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Table of Contents

The Scoop	Page 1
New Students	" 1
Kahn's Korner	" 7
New Addresses	" 1
Recent and Readable (Theses)	" 4 and 5
Review of Current Literature	" 2 and 3
Notes on Torque with Closing Loops	" 6 and 7

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By

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THE SCOOP:

A faculty student outing was held at DICK PHILBRICK'S home on the shore of Lake Washington and all present reported having a wonderful time; good food, water skiing, etc. We note with regret that DR. EMERY FRASER will no longer be supervising the treatment of patients here at the clinic (we can all say, "Thanks for a job well done.") DAN EMPINGER will replace Emery on the staff and take over his cases. (Welcome aboard Don Imper) The GERRY DOHNERS are expecting in another three or four months (must have been those Havana bed bugs) GERRY is also about to move into his newly built home in Innis Arden. They will need more space now. The TED WENDORFFS announce the arrival of Terry Lynne on May 14, 8 lbs. 4 oz. Since the last issue we have had notes from GERRY SCHULZ telling us that things are going well in Longview and Vancouver; from RUSS VAN DYKE who enclosed a few select jokes which we probably should not include in this issue, and from MILT YELLEN who saw Al Moore when Al visited Houston back in March.

Those of us who were in Havana had the opportunity of seeing BILL TAKANO again and he says he is strictly a desk jockey except during his spare time when golf is his chief preoccupation. (He has made the San Diego Naval Training Station golf team) Also visited with PAUL STEPHENS and his wife and he noted that things were going along well in Oregon. The BILL GILMORES have moved into their new house in Yakima and KEN ORMAN, who was present in Havana with his wife is very proud of his new office. AL MOORE has managed to get in a couple of fishing trips lately and with some success. AL, KEN GIBBS and GENE SUPERNOW came back with a couple of nice rainbows. The latest scoop is that Al was blanked in his last outing at Westport. The WAYNE BOLTONS are expecting late this year. AL DONA has been inducted into the service and his practice has been taken over by GERRY SCHULZ. KEN ROBERTS will soon be moving into a new office on University Way. GENE SUPERNOW is headed back to Michigan to marry off his sister. DR. ALTON MOORE has been named as Acting Assistant Dean at the University of Washington Dental School, has been invited as a fellow in the American College of Dentists and is now a certified member of the American Board of Orthodontists having finally turned in his thesis.

The following are announcements of the opening of practices:

JOHN ANDERSON is located at 901 Selling Bldg., Portland 5, Oregon.
 LOWELL LUNDELL at 930 Santa Cruz Ave., Menlo Park, California.
 DON RUDEE, 609 Cowper St., Palo Alto, California.

A new class of ten students has been selected and their names, home addresses and schools from which they graduated follow:

<u>Name</u>	<u>Home address</u>	<u>School</u>
Barringer, Frank E.	No. 5426 Wall St., Spokane, Wash.	Univ. of Washington
Davis, John R.	155 S. 19th, Pocatello, Idaho	Univ. of Oregon
Flint, Willard L.	8047 Jenkins Arcade, Pittsburgh, Pa.	Univ. of Pittsburgh
Inouye, Stanley Y.	P. O. Box 1469, Lihue, Kauai, Hawaii	Univ. of Maryland
Knell, James K.	4385 Union Bay Lane, Seattle, Wash.	Univ. of Washington
Meinhold, Gareth L.	1645 Valparaiso Ave., Menlo Park, Cal.	Col. of P. and S.
O'Rielly, William C.	208 Majors St., Santa Cruz, Calif.	U.S.C.
Ovens, John P.	825 N. 2d Ave., Phoenix, Arizona	Univ. of Penn.
Seal, William M.	1349 Mokulua Dr., Lanikai, Oahu, T.H.	Col. of P. and S.
Telford, Robert F.	2221 Kendall Ave., Madison, Wisc.	Marquette University

Just a note for those who might be interested in the July issue, 1955, of 'Changing Times,' an article appeared on Orthodontics for the lay person which you might well copy for use in your waiting room or office. Also in the same issue of 'Changing Times,' an article appeared on trusts, which every Orthodontist should be familiar with. (Particularly those who have wives and children to consider)

From the current literature in the American Journal of Orthodontics, July 1955 issue, an article by Dr. Turo M. Graber, entitled "Extra Oral Force, Facts and Fallacies." Dr. Graber reports on 100 cases treated with the use of a maxillary headgear. The appliance consisted of maxillary molar bands and .045 stainless steel labial archwire with vertical spring loops at the molars and continuous loops at the lateral canine embrasure to receive a cervical gear. This was a metal tube with a continuous spring inside to provide distal motivating force. The patients were divided into three groups, 3-6 years, 7-10 years, and 11-19 years. Dr. Graber asked several questions: (1) Can we, by using extra oral force, establish normal tooth interdigitation? He replies that in 14 deciduous cases only 3 made the grade. He also noted that correction included excessive lingual tipping of maxillary incisors in a number of cases, especially where there were no spaces to start with. Overbite correction was least satisfactory he reports. He also reports that in 34 girls and 16 boys in the mixed dentition a better response was observed. Twenty-nine cases were corrected to normal molar relationship, although this did not necessarily mean normal canine relationship. Overjet correction again meant excessively lingually inclined incisors in some cases. Vertical correction showed more response than in the deciduous dentition. In the permanent dentition there was one common factor, growth. In 19 boys and 17 girls a clearer correlation between pubertal growth spurt and response to mechano-therapy was evident. Twenty-five of the patients responded well enough to correct completely the Class II malocclusion.

In relation to this question of correcting Class II malocclusions in the deciduous and mixed dentition, no notes were included regarding the length of time necessary or the length of time that the appliance was left in place on the teeth. Further, we can imply from the description of the appliance that the labial arch was allowed to rest against the maxillary anterior teeth and hence caused them to tip lingually. Certainly the appliance, as Dr. Graber uses it, causes severe tipping of the maxillary first molars as was evidenced in some of the head x-ray films and from the models shown. We include this note here because this is not the type of mechano-therapy that is used with the Kloehe type headgear, at least as we use it here at the University of Washington.

The second question that Dr. Graber poses is, "Does extra oral force withhold maxillary growth or maxillary alveolar growth, move teeth bodily distal or merely tip teeth distally?" He replies to this by indicating that there is no evidence that maxillary growth per se is affected. To this point we might reply that we do not see untreated Class II cases improve tremendously in angle of convexity or reduce the dysplasia in apical base relationship. We do, however, see this correction in cases that have had interference with headgear. As to maxillary alveolar growth, Dr. Graber mentions that routinely there is a change in the anterior posterior apical base relationship. As to distal bodily movement of the maxillary first molars, he seems to think that it can happen occasionally without apparent reason, or that it can be predicted if maxillary second molars are removed during the course of active treatment. He says, however, in most cases that the maxillary first molars merely restrain from coming forward in their normal path, or tip distally. He mentions also that one of the disadvantages of extra oral appliances is this tendency, in some cases, towards excessively distal tipping of first molars. He also mentions that it is claimed that tipping is less likely with a headcap than with a cervical gear, and compensations for this tendency can be made by bending the labial bow in a certain manner. Apparently

he has not tried, or at least often enough tried, the Kloeohn type of headgear which can and does control the distal tipping of molars. Personally I never place tipping force against maxillary molars. (The outer bow is always kept higher than the inner bow.)

Third question, "Does extra oral force tip maxillary incisors lingually moving apices labially?" He indicates that lingual tipping is of constant concern and that it apparently happens in most of his cases. We think this is not necessary in every case if the labial bow is kept away from the maxillary incisors and force directed only against the maxillary first permanent molar.

Question number 4, "Does extra oral force directed as it is against the maxillary first molar impact maxillary second or third molars?" "The answer to this is vague and it is apparently not as great a problem in the mixed and deciduous dentitions as it might be in the permanent dentition. The answer to the problem is, how much growth will the patient have; will that growth be sufficient enough to allow eruption of the second permanent molars."

Fifth question, "Does extra oral force free occlusal interferences allowing the mandible to come forward? Does it stimulate forward positioning on the basis of neurogenic reflex as claimed in some quarters? Does it stimulate mandibular growth by removing all restrictions?" He indicates that functional retrusions occur with neither the frequency nor the degree once thought. No Class II, he says, becomes a Class I through elimination of distal displacement. As to repositioning the mandible through a neurogenic mechanism or any other, "let us analyze all diagnostic criteria and records and duplicate the experiment with biometric analysis." We do not say it cannot happen, but Dr. Graber certainly thinks it is a doubtful quantity.

The important point in Dr. Graber's summary number four, is that certain untoward results may be seen in the use of extra oral force. These include incomplete correction of tooth relationship or malrelationship, excessive distal tipping of maxillary first molars, possible impaction of maxillary second or third molars, possible excessive lingual tipping of maxillary incisors, possible unilateral response in correction of Class II and difficulty in control of excessive overbite.

Dr. Graber is using an appliance which has been discarded, at least in these quarters, four or five years ago because of the undesirable effects that occur with the free tipping that is allowed with a free cervical gear. We are of the opinion that the Kloeohn type headgear properly controlled will eliminate a number of the objections that Dr. Graber has posed. We further believe that there is a great advantage in using the headgear early before maxillary premolars and canines have erupted so that they may be guided into normal occlusion without ever having to be concerned over them. It is the author's practice to place the appliance with the outside bow higher than the inside bow at all times, and the maxillary molars are never allowed to be tipped distally. Those who use this type of therapy will find that the response to the appliance is probably slower but that the resultant occlusion is much more satisfactory. The overbite and overjet problems are very often reduced as the Class II relationship is reduced and at least in many cases overbite will be reduced to a satisfactory minimum as well as overjet.

As to the lingual tipping of maxillary incisors; if the headgear is so constructed that stops are placed against the molars and kept advanced from the incisors, they will not tip excessively ingually. We do allow some lingual tipping in cases in which there is an excessive labial axial inclination or considerable

spacing in the maxillary incisors by resting the labial inside bow against these teeth. We would like to be very critical about the comments that Dr. Graber makes in his article because we believe that the type of appliance is not capable of producing the results which we expect during headgear therapy and that the information which Dr. Graber has included in his article will be misleading to many practicing orthodontists.

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The first thesis review is entitled, "A Serial Cephalometric Study of Children at Twelve and Sixteen Years of Age Having Excellent Occlusions," by Jerold Schulz.

Material consisted of a group of children whose headfilms were evaluated over a period of four years' growth. The group consisted of twenty-one children of whom eleven were boys and ten girls. The mean age of the boys was twelve years and seven months; the mean age of the girls was twelve years and five months; the mean age of the second set of films was for boys sixteen years and ten months and for girls sixteen years and five months.

The findings of the thesis may be summarized as follows: (1) The size of the sample is an important consideration when determining growth changes by statistical methods. (2) The skeletal pattern of both the males and females changed in positional relationship. The mandible became increasingly protrusive; the convexity of the facial profile decreased in both groups studied; the downward growth of the mandible was greater at the condyle than at the symphysis; the relative forward growth of the maxilla was less than that of the mandible.

The mean change of the facial angle for boys indicated an increase of 1.5° ; the main increase in girls was 1.1° . On a percentage basis, pogonion moved forward at a faster rate than did nasion between the two age groups studied, both in males and females. The mandibular plane angle tended to level off or become less acute during growth. The mean decrease of the mandibular plane angle was 1.6° in boys and 1.1° in girls. The relative mean increase of posterior facial measurement was 3.5° greater in boys and 1.9° greater in girls in the anterior vertical facial measurement.

The relative mean increase of point A in a horizontal direction was 2.3% less in boys and 1.5% less in girls than the relative increase measured by the forward growth of point B in these same cases. There appeared to be a tendency indicating a more vertical position of the maxillary and mandibular incisors when the angle formed by their long axes was noted.

In the measurement of the distance from sella to nasion the boys' percentage increase was 6.1% of the original measurement during the growth periods studied and the girls' percentage increase was 2.1%. The other horizontal and vertical measurements of this study indicate greater relative growth in boys.

Conclusion #3. The present study was unable to show any statistical significance in change in the denture pattern for either sex in the age range studied. This is probably related to the size of the sample.

Conclusion #4. The relative growth of males is greater in all directions than that of females in the age period studied.

Conclusion #5. A composite drawing of the means of measurement of both age groups would seem to show that angular changes evidently maintain harmony during growth.

In addition to these conclusions a little note: Growth changes between the age groups indicated that the males have been evaluated during a rapid growth period, whereas the females indicated little growth. The fact that the males are in a rapid growth period between the ages of 12 and 16 and the females are not, should be an important consideration in clinical orthodontics.

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The second thesis to be reviewed is entitled, "A Cephalometric Study of Relationships of the Maxillary and Mandibular Central Incisors of Children Having Excellent Occlusion and Class II, Division 1 Malocclusion," by Richard O. Failor.

Cephalometric headfilms of 120 individuals were selected; 30 males and 30 females with excellent occlusions and 30 males and 30 females with Class II, division 1 malocclusions. For both groups the age range was from 11 to 13 years. An attempt was made to compare the usefulness as a tool in cephalometrics of Steiner's analysis or Downs' analysis in attempting a critical differentiation between various types of occlusions. A coefficient of correlation was calculated between each of Steiner's measurements and each of Downs' measurements. The results of these tests are recorded here.

A study of the tables showed a high degree of correlation between Steiner's measurements and the measurements of Downs' denture analysis where there was a common anatomical structure being measured; for example, Steiner's angular and linear measurement of the upper incisor was closely correlated with Downs' angular and linear measurements of those same teeth. Using the Downs' analysis there were significant differences in the procumbency of the maxillary and mandibular incisors between the sexes for age groups 11 to 13. When the males and females in this same table were compared as to their mean value for each of the Steiner's measurements, no differences could be noted. It is evident, therefore, that the Downs' measurements readily demonstrate differences between sexes as whereas the Steiner measurements do not.

Denture measurements were compared between the normal occlusions and Class II, division 1 malocclusions using Downs' analysis and the Steiner analysis. Checking the "t" tests we find that all of the Downs' measurements relating to upper and lower incisors show a definite significant difference when the two occlusion groups were compared. When this same comparison between the denture measurements of the excellent occlusion and Class II, division 1 malocclusion group were made using the Steiner analysis, no significant difference could be observed between the mean values for each of the measurements between the occlusion groups.

On the basis of these comparisons and many others not noted here, it must be concluded that the Downs' measurements are more critical in differentiating between individuals possessing malocclusion and those with excellent relationship of the teeth.



Steiner emphasized the importance of point A being in close proximity to the tooth, that is, maxillary incisor being measured, and point B being in close proximation to the lower incisor being measured. There is no reason to believe, however, that the distant point nasion, which was used in the angular and linear measurements of upper incisor to Na, and lower incisor to NB, should be used in denture analysis.

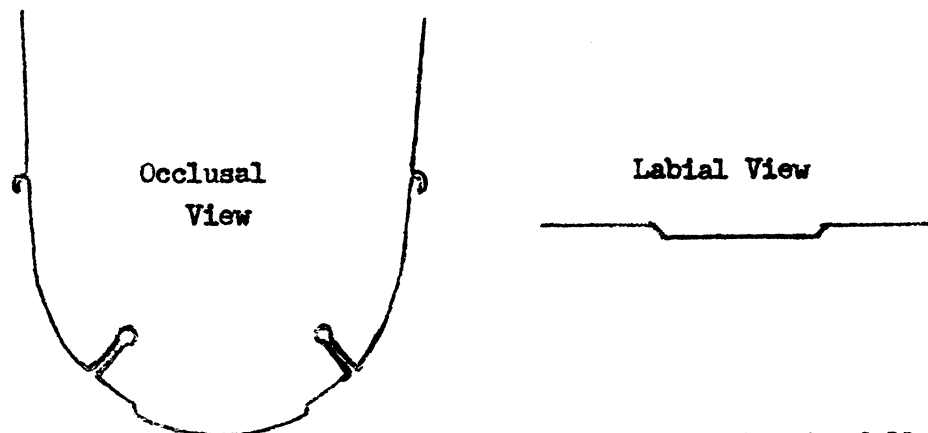
In recent years there has been a great deal of interest shown by clinical orthodontists in cephalometric methods of evaluating orthodontic patients. The Downs' method of assessment was the first to be proposed for the profession and, therefore, has been the longest in clinical use. For this reason, it has become the standard against which other methods are tested. In the present comparison of the Downs' method of analysis, with that proposed by Steiner, the Downs' method was found to exhibit less variability than the Steiner method. It was found also to differentiate between the denture patterns of males and females and to differentiate between incisor relationships in excellent occlusion and Class II, division 1 malocclusion, which the Steiner method did not do.

It must be concluded, therefore, that the Downs' method of assessing denture relationships is far superior to the method proposed by Steiner. Examples of the significant differences that appear between excellent occlusions and Class II, division 1 malocclusions appear in Table 6 in Failor's thesis. The denture analysis by Downs' method in males indicates a significant difference between excellent and Class II, division 1 malocclusions in the upper to lower incisor angle, and in the cant of the occlusal plane and in the position of the upper incisor to AP. These same significant differences appear in the females along with the difference in the lower incisor to mandibular plane angle and the lower incisor to Frankfort angle. There are no significant differences between excellent occlusions and Class II, division 1 malocclusions in any of Steiner's measurements for males or females; the measurements include upper incisor to Na, in millimeters upper incisor to Na angular measurement, lower incisor to NB, in millimeters lower incisor to NB angular measurement.

Notes on Torque in Edgewise Archwires With Closing Loops

1. The arch is formed over the thumb in an arc to conform to the malocclusion (shaped over the flat side, not on a turret on the edgewise side).
2. Using the edgewise arch now as if it were a ribbon arch, closing loops are bent in horizontally towards the palate (view the drawing just as if the arch were laid out flat on a table top).
3. Tie-backs are bent in horizontally but towards the buccal instead of in towards the palate as the closing loops were placed. (This will allow the tie-back to appear to the occlusal of the arch in the finished archwire and will provide less tissue interference when the arch is tied back to the molar tube or molar bracket.)
4. Inset bends are placed between centrals and laterals (but these will eventually be vertical offset bends).

5. Torque can be removed slowly by holding the closing loop with finger and thumb and tipping the closing loops buccally while holding with a 1142 plier on that portion of the arch mesial to the closing loop.
6. Further removal of torque can be carried out by holding the loop with thumb and finger and using the tie-back stop as a lever. The tie-back stop can be tipped to the buccal with a 1142 plier (the tie-back stop is actually being twisted toward an occlusal direction).
7. Torque on the central incisors can be decreased in comparison to the torque in the lateral incisor area by holding two 1142 pliers between central and lateral and tipping the area of the central incisor toward the labial.
8. Lateral insets can be included here at this point or with step #4 (remember at step #4, these bends would be in an occlusal direction).
9. Finish details of form and torque. Excess torque can easily be removed by tipping loops further to the buccal or labial (in the finished arch the closing loops should be tipped inward at their gingival ends and only when they are placed properly in the brackets will they tip to a level position again).
10. When the edgewise arch is seen in cross sections through the central incisors it should appear like this:  or this 
11. Leave at least some lingual root torque in the canine area or you will find that the roots of the canines will be thrown labially due to the excessive use of torque in the incisor area.



KAHN'S KORNER:

Ken Kahn says that he has been making better use of his acrylic by the following method: When wires have been bent and you are ready to place acrylic a little liquid can be sprinkled on the model and some powder dropped on to it. Ken finds that if one taps this mixture with the finger the liquid will come to the surface and more powder can be included than without tapping the surface of the acrylic with the finger. Small portions of powder and liquid are continually added to various areas and the area tapped or rubbed over slightly with the finger so as to bring the liquid to the top and allow the inclusion of more powder than had previously been possible. Ken says that he can control his powder and liquid better this way and prevent the occurrence of very thick areas particularly in the center of the palate. The model is tipped at various angles so that the area in which the powder is being placed is as close to horizontal as possible. The acrylic powder liquid mixture is actually pressed by the finger tip in the area in which liquid is being added which produces a more solid or bubble-free mix of acrylic and one which will not tend to run readily toward the center of the palate. If you want more information about this method write to Ken Kahn and I am sure he will be able to help you.