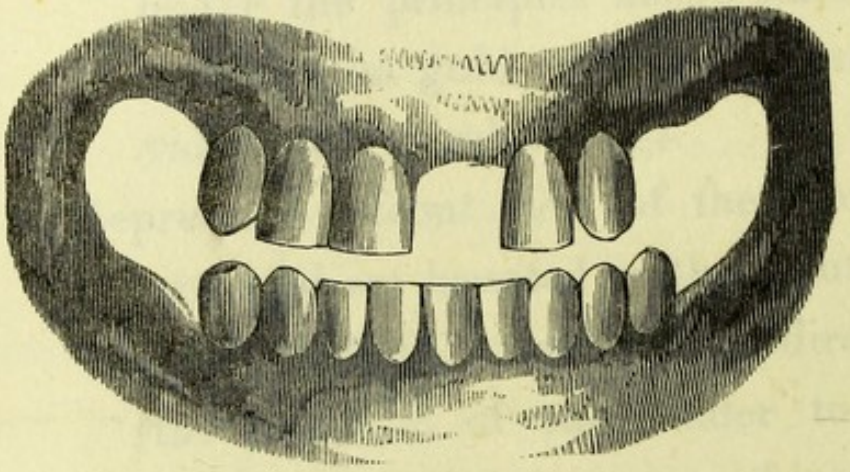

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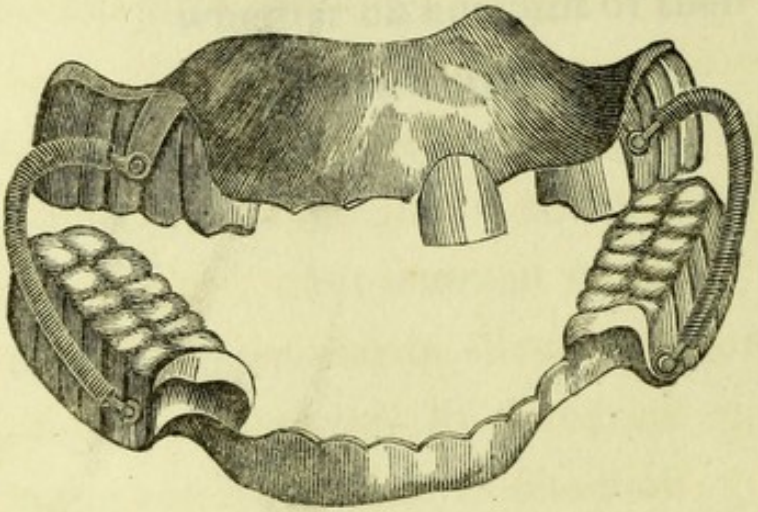

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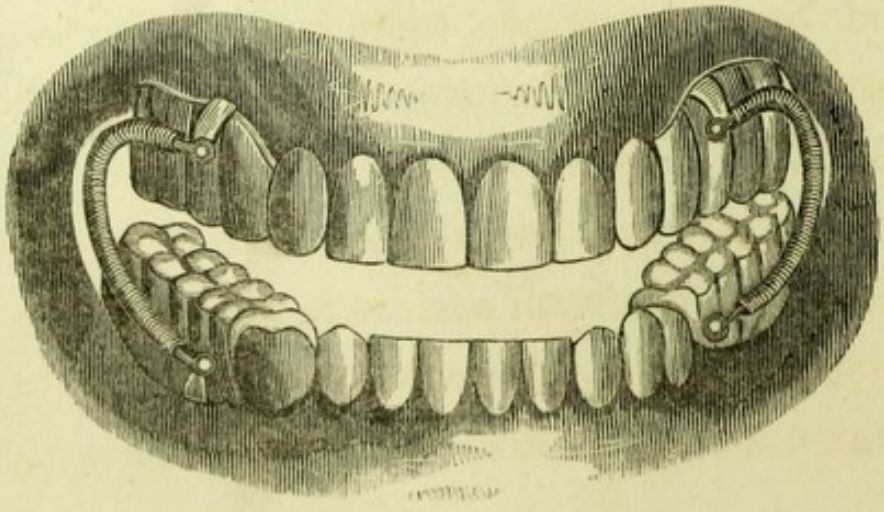


CASE XXII.

See Plate 16, *Figures* 1, 2, *and* 3.

The Honourable Mrs. ———, of ———, of rather delicate health, for some time previously to my being first consulted in 1829, had made use of an artificial incisor tooth, attached by means of a pivot inserted into the natural root. All her teeth and gums had now become very tender in consequence of the inflammation and gumboils produced by the root containing the pivot of the artificial tooth, as well as by some other dead roots and fragments of teeth; and, in addition to this, her upper teeth had become greatly loosened, partly by disease and partly by the unnatural pressure of the under teeth.

Her teeth and gums were rendered perfectly healthy; and, with a view to support her few remaining teeth, the lady was provided with a double set of natural teeth, mounted on gold

plates, supported in the mouth by two gold semicaps and spiral springs.

In 1834, the set required some trifling repair, when I found the mouth in the same state of good health, and her natural teeth are now, in 1835, more firm and useful than when the set was first constructed; her general health also continues very good.

EXPLANATION OF PLATE XVI., IN ILLUSTRATION OF CASE XXII.

Fig. 1, Represents a front view of the upper and under jaws, and gums, after having been restored to a healthy state, with five upper and nine under teeth remaining.

Fig. 2, Represents a front view of an upper and under set, prepared of natural and sea-horse teeth, mounted on gold plates, provided with two gold semicaps, and supported by spiral springs.

Fig. 3, Represents a front view of the artificial teeth in their intended situation in the perfectly healthy mouth.

CHAPTER IX.

ON PIVOTED TEETH, OR THE INGRAFTING OF ARTIFICIAL TEETH UPON THE ROOTS OR FANGS OF THE NATURAL TEETH.

This mode of inserting artificial teeth has been adopted and sanctioned by custom from time immemorial; and although, at a superficial view, it might, from the great simplicity and the natural appearance it produces, be considered a very excellent process for restoring lost teeth by art, it will be found on deliberate and judicious consideration to be by no means well founded on good pathological and surgical principles, and, on this account, I have deemed it proper to devote a separate chapter to its special consideration.

In referring to that kind of works on Dental Surgery, which have been written more for the interest of the authors than for the benefit of the

public or the promotion of science, and even to all others which treat on the mechanical part of Dental Surgery, which I have had an opportunity to peruse, none of the authors offer any objection to this kind of artificial teeth, but, on the contrary, they all consider it either a useful or desirable, or even an excellent mechanical means of restoring lost teeth.

Mr. Fox, in his "Natural History and Diseases of the Human Teeth," Part II., p. 139, in referring to a tooth inserted in this manner, says, "It may continue for many years without occasioning any trouble or requiring any repair. In this mode, several teeth belonging to the same person may be replaced, which cannot be discerned upon the most minute inspection." And the view of this celebrated Dental Surgeon may be considered the opinion generally entertained, not only by practical Dentists, but also by the public at large.

For my part, however, I cannot help differing from the extravagant opinion of this operation so long and so universally received, as I consider this method of inserting artificial teeth as one which requires great caution, and is fre-

quently highly objectionable, from its being always attended with more or less irritation, which is sometimes of a dangerous and even fatal nature; I will not, however, deny that it has frequently met with considerable success, and has not been followed by much inconvenience, but that such artificial teeth have, as Fox states, been used for many years without requiring much repair.

I have, in my own practice, applied these teeth, and, by proper caution, with a favourable result, so that I have found them in a good condition even after a period of many years.

Artificial teeth of this kind are generally used after the crowns of teeth have been so destroyed by caries as to leave little more than the roots in the sockets, and are mechanically inserted in the following manner.

All the irregular and carious remains of the crown of the tooth are filed away close to the gum; the natural cavity or canal of the fang is then prepared to receive the pivot by passing a small drill into the cavity, and drilling it into a round hole.

The crown of a human or mineral tooth, resembling the one lost, is then made to fit to the fang; a pivot, somewhat shorter than the cavity in the root, is introduced into it, and the artificial tooth inserted by means of the pivot upon the root, where it is then properly fastened.

Having given a concise description of the mechanical process of this operation, it remains for me to place before the reader its very important consideration in a pathological and surgical view, and to point out its effects upon the parts involved in the operation as well as upon the constitution. First, with respect to the dead roots, I have extensively treated on their morbid effects in my "Principles of Dental Surgery," p. 254, to which I beg to refer the reader for the consideration of that subject, and I shall here only remark that, by the insertion of artificial teeth in this manner, all the morbid effects of such roots must naturally be augmented and aggravated.

Again, for the insertion of pivoted teeth, one or more roots, or fangs, after having lost their vitality, in consequence of disease or the application of artificial means, are preserved in a

dead state with a view to make a mechanical use of them. By the preparation of the fang and by the attachment of the artificial tooth, every morbid irritation of the dead fang upon the living surrounding parts is excited and rendered generally more extensive and more permanent than if they are left alone to the influence of nature.

Moreover, by the insertion of the pivot into the canal of the root, the natural curative process, in the decomposition and absorption of the fang, is either prevented or retarded; while, on the other hand, the most convenient outlet for a constant and regular discharge of the matter, which is always produced by the carious root in the surrounding soft parts, is obstructed; the matter, thus confined by this artificial obstruction at the point of the root, penetrates through the sockets and gums, and forms gumboils, or small fistulous abscesses, in the neighbourhood of the root. This inflammation of the gums and caries of the sockets much more frequently occurs after this treatment, than when these structures are left under the exclusive influence of disease.

In many instances, and more especially where only one or two teeth have been inserted in this manner, the morbid symptoms remain in a chronic state for many years, and the patient experiences apparently very little or no inconvenience; in others, even after the insertion of a single tooth, the symptoms become more acute, and extensive and painful swellings of the face and jaws are produced, sometimes accompanied by great disturbance of the constitution.

Where a greater number of teeth are inserted with pivots, the symptoms are generally immediately aggravated, the gums become spongy and painful, and the sockets morbidly softened, the periosteum thickened and relaxed, the jaws are affected with chronic pains, so that the whole mouth becomes more or less affected, and these local affections are followed by a train of general symptoms of various descriptions, especially in weak and irritable constitutions; and it is impossible to say to what extent the mischief may proceed if the fangs are not removed, which, although it almost invariably produces a perfect cure of the local

diseases, is too often delayed till the patient has experienced all the evil effects above stated.

Several cases have already been related, strikingly illustrative of the danger connected with the insertion of these teeth, in my "Principles of Dental Surgery," of which Cases IV. and V. are the most important. The first of these is that of a lady in Germany who suffered a most deplorable death in consequence of the application of one tooth of this kind; and the other that of an American lady, whose face was greatly disfigured by the insertion of one pivoted incisor tooth. But the Cases XXIII. and XXIV., related at the conclusion of this chapter, selected from a considerable number which I have had an opportunity of observing during my practice, are equally illustrative of the pernicious effects following the insertion of pivoted teeth, without the direction of the necessary pathological and surgical judgment. To these I wish to direct the particular attention of the reader.

ON THE SURGICAL AND MECHANICAL PRINCIPLES FOR THE INSERTION OF PIVOTED TEETH.

From the preceding statement and facts it seems to be sufficiently evident, that although the application and use of pivoted artificial teeth is not always accompanied with real inconvenience and danger, but frequently even with considerable success, that this success is at least very uncertain, and that moreover, in some instances, their injurious tendency is very great, and destructive to health and even life. It would, therefore, be best to abandon the operation entirely in dental surgery if it were possible, but such are its mechanical advantages and its immediate apparent good effects, that it would be most difficult in many instances to dissuade the profession or the public from the adoption of an operation which has been so long sanctioned by custom and even lauded for its immediate success, while its ultimate dangerous and injurious effects have remained unobserved, and have been almost invariably ascribed to perfectly erroneous causes; I shall, therefore, content myself with attempting the ame-

lioration of a treatment, the perfect avoidance of which seems not to be obtainable; and with this hope I shall now state those principles which I have adopted for the insertion of this kind of artificial teeth during my own practice, and by which I have invariably obviated every injurious consequence.

In the choice of this operation, the dentist should always be mindful of the fact, that though health is often strong and nature often kind enough to bear abuses, that there is also a certain extent as well as duration of this kindness of nature which cannot be overstept without producing dangerous consequences, and if circumstances oblige him to profit by nature's health and strength, he should at least take care not to abuse its powers. The principles which have guided me, I hope, will be found to be in perfect unison with the above reasoning.

ON THE INDICATIONS.

The indications for pivoted teeth, or rather the circumstances which may be deemed as

admitting of their insertion, as well as the indications for their rejection, should always be the objects of deliberate consideration previously to their application.

It should always be viewed as a very improper practice to apply these teeth indiscriminately in all cases in which the appearance of the remaining fang of a tooth seemed to be favourable to this practice, and in order to proceed with some degree of safety, the following points should receive the most deliberate attention before the adoption of this treatment.

First.—Which of the human teeth are, and which are not properly calculated from their situation and the formation of their roots to receive such artificial pivoted teeth.

Secondly.—To what extent this treatment may be judiciously carried, or how many teeth may be inserted with safety in the same mouth.

Thirdly.—Under what circumstances the application of such teeth may be admitted, and under what it should be properly rejected.

With respect to these points I must give it as my decided opinion: First.—That neither the situation nor the form of any teeth of the

under jaw, nor any of the molar teeth of the upper jaw, warrant the insertion of this kind of artificial teeth, and that I have, therefore, made it an invariable rule to apply them exclusively for the restoration of the upper incisor and canine teeth, in which cases only they are properly indicated.

Secondly.—That having very frequently seen considerable injury and danger accompany and follow this operation in those instances in which a considerable number of pivoted teeth had been inserted in the same mouth, I have made it a principle never to exceed the use of three teeth of this kind for the same individual, and have rather advised the extraction of the roots and the insertion of other artificial teeth where any number exceeding the above was requisite.

Thirdly.—That I consider it particularly necessary to take the state of health of the mouth and of the constitution into very deliberate consideration previously to the application of such teeth.

In cases of delicate, irritable, nervous, and inflammatory constitutions, or such instances in which the teeth and gums are much diseased,

I have always deemed this operation counter-indicated, and have, in preference, recommended the removal of the roots which were to receive the artificial teeth, and the adoption of small sets of teeth inserted under the principles previously described.

Only in healthy and robust constitutions, which are free from general inflammatory predisposition, and in which the teeth and gums are generally good, and free from extensive disease, have I deemed this treatment admissible and capable of being followed by that degree of success on which its reputation should be founded, at the same time without endangering the health of the patient or the reputation of the dentist.

ON THE MATERIALS.

The materials for pivoted teeth are natural human teeth, and those of a mineral, or terro-metallic composition. Some dentists apply the sea horse and sea cow teeth, but these materials are always more or less objectionable, as they

are far less durable, useful, and natural in their appearance, than the above materials.

The pivots should be made only of fine gold or platina; every other metal, such as brass, copper, silver, and even inferior gold are highly objectionable, being more or less liable to corrode, and thus become injurious to the other teeth, and the general health.

There is, however, a practice adopted by some dentists which is still more improper, namely, the use of pivots made of wood; these pivots after insertion considerably expand from the moisture of the mouth, and consequently remain perfectly firm in the roots for several years, which deceives not only the patient but the dentist also, and induces them to consider the case very successful, until they at last find that the root is either split by the great swelling of the pivot, or nearly destroyed by the rapid decay of the wood in the cavity, which by its chemical and mechanical irritation is very apt to produce very serious inflammation, and other affections of the gums and sockets, and, not the least objection, the disagreeable breath, which must be an unavoidable concomitant of this practice.

ON THE SURGICAL AND MECHANICAL PREPARATION OF THE NATURAL ROOT AND OF THE PIVOTED TOOTH FOR ITS INSERTION.

As regards the treatment of the whole mouth previously to the insertion of pivoted teeth, the surgical principles should be the same as have been already stated in a former part of this essay for every other kind of artificial teeth, and it remains only for me to make some observations on the surgical and mechanical principles for the best performance of the operation itself.

In preparing the natural root for the reception of the pivot, every unnecessary irritation should be avoided, and no violent means should be used to remove the remaining irregularities from the root by means of pincers; but they should be removed with a file of a half-round form, and of such a size as is calculated to give the fang the proper form; the cut of the file should be neither very fine nor very coarse. The natural cavity of the root should be carefully and gradually enlarged with drills of

different sizes, and of such forms as to render it equally wide throughout.

In the preparation of the artificial tooth, particular care should be taken to make it fit exactly to the root, and to give it such a form and direction as will prevent every pressure upon the natural teeth on both sides, as well as any contact, and, more especially, any striking of the opposite teeth upon the artificial tooth, as the irritation thereby produced cannot be sustained by the root without painful and destructive consequences.

The best mode of fastening pivoted teeth is that which produces the least irritation, and particular attention to this part of the operation is of great importance.

To attain the most extensive success and most desirable advantages in this kind of artificial teeth, every acute inflammation or swelling in the gums and sockets belonging to the fangs prepared for their reception should be prevented; with this view, I have always endeavoured to make the cavity of the root form an outlet for the matter, as well as a cavity to receive the pivot of the artificial tooth, so as

not to obstruct the natural mode of its discharge. This point will be best obtained by a particular attention to the following rules, which I have adopted for many years.

1st, After a careful preparation of the extremity of the fang and the cavity for the reception of the pivot, as well as a perfect adaptation of the artificial tooth, I have delayed its insertion for two or three days, in order to allow the root to recover from the unavoidable irritation produced by the filing and drilling; and to excite the discharge through the root, I have requested the patient to keep a small lock of cotton in the cavity, which generally produced the desired effect.

2ndly, I have made it an invariable rule to insert the tooth in such a manner, that the patient should be capable, after receiving the necessary instruction, to remove it and replace it at pleasure; for this purpose, I have found it best and most effectual to wind a little cotton round the pivot, which should be filed somewhat rough previous to its insertion into the fang.

3rdly, The artificial tooth should be inserted

without any violence, and only sufficiently firm to prevent it from moving. It should be removed every fortnight by the patient in order to clean the cavity of the root and the artificial tooth from all foreign matter; and to change the cotton, which having been carefully done, the artificial tooth should be immediately replaced. Should, however, the operation be followed by any untoward symptoms, such as might be deemed a foreboding of inflammation, or by swelling of the gums or face, the patient should be requested to remove the artificial tooth immediately, and to excite the discharge of any matter that may have been formed through the cavity of the root, by keeping that canal perfectly clean, and by frequently washing the mouth with a mixture, composed of one part of tincture of myrrh and three or four of warm water; and the artificial teeth should not be replaced until the gums and sockets have perfectly recovered from the inflammation.

The use of pivoted artificial teeth should not be persisted in when the roots which receive them become loose, or the gums become consi-

derably inflamed and swelled, and dark and morbid in appearance, which evinces a carious state of the sockets; but they should be immediately extracted, and, after a perfect restoration of health to those parts, they should be replaced by artificial teeth, mounted on gold plates, and fastened with springs, such as have been already described.

By a strict adherence to the above principles, I have always succeeded in preventing every injurious effect, and I have no hesitation in asserting that, in all cases which have been followed by injurious and fatal consequences, such as have been stated in various parts of this essay, the result can only be ascribed to the culpable omission of proper surgical principles, and the employment of some positively violent and destructive modes of treatment; modes which, I regret to state, are not so uncommon as their absurdity and impropriety might induce us to believe; and I cannot conclude without naming a few of the most injurious kinds, namely, the use of a bow and drill, or gimblet, for the preparation of the hole in the root to receive the pivot, which practice,

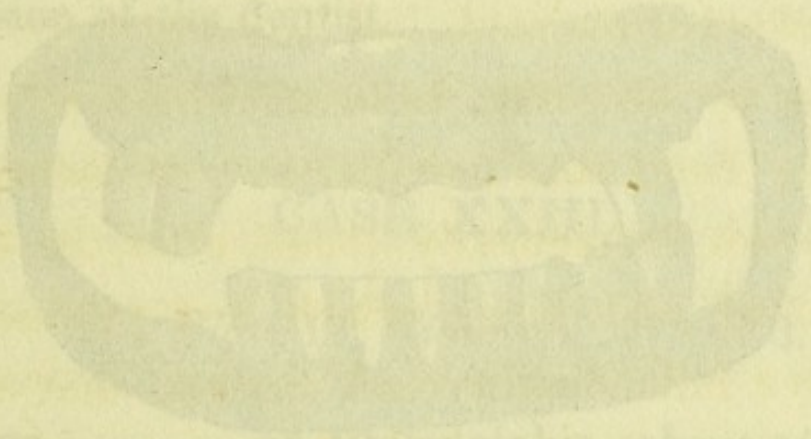
from the violent and rapid manner this apparatus cuts into the root, must inevitably produce great pain and inflammation in the periosteum and sockets of the root.

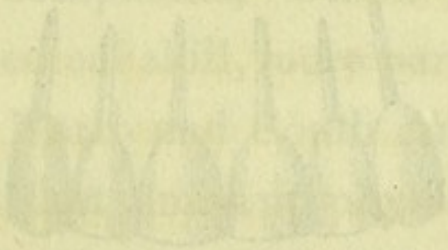
These are, however, the least injurious effects resulting from such injudicious proceedings; I have not unfrequently found, after the extraction of such fangs, which had produced extensive inflammation and abscess, that the drill had passed through the lateral part of the fang, and penetrated the bony structure of the socket, and sometimes I have found the root split into two pieces.

In one instance, I extracted with the carious root a part of the steel drill, which had been broken when applied for this purpose, and left for years to produce painful inflammations and suppurations in the gums and sockets.

Another mode more culpable and more injurious is that of inserting the pivot with great force, even to the making use of a hammer to fasten the artificial tooth.

The inevitable consequences of the above improper modes of treatment are too evident to the dental pathologist to require any comment;





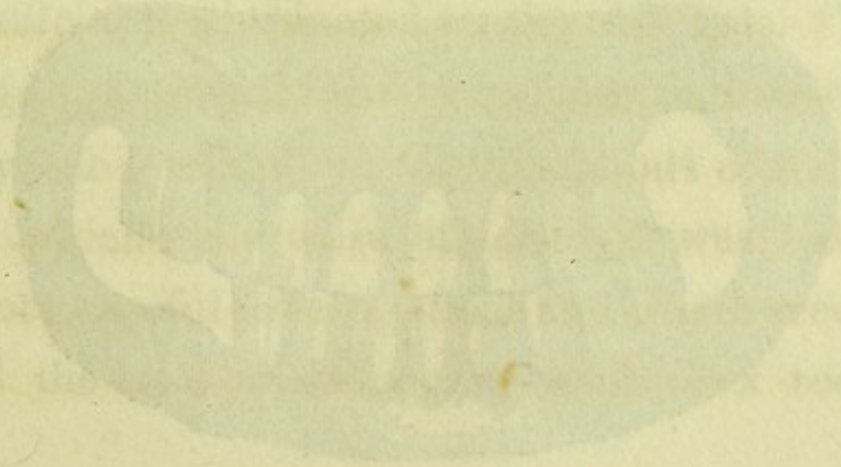


PLATE XVII.—CASE XXIII.

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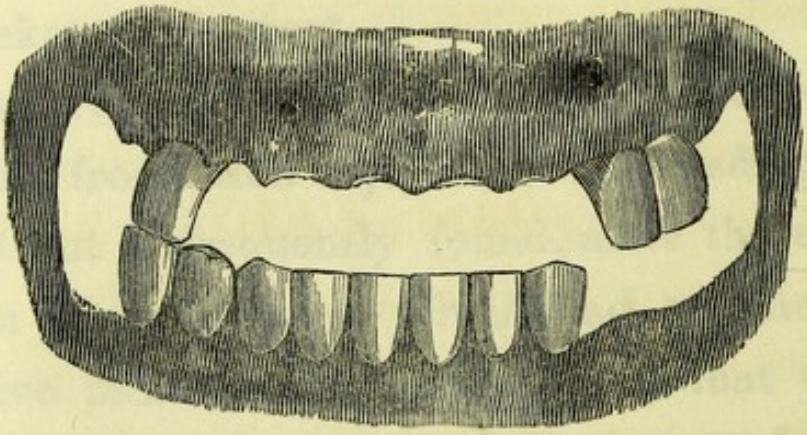

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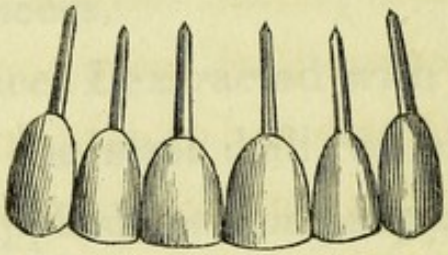

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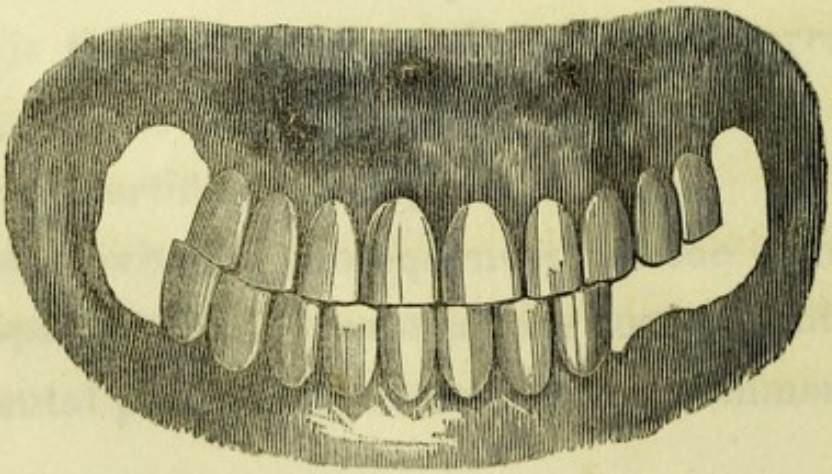


while of the ignorant operators who adopt them, we can only express our deep regret that they should so frequently disgrace the profession of the dentist.

CASE XXIII.

See Plate 17, *Figures* 1, 2, *and* 3.

Mrs. ———, of Philadelphia, about 40 years of age, under the medical care of Dr. Chapman, for a train of those nervous, rheumatic, and dyspeptic complaints, which so frequently baffle all medical skill, more particularly in the climates of North and South America, was requested by that eminent physician to consult me respecting her teeth in 1820.

By examination I found that she had the four upper incisors and two cuspid restored by artificial teeth pivoted on the old roots. Finding the artificial teeth to be loose, and observing several gumboils about the points of the roots to which they were attached, I was led to a more careful investigation, and discovered that all the sockets belonging to the six roots in

which the pivots were introduced were perfectly carious, entirely detached from the jaw, and, together with the artificial teeth and dead roots, were only held in their places by the gums. Having lost the greater part of the grinders, the lady could not prevent the contact of the artificial teeth with those of the lower jaw during speaking and mastication, and the constant motion thereby produced kept up a permanent irritation, which could not fail, in combination with the very diseased state of the mouth, to produce the most distressing local and general symptoms. I, of course, advised the immediate removal of these roots, but unfortunately the lady was in that nervous and irritable state of mind and body, that all the combined persuasion of her physician and myself could not induce her to allow me to remove these roots, and she continued the use of her artificial teeth for some years longer, submitting at the same time to the continuance of her great local and general sufferings, which must have necessarily continued until either these causes were removed, or death relieved her from her sufferings.

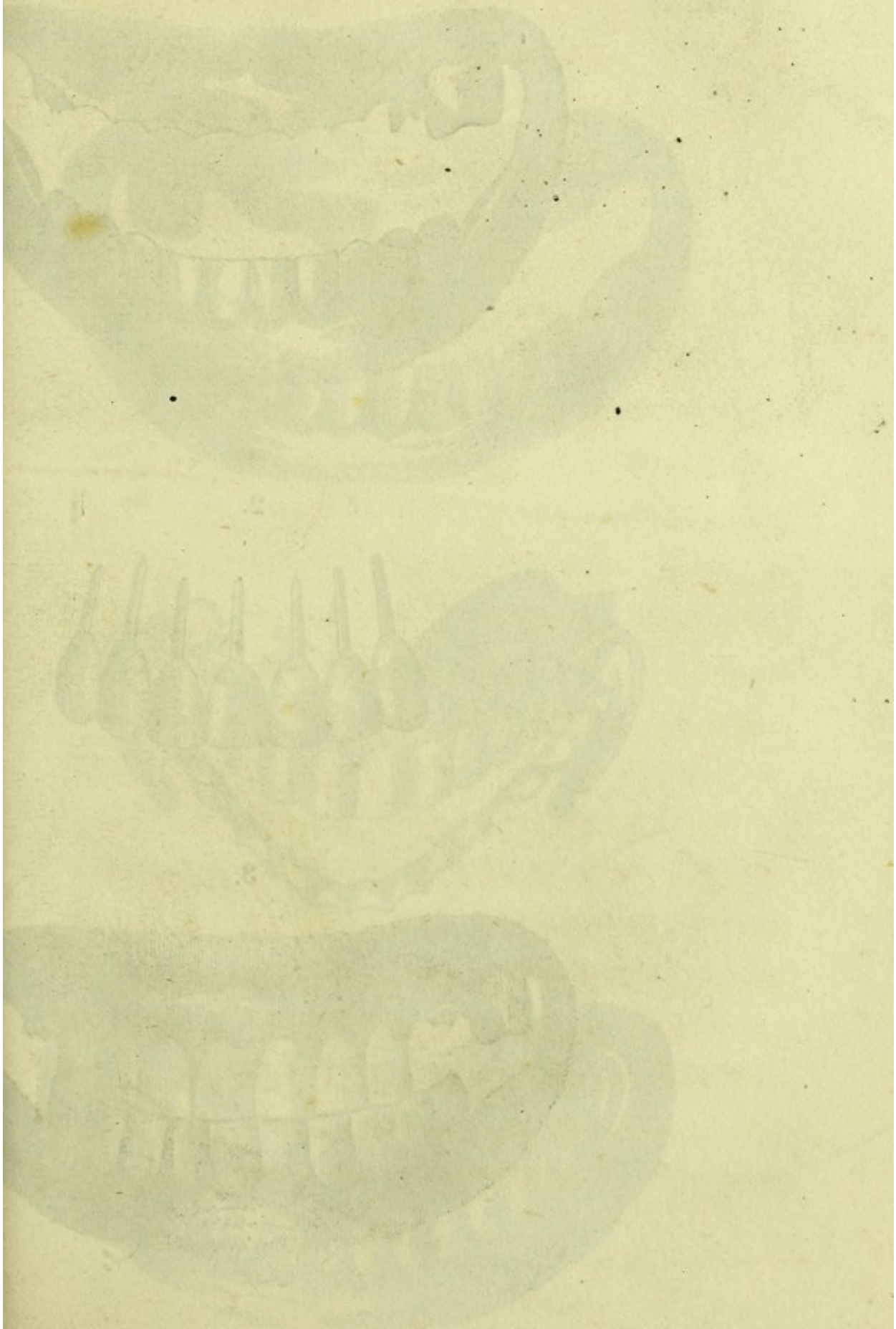
EXPLANATION OF PLATE XVII., IN ILLUSTRATION OF CASE XXIII.

Fig. 1, Represents the mouth without the artificial teeth, shewing a line of gumboils occasioned by the irritation of the dead and carious roots, and the consequent inflammation and suppuration in the gums.

Fig. 2, Represents six pivoted teeth, four incisor and two cuspid, to be inserted in the mouth above referred to.

Fig. 3, Represents the same mouth with the artificial teeth inserted, and the increased inflammation and suppuration of the gums, as shewn by the greater number and severity of the gumboils, in consequence of the mechanical pressure produced by the under teeth upon the artificial teeth, and which occasioned the consequent separation of the whole

circle of the alveolar process, as well as the very extensive inflammation, and mortification, through the whole circle of the upper gum.



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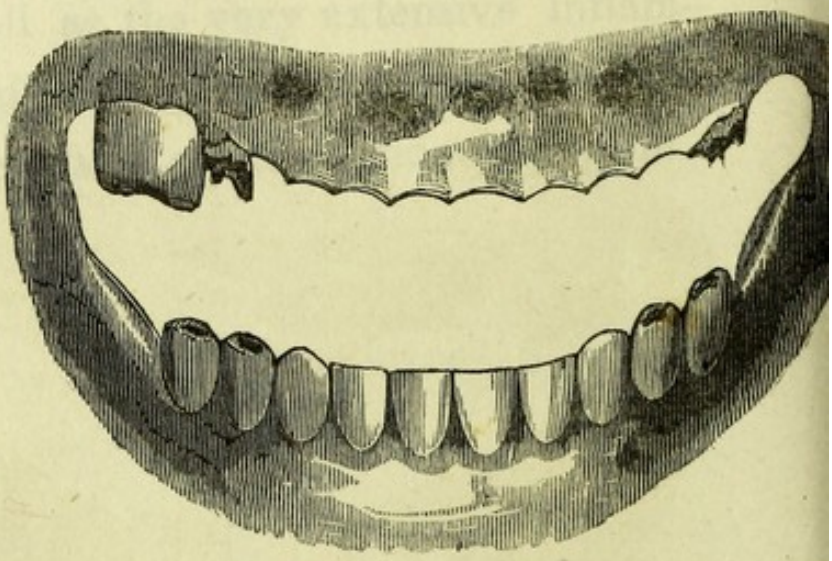

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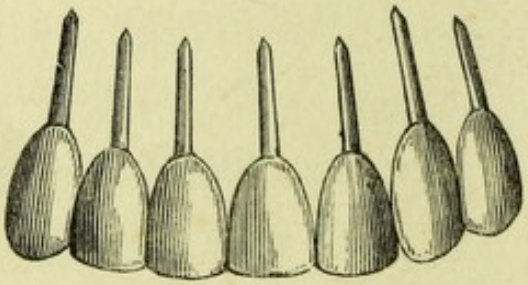

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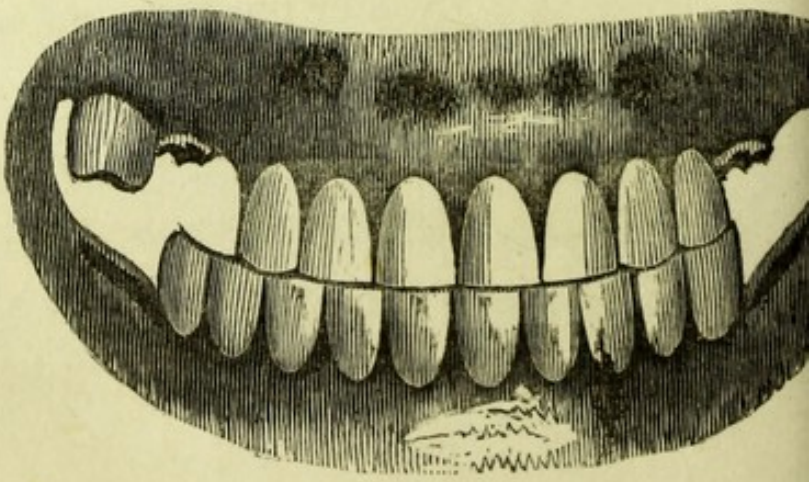

CASE XXIV.

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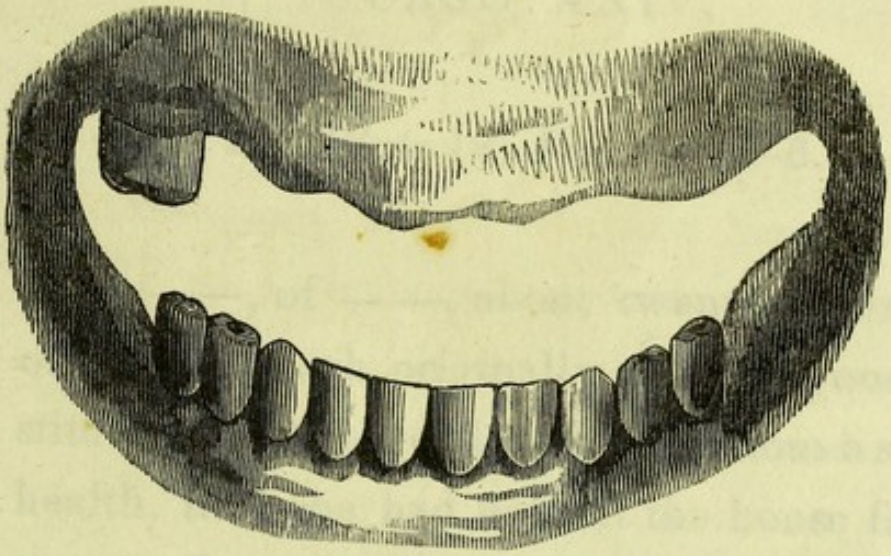

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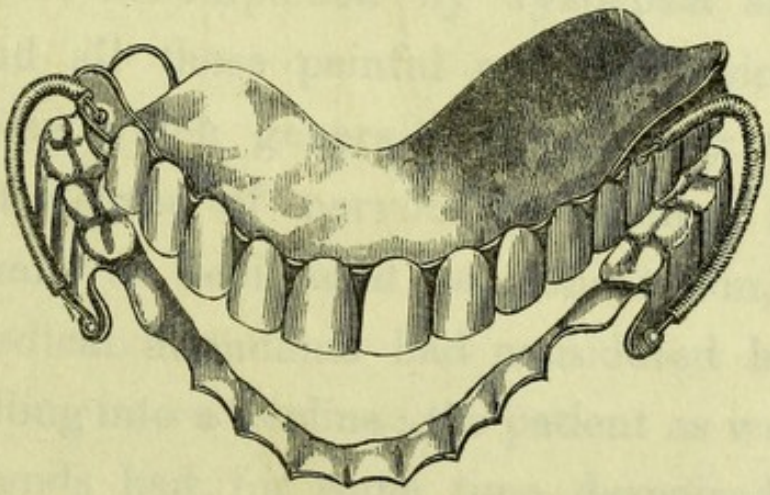

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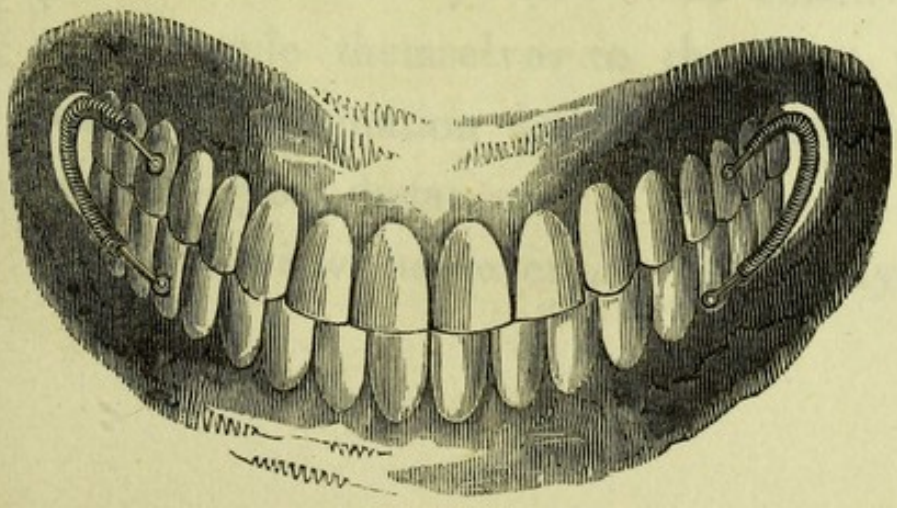
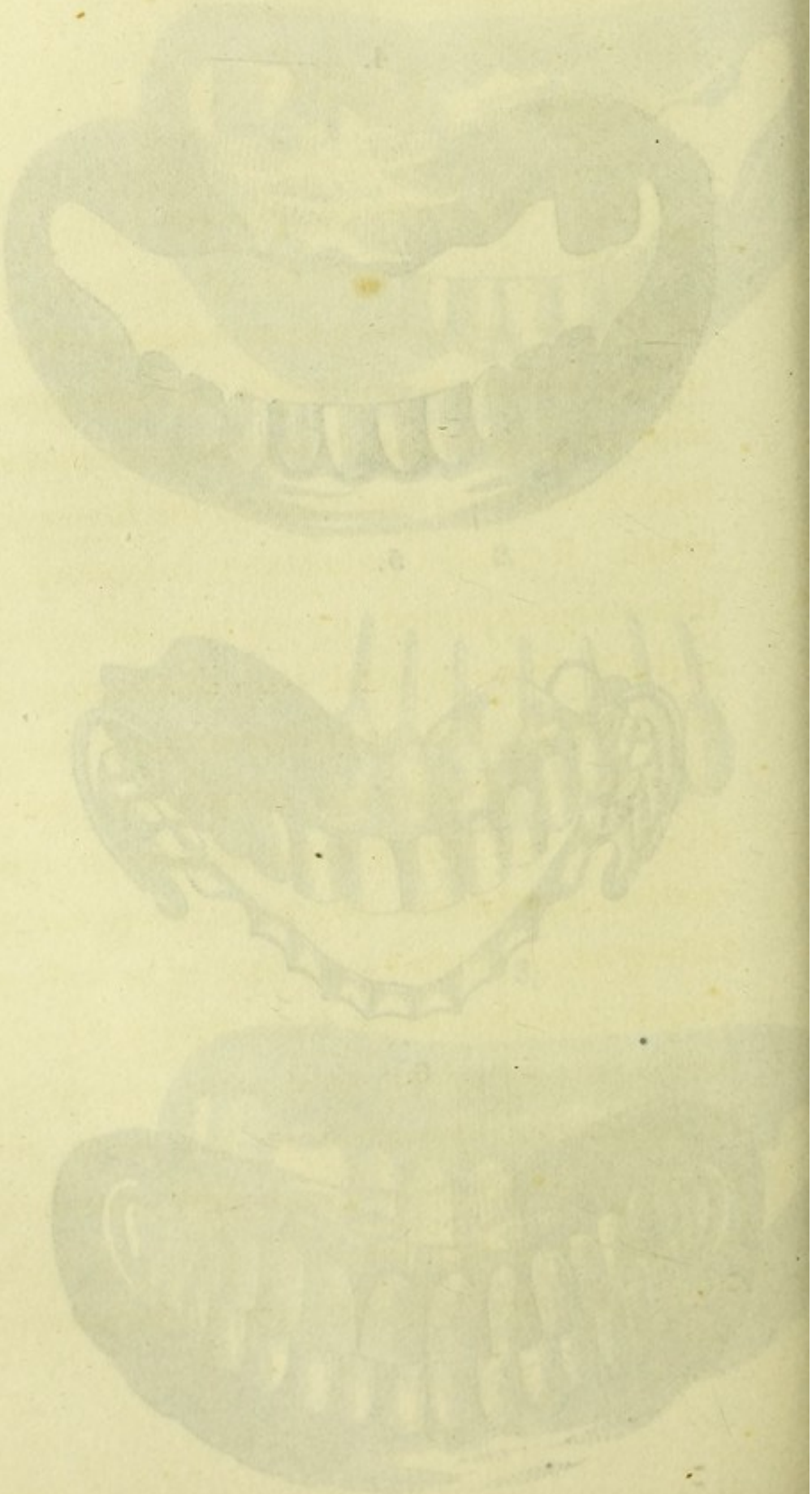




CASE XXIV.

See Plate 18, *Figures* 1—6.

Miss ——, of ——, about twenty-eight years of age, although originally of very good constitution, was reduced to so precarious a state of health, that she had not left the house for two years. Repeated pulmonary affections, sometimes accompanied by dyspepsia and fever, and all those painful and distressing symptoms which generally accompany the highest degree of nervous irritability, had gradually so debilitated her constitution, that her medical attendants had considered her to be falling into a decline; the patient as well as her friends had, for some time, despaired of any permanent recovery, and were endeavouring to reconcile themselves to the most painful result, a termination which they considered to be at no great distance.

To this view, however, one of her physicians

decidedly objected, for, being a staunch adherent to my theory of the great influence of diseased teeth upon the constitution, he suspected that her general health might be greatly suffering from the diseased state of her mouth; and that, by a proper treatment of these local diseases, great progress would be obtained towards her constitutional recovery; he, therefore, requested that I should be consulted.

I visited the patient at her own house, in company with her physician, and I was happy to corroborate the opinion of that gentleman. The lady had suffered principally from the irritation produced by the violent and unskilful insertion of seven artificial teeth with pivots upon the roots of the four upper incisors, two cuspid and one bicuspid teeth, and was still labouring under the injurious consequences of the operation, as well as the irritation produced by the dead roots and artificial teeth. I proposed, as the most important remedy, the removal of all the fangs on which the artificial teeth were fastened, as well as a few more diseased teeth and stumps which had also been very improperly permitted to remain.

January 20th, 1828, a few days after my first visit, the lady gladly acceded to my proposition, and nine carious teeth and roots were immediately removed.

February 29th, Visiting the lady again at her own house, I found her general health greatly improved, and her mouth in a sufficiently healthy state for the scaling of her remaining teeth.

March 21st, The health of the patient had now so much improved that she was able to ride a considerable distance to town, and submit to some further operations for the preservation of her remaining teeth.

April 12th, Some of her teeth were rendered sound by filing and stopping some carious places with gold.

April 26th, One tooth was rendered sound by stopping a carious cavity with gold. Her whole mouth was now in a perfectly healthy state, and the impression for a set of artificial teeth was taken at the same time. Her general health was much more improved.

May 15th, The patient was provided with a whole set of artificial teeth, which restored her

powers of mastication and her original healthy and beautiful appearance. The lady has since uninterruptedly enjoyed very good health, has married, and become the mother of beautiful and healthy children.

EXPLANATION OF PLATE XVIII., IN ILLUSTRATION OF CASE XXIV.

Fig. 1, Represents the mouth of the lady after the removal of the seven pivoted teeth, shewing the only remaining tooth and two carious stumps, and the gum containing the seven roots which had been prepared for and contained the pivoted teeth. Along the front of the gums is seen the line of gumboils opposite to the dying roots, produced as well by the violent irritation accompanying their premature destruction by the cutting off of their crowns, as by the gradual decay of the remaining roots.

Fig. 2, Represents the seven pivoted teeth removed from the roots above described.

Fig. 3, Represents the pivoted teeth in their places, which, by their mechanical

irritation upon the sockets of the roots, had produced the consequent mortification and separation of a considerable part of the circle of the upper alveolar process, and the line of gumboils, or inflammation and suppuration of the gums.

Fig. 4, Represents the same mouth restored to a perfectly healthy state after the removal of all the bad teeth and roots.

Fig. 5, Represents a double set of artificial teeth mounted on gold plates and supported by spiral springs.

Fig. 6, Represents the above double set placed in the healthy mouth, shewing the great precision and accuracy with which the set is adapted to the gums and every other part with which it is placed in contact.

CHAPTER X.

ON ARTIFICIAL OBTURATORS AND PALATES.

The defects of the mouth which require restoration by means of artificial obturators and palates are either congenital, or the effects of disease, the abuse of medicines, or accident. The first are most frequently observed in cases of harelip, accompanied by more or less defect, or the entire absence of the palate, while the rest are much more variable in their form and extent, as well as in the parts on which they exert their destructive influence. In any of the above cases the art of the dentist is well supplied with various permanently useful restorative means, if that art is exercised upon proper medical and surgical principles, as well as with mechanical precision and judgment.

Artificial obturators and palates may be divided into simple and complicated; the former

are such as are applied without the addition of artificial teeth, and the latter are such preparations as require a combination of an artificial obturator or palate with artificial teeth.

In either kind, the same surgical and mechanical principles, the adoption of which I have endeavoured throughout this work to impress upon the mind of the reader, for the insertion of artificial teeth, are not only necessary to be observed in the application of these still more difficult and more important restorations, but, if possible, they should be adopted with even much more minute and rigid observance.

I have, in treating on the subject of artificial teeth, sufficiently insisted on the importance of the preservation of the natural teeth, by restoring them to perfect health, for the purpose of permanently supporting the artificial apparatus. If, therefore, the remaining natural teeth are of great importance in the insertion of artificial teeth, they are of much greater value in the application of obturators or palates, and still more in the application of those preparations in which artificial teeth and artificial obturators or palates are combined.

I must, therefore, again intreat the conscientious dentist to be mindful that the first object in the treatment of such cases should be to render perfectly healthy the parts which are to receive the intended artificial apparatus, and these are not only all the osseous and soft structures which form the surrounding edges of the cavity, but also the gums, sockets, jaw, and teeth, all which must, more or less, assist in supporting and retaining the artificial apparatus, as well as in rendering it useful and beneficial in its intended objects; namely, the improvement or restoration of pronunciation, mastication, deglutition, and the general health and comfort of the wearer.

The above general preparative principles having been properly attended to, and every part of the mouth having been restored to a perfectly healthy state, the following principles have been my guide in each individual case which has fallen under my treatment.

ON THE INDICATIONS.

In the decisions whether such preparations are requisite or not, very little difficulty seems to present itself; for in every instance in which there is a sufficient absence or defect of such parts of the mouth as are indispensably necessary either for pronunciation or elocution, mastication or deglutition, in order to restore or assist these important functions, so soon as the sufferer has arrived at the age of puberty, when the parts of the mouth are fully developed, nothing can be more desirable and more decidedly indicated than a proper artificial substitution for such a defect.

I say a proper substitution, and not such a one as, though it may, by its immediate effect, remove the mechanical inconvenience of the disease, will, at the same time, by its mechanical irritation, inevitably augment that very defect, the importance of which induces the patient to seek for an equally important remedy.

The difficulty, therefore, lies in the choice of the kind and extent of the apparatus; this must

entirely depend on the judgment of the surgeon-dentist, and cannot well be pointed out by particular rules.

It may, however, be stated, that in cases where all, or the greater part, of the teeth are preserved sound, a simple obturator or palate only is generally indicated, and in cases in which one or more important teeth have been lost, a complicated apparatus is most frequently required.

ON THE MATERIALS.

I have stated my views and opinion with regard to the materials for the construction and preparation of artificial teeth, and the same principles will equally apply to the present subject, particularly to complicated preparations; and I have only to add, that fine gold is the metal which I have found, in every case, best calculated to answer the expectations of the patient and the dentist.

But I would here particularly observe, that I deem every substance or material which is

calculated to absorb mucus, or matter, very injurious, such as sponge and gum elastic, which are the substances usually employed, both from the mechanical pressure and irritation they produce, by their increase in size from the absorption of fluid matters, upon the tender and irritable parts, as well as from their chemically corrosive and disagreeable tendency.

MODE OF PREPARATION AND ATTACHMENT.

In addition to the principles I have already laid down for the preparation and attachment of artificial teeth, and which I here must most strenuously recommend, I beg to add, that the utmost simplicity, connected with the greatest accuracy and surgical and mechanical judgment, are equally important in the construction and attachment of artificial obturators and palates.

But to obtain all the advantages, and to avoid all the disadvantages, of these artificial restorations here considered, every means of support which would produce irritation and diseased

action, which I have objected to when considering the application of artificial teeth, must be more scrupulously avoided in the application and formation of artificial obturators and palates; such as ligatures of silk or wire, injudiciously prepared clasps and springs, to which I have to add, dead roots and pivoted teeth; sponges, preparations of gum elastic, and other means which I shall more particularly describe where I shall place before the reader a small collection of obturators and palates, which have been invented and applied by various dentists; as well as a few cases of great importance and complexity, which I have had an opportunity to observe and to treat in my practice.

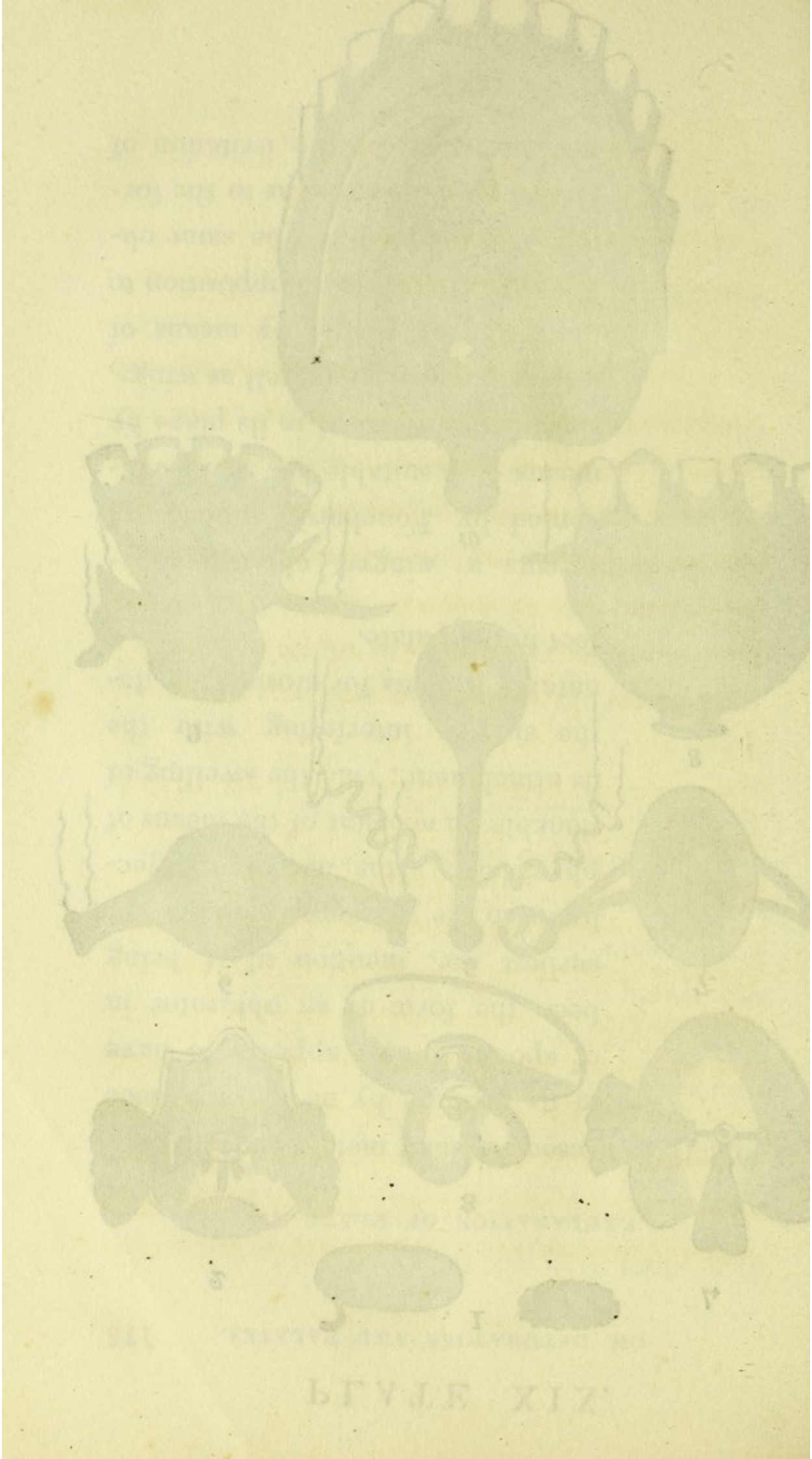
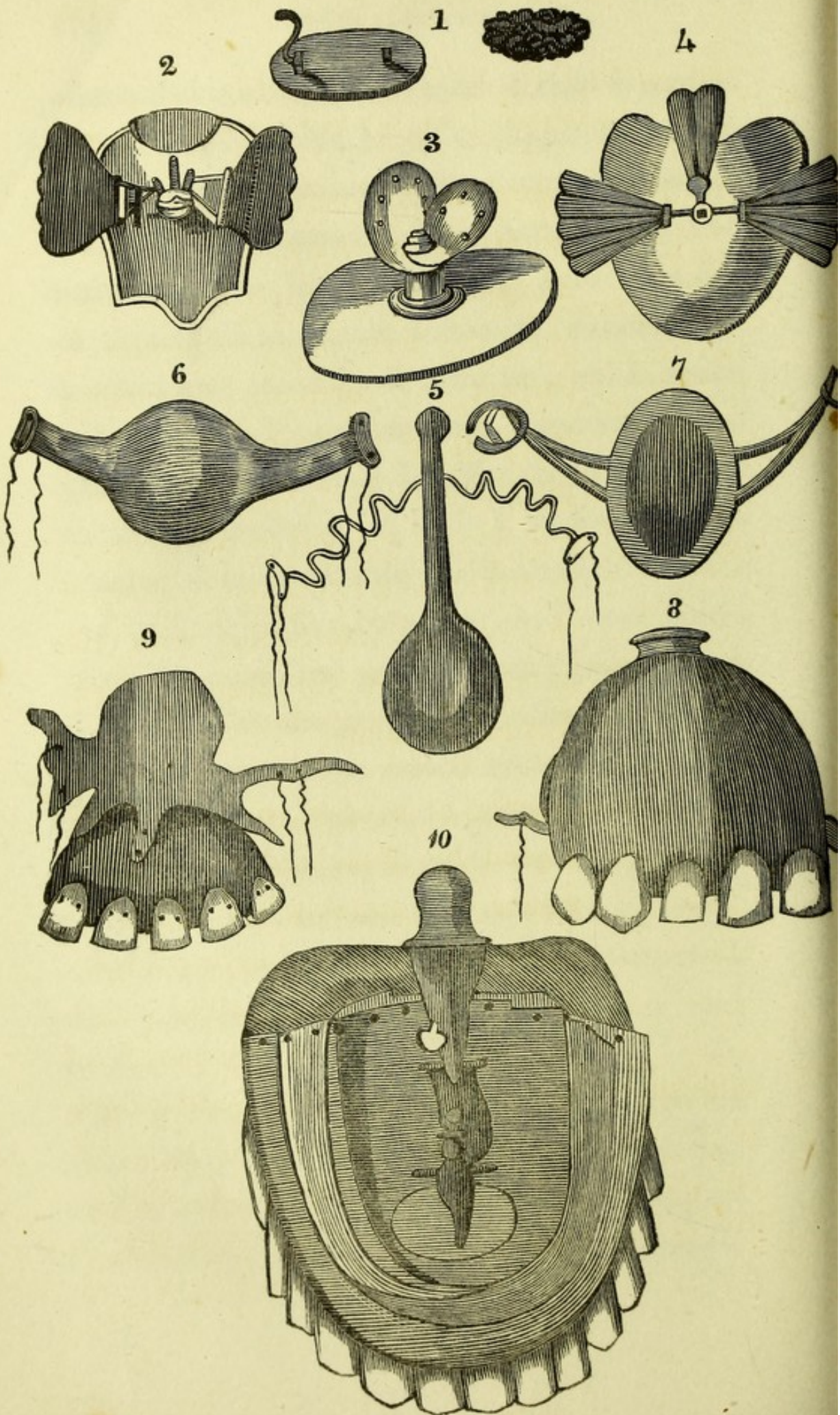


PLATE XIX.



EXPLANATION OF PLATE XIX.

Fig. 1, Represents a small metal obturator held in its position by means of a piece of sponge. This appears to have been the form of an obturator in earliest use, mention of it being found in the writings of the ancient physicians. It is, however, objectionable on account of the means of its attachment; viz., the swelling of the sponge interfering with the natural process for closing the defect in the palate.

Fig. 2, Represents a winged obturator, invented by Fouchard, applied by means of a suitable key. This instrument is retained in its place by means of a sponge as well as wings, the latter of which, by means of the key, are placed in opposition to the external plate. The same objection applies to this as to the former, increased by the irritation of

the wings on the soft parts with which they are in contact.

Fig. 3, Represents another winged obturator, invented by Fouchard: its wings turn on a pivot. To insert this apparatus, both wings are placed one above the other, and when introduced, the wings are, by means of the key, placed opposite, and thus prevent the falling out of the instrument.

This, as well as the previous instrument, is of very ingenious construction, but they must inevitably produce such irritation upon the inner surface, as well as the edges of the palate, on which the wings press, as to render them practically objectionable.

Fig. 4, Represents a complete palate obturator with the uvula, by Cadet. It is liable to the same objections as the previous winged obturators.

The uvula, however, seems ill adapted to perform the various and numerous functions of this very moveable organ.

Fig. 5, Represents the obturator inserted by M. Foucou, see Dict. des Sciences medicales. The mode of attachment of the instrument forms its chief objection. The serpentine springs, as well as the ligatures by which it is fastened to the teeth, must produce constant irritation on the parts to which they are attached.

Fig. 6, Represents an obturator in juxta-position with ligatures by Bourdet. This instrument would be deserving of recommendation were it not for its ligatures, the disadvantage of which has been sufficiently insisted upon heretofore.

Fig. 7, Represents an obturator in juxta-position, retained by elastic compressors or crotchets by Dr. Delabarre.

The instrument is an improvement upon the last, fig. 6, by the introduction of clasps or springs instead of ligatures; but I must object to the small spurs attached to the springs, which were introduced into holes made for that purpose in the teeth; for these holes form an artificial disease, and the teeth thus injured for a mechanical purpose will inevitably become carious, and be gradually destroyed.

Fig. 8, Represents the convex surface of an obturator with teeth, by M. Fouchard.

This apparatus, though in its principle not objectionable, is attended with many of the defects previously described.

Fig. 9, Represents an obturator with five teeth, by M. Fouchard, described in the Journal de Med., v. 50, p. 386.

The same remarks apply to this instrument as to the former.

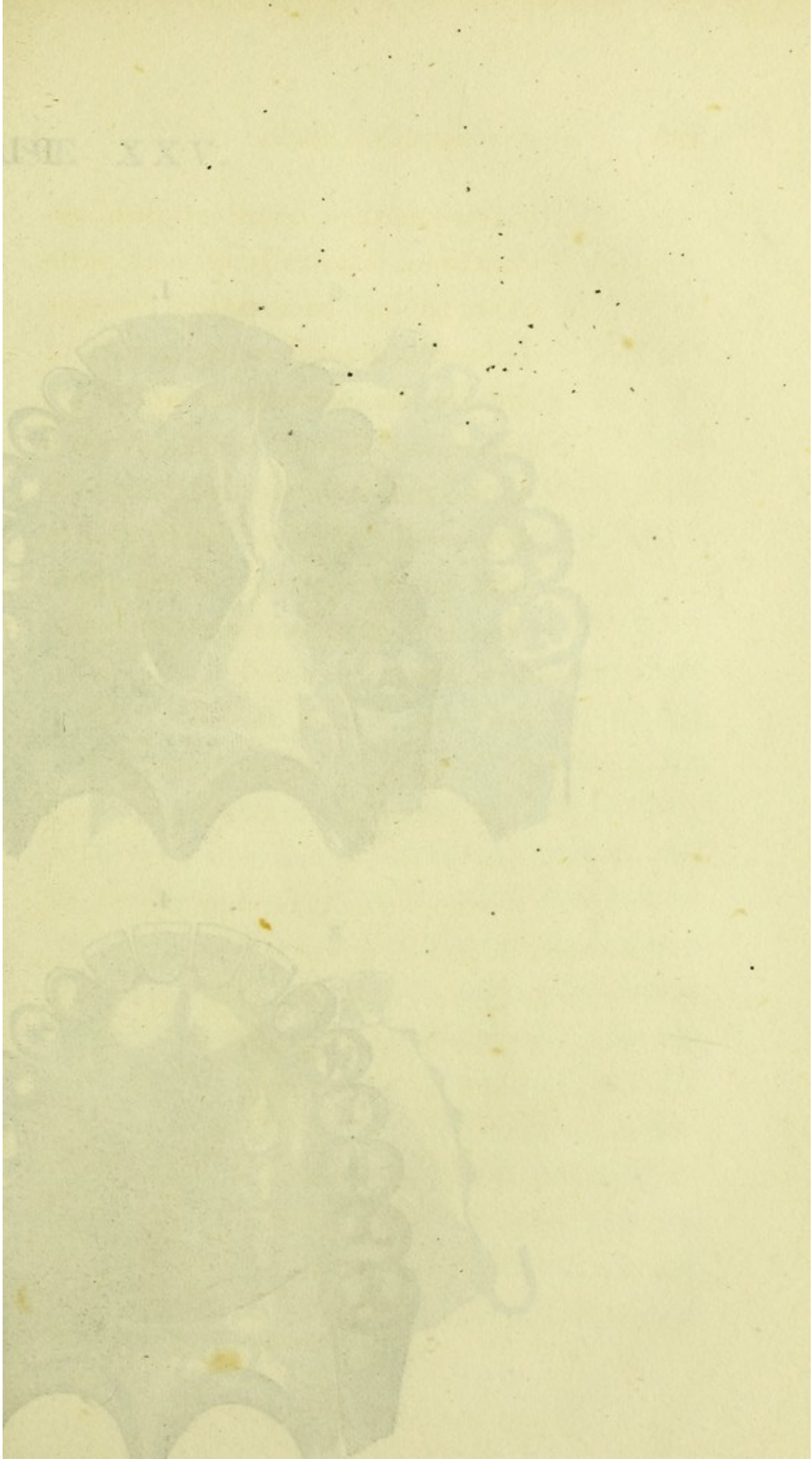
Fig. 10, Represents a complete palate, with fourteen teeth, described by Dr. Delabarre in his "Traité de la partie Mechanique de l'art du Chirurgien Dentiste, &c., vol. i. p. 310. The apparatus being rather complicated, I must refer the reader to the original description of the author, and leave him to form his own judgment upon it.

The chief object of the intricacy of its construction consists in an attempt to supply the artificial uvula with its natural functions, by means of springs acted upon by the tongue in swallowing.

For my own part I doubt whether the apparatus for the artificial moveable uvula will answer the expectation of either patient or dentist.

I have always found that the utmost simplicity, guided by good judgment and mechanical precision, is far preferable to complexity in

the preparation of all artificial restorations, especially of such parts as are subject to so many changes of form and position as the uvula; and the less we attempt at the restoration of the moveable soft parts of the palate the better, for at best the patient will have more trouble to make use of that part of the apparatus than to become accustomed to do without it.



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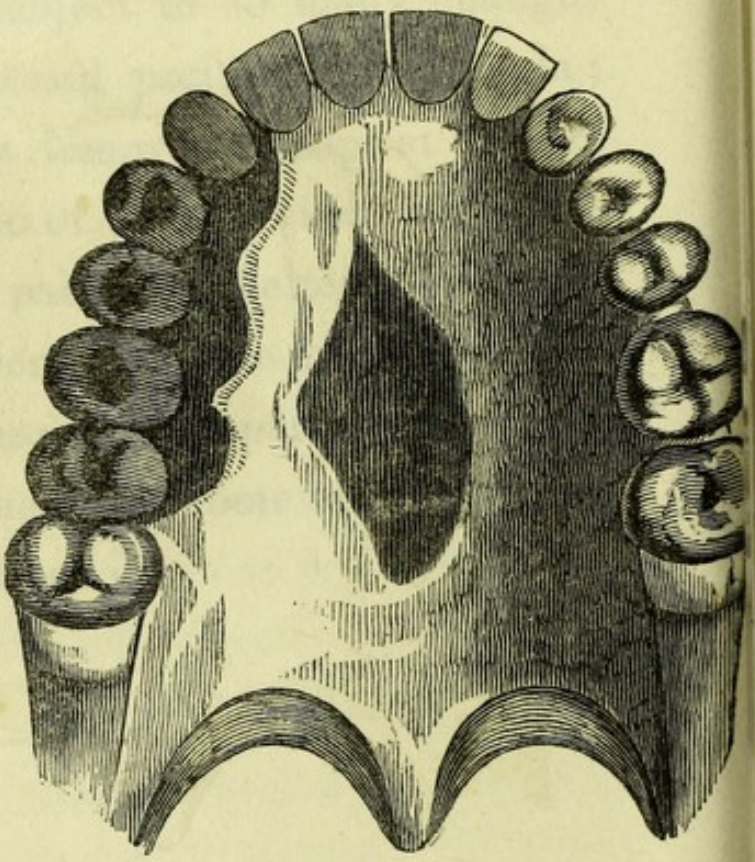

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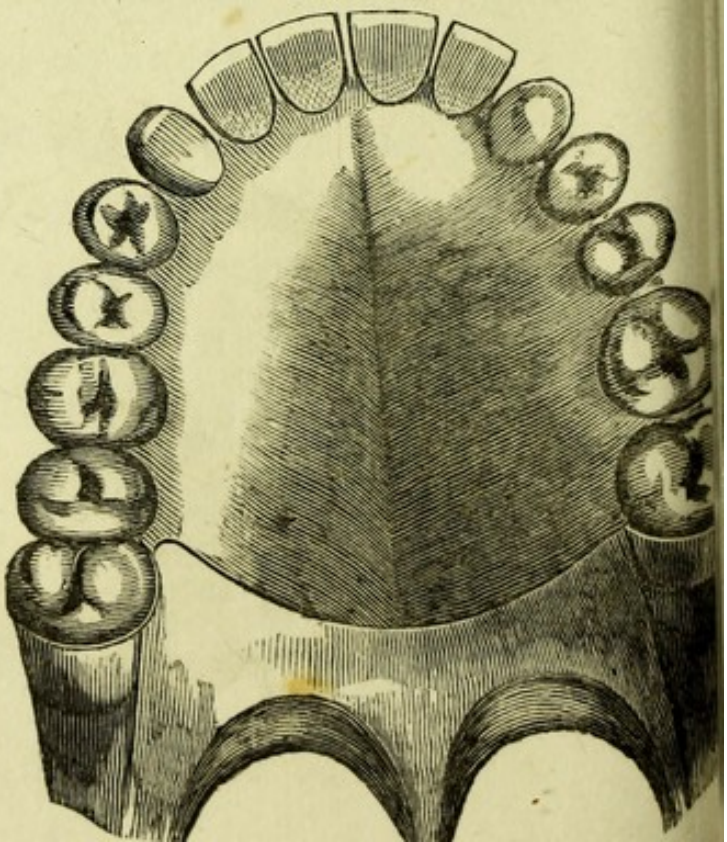

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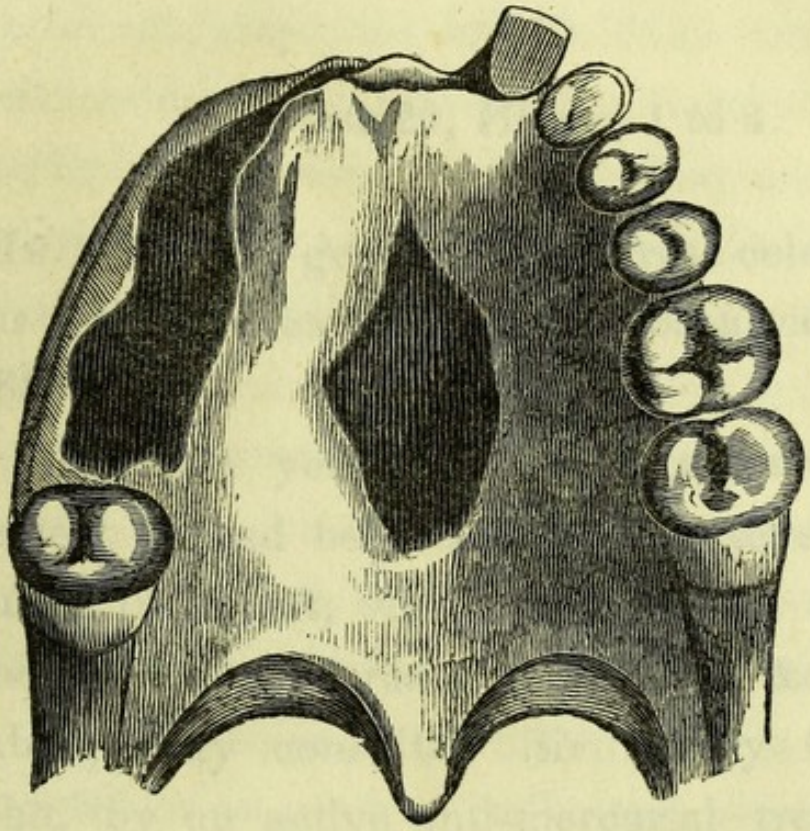

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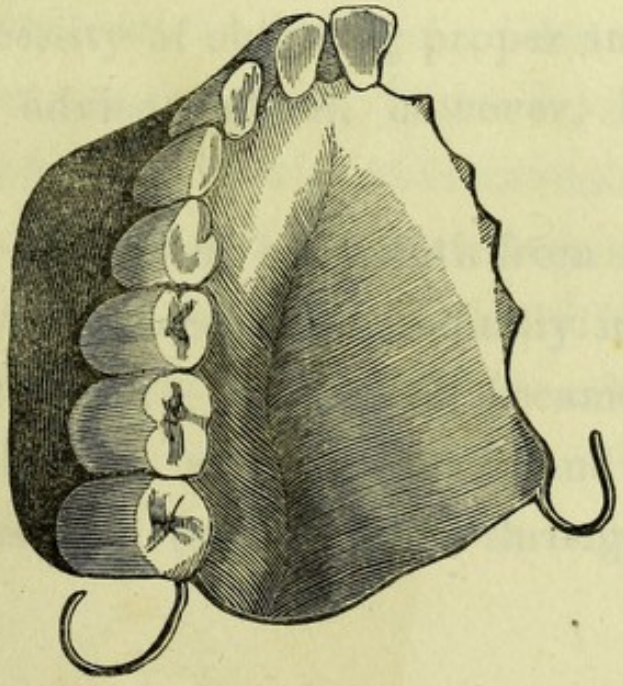
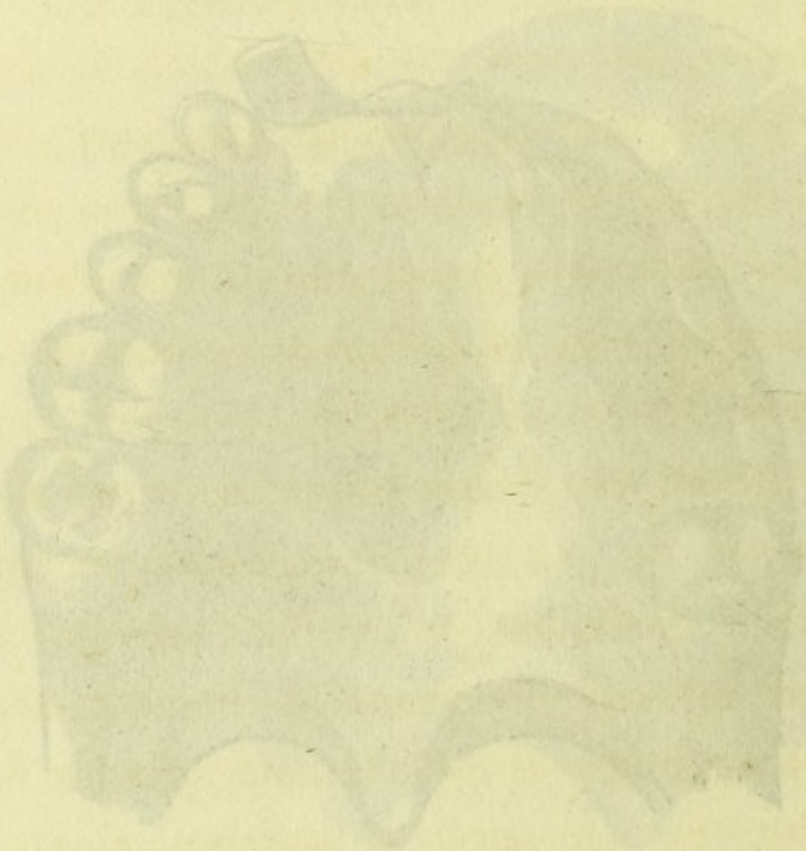
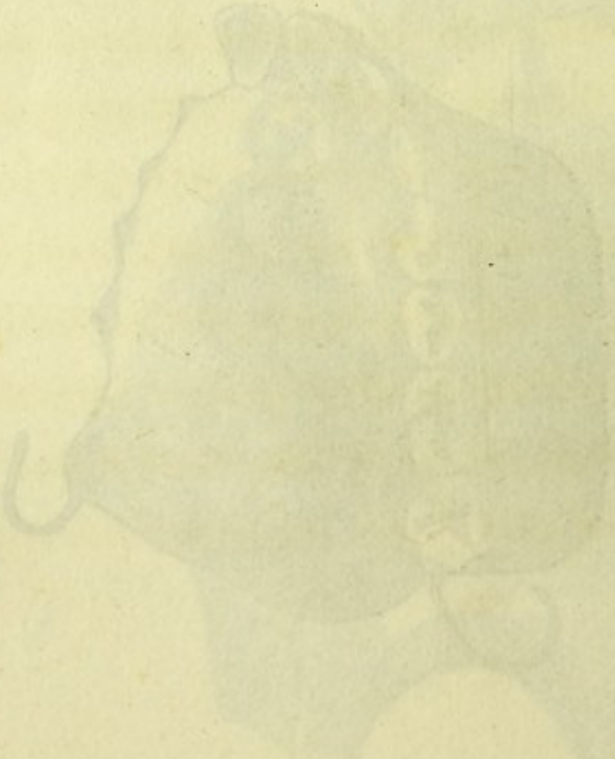






CASE XXV.

See Plate 20, *Figures* 1 to 4.

Mr. ———, a gentleman of great celebrity in his profession as a tragedian, consulted me in 1830.

About five years previous to my seeing the patient he had been under a very severe mercurial treatment, which had greatly affected and injured his gums and teeth, &c. He subsequently consulted Sir Astley Cooper, who, by an active anti-mercurial treatment, soon restored his general health. This judicious surgeon also earnestly impressed upon him the necessity of obtaining proper and judicious dental advice, which, however, he did not obtain.

The diseases of his mouth from that period rapidly advanced, and gradually increased to a great extent. His speech became perfectly unintelligible, and his fluid, and sometimes even his solid food returned through the nose.

This inconvenience he was in the habit of obviating by stopping up the cavities of the palate with cotton or linen. Although these expedients enabled him for years to follow his public professional avocations with satisfaction to the public, yet they were accompanied with constant pain; and the permanent irritation and pressure produced by this mode of filling up the diseased cavities, unavoidably became a great cause of aggravation to the disease of the mouth.

His breath also became so intolerably offensive, that the ladies of the dramatic company, whose part required them to approach the patient, were compelled to keep at a distance, and at last refused altogether to perform on the same stage with him. This evil was for a long time alleviated by his medical attendant, Mr. Douchez, who employed every means in his power to maintain the health of the constitution of the patient; nevertheless, reluctant to relinquish the duties of his profession for the period of time he feared might be necessary to remove his complaint, the gentleman continued to delay to submit to that treatment by which alone the

disease could be arrested, and a permanent cure obtained. At length, however, he was compelled, by pain and inconvenience, to seek some relief, and, on July 3, 1830, the patient was introduced to me by Mr. Douchez.

His age was about thirty, his constitution originally was very good and robust, but it was then suffering from great debility, anxiety, and depression of spirits.

Previously to examining his mouth, it was necessary to remove a great quantity of cotton and linen from the diseased cavities of the palate, the odour of which was very fœtid. His speech then became perfectly nasal and unintelligible, and some warm water, with which I requested him to wash his mouth, was immediately returned by the nose, unless he closed the nostrils with his fingers.

All the teeth of the right side of the upper jaw, situated between the right wisdom tooth and the left lateral incisor, had entirely lost their vitality, and the external and internal circle of the gums and sockets containing the teeth were, to a certain extent, perfectly dead;

the former being nearly wasted away, the latter still remaining, and surrounding, and mechanically retaining the dead teeth, more or less black in appearance, and in a state of putrefaction. Along the outer side of the molar and canine teeth there was an opening about an inch and a half long, and a quarter of an inch wide, which perfectly exposed the cavity of the jaw, and along the inside of the same teeth another opening of about the same extent, bringing into view the cavity of the nose. And in the centre of the palate there was a third aperture, about an inch long, and nearly half an inch wide. The two last cavities are distinctly seen in plate 20, fig. 1, but the first could not be brought to view without misrepresenting the other openings.

All the various structures of the mouth were more or less diseased; but the edges of the diseased cavities were exceedingly inflamed, and discharging a very dark fœtid pus.

All the dead teeth, eight in number, were immediately removed from the upper jaw, which constituted the greatest obstruction to

the natural curative process of exfoliation. Two or three days subsequently, all the dead sockets, and the other osseous structure separated, and by further careful surgical and dental attention, I had the gratification to see all the diseases of the mouth removed, and all the teeth and gums, as well as the palate, restored to a perfectly healthy state, and nothing was left to complete the cure but the artificial supply of the remaining defects.

September the 2nd, not quite two months after the beginning of the treatment, a complete artificial palate, with eight artificial teeth, was inserted; and so successful was the whole treatment, and so satisfactory was this last operation, that on the 6th of September, only four days after the insertion of the artificial apparatus, the patient made his appearance on the stage at Liverpool; and so excellent was his performance, that his friends, who had already deeply lamented the loss of his professional talents, and the ruin of himself and family, declared they had never seen and heard him perform better in his life than on that day of trial.

The gentleman is now, five years afterwards, pursuing the avocations of his profession at one of the first theatres in this country, in perfectly good health, and held in high estimation by the public for his private and professional merits.

EXPLANATION TO PLATE XX., IN ILLUSTRATION OF CASE XXV.

Fig. 1, Represents the internal surface of the palate and teeth.

On the right side eight teeth, from the second large grinder to the left central incisor, are dead and dark. The gums are destroyed and wasted away; the alveolar processes are still remaining, but in a state of complete mortification and putrefaction, by which great irritation is kept up in the soft and osseous structures.

In the centre of the palate is seen a perforation of about an inch in length and half an inch in width.

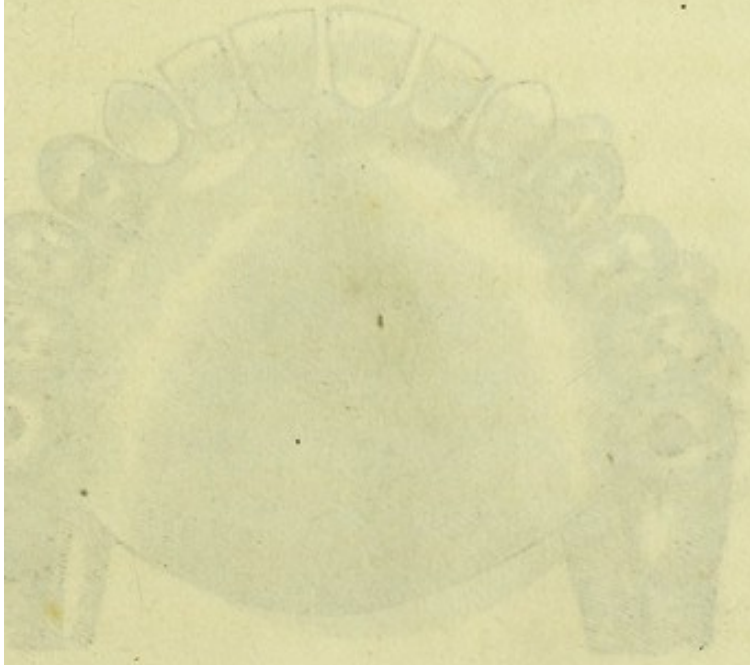
Along the internal surface of the teeth there is an opening of about an inch and a half long, and a quarter of an inch wide: there was a similar cavity along the outside of the

dead teeth, which could not be well brought to view in the drawing.

Fig. 2, Represents the same mouth in its defective but perfectly healthy state. The teeth and gums are rendered all healthy and clean, and the edges of the perforations are perfectly cicatrized and free from inflammation and disease.

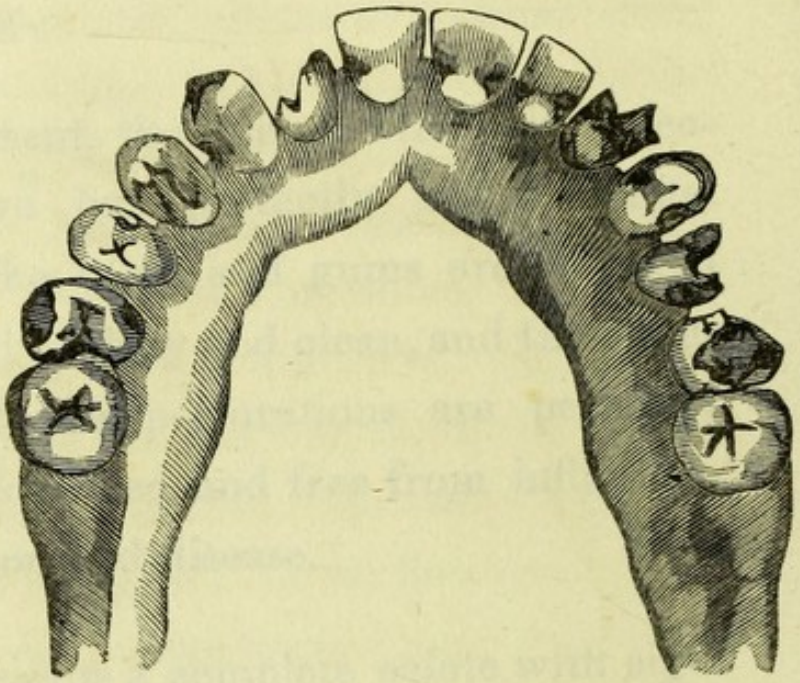
Fig. 3, Represents a complete palate with eight artificial teeth, made in the most simple manner.

Fig. 4, Represents the artificial palate and teeth inserted in the healthy mouth, removing all the defects of the natural palate and teeth.



PLATE

1.



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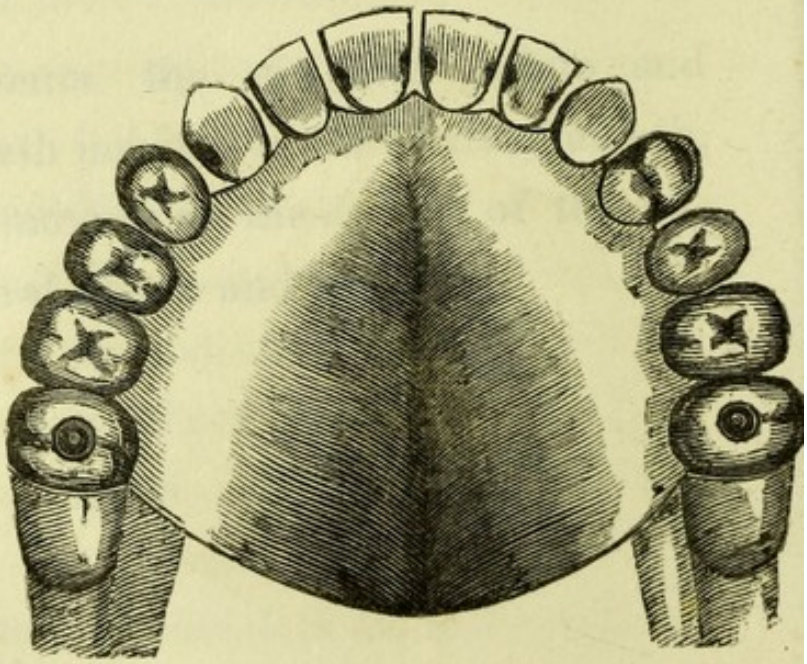

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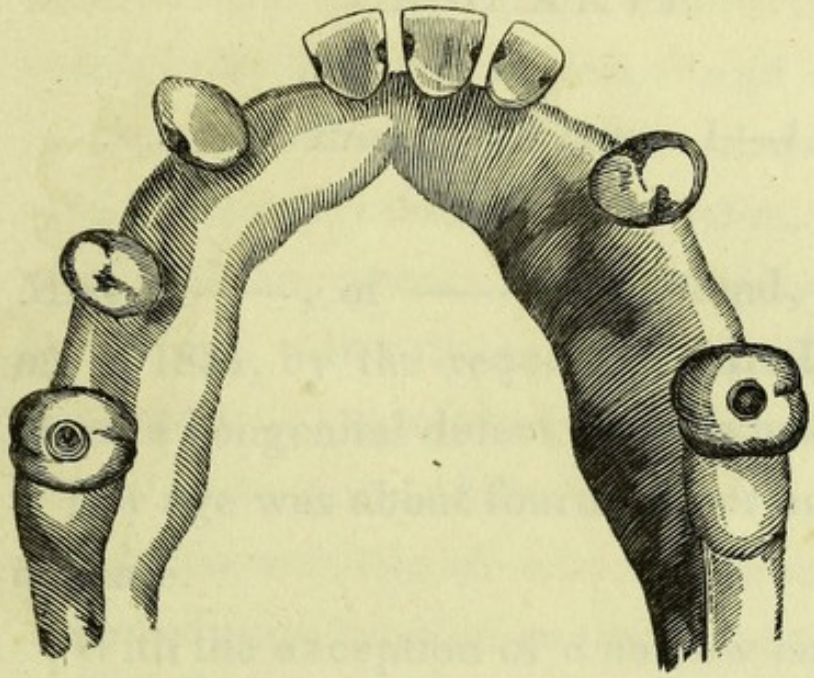

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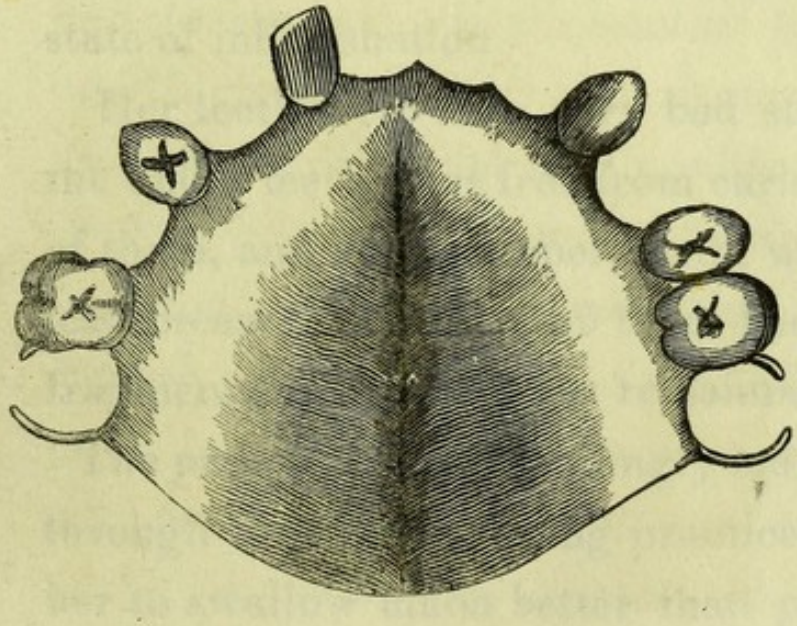

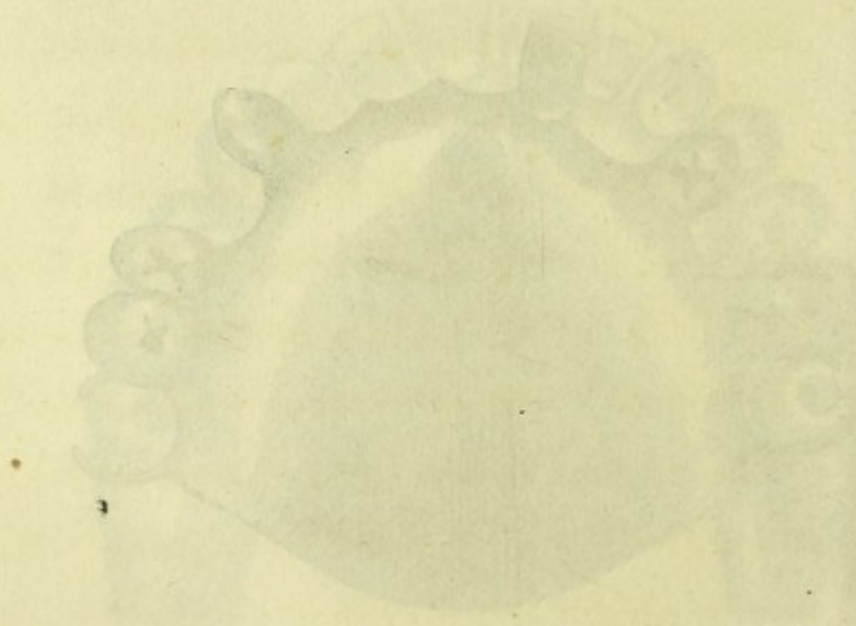

CASE XXVI.

See Plate 21, *Figures* 1—4.

Miss ———, of ———, Scotland, consulted me in 1831, by the request of Mr. Lawrence, about a congenital defect of the whole palate.

Her age was about fourteen, her constitution delicate.

With the exception of a narrow circle along the teeth, the whole palate, including all the soft structures and the uvula, was wanting, and the edges of the defective margin were in a state of inflammation.

Her teeth were in a very bad state; few of the under teeth were free from caries, but many of them, and all the upper teeth, were more or less diseased, and some of them had only dead fragments of their crowns remaining.

The patient spoke exceedingly indistinctly and through the nose, but long practice had taught her to swallow much better than patients who lose their palate from disease or accident.

I proposed to provide her with a whole palate; but I wished also to make this instrument of permanent advantage, an object which could only be effected, first, by a perfect restoration of health to all the remaining parts of the mouth, a treatment which required the removal of some teeth and roots; and, secondly, by the greatest simplicity in the mechanical construction of the apparatus. The latter object completely answered the hopes and views of the patient; but the former, on which the success of the patient and dentist must be based, was declined by the kind-hearted parents, who objected to those remedies which, though permanently most preventive of pain and distress, were of an immediately disagreeable and distressing nature, especially to a child who had been rendered, by original defect, an object of parental sympathy.

I succeeded, however, by argument and persuasion in effecting my object, and was permitted to remove every dead tooth and root, namely, four from the under, and six from the upper jaw. To restore every other part of the mouth to perfect health, some of the lower and

every upper tooth were next rendered perfectly healthy by filing and extirpating every minute superficial carious and diseased part, and of the upper remaining teeth the caries of every one was removed, and the cavities stopped with gold in one or two places.

About two months after the beginning of my treatment, when the gums and all the other structures of the mouth had obtained a perfectly healthy state, I inserted a whole palate with six artificial teeth, constructed of six mineral teeth with gold plates and springs.

I had my most sanguine hope gratified; my fair patient had greatly improved in her general health, her speech was clear and distinct, and her mastication and deglutition safe and unimpeded. We parted; she left me with feelings of gratitude and happiness, which have been repeatedly expressed to me whenever I have heard from her through her friends who have visited London since.

EXPLANATION OF PLATE XXI., IN ILLUSTRATION OF CASE XXVI.

Fig. 1, Represents the upper jaw with the congenital defect of the whole palate, including the uvula. Every tooth is more or less diseased, and the gums are inflamed.

Fig. 2, Exhibits the same upper jaw after the gums and all the teeth have been restored to perfect health, by removing with the file, or by extirpation, every carious or dead part, and by the stopping of the cavities with gold in a manner by which they will be preserved during life. The dark spots are purposely strongly expressed to indicate the cavities stopped with gold.

Fig. 3, Exhibits a complete palate made of a gold plate and springs, to which six mineral teeth were attached.

Fig. 4, Represents the above artificial apparatus inserted in the mouth, shewing the perfect artificial restoration of the six lost teeth and the whole palate.

FINIS.

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"We have known cases, and indeed they frequently occur, where general remedies are utterly useless till the local affection of the gums and mouth has been relieved; and here, therefore, the operation must be performed immediately. On the other hand, in this, as in other surgical operations, the general system may be in such a state of irritation, that though the operation itself may be exceedingly proper, it might be dangerous in the extreme to perform it till the morbid excitement of the constitution shall have been allayed. The directions of the author on this head are so judicious, that we quote them at length.

* * * *

"To these directions we consider it unnecessary to add a single remark.

"The chapter on the preservative treatment of the teeth and gums is deserving of great attention. Mr. Koecker has given one admirable proof that this is a duty, when alluding to the exhibition of medicines which are considered injurious to the teeth; and he asserts, and we believe correctly, that the loss of teeth after salivation is not so much owing to the medicine as to the neglect of a timely application of proper dental assistance.

"One of the most interesting and important parts of the volume is that which has for its subject 'the treatment of the teeth and gums of children at the time of the second dentition;' as, upon the proper practice at this time, much of the health of the mouth in after life depends.

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As this essay lies in a small compass, and embraces many interesting points of general as well as special surgery, we recommend it in the original to our readers, and shall only offer a very short analysis of its contents in this place.

* * * *

"As teeth are equally ornamental and useful in this world, and as we believe that bad teeth produce a number of derangements which are little suspected as to their origin, we recommend the present, and the former work of our author, to the candid consideration of the public."—See *Med. and Chirurg. Review, March* 28*th*, 1828.

REPLY to "ADDITIONAL STRICTURES"

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