

On the complete development of the teeth : the system whereby dentition may be easily accomplished, and its importance mentally and physically, with the consequences entailed upon their offspring by the incomplete development of the teeth of parents : addressed to the medical profession / by George Henry Cullis.

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ON THE

COMPLETE DEVELOPMENT

OF

THE TEETH,

THE SYSTEM WHEREBY DENTITION MAY BE EASILY ACCOMPLISHED,

AND ITS IMPORTANCE MENTALLY AND PHYSICALLY :

WITH THE CONSEQUENCES ENTAILED UPON THEIR OFFSPRING

BY THE INCOMPLETE DEVELOPMENT

OF THE TEETH OF PARENTS.

ADDRESSED TO THE MEDICAL PROFESSION,

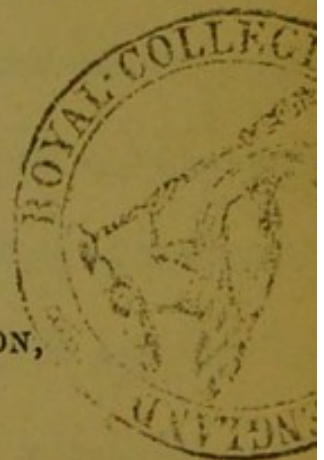
BY

GEORGE HENRY CULLIS.

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1859.



THE JOURNAL OF THE

THE JOURNAL

OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

AND ITS AFFILIATED SOCIETIES

WITH THE PROCEEDINGS OF THE ANNUAL MEETINGS

OF THE SOCIETY OF PHYSICIANS

OF THE DISTRICT OF COLUMBIA

AND OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

GEORGE HENRY CHAPIN

EDITED BY
GEORGE HENRY CHAPIN, M.D.
OF THE DISTRICT OF COLUMBIA

P R E F A C E .

The management of children's teeth during their first and second dentition, is a subject that has never yet received the attention that its importance requires.

Having devoted twenty-five years to the study and practice of dental surgery, the writer is he trusts, qualified to express himself with some authority upon the points connected therewith; and he avers that in calling the attention of medical practitioners to the very many serious and fatal results of difficult and impeded dentition in childhood, and of the abnormal condition of the teeth of adult and even advanced life, that his sole object and motive is to submit to their consideration the means by which many of the fearful evils may be easily obviated.

4, CAMBRAY PLACE,

1859.

PREFACE

1911

The management of children's teeth during their first two
years of life is a subject that has given rise to much
speculation as to its importance, and
having devoted twenty-five years to the study of
dental surgery, the writer is better qualified to express his
views with some authority upon the points connected therewith.
It is a pity that in calling the attention of practical physicians
to the very many serious and fatal results of neglected dentition
in childhood, and of the abnormal condition of the teeth
of adults and even advanced life, that his views upon the
subject are not more generally known, and that the
careful study may be easily omitted.

W. H. WALKER

1911

CHAP. I.

ON THE COMPLETE DEVELOPMENT OF THE TEETH.

To the Members of the Medical Profession.

GENTLEMEN,

You are aware that during the first dentition children often suffer from some derangement of the system, which is exhibited in restlessness, hectic fever, and constipation; sometimes in diarrhœa and spasms, in paralysis of the arms and legs, convulsions, epilepsy, water in the head, chorea, attacks of croup, and sudden death.

In a well formed and healthy child, the two lower and the two upper front teeth, (the central incisors) are ready to appear by the 8th month: the four next (the lateral incisors) by the 12th month; the four canines by the 16th month: the four first molars by the 18th month, the four next molars by the 24th month, and the four last molars, making the temporary dentition of *twenty four teeth* complete between the fourth and fifth year.

When the teeth do not appear in the above order, one or more of the consequences of impeded dentition must arise; therefore it is important to secure that order as nearly as possible, by lancing the gums as frequently as may be found necessary. You will observe that I have, contrary to every other writer upon the subject, classed the four last molars with the temporary teeth, and named two years earlier for the time

of their appearance; and I do so, after a long and very careful examination of the subject. I was first induced to take up the question, by examining, in my brother's Surgery, at Clun, in Shropshire, three anatomical preparations of the heads of children, neither of whom had lived to be three years of age. Each of the heads, upon my removing the outer parts of the bones of the maxillæ, exhibited twenty-four teeth—twelve in the upper, and twelve in the lower jaw; whilst every medical work upon the subject to which I referred, stated twenty to be the number of temporary teeth.

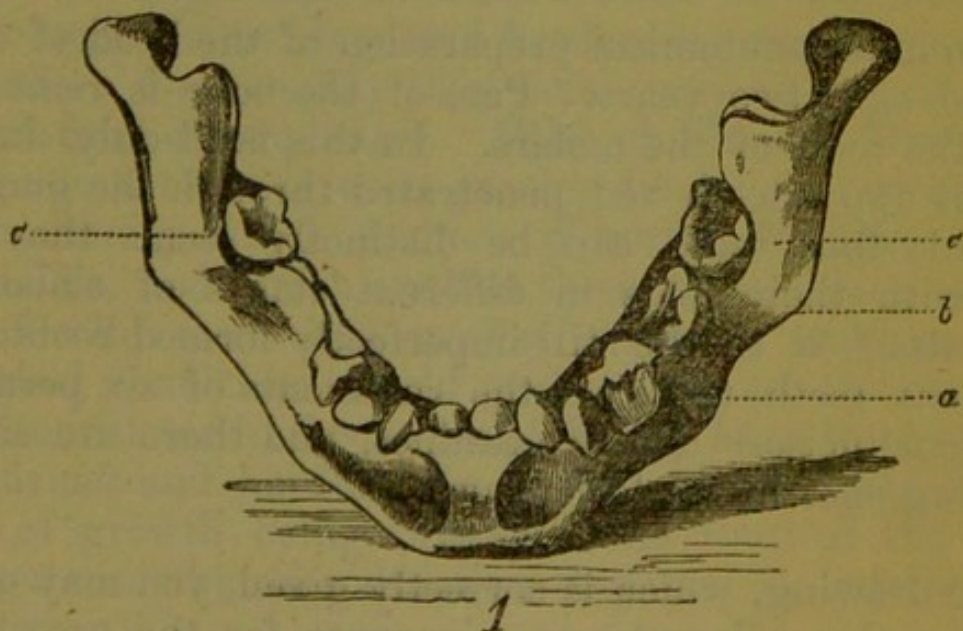
From the position which the back teeth occupy, and the difficulties that nature has to contend with in their development, they appear to have been overlooked; and because they are frequently concealed until the sixth or seventh year, when the eruption of the permanent teeth commence, I considered they had been erroneously classed with them. During the five years that I travelled under the tuition of a dentist, for the purpose of satisfying my doubts as to the correctness of this classification, by the examination of very many mouths of the living and skulls of the dead: I was led to suspect that inattention to the teeth in general, and to those four last molars in particular, had occasioned more diseases and deaths than had ever been imagined: and I then resolved to devote my life, and all the means at my disposal, to demonstrate by practice what the result would be of judiciously aiding nature in her works in the mouth; first, in the cutting of the temporary teeth; then in the shedding of those teeth, and the development of the permanent ones; and lastly, in uniformly treating the back molars as deciduous.

In September, 1837, I commenced operations in Cheltenham; and I have striven incessantly to introduce the system, carefully watching the result of every operation, at the same time keeping the principle enunciated by the illustrious Cuvier ever in my mind, that "We ought to labour not with the object of supporting a theory, because then the mind being preoccupied, will perceive only that which favours its own views; our labours should be for the object of discovering the truth;" and for this object have I laboured only.

Had I have found cause at any time to doubt the facts which my investigations brought to light, I would very gladly have abandoned this field of investigation; for I have had to bear deep insults, threats of personal violence, and of legal prosecutions; but having at length been permitted to pass through the fiery ordeal of continued unmitigated opposition for more than twenty-one years, during which I have never ceased to prosecute my inquiries into the truth of the system, and of the importance of the principle which they revealed, I now venture, without fear, to submit the results to the judgment of the public.

The accompanying drawing shows the position of the molar teeth in the lower jaw of a child at the twelfth month. The jaw from which the engraving was taken, was presented to me with another of the same size, by a surgeon residing in Hereford. In each of them may be distinctly seen twelve teeth firmly compressed together, the roots of the front ones sufficiently formed, but none had ever been cut, being bound in by a cartilaginous substance springing from the sides of

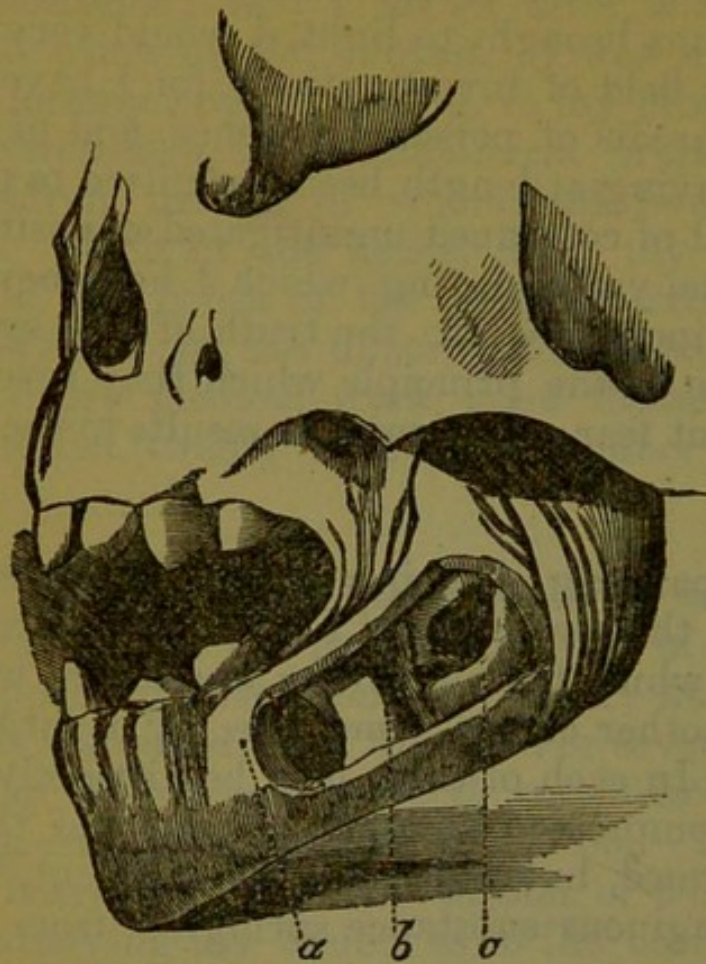
Fig. 1.



a The first molar. *b* The second molar. *cc* The third molars.

the jaw bone, which is almost entirely removed to exhibit the teeth, which led me to suspect that impeded dentition, in both cases, had been the proximate cause of death.

Fig. 2.



a The first. *b* The second. *c* The third molar.

Taken from an anatomical preparation of the head of a child who died aged two years. Part of the bone is removed to exhibit the roots of the molars. In this head only six lower and eight upper teeth had penetrated through the gums, but the twenty-four teeth can be distinctly seen: the twelve molars with their roots in different stages of elaboration. Closely attached to the still imperfectly formed roots of the upper front teeth, there are the rudiments of six permanent teeth; four incisors and two canines, and there are six corresponding ones in the lower jaw.

In the drawing, which is correctly given, you may observe that nature has allowed a certain space for the growth and elongation of the roots of the molars: the first molar has completed its growth, the second nearly so, although its crown had never pierced the gum, and the back one has filled about half its allotted space. In the interior of the jaw bone, just beneath the roots of the teeth, is a canal, which nature

is gradually enlarging, and in which runs a branch of the inferior maxillary nerve, the latter one of the most important branches of the fifth pair, the largest pair; this branch is termed by some writers the seat of motion, nutrition, and sensation: its branch gives out nerves to the properly developed teeth: it is accompanied by an artery, a branch from the carotid, supplying blood to the teeth, &c. Close to the nerve and artery is a vein, carrying out the blood to the jugulars to be returned to the heart; beneath them is situated the lymphatic gland, which is stated to be essential to them in the "preservation of fluidity, and a due mixture of the arterial blood." This canal was termed by Cooper, in his "Practice of Surgery," page 519, "*the canalis mentalis.*" Writing of "Fracture of the lower jaw bone," Mr. Cooper observes, "The artery, running in the *canalis mentalis*, is often ruptured in these cases, and the hæmorrhage is very copious," &c., and "including a nerve in a ligature with the artery, would alone be an adequate cause of death." Bearing this in mind, you will be at no loss to understand where I submit that the danger lies in the development of the teeth of children; and you will perceive that it is far easier for the pointed roots to pierce the soft and porous bone beneath, than for the large and flattened crowns of the molars to break through the cartilage and hardened gums above them; and, therefore, how readily this canal may be invaded, and with what fatal consequences. With children of strong and healthy parents there is even greater danger, in consequence of the immunity which a more powerful digestion would seem to offer, and which enables them to receive a greater amount of solid food than weaker children, or than other physiological conditions would justify; hence the cartilage above the uncut teeth, through which they have to penetrate, becomes firmer and harder than it otherwise would, and the principle of growth being inherent, the roots of the teeth will elongate in whatever situation they may be retained.

Many parents can rear their children in perfect health until they attain a certain age, at which they are suddenly seized as if with concussion of the brain, and die. The cause of their deaths appears to be enveloped in mystery, or in the occult operation of some special Providence: but if the bone

that covers the roots of the teeth were removed, and the situation of each of the teeth observed, the cause of death would not unfrequently be plainly revealed.

Mr. Wakley is reported to have said that "five thousand children, under five years of age, annually die in London alone, chiefly from preventable causes." There is no doubt, but that the inattention of parents to sanitary measures may have much to do with such fearful sacrifice of infant life; but difficult dentition I believe to have as much, if not more. I can hear of children dying around me in all directions, and often request in vain, to be allowed to save their lives. Not long since, one of my family missed an intelligent little boy from the class at a Sunday School: and calling to inquire into the cause of his absence, was astonished to find him in a state of insensibility. The family were quite satisfied with the treatment of the medical attendant, and the child remained in that state until his death, which took place a few days afterwards. I heard of another little boy, about three years of age, that had been taken to a Surgery for the purpose of having his gums lanced, as he had been very feverish and restless by night; the Surgeon, it was stated, had refused to lance the gums, but prescribed some medicine, which was duly taken by the child: but the second night afterwards convulsions terminated his existence. Narrating these two cases, that had just occurred in the Autumn of 1858, to a person upon whom I called, that person remarked, "Well, it is strange that professional gentlemen seem to object to the most simple operation upon children now. I know a fine little fellow, nearly four years of age, that was taken by the father (Mr. Dickens, of 184, High Street) to one of the head gentlemen of your profession, lately; who, after he had examined the child's mouth, said that nothing could be done for a child of that age, as the child was constitutionally affected." I immediately went to Mr. Dickens, and offered my services to the family. Mr. Dickens told me that "he had taken the child to a gentleman, who informed him that nothing could be done in the case; therefore it would be a pity to torment him." I assured him that it was a mistake, and that it was the object of my life to prove the simplicity and ease of saving children, and named several that I had given immediate relief to. The next day

finding the child sinking, I was allowed to operate. I lanced the gums of the child, removed a dead tooth, and allowed the escape of matter from the gums. On the following day the child was perfectly recovered. Never were the words of the learned Boerhaave more aptly exemplified—“*A proper incision of the gums, a removal of ulcerous matter, are, when properly applied, anti-epileptics.*” Since that time, early in the present year, the wife of a tailor, living in Ormond Place, called at my house upon some business, bringing with her a child; who, by the weakness of its cry and restlessness, appeared to be suffering severely. I requested to be allowed to examine the child’s mouth; but the mother objected, as she had just been to her medical attendant, (naming him) and he had prescribed for the child, and advised that the gums should not be lanced; and informed her that “the greatest men in London now, never lance the gums of children.” This growing objection to the application of the lancet to the gums of children, I deeply deplore, as I am perfectly convinced that by its timely use, thousands of lives might be saved. Upon this point, ample corroboration will be found in the works of Mr. Tomes, Dr. Ashburner, and Mr. Bell. Mr. Tomes, in his Lectures “on Dental Physiology and Surgery,” after stating from his own experience the very great benefits that almost immediately occur, from the free use of the lancet, quotes from Dr. Ashburner’s work on dentition, in which a number of cases are given, where lancing the gums produced instant relief to serious and distressing spasmodic diseases. “I attended a fine boy,” says Dr. Ashburner, “from the cutting of his first incisor tooth to the completion of his dentition of twenty teeth. He was the last of a family in which all the children had afforded examples of abnormal dentition. With the appearance of the four first molars, the spasms were more severe. The gum lancet freely used always cured these spasms,” &c. Mr. Bell, in speaking of the diseases consequent upon the irritation produced by abnormal first dentition, and in reference to the frequent occurrence of *diseases of the brain* from this cause, also says, “The brain too, is frequently affected, the pupils of the eyes are permanently expanded. Spasm of the voluntary muscles frequently succeeds, and convulsions at length recur at intervals with increasing violence; which, unless immediate relief be obtained, too

often terminate at once and the same time the little patients sufferings and existence. The symptoms which I have here described as connected with a morbid state of the brain, often arising either from an over charged condition of the vessels, or from actual effusion, do not always terminate fatally; but even where they are for the time relieved, and their acute form subdued, the occurrence of confirmed hydrocephalus is amongst the most common results of such affections. It appears, indeed, that the *irritation has not been sufficiently attended to*, as the origin of this disease. Were this view of its cause more generally taken, it is, I think, probable that it may in many cases be arrested in its earlier stages, and its dreadful consequences—death, or a state of idiocy, far worse than death—be frequently prevented.” This latter observation perfectly agrees with my own experience, but the use of the lancet should not be limited to the twenty teeth,—it is with the third molars, as I have endeavoured to show, that the greatest danger of diseases and death occur.

Would you be satisfied upon this point? if you would take the trouble to examine the mouths of the children at any Infant School in the Kingdom, you will find indications of the third molars struggling to emerge soon after the third year, for that they are in every properly formed mouth, in the positions exhibited in the engravings at the first and second year, you may rest assured: and if you find any of the affections incident to difficult dentition, exhibited any time after the third year, and those teeth have not appeared, crucial incisions in the gums and cartilage above them, will encourage their appearance, and many lives may be thus saved.

CHAP. II.

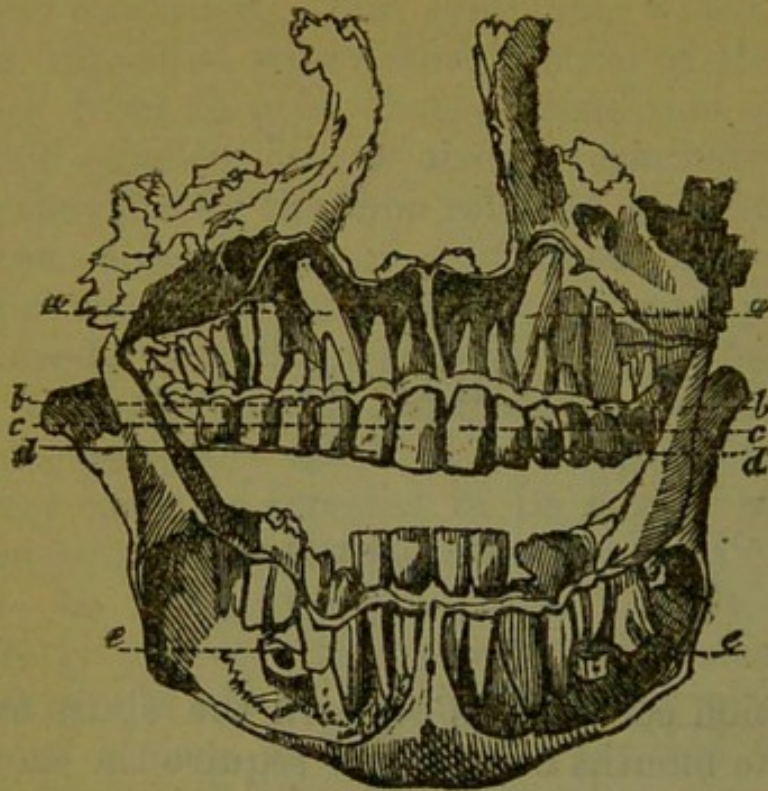
SECOND DENTITION.

SECOND dentition commences between the sixth and seventh year, when the mouths of children require the most watchful care, art being resorted to, in this, as is every other instance, to assist nature as her humble handmaid, in the way the most agreeable to her own laws; and when it is understood that the character of the voice, the symmetry of the features, the physical health and mental development of children are more or less involved in dental management, the importance of the subject can scarcely be over estimated.

I present two drawings, taken from the head of a child who died about the eleventh year. The jaw is above the average size; and I select it, as exhibiting the general situation of the teeth at that age, under the most favourable circumstances, when proper aid has not been given to nature.

The upper front incisors occasionally require aid in shedding, but not very frequently, and I prefer, unless either of the new ones were retained or growing irregularly, leaving them to nature, as I have found from their having been knocked out by a fall, or by their injudicious extraction simply because they were discoloured, that the enamel of the permanent teeth sustained injury in the parts to which the roots of the temporary teeth were attached. But I turn at once to the four temporary canines, take the front forceps, Fig. 5, and immediately extract them: in this case you can

Fig. 3.



First and second dentition: the outer bone partially removed to exhibit the undeveloped permanent teeth.

aa. Permanent canines.

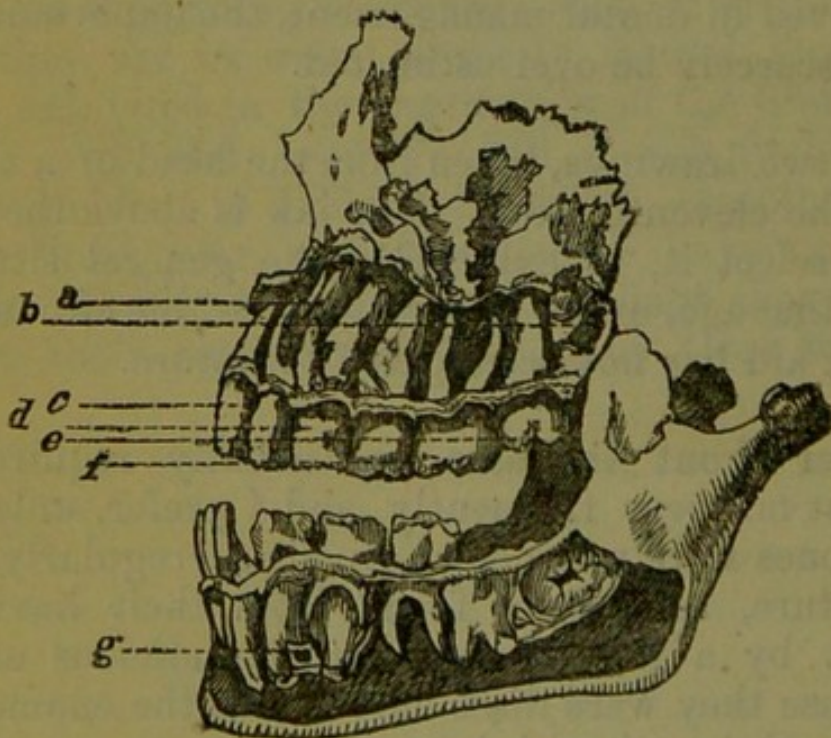
bb. Temporary canines.

cc. New front incisors.

dd. New lateral incisors.

ee. The smaller canals in the lower jaw by which the nerve and artery emerges.

Fig. 4.



Side view of Fig. 3.

a. Left permanent canine.

b. Position of the aens sapientia.

c. New front tooth.

g. The lower jaw, showing the position of the lower bicuspid in the roots of the first and second temporary molars, and the dangerous situation of the permanent molar, held down by the third temporary molar.

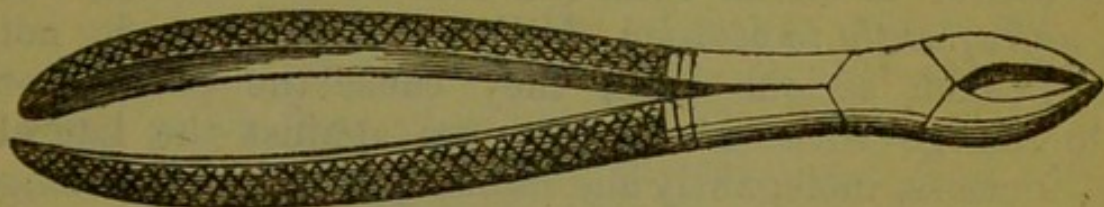
d. Retained temporary canine.

e. New molar partially developed.

f. Temporary molars.

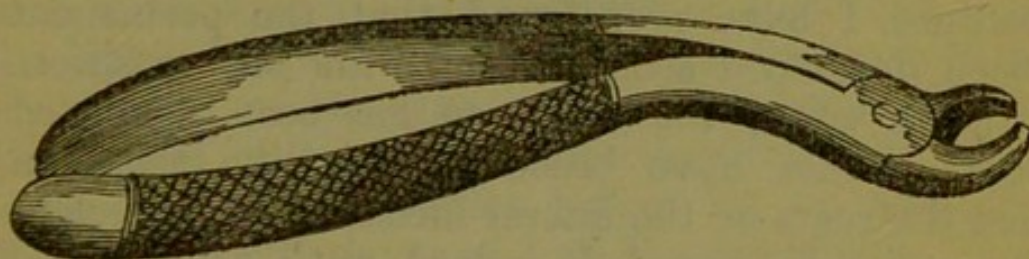
EXTRACTING FORCEPS ADAPTED TO THE
VARIOUS TEETH.

Fig. 5.



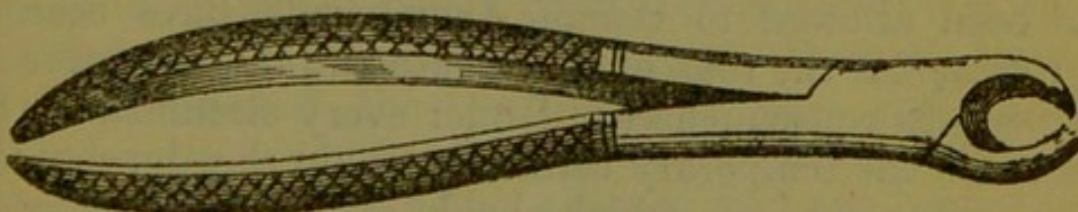
For the
front
teeth.

Fig. 6.



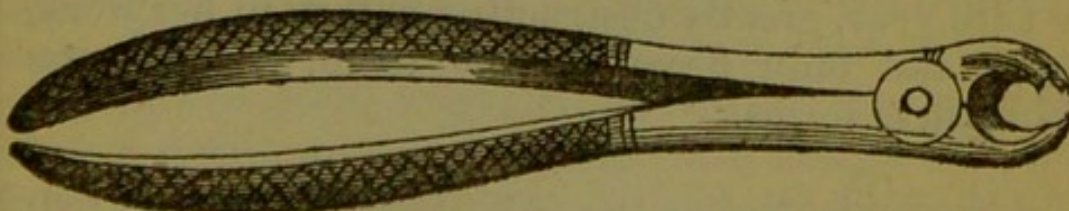
bicuspid.

Fig. 7.



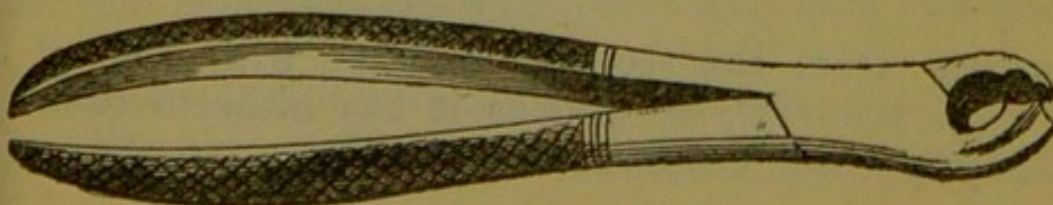
upper
molar left.

Fig. 8.



upper
molar right

Fig. 9.



lower molars

never do any injury, but must do good. Experience has shown me that from the strength of the roots, and the great difficulty that nature experiences in their absorption, that they are seldom shed without aid, nor until they have inflicted severe injury by causing the retension, overgrowth, or inversion of the permanent teeth, forcing them against the floors of the orbits, or by compelling them to deviate from their true course to strike into the roof of the mouth, and thus not *unfrequently to occasion death*. Where they do not inflict any such serious evils, they cause the permanent canines to emerge with intense pressure against the lateral and front incisors, inelegantly and most injuriously protruding them, either cracking or abrading their enamel, and laying the foundation of their speedy decay. In the thousands of cases that I have treated by the early extraction of the temporary canines, I have ever found that the permanent teeth have been developed sooner and in the best position. On the other hand, where the operation has been neglected the permanent canines have become fixed, like those in Fig. 3, against the roots of the lateral incisors, their development thereby seriously retarded, indeed until the general growth and expansion of the jaw made room for them, and if aid by that time were not given to them, and the temporary canines had been allowed to remain, they would have been forced to grow across the roof of the mouth and be productive of the most serious consequences. Under every circumstance the extraction of the temporary canines will aid the development of the permanent ones, which should ever be effected by the eighth year, and never allowed to remain, as I grieve to see them daily in my walks, like those in the engraving until the 11th or 12th year, greatly obstructing nature in her work, and producing not only decay of the teeth, but nervous affections in endless forms.

As early as convenient after the front teeth have appeared, as in the plate Figs. 3. and 4, but always before the twelfth year, the four back molars should be removed.

This departure from the received doctrine will, like all propositions that are new, be still as it has hitherto been most strenuously opposed. Confident however in my experience

I do not fear to propose it, and most earnestly to pray your attention thereto, more particularly for those families in which any taint of insanity may be suspected, or scrofula, deprivation of sight from unknown causes, paralysis of the limbs or bodily afflictions, and where any abnormal appearance of the teeth may be found in either of the parents; for it is well known that nothing is more hereditary than such conditions of the teeth: and I aver that the consequence would fall with greater violence upon the offspring: unless you kindly give that aid to nature which I have pointed out, and which she also prays from your hands. The forceps Fig. 7 and 8 are best adapted for extracting the two upper, and Fig. 9 the two lower teeth. With those instruments there is no more art in drawing teeth from the mouth of children at that age, than there is in taking a pin from a pincushion, and very little more danger. At the rate of about one in a thousand the hæmorrhage that follows might be in excess: but in all my experience, vinegar or salt and water has stayed the bleeding of ninety-nine out of every hundred cases, and turpentine on tow, or matico leaf rolled up, and pressed upon the gums, with a layer of lint, the remainder.

These teeth have I believe never before been treated as deciduous: but as such I have ever treated them in practice, be they sound or unsound, and upon the same principle that I have removed the temporary canines, and in reviewing the results of more than twenty years practice thereof, I sincerely rejoice in being allowed to have been the humble instrument in effecting such incalculable benefits. If the molars be extracted before the 12th year, or even at the 14th, although I have found it dangerous to defer it so long, no trace will remain of their extraction: yet by the operation room will be given to nature for all her works in the mouth while a fertile source of suffering and danger will be removed from the system. To the neglect of those teeth may be traced inflammation of the tonsils, deprivation of speech and hearing, and frequently of sight, locked jaw, severe fits, high nervous excitation, sudden death, and even *insanity*.

I know that it may happen, as it has often happened in my practice, that at the time that I would have aided nature by the

removal, first, of the temporary canines, and then of the four molars, that the child would be considered too weak and sickly to bear either of the operations, and before the child was considered strong enough that the first bicuspid appear and usurp the situation of the permanent canines. In such cases, after removing the temporary canines, I take the forceps, Fig. 6, and remove the intruding bicuspid: this in such a case is a valuable operation, as it saves the front teeth from pressure and protrusion; but upon the first seven years review of the benefits resulting therefrom, I found that they fell far short of those resulting from the early removal of the molars, as they did not afford sufficient room for the early development of the *dentes sapientiæ*, which the removal of the molars invariably did. The forceps that I have submitted to you can be purchased at any instrument makers. Mr. Tomes claims the merit of their introduction: they are far superior to the old forceps or the extracting key, as they are fitted to the roots of the different teeth, and are therefore capable of being used with the greatest facility. I have obtained cases of these instruments for Clergymen of the Church of England, and explained their application, which they very readily appreciated. In rural districts where medical aid cannot be easily obtained, a vast amount of physical benefit would be conferred upon the poor, by those gentlemen kindly using these instruments, nor would such employment in any way detract from the value of their divine missions. Schoolmasters and others to whom children are confided, would find it to their advantage also to learn how to employ the gum lancet and the forceps; by the timely removal of obstructions to the development of the teeth, intense cerebral excitement, to which there is scarcely any exception in childhood, would be much modified, if not entirely removed: and children would be enabled to acquire their earliest instruction, with far greater ease.

One class of conscientious persons object to my views, because they conceive that they tend to subvert their faith in the order of providence. Another class entertain the idea that it is a presumptuous attempt to improve nature. To the first I respectfully reply that the same objection was made to inoculation and vaccination, the latter now hailed by the

world as a blessing to the human family ; and we have good authority for believing that " a reliance on Providence does not imply that we are not to prevent or oppose those evils which we foresee, and which we have in our power to guard against by prudent precautions." To the second, I answer that a desire to *aid* must not be confounded with an attempt to *improve* nature. Nature certainly does not tell us whether the teeth are deciduous or not, but experience and observation tell us generally that the four first are the temporary canines, while my own special observation shows me that the last four are temporary molars. None can doubt that they appear with the temporary teeth, and, probably, would be shed with them did not our social habits cause such deviations from the ways of nature, as to neutralize or destroy the power or principle by which her work is accomplished. We recognise this in the difficulty presented to the absorption of the roots of the temporary canines, and we do not hesitate to extract those teeth. Analogy should suggest, what observation has in fact confirmed, that the molars form no exception to this diminished power of absorption, for I confess that I have never found it in their roots in youth ; but this, I say, is no proof of their intended permanency any more than it is of the temporary canines, which, like them from the loss of the absorbent power, are frequently retained until they have occasioned an amount of functional suffering and permanent derangement little thought of by either the orthodox practitioner or the conscientious ignorant. Be the objections to this view what they may, experience justifies me in laying down the rule, that they may far more safely be removed with the temporary teeth than allowed to remain with the permanent ones. It is notorious that whenever decay causes such an amount of suffering as to demand the extraction of either of these in early life, nature immediately avails herself of the fortunate circumstance and completes her work in the development of the permanent teeth in exact proportion to the facility thus afforded. Why should we then close our eyes to these facts, and continue blind to the means by which the attendant evils upon late, difficult, and impeded dentition may be readily prevented. For, " Man is the only living creature in the world in which there is a principle or capacity of self-improvement, by means of which one

generation availing itself of the experience of the generations which preceded it can become better informed than they, or which, by failing to exercise the means by which this improvement is attainable, can deteriorate and fall off."

CHAP. III.

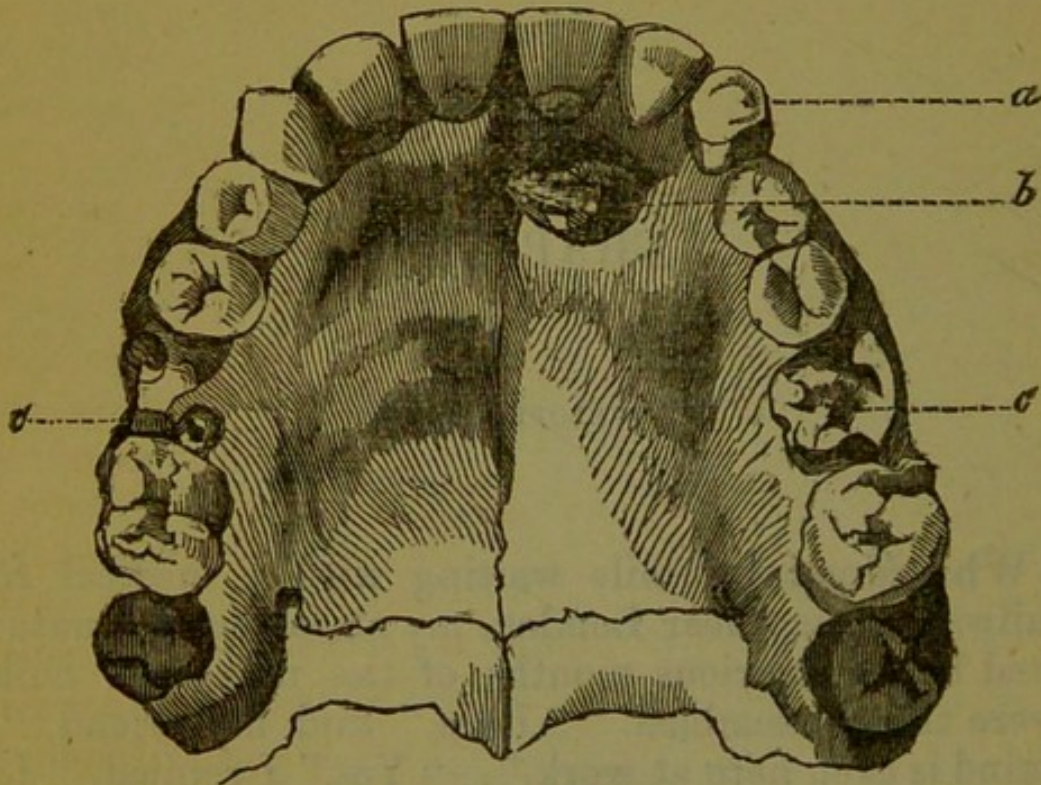
UNDEVELOPED TEETH.

LAST Whit-Monday, while waiting with a medical friend at a railway station near London, my attention was naturally attracted by the various mouths of the numerous children that were there assembled. "I see," said my friend, "that your mind is even here at work." "Yes," I replied, "I have been seeking, but in vain, to find one mouth that does not require immediate aid. Survey the pale faces and cheerless eyes of these children, though gaily dressed and assembled for their long expected holiday, listen to the harshness of their voices. Can you behold these little creatures here, or indeed children anywhere, without grieving over their hapless and neglected state? Would you restore the bloom of health to their cheeks, and the silvery sound to their voices—look to the growth of their teeth in time, aid their development in the way that I have pointed out, and you may depend upon it, that you will have cause for thankfulness.

"I can assure you," rejoined my friend, "that I have great faith in the principles that you have proclaimed, and fully purpose to carry them into practice, for I am confident that children have been sadly neglected, and that there is a certain amount of cerebral affection connected with almost every one of them."

Upon our return to London, I exhibited the drawings which I had taken there, for the purpose of having woodcuts made; and one of the skulls, of which I annex two engravings, which skull my medical friend examined very carefully, and of which I gave him the following history:—

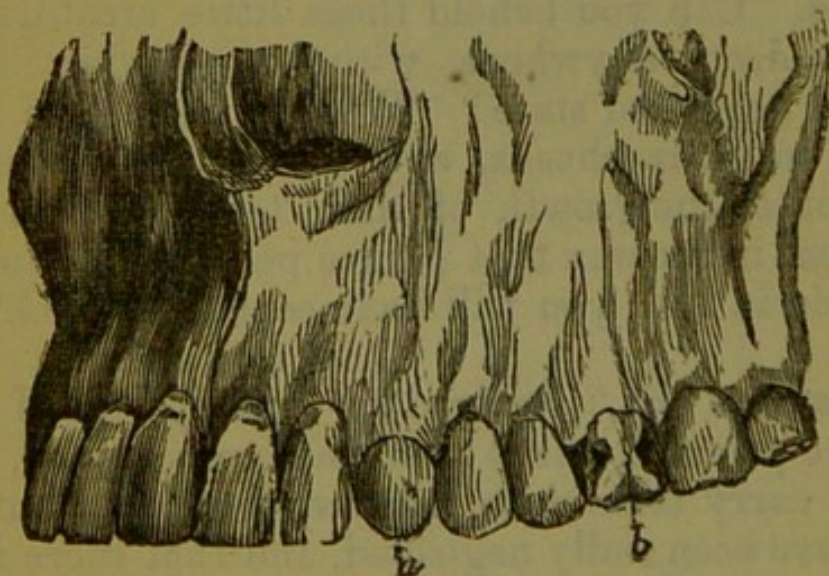
Fig. 10.



Interior of the Mouth.

- a.* The retained temporary canine.
b. The permanent canine forced across the palate.
cc. Decayed molars.

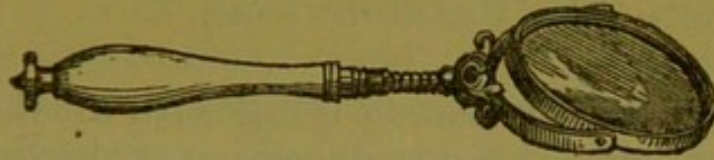
Fig. 11.



Side view of Fig. 10.

- a.* The retained temporary canine.
b. The decayed molar.

Fig. 12.



Magnifying mouth mirror.

Figs. 10-11.

This skull was presented to me some years back by a retired Surgeon, who stated, "that having read in the 'Cheltenham Examiner,' a letter with my name attached, in answer to a Cheltenham dentist, who imagined that he had made the discovery of the cause of decay in the teeth of the people: and attributed it to the general use of camphorated tooth powders." "In your reply," said he, "after giving your opinion that camphorated powders could have no injurious effect upon teeth naturally grown sound, you proceeded to inform him what you had found, from a very careful examination of the subject, to be the real cause of their decay: and stated that the four molars that appeared with the temporary teeth, did not shed with them, and that their retention was not only the cause of decay in the other teeth, but by the great space they occupied they caused the retention of other temporary ones, and forced the new growing permanent teeth out of their true places, overgrowing others, either retaining them above their roots, or in other positions that interfere with the action of the nerves and arteries around them, which occasioned the most lamentable results: but that if he would kindly extract the four molars, as early as possible after the 12th year, nature would rejoice throughout the whole frame of the youthful patient, and that tooth-ache and decay of teeth would be rarely known to those that had been thus treated." "I have thought," resumed the gentlemen, "a great deal about that letter, for I confess that I have often stood by the bedside of a dying child with the full conviction that the teeth were the real cause of the patient's death; but how, or in what way, I never could understand: and some years before I retired from practice, I was called in to attend upon a gentleman about 22 years of age. I had known the family for some time, and had attended upon him once before for a relaxed sore throat, upon examining which I discovered a lump in the roof of the mouth, just behind the front teeth: and remarked upon the singular appearance of one of the canines, being a short,

round, thick tooth, while the other was longer, and more taper and elegant, like the front teeth."

"I now found the gentleman lying with all the appearance of one who had suffered from concussion of the brain: the aid and assistance of all my professional brethren in the neighbourhood was called in, but it was of no avail; and after he had remained in a perfectly unconscious state for four days, he died. His death following so shortly after his sister's, and occurring nearly in the same manner, made a serious impression that the teeth in both of their cases had caused injuries, in some unknown way, to the arteries and nerves communicating with the brain. Time had nearly obliterated from the memory those painful events, when your letter recalled them: and shortly after I had read it, happening to meet the gentleman to whom I had relinquished my practice, he mentioned that the last of the parents of that young man, of whose death I had so often spoken, bowed down by grief under such afflicting bereavements, had sunk; and that the funeral would take place upon the following day. "I saw the coffin this morning," said he, "that contained his mortal remains." I would to God," I said most seriously, "that I could once more examine the head of that young man: I think it would reveal some important truths." "Your desire is accomplished," he said,—"here is the head." When brought to me, I recognized it immediately: all the painful and peculiar circumstances connected with the untimely deaths of two amiable young persons came back fresh to my memory. I now present the skull to you, and request that you will let it, as a voice from the grave, urge you to proceed with your labours; and proclaim the truth of your mission in these words—*Aid nature; serve God.*—Adieu."

The question naturally occurs—Are there many cases similar to this? I answer, yes, very many; I find them wherever I travel. I could find several in Cheltenham, now living, but many I have known to have passed away, the victims of abnormal dentition: and neither of their attendants ever knew the true cause of their deaths. I could find them in Hereford, and have seen plates to carry artificial teeth fixed over undeveloped natural teeth and fastened to a retained temporary canine.

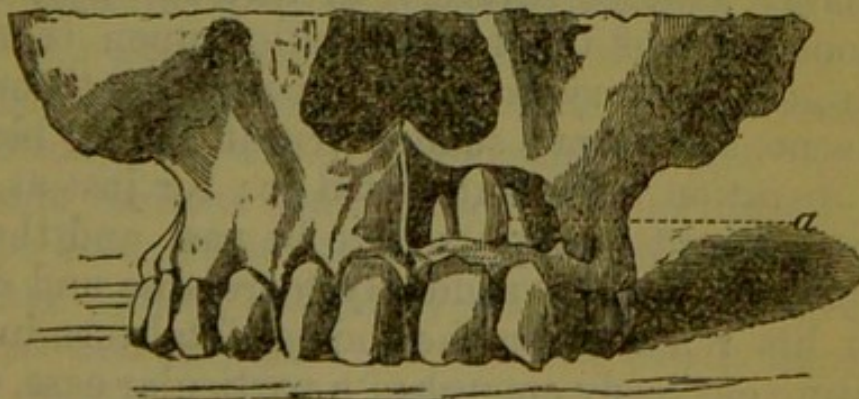
To facilitate the discovery of these teeth, it is necessary that you carry with you the magnifying mouth mirror—Fig. 12: it would be found useful in enabling the practitioner not only to discover overgrown and undeveloped teeth, but as an aid in detecting cases of suspected poisonings, for any powerful acid or mineral would leave some trace upon the gums or teeth.

Recurring to the illustrative case before us, the obvious course to have been pursued, if you had been called in when the attack first came on, and you had discovered the tooth, was to have removed the left front and lateral tooth, and the erratic canine could then have been safely drawn through their sockets, and the patient, I am satisfied, would have immediately revived.

This is what that eminent surgeon, Mr. Pott, in his day would have called “a good and easy composition for the preservation of life,” but the ignorance and timidity of parents, supported as they sometimes are by the indecision and want of scientific knowledge on the part of the practitioner, often lead to results the most fatal.

The next plates exhibit the position of an overgrown lateral and undeveloped *dentes sapientiæ* in the same head :

Fig. 13.

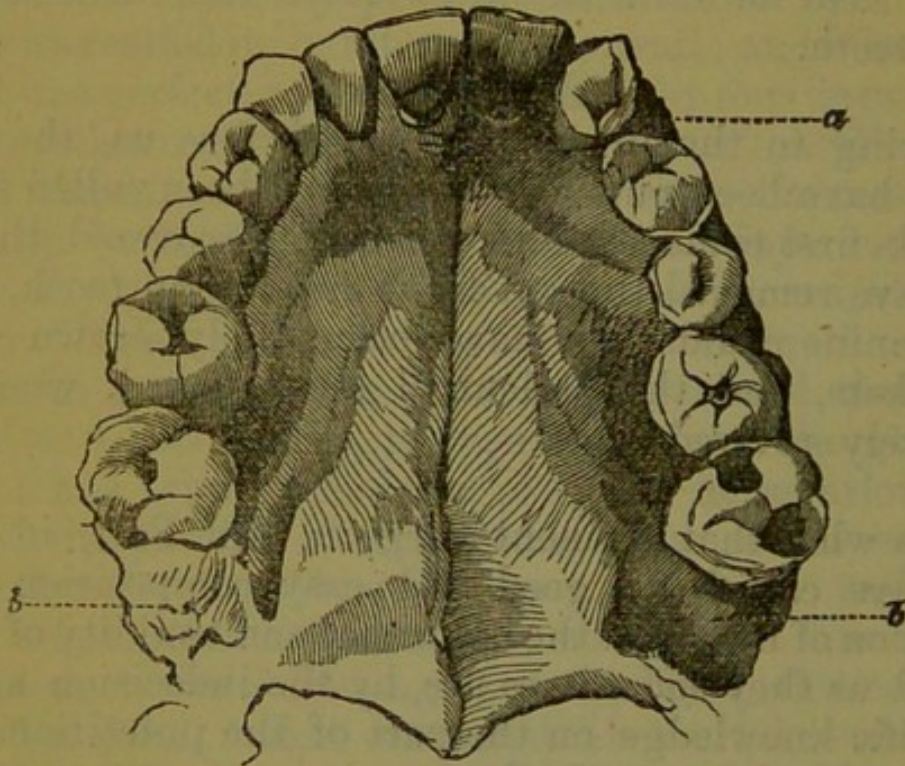


a. Part of the overgrown tooth.

I do not consider this condition of an overgrown tooth by any means so dangerous as if it had been forced inward and across the palate. I have known many similarly retained:—indeed, I know a case, in the neighbourhood of Cheltenham, which has existed for upwards of sixteen years, the tooth only

now, by the absorption of the gums, gradually appearing. No inconvenience has ever been experienced, beyond the inelegant protrusion and eventual loss of the front teeth, and it is a remarkable fact that although in this, as in several

Fig. 14.



a. The position held by the temporary canine.
bb. Undeveloped wisdom teeth.

similar cases known to me, the parents themselves have suffered no great inconvenience through life, their children have invariably suffered severely, in various ways, from the abnormal conditions of the teeth entailed upon them. Still there is danger in every case of impeded dentition, should fever supervene, and from a sudden fright, fall, or blow, or in any severe operation being submitted to; for just at the time that the crisis might be supposed to be past and the danger over, such patients are apt suddenly to relapse and die. Dr. Fordyce, in his remarks on the sudden fatal terminations of disease, writing curiously enough of a particular case, observes, "The author suspected that some mischief had happened, during the disease, to some particular part of the body, such as the brain, the heart, the lungs, or some of the other viscera necessary to life; and he has, *in many cases of the kind*, had the body opened by Mr. Hunter, and others, of the first anatomists of the age, but without finding any apparent

injury in any of the vital parts."—It is more than probable that the undeveloped teeth affecting the nerves, arteries, and glands in the maxillæ, which had been neglected in life, were left unexplored in death, and thus the seat of the mischief remained undiscovered.

The non-development of the dentes sapientiæ, as in Fig. 14, in the head of an adult, portends the most serious consequences, and will be found, I believe, to be a fertile source of insanity. Some years ago, I was employed in a family where insanity had, unhappily, become hereditary, exhibiting itself in the offspring soon after each of them had attained the *twenty-first year*. In not one of the mouths of the children were there any traces of the wisdom teeth; and I further satisfied myself that they never had appeared. I also found the same condition in the mouth of the parent from whom the insanity was supposed to have descended: and I was assured that neither of the parents ever had a tooth extracted in their lives. In further investigating this extremely difficult subject, I have seen sufficient to justify me in averring that if you will take the magnifying mouth mirror into any asylum, and examine the mouths of the hereditary insane, you will find sufficient to justify that conclusion. Would you examine also the condition of the teeth of their parents', whether of the insane or the deformed and afflicted, you would read such a tale as would convince you that my labours have not been in vain; for where insanity has not been the result of the abnormal condition of the teeth of the parent, I have found serious afflictions. In one family one child was totally blind, one was deaf and dumb; and the upper and lower front incisors could not, from the elongation of the molars, be brought in contact even within a fingers breadth. In another family deformity of the body, great nervous excitement and scrofula. In another family here, one child died an idiot, one little girl has lost one eye, one son is rapidly approaching the same condition. I see him frequently, and pray to be allowed to save him. The parents appear to enjoy perfect health; but their teeth present a most irregular appearance, and never were properly developed.

In the present month (March), Mr. Beach, surgeon, Rutland House, recommended a family to me to have some teeth stopped. In the mouth of the young lady brought to me, 17 years of age, I found two of the second lower temporary molars retained unshed, and each holding beneath its roots a permanent bicuspid; the upper front teeth were much compressed and protruding: each jaw was entirely filled, leaving the *dentes sapientiæ* not the slightest room to appear in. I refused to stop any of the teeth, but extracted one of the upper bicuspids and the two lower retained second temporary molars, being all that the patient would submit to. Upon being allowed to examine the parents' mouth, I found that he had never developed the *dentes sapientiæ*: and he also informed me that he had never had a tooth drawn in his life. He would not allow the gums to be lanced to free the teeth, although he confessed that he had been some time an invalid.

Since then Mrs. Bucknell, the wife of a corn-dealer, living in Winchcomb Street, having applied to a surgeon for his advice for an affection of her ear, that gentleman, after having examined the ear, gave it as his opinion that some important gland was broken therein; and prescribed medicines to be taken, and slight blister salve to paint the interior of the ear with. The lady being frightened, applied to me. I examined the ear, and could find no injury: but in the back of the mouth, on the same side, I discovered a swelling, which arose solely from an undeveloped wisdom tooth. I explained to her that those teeth remaining uncut in the gums were not unfrequently the cause of disease in the ear and of deafness. I lanced the gums deeply across the tooth; and feel assured that with its appearance the affection of the ear will vanish. Upon inquiring if she had any children, she replied that she had one child, and which suffered very severely with cutting her teeth.

I take these two as the last cases that have occurred, and that possibly may occur in my practice; but almost similar cases I have met with, every month of my life since I first investigated the subject: and having seen in so many instances, the fearful consequences entailed by such abnormal conditions, I consider that I cannot, as my last

effort, too strongly urge the subject upon your consideration, and upon the consideration of the government of the country, that it might receive the most searching investigation.

My opponents here *may*, by their wealth and influence, succeed in annihilating my power, and making parents and children tremble at my name, as "a man who has made tooth drawing his hobby, and who delights in it,"—and then boldly declare that "they cannot give their assent to any of my propositions."—And why?—Because it is too apparent that carrying them out would destroy the foundation upon which professional fortunes were built, and the very name of dentist: but, in submitting them to the judgment of the public, all that I ask, is a careful consideration, and I am sure of an impartial decision.

Still I am freely told that "the public will shudder at the fearful number of operations named in this paper, as Homœopathy has introduced the system that agrees with the age,—the mildest medicines, and the entire superseding of surgical instruments."—Can it be possible?—Are we as a nation so sunk in luxury and ease, that we tremble at the name of the simplest surgical operation, however important might be the anticipated results?

Ill will it be with any country, when such a state of enervation overtakes her people. By it Rome, once the mistress of the world, fell, to rise no more; and what nation could long survive it? It is by bodily vigour that labour, the source of wealth, must be maintained:—it is in robust health that physical endurance and indomitable courage can only be found, and their foundations must be laid in youth. It is in childhood that the seeds of mental and bodily diseases are sown: it is then that consumptions, with "weakness and debility," are implanted; and is it beneath parents or rulers, who should have truly paternal interests in the welfare of their children or people, to study the means of ensuring their health, and removing the proximate cause of deterioration and dire disease?

It cannot be—and I will pray that they may deign to investigate the principle that I have submitted, and as they find it based upon truth, freely adopt it. It is for the lives of millions, and for an immunity from deep sufferings during their lives, that I plead. It is for the interests of thousands, who, but for man's cruel neglect, might have remained amongst the noblest, as many of them were—the brightest ornaments of society, instead of being immured as lunatics: many of whom, if you will study this matter, it is possible that *you may yet restore.*

APPENDIX.

HEARING in the month of June, 1858, of a young man named James Kitchen, the son of a Shoemaker living at Cleeve Hill, about four miles from Cheltenham, being dreadfully afflicted with fits, I requested Mr. Coventry, M.R.C.S. of Essex villa, to accompany me there and see him; taking with us such instruments as I expected might be required. We found James Kitchen to be a stout, well grown young man, just entered his 21st year. Upon examining his tongue, we found it in a lamentable state, much swollen and nearly black from having been so severely bitten during the fits. His front teeth were sound and regularly formed—the first upper molars were decayed and had pained him several times—there were no signs of the *dentis sapientiæ* or any room left for them. We had no difficulty in inducing either the parents to allow or the patient to submit, to the operations of removing the two decayed molars; which were done, and the gums lanced at the back until the teeth could be clearly felt. I promised to call and see them again in about six weeks time and remove the two lower back molars, as they would be easier to extract, and it would greatly expedite the appearance of the lower uncut teeth: as we could clearly see that the danger was imminent, of insanity or death, as had been prognosticated, putting a period to the fits by the conclusion of his twenty-first year. Surveying the parents I observed a slight difference in the appearance of the eyes of the father Mr. William Kitchen, and inquired of him, whether he could see with the left one? He replied that “he had not been enabled to do so for many years.” I examined his mouth and found that he had never developed the upper wisdom tooth.

He said that he “was perfectly aware of that fact.” I further told him that the retention of that tooth uncut in the gums, had been the cause of the deprivation of sight from that eye. I remarked to Mr. Coventry, that it was by no means an uncommon case, and

that it was truly lamentable, that it was not more generally understood. I had seen and relieved several cases: and I believed that there were still many, apparently blind, to whom their sight might be restored, and the present case, although the nerve communicating with the ophthalmic division had been so long compressed was by no means hopeless, if he would submit to the clear extraction of the undeveloped wisdom tooth.

Seven weeks after the operation I called upon the patient again—the family had removed to Woodmancote, about one mile from their former residence. The patient was no better, only one tooth had appeared and that after a severe fit: lanced the gums again, and requested that they would either bring him to me or send, and that I would attend at any hour and extract the lower molars as explained. Hearing nothing of them for more than seven weeks I called upon them. Found the patient much worse, his memory, and the power of speaking nearly lost. Examined the mouth, found the upper teeth perfectly developed: but no trace of the lower ones; was informed that he daily vomited a considerable quantity of a clear fluid, which I imagined to be pure lymph, and that it proved that the lymphatic glands in the lower jaw were interfered with, and could not aid in absorbing that fluid, for the purpose of perfecting the chyle and diluting the blood: and the vessels would consequently become distended, as Dr. Mead remarks, “with black sluggish blood.” The parents however would admit of no further operations; and I was compelled most reluctantly to relinquish the patient to his insidious disease.

A highly respectable young female named Elizabeth Gardner, of No. 2, Regent street, in this town, I happened to hear had suffered severe paroxysms daily for full six months, in which her pains were most acute and her screams the most appalling, which her medical attendant had attributed to tic doloureux. I immediately sent one of my family to see her and offer my services, assuring her that I had relieved many from similar sufferings. She replied that she was greatly obliged to me, but that her medical attendant had taken a gentleman to examine her case, and that it had been pronounced that her teeth had nothing whatever to do with it, and to whom she had paid one guinea. I prayed to be allowed to see her, stating that I would tell her in a moment whether I could do any good or not in her case, and that I would neither demand nor accept of any fee. She consented, and I immediately attended, and with the aid of the magnifying mouth mirror discovered slight decay in the only

partially developed upper wisdom teeth, and with the aid of a fine probe convinced her that they were the cause of her sufferings. She consented to have them extracted, which was accomplished, and from that moment the paroxysms ceased; and although 18 months have elapsed since the operation, she has never had the slightest return thereof.

To Mr. Cullis.

“SIR,—I will gratefully certify to the good that you have done to every one of my family that would accept of your operations in the removal of some of their teeth when crowded; and whenever I could induce any of them to allow you to remove the back teeth, I have found those that you thus treated to have the best and soundest teeth. I have looked very closely into the matter, as I had been informed by several persons that the children’s mouths and teeth were completely spoiled by you. One person who I was told was ‘Dentist to the Queen,’ wished me to prosecute you, and offered money for that purpose. I told him that I would not do so, even if I were sure of making a fortune by it; for that you had offered your services freely to my family; and as I knew that you had to very many others, I considered that you could have no other object than that of doing good; and in the case he most complained of, a little girl then just turned seven years of age, that from fits had been brought down to idiocy; you had begged in particular to be allowed to remove some of her shedding teeth, and in their places you assured me that others would soon appear; and the new front ones you showed me with a magnifying glass were striking back into the roof of her mouth. As she was then in the habit of biting and tearing herself severely and to prevent which we were compelled to tie her hands down, we the more readily submitted to your advice. I further told him that you had Mr. Wood, a highly respectable surgeon, with you to witness the operations, who felt perfectly satisfied with them, and expressed his astonishment at the speed and ease with which the teeth were extracted, and that you afterwards brought Dr. Robinson to examine the child, and to whom you had explained the nature of the operations that you intended to pursue—He said, ‘He did not care, you had done wrong; you had drawn the child’s eye teeth, which was contrary to law, and that she would never have any in their places.’ Now with regard to this case, we consider that we are under the deepest obligations to you, for, although she remains idiotic, she has never had any fits since you attended to her, nor have we ever found it requisite to keep her under severe

restraint, and whenever you visited her or the other children she would immediately recognize and obey you, and soon learned to obey us, and to walk up and down stairs, which she had never done before; and her teeth, like the rest of the family's, soon convinced us that you were right and your detractors wrong. She is now grown up a tall young woman, and has had, I consider, generally good health.

“Yours respectfully,

“JOHN GROOM.

“Dec. 1857.”

“9, Henrietta St., Cheltenham.

The following testimonial is from a gentleman who having lost one child in the difficulties of dentition, submitted a large family to the whole of my propositions, some of them under the inspection of the family Physician, Dr. Hooper, of this town.

To G. H. Cullis, Esq., Cambray Place, Cheltenham.

“SIR,—I cannot leave Cheltenham without bearing testimony to the success of your practice as a Dentist generally, and more particularly in the cases of my children. For seven years, during the most critical period of dentition, they were with confidence submitted to your management, and I can with truth say I have every reason to be most entirely satisfied with *the result of your system*, each of them having an even, regular, and I may add, excellent set of teeth, for which I feel they are mainly indebted to your skill and judicious care.

“I remain, Sir, very faithfully yours,

“C. COOCH.

“1, Bath Villas, Cheltenham, 18th May, 1850.”

Mr. Merrett late Tailor and Draper of this town, about 16 years back brought one of his family to me to have his mouth examined. I found in the mouth of his son, then between 11 and 12 years old, no front teeth in the upper or lower jaw, while there were four teeth of a spurious growth in the place of the canines, and only eight small molars in the mouth. Upon a careful examination I could find no other teeth in the gums, and declared it to be a case of

malformation for which nothing could be done; and gave it as my opinion that I did not anticipate that any serious inconvenience would ever arise therefrom. Mr. Merrett informed me that he had another of his family in a similar situation with regard to the teeth, but as I had informed him that nothing could be done for them, I never saw the other. The first however I have attended and watched to the present day, and as I prognosticated, the teeth have never appeared, nor has any serious inconvenience ever resulted from their absence.

A young female who about ten years ago lived at Bath Villas, happening to attend to me at the door, I discovered in the place of her right front tooth, a short and pointed one, termed by some writers a supernumerary tooth. I was allowed to examine her mouth, and the position of the proper incisor was clearly defined in the gums above it. I offered to remove the spurious tooth and assured her that the proper one would then take its place. The family Surgeon, however, upon being consulted, advised her to let her teeth alone as she was then too old, being about 17 years of age, to cut new teeth, and I was compelled to resign her as I thought, amongst the numerous victims to ignorance upon that point. Happily, however, some time last year she presented herself and requested that I would extract the front tooth which had become inverted, and was growing out close under the nostril. I removed the tooth from its position and allowed the spurious one to remain. Had the tooth have forced its way into the interior of the roof of her mouth, her life would in all probability have been sacrificed, and the nature of her case never understood.

I annex a plate of her tooth and of 'a supernumerary one, and

Fig. 15



The inverted front tooth

Fig. 16



A supernumerary tooth

Fig. 17,



The inverted canine

of an inverted canine, which had pierced the left orbit, taken from the skull of a child about 10 years of age.

A young lady was brought to me, in the course of the last year to have something done to her teeth, upon examining her mouth, I found that the upper and lower front incisors had never been in contact, and could not meet by a fingers breadth. As I knew one of the family, a Draper living in Cheltenham, I called upon him and explained the case, and offered to draw the molars as they were the sole cause of the teeth not meeting. He examined the mouth, and found that it really was the case, and said he doubted whether that peculiarity was not the effect of fits and severe illness. I replied that it was probably the cause of her illness but not the effect. I had relieved many and could relieve the case. The operation however was put off for the opinion of the medical attendant of the family.

“ Sir, Although my brothers were very angry with you for taking the four large grinding teeth from my mouth that were not at all decayed, I am now quite sure that it was for my good ; as the upper places are completely filled up, and the lower very nearly so ; and my throat has been entirely free from the disagreeable swelling to which I had been for a long time previously liable.

“ Charles Smith,

“ Hairdresser,

“ Cheltenham, Feb. 9th, 1858.”

“ Bath Road.”

To Mr. Cullis Dentist, Cheltenham.

“ Sir,—I find my mouth very greatly benefitted by your removing the three large grinding teeth, and I now wish that I had allowed you at the time to draw out the other, as you advised me, for I find that other teeth have come down at the back of the mouth, and there is no vacancy near where you took the three from, but the tooth cannot come down on the side the one remains, therefore I intend to have it drawn as soon as I can.

“ Yours respectfully,

“ Stephen Reynolds.”

“ Hyde Mills, near Stow-on-the-Wold,

“ Jan. 1858.”

The above patient was 17 years of age at the time of the first operation—which was two years previous to the date of his letter.

From a son of the late Mrs. Baker of the Montpellier Baths, who was submitted to the operations at the 12th year.

To Mr. Cullis.

“Sir,—Some twenty years since my teeth were in a lamentable state; the operations you then performed on them has been, I believe the means of preserving the others sound to the present time, for which I can now tender you my very best thanks.

“Yours truly,

“Thomas Baker.

“39, Brunswick Street, Newington.”

“Feb. 25th 1858.”

To Mr. Cullis.

“Sir,—I am highly pleased with the attention to the teeth of my family; and I feel confident, that your system of the timely removal of the four side teeth, allows the back teeth to appear earlier, and all of them to grow sounder, and in much better situations.

“Leonard Winters,

“Marble Mason.

“Sherborne Place, Jan. 1858.”

“To Mr. Cullis, Cheltenham.

“My Father, the late Mr. W. Paine, printer, of this town, had the greatest confidence in your system of regulating children’s teeth; and for my own part, I can vouch for your operations upon my mouth having been of the greatest service to the other teeth.

“W. B. Paine, Regent Street.”

“I certify that after I was 35 years of age, Mr. Cullis extracted a large back tooth from my mouth, and I have since, as he told me that I should do, cut another tooth in its place.

“S. M’Craith,

“The Knapp,

“Jan. 1858.”

“Cheltenham.”

To Mr. Cullis.

“ Sir,—As far as I am concerned, I can truly say that I have found in my own case, and observed it in others, that your plan of preventing pressure upon the teeth, by the early extraction of the side ones to be beneficial to the mouth, as the other teeth attain a more regular growth and appearance, with greater prospects of their preservation.

“ Francis Lawrence,

“ 4, Montpellier Street,

“ June, 1858.”

“ Cheltenham.

The patient was 16 years of age at the time of the operation.

Mr. William Draper, tailor, Montpellier Avenue, some few years back requested my attendance upon a friend of his, that was suffering from a diseased jaw bone, to ascertain whether the teeth had anything to do with it. I examined the wound, and upon my pressing the neglected molar above it, I became perfectly satisfied that the tooth had lost its vitality, and had caused the disease in the jaw, and recommended its immediate extraction. I drew it out, and he was convinced by the colour of the roots of the tooth, that it had been the cause of all his sufferings. The wound soon afterwards completely healed; but to what extent the constitution had suffered by the tooth being allowed to remain in that state in the mouth such a length of time, must now for ever remain a mystery.

A lady from Newent named Buckland, whilst residing in this town, cut a canine tooth, after, as she supposed, that she had been freed from all her upper teeth for more than five years; and as it then greatly inconvenienced her, I was called in to extract it. She had suffered pain in her gums and nostrils for years before, but it had always been attributed to tic doloureux. The tooth had lain in the gums on the outside of the jaw.

I am aware that we all occasionally meet with, and read of such cases; but I believe that they are only *the few* that survive, *the many* that die from such causes we know nothing of.

Some years back I was called in by Mr. Cox a Bootmaker, then living here in Winchcomb Street, to attend to a little girl about nine years of age, who had been suffering severely from a swelling of the inside of the nostril, and the cause of which had not been ascertained. Upon examining her mouth I missed one of the permanent front teeth, and suspected that its root had forced its way into the nostril. As the parents were anxious that everything should be done, that could save the child, I opened the gums with the lancet, then introduced the forceps, and safely extracting the tooth, relieved the nostril, and saved the child. The patient is still in Cheltenham, and anyone could scarcely observe that a front tooth had been drawn, as the lateral has completely taken its place.

The few cases that I have submitted to you are selected as fairly representing the many that I have had, therefore I shall merely annex the names of a few families in the immediate neighbourhood, who have confidently submitted their children to my management.

Mrs. Jane L. Guinness, 1, Wellington square
 Mrs. Capt. Johnstone, 11, Clarence square
 E. G. Broderip, Esq., Sudgrove
 W. Boodle, Esq., Manchester Walk
 Mrs. Campbell, 8, St. George's terrace
 Mrs. Jewell, 27, Lansdown crescent
 W. W. Bryer, St. Georges terrace
 Mrs. John Davis, Prestbury
 Mr. Lewis, Academy, Prestbury
 A. Chreiman, High street
 John Glass, Regent street
 Mrs. Walters, 8, Oak terrace
 Mrs. Paine, Regent street
 Thomas Fursey, Belmont House
 Mrs. Gardner, 2, Regent street
 Mrs. Turk, Charlton Kings
 George Lewis, sculptor, Clarence street
 W. H. Knight, St. George's place
 Thomas Sims, High street
 James Villar, Auctioneer, Cheltenham
 George Sweeting, 315, High street
 John Acock, Portland street
 Thomas Giller, 79, High street

Jacob Silk, 149, High street
 Thomas Waite, 349, High street
 Job Parkes, 7, North street
 Robert Elliott, Grosvenor street
 Matthew Lawrence, 216, High street
 Mrs. Clarke, 171, High street
 Jacob Parker, Montpellier
 James Powell, 5, Bays hill
 Mrs. Thornton, 81, High street
 Mrs. Phillimore, 119, High street
 Benjamin Alcock, 106, High street
 John Stroud, Montpellier villas
 Mrs. B. Leach, 156, High street
 J. Radford, 56, St. George's place
 Isaac Lawrence, Colonnade
 George Gordon, Jeweller, High street
 Richard Page, Grosvenor street
 William Draper, Montpellier
 J. B. Weston, Wellington House
 William Smith, Oxford passage
 J. Carter, Montpellier villas
 John Sier, Great Norwood street
 William Roberts, Hales road
 J. P. Leacey, High street
 Benjamin Mayer, Portland street
 Thomas Doogood, Plumber
 James Phipps, 407, High street

Henry Jeens, Plumber, Hewlett street
 Mrs. Lane, 10, St. Paul's street north
 William Hamer, Tivoli
 Isaac James, Tivoli
 William Laurence, 4, Queen's circus
 Edward Raven, Albion street
 J. Harris, 8, Leamington place
 W. Ruck, Montpellier Baths
 John Cormack, Clarence street
 S. L. Price, 136, High street
 Mrs. Coles, 420, High street
 Thomas Yeuell, York house
 Charles Tilley, Salt Works, Baths
 John Bignell, 2, Tivoli place
 Mrs. Millard, 2, Leamington place
 Mrs. Hopwood, 1, Carlton place
 Charles Niblet, Albion street
 J. Bevan, 5, North place
 Samuel Broome, Regent place
 Thomas Ballinger, 93, Winchcomb street
 George Lyne, 117, High street
 Mrs. Banbury, Winchcomb street
 James Wood, 7, Corpus street
 Mrs. Blunt, 2, Oxford villas
 Thomas F. Willis, Winchcomb street

Mrs. Weatherstone, High street
 Edwin Parry, High street
 Thomas Phillips, 5, Oxford parade
 John Chandler, 10, Fairview street
 John Dossou, Charlton Kings
 Thomas Furber, 3, Montpellier Exchange
 William Dickens, 284, High street
 Stephen Berkeley, 7, Queen's buildings
 Thomas F. Neill, Albion street
 Mrs. Ballinger, Wellington street
 W. Hayward, Prestbury
 J. J. Moss, 2, Brandon terrace
 W. R. Tymms, 2, Albion street
 E. M. Edwards, 396, High street
 Mrs. Stanly, 1, Oilney place
 Mrs. Goodingham, Well walk
 Leonard Winter, Sherborne place
 Robert Bray, 6, Montpellier
 R. Elliott, Grosvenor street
 James Uglow, Eldon cottage
 Mrs. Darby, Lansdown hotel
 William Hall, 92, High street
 Mrs. Morgan, Fairview
 W. Roberts, 2, Regent place
 Mrs. Rebbitts, 15, Beauford buildings