

ANDREWS (R.R.) *Repr.*

A GLANCE AT DENTAL HISTORY.

ADDRESS

DELIVERED BEFORE THE

MASSACHUSETTS DENTAL SOCIETY,

AT ITS

TWELFTH ANNUAL MEETING,

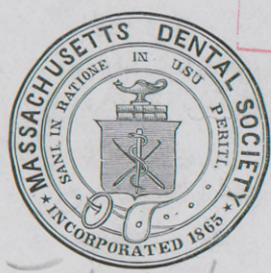
DECEMBER 14, 1876,

BY

R. R. ANDREWS, D. D. S.,

OF CAMBRIDGE.

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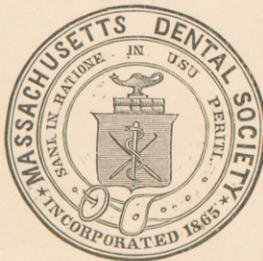
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J. H. BATCHELDER, CHAIRMAN, EXECUTIVE COMMITTEE.

ADDRESS.

Mr. President, and Gentlemen:

YOU have assigned me both an honorable and a difficult task on this occasion of our annual gathering. Permit me to thank you at the outset, for the honor you have thought fit to extend to me, while, at the same time, I shall accept the difficulty of the task with every limitation of circumstance which I may deem to be favorable to myself.

There are themes without number which we might discuss, both profitable and interesting at such a time as this, and before this Brotherhood of Dentists; for, in the realm of scientific research, new phases of development are constantly adding treasures to dental knowledge, which it would be interesting to criticize in their freshness and originality; but this is too wide a range, and far too speculative in character, for either our purpose or my inclination. Theories are unsafe until they have crystallized into facts,—then they become practical.

It is my intention, in my address, to present to you what has grown into—what has become woven into the very texture of the history of Dentistry. History is a growth: the things that enter into it must have had their times of being, or else they could not

have been recorded; and growth indicates age. A day's experience may indeed be history, but until it has grown into a long series of like experiences it will not be regarded as history in the truest sense. An experiment may indeed be a matter of history, but until the experiment grows into something more tangible than itself, it does not pass into history.

Dentistry has a history,—has had one for centuries,—has been groping through all the ages, by steps, from darkness to the light. As a specialty of the surgeon's art, it has developed with surgery. It has had its epoch of growth; its honorable mention in the writings of the sacred past; its champions, who speak from behind the shadowy hills of distant ages gone; handed down from sire to son until it comes to us, who must improve the trust and hand it down to other generations, an enlarged power. In their relation to human beauty the teeth have figured in poetry and prose from the earliest times. It was Ovid who wrote the significant lines,—

“Let not the nymph with laughter much abound,
Whose teeth are black, unsightly, or unsound.”

While Laurence Sterne, of more modern fame, speaks of “a pearly set of teeth so beautiful that Royalty would have pawned her choicest jewels for them.”

The teeth demand a peculiar treatment, a separate professional skill, which, in its kind, is unlike that of any other. This is why we limit the name of our profession, and call it Dentistry,—a special practice

which involves truly the science of the teeth. Out from among the dim ages of past wisdom,—away back amid the shadows of perished times,—we have preserved for us the record of the first effects of dental skill. Five centuries before the time of Christ, we find it mentioned in Herodotus, that in Egypt there were physicians for the sole care of the teeth,—the dentists of twenty-three hundred years ago. Cicero has left the mention of the name of *Æsculapius* in his writings, whom he says was the first to extract teeth; and also mentions that the leaden instrument, called odontaggon, used by him, was hung in his temple by the ancients.

Pursuing further this first epoch of dental history, there is scarcely room for doubt that the teeth were objects of special care, inasmuch as gold was found about the teeth of the dead; for one of the laws of Rome, formed by the Decemveri, was that gold found about the teeth of the dead should be burned with the corpse. I find it stated by one writer that it was *Æsculapius*, the third, who first extracted teeth, and that Hippocrates, his successor, was the first to leave any writings in regard to their maladies. In these writings, he notices that dentition is easiest with children in winter, and that when the bowels are in a relaxed state there is less danger of convulsions. Very cold drinks, he says, hurt the teeth; diseased teeth he finds to be the cause of many disorders, and in this case he counsels extraction. When a firm tooth ached he used the cautery. Rough edges of

decayed teeth, he states, cause ulcers on the tongue, and swellings of the gums he attributed to caries. Loose and painful teeth he extracted; such as were merely loose he tied to adjoining teeth with threads of gold and with silk. He lived four hundred and fifty years before the time of Christ.

Three hundred years later we find that Celsus, a celebrated surgeon of his time, wrote much about the teeth. He left many recipes for the cure of aching teeth, which he regarded as one of the greatest of human afflictions. One treatment was to restrict his patient to a low diet, and he employed emollient applications, in the form of vapor, to the teeth and gums, wrapping up the head and using blisters on the breast or shoulders. He was averse to extraction. He treated the gums about loosened teeth with the cautery, afterwards anointing with honey. When a tooth was decayed and rough he filed it "with an iron file."

Thus we observe more light is gradually thrown on the treatment of the teeth. In the middle of the first Christian century we find it written that one Archigenes, a Roman surgeon, invented an instrument for boring a small hole in the teeth, in cases where medical applications failed to give relief. Is not this the operation we call rizodontrophy? About this time Scribonius makes the first mention of the tooth-pick, a little instrument to be made of mastic wood or of quills.

Later, in the early part of the second century, we

find a bit of literature on the care of the teeth, which is most opportune to our present purpose, and although not written by a surgical writer, is sufficiently interesting and pertinent to be given entire. It is a chapter which I find in a discourse on magic, written by one Apuleius,—seventeen hundred years ago,—and it is so terse on the subject of the teeth, that it gives us a good commentary on ancient ideas of their care. It seems Apuleius had been sharply criticized for writing certain lines, which he sent to one Calpurnianus, with a dentifrice, and in the chapter referred to says:—

“I will now take up the argument in reference to the lines,—compositions of mine:

“In hurried verse, I bid Calpurnian hail!
 I've sent, as you requested, the dentifrice,—
 Arabian produce,—brightener of the mouth;
 A fine, choice powder,—a rare whitener,—
 A soother of the swollen, tender gums,—
 A cleaner out of scraps of yesterday,
 That no unsightly blemish may be seen
 If you should chance, with open lips, to laugh!

“And now, pray, what do these lines contain, in meaning or in language, that I should be ashamed of? What is there that a philosopher should be at all unwilling to acknowledge as his own composition? Unless, perchance, I was deserving of reprehension for sending to Calpurnianus a powder made of Arabian drugs, seeing that he was a person who might

have, with much more propriety, after the filthy manner of the Iberians,—

“ ‘With his own water, wash his teeth and rusty gums,’ ”

“As Catullus says.

“I perceived just now some who could hardly control their laughter, when the orator inveighed with such asperity against cleaning of the teeth, and pronounced the word *dentifrice* with more indignation than anyone else would speak of poison. And why should he not? No doubt it is a crime to be overlooked in a philosopher if he is particular in his precaution against dirt; if he allows no part of his body that is exposed to view to be unclean and filthy,—the mouth especially, which man makes frequent use of, openly and conspicuously, whether he kisses another, or discourses on any subject, or lectures before an audience, or repeats his prayers in a temple; for so it is that words precede every act of mankind,—words which, as the first of poets says, issue forth from the hedge of the teeth. If you could, at the present day, produce anyone gifted with powers of utterance as grand as those with which he was endowed, he would declare in his usual manner, that from him, above all men, who has any care for the art of speaking, the mouth requires more sedulous attention than all the rest of the body, seeing that it is the vestibule of the mind, the gateway of speech, and the outer court of the thoughts. At all events, according to my way of thinking, I should say that

nothing so ill becomes a man who is of free birth and of liberal education as inattention to the appearance of the mouth. You look upon no feature before this in a man while he is silent; no one more frequently while he is in the act of speaking.

“I only wish now that my censor, Æmilianus, would answer me this question,—whether he is ever in the habit of washing his feet, or whether, if he does not deny this fact, he would contend that greater care ought to be bestowed upon the cleanliness of the feet than upon the teeth? If, indeed, a person like yourself, Æmilianus, will hardly ever open his mouth except to utter calumnies or revilings, I am clearly of the opinion that he ought to bestow no attention whatever on his mouth, nor to clean his teeth with powder brought from abroad, when he might much more appropriately rub them with charcoal snatched from the funeral pile; and that he ought not so much as to rinse them with common water. On the contrary, let his malignant tongue, the caterer of falsehoods and of bitter abuse, forever lie amid the stench and foulness which so well become it; for how in the name of misfortune is it consistent with reason that one should have a clean and purified tongue, and at the same time a loathsome and offensive voice? That he should, like the viper, instil black venom from teeth white as snow? On the other hand, in the case of him who knows he is going to utter language that is neither inappropriate nor unpleasing, it is with good reason that his mouth is washed beforehand,

just like a cup when it is prepared for containing a pleasant draught.

“But why enlarge further upon this topic with regard to mankind? That huge beast, the crocodile, — which is produced in the Nile,—even it, as I am informed, opens wide its jaws, and without inflicting injury, allows its teeth to be cleansed; for it has an immense mouth and no tongue, and generally lies concealed beneath the water; numbers of leeches fasten about its teeth,—wherefor it repairs to the banks of the river and opens its mouth, and one of the river-birds, a friend to it, thrusts in her beak and picks its teeth without incurring any risk. No more of this.”

And so ends, probably, the first chapter ever written on the care of the teeth. Marked by a vigorous originality, this discourse is one of peculiar force and should live in the annals of dentistry as an appeal from the dead past to the living present.

Later we find Galen, a celebrated physician of his time, writing much in regard to the teeth. He finds a difference in odontalgia, the pain sometimes being in the tooth, sometimes in the gum. He writes that a dentist once tried to extract a tooth for him, but only succeeded in lifting it a little from the socket; but this caused all pain to cease, and the tooth was retained for use a number of years. Masticating the root of purslane, or a decoction of it used as a lotion, was his cure for an aching tooth. He speaks of using applications to make faulty teeth fall out; these, it would seem, were secrets with him.

In the year six hundred and thirty-six,—the last well defined period of dental history until after the excitements and disturbances of the decline of Roman power and the superstitions of the Dark Ages,—we find Paulus, of Ægina, writing much that is interesting to us. He says, that to save the teeth one must avoid indigestion and obstipation. He recommends cleansing the mouth after every meal, to avoid eating sweets, or anything very cold, or biting very hard substances, as this, he notices, injures the enamel.

“About this time,” in the words of an old writer, “the barbarous nations began to overrun the whole earth, and surgery was so far from increasing that it received the same fate with all other parts of knowledge, and suffered under the common calamity.”

Sometime between this and the tenth century, Mohammed Arrasi, an Arabian dentist, is mentioned as having filled the hollow of carious teeth with a composition of mastic and alum, afterwards rubbing the teeth and gums with pepper and powdered gall-nuts; he used astringent applications when the teeth were loose. For odontalgia he recommended oil of roses, pellitory root, opium, scarification, and leeches to the gum; if these failed, he touched the roots of the tooth with cautery, and then endeavored to eradicate it by means of certain specifics. Albacasis, an Arabian physician, sometime in the twelfth century, is said to have given certain rules for replacing lost teeth by artificial ones made of animal bone or ivory.

The method used by the Arabians at this time to destroy the pulp, was to push on it a red-hot needle through a metallic tube.

To Avicenna belongs the honor of publishing the first work giving the anatomy and physiology of the teeth. He believed worms to be the cause of the tooth-ache, and gives many hints in regard to tooth powders and narcotics as odontalgic remedies. He recommends boring carious teeth to let out any accumulation of humors, as well as to apply eradicating specifics with greater ease. To eradicate a tooth, the gum was first scarified, and the specific applied cautiously to the tooth; to keep them from injury, the neighboring teeth were covered up until the tooth operated upon became completely loosened. Michael Sarvonarola, who died in 1462, in his "Practical Compendium," says that after the great pestilence of 1348 the number of teeth found in the human jaws were only twenty-two,—sometimes twenty-four,—and that before this pestilence there had always been thirty-two.

When we consider that at this period the whole earth was overrun with barbaric tribes of men, whose instincts were savage, and whose customs were rude and untempered, we may not wonder that dental surgery, in common with almost every other branch of knowledge and industry, became largely contaminated with absurd systems, and partook of the superstitious veneration for charms and nostrums which characterized the history of the Middle Ages. It

may not be uninteresting at this juncture, to cite some instances of the crude manner in which, at this time, fact was adulterated with superstitious fancy; they may serve to show one of the stages of development through which dentistry has passed.

Thus Gaddesden, court physician to Edward II., speaks of using the grease of a green frog to cure an aching tooth, and says that if the gums are rubbed with this remedy the offending tooth will soon fall out. In cases of retarded and difficult dentition, the grease of animals was used,—sometimes the brain of a hare, or what was considered better, the milk of a slut,—to be rubbed over the gums of the little sufferer until the teeth were cut. And John Arculanus, whom I find to be the first writer to speak of filling carious teeth with leaves of gold (about 1430), makes this curious and unintelligible statement: "In performing this operation, regard must be had to the complexion of the patient, — warm ingredients being employed for those of a cold constitution, and *vice-versa*."

Lawrence Phries, in his "Mirror of Medicine" (1529), says that pain in the teeth is caused by an effusion from the brain into the tooth; if this effusion was hot, the pain was sticking and sharp; but if the effusion was cold, there was no sharp pain, but the gums and face were swollen. Bad vapors from the stomach also caused pain, and this could be known by the pain becoming less either before or after meals: the treatment for this form was a system of diet. He says that if pain in the teeth is not cured

by the simplest drugs, recourse may be had to the narcotics; if then the pain could not be stilled, and it was certainly located in the tooth, and not in the nerve, the tooth must be broken out. Phries gives a long prescription, the principal ingredient of which was arsenic, to eradicate a tooth; he also invented numerous tooth powders.

Thus, until about the sixteenth century, the darkness of ignorance and blind fanaticism prevailed, and then the dawn of a brighter period began. Early in this century the effect of mercury on the teeth and gums was noticed.

Versalius, a noted surgeon of his time, whose laborious investigations are said to have given birth to anatomy, found that in cases of difficult dentition nature might be much assisted by making incisions in the gums, cutting quite down to the crown of the tooth. He also recommended turpentine to facilitate the protrusion of the teeth, in place of the disgusting remedies before in use. Ambrosè Paré, whose great reputation saved his life at the massacre of the Huguenots (he being a Protestant), wrote much in regard to the teeth. He relates to us the case of a lady who, having had a tooth extracted, had it replaced by one taken fresh from the mouth of her serving woman. The origin of this operation has been, by some, ascribed to John Hunter; but this is a mistake. We have the record of it here two centuries before Hunter's time. Many of the dental instruments invented by Paré resemble those in present use. About this

time it was recommended to stop up a defective palate, when the bone was eaten through by caries, with a piece of sponge or with a silver plate.

Dupont (A. D. 1633) was of opinion that the best way to cure an aching tooth was to extract it, and then to immediately replace it. He makes the statement that a tooth so treated will never afterwards be painful.

About the middle of the seventeenth century, Nathaniel Highmore discovered the cavity in the centre of each maxillary bone, extending from the orbit of the eye to the roof of the mouth, called in honor of his name *Antrum Highmori*. This was a highly important discovery, giving a clew as it did to many affections apparently of the teeth, which had hitherto baffled the skill of all operators. I find it mentioned that it was the practice at this time to kill the nerve (pulp) of an aching tooth with aquafortis, oil of vitriol, and the cauterium. In the year 1678, Leeuwenhoeck discovered, with his simple microscope, the microscopical anatomy of the teeth; but his discoveries were so much ahead of his time that they had to wait generations to find themselves confirmed. Peter Diones, a French surgeon, published a work in 1696, which evinces that the practitioners of that period began to take a lively interest in dental surgery. His observations on operations which now belong exclusively to the dentist, are exceedingly pertinent and valuable. He censures the practice, too common at the present day, of running to the dentist on every

occasion of the slightest pain, to have the tooth extracted. He enumerates every legitimate cause for extracting, and gives a description of the various instruments used for dental operations in his time.

Thus I have tried to convey a tolerably accurate idea of the history of dental surgery from the earliest times to the commencement of the eighteenth century. As we now approach a period better known, and in which the dental art has made such vast strides, it is neither practical nor essential to notice all the writings of the last century; indeed, my time would not allow. I shall therefore content myself with a cursory glance at a few.

We find in 1728 the dental art in France in the hands of some very skilful dental operators. Perri Fauchard, the most celebrated, wrote a work entitled "The Surgeon Dentist." He was the first to use a special chair for dental operations, instead of having the patient sit on the floor, or lie on a couch, as was the custom. He treated many cases of caries by replacing the teeth after extraction, tying them with wire to those adjoining, filling them as soon as they became fixed and painless. He used fine pewter for filling, preferring it to either gold or lead. He regulated misplaced front teeth with an instrument called a pellican, retaining them in place with wire; he speaks of performing this operation frequently and successfully.

Bunon described an affection of the teeth which he claims the merit of having discovered, and which he

calls erosion. About this time Heister, a surgeon practising in London, writes: "If a tooth aches, cauterize it by inserting a red-hot instrument into its cavity, by which practice you will free the patient instantly of pain, provided you do not burn the adjacent parts of the mouth." To extract a tooth he says,—“If it be a lower one, place your patient on a low seat; if an upper one, he must be seated on a high stool; then take the instrument best adapted to the case, and thereby draw out the tooth, *as though you were extracting a nail out of a piece of board.*”

Philip Pfaff, a German writer of 1786, informs us that artificial teeth were first formed of silver, and of mother-of-pearl, subsequently of ivory and neat's horn, but in more recent times, of copper, covered with a delicate enamel. The eighteenth century was not without its charms and nostrums, any more than those periods of acknowledged ignorance and superstition, before alluded to. So late as 1794 we find it written that one Reneiri Gerbi cured six hundred and nine cases of severe odontalgia by using the larva, *curculio anti-odontalgicus*, which is found in the blossoms of the *carduus spinosissimus*. Fourteen or fifteen of the larva were crushed between the forefinger and thumb; the tooth was then touched with these, and the pain entirely removed in a moment. The finger and thumb so charged, he says, retain their healing power for a year. In 1797 we find Dubois de Chemant, a Frenchman, announcing the invention of a paste for making mineral teeth. The merit of

this invention was, however, claimed by Duchateau, a French apothecary. The writings of Fox and Hunter are too well known to need any mention here.

Thus have I described, so far as I have been able to learn, the steps of growth which have marked the progress of our profession up to the commencement of the nineteenth century. Gleaning from rare harvests of treasured thought, from books that have lived on for centuries after their authors have mouldered into dust, it has been my endeavor to present in these brief outlines, what the past has done for dentistry. The men of the past who have become prominent in giving our profession the high rank it takes to-day, have been the men who, with unceasing toil, not content with what they had already acquired, sought to learn more. Shall we be behind them, with all the advantages to be derived from this age of intellectual power, and amid the vast multitude of modern appliances? Upon our answer depends the future of dentistry.

Our work is to preserve what God has made and what man has corrupted. The human teeth are the creation of a divine hand, and if we would but realize our mission in its highest significance, we should know that we are ministers to heal in Heaven's name. Let this be our inspiration:—To act nobly and well, that in the mouths of many witnesses our judgment may be just.

