AN EFFORT TO FIX A STANDARD OF CROWN AND BRIDGE WORK ON SCIENTIFIC PRINCIPLES CONSISTENT WITH PROPER REQUIREMENTS.

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MR. CHAIRMAN, members of the Crown and Bridge Section of the National Dental Association; it is with great pleasure that I bring this subject before you and still with much trepidation at the undertaking.

The reading of a paper of this kind was to have been the lot of Dr. Forrest H. Orton, of St. Paul, who has given this subject a great deal of thought and attention. Unfortunately, he has been very ill and his recovery has not been very encouraging.

The purpose of this section is simple, and still very complex. Primarily, we are endeavoring to bring order and system out of chaos. No Art can become scientific without the adoption of some standard. Operative Dentistry floundered about until Dr. G. V. Black set a standard for it that made it scientific at once. His extension for Prevention, placed this branch of our profession upon a scientific basis. Crown and bridge workers have not been so fortunate as yet, but it is a hope of the officers of this section, that thru the work of the section, we may have a standard that will place this great part of the work of our profession upon a scientific basis. In other words, we are endeavoring to lead the crown and bridge workers to a point where their efforts will be based upon truly scientific principles and this will be accomplished only after

we have proven and accepted standards of operation.

A very conservative estimate of dental operations based upon investigation of a rather rigid sort, shows that 15% or more of all dentistry done is crown and bridge work and only a partial survey of the literature of the day and of the work seen, soon drives into our consciousness that the great bulk of this work is doing more harm than good, in fact, is doing more harm than any other class of work. Still no research work is being done in a beneficial way by our profession. No investigation is being made as to why the work in this great field of Dentistry is doomed to failure. What work of this sort is undertaken, is done by individuals who, unfortunately, have to struggle hard to influence the few they reach. Some serious work should be done by the Research Commission and by the National Association thru this section if need be, and I earnestly plead that this section be a permanent part of the National Association. The work, as presented at this time, can but represent a start in the proper direction. We solicit the earnest support of the members of this section as well as the officers of the National Association. A great amount of work will have to be done, much investigation undertaken, and those interested in furthering this work will of necessity give

thought that is unbiased and open-minded.

I have personally felt the need of this work as I made a survey of my own too many failures and tried to analyze them. The profession is very much at sea, largely because so much has been left undone in a connected way. The teachings of some one man or group of men has been followed, only to be torn down and ridiculed by another man or group of men. The profession has been swayed too easily by professional likes or dislikes and the true merit of much, has been overlooked by the failure to be open-minded. We should know first what bridge work is, what should be accomplished by its use, what it should be and what it should not be. This requires also a standard of criticism. We should know what the essential principles are and, by all means, have a classification of favorable and unfavorable conditions. This can be undertaken by our section and be of everlasting benefit to workers in this field.

There must be radical changes in the teaching of this great subject, for much blame for the failures can be traced to the Dental Colleges. A survey of work done in the majority of the colleges of this country proves that here we have the source of much that retards advancement along proper lines. The student is instilled with a mass of detailed technic and little attention is paid to the essentials. This is retained and the practitioner goes forth to enter this field with a mind unable to think along other than the presented lines. There are exceptions to this and we have men rising out of this condition to be individual leaders, but unfortunately, whose efforts are isolated and of less avail than those of the teacher in a college who directs the minds of a class of students varying in number every year.

The teaching in our colleges, for the

most part, is done by men who have developed a certain technic and rarely is a man found who recognizes the fundamental principles involved or who will place them above the technic that he has developed.

Crown and bridge work is taught very largely as a side issue or a part of the course in Prosthetics. The subject is a large one and we know it is too important to be combined with that of another of equal importance, namely, Prosthetics. These two subjects should be taught separately and by men who can give sufficient time to do justice to the subjects. No man can give the proper instruction, to a class of one hundred men, in the essentials of crown and bridge-work, by a series of lectures and turn the control of technic work as well as practical work, over to a set of Demonstrators drawn from the classes previously so trained. Little attention is given to Dental Anatomy, Dental Physiology, occlusion or articulation. To open the door thru which much truth and light may enter, allow me to advance the following thoughts: Dr. Orton has advanced a definition of bridge work that I will submit at this time,—“A method of correcting or perfecting malocclusion in an arch mutilated by the loss of one or more teeth.”

This may require changes; but as it stands, is short and to the point. We realize that the malocclusion brought about by the break in a perfect arch following the loss of one or more teeth, produces many degenerative changes. It interferes with the functions of the organ of mastication and with the specialized functions of the individual teeth. Thus, we see that the primary purpose of crown and bridge work is the necessity of preserving the normal functions of the organ and of the individual teeth.

Let us present the essential principles that we believe should become the found-

dation upon which crown and bridge work should be based, and take them up in an indiscriminate order and we shall see that one predominates the others. In other words, we have several essentials that contribute to a principle.

First of all, let us take Dental Anatomy and emphasize its importance. Dental Anatomy receives some attention as such, and then seems to be entirely forgotten when it comes to our Crown and Bridge work. Men who give a great deal of attention to Dental Anatomy in their foil, amalgam or inlay operations, forget it all when constructing a Crown or a Bridge.

When we speak of Dental Anatomy, we mean not only the occlusal restoration but the restoration of all tooth shape contours, etc. This is seldom done, and I will admit, is very hard to do by even the most skilled technician.

The results following the preaching of Dr. J. Lowe Young, on occlusal restorations, have been remarkable and far-reaching. The occlusal restoration is of vital importance possibly of greatest importance, in maintaining normal functions, but is only a part of the reproduction of tooth anatomy. The Gingival contours, the contacts, the embrasures, the Buccal and Lingual contours, which if overlooked, allow food to pack against the Gingival tissues producing inflammatory changes, must all receive proper attention if we wish to have our work function properly and fail to be an agent of destruction.

Next, let us take up occlusion. While not of greatest importance, it has been emphasized very much. Perfect occlusion is very vital in order to maintain the proper balance of stress, etc., necessary for proper function of the organ of mastication. However, we may have a perfect occlusion but a very imperfect articulation, and our perfect occlusion stands for little. This may occur in mouths

where a great amount of wear has interfered with a proper articulation and still worn itself to a perfect occlusion.

It is unfortunate that while we may have so-called articulation, that they will not give us perfect articulation while they may give us perfect occlusion. This is easily demonstrated by taking a set of casts of normal teeth and try mounting them in any articulator. They will never produce movements necessary to follow the facets showing normal wear during the movements of the jaw in mastication.

There is being made, however, by Dr. Munson, of St. Paul, an articulator built on an entirely new principle, that I believe will revolutionize our theories with which it is possible to so mount cast of jaws, that all the movements of the jaw can be followed accurately. This promises to be of great aid to us in our bridge work in attaining perfect articulation.

In summing up, we find that all of the foregoing, all of our efforts in obtaining occlusion, articulation point to the maintenance of normal function. The reason that a tooth with a perfect occlusal reproduction is of great service, while one without is of little service and produces changes that soon become degenerative, is that it functions properly. We know that teeth have certain contours as for instance, the marginal ridge preventing the packing of food thru the contact point. The lingual and buccal contours that direct the food out into the mouth and away from the gingival supporting tissues. This is definitely a function of the tooth as much as is mastication, so that our tooth form our Dental Anatomy has its reason in maintaining normal function of the organ as well as the specialized function of the individual teeth.

So it all points to normal function. We may have many things contributing

to the maintenance, but in obtaining normal function, we cannot overlook this fact.

Whether a fixed bridge is a menace to the wearer's health; whether partial plates should be made or matters of that kind, I do not propose to take up at this time, since we are only seeking to find a definite, unqualified principle or principles upon which to base our work.

Unfortunately, the economic problem is ever before the profession, and man must live and be as efficient as possible.

The fixed Bridge, the removable Bridge and the partial plate, all operations, now in the controversy, may be made better, more efficient, if the principles are carefully observed, or any one of them may be made worse by a total disregard for the factors that go to make up the principles.

A fixed Bridge, in the construction of

which a man may have been painstaking in following out his Dental Anatomy, his occlusion articulation may produce a bridge that protects the soft tissues, acts as a perfect part in the masticating function of the organ, that will be infinitely better than a Removable Bridge made without regard for the principles observed by the man who made the Fixed Bridge.

Operations of all kinds may be made more efficient by observing the principles and carrying them out in detail.

This is but the beginning of our work, and I hope a great deal will be done to bring this great branch of our profession out of the position it is in, into a position that is its due, and to do this, we must combine our technical skill with a deeper knowledge of the fundamental principles.