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American College of Dentists

Objects: The American College of Dentists "was established to promote the ideals of the dental profession; to advance the standards of efficiency of dentistry; to stimulate graduate study and effort by dentists; to confer Fellowship in recognition of meritorious achievement, especially in dental science, art, education and literature; and to improve public understanding and appreciation of oral health-service."—*Constitution, Article I.*

Announcements

Next Meeting, Board of Reagents: Atlantic City, October 28, 1950

Next Convocation: Atlantic City, October 29, 1950

Fellowships and awards in dental research. The American College of Dentists, at its annual meeting in 1937 [*J. Am. Col. Den.*, *4*, 100; Sept. and 256, Dec., 1937] inaugurated plans to promote research in dentistry. These plans include grants of funds (The William John Gies Fellowships) to applicants, in support of projected investigations; and also the formal recognition, through annual awards (The William John Gies Awards), of distinguished achievement in dental research. A standing committee of the International Association for Dental Research will actively cooperate with the College in the furtherance of these plans. Application for grants in aid of projected researches, and requests for information, may be sent to the Chairman of the Committee on Dental Research of the American College of Dentists, Dr. Albert L. Midgley, 1108 Union Trust Bldg., Providence, R. I. [See "The Gies Dental Research Fellowships and Awards for Achievement in Research," *J. Am. Col. Den.*, *5*, 115; 1938, Sept.]

JOURNAL
American College of Dentists

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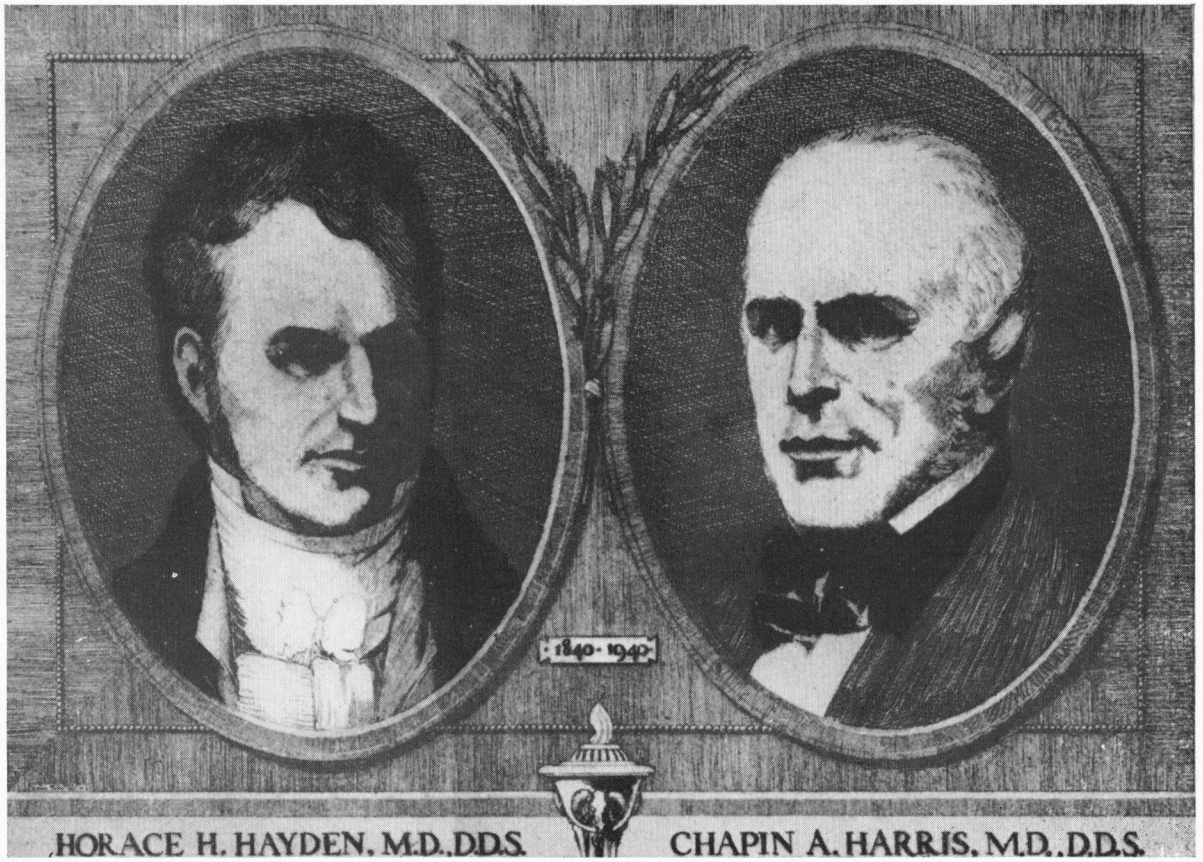


FOUNDERS OF THE WORLD'S FIRST DENTAL SCHOOL
(Baltimore College of Dental Surgery—1840)

COMPARISON OF THE UTILIZATION OF CERTAIN SUGARS BY SOME ORAL ACTINOMYCETES AND LACTOBACILLI[1]

WM. E. HUTTON, PH.D., VALERIE HURST, M.A., JAMES NUCKOLLS,[2] D.D.S.

San Francisco

Composition studies of sugars in their possible end results in relation to Dental Caries have been the subject of much controversy. This research study is herewith presented for whatever part it may play and as another step in the continuation work of Nuckolls and his group whose studies had their initial start by the American College of Dentists.

It has been carefully studied and commented upon by researchers in various departments of the University of California, and the hope of the authors is that it may have a fuller reading and discussion. (Ed.)

Hurst et al.[3] reported that certain pure cultures of oral actinomycetes produced microscopic caries-like lesions in molars of the Syrian hamster *in vitro*. More recently Hurst et al.[4] found that certain strains of oral lactobacilli produced similar lesions. The mechanisms by which these lesions were produced are not known; however, the phenomenon took place in an approximately neutral menstruüm. Since both actinomycetes and lactobacilli attacked the hamster molars, it appeared to be desirable to obtain comparative data concerning the metabolic activities of both forms in order to assess their relative importance in tooth decay.

There is available a large body of data suggesting that refined carbohydrate utilization, particularly sucrose intake, may have a relation to the incidence of caries in humans. Thus a comparison of the utilization of sugars important in human nutrition by bacteria was undertaken.

[1] Division of Pre-Clinical Sciences, Section of Oral Pathology, University of California College of Dentistry. This work was supported in part by a research grant, R.G.939, from the National Dental Research Institute, U. S. Public Health Service.

[2] Presented at the meeting of the Society for Experimental Biology and Medicine, Pacific Coast Section, April 9, 1949, Stanford University, Stanford, California.

[3] Hurst, V., Frisbie, H. E., Nuckolls, J. and Marshall, M. S.: *In vitro* studies of caries of the enamel in the Syrian hamster. Science, 107: 42, 1948.

[4] Hurst, V., Mullett, P., Frisbie, H. E., Nuckolls, J., and Marshall, M. S.: A progress report on the bacteriologic aspect of the caries research program, College of Dentistry, University of California. J. D. Res., 29: 430, 1949.

A study of the literature showed that Bibby et al.[5] had compared 10 strains each of several oral forms of bacteria including, among others, streptococci, actinomycetes and lactobacilli. These forms were able to produce acid from glucose at rates decreasing in the order of listing. The initial pH values in the cultures that Bibby examined were apparently 6.9 to 7.0 Stephan and Hemmens[6] found in heavily populated cell suspensions of lactobacilli and actinomycetes that two strains of lactobacilli produced a greater drop in pH in the fermentation of glucose than did one strain of actinomycetes, but when the fermentation substrate was sucrose, the actinomycete strain produced a greater pH drop than did the lactobacilli. Again the initial pH was 6.9 to 7.0.

METHODS

The following basal broth medium was used in the cultivation of the bacteria.

Proteose peptone No. 3 (Difco)	20 grams
Dipotassium phosphate	5 grams
Tap water	1 liter

The medium was boiled, filtered and antoclaved following which its pH was 7.6 to 7.8. The sugars (Difco) sterilized separately in 10 per cent solution at 115° C for 10 minutes, were added to the basal broth in a final concentration of 20 grams per liter. The media were routinely dispensed in test tubes in 5.0 ml. amounts.

The cultures were incubated under microaerophillic conditions in candle jars at 37° C.

Acid production was measured by determining the titratable acidity (given as microequivalents per ml.) and the terminal pH (Coleman pH electrometer) in cultures containing sugar and in inoculated controls to which sugar was not added.

In some of the experiments the amounts of cell material present under different conditions were determined. Plating or minimum dilution methods are not satisfactory with the actinomycetes because

[5] Bibby, B. G., Volker, J. F., and Van Kesteren, M.: Acid decalcification by oral bacteria. J. D. Res., 21: 61, 1942.

[6] Stephan, R. M. and Hemmens, E. S.: Studies of changes in pH produced by pure cultures of oral microorganisms. II. Comparison of different microorganisms and different substrates. J. D. Res., 26: 25, 1947.

of their filamentous habit and their tendency to clump. Therefore, growth was measured by centrifuging off the cell material, washing, drying, and weighing it. The results are presented as mg. of cell material (dry basis) per ml. of medium.

DESCRIPTION OF ORGANISMS

The seven strains of actinomycetes examined were briefly described by Hurst et al.[3] They were similar in morphology to the variants of *Actinomyces bovis* and *A. israeli* described in "Bergey's Manual of Determinative Bacteriology"[7] although somewhat more tolerant of oxygen.

Three strains of lactobacilli were studied. Two of these strains were supplied by Dr. R. W. Harrison of the University of Chicago who identified them as oral strains of *Lactobacillus acidophilus*. The third strain was isolated from carious dentin in the laboratory of Dr. M. S. Marshall of the University of California Medical Center, San Francisco. This organism, a gram-positive, strongly acidogenic rod, was not identified as to species. However, from its cultural characteristics it could be placed tentatively in the genus *Lactobacillus*.

All of the strains examined, both lactobacilli and actinomycetes, had been observed by Hurst et al[3, 4] to produce microscopic caries-like lesions *in vitro* in molars of the Syrian hamster. It would have been of interest to include oral alpha streptococci in the study; however, neither of the strains thus far tested has attacked hamster enamel.[8]

COMPARISON OF ACID PRODUCTION IN GLUCOSE MEDIA

A preliminary study was made comparing, at initial pH values of 6.9 and 7.7, the amounts of acid produced by the actinomycetes and lactobacilli in glucose broth and in the basal broth to which glucose had not been added. The cultures were incubated five days before acid production was measured. The data are presented in Fig. 1. The acid production reported is the difference in the amounts of titratable acidity found in cultures containing glucose and inoculated controls to which the sugar was not added. The data show that

[7] Breed, R. S. (editor): Bergey's Manual of Determinative Bacteriology. (Baltimore, Williams and Wilkins, 1948) p. 925.

[8] Since this paper was written two strains of oral alpha streptococci have produced microscopic caries-like lesions in hamster enamel.

while these actinomycetes produced relatively small amounts of acid compared to these lactobacilli at an initial pH of 6.9, at an initial pH of 7.7 the amount of acid produced by these actinomycetes was almost as large as that produced by these lactobacilli.

The pH ranges were as follows:

Organism	Initial pH	Final pH range
actinomycetes	6.9	4.9 to 5.5
actinomycetes	7.7	4.9 to 5.5
lactobacilli	6.9	4.0 to 4.2
lactobacilli	7.7	4.1 to 4.9

Since the data of Bibby et al.[5] indicated that in the presence of ground dentin the pH, in growing cultures of microorganisms fermenting sugar, was limited to 5.0, the total amount of acid pro-

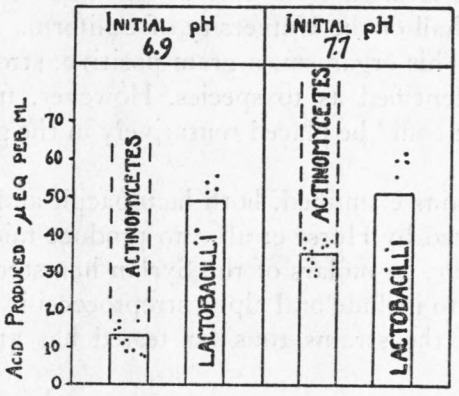


FIG. 1. A comparison of the amounts of acid produced from glucose by certain oral actinomycetes and lactobacilli incubated five days at 37° C and having different initial pH values. Acid produced is the amount of titratable acidity found in glucose-peptone broth cultures less that in otherwise identical peptone broth cultures. Except as noted, the points shown in this and subsequent figures represent the values found in individual cultures.

duced by particular strains may be more important in the decalcification of tooth substance than the final pH value attained. It is interesting to note that these actinomycetes were able to reduce the pH to between 4.9 and 5.5, under the conditions of the experiment. The results suggest that, under the foregoing conditions, the actinomycetes could be effective in the decalcification of tooth substance.

COMPARISON OF ACID PRODUCTION IN OTHER SUGAR MEDIA

A second experiment was carried out using maltose, sucrose, and lactose as fermentation substrates. The cultures were incubated seven days before acid production was measured. The initial pH was 7.8. The results are shown in figure 2. The acid production reported is the difference in titratable acidity between inoculated controls from which sugar had been withheld and the cultures containing sugar.

The results show that, on the average, the actinomycetes produced more acid from maltose and sucrose than did the lactobacilli. Only two strains each of lactobacilli and actinomycetes attacked lactose, the former producing somewhat greater amounts of acid than the latter.

The results of the sucrose fermentation are interesting because of the nutritional importance of this sugar, and because from it the actinomycetes produced, on the average, about five times as much acid as the lactobacilli. The terminal pH ranges were as follows:

Organism	Terminal pH range
actinomycetes	5.0 to 5.5
lactobacilli	6.5 to 7.6

These data are in qualitative agreement with those of Stephan and Hemmens.[6]

RATES OF GROWTH AND ACID PRODUCTION

From the work of Bibby et al.[5] it could be anticipated that the actinomycetes might produce acid more rapidly from glucose than the lactobacilli. It was not known, however, whether this applied generally to the strains described above at initial pH values of 7.6 to 7.8, and it was not known whether the growth of the actinomycetes would be stimulated by glucose to the same extent as the lactobacilli or whether any of the actinomycetes grew at all well in the absence of glucose. Therefore, two experiments were carried out in order to compare the rates of acid production and of growth of the actinomycetes under somewhat different conditions than those employed by Bibby et al.[5]

For the first experiment five sets of duplicate cultures were prepared for two strains of actinomycetes and one lactobacillus strain

both in glucose broth and in the basal broth from which glucose had been withheld. The titratable acidity, terminal pH, and dry weight of bacteria were determined immediately after inoculation and after one, two, three and five days of incubation.

For the second experiment three sets of duplicate cultures, both in glucose broth and in the basal broth without added glucose, were set up and inoculated with seven strains of actinomycetes and three strains of lactobacilli. Growth and acid production were measured immediately after inoculation and after 30 hours of incubation. The third set of cultures was incubated seven days and examined quali-

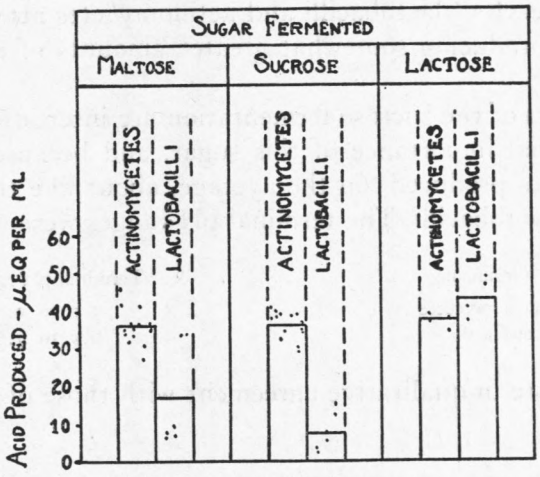


FIG. 2. A comparison of the amounts of acid produced from various sugars by certain oral actinomycetes and lactobacilli incubated seven days at 37° C and having an initial pH value of 7.8. Acid produced is the amount of titratable acidity found in sugar-peptone broth cultures less that in otherwise identical peptone broth cultures.

tatively for evidence of growth in order to see whether or not the inocula had been viable. All the strains were viable; however, two of the actinomycete strains (70 to 80) and the three lactobacillus strains failed to produce macroscopically visible growth in the basal broth without added glucose. The initial pH range in both experiments was 7.6 to 7.8.

GROWTH. The data on growth obtained in the first experiment are shown in Fig. 3. They show that both actinomycetes grew better with than without glucose, that they grew as well as or better than the lactobacillus strain, and that they grew in the basal broth with-

out added glucose. The failure in this experiment of the lactobacillus strain to produce weighable growth in the basal broth indicates it to have a very low sugar concentration. Thus it is probable that the actinomycetes were utilizing the peptone in the medium as a source of energy.

The amount of growth found after 30 hours' incubation (second experiment) are shown in Fig. 4.

An inspection of the data reveals that in glucose broth three actinomycete strains grew more than twice as well, one actinomycete strain grew about as well, and three actinomycete strains grew more

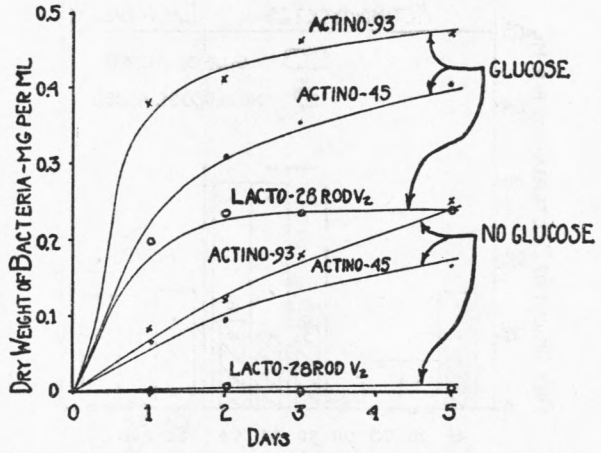


FIG. 3. A comparison of the rates of growth of oral actinomycete strains 45 and 93 and of the lactobacillus strain 28 Rod V_2 in glucose-peptone and in peptone broths incubated at 37° C and having initial pH values of 7.6 to 7.8. Points represent the averages of duplicate cultures.

poorly than the average of the three lactobacillus strains. In the basal broth four antinomycete strains produced considerable amounts of growth, while the other three actinomycetes and the three lactobacillus strains did not produce weighable growth within the limits of the experimental error. Therefore the observations made in the first experiment (See Fig. 3) that the actinomycetes produced acid at as great or at a greater rate than the lactobacilli and that the former grew at a greater rate than the latter, did not apply to all of the strains of actinomycetes tested.

However, all seven actinomycete strains produced more growth in seven days in glucose broth than in the basal broth without added

glucose, although only six of the seven did so in 30 hours. If these data were to apply to the oral flora *in situ*, it might be expected that about half of the actinomycetes could outgrow the lactobacilli under comparable conditions.

ACID PRODUCTION. It was thought that a more accurate comparison of the rates of acid production of the actinomycetes and lactobacilli examined in the first experiment (See Fig. 3) could be obtained on the basis of acid produced per milligram of dry bacteria. The rates are, therefore, given as microequivalents of acid per mg.

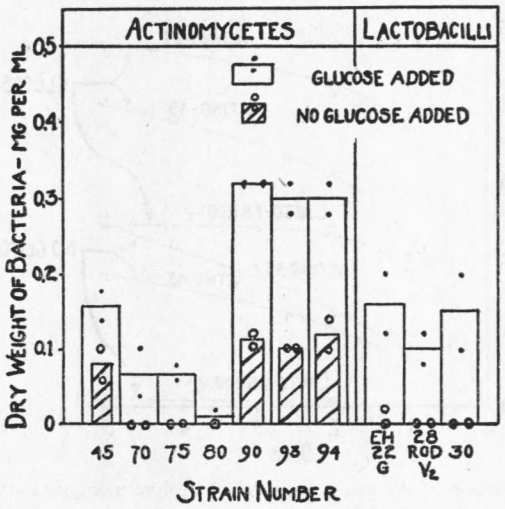


FIG. 4. A comparison of the amounts of growth produced in 30 hours by certain strains of oral actinomycetes and lactobacilli in glucose peptone and in peptone broths incubated at 37° C and having initial pH values of 7.6 to 7.8. The average weight of inocula was less than 0.01 mg. per ml.

of bacteria (dry basis) per day. The pH values obtained are also shown. Methods were not available to measure the rate of acid production initially. The sources of inocula had been refrigerated for some days, however, and it appeared reasonable to assume the initial rate of acid production to be zero.

The data are presented in Fig. 5. They show that during the first day of incubation both actinomycete strains (45 and 93) produced acid at a greater rate than the lactobacillus culture (28 Rod V_2). From the second day on the lactobacillus strain produced acid at a

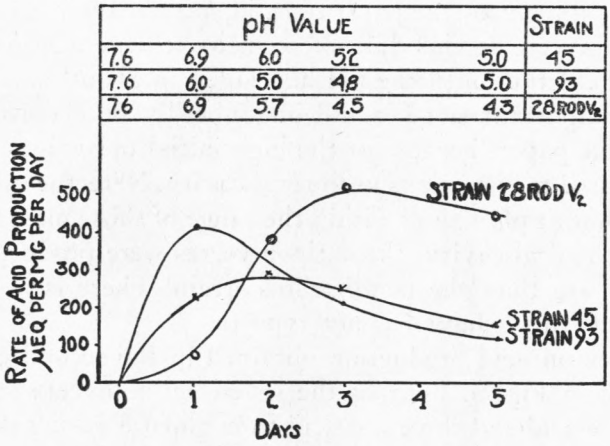


FIG. 5. A comparison of the rates of acid production at 37° C. found in certain oral actinomycetes (strains 45 and 93) and lactobacilli (strain 28 Rod V_2) and of the pH values of the media at times of measurement. The rate of acid production is the average amount of titratable acidity of duplicate cultures in glucose peptone broth less that of peptone broth cultures divided by the weight of bacteria in mg. and the time in days.

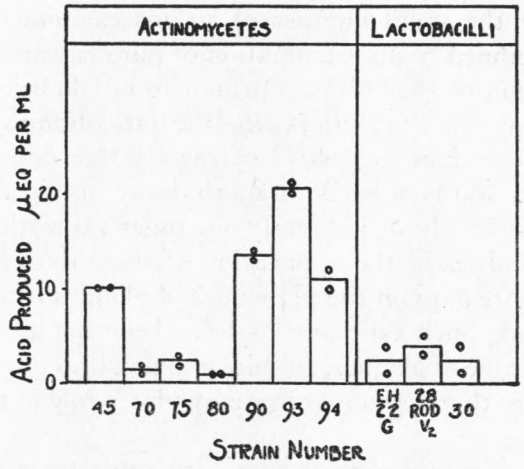


FIG. 6. A comparison of the amounts of acid produced from glucose by certain oral actinomycetes and lactobacilli incubated at 37° C. for 30 hours. Acid produced is the amount of titratable acidity found in glucose-peptone broth cultures less that in otherwise identical peptone broth cultures.

greater rate than did the actinomycetes. These data are in agreement with those of Bibby et al.[5]

Figure 5 illustrates the point that, in spite of the high initial pH, the actinomycete strains did not seem to achieve a maximum rate of acid production until the pH had fallen to about 6.0. This point is rather important since it will undoubetdly be claimed that the work in this paper, because of the high initial pH values used, cannot be related to conditions in the oral cavity. Nerertheless, the data indicate that at pH values within the range of those most frequently found in the oral cavity, the actinomycetes were producing acid at a greater rate than the lactobacillus strain. There is no reason to believe that this behavior is not typical.

The data on acid production obtained in the second experiment are shown in Fig. 6. Four of the seven actinomycete strains produced more acid and three less acid from glucose during thirty hours of incubation than the average of three lactobacillus strains. Thus, under the conditions of the experiment, a fair proportion of the actinomycetes tested were more active in acid production than were the lactobacilli.

DISCUSSION

Because of the small number of strains examined, because the study was confined to an examination of pure cultures, and because of the variation of the culture medium from conditions existing in bacterial plaques on the teeth *in situ*, the data obtained in this study can be no more than suggestive of the relative importance of the actinomycetes and lactobacilli in tooth decay insofar as tooth decay may depend, directly or indirectly, on sugar utilization.

Other difficulties in the application of these data arise from the lack of adequate data on the pH values of plaques *in situ* under normal conditions. Such estimates as have been made[9, 10] suffer from lack of knowledge of plaques. In spite of difficulties one must consider the suggestion[3] that actinomycetes may play a role in the production of caries.

Microscopic studies suggest that actinomycetes may play a role in caries. The data available (e.g. Hemmens, et al.[11]) indicate that

[9] Stralfors, A.: Studies of the microbiology of caries. II. The acid fermentation in dental plaques in situ compared with lactobacillus count. J. D. Res., 27: 576, 1948.

[10] Stephan, R. M.: Intra-oral hydrogen-ion concentrations associated with dental caries activity. J. D. Res., 23: 257, 1944.

[11] Hemmens, E. S., Blayney, J. R., Bradel, S. F., and Harrison, R. W.: The microbic flora of the dental plaque in relation to the beginning of caries. J. D. Res., 25: 195, 1946.

filamentous organisms or actinomycetes are always present in smears of plaque materials but that lactobacilli are present in only about 50 per cent of carious plaques cultured.[11] The positive identification of lactobacilli on morphological grounds alone is difficult if not impossible. Somewhat more indicative of the relation of filamentous forms to the carious lesion are the photographs of histological sections of carious enamel, published by Frisbie et al.[12]

Studies comparing the production of acid from sugar by lactobacilli and actinomycetes suggest that oral actinomycetes can produce acid from glucose at a greater rate than can the lactobacilli. This would be important when the rapidity of oral sugar clearance is taken into consideration. The data presented in this paper and by Stephan and Hemmens[6] suggest that oral actinomycetes can produce relatively larger amounts of acid from sucrose than can the lactobacilli. In view of the nutritional importance of sucrose, *and, if acid from sugar plays a role in the formation of caries*, the greater acid production from sucrose by the actinomycetes would again suggest that the lactobacilli are less important in tooth decay.

The data in this paper suggest that a fair proportion of oral actinomycetes can grow more rapidly on glucose than can the oral lactobacilli so that in competition in the plaque the former might overgrow the latter. The data also suggest that some actinomycetes could grow on proteinaceous substances in the absence of sugars. In view of the rapid sugar clearance in the mouth the actinomycetes could be active in tooth decay over longer periods of time than the lactobacilli, if tooth decay depended on the presence of enzymes other than those functional in glycolysis.

The evidence against the hypothesis that actinomycetes are more important than the lactobacilli in the etiology of caries has been presented elsewhere.[11] This evidence has not been well organized as yet since the actinomycetes have been too infrequently considered in a direct role in the etiology of caries.

At the present time the evidence supporting any particular microorganism as a cause of caries is only suggestive. Furthermore, the reasons for supporting a particular type of microorganism as a cause of caries have been advanced from the rather narrow point of view

[12] Frisbie, H. E., Nuckolls, J. and Saunders, J. B. de C. M.: Distribution of the organic matrix of the enamel in the human tooth and its relation to the histopathology of caries. J. Am. Coll. Dent., 11: 243, 1944.

that acid produced from substrates present in the environment of the tooth are entirely responsible for tooth decay. However, it has not been possible to duplicate caries *in vitro* by simple acid treatment of the teeth, therefore the mechanism of caries is, in all probability, not a simple acid decalcification. The presence of an organic matrix capable of binding together the mineral crystals of the enamel has been thoroughly established.[12] The decomposition of this matrix could play a role in tooth decay be permitting the disintegration of the mineral microcrystals of the enamel, by supporting acid production,[13, 14] by removing a mechanical barrier to microorganisms, and by supplying materials for the growth of invading bacteria. By assuming variations in the composition and amount of the organic matrix one can explain not only the pattern of penetration observed in caries but also susceptible areas and the variation in individual susceptibility to the disease. Although it is generally believed that the decomposition of the organic matrix is secondary in effectiveness to acid decalcification in tooth decay,[15] the evidence supporting this view is no more than suggestive. It is the belief of the writers that the microorganisms responsible for tooth decay can be found only if the oral flora is subjected to a searching study under conditions simulating, as nearly as possible, those found on the sound and decaying surfaces of teeth.

SUMMARY

At an initial pH of 6.9 the three strains of oral lactobacilli produced an average of 3.7 times as much acid from glucose as the average of the seven actinomycete strains. At an initial pH of 7.7 the lactobacillus strains produced, on the average, 1.6 times as much acid as the strains of actinomycetes.

At an initial pH of 7.8 the seven strains of actinomycetes produced, on the average, 2.1 times more acid from maltose and 5.0 times more acid from sucrose than did the three strains of lactobacilli. Only two strains of the actinomycetes and two of the lactobacilli fermented

[13] Atkinson, H. F. and Matthews, E.: An investigation into the organic components of the human tooth. A study of sound and carious dentin. Brit. Dent. Jour., 86: 167, 1949.

[14] Pincus, P.: Production of dental caries. A new hypothesis. Brit. Med. Jour., 4623: 358, 1949.

[15] Committee I, University of Michigan course for the evaluation of dental caries control technics. Report of Evaluating Committee. J. D. Res., 27: 419, 1948.

lactose. The lactobacilli produced about 1.1 times as much acid from lactose as the actinomycetes.

In glucose broth three actinomycete strains grew much more rapidly, one strain about as rapidly, and three strains less rapidly than the three lactobacillus strains.

The data indicated that four of the seven actinomycete strains were able to grow in the absence of sugar.

A COMPARISON OF SURVEYS ON THE CAUSE OF DENTAL CARIES[1]

WILLIAM G. SHAFER, D.D.S., M.S.[2]

A survey carried out by the Iowa State Department of Health reported in 1938 how 699 Iowa dentists replied to the question, "What do you believe to be the cause or causes of tooth decay?"[3] The results were highly interesting from the aspect of the diversity of the answers. The chief cause cited was "inadequate nutrition" with "improper oral hygiene", "overingestion of carbohydrates", and "vitamin deficiency" each having a large number of advocates (Table I). This survey was made in an area in which a large number of the dentists had graduated from a school well-known for stressing the role of nutrition in dental caries. To see whether this geographical influence was responsible for the emphasis on nutrition, a similar survey was conducted in 1948 from this laboratory of opinions of dentists practicing in Rochester, New York and in Toledo, Ohio. These cities are approximately the same size, although Rochester (at this time) listed 322 registered dentists; Toledo, 223. A mimeographed questionnaire, accompanied by a letter of explanation and a return-addressed, stamped envelope, was mailed to every registered dentist in these two cities. The questionnaire sheet was entitled, "*What do you believe to be the chief cause or causes of dental caries?*", and contained 27 choices with space allowed for "others" and "comments".

Of the 322 registered Rochester dentists, 142 or 44% answered the questionnaire while of the 223 Toledo dentists, 80 or 36% answered. Graduates of 28 dental schools are represented in the survey.

"Inadequate nutrition" no longer was the cause most frequently checked (Table II). Instead, the predominant choice was "acid-producing bacteria" followed by "over-ingestion of carbohydrates", "hereditary factors", and "improper oral hygiene". "Vitamin deficiency" was regarded more lightly than in the former survey.

One item which was checked frequently in both surveys and may warrant close scrutiny is "hereditary factors". Interestingly enough,

[1] Supported in part by a grant from the Eastman Dental Dispensary, Rochester, N. Y.

[2] National Institutes of Health Postdoctorate Research Fellow: University of Rochester, School of Medicine and Dentistry, Division of Dental Research, Rochester, N. Y.

[3] Hoffman, O. E. American Dental Association, Research Commission, Dental Caries; Findings and Conclusions on Its Causes and Control, p. 80, New York, 1939.

heredity has never been proven to be associated with human dental caries, although the dental literature contains many reports dealing with *familial tendency*. Another item, "vitamin deficiency", (checked 5th in the Iowa survey and 11th in the present survey) has never been shown to cause increased caries. Indeed, some reports suggest

TABLE I

Iowa Survey (699 responding dentists)

	No.	%
1. Inadequate nutrition	502	72
2. Improper oral hygiene	414	59
3. Overingestion of carbohydrate food, starches and sugars	390	56
4. Vitamin deficiency	386	55
5. Hereditary factors	308	44
6. Aciduric group of microorganisms	257	37
7. Endocrine dysfunction	193	28
8. Streptococcus odontolyticus	70	10
9. Improper mastication	11	1.6
10. Malocclusion	11	1.6
11. Improper prenatal nutrition	9	1.3
12. Metabolic imbalance	8	1.1
13. Childhood diseases	7	1.0
14. Insufficient coarse foods	5	0.7
15. Poor assimilation	3	0.4
16. Worry and fear	3	0.4
17. Insufficient rest and relaxation	2	0.3
18. Improper prenatal care	1	0.1
19. Bolting food	1	0.1
20. Deep sulci	1	0.1
21. Insufficient rest-period for mother before childbirth	1	0.1
22. Demineralized soil	1	0.1
23. Acid saliva	1	0.1
24. Chocolate foods	1	0.1
25. Poor operative dentistry	1	0.1
26. Malformation	1	0.1
27. Chewing gum	1	0.1

protection against caries in the face of well-identified vitamin deficiencies.

Several interesting factors, other than those listed, were written in; these included "inadequate digestive assimilation", "lack of dental treatment before the age of 16", "too rapid growth", poor and broad contact points", "teeth with low inorganic content in enamel", "factor X in the saliva", "sedentary habits", and "demineralized flour". Many of the dentists concurred in the fact that what causes

caries in one mouth will not necessarily cause caries in another and also that what causes caries at one period of life may be entirely different from the causes at another time.

From the results of this survey and a comparison with the Iowa survey, it is possible to reach several general conclusions:

TABLE II

Rochester-Toledo Survey (222 responding dentists)

	No.	%
1. Acid-producing bacteria	159	72
2. Over-ingestion of carbohydrates	120	54
3. Hereditary factors	106	48
4. Improper oral hygiene	99	45
5. Inadequate nutrition	60	27
6. Low fluorine content of drinking water	53	24
7. Deep sulci	49	22
8. Acid saliva	48	22
9. Insufficient coarse foods	48	22
10. Malocclusion	48	22
11. Vitamin deficiency	46	21
12. Childhood diseases	37	17
13. Poor operative dentistry	37	17
14. Improper prenatal nutrition	36	16
15. Poor assimilation	32	14
16. Chocolate foods	30	14
17. Endocrine disturbances	30	14
18. Malformed teeth	29	13
19. Demineralized soils	27	12
20. Improper prenatal care	24	11
21. Chewing gum	23	11
22. Improper mastication	21	10
23. Worry and fear	19	9
24. Others	15	7
25. Bolting food	9	4
26. Insufficient rest and relaxation	7	3
27. Insufficient rest period for mother before childbirth	5	2
28. Streptococcus odontolyticus	5	2

1 As would be predicted, the practicing dentist is influenced by the teaching in his locality.

2 Many dentists believe that caries is the result of a number of factors which can be classified as "exciting" and "predisposing" and not any one single cause.

3 A large number of dentists hold to beliefs which have no scientific basis.

AMERICAN COLLEGE OF DENTISTS
THE FIRST THIRTY YEARS
A
N
D
THE NEXT FIFTY

This assignment was made by the editor in the hope that something of merit might be brought out both as to what has happened and what may happen. Unfortunately in these busy days all Officers and Regents have not been able to comply and their reasons are wholly acceptable. Those who have, bring out the fact that we are dependent upon the past for what we are today. But also, and between the lines we can easily discern the direction of the future and that our predecessors are really depending on us to make good. We must dig in a little deeper.

However, in addition to this, you will become acquainted in some degree with your Officers and Regents. (Ed.)

Comments by Officers and Regents

President Elect, Henry O. Lineberger, D. D. S., Raleigh.

The American College of Dentists, which was established thirty years ago, by a group of outstanding and determined leaders in the Dental Profession, state in the very beginning the following objectives:

"This organization, named American College of Dentists, was established to promote the ideals of the dental profession; to advance the standards and efficiency of dentistry; to stimulate graduate study and effort by dentists; to confer Fellowship in recognition of meritorious achievements, especially in dental science, art, education and literature; and to improve public understanding and appreciation of oral

health service. Suitable means shall be used to attain these and related objectives."

Like any great organization, which is to be permanent and exert a lasting influence, the College was built on a strong foundation. During the first years the Charter members had to devote most of their time to organization. An appraisal of the first years of the College is primarily a review of the accomplishments of the Founders. Many have passed to their reward, while the others, as older men, still council and advise with the younger Fellows.

You have seen the list of Charter members, now go carefully over the roll once more, and as you call the name, recall the many contributions they have made toward the progress of the Dental profession either through the College or through other contacts.

* Henry L. Banzhaf
* John F. Biddle
** Arthur D. Black
* John P. Buckley
* Harvey J. Burkhart
** John V. Conzett
* Julio Endelman
** H. Edmund Friesell
* William A. Giffin
* Clarence J. Grieves
* Thomas B. Hartzell
* Thomas P. Hinman
* Milus M. House
* Victor H. Jackson
* C. N. Johnson
* Ervin A. Johnson
* C. Edmund Kells
* Albert L. Midgley
* Frederick B. Noyes
* Roscoe H. Volland
* Charles E. Woodbury

In addition to the list given above, add the Fellows who have served as President or in other official capacities:

W. J. H. Benson
J. Cannon Black
Otto W. Brandhorst
Frank T. Breene
Alvin W. Bryan
C. Willard Camalier
Malcolm W. Carr
Ernest A. Charbonnel
William R. Davis
James H. Ferguson, Jr.
Henry Cline Fixott, Sr.
Willard C. Fleming
William J. Gies
John E. Gurley
Fred W. Hinds
William N. Hodgkin
Elmer C. Hume
Holly C. Jarvis
Paul C. Kitchin
Charles Lane
Wm. F. Lasby
Arthur R. McDowell
Patrick V. McParland
Lee Roy Main
E. G. Meisel
Arthur H. Merritt
Howard C. Miller
Fred B. Olds

* *Indicates Founder* ** *Indicates Founder and Organizer*

Bissell B. Palmer
Fritz A. Pierson
U. G. Rickert
J. Ben Robinson
Chas. E. Rudolph
W. H. Scherer
Ernest G. Sloman
Harold S. Smith
Earl W. Swinehart
William O. Talbot
Lewis W. Thom
Robt. P. Thomas
Edward L. Thompson
Harry S. Thomson
Benjamin F. Thielen
John E. Tyler
Wm. F. Walz
George W. Wilson
Walter H. Wright
W. R. Wright

There are still many other Fellows, not mentioned in the above lists, who have rendered valuable services to their local, state and national organization. In other words, the contributions which the Fellows in the American College of Dentists have made during the last thirty years to the profession, cannot be summed up in any statistical report, but rather is the sum total of every act of every Fellow. The individual Fellow in a small town is the College in action in his community. The organized Sections and the national Convocation, act for us collectively—representing the College.

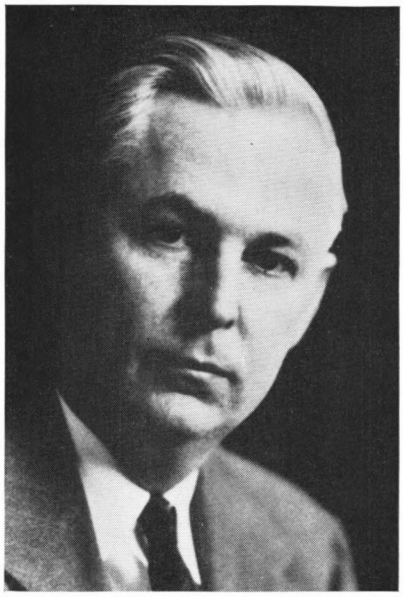
The Next Fifty Years

The American College of Dentists has builded well and moved forward at a rapid rate. With this tremendous record of accomplishment already to the credit of the College, there is no reason for fear or hysteria regarding the future. There will be many problems, but problems to a profession are like March wind to a tree—they serve to make the roots grow deeper. National problems, if broken down to actual local demands, can often be solved through local approaches.

If the Fellows in the various States and Congressional districts, demonstrate to their elected State and National Officials that we, as members of the Dental Profession, can offer a solution to the Dental problems and meet the demand for Dental Health needs in our State and community, there will be no excuse for State or National Dental control.

Loyal Fellows of the College have carried the torch for thirty years. It has been passed on to us. So let us individually and collectively resolve to build on the foundation laid through toil and sacrifice in the past and make the future a credit to the past.

Secretary, Otto W. Brandhorst, D.D.S., St. Louis.



About thirty years ago a group of the elder dental statesmen saw fit to found the American College of Dentists as an organization "imbued with the highest ideals for the dental profession and one that would lend its influence to every movement having for its purpose the advancement of professional objectives and the betterment of dental service to humanity."

How well those to whom the development of this organization was delegated have succeeded in carrying forward these tenets over the intervening years, is now a matter of record.

Although young in years, the American College of Dentists is old in experience. It has had the benefit of guidance and stimulation from the leaders of the profession, men who lived their profession, day in and day out, and whose hopes and aspirations for the profession of Dentistry never faltered.

It can truthfully be said and without boasting, that the activities of the College have had a favorable influence on the advances and developments in the profession during the past three decades. It has stood, with other organizations, for the best for the public and the profession. It has also fought for ideals when there were no other groups prepared to do battle for them. To be sure, it has made mistakes in method but it has never lost sight of what was best for the public and the profession.

Today, we stand on the threshold of the second half of the century. As we look about us and see the threatening skies that are gathering, possibly bringing stormy times in the near future, there is comfort in the fact that this organization "imbued with the highest ideals for the dental profession is ready to lend its influence to every movement having for its purpose the advancement of professional objectives and the betterment of dental service to humanity", is standing by ready to do its bit when the need arises.

The ideals of the American College of Dentists are the ideals of

the American Dental Association and many other organizations. Its opportunities to serve the American Dental Association and the dental profession are sometimes unique and it is glad to serve.

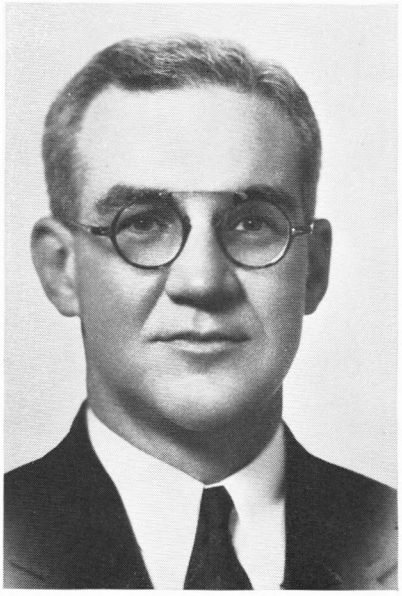
In the years ahead there will be much to do and strive for. Professional ideals will need to be maintained if the profession is to survive. Public interests must be guarded if public confidence is not to be shaken. Encouragement in study and research must be given if we are to progress. Methods of prevention must be developed if we are to be appraised as worthy of health service status. The profession's goal must be consolidated and made the common objectives of all our efforts, if we are to survive the onslaught of subversive efforts. Thoughtful, considerate, impassionate efforts must replace indifferent and quarrelsome methods if we are to convince the public of our sincerity.

In all these relations, the College can make major contributions and find plenty of activity in the future.

And, as has been its custom, it can give encouragement and recognition to those who serve the profession well in these many efforts.

The future holds many opportunities for the College to serve for the advancement of professional objectives and the betterment of dental service to humanity.

Treasurer, William N. Hodgkin, D.D.S., Warrenton.



When elected a Fellow of the American College of Dentists in 1931, I attended my first Convocation at Memphis just in time to hear the Simons-Sinai report on a study of so called health insurance plans as then developed in Europe.

Quite beyond the natural feeling of wonder and humble pleasure in being included in the Fellowship of dental figures well known and long admired, the program of that Convocation made a definite impression. It was for many of us present the initial intimate introduction to a subject of wide-reaching import—at the time, seemingly remote—and

it gave a hint of the broad interests of those who guided the profession in that study.

Through the usual corridor talk, it was learned that the College had provided a considerable sum in sponsoring and underwriting the survey on which the report was based. As the expenditure was mulled over, many must have inquired of themselves if not of others —"With what manner of profligate organization am I affiliated?"

The answer, confirming the foresighted action in outlay and heightening the impression that one was joined with men of wide horizons, came rather quickly. Almost on the heels of the Memphis Convocation came the presidential appointment of a Commission to Study the Costs of Medical Care. And the College was ready with the supply of valuable material to that Commission as well as to the health professions generally.

The almost two decades succeeding have but made more profound the first impressions of the purposeful direction of a group in its somewhat early days. Think of it! A professional organization of scarcely ten years existence, and yet among all professional groups the only one with truly authentic information and factual material when the nation had thrust upon it the consideration of a new idea in departure from its accustomed ways. So clearly did our founders and early leaders see; so soundly did they plan.

While the timely survey of health insurance programs in foreign lands appears in retrospect perhaps the spectacular accomplishment of thirty years, it is but one instance evidencing the broad interest and helpful influence of the College. Addressing itself to many areas within the range of stated objectives, it has ever pointed to higher levels with resultant benefits to the whole profession. Many of these objectives of the College touch on intangibles difficult of measurement in terms of accomplishment—but permit the citation of a few pursuits.

In pursuit of its objective "to stimulate graduate study and research", the College made grants-in-aid to selected research projects for a considerable period before such activity gained particular interest elsewhere. Modest sums, but telling contributions in encouragement until the enlistment of support from greater resources.

In pursuit of its objective "to improve public understanding and appreciation of oral health-service", the College as a first step was instrumental in the establishment of the section of dentistry within the American Association for the Advancement of Science. This

definite recognition of dentistry is but one of many instances in which the rightful prestige of the profession has been enhanced in circles of potent worth.

In pursuit of its objective "to advance the standards and efficiency of dentistry", the College initiated studies through appropriate committees in many areas leading to later accomplishments in improvement. The usual pattern in development has been the quiet and unobtrusive promotion of committee studies, with annual reports for discussion and frequent consultations with individuals of experience and known capacity in the particular fields—all pursued with the anticipation that somewhere along the line like committees of the American Dental Association would become engaged in consideration of the subject areas. Thus have labored long and assiduously the members of College comimttees on Hospital Dental Service, Oral Surgery, Prosthetic Dental Service, Certification of Specialists, Public Relations and Socio-economics, to cite a few, in furnishing a background of material which frequently became the basis for enunciation of policy or action by committees of the parent dental organization. This quiet groundwork is the effective role of the College, and has been the role preferred always.

It is a presumptuous individual indeed who pretends to peer with any certainty into the coming fifty years. Yet, despite the fact that at times the College has offended some by its forthright pursuance of the objective "to promote the ideals of the dental profession", one senses that a present requirement in eligibility for its Fellows will eventually become the guide for an entire profession. Reference is made to the requirement that—"Courses of instruction for remuneration should be given only as an appointed teacher serving under the auspices of a dental school, dental society, hospital or other accredited professional or educational agency".

Likely a few would claim that the College here declares that only under such conditions could a worthwhile course of dental instruction be given. It declares nothing of the kind. It announces only that the general policy is so sound that it must prevail and endure.

Those who are keenly attuned to the near future would do well, it seems, to lend an attentive ear to the reports and conclusions of two committees in particular. The Committee on Education is even now making headway in their projected idea of dental teacher training, and the potential benefits both to dental faculties and the

coming profession are beyond measure. The Committee on Research, aside from its activity in stimulating promising projects, has an obviousnes awareness of the high-pressure and premature exploitation of dental research so common at the moment that one competent onlooker observes—"With a dental research paper published today, an industry is born tomorrow". Perhaps the committee studies may point to guiding policies affording reasonable safeguards to a gullible public, and preventing embarrassments to an entire profession as well.

Whatever the specific contributions of the College in the future, it is quite likely that its greatest influence will be in stimulating lives of unselfish devotion to a profession—both within the College, and without—just as it has in the past.

Regent, James H. Ferguson, Jr., D.D.S., Baltimore.

Here is one man's version of what the College has done for dentistry during the last thirty years, and a vision of what it may yet do. I was attending the meeting of the American Dental Association in Boston in 1920 at the time of the founding of the College. One evening in the lobby of the Copley Plaza Hotel I met Doctor H. Edmund Friesell of Pittsburgh. He asked me to sit down and talk with him. He evidently sensed that I had an admiration for him which began the year before at New Orleans when he was elected president of the American Dental Association. During our conversation of more than an hours' duration he told me of his plans and aspirations in connection with the founding of the College. My impression at the time was that he felt it should be patterned along the lines of the American College of Physicians which was founded in 1915.

During the last thirty years the College has served a useful pur-

pose and has had a profound influence in shaping many of dentistry's policies. It may sound highly idealistic but I feel it has been a guiding star and beacon light in leading the way for many reforms that have taken place during the last three decades. As we take a retrospective view of the steady growth and progress of dentistry it must be admitted that many Fellows of the College were in the forefront. Their unselfish contributions to dental education, dental research, dental literature, and to dental society activities will stand as a lasting monument to them and justifies the motivating thoughts and plans of those who pioneered the College and are listed as its charter members. As to the next fifty years I can visualize the solving of many oral health problems that today seem insurmountable. I think a better control of dental caries will be solved by the leaders in dental research. I can visualize dental researchers among the Fellows of the College and Fellows of the College among the researchers, making startling contributions in improving the quality of our filling materials. I do not believe it is beyond the realm of a possibility to predict the development of an unbreakable denture material during the next half a century. That prediction is based on the premise that as far back as 1900 some of our practitioners especially interested in prosthetics stated that a "gum colored" substance would eventually supplant rubber. We are told during that period some members of the profession hooted at the idea.

The socio-economic problem is an all consuming one and in facing it we should neither lean too far to the left or right. Neither should we be influenced too much by the old worn out idea that the middle of the road will get us nowhere. Some where along the middle of the road it would seem that a truly creative area could be established so that at least some of our problems could be solved compatibly with basic American principles. Criticism of the executive and legislative branches of our government in its plan to furnish medical and dental service to people in the low income class will not accomplish anything unless we have something constructive to offer in its place. This problem must and I predict will be solved by the medical and dental professions. We must be realistic about it and place at the disposal of the American public a health service that is compatible with American ideals, and is far reaching in its usefulness for the masses it is intended to benefit. If the fullest benefit

is to be obtained from any health plan it must definitely be under the direction of the medical and dental professions. Posterity may record our governments socialistic health service plan a blessing in disguise because it has aroused our profession from one of apathy to one of unrelenting vigor. It has been a challenge to our thinking and our planning and I predict that we will rise to the occasion in solving it. Here many Fellows of the College will play an important part. Socialized medicine is not a new venture. Bismarck introduced it in Germany in 1883 thinking it would strengthen the monarchy by making his people dependent on the state. It spread to Austria in 1888, and France adopted it in a modified form in 1918. However France soon found it involved huge deficits as well as widespread corruption. There is concern on the part of many of us over the dental legislative episode in Massachusetts, and that of the dental laboratory in Connecticut. The feeling is justified but the problem is not beyond solution and control. Medical historians in describing the era of the early days of the nursing profession tell us many physicians predicted that nurses would take over certain phases of medical practice. It would be a sad commentary upon dentistry and an admission of weakness if we could not control the auxiliary groups so essential to the dental profession and the public we serve. In our zealous desire to contribute to the solving of the many oral health problems confronting us we must not lose sight of the fact that the organized leadership must come from the American Dental Association. However nothing retards progress like complacency and one of our supreme efforts should be to influence constructively dental thinking in America during the years ahead. If we can accomplish that we will have made a worth while contribution, and the aspirations, and labors of the founders of the College will not have been in vain.

Regent, Benjamin F. Thielen, D.D.S., Paris.

Since the organization of the American College of Dentists many laudable changes have taken place in the Profession of Dentistry.

The Standards of the Profession have been raised.

State Dental Legislation has been improved.

Dental Colleges have been classified and now operate upon a high professional plane.

Research has been aided and stimulated.

Materials and Drugs have been improved and standardized.

Dental Journalism is practically free from commercialization.

Regent Fred B. Olds, D.D.S., Los Angeles.[1]

Not so many years ago dentistry was not the united profession that it is today. Dentists were graduated from our various schools and colleges free to practice, more or less, in the manner of their own choosing. There was no concerted effort to make them realize that they had learned only the fundamentals of dental practice and that for the remainder of their professional careers they must continue to be students. Theodore Roosevelt once said, "No professional man has the right to be anything but a continuous student." No great effort was made to teach these new graduates the ethics of the profession. There was a great lack of common understanding. They were very much like

[1] Read before the Northern California Section, April 25, 1950.

the Jewish gentleman woh embarked on the maiden voyage of a great ocean liner. Approaching the chief steward he said, "Listen, I came on this trip for a rest. I don't want to be bothered by anyone. I don't want to talk to anyone. Can you give me a table to myself, in the dining salon?" The chief steward replied. "I am sorry, sir, that I cannot. This being our maiden voyage, we are loaded to capacity. Our dining facilities are taxed to the limit. However, I'll tell you what I can do. There is a two-table, one half of which is to be occupied by a Frenchman who does not speak English. I presume you do not speak French?" "No", replied the Jewish gentleman. "Then, said the Steward, "that will be ideal. You shall both occupy this table and you will not be able to converse." So it was arranged. When the Jewish gentleman went into luncheon the Frenchman who had arrived earlier, jumped to his feet, bowed and said, "Bon appetite, bon appetite." The Jewish gentleman extended his hand and said "Ginsburg". This ceremony was repeated at each meal until the morning of the third day when the Frenchman did not appear for breakfast. The Jewish gentleman, being somewhat concerned, approached the Steward and asked, "Where is Mr. Bon appetite?" The Steward replied, "Oh, you mean your table mate? His name is Rousseau—'bon appetite' means good appetite—enjoy your meal."

So when the Frenchman appeared for luncheon, the Jewish gentleman jumped to his feet, bowed and said, "bon appetite, bon appetite." Where upon the Frenchman extended his hand and said, "Ginsburg."

I do not mean to imply, in the remarks that follow that the American College of Dentists is alone responsible for the great changes that have occured in the concept of dental practice and ethics. However, no one can deny that the College has been an important factor in bringing about these changes. It is now, and always has been the policy of the college to work unobtrusively for the objectives it believes in, assisting other organized groups in bringing about the desired changes and to seek no credit for it's own part in the matter.

With conditions existing as I have described them, it was inevitable that someone should attempt to elevate the profession to higher standards of practice. Accordingly, on August 20, 1920, Arthur D. Black, John V. Conzett and H. Edmund Friesell, great leaders of their day, met to organize the American College of Dentists. They associated with themselves nineteen other prominent dentists from

various parts of America. This group drafted a Constitution and By-laws and completed the organization of the College. An examination of the objectives, as set forth in this first Constitution convinces an observer that these men were, indeed, farsighted, foreseeing the need in the years ahead of an organization dedicated to service—service to the public and to the profession of dentistry. The objectives of the College were stated to be:

1. To promote the ideals of the dental profession;
2. To advance the standards and efficiency of dentistry;
3. To stimulate graduate study and effort by dentists and
4. To confer Fellowship in recognition of meritorious achievement, especially in dental science, art, education and literature.

So well conceived was their plan of organization that only one addition to the original objectives has been found to be desirable in the 30 years of its' existence. This fifth objective is:

5. To improve public understanding and appreciation of oral health service.

That the College might be made up of workers they wisely decided to select as Fellows only those men who had achieved—men who had helped to advance the profession in the public esteem or to place Dentistry on the high ethical plane where it rightly belonged. Thus, with a foundation of selected personnel, guided by a pattern of worthy purpose and lofty ideals, it is only natural that the College today stands as a monument to all that is good in Dentistry, Fellowship in which is desired by many, achieved by few.

To have Fellowship conferred upon one is indeed an honor. However, I am sure that it was not the intention of the founders of the College to reward men for past performances but rather to select men for Fellowship whose past performance indicated that future achievements might be expected of them; that these men would carry the ideals of Dentistry to even higher planes and would aid in the important work that must be accomplished by the College.

Fellowship in the College is granted only to those whose educational background, ethical standards and high professional ideals meet rigid requirements. In addition to these basic qualifications, the nominee must have contributed to the advancement of Dentistry and aided in its' increased public appreciation. It is required that he be nominated for membership by two Fellows of the College. His qualifications are reviewed by a Board of Censors, whose personnel

is known only to the Regents. If approved by the Censors, the Board of Regents may elect and extend an invitation to Fellowship.

The College is governed by a Board of Regents consisting of the officers and eight Fellows elected to serve four years.

The annual convocation of the college is held at the time and place of the annual convention of the American Dental Association. Fellowships are conferred upon the successful nominees at this meeting. The Board of Regents meets at least twice each year, one at the time and place of the America Dental Association meeting and the other in Chicago at the time of the Mid-winter meeting. The Sections of the College, about twenty in number, meet at their own discretion.

In an effort to stimulate study by the various sections, the officers of the College, some time ago, sent to each of them a list of suggested subjects for their consideration. A few of the sections responded and have undertaken the study of a selected problem. However, the majority of the sections have not yet indicated their willingness to participate in the work of the College in this manner. It is the earnest desire of the Regents that more sections will begin the study of a specific problem, which should result in a more cohesive group and be of unlimited value in speeding the work and increasing the effectiveness of the College. Surely, with a membership of 1537, selected for their ability and achievements, great contributions toward the solution of dental problems should be expected.

From a Statement by Secretary Brandhorst relative to the activities of the American College of Dentists, I quote:

"During the years that have elapsed since the organization of the College in 1920, its interests and activities have increased with the needs of the times, and have become more varied as dentistry as a profession, broadened its fields of usefulness. In efforts to advance the welfare of the profession, the College has continually encouraged high educational standards and research. Its committees on Education and Research regularly report their findings and offer recommendations. The College has been an ardent supporter of dental research, and in recent years has been one of the main financial supports for the Journal of Dental Research. The Board of Regents, believing that through research a better dental health service would result and a closer medico-dental relationship would be established, has formulated plans for the granting of research Fellowships and

grants-in-aid to men in various fields of research, upon recommendation of the Committee.

"Through the committees on Hospital Dental Service and Oral Surgery, a better understanding between the health-service professions has been created and the foundation has been laid for a much closer relationship in the future.

"The profession, years ago, set up a code of ethics that resulted in our present splendid American Dental Association, and took hold of dental education by placing the dental schools in a new relationship with universities. So in the field of literature, the profession desires to terminate commercial control of dental journalism. The College has, therefore, through its Committee on Journalism, championed the cause of professional control of dental literature.

"The College is cognizant of the interest of its members and the profession generally in better standards and protection. Through the committees on Prosthetic Dental Service, Legislation and Certification of Specialists, the College seeks ways and means to improve existing standards and also to protect the public.

"The College is also investigating conditions in the many relationships with the public and other organizations. Its committees on Relations and Socio-economics have been making detailed studies. If and when the need arises, information of the greatest importance will be available.

"More recently, the committee on Socio-economics undertook a study of the service records of Dental Health, Inc. New York City, to ascertain the cost of dental services. This resulted in the publication of "Cost of Dental Care for Adults under Specific Clinical Conditions" under the authorship of Dorothy Fahs Beck, in 1943.

"There are other committees, such as Committee on History, Endowment and Ceremonial, and special committees, which serve to round out the activities of the College in various directions. Special committees and additional standing committees are appointed from time to time to consider special problems as they present themselves.

"The College has been able to bring about many recognitions of dentistry, one of the most important of which was the admission of dentistry into membership in the American Association for the Advancement of Science, where Dentistry is now an active section."

Today, with paternalistic government seeking to lead, nay, push Medicine and Dentistry down the path of Socialism, it becomes necessary for all to group their strength and resources that the American way may survive. I need not tell you the story of Compulsory Health Insurance—you have heard it from lips more eloquent than mine. The American College of Dentists has been studying this problem since the inception of the College. In fact, it assigned to Dr. Nathan Sinai, in 1928, the task of making a study of health insurance in Europe. His report is a book entitled, "The Way of Health Insurance."

Socio-economics was the theme of the convocation of the College here in San Francisco last October. Those of you who attended were privileged to hear a fine program highlighted by such men as Harold Hillenbrand, secretary of the American Dental Association, who gave a splendid first-hand report on the British Health Plan; Raymond E. Myers, Dean of the University of Louisville, who spent about a month in England and Scotland studying the plan at the request of the American College of Dentists and our own Ernie Sloman, who probably has a keener understanding of this problem than any other man in America.

It is the duty of every dentist and doubly so of every Fellow of the College to assist in bringing to the public the truth about this great threat to its comfort, health and economy. Enormous quantities of propaganda in the form of books, newspaper and magazine articles and radio broadcasts have been used to bombard the public, all in favor of compulsory health insurance. This propaganda has been financed largely by tax money, yours and mine. Until recently, very little has been said or written against the plan. Your College is bending every effort to assist the American Dental Association and other groups in combating this threat to the national health and economy by spreading the true facts where all may see or hear.

Two examples of this effort may be cited:

Wire recordings have been made of the reports on health insurance presented at the October meeting. These are available to responsible groups and it is hoped that many lay audiences will be privileged to hear these first-hand reports of actual conditions in England. Secretory Brandhorst will be glad to furnish full details to anyone who requests it.

At its' own expense, the College has made available to the American Dental Association reprints of the papers read at the San Francisco convocation. These have been mailed to every member of the American Dental Association in an effort to better inform that member that he, in turn, may do his bit to acquaint his friends and patients of this very real danger to the health of the Nation. Read these reports—give the information contained therein wide circulation—"its' later than you think."

Health insurance is not the only problem being considered by the College today. Even though our dental schools now have more applicants than they can admit, the College foresees the time when this will not be the case. In anticipation of this time it is financing the preparation of a film, under the direction of Dr. Willard Fleming, designed to aid in the recruitment of dental students.

Another project is the training of dental teachers that they may more effectively present their subjects to students. While the final report of the committee has not been made, it is tentatively planned to award scholarships to qualified applicants who will make this their major objective.

Every graduate in Medicine must subscribe to the Oath of Hippocrates. Dentistry has no such pledge. Dr. Walter Wright, the president of the College, believes that such an oath should be taken by dental graduates and lists as one of his projects, the formulation of such a pledge. Surely, this is another step toward that ever higher ethical plane we are striving to reach.

The Australian Dental Congress which meets this year has requested the College to send a representative who while there may study the health insurance plan in effect there. Dr. Wilfred H. Terrell of Pasadena, who will attend the Congress, has agreed to accept the assignment for the College.

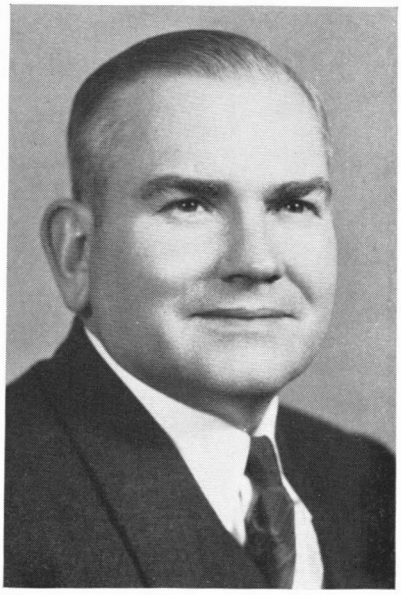
Your own John Gurley has resumed the Editorship of the Journal which post was vacated by the resignation of Dr. J. Ben Robinson. Dr. Gurley, as you know, previously served as Editor for a period of nine years and was largely responsible for the development of the Journal to its' present status.

President Walter Wright of the College, Dean of New York University College of Dentistry has expressed his desire to visit as many of the sections as possible during the year. It could be possible for

the Pacific Coast sections to get together in arranging for a visit from him, and I am sure that the inspiration he would give us would spur us on in our conduct of the work of the College.

In closing let me express my appreciation of your kind invitation. It is always a pleasure to renew friendships with you nice people. The greatest reward any man may receive is friendship. If this is true, I am indeed, a rich man in being privileged to count so many of you as may friends. I hope the remarks I have made may give you a better understanding of the work of the College and that each of us will renew our pledge of the College, that we may continue to merit the high honor that Fellowship in the American College of Dentists implies.

Regent F. A. Pierson, D.D.S., Lincoln



At the time the request for a short article on the uses of the American College of Dentists was received from Dr. Gurley I had just had a letter from one of the early Fellows of Nebraska, Dr. Thomas, of Hastings, stating he had the first five volumes complete of the Journal of the American College of Dentists and inquiring whether or not I should like to have them.

As I was interested in knowing more about the early activities of the College I asked that he send them to me. I became so interested in the material they contained that it occurred to me other members of the College, especially those upon whom fellowships have been conferred in the last few years, might also be interested, and I decided to review some of the earlier College activities in this article.

My knowledge of the activities of the College up to the time fellowship was conferred upon me in 1938 was meager and these volumes, covering the period 1934–1938 inclusive, are very informative.

I am not interested in a survey of the past achievements of the College except as it may help us understand why and how we arrived at our present status and that it may better fit us to meet the problems of the present and future.

My first contact with the American College of Dentists was in the early thirties through the Commission on Journalism. This was due to my association with the Journal of the Nebraska State Dental Association as its business manager. No one who was connected in any way with a dental publication at that time has forgotten the bitter battle which was waged by the College to raise the standard of dental publications. The amount of work done by the Commission on Journalism at that time was tremendous, as is evidenced by its report, which covered thirty-two printed pages in the Journal.

For many years the College has been interested in solving dental health problems. Dental health for the American people is the primary aim of the profession and how to make dental services available to more people is a problem on which the College has been concentrating. As early as 1930 a study of health insurance in Europe by Drs. Simons and Sinai was made possible by the financial support of the College. During the summer of 1949 a study of the results of the health services in Great Britain provided under that country's National Health Service Act, was made by Dean R. E. Meyers of Louisville University, a member of the Socio-Economics Committee of the College, with the financial assistance of the College.

The Convocation at San Francisco was devoted entirely to a discussion of this subject, and the report of Dean Meyers and other reports were presented. These reports have been distributed through the American Dental Association to all of its members.

Certainly the College has been and will continue to be useful in obtaining and disseminating the facts about dental health plans which have been and will be proposed.

I believe that making dental service available to all our people is one of the important Socio-Economic problems of our country today and therefore one of the most important to our profession, and I believe the College should lend its influence and support in bringing about a workable solution to this problem.

In the earlier days the College was active in attempting to solve several other problems, such as certification of specialists, dental

prosthetic service, hospital dental service, and medico-dental relationships. These problems are still with us but some progress in their solution has been made. The aims of the American Dental Association now include an attempt to solve them. And, of course, the College will continue to give its assistance.

There are two fields in which the influence of the College has been chiefly exerted. These are Education and Research. The College has exerted a very helpful influence in charting the course of dental education during the period of its existence. It has been a period in which many changes in dental curriculums have taken place. Many types of experimental courses in dental education have been proposed and the influence of the College has been felt in supporting those which which seemed to be for the betterment of dental service to the public and in opposing those which appeared to be to the detriment of the public. I am certain the College will continue this policy in regard to plans which are continually being presented for changes in dental practice.

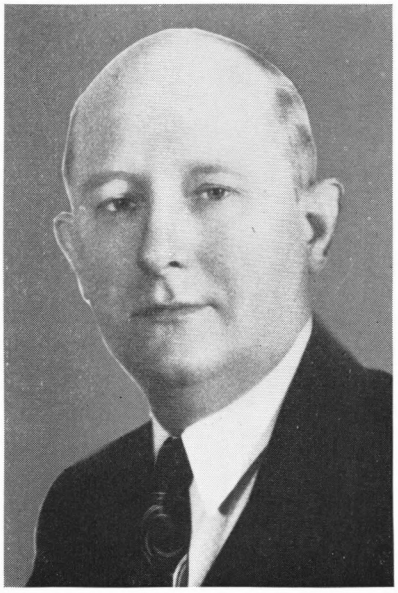
One of the earliest projects of the College was stimulating research and giving financial aid to research projects. This interest in stimulating and support of research projects has continued in the College. It has supported financially many worthy research projects as well as given financial support to the Journal of Dental Research. It seems that one of the real opportunities of the College in the future will be the encouragement and support of research.

With this fine record of achievement in the past the College can look forward to greater accomplishments in the future. Its objectives must continue to be the elevation of the standard of dental service and making such service available to more people. If the individual members of the College will do their utmost to aid in achieving these worthy objectives the continued progress of the College and better health for the American people are assured.

In closing I wish to express my appreciation to the members of the College for the privilege and honor of serving as one of their regents. I have never served with any group where the members were more sincere in their efforts to carry out the stated objectives of the organization. With no incentive whatever for personal advantage they give generously of their time and energies. Such honest efforts on the part of the officers and regents, supported by the continued cooperation

and work of the individual members, must bring about a degree of success in achieving the aims of the College both gratifying and stimulating to us all.

Regent Holly C. Jarvis, D.D.S., Cincinnati



Looking back about thirty years ago we read where some twenty-five dentists met and organized the American College of Dentists. These men, having great vision and foresight, had dreams of an organization that would take the leadership in American dentistry by promoting the ideals of the dental profession and advancing the standards and efficiency of dentistry. Many of these founders of the organization have passed on to their eternal reward. However, if they were here to review the work and accomplishments of the men in the College they would be justly proud of the things that have been done.

Due to the objectives, ideals and standards of the College, the membership has grown from that small number back in 1920 until now we have working together more than fifteen hundred members. Space will not permit me to enumerate the many fine projects and accomplishments the College has completed up to the present time.

With the high ideals for which the College stands, and the ability and fine leadership of its present membership, one can predict the College will go forward with greater success and accomplishments in the next thirty years than it has in the past thirty years. Membership will grow and continue to grow because of the incentive to do better things for dentistry and a greater and more efficient service for the people. Young men coming into dentistry will work more diligently to attain achievements that will qualify them for nomination for membership in the College.

The willingness of the membership to continue to serve and work

for the ideals of dentistry and to improve public understanding and appreciation of better oral health service, will stimulate the further growth of the College.

Henry Ford once said: "Coming together is a beginning; keeping together is progress; working together is success."

The College will continue to keep working together.

"The point is that the educational method is twofold. It involves association, fellowship, or participation in life on one hand; and articulate thinking, conversation, explication or instruction on the other. It includes both the induction of habits and feelings, and the sharing, communication and gaining of ideas."

—Bulletin, International Council of Religious Education.

AMERICAN COLLEGE OF DENTISTS

Proceedings of the San Francisco Convocation, October 10, 1949

Reports of Committee to the Board of Regents

CONTENTS

RESEARCH

ALBERT L. MIDGLEY, D.D.S., Providence, Chairman[1]

Plainly our research program, its attainments and its future potentialities cannot rest on past achievement as a guaranty of continued interest and support. And so our main objective, at all times, is to keep wide awake the spirit of scientific research among the medical and dental professions, research workers and others in order to meet present day requirements.

It appears to be more necessary than ever to set up a well thought-through plan toward clearly defined objectives under capable direction. In this way we shall be prepared to move forward even more effectively than we have in the past and to strengthen our efforts that we shall slight no professional obligation and none of dentistry's opportunities whenever or wherever they may arise.

Progressive advancement in education, in programs of scientific investigations in consciousness of public responsibility is well documented in our professional literature so that an appraisal of what we have done can readily be made for the benefit of interested members of the medical profession, public spirited laymen and state and national institutions.

The Committee on Dental Research accomplished a real piece of work at a time when support to research activities was greatly needed. Through the William John Gies Fellowships and Grants-in-

[1] Other members of this committee, 1948–1949, are: L. E. Blauch, P. J. Brekhus, T. J. Hill, P. C. Kitchin, A. B. Luckhardt, A. G. Lyle, Irvine McQuarrie, Fr. A. M. Schwitalla.

aid,[2] research was stimulated in a worthy and commendable manner, and after Federal funds became available, the committee wisely adopted an attitude of retrenchment. Since requests for Federal funds are very much in excess of the amount of money available at the present time, we wonder if the American College of Dentists should not again offer grants-in-aid in small amounts to support either fellowship programs or actual research. Would it not be worthwhile to support training or fellowship programs to develop young men in teaching and research positions?

The committee has given attention to this suggestion, and during the year invited Dr. Russell W. Bunting to present an article on "Research in Dentistry" which was published in the Journal of the American Dental Association. The purpose of the essay was to stimulate young men to aspire to positions of teaching and research. 12,000 reprints of this essay are to be distributed to students in our dental schools this fall.

Should not the Research Committee compile a list of dental research studies and include this list in its annual report? In case the list of studies becomes too extensive, might it not be limited to a small number of fields or even to a limited number of topics? As an alternative, might we not report annually a list of the research studies completed by members of the American College of Dentists?

The attainment of an active program for the promotion of interrelations between medicine and dentistry has been one of the objectives of the Research Committee of the College since its creation. At the outset, it was obviously necessary to clarify the doctrine of an effective medical-dental relationship by establishing a series of principles essential in its development.

Convinced that the time had arrived for united action by medicine and dentistry, based on the theories, principles and related details which its studies of conditions had revealed, the Research Committee suggested that an effort be made to induce the R. I. Medical Society and the R. I. State Dental Society to merge their knowledge and professional experiences and draft an acceptable program for continuous cooperation in the solution of problems of common concern or overlapping interest to both professions.

The R. I. Medical Society and the R. I. State Dental Society appointed a joint committee to draft a report which was accepted

[2] See p. 99, this number of the Journal. The beginning of this was financed by the college.

in principle by both societies. This is the first time in the annals of medical and dental history wherein a state medical and dental society pooled their interests to blueprint, assemble and put in operation the mechanism of an acceptable medical-dental program.

The Fellowship of the College should be conscious of the importance of the opportunities and seriously aware of the value of the concurrent obligations that have come to medicine and dentistry in Rhode Island through a complete health-service program. What has been done in Rhode Island calls for wide publicity by the College with the hope that every state medical and dental society in the U. S. and the provinces of Canada may be inspired to take similar action for better medicine and better dentistry in behalf of the public welfare throughout both nations. And so we bespeak the active interest and support of the College, especially through its constituent sectional divisions, with the hope that the program of health service for the "whole man" may promptly become national in scope.

For the sake of dentistry's "tomorrow", with its urgent needs, its everwidening horizons, its duties that cannot yet be foreseen, the American College of Dentists presents an irresistible appeal that the rank and file of the dental profession cooperate with the full power of their active support in the promotion of dental research and a national-in-scope medical-dental program.

CERTIFICATION OF SPECIALISTS

RALPH L. IRELAND, D.D.S., Lincoln, Chairman[1]

Last year, the Committee on Certification of Specialists made a survey of the six states which had passed dental speciality laws. The survey was made "to assemble information in order to present the true situation in those six states." After carefully studying the replies received from an official of the state board of dental examiners, from an official of the state dental society, and from a specialist in each of the six states, the committee concluded that:

1. The principle and the purpose of the laws certifying specialists in dentistry have been upheld.

[1] Other members of this committee, 1948–1949, are: Carl O. Boucher, Wm. E. Flesher, Daniel F. Lynch, Samuel C. Miller.

2. The experience of the six states having these laws supports the conclusion that the public should have the benefits and the protection of the laws providing for legal certification of specialists, and that these laws have earned and deserve a rightful place in state dental acts.

In a paper, "Certification of the Specialist in Dentistry: Education and Licensure," read before the American Association of Dental Examiners in Chicago, September 11, 1948, and later published in the January 1949 issue of the Journal of the American Dental Association, John C. Brauer, President of the Advisory Board for Dental Specialties, points out that:

> Six states now have speciality laws which vary appreciably in their requirements for certification. Many additional variables and appended restrictions could be processed into law, if the existing laws governing the specialities are used as a criterion in predicting future actions by states.
>
> Certification on a national level assures the public and the profession that a dentist is qualified to practice his speciality, but it does not protect the public from those unqualified pseudo-specialists who may elect to limit their practice. Therefore, state certification under given conditions is desirable.
>
> The problems of national and state certification for dentistry and medicine are not entirely parallel.
>
> There is need for clarification of the boundaries or limitations of treatment on several of the specialities.

As you no doubt know, the Advisory Board for Dental Specialties is composed of two representatives from each of the examining boards of the dental specialties and such other national organizations as are interested in education, examination, or certification of dental specialists. The Board is now composed of representatives from:

The American Board of Orthodontics
The American Board of Periodontology
The American Board of Pedodontics
The American Board of Oral Surgery
The American Board of Prosthodontics
The American Association of Public Health Dentists
The Council on Dental Education of the American Dental Association
The American Association of Dental Schools
The National Board of Dental Examiners

The National Association of Dental Examiners

Your chairman attended the last meeting of the Advisory Board which was held in Chicago at the time of the 1948 A. D. A. meeting. One of the topics discussed at this meeting was state licensure of specialists. Dr. Harlan H. Horner, who at that time was Secretary of the Council on Dental Education, was of the opinion that if laws are to be enacted they should be based on a model which should be worked out by the Advisory Board using the Council on Dental Education's requirements as a standard and not demanding limitation of practice for certification.

After considerable study in regard to the Committee's activity for this year, it was decided that helping the Advisory Board for Dental Specialties formulate a model state dental law for specialists would be a most worthy project. Accordingly, the services of the American College of Dentists Committee on Certification of Specialists were offered to Dr. Howard C. Miller, Chicago, Illinois, chairman of the Advisory Board's committee appointed to study this problem. Information from Dr. Miller as to how our committee can be of assistance to the Advisory Board, no doubt, will be received in the near future. When this information is received the Committee can begin to function actively. It is hoped that this project can be completed during the coming year.

EDUCATION

HARRY LYONS, D.D.S., Richmond, Chairman[1]

A number of factors and data pertaining to the preparation for teaching of dental teachers in the dental schools of this country were enumerated in the 1948 report of this Committee. Recommendations were made to provide for financial support of a graduate dental teacher training program. The report and recommendations with limited revisions were adopted by the Board of Regents. The present Committee was instructed to proceed with the development of details for the implementation of the proposed program.

Copies of the 1948 report were sent to the deans of all dental schools in this country with a request that they consider the proposed

[1] Other members of this committee, 1948–1949, are: P. E. Blackerby Jr., A. W. Bryan, S. E. Davenport, Jr., M. K. Hine.

program in conference with the administrators of the departments of Education of their universities. The report was generally acclaimed by both administrators of dental schools and university departments of Education.

The following schools, through appropriate administrative officers, have indicated their interest in and willingness to participate in the implementation of the proposed program for dental teacher training:

Baylor University
University of California
Emory University
University of Illinois
Indiana University
The State University of Iowa
University of Michigan
University of Pennsylvania
St. Louis University
Temple University
University of Texas
Washington University

Most of these already have outlined programs leading to graduate degrees and are ready to accept qualified applicants.

A number of interesting developments have come to light or materialized as a result of the 1948 report from this Committee[2]. These relate to the special needs of dental teachers in their preparation to meet adequately the unique requirements of dental education. It was suggested from several quarters that dental school curricula might be studied to determine more accurately what special training should be afforded those preparing to teach in dental schools. Such a study was undertaken several years ago at the University of Michigan. Temple University made such a study this past session, having been moved to do so by the 1948 report of this Committee. Much progress in the development of better dental teacher training programs may be expected in the immediate future from these studies. Several sources offered the suggestion that preparation for teaching should include further study of the subject to be taught. The program outlined for this project in the 1948 report provides for this feature.

The College has an opportunity to promote better dental teacher training by providing a measure of moral and financial support. Accordingly, since a large number of schools are prepared to implement the program proposed by this Committee in its 1948 report, it is again recommended that (1) the College support more adequate dental teacher training by establishing fellowships carrying an an-

[2] J. Am. Coll. Den.: 15, 125–28; 1948 (Sept.).

nual stipend of $2500 and that (2) an agency of the College be established for the general administration of the proposed program and for the selection of graduate students for dental teacher training under the proposed fellowship plan.[3]

[3] See A. D. A. News Letter; 3, 4; 1950 (April 1).

JOURNALISM

JOHN E. GURLEY, D.D.S., San Francisco, Chairman[1]

The Committee on Journalism has gone ahead very quietly during this year, matters pertaining to that subject apparently being satisfactory. We would like to submit the following classification of literature, thereby bringing that subject up to date:

Group A. Professionally owned and professionally controlled
Group B. Privately owned but professionally controlled
Group C. Privately owned and privately controlled
Type 1. Non-subscription magazines
Type 2. House organs
a) Company use only
b) Professional distribution

In addition to this it would be our suggestion that the present committee be discharged in its entirety and a new and larger committee, representative of the country as a whole be appointed. It is our thought that this committee should consist of at least 25 strategically located dentists, whose business it is to read the literature, then advise us as to their ideas of the status of journalism. The fact is, this study has been carried on for a considerable number of years and journals have been classified according to standards set. Now let us find out from readers whether journals are meeting those standards, or what journals and why, give readers most satisfaction.

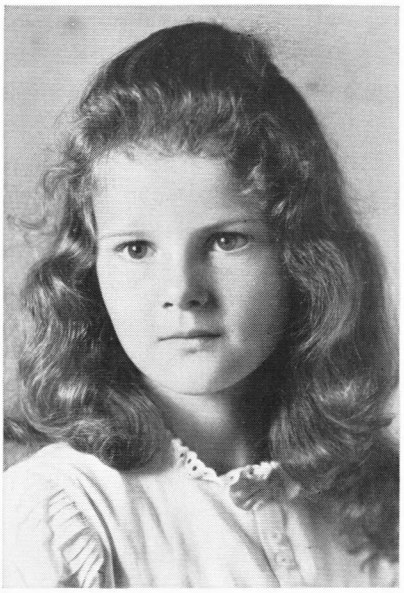
[1] Other members of this committee, 1948–1949, are: Reuben L. Blake, Barry B. Hambly, LeRoy Main, Jacob Shapiro.

NECROLOGY

M. WEBSTER PRINCE, D.D.S., Detroit, Chairman[1]

As the report of the Necrology Committee was read, and as the name of each deceased Fellow was announced, Suzanne Gaynor Sloman dropped a rose into a bowl as a token of respect. (Ed.)

Throughout the history of civilization it has been customary for the living to pause in the routine of daily activities, and pay tribute to the memory of the departed. It is therefore proper that we like wise should pause in the program of this day to express our sorrow over the loss of the valued Fellows of this College who have answered the call of the Almighty in the year past, that their memory may linger as a soft benediction in the days to come.



Down through the ages man has ever sought the comfort that comes from a belief in the hereafter. At such a time we take hope from the words of the Psalmist who said, "Yea, though I walk through the valley of the shadow of death I will fear no evil, for thou art with me, thy rod and thy staff they comfort me. Surely, goodness and mercy shall follow me all the days of my life; and I will dwell in the house of the Lord forever."

Then Paul, speaking to the believers in his time said, "In Christ shall all be made alive; every man in his own order, for the last enemy that shall be destroyed is death.

The faith we have in these statements is the faith that spurs us on to do our best, it is the foundation on which our churches are

[1] Other members of this committee, 1948–1949, are: J. E. Buhler, H. E. Summners, W. F. Swanson, R. S. Vinsant.

built, it is today, the greatest hope man has in permanent world betterment.

But even faith is not always essential, for I once heard a noted agnostic say, "Why should I fear death? I have had about as many of the good things of life as the majority of people, I have made enough money to own a good home; it has all of the comforts that anyone needs in a home; I own a good automobile and I enjoy good health, so what more do I need? But, notwithstanding all of these things, I have to admit that my greatest pleasure has been derived through sleep, so why should I hate to die? To me, dying is merely going to sleep."

But for me, I like the way Helen Hunt Jackson expresses it in her poem, Habeas Corpus.

HABEAS CORPUS

Helen Hunt Jackson (1831–1885)

My body, eh? Friend Death, how now?
  Why all this tedious pomp of writ?
Thou hast reclaimed it sure and slow
  For half a century, bit by bit.

In faith thou knowest more to-day
  Than I do, where it can be found!
This shriveled lump of suffering clay
  To which I now am chained and bound,

Hast not of kith or kin a trace
  To the good body once I bore;
Look at this shrunken, ghastly face:
  Didst ever see that face before?

Ah, well, friend Death, good friend thou art;
  Thy only fault thy lagging gait,
Mistaken pity in thy heart
  For timorous ones that bid thee wait.

Do quickly all thou hast to do,
  Nor I nor mine will hindrance make;
I shall be free when thou art through;
  I grudge thee naught that thou must take!

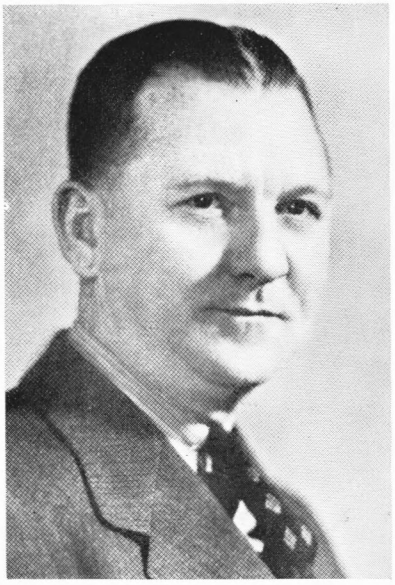
Stay! I have lied: I grudge thee one,
  Yes, two I grudge thee at his last,—
Two members which have faithful done
  My will and bidding in the past.

I grudge thee this right hand of mine;
  I grudge thee this quick-beating heart;
They never gave me coward sign,
  Nor played me once a traitor's part.

O feeble, mighty human hand!
  O fragile, dauntless human heart!
The universe holds nothing planned
  With such sublime, transcendent art!

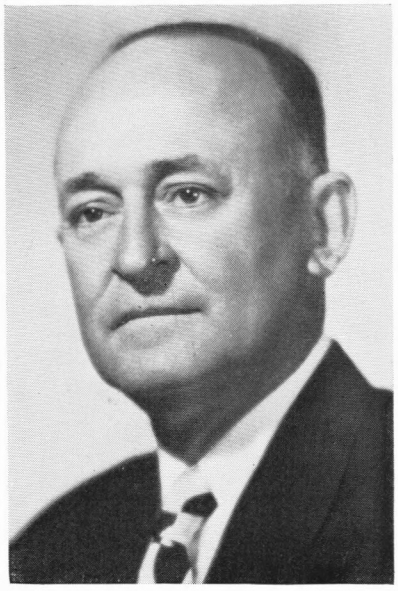
Yes, Death, I own I grudge thee mine
  Poor little hand, so feeble now;
Its wrinkled palm, its altered line,
  Its veins so pallid and so slow—

Ah, well, friend Death, good friend thou art:
  I shall be free when thou are through.
Take all there is—take hand and heart:
  There must be somewhere work to do.



Henry U. Barber, Jr., D.D.S.
New York, N. Y.
1893–1948

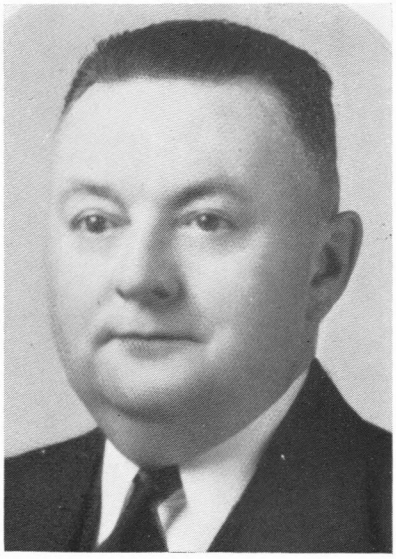
Fellowship conferred in 1942.
Graduated from Univ. of Pennsylvania School of Dentistry in 1916.
Past-President, American Association of Orthodontists.
Member, New York Academy of Dentistry; New York State Dental Society.



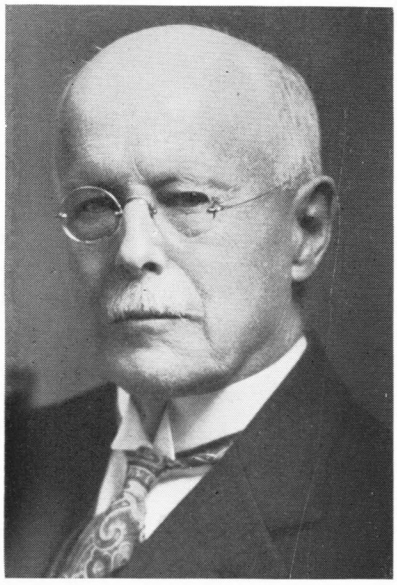
Arthur R. Beckman, D.D.S.
Dallas, Texas
1896–1948

Fellowship conferred in 1940.
Graduated from Baylor University School of Dentistry in 1918.
Past-President, Dallas County Dental Society.
Member, Texas State Dental Society; American Dental Association.

William J. H. Benson, D.D.S.
Milwaukee, Wis.
1884–1948
Fellowship conferred in 1929.
Graduated from Marquette University School of Dentistry in 1913.



John J. Berry, D.D.S.
Deadwood, S. Dakota
1884–1949
Fellowship conferred in 1942.
Graduated from Washington University School of Dentistry in 1916.
Member, South Dakota State Board of Dental Examiners; South Dakota State Dental Society; Black Hills Dental Society.



Edwin C. Blaisdell, D.D.S.
Portsmouth, N. H.
1861–1945

Fellowship conferred in 1934.
Graduated from Harvard Dental School in 1883.
Past-President, New Hampshire Dental Society; Past-President Harvard Dental Alumni Association.
Member, Harvard Odontological Society; Maine Dental Society; New England Dental Society; American Academy of Dental Science.

James A. Blue, D.D.S.
Mobile, Ala.
1883–1949

Fellowship conferred in 1926.
Graduated from Birmingham Dental College in 1905.
Past-President, Alabama Dental Association; Past-President, American Society Oral Surgeons and Exodontists; Member, Birmingham Dental Society.
Honorary member, Mississippi State Dental Association.

Frank B. Bostwick, D.D.S.
Arlington, Va.
1880–1949

Fellowship conferred in 1926.

Graduated from University of Pennsylvania School of Dentistry in 1902.

Assistant Court Dentist of Spain in 1908; Naval Dentist to the British Channel Fleet, appointed by Lord Chas. Berisford in 1905.

Theo. D. Casto, D.D.S.
Philadelphia, Pa.
1870–1949

Fellowship conferred in 1933.

Graduated from Philadelphia Dental College in 1895.

Past-President, Academy of Stomatology; Past-President, Alumni Association, Temple University School of Dentistry.

Member, American Soc. for the Promotion of Dentistry for Children; Pennsylvania State Dental Association; American Dental Association.

W. T. Chambers, D.D.S.
Denver, Colo.
1886–1949

Fellowship conferred in 1922.

Graduated from Pennsylvania College of Dental Surgery in 1886.

Past-President, Colorado State Dental Association; Past-President, Denver Dental Association

Former Vice-President, National Dental Association.

Chas. B. Coleman, D.D.S.
Poplar Bluff, Mo.
1873–1949

Fellowship conferred in 1938.

Graduated from Marion Simms Dental College in 1897.

Past-President, Missouri State Board of Dental Examiners; Past-President, Missouri State Dental Association; Past-President, Southeast Dental Society.

Frederick Joseph Conboy, D.D.S.
Toronto, Can.
0000–1949

Fellowship conferred in 1942.

Graduated from Royal College of Dental Surgeons in 1904.

Past-President, Canadian Dental Association; Past-President, Ontario Dental Association; Past-President, Toronto Dental Educational Society.

Robert C. Craven, D.D.S.
(Regular Army)
1892–1949

Fellowship conferred in 1943.

Graduated from University of Michigan School of Dentistry, 1916.

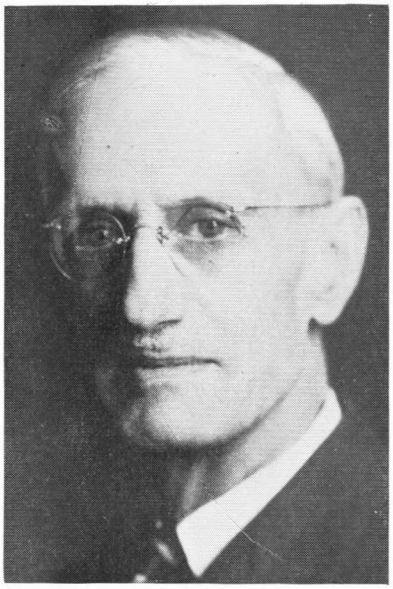
Member, District of Columbia Dental Society; Bolivia Dental Society; Canal Zone Dental Society.

Hugh S. Cummings, M.D.
1869–1948

Honorary Fellowship conferred in 1932.
Graduated from University of Virginia Medical School, 1893.
Past-President, Association of Military Surgeons; Past-Pres., Southern Medical Association; Past-President, American Public Health Association.
Former Vice-President Health Section, League of Nations.
Former Surgeon General, U.S.P.H. Service.

Henry A. Delaney, D.D.S.
Allaston, Mass.
1888–1949

Fellowship conferred in 1948.
Graduated from Philadelphia Dental College in 1910.
Former Chief Dentist, U. S. Veteran's Administration.



Chas. W. Digges, D.D.S.
Columbia, Mo.
1881–1948

Fellowship conferred in 1945.

Graduated from Washington University School of Dentistry in 1902.

Past-President, Missouri State Dental Association; Past-President, North Central District Dental Society.

Member, Missouri State Board of Dental Examiners.

G. Walter Dittmar, D.D.S.
Chicago, Ill.
1872–1949

Fellowship conferred in 1922.

Graduated from Northwestern University Dental School in 1898.

Past-President, Chicago Odontological Society; Past-President, Illinois State Dental Society.

Member, Texas State Dental Society; West Virginia State Dental Society; Mississippi Dental Association; Chicago Dental Socety; American Institute of Dental Teachers.

Julio Endelman, D.D.S.
Los Angeles, Calif.
1879–1948

Fellowship conferred in 1921. One of the Founders of the American College of D.

Graduated from University of Pennsylvania Dental School, 1900.

Past-President, Southern California State Dental Association; Past-President, Los Angeles County Dental Society.

Member, California State Dental Association; Odontological Society of Chile, S. A.

Former Dean, University of Southern California School of Dentistry.

Carl O. Flagstad, D.D.S.
Minneapolis, Minn.
1888–1949

Fellowship conferred in 1932.

Graduated from University of Minnesota School of Dentistry in 1911.

Past-President, Minneapolis District Dental Society.

Member, Minnesota State Dental Association; American Dental Association.

William E. Goepper, D.D.S.
Louisville, Ky.
1888–1949

Fellowship conferred in 1925.

Graduated from University of Louisville School of Dentistry, 1913.

Past-President, Kentucky State Dental Society; Past-President, Louisville District Dental Society.

James Allen Graham, D.D.S.
San Francisco, Calif.
1880–1948

Fellowship conferred in 1928.

Graduated from University of Iowa, College of Dentistry in 1908.

Member, National Society of Dental Prosthetics; California State Dental Association; American Dental Association.

George F. Haynes, D.D.S.
Laurel, Miss.
1878–1948

Fellowship conferred in 1939.

Graduated from Univ. of Tennessee, Dental Department, 1904.

Past-President, Mississippi State Board of Dental Examiners; Past-President, Mississippi Dental Association; Past-President, Laurel Dental Society.

Ingolf B. Hauge, D.D.S.
(Regular Army)
1903–1949

Fellowship conferred in 1944.

Graduated from University of Minnesota School of Dentistry, 1928.

Honorary member, San Antonio Dental Society; San Francisco Dental Society; District of Columbia Dental Society.

Timothy Heatwole, D.D.S., M.D.
Baltimore, Md.
1865–1949

Honorary Fellowship conferred in 1940.
Graduated from University of Maryland School of Medicine, 1897.
Graduated from University of Maryland School of Dentistry in 1895.
Past-President, Maryland State Dental Association.
Member, Baltimore City Dental Society.
Honorary member, North Carolina State Dental Society; Virginia State Dental Society; West Virginia State Dental Society.

Forrest W. Huntington, D.D.S.
Kansas City, Mo.
1892–1949

Fellowship conferred in 1948.
Graduated from University of Kansas City Dental School in 1929.
Member, American Dental Association; Missouri State Dental Association; Kansas City District Dental Society; American Chemical Society; National Educational Association; American Men of Science.

Jorgen Peter Justin, D.D.S.
Milwaukee, Wis.
1895–1948

Fellowship conferred in 1938.

Graduated from Marquette University Dental School in 1922.

Past-President, Milwaukee County Dental Society.

Member, American Dental Association; Wisconsin State Dental Society.

Glenn D. Lacey, D.D.S.
Dallas, Tex.
1894–1948

Fellowship conferred in 1938.

Graduated from University of Minnesota School of Dentistry in 1916.

Member, American Dental Association; Texas State Dental Association; Dallas County Dental Society.

John J. Lusardi, D.D.S.
Jersey City, N. J.
1898–1948

Fellowship conferred in 1944.

Graduated from University of Maryland School of Dentistry in 1925.

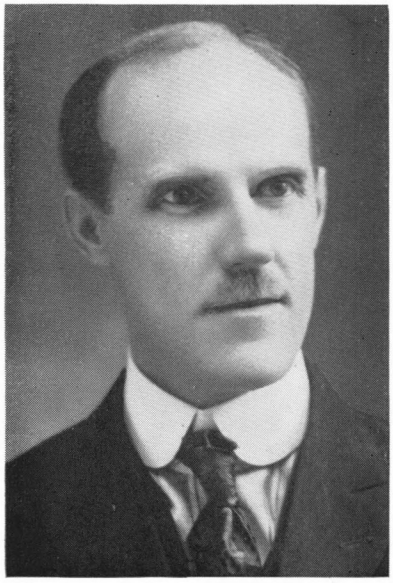
Member, Hudson County Dental Society; New Jersey State Dental Society; American Dental Association; American Society for Advancement of General Anaesthesia; American Society of Oral Diagnosis.

Harry M. McFarland, D.D.S.
Kansas City, Mo.
1879–1949

Fellowship conferred in 1938.

Graduated from Kansas City Western Dental College in 1902.

Past-President, Kansas State Dental Society; Past-President, First District Dental Society; Past-President, American Society of Oral Surgeons and Exodontists; Past-President, Wyandotte County Dental Society.



William A. McFarlane, D.D.S.
Waukesha, Wis.
1878–1948

Fellowship conferred in 1939.
Graduated from Milwaukee Dental and Medical School around 1912.
Past-President, Waukesha Dental Society.
Member, Wisconsin State Dental Society; American Dental Association.

Paul Joseph McKenna, D.D.S.
Springfield, Mass.
1893–1948

Fellowship conferred in 1938.
Graduated from Tufts Dental School in 1918.
Past-President, Massachusetts State Dental Society; Past-President Springfield Dental Society.
Member, New England Dental Society; Northeast Dental Society; American Soc. of Orthodontists; New York Society of Orthodontists; Springfield Academy of Medicine.

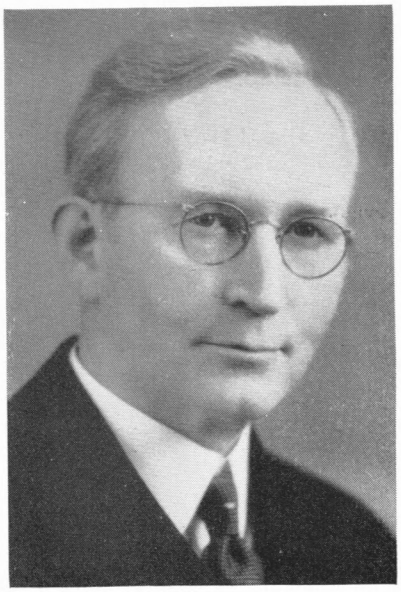
Patrick Vincent McParland, D.D.S.
Pittsburgh, Pa.
1878–1949

Fellowship conferred in 1929.

Graduated from University of Pittsburgh, School of Dentistry in 1904.

Past-President, Odontological Society of Western Penna.; Past-President Pennsylvania State Dental Society.

Member, American Dental Association; American Association of Dental Schools.



Philip Thomas Meaney, D.D.S.
Portland, Ore.
1885–1949

Fellowship conferred in 1943.

Graduated from North Pacific Dental College in 1913.

Past-President, Oregon State Dental Association.

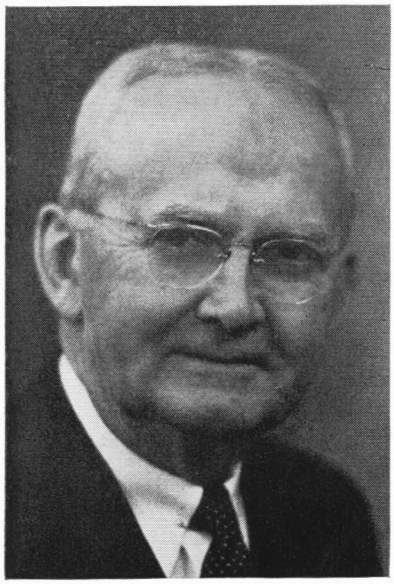
Member, American Dental Association, American Association of Orthodontists; Pacific Coast Society of Orthodontists; Portland Academy of Dentistry.

Robert T. Miller, D.D.S.
Muncie, Ind.
1881–1948

Fellowship conferred in 1945.
Graduated from Northwestern University Dental School in 1903.
Past-President, East Central District Dental Society.
Member, American Dental Association; Indiana State Dental Association.

Sydney Robotham Miller, M.D.
Baltimore, Md.
1883–1949

Honorary Fellowship conferred in 1940.
Graduated from Johns Hopkins University in 1910.
Past-President, American College of Surgeons.
Member, American Medical Association; American Climatological and Clinical Association.



Charles Willett Mills, D.D.S.
Chillicothe, Ohio
1872–1948

Fellowship conferred in 1931.

Graduated from Ohio College of Dental Surgery in 1892.

Past-President, Ohio State Dental Society; Past-President, Ross County Historical Society.

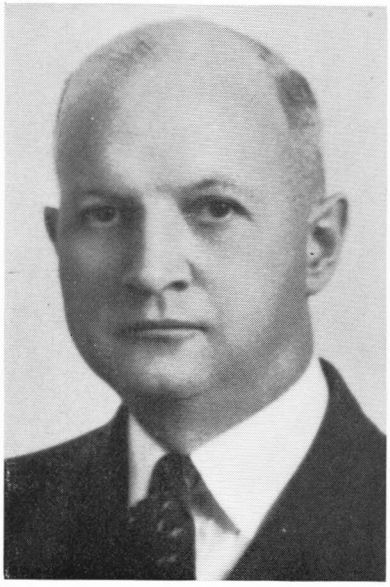
Member, Ohio State Dental Soc.; Northern Ohio Dental Soc.

Robert H. Murphy, D.D.S.
Macon, Ga.
1898–1949

Fellowship conferred in 1938.

Graduated from Atlanta-Southern Dental College in 1922.

Past-President, Sixth District Dental Society; Past-President, Alumni Association; Atlanta-Southern Dental College.



Elmer Chas. O'Connell, D.D.S.
(Regular Navy)
1891–1948

Fellowship conferred in 1945.

Graduated from College of Physicians and Surgeons, A School of Dentistry, 1917.

Member, California State Dental Association.

Former Member, Virginia State Dental Society; Rhode Island Dental Society; New York State Dental Society; Washington State Dental Society.

Alphonse Patrick O'Hare, D.D.S.
St. Louis, Mo.
1890–1949

Fellowship conferred in 1937.

Graduated from Washington University Dental School in 1919.

Past-President, St. Louis Society for Dental Science; Past-President, Washington University Dental Alumni Association.

Former Vice-President, American Full Denture Society.

Luther M. Parsons, D.D.S.
Baltimore, Md.
1873–1949

Fellowship conferred in 1938.

Graduated from Baltimore College of Dental Surgery in 1893.

Past-President, Maryland State Dental Association.

Member, Baltimore City Dental Society; Dental Surgeons Club of Baltimore.

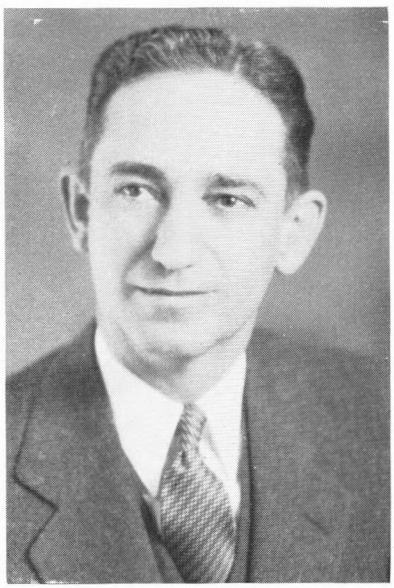
Wilfred H. Robinson, D.D.S.
Oakland, Calif.
1882–1948

Fellowship conferred in 1930.

Graduated from College of Physicians and Surgeons, A School of Dentistry, 1908.

Past-President, Alameda County Dental Society; Past-President, California State Dental Association.

Member, Pacific Coast Conference; American Full Denture Society.

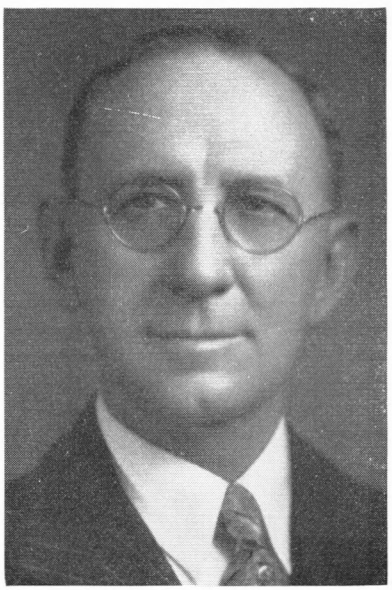


Frank G. Rohde, D.D.S.
Columbus, Neb.
1896–1948

Fellowship conferred in 1940.
Graduated from Creighton University Dental School in 1918.
Member, American Dental Association; North Nebraska Study Club.

William K. Slater, D.D.S.
Knoxville, Tenn.
1867–1949

Fellowship conferred in 1938.
Graduated from Vanderbilt University Dental School in 1892.
Past-President, Tennessee State Dental Association.
Member, National Dental Association; American Association of Orthodontists; Southern Society of Orthodontists.



Harold S. Smith, D.D.S.
Chicago, Ill.
1882–1949

Fellowship conferred in 1924.

Graduated from Northwestern University Dental School in 1905.

Secretary of the American College of Dentists from 1925 to 1949.

Member, American Dental Association; Chicago Dental Society; Illinois State Dental Society, Council on Dental Therapeutics; American Dental Association.

John Franklin Stephan, D.D.S.
Cleveland, Ohio
1872–1948

Fellowship conferred in 1925.

Graduated from Chicago College of Dental Surgery in 1892.

Past-President of the Ohio State Dental Society; Past-President, Cleveland Dental Society; Past-President, Northern Ohio Dental Association.

Member, National Dental Association; New York Institute of Stomatology; New York Odontological Society.

Alfred Walker, D.D.S.
Miami Beach, Fla.
1876–1948

Fellowship conferred in 1923.

Graduated from New York University College of Dentistry in 1897.

Past-President, Dental Society of the State of New York; Past-President, First District Dental Society.

Member, New York Academy of Dentistry; Fourth District Dental Society of the State of New York.

Frederick W. Webster, D.D.S.
Lincoln, Neb.
1884–1948

Fellowship conferred in 1938.

Graduated from University of Nebraska College of Dentistry in 1909.

Past-President, Nebraska State Dental Association.

Arthur F. Weeks, D.D.S.
Portland, Ore.
1887–1949

Fellowship conferred in 1934.

Graduated from North Pacific College of Oregon in 1911.

Past-President, Portland District Dental Society; Past-President, Oregon State Dental Association.

Let us not concern ourselves
About how other men do their duty,
But concern ourselves about
How we shall do ours

—Lyman Abbott

AMERICAN COLLEGE OF DENTISTS

TRI-STATE SECTION[1]

Convocation

ROBERT S. VINSANT, D.D.S., *Memphis, Secretary*

CONTENTS

THE DEMANDS WHICH HAVE BROUGHT ABOUT OUR MODERN PUBLIC HEALTH MOVEMENT

C. J. SPEAS, D.D.S., *Nashville*

Many of us do not realize that Public Health, as we know it today, although quite young, is also basically quite old, its beginning is very old and its founders, long since dead.

The word "movement" in my title may remind you of the scheme of a symphony, and actually in the development and recurrence of certain themes to a rising cresendo, its history is in many ways similar to the organization of a symphony, or symphonic poem. The setting has been for the most part, in the United States, and the opening theme centers around the City of Boston, where the first phase of our Public Health program in this country had its meager beginning. It is well to think of Public Health in this country, as being derived from three great "Movements" or "Eras". The word "Era" perhaps, is more applicable than "Movement".

Consider the first Movement or Era I., as beginning with a period prior to or between the years 1850 and 1870. Consider Boston

[1] Arkansas, Mississippi and Tennessee.

a hundred years ago and forget for a while our modern cities, automobiles, and other conveniences. Forget what we know in medicine now, and remember only, that prior to 1870 not much was known of Pasteur, or bacteria. Boston was one of our thriving cities. It was visited by people from all over the world. But from a health standpoint no one knew what caused disease nor the spread of disease. Nothing was known of sanitation, and little was known even of cleanliness as we know it now. Man's knowledge of disease itself was very limited by our present standards, and his action then, as now, was determined by the existing knowledge of the day. The treatment of disease was based on superstition, religion or custom, and man acted as he was urged by necessity.

It was customary at one time for people to defecate and urinate in the streets. Ditches were dug along the curbs for the purpose of receiving such excreta. Without machinery, the labor required to bury a dead dog or a horse was so strenuous that such animals were not buried but were allowed to putrefy, usually where death overtook them. There were no provisions made for the disposal of the refuse of the fishing industry or the slaughter house, and hides were tanned for leather without any regard for the atmosphere of the community.

Disease was a frequent visitor in the form of epidemics and plagues. People died in droves. Survivors were afraid to handle the bodies. In many instances, whole families died with no one to dispose of the remains. In any case, the burial of the dead was a haphazard procedure and was associated with mortal fear of contracting disease. Human bodies decayed and added to the stench. With an east wind blowing, the City of Boston could be smelled as far west as Worcester—a distance of some seventy miles.

In conditions such as these, and in the face of man's ignorance concerning disease, it seems quite logical that society would resort to some means of defense that seemed logical to it, at the time. And so it came to pass that during the epidemics great bonfires were lighted on the outskirts of the city, especially along highways leading to and from the towns. The fires were supposed to drive off evil spirits. Witches were caught and killed and people fled from the city or camped in its outskirts until the epidemic died away.

Without knowing it, however, much was accomplished by these bonfires in the way of what we now call quarantine. The fires

warned travelers of the impending danger of disease and caused them in many instances to camp far out from the city until the epidemic had subsided.

However, there came out of this chaos one man who can be given credit as the father of Modern Public Health. He was not a physician. Rather small of stature but mighty of mind, Lemuel Shattuck, inaugurated a one-man campaign. It originated with his profound interest in the number of people who died in the City of Boston within a year, and in the condition responsible for this mortality rate. Shattuck was a mathematician. Actually, he was a good statistician, although prior to 1870 no one gave much thought to statistics. This man busied himself, day after day, week after week, with the task of going through various grave-yards in the vicinity of Boston where he read the inscriptions on the tomb-stones, and determined as best he could the cause of death as it was implied by each epitaph. He noted the time of year that various persons had died. Since many of the deceased had no tomb-stones, he befriended the sextons of the churches, and secured from records the causes of deaths. This was a laborious method of accumulating statistics but it was the only way possible at the time. Upon conclusion of this study Shattuck discovered much to his own surprise, that in one year over half the deaths among children, in the City of Boston were due to measles. And in other years the savage child-killer, diphtheria, took an even greater toll.

So far as diphtheria is concerned, I should like to inject one story that I know to be true. It concerns someone now living, who experienced in her early years an epidemic of this disease. In her childhood she attended school at Crown Point, New York, which some of you will recall was one of the points of fortification along the west shore of Lake Champlain during Benedict Arnold's campaign. She was a pupil of a country school numbering 19 children, and at the onset one of the many epidemics of diphtheria which struck Crown Point, local authorities closed the school and kept it closed until the disease had run its course. When classes reopened, "this child" out of all those nineteen pupils, was the only one who survived to return to school. And I might add to illustrate how recently such scourges were prevalent she is still alive and able to describe the experience.

To return to Shattuck, physicians at first opposed him since his

exposure of the terrific death rate from simple measles did not speak too well for the Medical profession.

This statement does not reflect the attitude of the speaker but is a simple statement of facts from history.

About 1850 Shattuck produced a report of his findings which was made available to the public through the press and otherwise. One fact appeared to stand out. People in the filth, stench and misery of cities seemed to be afflicted more often than those living in the wide open country spaces, and it was assumed by him that bad odors from the excreta of man and animals, and from the processes of decay of vegetable and animal matter were responsible for the spread of disease.

The only interest in disease, therefore, was in the environment in which people lived. This Era I have chosen to call Era I, characterized by stenches, bad odors etc., and which also was known as the Miasmic or Stench Era.

After Shattuck published his report, he doggedly fought the local government, the medical profession, big business, and others who opposed him, until he succeeded in having the laws changed so that any decaying vegetable or animal matter or other material creating a bad odor could be declared a nuisance. Laws were instituted to impose a fine for harboring a nuisance. In addition to this, our first governmental agent for public health became a part of the law enforcement machinery of the city. The power of authority was vested in the police department, since at that time there were no departments of health. This enforcement officer was called a Police Sanitary Inspector.

Let me return again for a minute, however, and remind you that such a thing as calcimining came into vogue in Era I. Many of the filthy dwellings could be made to look and smell better by calcimining the walls and ceilings. Some of you in the audience may still remember calcimine. All of us know its present day counter-parts.

Oddly enough, the very wigs worn by such people as George Washington fall into this same category. Many people in those days had head lice and body lice. It was much easier to shave the head clean and wear a wig, in which the lice could find refuge, than it was to wear your own hair and fight these insects in the usual manner. When the wig became so infested with lice as to be unbearable, it was either dropped into boiling water or was thrown away or

burned and a new one obtained. Among the wealthy the wig could easily be replaced. Among the poor the wig was boiled to rid it of lice. Parenthetically the rich could be immediately distinguished from the poor by the rich color of the unboiled wig.

To return to the Police Sanitary Inspector, he was a figure of considerable importance. His appointment was political and carried with it a very good salary. In fact, the office would now be referred to as a sizable political plum. Into it went much chicanery, intrigue and party maneuvering, and it is easily seen that politics is not new in medicine. Actually the Police Sanitary Inspector was the Minister of Health of the day.

It is interesting to note also that a similar set of circumstances occured in England about the same time that Shattuck did his work in this country. A man by the name of Chadwick was going through the same motions in England even though he knew nothing of the work of Shattuck in the United States. Once again it is quite apparent that the thinking of man and the requirements of the population have been pretty much the same over the whole world, with the exception of a few peoples whom we like to think of as being backward.

Toward the end of Era I there was at work another crusader, who through his personal beliefs and convictions, was unknowingly setting the stage for a second great movement in what I have compared to a symphony. He furnished the information which led to the beginning of the Second Era in Our Modern Public Health Movement. His name was Louis Pasteur, and contrary to general belief, he was not a doctor. He was a chemist. About 1870 Pasteur was able to prove, with the help of the work done in the 17th century by Leuwenhoek, a Dutchman, and the contemporary Koch, a German, that bacteria produced disease and that disease was spread from man to man by bacteria. Leuwenhoek, as you will remember, was interested in glass and its development into lenses which would enable man to see what he had never seen before. It remained for Koch, however, to postulate the method by which man could prove that what Pasteur discovered and Leuwenhoek saw through his lenses could be passed from man to animal, and from animal to man, and that these organisms could be put under a microscope again, and identified as specific disease-producing agents. These discoveries exploded all the beliefs that had become so well estab-

lished in Era I. Think of the tremendous medical upheaval that must have resulted from the work of Pasteur. Medicine had barely succeeded in swallowing the bitter pill forced on it by this little New England statistician Shattuck, when like a bolt out the blue, a chemist in France threw a veritable bomb shell into the medical thinking of the day with his discovery of bacteria. All of you know of the pathetic drubbing taken by Pasteur at the hands of the medical profession.

Era II is known as the Golden Age of Bacteriology, or the Bacteriological Age. Some years after Lister and others had proved experimentally the effect of these organisms and the medical profession had reluctantly accepted the existence of bacteria, great advance was made. This acceptance naturally became widespread and man as a whole benefited greatly. However, as is often the case, someone, and I have in mind the Police Sanitary Inspector, was in for a general readjustment. A hyperdeveloped olefactory appendage was no longer considered good for twenty clams a week, no matter who the Mayor might be. The work of Pasteur was highly publicized and although the people learned slowly as is exemplified in the stories of Edward Jenner, an Englishman, who is the father of our modern method of vaccination against smallpox, they did learn, and as they learned the Police Sanitary Inspector, although not completely uprooted, was grievously badgered. One might think also of Era II as being an age in which we became interested, in better training of the people, who imposed health restrictions, upon a town, a state or a nation.

Health Departments in cities and counties and some states were established. These Health Departments were and are now controlled by a State Board of Health or a County or City Board of Health as the case may be. These segments of government were given authority to control the activities of the people in such a way as to protect the health of all the people. Legislation necessary to create such a board, and such a department, came as the result of the request of all the people, and so we learn that as a people come to understand, governments must recognize their demands.

Many trained individuals came into the Health Departments of which the first active workers were the bacteriologists. Furthermore it was necessary for someone with a training in engineering

to be brought into governmental office because we now knew that the bacteria causing typhoid fever could be transmitted from one man to another through drinking water, and the improper disposal of huma excreta. The office of Police Sanitary Inspector, who formerly had his authority from the Police Department, was remolded into what we now know as a Sanitary Engineer. And if you believe today that a Sanitary Engineer does not have almost the authority of the Police Department, then try building a privy that doesn't meet specifications in a restricted locality. This man now is a well trained engineer, who also understands bacteriology and above all else, understands law enforcement.

Now to enumerate some of the other helpers, and at the same time point out the great strides that were taken from a health standpoint in Era II, note the following. In the control of yellow fever the physician discovered for the first time that he could not function alone but only as one of a team. He not only needed the sanitary engineer but he needed someone who understood insects, the entomologist. Thus entomologists were added to the staff of the department. In such a disease as psittacosis (Parrot Fever) a man who understood birds and their habits was needed, and so the ornithologist was added. The spotted fever, and many other diseases that are borne by animals that we eat or use as beasts of burden, made it necessary to include also the veterinarian, and in this campaign on the part of man to rid himself of the scourge of disease he has relied on the Press to publicize and to inform the people that they might act in a body through their legislature to make it necessary to do such things as pasteurize milk, dispose of garbage, properly handle human excreta and otherwise control the environment that effects man in his daily life. You will note that in Era II, we still clung to an interest only in the environment. We established good sources of drinking water, we built a modern sanitary privy or furnished other means of disposing of human excreta, we cleaned up the slaughter house, and our streets, and made our cities clean, and relatively wholesome smelling places for human beings to live.

Such men as Walter Reed, who gave his life in the fight against yellow fever, and basically was the man who made possible such miraculous achievements as the building of the Panama Canal,

characterize this Era. There was, however, another and greater movement yet to come, a third Era.

In 1918 at the beginning of World War I about two million men were examined for military service. By this time man had become proficient in the tabulation of statistics. During that war our findings were tabulated and our statistics were collated in such a way that those who evaluated them were literally astounded to discover the tremendous number of men who had to be rejected for military service because of insufficient or unserviceable teeth. Flat feet, poor eyesight, poor hearing, chronic stomach disorders, legs, arms and eyes lost through accident and a myriad of physical defects made it necessary to reject a large part of the population. We were beginning to work a little faster, however, and we were beginning to accept facts from authorative sources much more quickly than we did in the days of Lemuel Shattuck, Chadwick and Pasteur.

In the 1925's President Hoover called representatives into the White House in Washington in what was known as "The White House Conference". The White House Conference was a representative segment of the United States, including members of parent teacher's association, women's clubs, the school system, physicians, dentists, nurses, and members of labor unions. This group descended upon the White House armed with the information that more men were turned down because of physical defects than were killed during the entire military campaign. We knew enough about disease and for the first time the physician was able to state definitely that these physical defects were separate and apart from anything that had occured as a malady of mankind resulting entirely from environment, which was our only interest in public health up to this time. At this point, the interest shifted to include not only environment but individuals. We became interested in the ills of childhood and their sequelae in the form of damaged eyes, hearing, crippling defects etc. We became interested in the appalling number of men, who were of military age and who had defective teeth. Actually we had through this White House Conference, for the first time a chance to go before our President and say to him; "These are the facts; what are you going to do about them?" This White House Conference was the first indication so far as the government was concerned, that the people were interested not only in the correc-

tion of physical defects but in locating in society who suffered therefrom. The fact of the matter is, this bringing together of the people and the government ultimately resulted in a movement which finally brought about the passage of the Social Security Act of 1935. It took 15 years, from 1920 to 1935, to create the governmental machinery to provide something for the appalling number of individuals afflicted with these various types of physical defects.

Modern Public Health did not come with any one political leadership. Irrespective of political parties it was and should have been obvious even as far back as 1918, if we had taken into account a running story of what had gone before. Today in our Modern Public Health Departments we have not only the physician, the bacteriologist, the entomologist, the orithologist, the sanitary engineer, the veterinary, the nurse, and some others, but we have also added the dentist (mind you) and the school teacher, even a health educator, the research worker, and one who now acts as an administrator, the latter may have none of the distinctions named above, other than a good education and the physical fitness to be able to coordinate for the benefit of the public all of the activities of this army of specially trained people. This person is known as a Public Health Administrator. On a national basis, he has for many years been called the Surgeon General.

If a fourth Movement presents itself, as one would expect, the development will not be in the nature of something new but will continue as still another Era. As we have travelled from one movement to the next, one significant fact today is outstanding, the members of the healing arts have become the leaders and sources of health information for the people. The people look to them today for information, for guidance, and for deliverance from the evils of disease. The truly qualified practitioner has changed and looks to the chemist, the bacteriologist, the research worker, the psychiatrist and to other healing arts allies, for scientific information that will allow him to correctly inform the people. If the people will but listen to him this fourth Movement of Era can produce a near Utopia in the preservation of a healthy human existence. And if we as doctors can unify this effort as well as the people have been able to unify their efforts in the past, the people will listen. The doctor

will be heard because our Modern Public Health Movement is not something new but is merely a continuation of something very old, man's undying attempt to rid himself of the ravages of disease.

BIBLIOGRAPHY

1. *Rural Health Practice*, Mustard, Harry Stoll. New York, The Commonwealth Fund; London, H. Milford, The Oxford University Press, 1936.
2. *Preventive Medicine and Public Health*, Smillis, Wilson G. New York, The MacMillan Company, 1946.
3. *Public Health Administration in the United States*, Smillis, Wilson G. New York, The MacMillan Company, 1947.
4. Lectures, P. H. Administration, Nathan Siani, University of Michigan, Ann Arbor, Michigan. Summer 1938.

PUBLIC HEALTH DENTISTRY IN TENNESSEE

CARL L. SEBELIUS, D.D.S., M.P.H., *Nashville*[1]

Public Health Dentistry in Tennessee may be described as a strong dental profession and an excellent health department working together with others toward the improvement of the dental health of the people of the State. Dr. R. H. Hutcheson, Commissioner, Tennessee Department of Public Health, and Dr. Oren A. Oliver, Chairman of the Tennessee Public Health Council, as well as many dentists, health workers, and others, have made for an active program with a maximum of cooperation.

In a discussion of Public Health Dentistry in Tennessee, it would be relatively easy to list in numerical order many activities which can be presented to you with pride. In the few minutes which are available, however, I do wish especially to emphasize the fact that, even though the Tennessee program is relatively complete in structure, it is most inadequate. Today, we are barely scratching the surface of the unmet dental needs of children.

The present full-time staff of the Dental Hygiene Service consists of a director, four regional dental officers, a dental hygiene consultant, and a dentist for the Negro schools of West Tennessee. Other active participants are the 136 dentists in private practice from 47 counties who participate in the cooperative dental program. Last

[1] Director Dental Hygiene Service, Tennessee Department of Public Health, Nashville Tennessee.

fiscal year, these dentists spent approximately 10,000 hours performing 44,000 dental operations for approximately 14,000 children.

It is thought that few states have developed a staff training program equal to the one in Tennessee. For instance, since 1936, three dentists have attended the course for health officers given at Vanderbilt University Medical School, and seven dentists and one dental hygienist have been sent for training in the field of Public Health Dentistry at the University of Michigan School of Public Health at Ann Arbor, Michigan.

The department has, also, cooperated with the Tennessee State Dental Association in the promotion of the annual postgraduate dental seminar program. Approximately one third of all practicing dentists in Tennessee annually attend the Seminar. The course usually consists of ten hours of seminar instruction conducted in approximately eight centrally located areas. Plans are now underway for the eighth to be conducted the coming year.

In 1937, when the Dental Hygiene Service of the Tennessee Department of Public Health was established, the Public Health Council set forth the following long term objectives which have served as a guide in the organization and conduct of the program:

1. To promote a better understanding among all age groups of the necessity for preventive as well as corrective dental care in the younger age groups and of the relative value of such services in the prevention of disease and the conservation of health.
2. To provide, insofar as possible, certain emergency and important dental services for preschool and school children whose parents are otherwise unable to secure these services.

Number two above has been carried out primarily through the development of what has been termed the cooperative dental program. Through this program, dental services at the local level are furnished by and in the community by local dentists to those children who could not otherwise obtain dental care.

It has been the experience of members of the Service that there should be no blueprint program since planning a dental program at the local level is so important. We need to understand more thoroughly the dental needs of the community, then take inventory of methods for meeting these needs. In the development of a dental

program, it is essential that the dentists, school and health officials, lay workers, and other organizational groups be included, and it is important that there be good leadership. It is with much satisfaction that in such areas as Memphis, Knoxville, Chattanooga, Murfreesboro, Paris, Greeneville, Kingsport, Morristown, Oak Ridge, Bolivar, McMinnville, Maryville, Shelbyville, Lewisburg, and many other places the dentists have been most instrumental in planning their own program. The process of working out, coordinating, and developing plans to meet such needs should take place in all of our program planning. In the development of the cooperative dental program, such a procedure is usually followed.

The physical setup for treating children varies in different communities. The time given to cooperative work may vary from two half-day periods per month to two whole days per week. In some cases the dentists work in their offices while in other localities the cooperative work is done in permanently equipped clinics set up jointly by the local health department and the state department. Several years ago, the department purchased ten Senior Ritter Units from the War Assets Administration. These units have now all been placed on loan where local groups have furnished the other necessary equipment. In other places, the participating dentists work with portable equipment furnished by the State Health Department. This equipment consists of an Archer chair, Dumore motor complete with stand, and a Pelton operating light. The equipment is set up in the school and is most often used by recent graduates. The Department of Health has purchased approximately fifteen of these outfits during the past several years.

The dentists who participate in the Tennessee cooperative program are paid $4.00 per hour. Of this amount, $2.00 is paid by the local agency and a matching amount by the State Health Department. The $4.00 per hour is the fee established by the Tennessee Public Health Council for part-time medical and dental service.

Dental clinics are being established in hospitals and health centers being built under the provisions set forth in the Hill-Burton Act. For example, there are ten units either scheduled or have been placed in the four regional tuberculosis hospitals. The Memphis hospital which is already built contains four of these units. Four clinics are included in the plans for the first four combination hos-

pital-health center and one clinic in the first five of the general hospitals.

Special projects have also been an important part of the program of the Service. Statistical records have been kept of all children who have received dental examinations; studies have been conducted which show the prevalence of dental caries rates by race and section; an absenteeism study in Tennessee industrial plants caused by diseases of the teeth and gums was reported to help evaluate industrial dental health problems; a five-year time and treatment study was completed in Pickett County; an x-ray study was conducted in Lake County to show the difference between oral and bite wing x-ray examinations; a dental health animated-cartoon sound motion picture in technicolor, "Winky, the Watchman", was produced for the department in cooperation with the U. S. Public Health Service; and in 1947, sodium fluoride in packages containing enough of the chemical to make eight ounces of a two per cent solution was made available to all Tennessee dentists without cost to them.

There have been several research and demonstration programs conducted in cooperation with the U. S. Public Health Service. A research project has just been completed in Chattanooga-Hamilton County by the U. S. Public Health Service. The project was conducted to test variables in the use of fluorides applied topically to teeth of children. A white fluoride team, consisting of a dentist, two hygienists, and a clerk, was assigned to Tennessee by the U. S. Public Health Service to give topical fluoride demonstrations beginning in December, 1948. A month previous to the white team's assignment, a Negro fluoride team was assigned on a part-time basis to conduct similar demonstrations in Negro schools. These fluoride demonstrations have been exceptionally well received and it is thought that such a procedure will in the future become a part of most preventive dental health programs. Since there is a possibiity that fluoride artificially applied to municipal waters will effectively reduce dental caries, the Tennessee Public Health Council on November 11, 1949, approved a procedure which municipalities will need to follow if the chemical is applied to their water supplies.

There are now in progress in Tennessee two special projects in

which the U. S. Children's Bureau, in cooperation with the State Health Department, actively participate. The first is the postgraduate program in 'Dentistry for Children' at the University of Tennessee School of Dentistry and the second is a pilot program which integrates dentistry in the health service given children by the department of Pediatrics at Meharry Medical College.

A major activity of the Dental Hygiene Service of the State Health Department is the dental demonstration program which serves well as a means of offering visual fundamental instruction to preschool and school children, especially in rural areas. A staff member is usually assigned to a county health department for a period of approximately two weeks. The program consists primarily of one-day demonstrations of dental health education in schools. The program is usually opened by a dental health talk and the showing of a motion picture. The second phase of the day's program is a series of dental examinations, mainly of those children whose parents are present. Models and illustrations are used to put over important points. The third part, the clinical demonstration, is somewhat spectacular and of a popular nature. A previously selected group of children serve as dental patients in a portable dental chair. Each child in turn serves as the patient while others, a few at a time, are invited to stand by the chair and watch. The primary purpose of the demonstration program is to provide an educational experience for the children, teachers, parents, and others who may be reached. Such an experience, to be most effective, should have as much 'follow-up' as possible.

The teachers, nurses, health workers, and dentists can be a most potent force in dental health education if they possess a knowledge of dental health facts. It has long been felt that these groups, in their comparatively large numbers, are the logical groups for the dissemination of dental health information. Since the first workshop on health conducted in June, 1945, at the University of Tennessee in Knoxville, an effort has been made to have a full-time dental representative at all the major workshops. Dental Health programs are, also, oftentimes the subject for discussion at staff conferences conducted by county health departments.

No better proof can be offered as to the commendable attitude of the Tennessee dental profession itself than a series of recommen-

dations offered by the delegates of the Tennessee Dental Workshop conducted by the Tennessee State Dental Association and adopted by that group as of May 15, 1949, at Knoxville. These recommendations are now accepted as directives for carrying out dental activities in Tennessee.

The House of Delegates of the American Dental Association at its 90th annual session in San Francisco adopted a statement setting forth basic principles for a dental health program for the community, state, and nation.

The principles adopted by the American Dental Association which should govern dental health program planning at the State level are as follows:

The State Program

The State dental health program should be developed within the broad framework of policies established by the dental profession through the state dental society and the American Dental Association. The right of determination on all points which vary from State to State should be reserved to the individual States.

General Policies: The State dental health program should be developed specifically after a consideration of the thirteen points outlined in the national program of the American Dental Association.

Grants-in-aid: Grants-in-aid should be considered as an acceptable method of supporting state dental health programs provided that the right of the State to adapt any program to meet its own needs is safeguarded.

Dental Health Inventory: In order to formulate the objectives, principles and policies for a statewide program based primarily on community dental health programs, provision should be made for the examination and analysis of dental health needs, for an appraisal of resources available for meeting those needs and for determination of the methods and means for utilizing and supplementing those resources.

Dental Health Conferences: Dental health conferences, sponsored by the state dental society and the state health department, are tested and successful devices for making a dental health inventory and for planning a statewide program based on prevention of dental

disease, dental health education and dental care especially for children.

Continuing Education for Dentists: At the state level, the dental and other professional schools should be encouraged to coordinate their undergraduate teaching programs with the general program of dental health service in the state. Short postgraduate courses should be made available regularly to practicing dentists, and an extension teaching program may be organized to reach dentists in areas more remote from the dental school. Where there is no dental school, a statewide program of annual seminars or "refresher" courses may be developed cooperatively by the dental society and the health department, and conducted in the various districts, drawing qualified teachers from outside the state if necessary. Library service also should be made available to dental practitioners, so far as is practicable.

Courses of Study for Teachers: Opportunities should be provided for teachers in training to learn dental health facts and methods for integrating dental health subjects in routine classroom instruction in elementary and secondary grades. Every teachers' college should include in the curriculum a course of study devoted to dental health.

Experiments and Demonstrations: Experiments and demonstrations designed to teach or disseminate new facts of value in providing dental health care should be encouraged by the state provided that there is approval by the state dental society of the type and duration of the experiment or demonstration.

In order to do these things, the dental profession will have to be aggressive since the profession should point the way for meeting the dental needs. We need not be afraid of establishing precedents if they are basic and right. We must not remain static, but rather endeavor at all times to expand our activities and programs which will lead toward the approved program recommended by the profession itself.

In Tennessee, we have been opportunists during the past several years. Money to expand the dental program has been made available from many sources, many times from budgets which were set up for purposes other than dental health and then not spent. Official budgets at this time are strained, and unless we have additional funds to expand services, little progress is going to be made during

the next several years. The profession should certainly lend active support in obtaining these needed funds. Only through working together can we wish to accomplish the goals which we have set forth to achieve. It is not so much what we have done in the past that counts, but rather what are we going to do to reduce effectively the dental needs of the people, especially those of our child population?

Discussion: E. Jeff Justis D.D.S., *Memphis*[1]

In reading over Dr. Sebelius's paper "Public Health Dentistry in Tennessee," it seemed that reiteration of what he had to say in the first paragraph, namely, "Public Health Dentistry in Tennessee may be described as a strong dental profession and an excellent health department working together with others toward the improvement of the dental health of the people of the State" this discussion would be complete. However, I would like to emphasize that we have in OUR State Dental Society, State Health Department, and Dental Health Division, complete harmony. Each working with the other to improve the service to the public without instituting a socialized health program.

The State Health Department is fortunate in having as its Dental Director, Dr. Sebelius, and Dr. Oren Oliver as Chairman of the Tennessee Health Council. These men are largely responsible for:

1st. The present staff who constitute the Dental Division—which we agree with Dr. Sebelius is inadequate!

2nd. The training program for its personnel

3rd. The Postgraduate seminars conducted jointly by the Health Department and the Tennessee State Dental Society

4th. The objectives, preventive dentistry and emergency treatment for the indigent children. This is sound and as far as I know was promulgated before the American Dental Association came out with its six objectives. Along with this is the local option plan as regards the type of program to be instituted and paid for. No section can take offense if you let that section arrange its own program. This is as it should be and the Health Department will not insist on any type program unless approved by the district societies.

[1] Secretary-treasurer, Tennessee State Dental Association.

5th. The establishment of dental operating rooms in all State Hospitals are the result of the work of those in charge of the Dental Division.

6th. The research and demonstration programs are commendable, however, there has been quite a bit of criticism about the fluoride teams over the country and some of it is justified. It is my opinion that they do more good than harm and should be accepted, especially where there are no strings attached.

The major activity of the Service as stated by Dr. Sebelius is that of dental demonstration programs offering a visual instruction to preschool and school children, mostly in the rural areas. He has very aptly explained this work. It is true that only through preschool and primary grade children can we honestly practice preventive dentistry.

Summarizing what Dr. Sebelius had to say regarding what had to be done and how it was going to be paid for the following facts come to the front:

1st. The profession should be aggressive and point the way for meeting the dental needs

2nd. We must expect our activities and programs to take care of the indigent children and educate the public in preventive dentistry.

3rd. Paying for these projects is a head ache at the present time and unless financial arrangements can be made our programs in Tennessee may become more or less static. The profession must demand an increase in the Health Budget for dental need, in the next Legislature. We should insist on our local health departments upping the appropriation for the dental department, and we as a profession should do our part in aiding the program, by lectures and by teaching preventive dentistry to our child patients. In other words, cooperate in every way possible.

4th. Be not afraid of setting precedents when you are sure they are basic and right. This statement is sound, and as long as our Association and the Health Department work together there is no reason to be afraid. Let each community work out its own program, and accept federal aid as long as it is allocated to be used in promoting health programs, but without federal interference.

MISSISSIPPI MOUTH HEALTH PROGRAM

WILLIAM R. WRIGHT, D.D.S., *Jackson*[1]

The Mississippi Mouth Health Unit was created as an activity of the State Board of Health in January, 1923, and has functioned continuously since that time. The unit is a part of the Division of County Health Work.

Activities are planned and developed with the assistance of the Mississippi Dental Association, county health departments, Federal health agencies, schools, Parent-Teacher Associations, and civic groups.

The Mississippi Dental Association cooperates with the program through the Council on Dental Health, the Sodium Fluoride Committee, county dental chairmen, and the dental member of the Mississippi State Board of Health, who has served since 1926.

The Association helped to create the program and outline its policies and functions. They secure dental legislation and stimulate appropriations for public health. Local dental societies organize and conduct municipal and community programs in cooperation with the state and county health departments.

The mouth health program is both educational and corrective. Education has been promoted for three groups: the staff, dentists in private practice, and the public.

Staff education has been fostered through dental workshops, training in nutrition, health education, topical application of sodium fluoride, and in dental hygiene. Three young women have been trained in dental hygiene and a fourth is now away on a State Board of Health scholarship.

Inservice training for dentists in private practice was made available through observation trips and workshops in other states. Assistance was given district dental societies in presenting out-of-state clinicians. Two sodium fluoride demonstration units have offered excellent opportunities for observation by dentists, and have done a fine job with children, parents, schools and the general public.

The mouth health staff participates in adult education, including the following groups: new public health personnel during their ori-

[1] Dental Director, Mississippi State Public Health Service.

entation; health education and teacher workshops; college hygiene classes; curriculum planning groups; pre-med students; Parent Teachers Associations, and civic clubs. Elementary and high school pupils are reached through assembly and classroom talks, demonstrations, movies, individual mouth examinations and follow-up. News items, broadcasts and films are used, aiming at selected groups and the general public.

The aim of the mouth health activities is to convince the public that healthy mouths are necessary and desirable for both children and adults. The objectives are:

1. To make mouth health activities a real part of the county health department and school programs
2. To supply sound mouth health teaching material
3. To supplement local funds for the correction of dental defects for indigent children
4. To stimulate children to enter school each year with dental certificates showing a record of completed corrections
5. To furnish a 2% aqueous solution of sodium fluoride to dentists on request
6. To assist the Mississippi Topical Fluoride Demonstration Unit loaned by the U. S. Public Health Service

Mouth health activities are conducted by a supervisor, a clerk-typist, and at present, six dental hygienists. These hygienists work full-time in four counties and the remaining three in districts which include a total of 34 counties.

The supervisor of mouth health renders aid when requested by the county health departments and other organized groups; gives school and adult instruction; and stimulates interest on a state-wide basis, coordinating the service with the plans of county health department, the dental profession, public health dental hygienists, and others participating.

Dental hygienists are responsible in their areas for the mouth health programs planned with county health departments, schools, Parent Teachers Associations and other local groups. They inspect mouths, give instruction, make applications of sodium fluoride, participate in studies to determine the needs and progress, and assist in planning and conducting clinics in health departments, schools and dental offices.

The State Board of Health supplements local funds administered by county health departments for dental work among indigent children. The remuneration to dentists is $4.00 an hour, the State Board of Health paying half, and local organizations, the other half. During the last fiscal year, of 78 counties having dentists, 46 counties had 154 dentists participating in this plan. We do not particularly like the plan. We should like to improve or abolish it; but we do appreciate the cooperation of these dentists and of others who are doing work without cost for the indigent.

The other phase of the corrective work, the phase in which the Mississippi program started in 1923, the phase which we hope will grow each year, is that of preserving and amplifying the patient-dentist relationship, and teaching parents to recognize the necessity for regular dental care among children. It has been a great satisfaction to observe that in spite of a reduction in the number of field workers in the past seven years from 16 to 8, and therefore much larger areas for the fewer number to cover, yet, dental certificates presented last year, doubled the number seven years before.

The Mississippi Mouth Health Program has nothing unique or spectacular to offer. Like other states we try to keep up with modern dental public health methods and teaching. Compared with other states, the Mississippi program is cut out of the same material though perhaps, a smaller piece of cloth. Some advantages we may have had over other states are:

1. An early start and a continuous program

2. No consideration could be given the Mouth Health program of Mississippi without including the outstanding contribution made to it by Miss Gladys Eyrich. From the very beginning she was sold on the idea. Her fine background of culture, refinement and education, together with her professional training and experience as a teacher in the Mississippi schools, abundantly equipped her for easy approach to school officials, school children and the public. She worked harmoniously with the dentists of the state. Miss Eyrich's energy and ambition, her broad vision of the possibilities of the program and her willingness to learn and adopt the best methods for procedure, inspired faith and con-

fidence in all with whom she worked. Her work has been recognized and her advice has been sought by workers in other states. Miss Eyrich richly deserves the favor of Honorary Membership in the Mississippi Dental Association, which the Mississippi dentists were happy to confer.

3. An economically handled program, sometimes on a shoe string. The important part was that it never ceased to function

4. An Oral Hygiene Committee since 1925, growing into the Council on Dental Health of a later day

5. We have had continuous and sustained cooperation from Dr. Felix J. Underwood, Executive Officer, and the entire State Board of Health in all phases of our program

6. An early law, and a good law, licensing the dental hygienist.

The first law passed in 1922 was amended in 1928 to permit the dental hygienists "to apply such agents as the dentist may direct for the arrest of dental caries in children's teeth." Of course the authors of this clause had silver nitrate in mind but we were happy to have that law when sodium fluoride applications were recommended. The law also states that "the work of the dental hygienist shall at all times be under the general supervision of the regularly licensed and registered dentists, and must be employed by and working in dentists' offices or in the employ of the State Board of Health or public school boards." Some Mississippi practices which we think helpful are:

1. The certificate from dentist to child to teacher as a record of completed dental work. Like many other good things, it can be abused, but bringing dental certificates to school annually has saved teeth as our DMF index has shown. Compared with a similar survey in a neighboring state, Mississippi with the older program had a slightly higher decay rate, more fillings but fewer lost teeth.

2. Since 1932 every public health worker in Mississippi has been required to have a yearly dental certificate and a complete mouth x-ray every three years. These records are attached to the physical examination sheet given the executive officer each November.

After practicing dentistry for over fifty years and having been

closely associated with a dental public health program for twenty-four years, it would be strange indeed if I had not dreamed and planned in my own mind of a day when dentistry would occupy an undisputed place in the prevention of disease so prevalent in the human family. We did not know why a tooth decayed until Miller, an American-born dentist, then practicing and doing research work in Berlin in 1890, claimed that bacterial film, plaques or pads, allowed to accumulate on the teeth, harbored the agencies that did the damage. Then, in 1904, at the fourth International Dental Congress in St. Louis, Dr. Miller elaborated on his previous findings and furnished proof of the correctness of his theory which has not been disproved to this day. Then came along someone who declared that a clean tooth would not decay. He deserves at least a decent marker, but if he had added that unhealthy gum tissue is never found around a clean tooth, he would have deserved a real monument erected to his memory.

With such basic fundamental facts before us, we should deplore the fact that we, as a profession, have allowed ourselves to be led into confusion by opportunists and commercial agencies who care little about the human element involved. While some of these quick, easy, overnight methods may have some merit, we have yet to learn how much good and how much harm will come from the complacency of the lay mind.

Oral health is a child placed in the lap of the individual dentist, and if he fails to recognize and does not apply the knowledge he has of basic principles involved in tooth decay and gum lesions, but depends on some unproved remedies, he falls far short of what is expected of him. We need to do better prophylaxis. If a clean tooth does not decay or is not lost from gum lesions, why not at least make an earnest effort to keep them clean? Let's learn to clean and save our own teeth, then we can better teach our patients how to clean and save theirs.

My dream will come true when each general practitioner of dentistry considers thorough prophylaxis executed by himself as the most important and beneficial service rendered to his patients, and when there is a specialist in this method of prevention to each community of 10,000 people.

DISCUSSION: (Miss) Gladys Eyrich, *Jackson*[1]

It is good to be in Memphis at a Tri-State meeting again. The Tri-State Dental Meetings which some of you recall were always a source of help, inspiration and pleasure. Since those days public health dentistry has grown in strength and extent. It is gratifying to see the Tri-State FACD recognize the importance of this phase of health and dentistry at their first meeting. You have the men and the power to add substantially to a wider dissemination of information about public health dentistry. This is a service greatly needed.

Probably the most important point in Dr. Wright's paper is that the Mississippi dental program was created with the backing of the dental profession and has continued under its guidance.

Those in Mississippi old enough to know, are proud of the vision and pioneering spirit of the dentists who began early in the 1900's to build public health dentistry. One of these leaders has just spoken to you. Dr. Wright served as a member of the first ADA Council on Mouth Health and Public Instruction. While chairman of the Council he called the organization meeting of the American Dental Hygiene Association at Cleveland, Ohio, in September 1923. At personal sacrifice, Dr. Wright has served as dental member of the State Board of Health for twenty-four years, tactfully binding together the efforts of dentistry, medicine and public health and interpreting them to laymen.

This brief outline of Dr. Wright's work in public health dentistry is mentioned not only to honor him. It is used to emphasize the important fact that some one individual must be in the forefront of every advance, and that public health dentistry on a sound basis in each state is worthy of your sacrifice and sustained devotion.

Second only to the dentists in our activities are the dental hygienists. They do the field work. They are essential to our program in the advancement of healthy mouths. Arkansas and Tennessee, good neighbors, both, have each had a part in the development of the Mississippi dental program. They opened their meetings, seminars and schools to the mouth health staff. They have sent us

[1] Supervisor, Month Health, Mississippi State Board of Health.

clinicians, but the greatest contribution is that Tennessee furnished Mississippi with thirteen of the thirty-three dental hygienists employed by the State Board of Health during the past twenty-five years. It is the sincere hope of all our people interested in dental health that the University of Tennessee will soon re-establish the dental hygiene training school.

Dr. Wright mentioned several objectives of the program three of which are: to supply sound mouth health teaching material; to stimulate children to enter school each year with dental certificates; to assist the Mississippi Topical Fluoride Demonstration Unit.

To supply sound attractive mouth health teaching material is easier now than in the past. You probably have on your office reading tables some products recently produced by Southern states, and later distributed through the ADA. This is a happy solution for states which do not have funds to make the original investment of educators, artists, photographers and printers. Developing attractive material is costly. Your careful reading, constructive criticism, and appreciation of the literature furnished by your State Board of Health will help those who are teaching your patients.

To stimulate children to go to school each year with a dental certificate is an objective which the dentists control, and therefore one which they can make of great value. As Dr. Wright mentioned, we use the certificate as a record of completed corrections. In the seven years past while the number of dental hygienists have been reduced 50% the number of recorded dental certificates have increased 138%. Funds for indigent work have influenced that rise to some extent, but the main point is that once the habit of dental certificates is established, work for children is easier.

The objectives of sound mouth health educational materials and dental certificates are long time objectives. A new one is to assist the Mississippi Topical Fluoride Demonstration Unit. Since February 1949, 5,410 children have been given sodium fluoride treatments in seven towns including 961 by the Negro team. One of the county health officers was so impressed with the work of the white team that he asked for a Negro team writing as follows:

"If the colored demonstration team is half as effective as the

group now operating in Laurel in stimulating public interest in oral hygiene, dental correction, and tooth preservation, they will have taken the most significant step in the advancement of health and hygiene yet taken in the colored schools of Jones County. We all feel that the benefit obtained from this demonstration is far beyond its aim, and that we have, indeed, been privileged to have this group in our schools."

When a demonstration unit reaches your community, be sure to see it at work. You will then realize how the public has taken hold of this partial decay preventive. In some form, it is likely that state and county health departments will use such units, when they can get the personnel. You will go to see a demonstration with an open mind and make your own evaluation. Only through the combined, pooled thinking of research workers and informed dentists can the public health forces and private practitioners keep ahead of public demands for preventive dentistry.

PUBLIC HEALTH DENTISTRY IN ARKANSAS

MARION H. GRAY, D.D.S., *Little Rock*[1]

Any discussion of Public Health Dentistry in Arkansas will involve the work of our State Health Department, therefore some excerpts from their files. I quote, "A Dental Program was inaugurated in accordance with the annual plan and budget. The Director personally interviewed local dentists in the counties chosen at least twice during the quarter for the purpose of selecting a dental clinician and instructing him as to the plan and program. July 1, 1938, a Dental Advisory Committee consisting of three members was appointed by the President of the State Dental Association at the request of the State Health Officer. This committee, in a meeting with the State Health Officer, the Directors of the Bureau of Local Health Service, and the Division of Maternal and Child Health, a group of local dentists representing twelve counties, and a Dental Consultant from the U. S. Public Health Service, laid plans for the Dental Health Program. Dentists were added part-time to the County Health Department of 17 of the 75 counties of the State.

[1] Member Arkansas Hospital Council.

General administrative supervision of the program is provided by the Director of the Division of Maternal and Child Health, acting under the advice of the Dental Advisory Committee. The dental health programs are conducted under the immediate supervision of the Medical Director of the local health departments. Dentists are selected and appointed by the State Health Officer after conference with the Medical Director of the local health department, and the Dental Advisory Committee. They must be members in good standing of the Arkansas State Dental Association. They devote approximately one-half day per week to the public health dental program. They provide their office, equipment, materials, and professional services which are limited to plastic fillings, extractions, and dental prophylaxis for indigent children under $8\frac{1}{2}$ years of age. Some of them provide examinations and conduct dental health education programs.

The type of dental health services rendered by the dentist varies in individual counties—educational services only, clinical services only, and a combination of educational and clinical services. Educational services consist of dental examinations chiefly of grammar school children. Examinations are not yet provided for preschool and prenatal clinics. Findings are discussed with parents, if present, or a report is sent to them. Dental health talks are made to school teachers, school-room classes, and lay adult groups. Motion pictures are used and dental literature is distributed. In counties where no dentist is provided, or where his activities are entirely clinical, the education program is conducted by the Medical Director of the Health Department. Clinical services are limited to indigent preschool, and first and second grade school children under $8\frac{1}{2}$ years of age."

A Director of a sub-division of dental hygiene was budgeted for in January, 1940 and on March 25, 1940, Dr. R. P. Spurlin, Jr. of Berryville, Arkansas was appointed. This program described above was continued until July 1, 1940. At that time it was discontinued and two full-time dental clinicians were employed, effective September 1, 1940. The following are excerpts from the Report of the activities of the sub-division of dental hygiene for the fiscal year, 1941:

"The program as it has operated during the year has consisted

of two interrelated phases or parts, the educational, and the clinical. The educational part has consisted of talks to adult groups such as Parent Teacher Associations and various service clubs, and of school room examinations of children in the lower six grades. It is felt that the school room examinations as they have been conducted have been of educational value. The examinations, of which there were 36,274 in 25 counties, were used to gather some statistical information and to stimulate those children able to pay for dental services to seek the services of their family dentist. Reports from dentists in the counties where the program was presented indicate that a very good response was obtained to this part of the program in every locality visited.

"The clinical phase of the program consisted of corrective work for indigent children under ten years of age. 3,385 children were given 12,093 corrections. These corrections consisted of prophylaxes, plastic fillings of various kinds, and extractions. The clinical work was done in trailers equipped as modern dental offices. It is felt that these trailers are of value in an educational sense in addition to their clinical value.

"The director of this division has been concerned with supplying the dental units, making preliminary preparatory visits to the counties included in the dental program, and has made frequent supervisory visits to each mobile unit. He has further been concerned with the proper administration and correlation of the dental program in regard to other health programs. He has been concerned with the proper reporting and recording of the work carried on by the dental program. The director has had frequent conferences with the Dental Health Advisory Committee of the Arkansas State Dental Association, and has made every effort to keep this committee informed of the manner in which the program is operating. An effort has been made by the director to contact every dentist in every county visited by the program and discuss with these men the plan and purpose of the program.

"During the month of June, 1941, a post-graduate course in Dentistry for Children was conducted for the dentists of Arkansas. Dr. W. J. Pelton, U. S. Public Health Service, and Dr. Ralph L. Ireland, University of Nebraska, College of Dentistry, were the clinicians presenting the course. Two-day sessions were held in the

State at the following places: Rogers, Fort Smith, Texarkana, El Dorado, Jonesboro, Pine Bluff, and Little Rock. One hundred forty three dentists attended these courses, this being approximately one-third of the dentists registered in the State. These courses were enthusiastically received by the dentists attending, and it is believed that the dental health program will benefit from having such a course presented to the dentists of the State."

In July, 1941, two additional dental clinicians and dental trailers were added to the program.

In the summer of 1942 all four dental clinicians and the director were called to the colors, the last in August. All four dental trailers were put in storage, with all the equipment and supplies.

In March, 1946, Dr. Spurlin, the former director was demobilized and rejoined the staff of the State Board of Health. A survey of the availability of dental service for children in the state, and conferences with Dental Directors in neighboring states convinced that the reactivation of the Division was not feasible at that time, as the children would not be able to obtain corrections as needed from private practitioners, and it was impossible to obtain clinicians for the state staff. Dr. Spurlin recommended the training of a Dental Health Educator, which has not been accomplished so far, and resigned to enter private practice. So far the positions of director and clinicians have been created and budgeted, but have not been filled. Funds have been expended for equipment. Considerable equipment and supplies have been furnished both to Little Rock and to North Little Rock. The Junior Auxiliary of North Little Rock approached the North Little Rock Health Department with the offer of assistance for a dental program in the fall of 1948. The State Department of Health loaned the equipment for two chairs and furnished supplies. The North Little Rock Department furnished the clinical service and the Junior Auxiliary provides volunteer service and some supplies. It is known that local programs (without state financial assistance) are going on in Ft. Smith, Van Buren, and Crawford county, Batesville, Star City, Adkins, and in other communities in the state. In 1947 "pilot health programs" were set up in five schools. Five more were added in 1948 and six in 1949. In all of these schools an attempt has been made to organize dental programs through the efforts of the local dentists.

A USPHS Dental Fluoride Team was assigned to Arkansas in October, 1948 and began their first demonstration in a Little Rock elementary school at that time. Concluding their first assignment the team has visited eight areas of the state for demonstrations of the topical application of sodium fluoride to the teeth of school children. A total of 5,121 children received the complete series of four applications in the seven districts on which we have reports. The team is now working in the eighth area. These locations were selected jointly by the State Health Department, the Dental Society, and the USPHS, and are intended to be distributed throughout the five dental districts as equally as possible. In addition to the eight counties already visited, and one scheduled to follow the present location, invitations for demonstrations by the team are on hand from 16 counties that have not yet been scheduled. Five sets of portable chairs and other equipment for a fluoride application program were purchased in the summer of 1949. So far they are in storage awaiting the arrival of a director.

With the employment of a director for the Dental Hygiene Program, the present "Sub-Division of Dental Hygiene of the Division of Maternal and Child Health" will become a full Division, Coordinate with Maternal and Child Health, V. D. control, T. B. control and other divisions in the Bureau of Local Health Services.

For the past thirty years the dentists of Little Rock have been interested in improving the dental health of our school children and a free dental clinic has been operated continuously for this period. From a small beginning and growth through the years, which time will not permit me to give in detail, we have grown to an annual free dental examination for all school children, white and colored, and the necessary work performed for the indigent by a regularly employed dentist in our beautiful public health center. A number of cities over the state have established part-time assistance for their children and the dentists have been generous in giving of their time.

It is perhaps opportune at this time to mention the new hospital program in Arkansas because it has a direct tie-in with dental public health. In 1947 the Governor of Arkansas appointed the writer a member of the Executive Board of the Arkansas Hospital and

Health Service Survey. The function of this group was to make a survey of the hospital and health service needs of our State. Experts were employed to assist and a year was spent in this important work. A study of the questionnaire furnished by the American Hospital Association for the survey showed that the importance of dentistry in the survey had been minimized. I immediately wrote a letter of protest to Dr. Harry Archer, Chairman of the A. D. A. Committee on Hospitals. He agreed with everything in my protest but said that the AHA would do nothing about it. Not to be defeated I was successful in getting unanimous approval of my own Executive Board for a separate dental health survey in conjunction with the Hospital Survey. At the end of the year when the statistics were compiled it showed exactly what I felt it would show—a shortage of dentists in the State where they are very badly needed, very poor if any dental equipment in hospitals and a lack of interest by the dentists in many communities of their school children. Arkansas was the first of all of the States to complete their survey and to make plans to fulfill the health needs of their people The United States Public Health Service was so pleased with our plan that it is now used as a model for the other states to follow. Following the completion of the work of the Survey the writer was appointed a member of the Arkansas Hospital Council. I immediately set to work to see that the importance of dentistry was recognized in the new hospital building program. I feel that any new hospital of any size should be equipped with an operating room for dental surgery. In this effort I met with opposition from my own profession. Strange as it may seem some dentists of the State objected but this objection was overcome when I called to the attention of our State Health officials that the hospitals are being built for generations to come and for progressive dentists now and in the future, not for antiquarians. These operating rooms may also be used for ear, nose and throat work and may be used as public dental health centers in the community. So in all of the new hospitals to be constructed in Arkansas, with the exception of the very small ones, these dental operating rooms will be included. In Texarkana the dentists of that city gave two thousand dollars to equip the dental surgery room in the new St. Michael Hospital. So public

dental health is looking up in Arkansas and our future is bright if we will keep a progressive point of view.

PUBLIC HEALTH DENTISTRY AT THE UNIVERSITY OF TENNESSEE

The Present and Future

JAMES T. GINN, D.D.S., *Memphis*[1]

In recent years there has been a growing interest on the part of both the profession and the public in an enlargement and a more even distribution of oral health care for the American people. Health has come to be regarded as a basic necessity and the conviction grows that social and economic conditions should be so adjusted as to ensure adequate health care for more people. If this object is to be achieved, those responsible for planning dental health programs must be on the alert to guard zealously the high quality of oral health care now available to the American people, while extending the quantity of dental care to a larger number of people.

At no time in its history has the dental profession faced so many and such perplexing problems of far-reaching possibilities. These problems cover a broad range of unsettled situations which require careful study and wise decisions by dental leaders in order to adjust them to the advantage of both the profession and the public.

Dental service in the early years of this century was almost exclusively a reparative service, and the emphasis in dental education was upon technical competence in restorations. As we approach the middle of the century we find that public health dentistry is being emphasized and students are receiving better instructions in this phase of our profession. The students are gaining a broader concept of the problem of dental health needs.

At the University of Tennessee, we are working in terms of increasing the dental manpower, better training in the field of pedodontics and orthodontics, and broadening the viewpoint of our students in giving better service to more people. We believe that

[1] Dean, College of Dentistry, University of Tennessee and Head of Division, Operative Dentistry.

we are not only increasing the quantity but also the quality of our graduates. In terms of quantity we anticipate that in 1950 approximately 110 students will graduate from the College of Dentistry, as compared to less than 40 students in previous years. This is due to the accelerated program which we now have in effect at the University. In terms of quality, future developments in terms of service will answer this question. We are confident that these men will give a full account of themselves in the communities in which they serve.

Any consideration of the supply of dental manpower with a view to increasing the facilities necessary to provide dental care for a greater number of people should be based upon realities and not upon abstract percentages. One should recognize clearly the difference between the potential needs of society for total oral health for all the people and the effective demand being made currently on the profession by those who actually seek dental services. Adequate oral health care for all the people is an ideal, but one that cannot be immediately attained. The effective demand for oral health is not constant. It increases in quantity with increases in population; it will increase in volume with a growing public appreciation of the value of health care. It may rise and fall with economic changes. It has been said that we are better equipped to educate the public to appreciate and seek dental service more rapidly than we are to educate the personnel to take care of this increase in demand for oral health care. At the same time, the profession should attempt to extend the scope of effective demand to include more and more of the total population, with special emphasis upon the dental health of our children. We must look to the future with the idea of serving mankind in a far larger measure than we have in the past. Dental education of the future must be founded upon the basic needs of a changing social order.

No graduate in dentistry has ever entered a more changing and unchartered period than those who are now graduating from our dental schools. It is most interesting as a teacher, to observe students from year to year as they go out to join the army of professional men to give the public a specialized service. They have developed definite ideas about the part they will play in society. Some have built in their imagination a dream-castle in their little

world of "private practice". Others have gained a broad perspective of the needs for more service for more people.

It is my opinion that pedodontics and orthodontics constitute the base for an understanding and an appreciation of Public Health Dentistry. I would like to be personal and give credit where credit is due. Dr. F. N. Weber, a member of our faculty has, for several years been very instrumental in efforts to serve more and more children in the field of pedodontics and orthodontics. He has given his time and energy in an all-out effort to serve more of the children of Shelby County and Memphis. We now have more students in our postgraduate courses of pedodontics and orthodontics than we have ever had before. We have nine students pursuing the post-graduate course in pedodontics and five students in the postgraduate course in orthodontics. We hope to expand our postgraduate courses in other fields very soon.

In addition to the increase in dental manpower, we have made definite plans to offer a Course in Dental Hygiene. We will be able to supply the dentists at the Tri-state area with auxiliary personnel which is sorely needed at the present time.

A course in Public Health is essential in the present-day dental curriculum. In the crowded hours of the dental student we attempt to keep our course in the subject brief and to the point. I believe the student should obtain an appreciation of the full significance of this subject, and gain a working knowledge of Public Health and its principles at the undergraduate level. For the student who is especially interested in Public Health, it is gratifying to note that there are several schools now giving courses at the graduate and postgraduate level. In these courses he is given fundamental training in Public Health with the object of fitting him for a career in Public Health Dentistry.

The best time for introducing formally the subject of Public Health in the undergraduate curriculum is in the Senior year. Our students have had their didactic and basic technical training in Pedodontics and Orthodontics. At this stage of their development they are pursuing the practical aspects of these subjects.

Through the cooperation of the State Health Department, plans are being made to extend our undergraduate instructions to include formal hospital training at the West Tennessee Tuberculosis Hos-

pital. It will give the students the opportunity to learn hospital routine which is essential for the well-trained dentist of today. There is not sufficient opportunity in the college infirmary to make practical application of the fundamental information gained in the basic sciences. The hospital period of training may act as a stimulus to make the student fully aware of the fact that he is taking care of a patient, not just a part. At the same time, more needed services will be provided for those ill, indigent people.

It may be stated with some degree of pride that no other American profession occupies the unchallenged position of world leadership as does American Dentistry. Yet, when one views our position in retrospect and reads the various reports on the potential need for dental care, one is amazed to find that 50% of our children have dental decay at the age of two years according to Davenport; 80% of our children have dental decay at the age of three years; 90% of our children have dental decay at the age of four years, and one out of every four of our children are dental cripples at the grand old age of five years.

Dentistry must take its place in the front line for the fight against the preventable diseases of mankind. An enlightened public is, in greater numbers, demanding that their teeth and the teeth of their children be preserved for more years of usefulness. Public Health has become a peoples' cause. The people of our great nation have become insistant that they be given the benefits of scientific progress in the alleviation of human suffering, in the prevention and control of dental diseases, and in maintenance of healthful living.

Appropriate as a conclusion to these remarks is an article entitled "A Confession" and published in "Health Briefs" of the Tennessee Department of Health. It reads as follows:

"I am a destroyer. I have paralyzed progress and checked civilization. Ofttimes my footsteps are stealthy; my breath poison. I carry anguish as my offering; suffering as my current award.

"The world has been the theatre of my action. Multitudes have quailed at my approach. I am relentless; my heart is stone. I am cruel. I have crippled defenseless children.

"Where I dwell the smile of happiness is unknown. Grief is my companion; I draw my dividends from distress. Sorrow and pain minister to my gladness; death is my final goal.

"Though terrible is my devastation, I am not invincible. Ignorance provides me with victims; poverty contributes to my success. Superstition is my co-laborer; carelessness is the basis of my hope. Dominant in the darkened past, I am yielding to the advancing present; I will vanish in the enlightened future of applied Science and Truth.

MY NAME IS "PREVENTABLE DISEASE."

DISCUSSION: Faustin N. Weber[1]: D. D. S., *Memphis*

Dr. John W. Knutson, senior dental surgeon of the United States Public Health Service, states that "Generically, public health refers to the health of groups of individuals or of individuals in the aggregate, such as the people of a community, a state or a nation; and recently we have even ventured to think of world health."[1] Dental disease is omnipresent in all races, age groups and economic classes of people. The recognition of this fact prompted public health officials to include dentistry in their programs of operation of health service agencies. For sometime now the United States Public Health Service, our national health service agency, the health departments of most of our states and many of the local community departments of health have included trained dental personnel as an integral part of their staff.

It is true that at all levels national, state and community, the programs of activity of this staff have been for the most part, educational. This is a program born of necessity. The funds available for the administration of dental health activities have been limited, and there has been a shortage of trained personnel.

In an effort to accomplish the most good with the limited resources, dental health programs have been conducted with varied techniques. As Knutson[2] observes, "some state dental health programs provide care for those who cannot afford to pay for needed health services. Others, through school and industrial programs, promote attention to dental health and encourage the seeking of regular dental care. Some, through mobile dental units provide services in areas where there are no established facilities for dental care. Some

[1] Assoc. Professor, Orthodontics, Director Post Graduate Program in Orthodontics and Secretary to the Faculty.

concentrate their time and attention towards increasing the quantity and quality of services available to children by providing special postgraduate courses in dentistry for children."

The immediate goal of dental health programs is, as Doctor Ginn has stated, "to ensure, adequate dental health care for more people." The ultimate goal is to provide necessary dental health service to *all* people.

Lest this last statement be construed to suggest that we advocate a socialization of dental health workers, let me state that one of the most effective methods that is available to defeat the trend to compulsory dental and medical health insurance programs, is to make the services of these health specialities available to more of our people. Those who would specialize the dental and medical professions, contend that there is a need for this legislation to extend the services of the health professions to larger numbers of our population. Their argument, which to begin with is without substance, would lose additional face if by the extension of our public health services, we reached even greater segments of our people.

There are four methods by which this objective can be attained:

First—The manpower of the health sciences may be increased. As Doctor Ginn has indicated, this is being done by the educational program of the University of Tennessee. The dental and medical colleges and the school of nursing, in continuous year around sessions, are training a maximum number of health science students in a minimum length of time. Postgraduate programs in pedodontics and orthodontics are in operation. The course in Dental Hygiene is to be reactivated in September, 1950.

Second—Preventive methods may be emphasized. Doctor Ginn has also called attention to the stress placed on teaching preventive techniques in the dental curriculum. A series of ten lectures is given to the undergraduate students on the subject of prophylactic orthodontics. The accepted interceptive and preventive methods useful in all phases of dentistry are taught.

Third—The elements of public health may be taught in dental and medical schools. As stated by Doctor Ginn, "the student should obtain an appreciation of the full significance of this subject and gain a working knowledge of Public Health and its principles at the

undergraduate level." Appropriate courses in dental schools are sure to stimulate more graduates to enter the field of public health dentistry.

Fourth—Research in the basic sciences may discover new and effective techniques of preventing disease. In the past the majority of research in the basic sciences has come out of the schools of dentistry and medicine. These institutions will continue to be a productive source of basic science research. Regardless of its origin, as Knutson has observed, "research will be a vital part as well as a base for all dental health activities."

In conclusion may I say that we at the University of Tennessee recognize the vital role that this school can play in advancing all the worthy objectives of adequate public health dentistry and are dedicated to a program, the consummation of which, will bring the blessing of health to increasing numbers of our people.

BIBLIOGRAPHY

1. Knutson, John W. Round Table Discussion twenty-third annual convocation, The American College of Dentists. J.A.C.D., Vol. 15 No. 4, December, 1948, pg. 165.
2. Ibid—pp. 166–167.

THE DENTIST AND THE DENTAL HEALTH PROGRAM

THOMAS L. HAGAN, D.D.S., M.P.H., *Atlanta*[1]

Despite our lead in the number of dentists, our splendid training facilities, and the great public demand for dental services, we in the United States are falling far short of our goal—adequate dental health for our people. However, dentists are making progress toward that goal. Witness, for example, the increasing interest of the dental profession in the problem of adequate dental care and our greater knowledge in the field of preventive dentistry. Certainly on those two fronts we have made marked advances during the last several years.

When we consider the competition between dental health programs and other health measures, progress in dental public health is far from disappointing. Programs for the control of cancer, tuberculosis, veneral disease, heart disease, poliomyelitis, and others with great dramatic appeal are backed by powerful private organizations.

[1] Dental Director, U. S. Public Health Service, Atlanta, Georgia.

Year after year they make significant bids for and obtain wide public support. But in the important field of dental health, the dental profession and public health workers are almost alone in their vigorous attempts to improve the dental health of our people.

The American Dental Association has long recognized that health education is a basic, vital factor in dental health programs or plans. Such educational efforts must be directed at both the general public and the dental profession. The public needs to be kept informed and stimulated, and we as dentists need to keep abreast of advances in our field. With the tremendous strides made in preventive dentistry in recent years, perhaps some of us need to adopt new viewpoints toward this rapidly expanding body of knowledge. We need, I believe, to recognize that we and the public can get the greatest good out of preventive practices only through a concerted study of their effectiveness, practical usefulness, and methods to be employed.

If a major objective of the dental profession is the promotion of improved dental health, and this is an avowed objective of the American Dental Association, we should use every means at our command to bring about an understanding of the importance of dental health and of the programs for its improvement. The methods to be used in doing this job cannot be laid down on a nation-wide basis. They must meet the needs of each individual community. Because of this the methods to be used should be determined by each community, by its dentists and by its citizens. As dentists are the best informed members of the community on the application of control or preventive measures, and as they know the needs and attitudes of people in their communities, they are in a position to make substantial contributions to the establishment of sound dental health programs.

The public rightfully expects dentists to be fully informed on the use of preventive measures which are based on sound research and field trials. The public expects dentists to know the status of preventive practices, to acquire and improve their technical skills, to recognize the more efficient methods of using dental skills and knowledge, and to be of assistance in developing community-wide health programs that will not necessarily be limited to dental health. They are likely to be sound plans, for they are based on a knowledge of local needs and local resources.

The hugh backlog of dental needs and the inadequate manpower to meet these needs poses one of the knottiest problems in the health field. It is a well established fact that early and regular care results in improved dental health. Yet, notwithstanding this common knowledge, few communities have made a concerted effort to follow this policy.

The activities of state health departments represent the major organized efforts in the field of public dental health. Many of the larger cities have dental programs of different kinds and of varying effectiveness. The provision of services for indigent children is the most common direct service program operated by city or state governments. This service is provided in dentists' offices, school or health department clinics, or in dental trailers. Usually private dentists operate the clinics on a pay or honorarium basis. In a few places, full-time, salaried dentists provide the service.

The dental correction certificate is in general use to maintain records of children whose parents can afford to pay for private service. But in too many instances, because of the pressure of activities on school teachers, the issuance of certificates has become the goal, and not the practice. As a result, far too little attention has been possible and the development of sound health habits in children has been delayed. Again, the certificate plan is wholly dependent upon the integrity of the dentist.

Dental examinations of children at regular intervals constitutes an older type of program. Basically, these programs consist in sorting out the children in need of dental care and in sending a notice to their parents. Perhaps such programs do some good, but does it not seem like a waste of a dentist's time to examine children when the effect is to eliminate about five percent who need no service? Would it not be better for the dentist to use his time more effectively in providing service?

Instead of this routine examination of school children, rapid methods of analyses of community dental needs may be applied at the beginning of a program.[2, 3] The prevalence, incidence, and consequences of dental diseases may be determined at this time. Five or more years later a similar survey may be made to measure the

[2] Knutson, J. W. An Index of the Prevalence of Dental Caries in School Children. Pub. Health Rep., 59: 253 (February 25) 1944.

[3] Knutson, J. W. Appraising the Dental Health Program. Am. Dent. A. J., 29: 543 (April) 1942.

effectiveness of the program. If a caries preventive program is instituted by dentists or the community health department, its effectiveness can be measured by a decrease in the prevalence of this disease. If a dental care plan is devised, then measures of consequence of dental disease may be used. Such measures of consequence are rates of loss of teeth, or filled teeth, and of untreated carious teeth remaining. The prevalence of gingivitis and of malocclusion may be determined at the same time. Increases or decreases in these rates evaluate in quantitative terms the achievement of such a program. If dental certificates are used, these objective findings measure the efficiency of their use. Local financial support and the subjective factor of public interest add less specific though important weight to the effectiveness of the program.

The dental profession is entering a new era in the field of prevention. We are on the threshold of preventing the inception of a considerable amount of dental disease. At present we are attempting to prevent certain undesirable sequellae of dental disease.

In dental practice, prevention in its broad sense may be considered in three phases. The phases are consecutive and the accomplishment of one phase prevents the occurrence of dental caries. This, of course, is most desirable, and although still in their infancy, measures to attain partial prevention on a community basis are available. In the second phase, we can prevent the loss of teeth as a result of caries by the timely repair of defects, that is, by dental care started at an early age and continued at regular intervals. In the third phase, the contribution made by missing teeth to malocclusion, or poor relationships of remaining teeth, and to disturbances of the supporting tissue, may be averted by the timely replacement of lost teeth.

These preventive aspects of dental health must be related to the problem with which all of us are familiar. The decay of teeth is the particular problem which concerns the dental health of the child and adolescent group. If we were without effective means for the reduction of tooth mortality in children, inaction would be justified. This supposition, however, is not true. A substantial reduction in tooth mortality not only is possible but has been accomplished effectively within our structure of practice.

The area of prevention which affords the greatest hope is that concerned with fluorides. Topical fluoride prophylaxis has been proved

effective and is accepted as a partial caries preventive.[4] Water supply fluorinization is in the test period with many communities adding fluorides to their communal waters entirely on the presumptive evidence available. In addition studies on ammoniated dentrifices, penicillin, chlorophyll and synthetic vitamin K continue. Although these substances may prove effective, only the topical fluoride measure has been proven in field trials.

Present preventive practices (in their narrow sense) are completely new to dental program planning. Never before have we in dental public health had a measure which is preventive in the strictest sense of the word. With the excellent results obtained from the use of sodium fluoride applied topically, dentistry begins a new era—prevention. We can ill afford not to use all of our power and ingenuity to make this service available to all children through public health programs and through private services. The dental profession has a profound responsibility to the public in making this preventive service as effective as possible.

In conclusion, we may point out some specific areas where the dental profession can contribute to improved dental health. Our responsibility is dual—first to ourselves and families, and second to our communities in maintaining dental health at its highest possible level. Our profession has committed itself to improving the dental health of our people. Indeed, our virtual monopoly in this field of health demands it. In meeting this responsibility, ever increasing efforts are being made to use preventive measures, health education, and specialized services. We as individuals, as an organization, can do no less than support this positive approach.

We have at hand a preventive measure sufficient to control a large segment of dental needs. We must strive for additional knowledge in the field of corrective services. We must use more assistants to increase our services and our efficiency. Health education methods must be strengthened and new methods developed to obtain public and professional awareness of needs and methods to meet these needs. Our profession has come a long way in 100 years. We cannot afford to rest on the laurels of our pioneers. We can and must use all practicable methods to raise the level of dental health for our people.

[4] Council on Dental Therapeutics, American Dental Association. Report on Topical Applications of Fluroides. Am. Dent. A. J., 34: 700 (May 15) 1947.

BOOK ANNOUNCEMENTS

DENTAL INDEX OF PERIODICAL LITERATURE. This is the Index to Dental literature for the period 1945 to 1947, published by the American Dental Association under the immediate direction of Miss Martha Mann, Indexer.

This edition is presented in a new format, and is offered to the public under a set of Subject Headings, developed through a number of years of trial and effort, finally arriving at the present set. No set of Subject Headings can be final due to many unforeseen conditions requiring change, but this set does offer a high degree of perfection over that first used. The Dewey Decimal System of classification has been completely eliminated and although this is the third volume in this form it now does represent a complete separation from the former system or systems. One hundred and forty-four publications in the English language from different countries are indexed. It carries a subject and author index in a straight alphabetical arrangement, which will make this book of great value and easily useable. Price $10.00.

ENDODONTIC. This is the title of a book by Bernhard Gottlieb M.D., Professor of Oral Pathology and Dental Research in collaboration with Seth Lee Baron, D.D.S., Assistant Professor of Root Canal Therapy and J. Hobson Crook, D.D.S., Associate in Dental Research, all of Baylor University, School of Dentistry, Dallas, Texas. It consists of 177 pages with an index, a bibliography and 103 illustrations. Published by the C. V. Mosby Company, St. Louis, Mo. Price $6.00.

A TEXTBOOK OF DENTAL ANATOMY AND PHYSIOLOGY. By Russell C. Wheeler, D.D.S., F.A.C.D., Associate Professor of Anatomy at Washington University, School of Dentistry, St. Louis. New, 2nd Edition. 422 pages with 414 figures. Philadelphia & London: W. B. Saunders Company. 1950. Price $6.75.

CURRENT THERAPY 1950. Latest approved methods of treatment for the practicing physician—Editor Howard F. Conn, M.D. with a dozen contributing editors.

This book is novel in its arrangement in that it contains specific diagnosis and treatments of various diseases by many different men.

In some cases one man may be selected for one disease. It is therefore realistic in its application. A small space is given to dentistry. Publishers, W. B. Saunders Company, Philadelphia. Price $10.00.

ORAL HISTOLOGY AND EMBRYOLOGY. This is the sixth edition of one by the same title by F. B. Noyes, D.D.S., Sc.D., edited now by Issac Schour, D.D.S., Ph.D., Professor of Histology and Associate Dean, College of Dentistry, University of Illinois and Harold J. Noyes, D.D.S., M.D., Professor and Dean, University of Oregon, Dental School.

The book is comprised of 443 pages with 284 illustrations and 15 plates including 11 in color. All the authors are well known in the profession hence the authoritativeness of this book is once recognized. It is printed on good stock and is easily read. Published by Lea & Febiger.

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