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A Study of the Teaching of Oral Diagnosis and Oral Medicine

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EDITOR'S NOTE: *While the accompanying article is not of the type usually published in our* JOURNAL, *it is an excellent discourse and review of the position of Oral Diagnosis and Oral Medicine in the field of dental education, a field in which the College is very definitely interested.*

A.E.S.

NEED FOR RE-EVALUATION OF COURSE STUDY

There is ample evidence that the teaching of Oral Diagnosis and Oral Medicine warrants critical review. The need for reappraisal is clear from *five* different sources: (1) an examination of *A Course of Study in Dentistry: Report of the Curriculum Survey Committee of the American Association of Dental Schools* released in 1935,[1] (2) a review of the literature on this subject, (3) the deliberations of the *Oral Diagnosis Teaching Conference for Discussion of Curricula* conducted at Ohio State University College of Dentistry in September 1954, (4) a study of the course descriptions in the dental school catalogues, and (5) the survey by the Council on Dental Education of the American Dental Association in 1946.

REPORT OF CURRICULUM SURVEY COMMITTEE

The difficulties which presently exist in the teaching of Oral Diagnosis are brought into relief through an examination of the *Report of the Curriculum Survey Committee* of the American Association of Dental Schools compiled in 1935.[1] *Three* sections of this report are pertinent to this discussion: (1) Chapter Twenty-Three (pp. 219-228) outlines the suggested course content in *Diagnosis and Treatment Planning,* (2) Chapter Twenty-Six (pp. 252-258) summarizes the material to be included in a course of *Oral Medicine,*

and (3) Chapter Thirty (pp. 302-306) is a guide for instruction in the *Principles of Medicine.*

Diagnosis and Treatment Planning: On the first page of Chapter Twenty-Three, the following statement appears:

> Insufficient attention is generally given to adequate diagnosis and prognosis as the basis of rational treatment, with the result that the student is apt to acquire a superficial idea of correct diagnostic methods and the part they play in dental science.

The authors of the survey report recognized that diagnosis is an important discipline and one which has not received serious attention in many, if not most, dental colleges.

The committee report continues with the following statement:

> Much effort is expended in teaching fundamental sciences to dental students, but the full benefit is not derived from these sciences because they are not sufficiently applied in the study and treatment of cases. This particular weakness can be corrected through instruction and clinical practice that constantly forces the student to use the principles and procedures acquired in his earlier study. A comprehensive course of instruction in diagnosis and treatment planning should help to accomplish this object.

This quotation suggests that the course in Oral Diagnosis may provide an excellent "bridge" between basic sciences and clinical practice.

The concluding introductory statement by the committee is of paramount importance:

> Frequently sufficient attention is not given to the fact that diagnosis involves an orderly procedure which is the reverse of that to which the preclinical teaching accustoms the student. In courses of pathology, he studies diseases by beginning with the etiology and proceeding through various steps to the symptomatology, which is usually the last step. In making a diagnosis this order is reversed, the diagnostician beginning with the signs and symptoms and finally arriving at the etiology and diagnosis. Students who have presumably learned the principles of pathology have been known to fail completely in diagnosis because they were unable to reverse the order of study. Proper instruction should help the student to acquire ability in this difficult process.

It appears that the committee believes that: (1) diagnosis involves a method, (2) it differs from any other technique learned by the student, (3) it must be orderly, and (4) the procedure is difficult to learn. We are in full agreement with the opinions expressed by the members of the survey group.

The report continues with a section entitled *Definitions* and, on page 220,[1] diagnosis is defined as:

The act or art of identifying a condition, or conditions, which in a broad sense may be any departure from normal. It is the outcome of a careful and exhaustive study of the signs and symptoms associated with the particular condition, or conditions, in question based upon a comprehensive knowledge of the causal factors of the disease, a determination of its type and severity, and an estimate of the amount and kind of damage that has been incurred. Diagnosis is preceded by, and is possible only after, a thorough examination, which should include charting of signs, symptoms, and all other factors associated with the condition that is to be diagnosed.

Here the committee has attempted to set the boundaries of diagnosis. This quotation implies that diagnosis is a technique, a method of examination.

The report includes a curricular array designed to underscore the fact that Oral Diagnosis and Treatment Planning should interrelate the subjects of the undergraduate dental curriculum:

(1) To emphasize the importance of considering and properly relating all types of dental health service to the patient; (2) to help the student to see the work of the various clinical departments in proper perspective; (3) to emphasize general practice rather than specialization in the mind of the student; (4) to emphasize the importance of planning the treatment for a patient on a rational basis, the basis being a through examination of the patient and a careful diagnosis and prognosis of the patient's conditions; (5) to emphasize the health service to the patient rather than the convenience of the student in meeting clinical requirements of his course; (6) to promote orderliness of procedure in rendering dental health service; (7) to expedite the performance of the procedures in treatment, each being done best if it is properly related to the others; (8) to prevent needless duplication of instruction; and (9) to prevent confusion in the mind of the student, which sometimes arises because of conflicting methods of examining patients and planning treatment.

Once again there is a plea for thoroughness (No. 1, 4, 6, 7, and 9), for correlation with preclinical studies (No. 1, 2, 4, and 7), and for streamlining the dental curriculum to avoid duplication (No. 8).

Later in Chapter Twenty-Three, an outline of instruction in Diagnosis and Treatment Planning is suggested. There is the specific recommendation that 29 lecture hours be assigned and that the distribution be as follows:

1. Diagnosis (1 hour)
2. Prognosis (1 hour)
3. Indication for various types of treatment (1 hour)
4. Planning the treatment (1 hour)
5. Final examination and dismissal of patient (to be included in No. 4)
6. Approach to the patient
7. The preliminary survey of oral condition (1 hour)
8. The case history (to be included in No. 7)

9. Inspection (1 hour)
10. Palpation (to be included in No. 9)
11. Percussion (to be included in No. 9)
12. Radiographic examination (1 hour)
13. Transillumination (1 hour)
14. Tests of pulp vitality (to be included in No. 13)
15. Impression and study casts (to be included in No. 13)
16. General disorders of the mouth and teeth (1 hour)
17. Physical examination of the patient (1 hour)
18. Pain (1 hour)
19. Tenderness (to be included in No. 18)
20. Paresthesias (to be included in No. 18)
21. Local anesthesia as an aid to diagnosis (1 hour)
22. Bacteriological examination (to be included in No. 21)
23. Microscopical examination of tissue (to be included in No. 21)
24. Salivary analysis (to be included in No. 21)
25. Signs and symptoms of disorders of the hard tissues of the teeth (3 hours)
26. Signs and symptoms of disorders of the dental pulp (1½ hours)
27. Signs and symptoms of periapical disturbances (1½ hours)
28. Signs and symptoms of disorders of the gingiva and peridental tissues (2 hours)
29. Signs and symptoms of disorders of the mucous membranes (2 hours)
30. Signs and symptoms of dentition (2 hours)
31. Signs and symptoms of disorders of the mandible and the maxillae and the temporomandibular articulation (1 hour)
32. Signs and symptoms of disorders of the maxillary sinus (1 hour)
33. Signs and symptoms of disorders of the salivary glands and ducts (½ hour)
34. Systemic diseases possibly associated with chronic dental infection (1½ hours)
35. Systemic conditions which demand special planning of dental treatment (1 hour)
36. Oral manifestations of systemic derangements (to be included in No. 35)

A study of this outline suggests the following conclusions. First, the orderliness called for in the introductory remarks (p. 4) is not exhibited in the proposed course outline. For example, there is no question but that pain is an important symptom. Furthermore, there are other disturbances in sensation such as burning, itching, paresthesia, hypo- and hyperesthesia. Finally, since disturbances in sensation are *symptoms,* not *signs,* they are usually elicted during the history taking. One then wonders why case history (No. 8) is included with the lecture on the preliminary survey of oral condition (No. 7) and that all of this other highly important material on disturbances of sensation is only allotted one hour. More confusing is the position in the course and the time allottment for pain (No. 18), tenderness (No. 19), and paresthesias (No. 20) and the complete disregard for other disturbances in sensation. Secondly, it can be noted that final examination and dismissal of patient (No. 5) is combined with plan-

ning of treatment (No. 4). It would appear in a *logical* (temporal) diagnostic procedure that these items would be discussed last because these problems represent the finale. Third, an examination of the proposed lecture series reveals that inspection (No. 9), palpation (No. 10), and percussion (No. 11), which are clinical techniques, are followed immediately by the radiographic examination (No. 12) and by laboratory aids such as transillumination (No. 13), tests of pulp vitality (No. 14), study casts (No. 15), etc. This method of presentation lacks order. More logically, one first *completes* the clinical examination and then proceeds to the x-rays and other laboratory aids.

In conclusion, it appears to us that the objectives set forth by the Survey Committee are excellent. However, the blueprint does not follow the objectives and, in fact, in some instances it is contradictory. This opinion is shared by Barr[2] in his report in 1954.

Oral Medicine: It was pointed out earlier that the Curriculum Survey Committee attempted to study also the limits of Oral Medicine. Their findings are incorporated in Chapter Thirty (pages 252-258).[1]

Their concept of Oral Medicine is captured in the following introductory paragraph (page 252):

> Oral Medicine, as the term is used in this report, includes the treatment of such conditions of the hard and soft tissues of the mouth as are not treated through operative dentistry, orthodontics, oral surgery, or oral prosthesis. It comprises the treatment of: (1) diseases of the dental pulp and periapical tissues, (2) diseases involving the gingivae and other peridental tissues, and (3) lesions of the lips, cheek, and tongue, and other diseases of the mouth which do not require surgery.

It should be clear from this quotation that those aspects of dentistry which today are regarded as periodontology and endodontics fit the above specifications. Surely, endodontists are willing to accept the responsibility for the treatment of pulpal pathology and, generally speaking, also much of periapical pathology either alone or in combination with the oral surgeon. Other periapical disorders seem to be successfully handled by oral surgery although, according to the above definition, the oral surgeon may be trespassing. The periodontologist is willing to accept the responsibility for the management of diseases of the gingiva and the periodontium. The third item in the definition is the most controversial point. Here we find everyone and no one interested in the *adnexae* of the teeth. The lack of definitions becomes more impressive.

There appears to be a second conflict in the definition of Oral

Medicine. On the one hand, according to the limits set forth, Oral Medicine embraces the responsibility for the *surgical* management of pulpal and periapical disease and afflictions of the gingiva and periodontium but it is only to be concerned with the *medical* aspects of therapy of the lips, cheek, and tongue. Here again, the fundamental difficulty appears to be one of responsibilities or standards.

We shall now turn our attention to the proposed curriculum and observe how well it satisfies the definitions proposed by the Survey Committee. The recommendation was made in the 1935 report that there be *two* courses in Oral Medicine: (1) a *preclinical* program, and (2) a *clinical* course.

> The preclinical instruction is intended to furnish the student with a working knowledge of the principles of opening, cleansing, and filling root canals and to develop in him sufficient ability in performing the operations so that he can satisfactorily begin work in the clinic. The course should consist of reading by the student, class instruction, and laboratory teaching, the greater part of the time being devoted to laboratory exercises.

It is of interest that, in the present day curriculum, the preclinical phase of Oral Medicine, all of its recommended six lecture and thirty-two laboratory hours, is offered in the course in Endodontics. The root canal tenor of the preclinical Oral Medicine course is emphasized in the proposed course content:

1. Meaning and purpose of opening, cleansing, and filling root canals (1 hour class)
2. Introduction to laboratory study (½ hour class)
3. Instruments and instrument nomenclature (1 hour class)
4. Principles of opening and cleansing root canals and filling dressings (1 hour class)
5. Opening and cleansing the root canals of anterior teeth (6 hour laboratory)
6. Opening and cleansing the root canals of upper first and second bicuspids (1 hour class and 6 hour laboratory)
7. Filling the root canals (1 hour class and 3 hour laboratory)
8. Opening, cleansing, and filling the root canals of upper first and second molars (1 hour class and 4 hour laboratory)
9. Opening, cleansing, and filling the root canals of lower bicuspids (1 hour class and 3 hour laboratory)
10. Opening, cleansing, and filling the root canals of lower molars (4 hour laboratory)
11. Study of filled root canals (3 hour laboratory)

According to these remarks, Oral Medicine, at the preclinical level, is simply a course in root canal therapy and satisfies in part the first item in the Committee's definition of Oral Medicine.

A study of the *clinical* course in Oral Medicine reveals a suggested thirty-two lecture hour series in the following format (pages 256-258):[1]

1. Meaning and purpose of Oral Medicine (1 hour)
2. Diseases of the dental pulp (1 hour)
3. Treatment of vital pulps not requiring removal (1 hour)
4. The treatment of vital pulp requiring removal (4 hours)
5. The treatment of necrotic pulps and associated apical conditions (4 hours)
6. Filling pulp canals (1 hour)
7. The investing tissues of the teeth (2 hours)
8. Calculus (1 hour)
9. Diseases of the gingiva (general description) (2 hours)
10. Atrophy (recession) of the gingiva (1 hour)
11. Gingivitis, other than acute ulcerous and proliferative (2 hours)
12. Proliferative gingivitis (1 hour)
13. Suppurative pericementitis (4 hours)
14. Loosening and drifting of teeth (2 hours)
15. Stomatitis (3 hours)
16. Glossitis (1 hour)
17. Diseases of the salivary glands: anomalies of salivation (1 hour)

A perusal of this course outline reveals that almost one-third of the clinical course in Oral Medicine deals with root canal therapy, one-half is concerned with periodontal problems, and three lectures meet the third specification in the definition, i.e. the dental adnexae.

One gains the impression, from the recommendation for a course in Oral Medicine, that it is either a course in Endodontics or a composite of Endodontics-Periodontology. The scope of Oral Medicine, within a surgical-nonsurgical dimension, is somewhat hazy. In short, the scope of Oral Medicine has not been delineated.

Principles of Medicine: Finally, Chapter Thirty (pages 302-306), entitled "Principles of Medicine,"[1] presents the following objectives of instruction in this discipline:

1. To understand the clinical application of principles and facts learned in the basic sciences.
2. To recognize the importance of cooperation between dentists and physicians in rendering health service and to be competent to take a proper part in such operation.
3. To understand the general procedures employed by a physician in making a diagnosis.
4. To recognize the presence of oral manifestations of systemic diseases.
5. To comprehend the relationship between oral infection and systemic disease.
6. To recognize the symptoms of systemic disease which might influence the plan of dental treatment.

7. To read medical literature more intelligently.
8. To participate intelligently in public health work.
9. To appreciate bedside consultations and hospital procedures and routine.

These objectives suggest that this course is designed to acquaint the dental student with medical thought and action. Probably the most pertinent feature of the course, surely as it relates to dentistry, is the emphasis placed upon the oral manifestations of systemic diseases as shown in the proposed course program (pages 305-306):

1. Introduction (1 hour)
2. Infectious diseases acquired principally through inhalation (3 hours)
3. Infectious diseases acquired by ingestion (3 hours)
4. Infected bone, protozoal diseases (2 hours)
5. Infectious diseases acquired by contact (3 hours)
6. Streptococcal and pyogenic infections (4 hours)
7. Diseases of the blood forming organs (2 hours)
8. Degenerative diseases of the cardiovascular and renal systems (2 hours)
9. Diseases of the endocrine system (3 hours)
10. Avitaminoses (2 hours)
11. Allergic diseases (1 hour)
12. Chemical poisoning (2 hours)
13. Diseases of the skin (1 hour)
14. Diseases of the gastrointestinal tract (1 hour)
15. Miscellaneous disorders of the nervous system (1 hour)
16. Disease hazards of dental practice (1 hour)

A careful examination of the suggested curriculum discloses that some of the lectures are arranged in an etiologic frame. For example, items 2 and 3 deal with infectious diseases versus noninfectious disorders such as neoplasms, metabolic conditions, etc. On the other hand, other lectures are arranged on the basis of systems. Thus, item 9 deals with the endocrine system and item 15 with the nervous system. Thirdly, other lectures are arranged on a regional basis. This is exemplified by item 13 which is designed to discuss diseases of the skin.

In summary, the general statement can be made that the Curriculum Survey Committee recommended three different courses which are pertinent to this discussion. It has been our purpose to discuss the consistencies and inconsistencies in these three suggested programs.

A Review of the Literature

Further opinions regarding the teaching of Oral Diagnosis and Oral Medicine can be gleaned from a study of the literature appearing since the 1935 survey report. In this section, an attempt will be

made to analyze critically many of the numerous articles in the literature which are relevant to the subject at hand.

Dr. Maynard K. Hine, in 1944, presented a paper before the Restorative Dentistry Section of the Twenty-First Annual Meeting of the American Association of Dental Schools at Chicago.[3] The principal theme of the paper centered about the report of the Curriculum Survey Committee. However, the following paragraph from his talk is especially significant:

> In this course should be taught the *techniques* of Oral Diagnosis, so that the student will learn how to collect facts and interpret them to aid in arriving at the correct diagnosis. . . . To be sure that the student acquires a complete picture of the methods available for study of patients, it is advisable that this information be presented in one course. Such a course offers an excellent opportunity to correlate clinical dentistry with the knowledge obtained by the student in the so-called "medical" or biological sciences.

Dr. Hine concluded his paper with a plan for the teaching of Oral Diagnosis:

> 1. Students to be assigned in groups to the admitting clinic, which serves chiefly as a routing station. Here the student learns how to approach the patient, and make a tentative diagnosis.
> 2. Students to be given a formal course in the *techniques* and methods of obtaining data to aid in making a diagnosis.
> 3. Detailed diagnosis and treatment planning to be made by students on each case he treats in the departments where the treatments are to be given. Here the student can apply on his own patients the techniques and methods he has been taught in the course in Oral Diagnosis.

It is of particular interest that Dr. Hine made special note that diagnosis is a technique as evidenced by his own italicization of the term. Finally, Dr. Hine is especially careful to point out that treatment planning should be done in the department where the therapy is to be performed. He recognized, as do others, that it is extremely difficult for a department, divorced from therapy, to plan the specific treatments which must be executed by someone else.

John H. Barr, in a talk before the Section on Oral Diagnosis at the annual meeting of the American Association of Dental Schools in Philadelphia in 1953, presented a review of the trends of the teaching of Oral Diagnosis.[2] The following statement is quoted from his presentation:

> The ultimate test of diagnostic teaching should be the extent to which it carries over into the practices of graduates, and by this token we have to admit that results to date are disconcerting.

It is evident from these remarks that, as recently as 1954, it was the considered opinion of one who has been studying this problem for many years, that the teaching of Oral Diagnosis has not been satisfactory. Dr. Barr continued in a rather interesting vein:

> I have gained the impression that the content of our diagnosis courses and some of the activities in diagnosis teaching, seem to have strayed far in an unrealistic pursuit of the ideal. The urgent need is for the effective carry-over of basic diagnostic philosophy into practice, and in reconsidering the course content we will enhance our opportunity if this is kept in view. . . . I believe . . . our best hope will be found in the concentration of his learning experience —didactic and clinical—on cases of the kind most likely to come into his office. . . . Teachers may not readily forsake the dramatic and impressive presentation of rarities in favor of such ordinary things as caries, pulp inflammation, malocclusions, periodontal disease, periapical conditions, and the systemic relationships of oral infections; but able diagnoses of these widespread afflictions will serve patients generally far better than to name, say, a case of Pink's disease.

Dr. Barr makes a plea for simplicity and practicality. Specifically how this can be down and what must be taught to accomplish this end, is not evident from his remarks. Furthermore, how uncommon must a disease be to be considered rare? In many cases, uncommon conditions are only so because of a lack of reporting. In other instances, the subtle manifestations of a disorder go unnoticed because they do not fit the classical clinical picture. Surely, if the diagnostician is to comprehend what Dr. Barr regards as everyday cases, then he must inevitably wend his way through all of the subtleties of the etiology of periodontoclasia, malocclusion, and foci of infection. This will inevitably find the diagnostician entangled by marginal nutritional states, so-called uncommon developmental disorders, questionable metabolic problems, all in combination with local trauma in the oral cavity.

Dr. William R. Mann, at the very same meeting, presented his views on the question as to whether roentgenology should be incorporated as an integral part of instruction in Oral Diagnosis:[4]

> It is my belief that the term "Oral Diagnosis Department" is a misleading one and that most of us could agree that much more must be included in its scope than the name indicates. Certainly no one can make a diagnosis unless he has first made an examination and has considered the treatment and prognosis. To my mind, a wordy but more definite name should be applied to this portion of dental teaching. I would term it a Department of Oral Examination, Oral Diagnosis, and Treatment Planning.

Dr. Mann made the special point that the term Oral Diagnosis has broader connotations than its name indicates. This can only

mean that he differed with the committee report. However, no definition of diagnosis appeared in his paper. The suggestion that the name be changed was presumably based on the premise that a "diagnosis" cannot be made unless there is first an examination. This is conceivable but even this statement hinges upon the definition of diagnosis and examination. On the basis of *any* definition of treatment planning and prognosis, one cannot accept Dr. Mann's statement that final judgment of the cause of the disease cannot be made without considering the treatment plan and the prognosis. It appears to us that the nature of the disease or condition can be properly established without any reference to the future treatment plan or to its prognosis. The objection to fabricating a Department of Oral Examination, Oral Diagnosis, and Treatment Planning will become evident later in this discussion. Suffice it to say here that an examination of the patient is part and parcel of diagnosis. Further, in our opinion, Oral Diagnosis is but a technique. Were we to adhere to Dr. Mann's philosophy and change the name of the department as he indicated, then it would logically follow that the Department of Operative Dentistry should become a Department of Cavity Preparation, Matrix Band Application, and Amalgam Restoration.

Dr. George S. Easton presented a paper before the Section on Oral Diagnosis of the American Association of Dental Schools meeting in Philadelphia in 1953.[5] We quote from that article:

> It is generally agreed that Oral Diagnosis neither can nor should be divorced from a consideration of the patient's general state of health. It is also known that a diagnosis can be reached only as a result of an analysis and evaluation of all pertinent diagnostic data. If we concede these statements to be true, then we must admit that, for competent instruction, as many pertinent tests as possible should be available to the diagnosis clinic. This is not the controversial point. The matter upon which there is no apparent unanimity of thought concerns the persons by whom the tests are to be performed and the extent to which the student is to be trained in laboratory techniques, test evaluation, and physical diagnosis.

Dr. Easton has clearly outlined and confirmed the fact that all important data must be obtained in order to establish the nature of a disease. His further remarks, which center about the sharing of responsibility for laboratory information, are not appropriate to this discussion. If we are agreed that such data are important, then we must teach them. Precisely who does the blood count and who interprets it is something for which we must rely upon the graduate's good sense.

In March 1952, Dr. Lester W. Burket published a paper in connection with the teaching of Oral Diagnosis.[6] He pointed out in his introductory remarks that the paper does not attempt to formulate a definite course content. The only reference in this regard is as follows:

> The didactic instruction in diseases of the mouth and the general orientation in diagnosis is best given in the form of lectures and the extensive use of visual aids before the students are assigned in the diagnosis clinic. . . . The importance of developing a routine diagnostic procedure should be emphasized through the didactic instruction.

Again, the peculiarities of diagnostic thinking are underscored by Burket[6] and the opinions of Hine[3] re-emphasized. Dr. Burket's distinct contribution is the fact that he analyzes, in a practical and concrete fashion, the procedure which is followed in the clinic at the University of Pennsylvania. Of particular interest in this regard is the fact that a questionnaire, a modification of the Cornell Medical Index, is utilized as a screening device and appears to work satisfactorily in the administrative framework of his clinic.

Dr. J. T. Ginn, in a report in 1952,[7] pointed out that:

> It is generally agreed that the Oral Diagnosis Department should play an important role in the education of the dentist, for it should be the "core of the dental curriculum." It is the obvious department for instruction in case history, in thorough examination methods, and in the practical application of laboratory methods.

Dr. Ginn continued by indicating that there are three types of patients: (1) those with an emergency problem, (2) routine cases, and (3) those with a special condition.

> The special cases should be given more attention by the Department of Oral Diagnosis. This group includes those cases which require a complete study, including laboratory examination, physical examination, analysis of diet, and others. . . .

Dr. Ginn's chief contribution lay in his recognition that there are problems which are unique and which require careful and intensive investigation. It was his opinion that such cases could best be investigated in a Department of Oral Diagnosis.

Dr. Virgil R. Cheyne, in a paper[8] presented at the annual meeting of the American Association of Dental Schools in 1949, outlined the genesis and progress of the new Department of Oral Diagnosis and Treatment Planning at the University of Washington School of Dentistry. Most of his remarks concerned the methods of instruction

in the clinic. His principal thesis was that the clinic should be a coordinating and arbitrating center and be so set up as to be free to call on all departments for consultation. It was the author's belief that the *final* treatment should be decided by the treating service. The lecture portion of the course at his institution comprises 50 hours. The content is exhibited in these sentences:

> The management of patients and the sequence of taking case histories opens the course. The laboratory tests which can be performed by the dentist are discussed in detail, including radiology, the value of saliva and pulp vitality tests, transillumination, smears and recourse to microscopical inspection of tissue through biopsy.

The most important concept which Dr. Cheyne advanced and which was consistent with the remarks of others is that, in large measure, what is taught in the didactic portion of the course are *techniques.*

Dr. René Rochon, in a presentation before the American Association of Dental Schools in Chicago in 1949,[9] discussed the general problem of charting and treatment planning in relation to Oral Diagnosis.

> We should realize at the onset that in the solution of the problem we will have to be most practical. . . . If clinic practice in our schools has to be a dress rehearsal for office practice in later life, then this rehearsal should be patterned after the type of practice that our future family dentist will be expected to follow when attending his patients.

(To Be Continued in June Issue)

Activities of the College

EDITORIAL

The theme of the 1958 meeting of the American College of Dentists will be the activities of the College. The plan calls for a type of meeting which will permit the membership an opportunity for frank discussion of the various activities and methods to further or reach our objectives. In view of this your President desires to present to the membership information on some of the activities of the College in this and the next issue of the JOURNAL.

Over a period of years the College has been constantly expanding its activities. The broadening of its scope by the increasing of activities is placing increasing demands on the officers and the financial resources. In the recent past it has given financial aid to the National Opinion Poll on preventive services and to the Pacific Coast studies on pre-payment dental services. At the present time it is committed to the support of a Teacher Training Fellowship, memorial books to libraries, Writing Award Competition, emergency fund for research laboratory accidents, travel fund for investigators who find it necessary to visit another laboratory, the publication of a JOURNAL, and the new National American College of Dentists Lectureship. In addition to these committed funds, requests have been made by the committees for the publication of seven brochures, one motion picture and the support of a workshop. Some of these have been authorized and are in preparation.

All of these are considered by the Board of Regents to be in keeping with the purposes and objectives of the College. It is their belief that no restrictions should be placed on the breadth of its activities, so long as they are consistent with the College objectives. However, it is apparent that some strain is being placed on available funds. In 1957 we had a balanced budget, and the 1958 budget will be practically balanced, depending on some undetermined costs. From this it will be seen that further expansion of activities will be restricted by the availability of funds.

The elected officers and the Board of Regents serve without re-

muneration and no provision is made for travel or hotel expenses; however, some funds are available for committee expenses when meetings are held in the Central Office. It does not seem that operating expenses or the cost of the annual convocation can be materially lowered.

The justification for the existence of the College is its power to advance the higher ideas of the dental profession. The furthering of these ideals should not be limited by dollars and cents, but only by the initiative and the ability of its membership. Should not the College give serious consideration to increasing its activities by increasing its available funds?

This is an era when Dentistry seems to be coming into its own. Its future will depend on how we guide these developments now.

THOMAS J. HILL

Human Relations*

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IT WAS WITH GREAT pleasure that I accepted the kind invitation of our mutual friend, Dr. Fred Elliott, to address your group this morning. Actually this will not be a speech in the formal sense, but a discussion of the observations of an "outsider" to your profession on a topic which is and has been of great interest to you. Perhaps because I am an outsider, and not bound by any of the courtesies which one should extend to his professional colleagues, I can speak frankly on this topic. Because of this I may add some insights to your thinking.

About six months ago I began to prepare a speech which I felt would be timely and vital to your group. As a research person, I talked to members of your profession and members of adjunct professions to ascertain what aspects of this broad problem should be covered. It was during that search for information that your colleague Dr. J. D. Larkin referred me to several articles written on the topic and published in your professional journals. Frankly, I was astounded both by the quality of these articles and the penetrating thought which they so clearly displayed. If you are as I am, you rarely get the chance to read fully even your own professional journals, and it is possible you missed these articles. If you did so, let me call them to your attention since, without question, they are "must" reading. I refer to Dr. Allison G. James' article, "Ethics and Human Relations Today—1956." Dr. Ernest B. Caldwell's article, "Ethics and Human Relations"; and "Human Relations: One More River to Cross" (a panel discussion), all three in the ACD JOURNAL (Vol. 23, No. 4) Dec., 1956. This is one copy of the JOURNAL which you should keep at your fingertips.

I have already mentioned this will be an informal speech. Let me hastily add that I am not prepared to discuss the topic in complex professional terminology. To me "Human Relations" need not be made into something complex and obtuse; rather, it is as

* Mr. Mallas, project director of the Texas Research League, presented his views before the Third Annual Meeting of the Texas Section of the College, December 7, 1957, at Houston, Texas.

defined by the April 1957 edition of your ACD REPORTER ". . . those personal relations that an individual has toward others. In dentistry they are characterized by many of the following qualities—kindliness, integrity, empathy, character, morality, etc." A simple definition, but to me complete and the one which I used in preparing this speech.

In discussing this topic with a professional group there are certain unique aspects which must be cited because they are all-important. One of these is the fact that the practice of successful human relations on the part of any dentist is really not a matter of his own personal choice. Actually it is a *responsibility* which he accepted when he became a member of the dental profession. Perhaps this comes as a surprise to you. Perhaps you have never considered your own human relations as something other than a matter of your own personal choice. If this is so, then I question whether you really understand the "why" of a profession.

What constitutes a profession or sets it apart from other groups or trades? Is it educational attainment? Hardly, since there are many persons in other occupations who spend more time in achieving advanced degrees. Is it the fact that your group reserves the right of "self government" and "self policing"? No, this could not be the difference since these factors are present in many other occupational or trade groups. Is it the fact that you render a public service? Well, we could stand here all day listing the groups that render a public service—all the way from a garbarge collector on up the skill ladder to C.P.A.'s, etc. While these and many others might be in part, or in total, interesting aspects of the professions they themselves are secondary. What then is the primary factor that sets professions apart from all others?

I think Dr. Colwell in his article which I mentioned previously states it very clearly ". . . the professional man is one who makes decisions about values that society cherishes and the base upon which they stand is the value of being the best possible human being . . ." and secondly, "professional persons . . . will render their services without a constant concern for material advancement." This to me is the fountainhead of all professionalism, and it is not difficult to see that rather than the profession being *created* by its members, it is created in the mind of society and *maintained* by its members. The fact that each of you in your day to day work deals with basic

human values determines the status of your profession in the eyes of people. This then, is the all-important bridge between good human relations being not your *choice,* but your *responsibility.*

Most of the gentlemen in this room—but certainly none of the ladies—are past the age of 50, and I would assume have spent 25 years or more in professional work. In that period of time your profession has constantly gained in both prestige and importance. Today, as we stand here, the profession is at the peak of its progress. Thus, we are not discussing how to achieve professionalism, but really how best to pass the mantle of professionalism—and thus good human relations—on to those who have yet to be admitted to this body, but who today are helping to set the tempo for what the people of this State think of your group.

I'm certain that every man in this room has done his share to develop and maintain the prestige of this profession. You would not be taking these days out of your crowded schedules if you were not deeply interested in your profession and its future. I'm almost certain that each of you understands clearly that the backbone of a profession is good human relations and without this being uppermost in the minds of the professional youth, all your effort will be wasted. On the other hand I'm not so certain that each of you clearly understands what constitutes good human relations. To some, good human relations is a matter of scientific approach, to others—and I should add probably the bulk of people—it is a matter of accident. What constitutes a foundation for good human relations? What are the essentials?

I find in analyzing good human relations that four basic qualities must be present. They can vary to some degree, but they *all* must be present. First is the need for respect for human beings. Without that respect no professional person can be effective, even if he has all the other essential qualities. Second is competence. Moreover, I'm not talking about competence in any one point of time, but over-all competence. This establishes the need for professional persons to keep up to date both in the techniques of their own professions, and in the understanding and appreciation of other professions. Third is basic integrity and honesty. I hope I do not have to detail their importance here. Fourth is primary concern with service, not with prestige or profit.

I know what some of you are thinking—that these are basic truisms—that it's sort of like every politician being "agin sin."

Think back over them, however. This is the foundation for all human relations and the foundation for your profession as well. I ask you what profession would have any status in the eyes of the public if these four qualities were not present? I could ask you if there is any other way to build effective human relations than working from this base. I know of none!

Unfortunately, in fact to a serious degree, in recent years some professional groups have laid less emphasis on maintaining these four principles and have turned more and more to public relations men. Frankly, it is not working and will not work. It's like building a complex building on a sand foundation—the weight will eventually cause the whole structure to collapse. Your profession must always operate within the context that you have moral obligations to your patients that overshadow your personal interests. Thus you must by your use of human relations establish good public relations. There is no other way.

Moreover, it is not what ten of you or a hundred of you do—rather it's what each does. I think one of the great errors we make is to expect one action or one series of actions to achieve a given end. We are usually disappointed when what we want to happen never does. It's the same way with achieving good human relations. One action or one series of actions will not achieve good human relations—rather it is each action we take every day when lumped together that decides in the end whether we've achieved good human relations or not.

I'm certain that each of you realizes these basic factors. The important thing is, do all the members of your profession realize them—especially the younger members? Any organization, whether it's a profession or not, will gradually fall apart unless it moves forward constantly. Yet to move forward you gentlemen must gradually entrust the "mantle of professionalism" which you struggled to build to those coming on in the profession. If you have done your job well, you have nothing to worry about, but if you have not been active in at least four important areas, then there will be trouble ahead. These four areas are:

1. Selection of new professional members.
2. Indoctrination of new professional members.
3. Policing of the profession.
4. External education.

I would say number one is being well done today. I would venture

the opinion that students in our dental schools are probably the best that can be found and standards of admission have been progressively stiffer the last 25 years. Number two is more open to question. I'm afraid that you are a bit too busy to spend the time you should with your younger colleagues acquainting them with some of the basic aspects of the profession which sometime take a lifetime to acquire by experience. And yet if the fine students in our schools are left to learn only by trial and error, much of the momentum of professional progress will be lost. Number three is always a touchy subject but one all professional groups must face. It is your responsibility, in fact your very existence may depend upon your ability to eliminate undesirable aspects of practice and/or members if necessary. Don't expect others to do it for you—especially government. If you do, it will be only a matter of time until they dictate the rest of your actions.

Last is external education—the acquainting of the public with what you are trying to do as a profession and the need for doing it. I can think of no other profession that has such a "captive" audience. You can be an educator as well as a practitioner. In fact, to be a good practitioner you must be a good educator. Problems you face as a professional group are of vital interest to the public. If they weren't, the public would never have elevated you to a professional status. Keep them informed. Don't hesitate to serve on community projects and advise on problems that affect your profession. In the eyes of the public you are an informed, educated man. Not only should you strive to deserve that reputation, but you should use your talents when called upon to do so. What better way to build good human relations? The success of your profession will depend on your activity in these four fields during the next ten years.

So far I have discussed only internal aspects of your profession. Actually, as a professional group you must relate to a bigger picture and become a part of what, for lack of better words, I term our way of life. Since we are a part, it is our responsibility to realize that our way of life is constantly changing, and every change has its effect on our profession. For example, let's examine what can be expected to happen here in Texas in the near future: For one thing by 1975 the population of Texas can be expected to reach about 14,000,000 with a substantial part of that population being in the aged (above 65) and young (below 18) age group. Annual average family income will be expected to reach an all time high—$5,000

by 1965. Imagine what that will do to the number of persons who can afford your services. During this same period cities will continue to grow and all the social problems we associate with urbanization will stay with us and probably become larger and more complex. One positive development is the continued increase in the average educational attainment of the population. These plus many many more developments foretell the future. Some of the developments such as population, income, educational attainment have positive influences on your profession, but there are others more questionable.

For example, the last 25 years have seen us move closer and closer to the welfare state concept. Here in Texas in the last ten years we have spent $1,500,000,000.00 on state level welfare programs alone. Frankly, we know little about the effects of these programs, but it is not hard to speculate that the substantial portion of our population who receive these grants are becoming more and more dependent upon them. The trend has been to increase public welfare programs until important groups—politically significant—are demanding more and more in the way of outlays. It is only a matter of time until your profession must face this challenge. The American Medical Association is now battling increased medical benefits to the aged. It would behoove each of you to examine carefully the issues. As a professional group it will not be long until you must stand and fight also. Perhaps it would be well to fight together rather than alone. And remember you can fight more effectively if your foundation of human relations is strong.

I hope that I have stimulated some of you to re-examine your professionalism and its impact on our way of life. You have lived to see your profession develop into a dynamic force which has as its very base service of the highest caliber to your fellowmen. You have added momentum to this force and have shaped it positively. I hope you are developing the manpower to take over in the world of tomorrow since the challenges to your profession then will be greater than those which you faced. Moreover, and I hope I'm wrong, but the external threats to the very existence of your profession will become so great that only a cohesive, sound, progressive group can survive as an effective force. I hope that ten years from now as I look upon this group that you have continued and increased your rate of human progress!

Book Reviews

Travis, L. E., ed. **Handbook of Speech Pathology.** New York, Appleton-Century-Crofts, c 1957. viii + 1088 p.

This is a major text on speech and although it is a basic work intended to be used in conjunction with formal education and the facilities of seminar and clinic, it is a very welcome reference book for those who are in allied fields. The book comes to dentistry's direct attention by reason of chapters 19, pathomorphology of cleft palate and cleft lip; chapter 20, speech problems of the person with cleft palate and cleft lip; and chapter 21, speeech defects associated with dental abnormalities and and malocclusions. But those who have studied speech problems will know that the understanding of speech pathology involves the total individual and his environment. How magnificent then to find this book which calls upon the learnedness of many recognized clinicians, scholars, and teachers of speech pathology, each contributing a chapter of their own specialty. The complete amount of information is thereby prodigious.

The work is an excellent introduction to many facets of speech; definitions, mechanics, etiologies, diagnoses, measurements, evaluation, care, and philosophy.

The major portion of the book is devoted to basis consideration in speech pathology and speech and voice disorders associated with organic abnormalities. The last third of the book is devoted to speech and voice disorders unrelated to organic abnormalities, and psychotherapy and speech therapy. Although there may be little immediate dental relationship, these latter areas of discussion are simply fascinating in their remarkable insight and contribute immensely to the reader's knowledge of human dynamics. Dentistry has evolved closer to the need for understanding the individual beyond the implication of the oral problems alone and since the incidence of speech defects appears to lie somewhere between 4 to 5 per cent of our population, some knowledge of speech problems increases the value of the dentist to his community.

This book is so vitally interesting that it cannot help but engender further study. Dental libraries will considerably add to their reference fund with this addition.

—Marvin Davis

Orthodontics, Principles and Prevention. By Dr. J. A. Salzmann. 381 pages with 262 illustrations and 26 tables. Index, Philadelphia-Montreal, J. B. Lippincott Co., 1957.

The new edition by J. A. Salzmann is presented in two volumes. The first, Principles and Prevention, includes subjects related to the principles basic to orthodontics.

There is a well developed presentation of the development of the dentition. The histology of human teeth is reviewed. The eruption sequence of the primary and permanent dentitions is given, together with charts showing norms for tooth size and the number of erupted teeth at selected ages.

The chapter reviewing orthodontics as a public health concern is enlightening in showing the incidence of malocclusion in our population.

Growth and development are extensively covered, with guides given to deter-

mine the individual's general development level at a given age. The growth of the skull and the growth of individual bones of the face are related to dental growth.

In the chapter on prevention and treatment of incipient malocclusion, minor appliances are described together with discussion of habits and serial extraction.

Subjects of electromyography and cephalometrics are presented with an appendix defining anthropometric and cephalometric landmarks.

This book's scope of subjects make it a reference source for the general practitioner as well as the orthodonist.

Orthodontics, Practice and Technics. By Dr. J. A. Salzmann. 497 pages with 471 illustrations and 34 tables. Index, Philadelphia-Montreal, J. B. Lippincott Co., 1957.

The second volume of this edition, Practice and Techniques, deals primarily with the appliances and technics of orthodontic correction. The various appliances are shown with clear and well labelled illustrations.

The details of many of the cephalometric analyses are discussed. Differential diagnosis and treatment planning are presented with the technic of appliancing. The appliances presented include the Edgewise Arch Appliance, the Johnson Twin-Wire Appliance, activators, myofunctional appliances, and bite plates.

The subject matter is well organized and the large number of illustrations increases the volume's usefulness.

Shaw, S. I. **Clinical Application of Hypnosis in Dentistry.** Philadelphia, W. B. Saunders, 1958. xi + 173 p.

Those who know Dr. Shaw recognize this book as a beautifully filtered and refined presentation of many years of thought, training, and experience in both dentistry and psychology. It is not a large book, since what it has to say is accomplished with brevity. But it is a brevity which belongs to the scholar who has mastered the technic of teaching his subject in the most practical manner. Ethical hypnosis is such a valuable dental ally, that it is a little surprising to find resistance to its use. Perhaps all that is required is an increased understanding of hypnosis and how it is brought about. This book uniquely extends this information with suitable dignity.

The qualifications of a dentist to study the use of hypnosis do not include or demand special skills other than an understanding of human dynamics and the expression of kindness and intelligence.

The successful technics to induce hypnosis for dental purposes are presented with such order and clarity that the reader may recognize and utilize various stages of hypnosis from simple suggestion to deep trance as workable capabilities of the mind . . . completely divested of the theatrical taint.

Dr. Shaw covers the dangers of hypnosis as well as the benefits. He also works within the framework for understanding the individual as a total person with many needs and influences guiding his actions.

A most valuable use of this book will be as a supplement to the teacher of hypnodontics. It is also fine preparation for such intended courses and an excellent auxiliary to enhance the patient-dentist relationship through suggestion.

—MARVIN DAVIS

X-Radiation and Protection in Dental Radiography

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EDITOR'S NOTE: *While it is not customary for our* JOURNAL *to publish papers of technical nature, we feel that in view of the importance and timeliness of subject of exposure to x-radiation in the dental office, the accompanying paper by Dr. Sinclair should be read by all practicing dentists.*

A. E. S.

NOWADAYS,WHEN publicity about ionizing radiation and its hazards, the dangers of radioactive fallout, etc., is so extensive, the number of people who are aware that radiation is a potential hazard to the population is very large indeed. The number, however, who are well enough informed on the subject to be able to form a constructive opinion as to the magnitude of the problem and to put it into perspective with regard to other modern human hazards, let alone advise on means of minimizing the danger, is unfortunately, pitifully few.

The medical and dental professions have a very special responsibility in this regard since they themselves are responsible for a considerable part of the exposure received by the average individual. Consequently the dentist should be as informed as possible about the nature of the hazard from x-radiation and the means of minimizing exposure to himself, his staff, and to the patient.

Dentists are fortunate in one respect—that their activities are confined to one type of radiation, x-rays, and to one range of x-ray energies, the region which is useful for diagnostic or radiographic purposes. For those x-rays the means of protection can be comparatively readily provided. On the other hand, the use of x-rays for dental purposes is tremendous in its extent and so the potential hazard cannot be easily disregarded. These facts indicate that education of the dentist on the subject of radiation protection can result in a tremendous improvement in the dental exposures both to the average individual and to dental workers and staff.

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1. *Biological Effects of Radiation*

First let us consider the general effects of x-radiation. What can this radiation in appreciable amounts do to us? The principal radiation effects may be summarized as follows: First are superficial injuries, which comprise effects on the skin, possibly causing an erythema or burn, or perhaps epilation. At severe levels this may cause ulceration and eventually perhaps malignancy. Second, general effects on the body, which include damage to the blood system and the blood-forming organs which are the most radiosensitive. If continued over long periods, or if the amount of radiation is high, this can result in anemia or leukemia. Third, the induction of malignant tumors. This occurs only after a large dose or following a lengthly exposure to smaller doses. Fourth, other deleterious effects, including cataracts, obesity, impaired fertility, and a general reduction in the life span which is characteristic of radiation exposure. Finally, genetic effects which may cause damage to successive generations.

2. *Recommended Maximum Exposure Levels*

The next point we wish to consider is at what radiation exposure levels are these effects likely to occur? We know, for instance, that we are exposed to a rather low level of natural radiation from our environment, from cosmic radiation and from the small amount of radioactive material contained in our bodies. This exposure is inevitable and is presumably harmless. We also know that a large, sudden dose of 400 roentgens or more would be lethal to many of us. Somewhere in between, presumably, there is a level of radiation which we can accept, which is higher than the average natural background radiation but will not cause any deleterious effects. In order to be able to appreciate these dose levels we must be able to understand the units of radiation dose. The unit of dose for x-radiation is the roentgen or the rad, usually denoted by a small "r." In protection, however, it is often more convenient to use 1/1000 part of these units, the milliroentgen or the millirad. These units of dose are usually measured by means of ionization chamber dosemeters, pencil type dosemeters, or they can be measured by film. "Dose" has a rather special meaning with regard to radiation, and the distribution of this dose in the tissues of the body is rarely uniform. In

many other respects, however, it corresponds approximately to a prescribed dose of a drug.

In considering at what level damaging effects occur we must know not only the dose but also the area of the body over which the damage may occur and the time for which that dose is given. The smaller the area of exposure the less important the dose, just the same as for conventional burns. The longer the time over which a given dose is delivered, the less severe its effect.

It is usual to distinguish broadly between acute effects, the result of sudden doses, and chronic effects, the result of small, low-level exposures. For *acute effects,* for doses up to 25 r no effect is observable. At about 200 r there is a possible temporary sickness followed by blood changes and probable late effects. A 450 r death is likely in about 50 per cent of the cases, and at doses higher than this death would be certain. For *chronic effects,* 0.3 r per week, which is the permissible level for radiation workers, is not known to produce any deleterious effects and is in fact believed to be safe by a considerable margin. At much larger doses late effects, including the induction of malignancy, start to occur with increasing frequency.

We are constantly learning more and more about the nature of these effects and the levels at which they occur. However the national and international agencies set up to correlate the various facts that come to light and to make recommendations regarding the levels that ought to be observed by radiation workers allow reasonable safety margins on the best estimates of the dose level at which damage would be likely to occur before expressing their recommended levels. The two most important bodies in this regard are the International Commission on Radiation Protection, which contains representatives from many countries, and the National Committee on Radiation Protection, which suggests recommended levels for use in the United States. In many cases the recommendations of the National Committee on Radiation Protection, which are not in themselves legally binding, have been adopted by the various states, most of whom now possess some radiation legislation. The latest recommendations of the National Committee on Radiation Protection are as follows:

* MPD Recommendations for Occupational Conditions (Controlled Areas)

1. *Accumulated Dose.* The maximum permissible accumulated dose, in rems, at any age, is equal to 5 times the number of years beyond age 18, provided no annual increment exceeds 15 rems. Thus the accumulated

MPD = 5 (N-18) rems where N is the age and greater than 18. This applies to all critical organs except the skin, for which the value is double.

2. *Weekly Dose.* The previous permissible weekly whole-body dose of 0.3 rem, and the 13-week dose of 3 rems when the weekly limit is exceeded, are still considered to be the weekly MPD with above restriction for accumulated dose.
3. *Emergency Dose.* An accidental or emergency dose of 25 rems to the whole body, occurring only once in the lifetime of the person, shall be assumed to have no effect on the radiation tolerance status of that person.
4. *Medical Dose.* Radiation exposures resulting from necessary medical and dental procedures shall be assumed to have no effect on the radiation tolerance status of the person concerned.

MPD Recommendations for the Whole Population

5. The maximum permissible dose to the gonads for the population of the United States as a whole from all sources of radiation, including medical and other man-made sources, and background, shall not exceed 14 million rems per million of population over the period from conception up to age 30, and one third that amount in each decade thereafter. Averaging should be done for the population group in which cross-breeding may be expected.

(The term "rem" may be taken as the same as roentgen or rad for purposes of dental radiography.)

* Maximum Permissible Dose

These levels are used principally as a guide. The objective of the National Committee is to keep the exposure of all radiation workers and the population itself to the minimum possible, but since it is not reasonable to assume that the level can be kept to zero, especially as radiation uses increase, these are the maximum levels that should be tolerated. However it should be appreciated that exceeding 0.3 r per week on one occasion, although it constitutes a technical overexposure, should not be regarded as a drastic event in the life of the exposed individual; it merely indicates that steps should be taken to ensure that such an overexposure does not occur again, or at least does not occur frequently.

3. *Doses Received in Dental Radiography*

The next questions we want to consider are what kind of doses are actually received in routine dental radiographic procedures, both by the patient and by the operators. With regard to the patient a number of surveys have been made and the data from one survey taken in England[1] is shown in Table I.

This indicates that the approximate dose per film is of the order of 2 roentgens and a whole-mouth examination would on the average take about 32 roentgens. At the same time the dose to the gonads is

about 5 milliroentgens for the male and 1 milliroentgen for the female for a whole-mouth examination. These figures are British (Stanford and Vance, 1955)[1] but American figures (for example, Webster and Merrill, 1957)[2] do not differ greatly. Strictly, since the same tissues are not irradiated with every exposure, all the films should not simply be added. Direct measurement of this situation (Baily, 1957)[3] showed that the actual dose in a full-mouth set of films varies from 8 to 23 r, depending on technique, Kv, filtration, etc. In order to compare this with other radiographic techniques, the average dose per

TABLE I
DOSES IN DENTAL RADIOGRAPHY

	In Beam	*Gonads*	
To Patient:		*Male*	*Female*
Per Film	2 r	0.34 mr	0.06 mr
Whole-Mouth	32 r	5.0 mr	1.0 mr
Bite-Wing	8 r	1.3 mr	0.3 mr
Other Radiographic Techniques:			
Average per Examination	2 r-2.5 r	40.0 mr	60.0 mr

examination (determined from the same authors) for standard radiographic techniques has also been included in Table I. This shows that the average dose per examination is also about 2 to 2½ r, although of course it must be noted that this number represents the average of a rather broad spectrum ranging from small exposures of about 0.2 r in a chest film to 10 r or so in some spinal examinations, and even larger doses in some gastrointestinal series. The average dose to the gonads per examination, averaged for a frequency of examination and type of examination over a period in a general hospital, is 40 milliroentgens for the male and 60 milliroentgens for the female. From this it is apparent that in dental radiography the doses per film are no larger than in many other radiographic techniques and the doses to the gonads are considerably less than the average of most other techniques. The exposure in the beam itself in dental radiography is small in area and should always be kept to a minimum. The dose from a whole-mouth examination is rather higher, over a limited area, than the dose received from most other standard radiographic examinations.

Data on the doses received by dentists and their dental technicians from radiographic sources are much more scant. Here, however, we

can note that the average radiologist receives less than 100 milliroentgens a week. In a survey made by S. B. Osborn (1955)[4] it was apparent that most observers found an average dose for the radiologist of about 30 milliroentgens per week and for the diagnostic technician about 60 milliroentgens per week. It is unlikely that these personnel, full-time employed on radiographic procedures, would receive less than a dental technician or a dentist unless the latter were being extremely careless. Consequently I believe we could assume this represents an upper limit to the exposure of dental personnel under good conditions. Our own studies, using a film badge service to control the exposures of two technicians in the x-ray work in the University of Texas Dental School here, have shown over a period of a year an average of about 4 milliroentgens per week per technician, which is a very low figure by comparison. However our own diagnostic department here also has rather low exposure levels compared with the average I quoted just previously, since the radiologists and technicians receive rather less than 15 milliroentgens per week on the average in our department. Consequently, this exposure level probably depends on the type of equipment that is used and the procedures in force in these relatively well controlled departments. In places where older equipment is used and stricter control not enforced the exposure may go up by a very considerable factor.

Most of the surveys so far made have been undertaken in dental institutions, hospitals and other rather well controlled environments. However very recently a survey of a large number of dental offices was made in one large American city.[5] As the results of this survey have not yet been published, I will only refer to them briefly, but they indicate a very broad spectrum in the present use of radiation among dentists. In other words, the results ranged from very good to very poor indeed. The average exposures both to patients and to operators was found to be considerably higher than the institutional data quoted above, with the extreme values being quite severe. The results of this survey serve to indicate what many of us on the radiation side feel regarding dental radiographic exposure—that there is room for a great deal of improvement in the present procedures used by many dentists.

4. *Measurement of Personnel Dose*

I have no doubt that many of you who are not familiar with the procedures used for measuring personnel doses are wondering how

these amounts are determined. The usual procedure is to use a film similar to dental film in a film badge partly covered with a metal strap. The exposure beneath the metal and in the open enables one to compare not only the quantity of radiation but also its quality. Alternatively, a fountain pen type of personnel monitor, which can be directly read, might be employed. These are shown together in Figure 1.

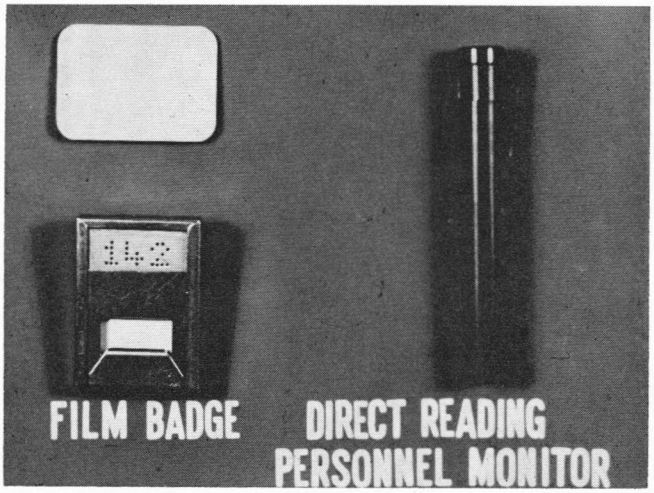

FIGURE 1

5. *Reduction of Exposure Levels*

What measures might be employed to ensure that the exposure level both to the patient and to the operator will be kept to a minimum?

In all radiation work there are three important factors in protection:

1. The individuals concerned should be exposed for the minimum time.

2. Personnel other than the patient should be as far away as possible.

3. As much lead as possible should be placed between the direct beam, the scattered beam and the operators.

In addition to these generalities there are a few specific suggestions that might be made.

(1) *The field size should always be kept to the minimum.* That is to say the beam should just include the area which it is desired

to measure and no more. This can be done by including a diaphragm of about 1 millimeter of lead with an aperture which is just sufficient to cover the film area at the depth normally used. If this is not done a large amount of unnecessary radiation will be used. It has been pointed out (Porter and Sweet, 1957)[6] in a recent scientific exhibit to the American Dental Association that a reduction in the standardly used field size of a 4-inch circle to a 3½-inch circle will reduce the amount of tissue exposed by nearly 25 per cent. If additional care is taken in the setting up of the procedure, this could be reduced still further, to an area not much larger than the dental film itself. In some techniques a small field will be possible, while in others a larger field will be necessary if retakes are to be avoided. It is not difficult to change diaphragms, however, and a conscientious dentist might therefore consider how his own practices might be modified to expose the minimum area of tissue. In doing so he may actually be improving the quality of his radiograph due to the reduction in scatter, at the cost only of a little more time and accuracy in setting up.

(2) The x-ray beam contains a good deal of soft radiation which will irradiate the skin of the patient but will not penetrate to the film. This radiation is or no value for diagnostic purposes and consequently should be excluded by the addition of an aluminum filter of about 1 millimeter to most dental units. The total filtration of tube and added filter should be about 2 millimeters (Seemann and Cleare, 1955).[7] Usually this reduces the dose per film to the patient by 40 per cent or more.

(3) Faster film: Manufacturers are continually striving to improve the speed of the film without impairing its qualities. Recently, for example, the speed of Kodak Periapical Radiatized Dental Film has been more than doubled[6] and exposures with this film can now be halved with no loss of quality in the radiograph. Developments in this field are very important and it behooves the dentist to keep abreast with these developments and utilize them to advantage in keeping personnel and patient exposures low.

(4) Modifications in technique: The standard technique using 65 Kvp may not be the best to obtain good quality films and minimum exposure. It has been proposed, for instance, that using ultraspeed film with 90 Kvp and longer processing than normal will result in very considerable reduction in patient exposure. While I am not advocating this particular technique, I do not think that the possibility of using techniques other than those now standard should be

forgotten or lightly dismissed, particularly with new types of film.

(5) It may be noted that the protective housing which encloses the x-ray tube in a dental unit contains a lead shield to attenuate all the radiation in all directions except that of the useful beam. Recommendations are laid down concerning the amount of radiation which can be allowed to leak through this protective housing. While most modern equipment easily meets these requirements some older x-ray equipment may not do so and this should be checked, otherwise both patient and operator may be unnecessarily exposed to leakage radiation from this source.

Reducing the field size and including a filter will also reduce the scattered radiation to which the dentist and his technicians are normally exposed. Neither dentist nor technician should ever have any part of their bodies in the direct beam and should never, of course, hold a film. The operators should always put as much distance between themselves and the useful beam as possible and for total operating levels exceeding 200 milliampere minutes of operation per week, which represents about 400 exposures of 3 seconds at 10 milliamperes, the operator should also stand behind a protective barrier. The scattered radiation normally encountered in dental radiography is very soft and can be easily stopped with even a very small thickness of lead. Even the direct beam can be absorbed easily and a thickness of only 0.2 millimeter of lead is sufficient to reduce the beam to less than 1 per cent of its incident intensity. The thickness of the barrier required in any given circumstances will generally need to be worked out for those circumstances, for the workload that is likely to be employed, the size of the room, etc. Data on the thicknesses required for particular installations are contained in a handbook based on recommendations by the National Committee on Radiation Protection (NBS Handbook 60, particularly page 16 and Table V).[8] The instructions in this handbook should be followed by the dentist and his technician. The most important points are as follows:

1. The film should be held by the patient, or if this is impossible, by some other person not usually exposed to x-rays.
2. Only the patient should be in the useful beam.
3. Neither the tube housing nor the pointer cone should be held during the exposure.
4. The operators should stand as far away as possible and certainly not within the region where stray radiation may be expected to exceed the permissible value.
5. Hand held fluoroscopic screens represent a hazard and should never be used.
6. The size of the x-ray field should never be larger than is clinically necessary.

7. The number of films taken should be held to the minimum consistent with diagnostic requirements.

8. Repeated radiographs made of individuals in order to try out a technique should not be permitted. Such trials can be conducted on phantom material.

Every dentist should, of course, feel the responsibility for knowing these important points relative to the taking of radiographs and be sure, by having his equipment checked, that he is not causing unnecessary exposure either to himself or his staff or patients. When he is assured of this and armed with the knowledge of the approximate exposure level to be expected under very good conditions he should take the time to explain to his staff and his patients, who will frequently have questions on the subject, what steps have been taken to ensure their minimum exposure. He should always have a copy of the appropriate handbook conveniently by for reference purposes, and perhaps might even consider putting a notice concerning his conformance to NCRP protection recommendations in his waiting room or in other suitable locations in his office where it will always be before his staff and patients.

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The accompanying photo of DOCTOR JOHN J. WELKER *and his son Richard was taken on the occasion of Dr. Welker's 83rd birthday, at a dinner given in his honor January 15, 1958, in Toledo, Ohio. Dr. Welker, a Fellow of the American College of Dentists, has had a long and distinguished career in dentistry, having completed 55 years of practice this year.*

Report of the Committee on Conduct*

At the meeting of the Board of Regents in Chicago, Illinois on Sunday, February 3, 1957, the Committee on Conduct reported on its meeting in the Central Office on January 12 and 13, 1957, outlining its objectives, plans of procedure and suggested the re-wording of certain statements in the proposed bylaws for clarification of interest and base-lines for the guidance of the committee in its activities.

As a result of the discussions at the meeting and the subsequent statements in the proposed bylaws, the Committee submits the following statements which it hopes will have the approval of the Board of Regents and will become the basis for carrying on the work of the committee.

It should be noted that while considerable attention in the objectives is directed to infractions, a very important, and perhaps the most important, function of the committee will be to counsel, advise and interpret the rules of conduct for Fellows or other interested persons.

The Committee recommends the adoption of the outline for its guidance in the work ahead.

Respectfully submitted,

J. Ben Robinson, *Chairman*
Fritz A. Pierson, *Vice Chairman*
Ernest N. Bach
Willard C. Fleming
Kenneth C. Pruden

AN OUTLINE FOR THE GUIDANCE OF THE COMMITTEE ON CONDUCT

The Purposes of the Committee

It was agreed that the purposes of the committee should be:

1. To study the various rules and regulations relating to membership in the College and to the conduct of the Fellows.
2. To interpret the rules and regulations of the College for persons seeking such interpretations.
3. To discuss with the Fellows any infractions of the rules in which they may be involved or in doubt.

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* Presented November 3, 1957 at Miami Beach, Florida.

4. To receive and investigate alleged infractions of the rules, to report them to the Board of Regents, and to recommend a course of action to be taken.

5. To recommend to the Board of Regents the adoption of such additional rules and regulations, or amendments of present rules which may be consistent with carrying out the objectives of the Committee in accord with the ideals of the College.

Operating Rules

1. *Organization*

The chairman of the committee shall be the senior member, that is, the member whose term of appointment will expire with the close of the current year. The Secretary of the College shall serve as secretary (ex-officio) of the committee.

2. *Counseling*

The committee shall be ready at all times to counsel and advise with Fellows on the rules of conduct and offer suggestions for their guidance on all matters coming within the purview of its activities.

3. *Procedure*

The committee shall receive complaints of, and investigate, alleged infractions of the rules of the College.

It shall gather evidence bearing on the complaints from all available known sources, using such methods as the committee deems proper.

4. *Committee reports*

It was decided that reports on all cases be made to the Board of Regents, including summaries of inquiries made by the committee and responses given, so that the Board of Regents would be kept fully informed. The extent of the information developed by the committee which shall be made available to the Fellowship generally, shall be left to the discretion of the Board of Regents.

5. *Committee meetings*

Meetings of the committee shall be held at the call of the Chairman and/or the Secretary, when it is deemed necessary to meet in order to carry out the committee's purposes, without undue delay, and in accordance with the further provisions that may be established by the Board of Regents.

Guiding Principles

The conduct of Fellows of the College shall be judged in terms of the provisions of:

(a) Requirements for eligibility to membership.
(b) The Pledge of the College.
(c) The Guide to Conduct.
(d) The requirements established in the Bylaws.
(e) The principles of Ethics of the American Dental Association.

Areas for Consideration

1. *General Conduct*

The dentist should be an individual of unquestioned honesty and high morals as befits a member of a profession.

2. *Organization membership*

Active Fellows of the American College of Dentists who are in active practice and engaged in teaching or research, or are employed in the administration of programs of dental health service, shall hold membership in the American Dental Association, the Canadian Dental Association, or in their appropriate equivalents.

If a Fellow is a non-dentist, teaching in a school of dentistry, he shall hold membership in the special organizations representing his particular field of interest.

3. *Willingness to share knowledge and experience for the benefit of the patient and the profession*

A Fellow of the College should evidence a readiness at all times to give freely of his time and talents and to share with his dental colleagues privately and publicly, the benefits of his special knowledge, skills and experience that may be useful to them.

Accordingly, Fellows of the College are expected to use their talents for the advancement of the profession, and to devote a reasonable amount of their time to the improvement of the skills of others. In these circumstances, the Fellow is entitled to fair renumeration for his services. If the demand for a Fellow's service as a clinician, lecturer or teacher becomes excessive, he should limit his acceptances of invitations to the number that he can reasonably undertake, rather than to demand greater compensation which would make a commercial venture of his efforts.

4. *Teaching and giving courses*

A Fellow should refrain from giving, promoting or in any way supporting courses of instruction in dentistry under any auspices other than those of a recognized dental society, approved dental school or other recognized not-for-profit professional or educational agencies.

5. *Study Clubs, Seminars, etc.*

Study Clubs, Seminars and special groups should be given every encouragement in their efforts to provide continuing educational opportunities for members of the dental profession.

Whenever feasible, special instruction should be sponsored and directed by conventional dental organizations. Where this arrangement is not feasible, such courses of instruction should be organized by dentists on a strictly not-for-profit basis.

In all cases Fellows of the College should avoid participation in projects designed for the aggrandizement of individuals, or planned and conducted with the profit motive as their basic objective.

6. *Pecuniary Interests*

(a) Fellows of the College may acquire patents and copyrights, provided the holding of, and remuneration received from such patents and copyrights do not tend to restrict research, to retard practice or to limit the benefits that might accrue to the profession from the use of such patented or copyrighted materials.

(b) Fellows of the College shall not engage in commercial pursuits involving the production and distribution of dental products; nor shall they become associated in business with manufacturing or trade firms which are organized to serve dental practice.

This limitation placed on the Fellows of the College is not meant to prevent them from entering commercial pursuits of a "non-dental" character, provided such pursuits do not become their major interest. If the retirement of a Fellow from dental practice, dental teaching, or other professional activities becomes necessary at a time well in advance of normal retirement age and he thus becomes inactive in dentistry but continues to be active in commercial pursuits, his Fellowship in the College shall be automatically forfeited.

7. *Journalism*

In order to ensure the scientific quality and professional excellence of dental journalism, it is necessary that dental periodicals shall be

published under the authority and control of recognized dental organizations. This type of professional control in no way restricts freedom of speech or freedom of the press. Rather, it is assurance to the public that its health interests are being protected.

In view of the importance of this policy, the American College of Dentists disapproves of ventures in proprietary journalism that might be made by private and/or commercial interests for the main purpose of profit. Such ventures depend for success mainly on income from uncensored advertisements of dental products, the use of which may not be in the best interests of the profession or the public it serves. Specifically, the standards of quality to be observed in accepting the advertisements of dental materials and supplies are those established by such agencies as the Council on Dental Therapeutics of the American Dental Association and the Bureau of Standards of the United States Government, non-profit, scientific agencies which are engaged objectively in establishing the true merits of manufactured products meant for use in dental practice.

The American College of Dentists holds the view that Fellows of the College should give their support and encouragement only to such professional periodicals as may be wholly under the auspices of recognized dental organizations and that are managed in accordance with these high ethical principles. The bylaws of the College define this obligation.

8. *Code of Ethics*

Fellows of the College are expected to uphold the Principles of Ethics of the American Dental Association or the equivalent representative scientific or professional organization in the country in which they practice and hold membership.

9. *The use of the title—F.A.C.D.*

In order to conform to good taste and accepted procedures, the use of the title *F.A.C.D.* is limited; it is not used in all cases where degrees are used. An accepted guide is as follows:

1. It is not used on office doors, office buildings, office name plates or stationery. The professional degrees (D.D.S., or D.M.D.) only should be used here.
2. It may be used in College registers, where faculty listings are presented, together with all other degrees and titles.
3. Its use following the name of the author of an article published in a journal is at the discretion of the editorial board. Some journals limit the titles to the professional degrees (D.D.S., or D.M.D.). This policy is observed by the American Dental Association. Some include the academic degrees, such as A.B., or

B.S., and the professional degrees. Some include all degrees of the writer. The decision should remain with the members of the editorial board, who can be informed of the Fellowship at the time of having the paper presented.

4. It should be used, together with both academic and professional degrees on the title pages of textbooks of which the Fellow is an author.

5. When signing a professional register, ordinarily the professional degree only, is given; however, in some foreign countries, when signing a visitor's register at a dental college, for example, one is expected to add all degrees for both information and identification. Previous policy of those signing earlier is a guide.

10. *The Gown and Its Use*

The Fellow's gown is the basic doctor's academic gown, trimmed in red (the color of the American Rose), the red being bordered with lilac (the color for dentistry). It is the property of the College.

The gown of Fellowship of the American College of Dentists should be worn at all convocations of the College. It may be worn at commencement exercises, together with the hood of the highest university or College degree held, and on all other occasions when academic regalia is required.

One exception: If one is to be a recipient of a degree at any specific ceremony the regulation black academic gown is usually worn, unless otherwise indicated.

11. *Public Esteem*

Fellows of the College will remain constantly conscious of the values of the high public esteem in which the profession is held. They will endeavor in every way possible to promote public respect for the dental practitioner and for dentistry as a profession. They will be constantly aware of the facts that public esteem for the dental profession and respect for the dentist is largely determined by the character and conduct of the dentists themselves.

Report of the Committee on Continuing Educational Effort*

THE COMMITTEE ON Continuing Educational Effort met in the Central Office on April 27 and 28, 1957, with four of the five members present.

Because of the assignment given the committee with regard to the Sunday morning program at Miami Beach, it was felt desirable to agree upon some definitions for the various areas of continuing education so that the participants in the program could develop their statements accordingly. The definitions below are the result of inquiries to the Council on Dental Education of the American Dental Association and statement agreed upon to designate areas not specifically referred to by the Council.

DEFINITIONS

Differentiation Between Course and Program

A program is a planned sequence of courses designed to provide the educational experience and training required for the acquisition of an advanced degree or a certificate of accomplishment. A program does not have the same meaning as a course. For example, a number of individual courses such as anatomy, oral pathology, physiology and others, may be included in a graduate program of oral surgery and lead toward a Master of Science degree, or courses by these same titles might be included in a postgraduate program or oral surgery and lead toward a certificate granted by the dental school.

Graduate Program

A planned sequence of courses leading to an advanced degree, such as, an M.S., M.S.D., or Ph.D., granted by a recognized educational institution.

Postgraduate Program

A planned sequence of courses that does not lead to a degree but one for which the student may be awarded a certificate. The level of instruction in the postgraduate program may or may not be similar

* Presented November 3, 1957 at Miami Beach, Florida.

to that in the graduate program and the student may not be required to meet the same entrance requirements expected of the student registered for a graduate degree.

Continuation Education

Continuation education is the terminology used to describe the informal courses, usually of short duration such as one or two days to several weeks on either a full-time or intermittent basis, which are offered to provide practicing dentists with information about new developments in technic and science. Continuation education may be offered under the supervision of an individual, a dental organization, or an educational institution.

A continuation program in education for the profession might well include the following:

Extension Courses. Extension courses or programs offered by educational institutions are distinguished largely by the fact that they are made available outside the facilities of the school, such as a branch or by mail. They may or may not be of an advanced level and are actually devoted largely to undergraduate courses or courses that are mostly of a vocational nature.

Seminars. A seminar is a group effort in study or research conducted under the leadership of one or more persons possessing special knowledge in the area of study.

Study Clubs. A study club is an organized effort on the part of individuals to pool their knowledge and interest for the benefit of all participants. Study clubs may be of two kinds: (1) Where the objective is basically instructional and (2) where the objective is basically investigative.

Scientific Programs and Exhibits. Scientific programs are programs offered by organizations or institutions that offer lectures or discussions on various subjects of interest to the practitioners in an effort to keep the practitioners abreast of developments. Scientific exhibits offer further opportunity for this depending more on the visual aspects of the educational process.

Summaries From Questionnaires

Proceeding then to the broader aspects of the committee's activities, the Secretary reported on the return from the questionnaires that had been sent out to dental schools and dental organizations. While the returns were still coming in, and complete summaries were, therefore, impossible, a sufficient number had been tabulated to indicate the following trends of the replies.

(a) That courses of instruction were widely available on various subjects, through schools and organizations.

(b) That the demand for courses was generally being met, some places in classes still unfilled.

(c) That some specific subjects—and these subjects differed geographically—were over-subscribed and in others no interest was shown.

(d) That study clubs were plentiful in many areas of the United States but non-existent in others.

(e) That the operation of study clubs and seminars differed greatly in different areas.

(f) that the payments to essayists covered a wide range, although the honorarium of $100 per day plus expenses, seemed to prevail as a top level, with a meal or travelling expense representing the bottom level. Usually, no payment was offered a local speaker.

Resultant Temporary Conclusions: As a result of these summaries the following conclusions were made:

1. *Graduate Training.* That in general, the demands in the area of graduate training are being met, or would be met with present plans in the further facilities.This made limited allowance for a possible increase in demand through special encouragement.

2. *Postgraduate Training.* The present offerings in this area seemed generally adequate but appeared to be a logical area for development in several directions.

4. *Seminars.* It was felt that this area needed some consideration in order to properly identify a seminar.

5. *Study Clubs.* It was felt that study clubs should be encouraged, since the broad field of their possible coverage lent itself to large numbers, broadly distributed, functioning in small units. The non-profit motive should prevail.

6. *Scientific Meetings.* While "more meetings" registered no special appeal, better meetings, especially for small organizations seemed desirable. Making good talent available at these levels seemed very desirable.

7. *Printed or Reading Material.* Books and publications were recognized as playing an important part in continuing educational program. Such material seemed readily available. The question resolved itself in motivation for its use. The idea of a daily study hour was suggested.

8. *Preceptorship.* This was recognized as an area that should not be overlooked even in present day situations. While this was in greater evidence years ago before formal education offered better opportunities, it still has limited use. Here, too, the application should be on a not-for-profit basis.

It was felt that there was no objection to courses given under proper auspices and sponsored by an individual, group or commercial concern—provided the sponsor exercised no direction or control in the course, a by-line of acknowledgement being the only recognition accorded.

Base Lines

For guidance in developing the various areas offering continuing educational opportunties, it was felt that base lines should be established, setting up certain standards and restrictions. Five areas suggested themselves:

1. Auspices
2. Purpose of courses or studies
3. Authenticity of material presented (not immature)
4. The organization arrangement
5. Financial consideration

The following base lines for these areas were agreed upon:

1. *Auspices.* By auspices is meant responsibility, and proper auspices suggest that the full responsibility of a course—its organization, its planning, its financing and its proper conduct—rests upon the organization or institution under whose auspices a course is offered. Thus, an individual cannot assume auspicies. On the other hand, an individual may function as the person who carries out the will and intent of the responsible parties, who jointly become the auspices.

Recognized dental societies, approved dental schools, or other non-profit professional or educational agencies would be considered proper and acceptable auspices. An individual would not be considered acceptable auspices.

2. *Purposes of Courses of Studies.* All continuing educational efforts—courses, seminars, study clubs, etc.—should have as their initial objectives, the advancement of the profession and better service to the public. Personal aggrandizement and/or financial return must not be initial incentives or sustaining influences. Efforts by individuals or groups having sales promotion of a product as an objective should be condemned.

3. *Authenticity of Material.* In all educational endeavors, since their objective deals with patient well-being, the authenticity of the material or studies should be above reproach. If this authenticity has not been established, it should be so stated. Truthfulness in all our relations must prevail.

4. *Organizational Arrangements.* The extent of detailed organizational arrangements in the various educational categories will vary greatly. In some instances a very simple agreement on procedures will suffice. In others, a more elaborate outline will be necessary for successful functioning. The extent of such arrangements should be the responsibility of those under whose auspices the projects come. In all cases the organizational arrangements should be clear cut.

Courses of instruction, seminars, and study clubs should not be identified by the name of a person, such as the person giving the course or organizing the club, or in honor of a person, but rather with descriptive term that identifies the course, as "Gold Foil Study Club of Omaha, Nebraska."

Where a course is offered by an institution or organization, it should be referred to as "the Course in Oral Surgery at X University under the direction of Dr. W. A. Jones," rather than "Dr. W. A. Jones' course in Oral Surgery at X University."

The Principles of Ethics of the American Dental Association forbid the use of one's name to instruments. The same should apply to courses of instruction, study clubs and seminars.

5. *Financial Arrangements.* Any effort having for its objective the furthering of knowledge in a subject or the better understanding of principles involved, should be applauded and given encouragement, assuming that it is in the interest of the public.

A principle, common to all health professions, assumes that such

professional persons will give freely of their knowledge and experiences to their confreres in the interest of the patient. This common sharing of knowledge precludes the assumption by an individual that he has the right or privilege of charging a fee for the dispensing of his knowledge to a confrere. In other words, by professional traditions he is obligated to do so freely.

However, custom decrees that when he is selected to act as an instructor, lecturer or director, etc., on the assumption that such formal presentations require specific preparation and planning, he is entitled to remuneration. Such remuneration, however, should be reasonable, based on time and expenses involved.

The sponsoring organization should be the one to determine the amount of honorarium and should state the amount to be paid at the time of extending the invitation. Dictation by a speaker as to an amount of money desired for delivering a lecture or directing a course, should be considered out of order.

Every dentist should feel obligated to accept some of these assignments. However, if the demand on him exceeds the amount of time that he can devote to such activities, due to health, contractual obligations, etc., he should limit such assignments to the number which he can reasonably handle and decline others. To make his services available on a high fee basis violates his obligations to the profession.

While the principle of an honorarium for such services is approved, where remuneration is desirable, it should be on a reasonable and uniform basis. Remuneration based on a per capita or a percentage of tuition charge is not acceptable.

Cooperation of societies or groups in providing honorarium and expenses for an essayist for a lecture tour is not considered out of order, if reasonable. However, an effort by an individual to offer a series of lectures or courses of instruction, under his own auspices and with income as a definite objective is not acceptable.

Not all continuing educational efforts need financing, but where necessary, it should be done with the above principles in mind.

Short and Long-Range Activities of the Committee

The committee feels that the procedures outlined, especially the suggested base lines for a program of continuing education constitute its short term or immediate activities.

The long range activities are embodied in the plans and efforts to motivate the profession to participate more broadly in the program.

Recommendations

The Committee offers no specific recommendations but asks approval of the principles outlined for guidance in its future efforts.

CYRIL F. STRIFE, *Chairman*
GEORGE W. REDPATH, *Vice Chairman*
LESTER E. MYERS
ALBERT B. HALL
ALTON W. MOORE

CALENDAR OF MEETINGS

CONVOCATIONS

November 9, 1958, Dallas, Texas

September 13, 1959, New York, N. Y.

October 16, 1960, Los Angeles, Calif.

Report of the Committee on Journalism*

THE WORK of this 1957 Committee, generally, has been that of continuing effort to further the long range planning and complete the short-term projects as "blue-printed" by the committees of the past two years.

The 1956 Committee prepared a statement of objectives and procedures, and the suggestion was made that each annual report of the Committee on Journalism be introduced by that statement.

The Committee on Journalism of the American College of Dentists has for its primary objective continual betterment of dental periodical literature.

The Committee, in all its efforts, will support and sustain that literature; will encourage and promote ever-widening use of that literature; and will strive to make that literature a major part of continuing educational effort. The Committee has the sound determination to improve the quality of, and to re-create interest in, dental periodical literature, "to the end that the virtues of our dental journalism may be more fully realized and appreciated, its inadequacies understood and remedied, and its development made a source of pride and inspiration to dentists everywhere." (Commission on Journalism, American College of Dentists, 1932.)

In the accomplishment of these objectives, the Committee will survey and study the current status of our periodicals; will determine and suggest goals, and will offer and develop ways and means for attaining those goals.

I

WRITING AWARD COMPETITION

One of the major aims of the Committee, as stated in 1955, has been to develop reader interest: "to find methods to instill in students . . . an interest in dental periodical literature; to make suggestions for ways to get them to *want* to read and to *continue* to want to read; to devise and suggest ways to bring about maximum utilization of professional literature."

In the furtherance of that aim, the Committee suggested and the Regents approved the initiation and promotion of a competition in the writing of papers and essays, and in the preparation of manuscripts, for graduating students in the dental schools of the United States and Canada. Other purposes were to stimulate more widespread use of libraries, and to develop competent dental writers.

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* Presented November 3, 1957 at Miami Beach, Florida.

The prize is $500.00 and a plaque for the national winner; an appropriate plaque is given the winner from each school.

Rules and procedures were prepared, and with an explanatory letter were sent to the deans of the dental schools in April, 1956. The deadline for submitting manuscripts was February 1, 1957. The winner was announced April 1, 1957. Entries were received from eleven schools: Temple University, Washington University (St. Louis), University of Indiana, Columbia University, Georgetown University, University of Iowa, College of Physicians and Surgeons (San Francisco), Emory University, University of Kansas City, Baylor University, and Creighton University.

Each Committee member received a copy of each entry and a guide for evaluation, previously prepared. The "best" manuscript was graded 1; the second "best" 2; and so on through the list. These grades were totalled in the Central Office, and the manuscript with the lowest score was the winning entry. Manuscripts were not identified.

The winner of the First Writing Award Competition was Ronald E. Goldstein of Emory University, Atlanta, Georgia. His title, selected by the Committee, was "Responsibilities of the Dentist in Health Service." This paper was published in the JOURNAL OF THE AMERICAN COLLEGE OF DENTISTS (24:69-79, June, 1957). A reproduction of the plaque awarded appeared with the paper.

The other participants were: John Ballots (Temple University); Richard L. McKay (Washington University—St. Louis); B. W. Sandefur (University of Indiana); R. D. Rhodes, III (Columbia University); V. A. Amicucci (Georgetown University); A. A. Frommelt (University of Iowa); Ralph Stern (College of Physicians and Surgeons—San Francisco); Vincent M. Kelly (University of Kansas City); Harris Kimbrough, Jr. (Baylor University); and Niles N. Hansen, Jr. (Creighton University).

The national winner and the individual school winners were notified promptly by Secretary Brandhorst. He also arranged with the schools for the presentation of the award and the several plaques. Wherever possible members of the College made the presentation at school functions, with appropriate remarks aimed at creating continued interest in the Writing Award Competition.

General Committee comment was (1) that the essays, as a whole, represented good thinking, good organization, good library research,

and satisfactory writing; (2) that most of the contestants, with some training, could become competent writers; and (3) that as a first-year project, the competition achieved its purposes well.

There has been some critical comment on the topics selected by the Committees and approved by the Regents. Several factors must be remembered. The topic must deal with a non-technical aspect of dentistry; the American College of Dentists, organized as it is, hardly can do otherwise. Students are the writers, and it is with their interests that we are most concerned. The primary aims of this project are to create in them an interest in dental periodical literature, to stimulate them to use more fruitfully the library, and to try to develop in them a competency in dental writings. The areas from which the topics may be selected are broad enough to be consistent with these aims: the ethical, social, historical, or cultural relationships of dental practice, education, research, organization, and journalism. Suggestions in the matter of topic selection will be welcomed by this Committee.

Notices of the Second Writing Award Competition were sent out in the spring of this year in a similar manner as for the first competition. The topic for the 1958 Competition is "Ethics in Dental Practice." The same deadline and winner announcement dates prevail.

II

Survey of Dental Periodicals

The 1928-31 Commission on Journalism of the American College of Dentists presented a monumental report on "The Status of Dental Journalism in the United States." Over two decades later, in 1955, this Committee suggested that certain statistics on dental periodicals currently being published in the United States again be compiled.

It was not the intent of that suggestion that the Committee on Journalism embark on a study similar in extent or in purpose to the 1928 report. But it was thought desirable to look at the status now; to bring some of the data in that pioneer report up-to-date; and to evaluate some of the findings of that earlier Commission in the light of contemporary dental journalism.

In 1956, this Committee undertook such a factual survey. The 1957 Committee now has these data, and proposes to carry over to next year the presentation of its "Survey of Dental Periodicals." At

this time, a review of the collected findings indicate that the following summary tables can be prepared:

An alphabetical list of dental periodicals.

A list of periodicals as to type, numerically.

A list of periodicals as to type, by title:

Type, as used above, refers to publications of the
American Dental Association
Canadian Dental Association
Constitutent associations
Component societies
Specialty and ancillary groups
Schools—student and alumni
Fraternities
Atypical and commercial groups

A list of periodicals with:

Title
Owner
First issued
Frequency of issue
Type

A statistical list of periodicals including:

Title
Number of pages per issue and volume
Circulation
Page size
Distribution, how
Distribution, geographical

A list of periodicals as to:

Type
Total number of pages per year
Total circulation

A list of periodicals as to distribution:

Membership
Solicitation
Free

A list of periodicals as to:

Title
Editor and address

In the long-range planning of this Committee, both in 1955 and 1956, there has been considered the matter of the selection of dental

editors. From the report last year: "The Committee proposes to prepare a 'Guide in the Selection of a Dental Editor.' Much has been written on this topic: the editor's interest, his qualifications, his development, his tenure—all have been explored from time to time in papers already published. These will be collected, studied, and refined. Data from the 'Survey of Dental Periodicals' will be incorporated. A basic outline of the qualifications for editorship and procedures will be drawn up that can serve as a guide for the dental society or owning group in the choice of an editor. This guide will be published and made available to the officers, and particularly the secretaries and executive secretaries, of dental societies and groups."

It will be noted that the above statement mentioned that data from the survey will be used. The survey has revealed much basic information, such as: how editors are selected, tenure, salary, honorarium, time given, and assistance. These, when tabulated, will be of great help in the preparation of a "Guide in the Selection of a Dental Editor."

III

Miscellany

Advertising Code. This Committee, in 1955, directed attention to the fact that the American Association of Dental Editors had a code of this nature, and that the American Dental Association had established a set of rules governing advertising policy. It was hoped that, with the cooperation of all concerned, a representative and realistic "Advertising Code for Acceptance, Placement, and Exhibit Standards" might be prepared. The Committee has attempted to coordinate the existing statements, but more study—as well as legal advice and council—is needed in this matter. The several groups involved must be consulted. This activity should be carried over for more study by the Committee next year.

Reference Works for Dental Writers and Editors. This Committee has been considering and studying, for two years, the preparation of such a list. The planning has been directed at collecting the various bibliographies of interest that have appeared in the publications of the American Association of Dental Editors, the American Dental Association, and the American College of Dentists. These lists have contained references to dictionaries; encyclopedias; gen-

eral works on writing, editing, and publishing; and to works on advertising and the business management of dental publications. It was the intent to review these and augment them with newer works, and then to distribute the list to editors and make it available to writers. Now, however, in the Proceedings of the Sixth Conference on Dental Journalism, February 25-26, 1957 (a cooperative project of the Council on Journalism of the American Dental Association and the American Association of Dental Editors), it is stated that the Council is preparing an "Editor's Kit." This is to contain, in addition to other pertinent matter: the *Manual for Dental Editors;* "a list of commercially published guides and tools"; and "a list of other recommended texts."

In view of this proposed development by the Council on Journalism, and until the "Editor's Kit" is available for inspection, this project of the Committee has been "tabled."

Compendium on Editing and Writing. This Committee has had under consideration since its re-activation in 1955, "The compilation, condensation, and publication in monograph form of the many excellent articles on dental editing and writing, contained in forgotten reports of the American Association of Dental Editors, the American Dental Association, and the American College of Dentists. . . ."

The Committee has been informed that the American Association of Dental Editors might be considering this suggested project. Then, too, the "Editor's Kit" (referred to above) might encompass what we have had in mind. In view of these developments, this project also will be "tabled."

Courses in Technical Composition. Still another item with which the Committee has been concerned is the further development of courses in Technical Composition—as originally outlined and promoted by the American Association of Dental Schools. A Committee of the American Association of Dental Editors has been working on this project and has gathered an impressive grouping of statistics. These were published under the title, "Writing for the Scientific Literature—Survey of Instruction in Dental Schools," in the *Journal of Dental Education* (21:164-69, March, 1957).

In view of that publication and development, and until action is forthcoming from the logical agency—the American Association of Dental Schools—this project of the Committee also will be "tabled."

IV

Future Plans

The Writing Award Competition will be continued. Further study will be given to the selection of a topic. More schools will be encouraged to have their students participate in the competition.

The "Survey of Dental Periodicals" and the preparation of a "Guide in the Selection of a Dental Editor" will be continued. A method to expedite these specific projects is contained in the recommendations that follow.

The formulation of an "Advertising Code for Acceptance, Placement, and Exhibit Standards" will be carried over by the Committee next year—with the aim of completion.

The other miscellaneous proposals now "tabled" by the Committee, and in the hands of related organizations, will be observed closely.

The Committee Reports for 1955, 1956, and this Report will be reviewed and studied in the light of accomplishment since 1955. Planning and activities, geared to current dental journalistic problems, will be instituted and undertaken.

The comments and suggestions that the College membership may offer will be in order, and are solicited and welcomed.

V

Recommendations

First: We recommend the prompt publication of this report.

Second: We recommend the creation and appointment of a Sub-Committee on Special Projects, consisting of T. F. McBride and O. W. Brandhorst, to assist in furthering certain undertakings now in progress.

Third: We recommend the acceptance of this report.

T. F. McBride, *Chairman*
Harry Lyons, *Vice-Chairman*
W. A. MacQueen
C. A. Scrivener
Isaac Sissman

Report of the Committee on Education*

THERE WAS NO MEETING of the Committee during the past year. However, the deliberations and recommendations which emanated from the Committee's stimulating meeting in St. Louis in February, 1956 have continued to provide a very useful guide for the Committee's planning this year, in relation to the problems, trends and needs in the field of Dental Education. It will be recalled that the following objectives for committee activity in the near future were defined at its St. Louis meeting:

1) To study the over-all problems associated with dental education.
2) To study and project the needs for a complete program of dental education.
3) To develop ways and means to meet the various problems discovered in such studies.
4) To encourage educational effort and research in order to bring a better health service to the public.
5) To define specific areas for committee activities.

To move toward the achievement of these broad objectives, the Committee has selected the following specific activities for development as rapidly as may be feasible:

1. Cooperation with the Committee on Socio-Economics in the study of dental manpower and needed facilities.
2. The preparation of articles, for publication, on the dental teacher problem, on teaching methods, and on teaching and research.
3. Cooperation with the Committee on Continuing Educational Effort in developing a broad program to encourage continuing education opportunities and participation.
4. Encouragement of fund drives in support of dental education and related programs at national and local levels.
5. Encouragement of workshops for discussion of administrative and financial problems related to dental education.
6. Continuation of the ACD Teacher Training Fellowship program.

Dental Manpower Studies: Members of the Committee have cooperated in the regional studies of dental manpower resources and needs conducted by the Western Interstate Commission on Higher Education and the Southern Regional Education Board, with the technical assistance of the U. S. Public Health Service and the Council on Dental Education. These two studies provide detailed infor-

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* Presented November 3, 1957 at Miami Beach, Florida.

mation and projections as to the present and future dental personnel requirements in the Western and Southern states. A similar study is being initiated this fall in the New England region, under the sponsorship of the New England Board of Higher Education, and to complete the national picture, data on the remaining Eastern and Mid-Western states will be assembled and summarized by the Public Health Service during the next few months. These reports will constitute an invaluable reference source for the College and other agencies interested in dental manpower problems.

Articles on Dental Education and Research: With the aid of the Secretary, Dr. Brandhorst, the Committee has made arrangements for the preparation and publication of a series of articles on dental education and research, by outstanding members of the profession. These articles will deal with specific problems in these fields, including recruitment and training of teachers, the financing of dental education, teaching methods, and research needs.

A comprehensive questionnaire survey of the dental schools was completed during the year, under the direct supervision of the Secretary. The vast amount of data secured from this survey is now being tabulated and analyzed and will provide a factual basis for planning and further development of the College's activities in dental education and in its other fields of special interest. Members of the Committee on Education are now studying this material with a view to identifying additional needs in dental educaton to which the College might appropriately direct its attention.

Continuing Education: The Committee is cooperating with the Committee on Continuing Educational Effort in the development and presentation at the Miami meeting of a panel discussion on continuing education. It is anticipated that this meeting will help further to identify the needs in this field and point to specific activities through which the College may encourage and support expansion of and increased participation in continuing education opportunities for the dental profession. Also, consideration will be given to a definition of certain ethical principles relating to the sponsorship of various "courses" presented by other than recognized educational institutions or professional organizations. With the rapidly increasing knowledge flowing from expanded dental research activity in recent years, regular continuing education has become a "must" for the dentist, and the Fellows of the College should provide the leader-

ship and set the example in this field for the profession at large.

Financial Support of Dental Education: The Committee has recognized the critical financial needs of many of our dental schools and has studied possible ways in which the College might assist in securing increased support for dental education. It has followed with much interest the creation and development of the Fund for Dental Education and is awaiting further information to the Fund's new policies and plans for acceptance and distribution of contributions. It is anticipated that the various Sections of the College, at the proper time, may be of real assistance in contacting both individuals and agencies at the local level to secure support for the Fund. It has also been suggested by the Committee that consideration be given to the possibility of utilizing the facilities of the ADA Relief Fund for simultaneous solicitation of the profession for contributions to the Fund for Dental Education. It seems clear that active support of the Fund by the dental profession itself is essential if contributions are to be expected from business, industry, foundations and the general public.

Teacher Training Fellowships: During the year two applications for fellowships were received and reviewed by the Committee, under the College's Dental Teacher Training Fellowship program. One fellowship award was made to a well qualified young faculty member at the University of Montreal, for graduate study toward the Ph.D. degree at the University of Michigan, beginning in September, 1957. This grant involves an expenditure of $2,500 by the College—the maximum amount allowable for one year of study under terms of the fellowship program.

The Committee believes that this program is serving an extremely useful purpose for our dental schools and hopes that it may be possible eventually for the College to increase the number of its fellowship awards for teacher training.

Other Needs in Dental Education: The Committee has given consideration to ways in which it might stimulate interest in the problems of dental school administration. In cooperation with the Council on Dental Education, the possibility of sponsoring workshops or conferences on this subject is being explored, and it is hoped that a definite plan for activities of this type may be developed during the coming year. In the curricula of our dental schools, it is apparent that increased emphasis is needed in the areas of preventive dentistry

and community health, as well as in practice administration and professional relations. These are additional problems to which the Committee might profitably direct its attention in the near future. Also needed is increased attention to research in dental education, and the development of both graduate and in-service training programs in dental education, to stimulate interest in and provide better preparation for teaching careers in dentistry.

The Committee is also giving consideration to the problems associated with the training and utilization of auxiliary dental personnel, including the preparation of dental students and practitioners for the effective use of such personnel. The activities of the Council on Dental Education in this field have been followed with keen interest, and it appears that there may be opportunity in the near future for the Committee to cooperate with the Council in its efforts to find solutions to some of these problems. The establishment of suitable standards for the training and supervision of dental assistants and laboratory technicians is imperative at this time and constitutes a real challenge to the profession.

Many of the problems with which the Committee on Education is concerned will be attacked in the national Survey on Dentistry which is being initiated under the auspices of the American Council on Education. It is gratifying to note that several Fellows of the College have been selected for membership on the Survey Commission and will have a vital role in the planning and general supervision of this important study, which is expected to have a truly significant influence on the future of American dentistry. The Committee on Education should find many opportunities in the next year or two for constructive contributions to the Survey and to the implementation of its findings and recommendations.

Recommendations to the Board of Regents.

The Committee recommends:

1) that the Teacher Training Fellowship program be continued.
2) that the College continue to seeks ways of assisting the dental schools in the improvement and financing of their teaching programs at all levels, including continuing education.
3) that the College cooperate in every feasible way in support of the Fund for Dental Education.
4) that the College lend its assistance, where indicated, to the national Survey of Dentistry.

5) that provision be made, if possible, for a meeting of the Committee on Education during the coming year, to facilitate its efforts.

H. H. McCarthy
W. A. Wilson
W. J. Simon
F. J. Conley, *Vice-Chairman*
P. E. Blackerby, Jr., *Chairman*

MINUTES OF THE MEETING OF THE BOARD OF REGENTS, FEBRUARY 2, 1958

(Abbreviated)

THE BOARD OF REGENTS of the American College of Dentists met on Sunday, February 2, 1958 in the Conrad Hilton Hotel, Chicago, Illinois. The meeting convened at 9:00 a.m., and adjourned at 6:30 p.m., recessing at 12:20 to 2:15 p.m., to attend the luncheon of the Illinois Section of the College. Fourteen members of the Board were present. President Hill presided.

The minutes of the Miami Beach session of the Board of Regents were approved. Report on minutes was received.

Under the heading "Reports of Officers and Regents," there ensued a broad discussion on the activities of the College and how the membership could be made more cognizant of such activities. This led to a consideration of the responsibilities of Sections to carry forward the work at the local level and of the individual Fellows to cooperate by word and deed at all levels in furthering the ideals of the College. Plans for acquainting the Fellowship with what is going on are under way.

Treasurer Hodgkin reported that "As of January 29, 1958, the funds of the American College of Dentists on deposit with the Fauquier National Bank, Warrenton, Va., are represented by balances as follows:

General Fund

Bank statement of January 29, 1958	$26,729.91	
Less checks outstanding	2,259.30	
	$24,470.61	
Plus foreign checks in process of collection	135.00	
Actual balance		$24,605.61
U. S. Government Bonds, Series G and K		38,000.00
U. S. Treasury Notes Series EO, due October, 1960		10,000.00
		$72.605.61

American Dental Association Centennial Fund

Savings Account	$ 8,000.00	
Accrued Interest	195.87	$ 8,195.87
Total		$80,801.48

The Secretary reported the following deaths since the Miami Beach meeting:

Henry J. Altfillisch	Dubuque, Ia.	December 10, 1957
T. Marvin Barlow	Bellingham, Wash.	November 17, 1957
Frank J. Bell	Billings, Mont.	November 5, 1957
J. Martin Fleming	Raleigh, N. C.	December 19, 1957
Fred W. Gethro	Chicago, Ill.	December 31, 1957
George Byron Hayes	La Jolla, Calif.	December 25, 1957
Eugene J. Kelly	Trenton, N. J.	August 19, 1957
Arno B. Luckhardt (Honorary)	Chicago, Ill.	November 6, 1957
Forrest W. Meacham	Chattanooga, Tenn.	January 11, 1958
H. Maxwell Morrow	Hamilton, Ont. Can.	
Michael L. Mullaney	Providence, R. I.	August 25, 1957
Edward W. Neenan	Veterans Adm.	December 28, 1957
Leo J. O'Hearn	Pittsfield, Mass.	November 22, 1957
John H. Phillips	Nashville, Tenn.	November 17, 1957
Thomas D. Speidel	Minneapolis, Minn.	December 10, 1957
Lewis R. Stowe	New York, N. Y.	November 4, 1957
John E. Tyler	Worcester, Mass	November 24, 1957

The Secretary presented a summary and the present status of the actions taken on the recommendations of the various standing committees approved at Miami Beach, Fla.

The Committee on the ADA Centennial reported on plans for the participation of the College in the Centennial Celebration of the ADA in 1959, suggesting a special program complimentary to the American Dental Association and its guests on that occasion.

Progress reports were received on the ILWU-PMA studies, the N.O.R.C. Opinion Poll studies and the Philadelphia Section study on *"A Classified Survey of the Attitudes of the General Population Towards Dentistry,"* indicating that these reports should soon be ready for publication.

The planned ACD Lectureship received considerable attention, since this is to be launched next fall. This is to be a lectureship presented by selected Fellows of the College to the dental students in the United States and Canada in the fall, tracing the dental profession's traditions and its responsibilities as an important segment of the nation's health service and what it means to dedicate one's self to such a service.

As a corollary to this, it is planned to present to each dental graduate as he enters the profession, a booklet, as suggested by the Committee on Human Relations, emphasizing his responsibilities as a professional person dedicated to the welfare of the public.

The title for the 1959 Writing Award Competition was designed as "Dentistry's Potential Contributions to Society."

The Secretary reported on plans for the Dallas meeting of the College on November 9, 1958, stating that all meetings would be held at the Baker Hotel. The theme will be "The Activities of the American College of Dentists" and facilities are ideal for projecting a number of sectional presentations to point up the many interlacing problems associated with our interests.

O. W. BRANDHORST, *Secretary*

Sections, American College of Dentists

CAROLINAS: Frank O. Alford, *Secretary,* 1109 Liberty Life Bldg., Charlotte, N. C.

COLORADO: Ralph R. Gibson, *Secretary,* 1132 Republic Bldg., Denver, Colo.

FLORIDA: Robert Thoburn, *Secretary,* 227 Orange Ave., Daytona Beach, Fla.

GEORGIA: Everett K. Patton, *Secretary,* 3650 Campbellton Rd. S. W., Atlanta, Ga.

INDIANA: Frank C. Hughes, *Secretary,* 1121 W. Michigan St., Indianapolis, Ind.

ILLINOIS: Robert F. Luck, *Secretary,* 4010 West Madison Ave., Chicago, Ill.

IOWA: Leslie M. FitzGerald, *Secretary,* 718 Roshek Bldg., Dubuque, Ia.

KANSAS CITY-MID-WEST: Phillip M. Jones, *Secretary,* 1108 E. 10th St., Kansas City, Mo.

KENTUCKY: Russell F. Grider, *Secretary,* 129 E. Broadway, Louisville, Ky.

LOUISIANA: Robert Eastman, *Secretary,* 735 Navarre Ave., New Orleans, La.

MARYLAND: Max K. Baklor, *Secretary,* 815 Medical Arts Bldg., Baltimore, Md.

MICHIGAN: Glenn R. Brooks, *Secretary,* Rochester, Mich.

MINNESOTA: Dorothea F. Radusch, *Secretary,* 832 Marquette Bank Bldg., Minneapolis, Minn.

MONTANA: Elmer A. Cogley, *Secretary,* 417 Medical Arts Bldg., Great Falls, Mont.

NEBRASKA: Walter W. Key, *Secretary,* 1314 Medical Arts Bldg., Omaha, Neb.

NEW ENGLAND: Richard J. Larkin, *Secretary,* 1245 Hancock St., Quincy, Mass.

NEW JERSEY: Walter M. Dunlap, *Secretary,* 144 Harrison St., East Orange, N. J.

NEW YORK: David Tanchester, *Secretary,* 120 Central Park South, New York, N. Y.

NORTHERN CALIFORNIA: Wm. Chester Cusick, *Secretary,* 2300 Durant Ave., Berkeley, Calif.

OHIO: Earl D. Lowry, *Secretary,* 79 East State St., Columbus, Ohio.

OREGON: Frank Mihnos, *Secretary,* 920 Selling Bldg., Portland, Ore.

PHILADELPHIA: J. Wallace Forbes, *Secretary,* 1420 Medical Arts Bldg., Philadelphia, Pa.

PITTSBURGH: Clarence W. Hagan, *Secretary,* 7528 Graymore Road, Pittsburgh, Pa.

ST. LOUIS: John T. Bird, Jr., *Secretary,* 4559 Scott Ave., St. Louis, Mo.

SOUTHERN CALIFORNIA: Rulon W. Openshaw, *Secretary,* 6703 Melrose Ave., Los Angeles, Calif.

TEXAS: Crawford A. McMurray, *Secretary,* Alexander Bldg., Ennis, Tex.

TRI-STATE: James T. Ginn, *Secretary,* 847 Monroe St., Memphis, Tenn.

WASHINGTON, D. C.: C. V. Rault, *Secretary,* 3900 Reservoir Rd., N. W., Washington, D. C.

WEST VIRGINIA: John Boatman Davis, *Secretary,* West Virginia University, Morgantown, W. Va.

WISCONSIN: Leonard C. Alexander, *Secretary,* 604 N. 16th St., Milwaukee, Wis.

WASHINGTON-BRITISH COLUMBIA: Bruce B. Smith, *Secretary,* 812 Cobb Bldg., Seattle, Wash.