TREATMENT OF IRREGULARITY OF THE PERMANENT OR ADULT TEETH.

By E. H. Angell, Dentist, San Francisco, Cal.

The following article is taken from the proof-sheets of the San Francisco Medical Press, furnished by the author of the communication. We are pleased to have an opportunity of presenting it to the readers of the Dental Cosmos, as there are several valuable suggestions in it; but must beg leave to differ with the writer in the conclusion arrived at, that by the use of the apparatus described he succeeded in separating the superior maxilla from each other. With no disposition to assert that such a thing is utterly impossible, yet, when taking into consideration the anatomical
relations existing between the right and left superior maxilla and the
other bones of the face with which they articulate, such a result appears
exceedingly doubtful. Even admitting the impression of the writer to
be correct, it would be a very strong argument against the use of such an
apparatus; for surely the irregularity of the teeth is a trifling affair
compared with the separation of the maxilla, which could not take place
without inducing serious disturbance in the surrounding hard and soft
parts. Doubting the possibility of effecting the separation, we can see
no objection to the employment of the apparatus, and indeed believe that
it will be found very useful in correcting many cases of irregularity.

After presenting a table, taken from Professor Herr's work, of the
order and period of eruption of the permanent teeth, (with which our
readers generally are familiar,) he says:—

"Considering these organs therefore, in the order of their eruption
and development, we have the first molars, two in each jaw, situated
directly behind the deciduous set. As the eruption of these teeth is
generally attended with no pain or inconvenience, they assume their places
in the mouth so stealthily, that the parent or guardian usually is none
the wiser for their presence.

"The deep depressions in their grinding surfaces are frequently so im-
perfectly covered with enamel as to readily invite disease; as a conse-
quence, they often become carious soon after their eruption, and if
neglected, their destruction becomes inevitable. If the carious or diseased
portion is removed as soon as it has penetrated to the bone structure, and
its place supplied with pure gold in a skilful manner, there is little
difficulty in rendering these invaluable organs useful up the period of a
protracted old age. I am more explicit in relation to these organs,
from the fact that the place they occupy in the economy of nature is in no
respects equal to the corresponding degree appreciated. The cases are far too numerous in
which their existence is entirely unknown to parent or guardian until the
irreparable loss of their pulp cavities compels the too intimate knowledge of the
surgeon. These teeth, four in number, are the first of the permanent set
to take their position in the mouth, and are usually fully developed and
admirably articulated before any of the primary teeth have fallen from
their sockets. Nature has thus in her manifest wisdom, provided a
sure and unerring guide to the correct occlusion of the jaws, despite the
loss of the deciduous set. By the presence of these organs, correct articula-
tion is preserved, while without them there is no security against de-
formity and distortion of the features. At the early period at which these
teeth are permitted to be destroyed, the inferior jaw may incline to either
side, or, instead of staying in its place, may assume the deformed position,
denominated under-bite; in which the inferior incisors shut outside the
superior. The distortion of face and ugliness of countenance resulting
from the early loss of these teeth, would severely tax the science of math-
ematics to compute.

"The central incisors are the next to make their appearance, and if
disease and ignorance have left undisturbed their predecessors they usually
assume the places designed for their occupation with unerring certainty;
but if modern reclusiveness has forsaken nature, or a disregard of hygienic
laws has permitted disease to do its devastating work, there no longer
remains any guarantee that these teeth will assume their correct positions, unless aided by the almost boundless resources of dental science.

"The lateral incisors succeed these, and are subject to the same laws and liable to the same contingencies.

"These are succeeded by the first, and the first by the second bicuspids, the eruption of which is attended with no difficulty if emphysema or disease has not hitherto occupied by the first and second primary molars. The size of the latter considerably exceeds that of the bicuspids, so that the last have abundant space assigned them, and an excess even, which is held in reserve for the cuspids, which in size greatly exceed their temporary predecessors.

"The bicuspids are succeeded by the cuspids, and if the teeth already developed have followed the grand highway nature has prepared for them, or the same has been accomplished by scientific aid, little will now remain to induce irregularity. If, on the contrary, the loss of the deciduous teeth has permitted the jaws to become narrowed and contracted, so as to leave no room for the cuspid in, as a consequence they are impeded in their eruption altogether, or compelled to take place inside or outside the dental arch. If on the inside, they encroach upon the tongue and impede articulation; if on the outside, they impart an expression so nearly approximating to the hideous, as to become the constant source of annoyance to the sufferer, and the occasion of regret, if not disgust, to his friends.

"These that have arrived at adult age with these protruding teeth, are not unfrequently firm in the conviction that they have been more generously endowed than their fellows, with what they denominate faults and terrors. The suspicion that they are an important and distinctive feature of a complete and natural set of teeth, seems never to have occurred to them.

"I have in my cabinet the right and left superior cuspids, vulgarly denominated eye teeth, of extraordinary length and thickness yet elegant in structure and proportion, which I removed for a man thirty years of age. He had been accustomed to the adventurous life of hunting the whale of the deep, and had imbibed some of the superstitions so common to men who "go down to the sea in ships," yet in this instance a superstition from which landmen are not exempt. He had arrived at the settled belief, that between these organs and those of vision there existed so intimate a relation, that the loss of the former would destroy the sight of the latter. It was from this conviction that he had so long endured these unsightly teeth, the whole of which were completely outside their fellows. In this case, the appearance of the teeth was but a small part of the discomfort that had been suffered. Their prominence had twice on each side, and at different periods, been the occasion of severing the lip in twain in consequence of blows received directly over them, and on either side he wore the bony scar occasioned by these wounds. As the other teeth had completely filled the arch and were all sound and firm, there remained no alternative but to remove the offenders, which I need not say was accomplished without detriment to the organs of vision.

"One of the modes of treatment frequently employed when these teeth begin to make their appearance and it is ascertained that there is not adequate space, is to remove them as soon as they can be taken hold of with the forceps, and thus deprive the mouth of two of its most ornamental,
ard at the same time, most serviceable organs. Another is the removal of the first bicuspids, and the employment of pressure, to bring the cuspidans into their places; and still another is the removal of the second bicuspids, when the first are moved back, and the cuspidans, as in the former instance, drawn into the arch.

"If the teeth are sound, and I am to treat this class of irregularity, and have the case in charge as soon as the cuspidans have made their appearance, I employ neither of the foregoing methods; but by apparatus, simple and efficient, proceed to widen the jaw and expand the maxillary arch, so as to admit the teeth to the places nature intended them to occupy. The time necessarily involved in this expansion at the age above indicated, by the apparatus in question, need not exceed two weeks; after which it is only necessary to preserve the space secured until the complete eruption and development of teeth in question. If the mouth having this class of irregularity has carious teeth that cannot properly be repaired, they should be removed, whether molars or bicuspids, in the event of which less widening will be required, and as a consequence, the difficulties of the case will be greatly diminished. That my method of treating irregularities of this class may be better understood, I subjoin the following case:

Miss ———, aged fourteen and a half years. Superior jaw as appears in diagram No. 1, the drawings being the size of nature. When I first saw the patient, the left superior first molar was aching from the exposure of its pulp cavity. The second molar had not yet made its appearance, owing probably to the crowded condition of this side of the jaw. The left cuspidans was completely outside the arch, where it remained suspended, having only attained half its length; while the lateral incisor and first bicuspids were close together, the former being so far inside the arch as to close within the teeth of the inferior jaw, the contact of which had considerably worn the enamel from its labial surface. On the right side the teeth were cramped for want of room.

![Diagram](image)

"The first step indicated was to remove the aching tooth, the next, to give those that remained adequate space. For this purpose I adapted to the lingual surface of the bicuspids of the right side, collars of gold, with ligatures of pure gold, that the contact might not injure the enamel. To these collars, which united between the teeth, was soldered the tubular nut marked A, diagram No. 2. The thread in the nut was sufficiently
extended to prevent any rocking motion. On the left side similar collars were not admissible, as the first bicuspids could not be moved outward, without moving the cuspids further out of place. I therefore adapted to the second bicuspids a clasp, similar to those usually employed for retaining plates supporting artificial teeth. By means of the latter, which, like the collars, was lined with pure gold, the fixture was prevented from sliding during mastication. To this clasp was soldered a second tubular nut, differing only from the first in having a left hand thread. The threads on the shaft marked D were cut to correspond with the nuts. The middle of the shaft was made square, to which was fitted the key or wrench, as seen in diagram above. This was made from a dime, the silver being strong enough to turn the shaft without being hard enough to bruise it.

This apparatus was placed in the mouth, when the shaft was made to revolve until the fixture was made comfortably firm, when the patient was provided with the key, and instructed to keep the shaft as uniformly firm as possible. Those directions were industriously followed, and at the end of two weeks, the jaw was so much widened as to leave a space between the front incisors, as indicated in diagram No. 2, showing conclusively that the maxillary bones had separated; while the left lateral incisor had been brought completely outside the inferior teeth. The plate (as seen in diagram No. 3) was next adjusted to the mouth, the molar and bicuspids of the right side having been moved apart, so as to admit a clasp adjusted to the molar. A collar was extended from the plate to the posterior proximal surface of the lateral incisor. A nut was soldered to the plate at the point near which the collar was attached, through which a smaller shaft, having a thread corresponding to the nut,

was made to revolve. To the opposite end of this shaft was affixed the common chain swivel, to which was soldered the original clasp, affixed to the extremity of the first shaft.

The maxillary arch being sufficiently widened, the next step was to move the bicuspids posteriorly, until sufficient space had been secured to receive the cuspids. This apparatus was placed in the mouth, and the patient again provided with the key, and instructed to apply it often enough to keep up a uniform pressure. In this instance we had a larger resisting surface than in the former, consequently our progress was slower; besides, the patient was kept at home for a time, from a severe indisposition, induced by an epidemic prevalent at the period. My impression, however, is, that the second bicuspids might have been moved sufficiently for our purpose in two weeks, without difficulty or causing any material inconvenience to the patient. The first bicuspids followed of its own accord a part of the distance.

(To be continued.)