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[Revised as of July 7, 1941.]

Objects: The 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 achievement, especially in dental science, art, education and literature; and to improve public understanding and appreciation of oral health-service."—Constitution, Article I.

Classes of members (each member receives the title of Fellow—"F.A.C.D."): (1) "The active members consist of dentists and others who have made notable contributions to dentistry, or who have done graduate, scientific, literary, or educational work approved by the College." (2) "Any person who, through eminent service, has promoted the advancement of dentistry, or furthered its public appreciation, may be elected to honorary membership."—Constitution, Article II.

Forfeiture of membership. "Membership in the College shall be automatically forfeited by members who (a) give courses of instruction in dentistry, for remuneration, under any condition other than those of an appointed teacher serving publicly under the auspices of a dental school, dental society, hospital, or other accredited professional or educational agency; or (b) give courses of instruction in dentistry in a privately owned undergraduate or postgraduate dental school; or in a school that is associated with an independent hospital or dispensary but is not an organic part of it; or (c) exact exorbitant fees for courses of instruction in dentistry under any auspices."...—Constitution, Article II.

JOURNAL OF THE AMERICAN COLLEGE OF DENTISTS

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AMERICAN COLLEGE OF DENTISTS
The topic to which I have been asked to direct my remarks suggests two important divisions of discussion: one, the value of dental history as a subject in the undergraduate curriculum; and two, the extent of interest in dental history demonstrated by the place the subject currently occupies in the curricula of the dental schools in the United States.

With respect to the first, it requires but a cursory review of the catalogues of our dental schools to ascertain that dental history as a subject for instruction is not held in high esteem by our educators; and with respect to the second, the evidence revealed by a study of the curricula of dental schools clearly shows that the subject does not receive adequate attention in the current schedules of instruction. The second is a corollary to the first since it is apparent that the lack of appreciation for the value of dental history as a subject of undergraduate instruction is cause for the lowly position it now occupies in the various dental school curricula.

The utilitarian value of dental history should be better understood by our educators. It is from historical sources that the true philosophy of dentistry is derived and it is from a knowledge of these sources that our philosophy will be more clearly defined. The answers to many of the questions relating to dental educational theories cannot be arbitrarily interpreted, but must be based on a knowledge that may be acquired only from a study of the facts of history. The causes of the present independent status of dentistry and the purposes of its various educational and health programs may be better understood; and the effort to promote professional interest may be greatly simplified and strengthened by a clearer perception of the basic principles and the fundamental forces that

1Presented at the Cleveland Convocation of the College, Sep. 8, 1940.
have brought dentistry to its present state of efficiency. An understanding of the philosophy of dentistry depends entirely upon a knowledge of the basic factors involved in shaping dentistry's course and ultimately in bringing it to the position it now occupies.

The indifference shown by the dental profession toward its history is largely the cause for the insecure positions that dentistry and dental education have occupied in the esteem of the public, of the professions, and of general education. Many who assume the responsibility for directing dentistry's course and for developing its plans of education do so frequently without the slightest knowledge of its philosophy, without any appreciation of its fundamental principles and without an understanding of the stresses that have governed its development. The leaders of the profession have in many instances prescribed treatment for dental educational ills without a knowledge of the fundamental causes of these ills; the attempted solutions of our educational problems have been for the most part empirical, whereas they should have been rationally adjusted on a basis of scientific understanding. The dental profession will continue to flounder, to perpetuate its handicaps and to fail to achieve its true purposes so long as it lacks an intelligent understanding of its historical background. If this conclusion be sound, and I think it is, it seems most desirable for dental educators to consider the importance of dental history as an essential course in undergraduate dental education and to strive diligently to establish a standard of instruction in this particular course on a par with standards of instruction in the other elements of the curriculum.

There are certain difficulties which must be overcome if dental history is to be established more firmly in the dental curriculum. One of these difficulties, already mentioned, is that the dental profession has not been conscious of the utilitarian value of its history and as a consequence dental students have not manifested serious interest in it. They have been content to proceed in the dim light of tradition and assumption, and have not been concerned about facts and realities; they have taken greater interest in propaganda than in fact, and have been content to applaud distinguished per-
sonalities rather than to show an interest in fundamental principles. If the profession is to profit more effectively from its past this attitude of indifference must be changed. It must abandon a history which for the most part has consisted of biographical sketches and remotely related incidents; an attempt must be made to substitute a chronological record of the beginning, growth and development of the dental science and art, with due regard for all of those forces that have shaped its course and have brought it to its present cultural level.

In order to achieve these changes of thought and attitude suitable materials must be made readily available to teacher and to student. Extensive research will be necessary to test theories and assumptions with respect to the history of dentistry and to produce factual data as a basis for successful study and teaching. Today there is no textbook on dental history that supplies the needs of undergraduate study. In fact, those that have been written may be charged with gross inaccuracies, poor arrangement, lack of coherence, lack of clarity and complete disregard for sequence in outlining the growth of the profession. The first duty of the profession is to provide an authentic textbook as a basis for sound teaching and as a source of stimulation of interest in the subject.

During the past year the Committee on History, of the American College of Dentists conducted a survey of the dental schools of the United States for the purpose of determining the status of dental history in their curricula, and to ascertain as far as is possible the quality of the instruction and the adequacy of the courses as they are now being administered. The responses are most revealing and offer, through a study of summaries of the data, an opportunity to judge fairly accurately the interest and efficiency of the teaching and to ascertain some of the difficulties surrounding the administration of a competent course of instruction in dental history.

The attitude of the schools, as revealed by the study, ranges from keen interest to positive indifference, with the weight of concern on the side of indifference. The reasons for this regrettable situation may be many, but the important fact to be noted is that dental
educators fail to place suitable emphasis on a subject that is basic to the integrity of the profession. No one may fairly question the adequacy of the time allotted in the current dental curriculum to courses in the pure and applied sciences, or in dental science and dental art. That there may be in some schools weaknesses in the curricula and in certain areas of instruction is admitted; but, by and large, dental education is sound and the constant advances now being made in correcting existing deficiencies offer to reduce or to eliminate entirely most of these weaknesses. But interest in dental history has not been firmly established and as a consequence it has not been regarded as equal in educational value to the biological and technological courses of the curriculum. It is true that dental history is a cultural subject but it is also true that it is basically utilitarian when considered from a broad point of view.

The Committee on History, of the College sent out questionnaires to the thirty-nine dental schools in order to ascertain the interest that is being taken in the subject, to determine the number of dental schools that include the subject in their curricula, and to compare the length of the courses and, as nearly as possible, the adequacy of instruction in the various schools. The responses are of sufficient interest to be reported.

Of the thirty-nine dental schools canvassed, thirty-six answered the questionnaire. Of this number, twenty-eight schools reported formal courses in dental history while eight reported no time assigned to the subject. Aside from the questionnaire, a check of the catalogues of these schools shows that eleven of the thirty-nine dental schools make no reference whatever to dental history in the description of their courses of study. While the foregoing reveals that some interest in dental history is manifested in most dental schools, it shows also that in twenty-five per cent of the dental schools the subject is not deemed of sufficient importance to deserve mention in the description of courses of instruction in the annual announcements.

The adequacy of instruction in dental history in the various dental schools is no more encouraging than the degree of interest found
to exist in the subject. The time devoted to the courses of instruction in the twenty-eight dental schools ranges from four to sixty-four clock hours, with an average time of approximately sixteen hours—the quantitative requirement recommended as a minimum by the Curriculum Survey Commission.

A study of the description of courses in the catalogues of the twenty-eight schools reporting formal instruction in dental history reveals a lack of similarity in the arrangement of courses of instruction. In an effort to determine the emphasis that is placed on various divisions of the subject, the Committee divided it roughly into three eras—(1) Pre-American, (2) Early American to 1840, (3) American 1840-1940. The schools were asked to indicate the amount of time devoted to each of these periods. It was found that the time allotted to a study of the first era ranges from 10% to 50% of the total; that the time devoted to the second era ranges from 8% to 33% of the total; and that the time devoted to the third era ranges from 28% to 85% of the total.

It is to be noted that the Pre-American period is well represented in available material for teaching and study provided by Guerini’s comprehensive text on the history of dentistry of this era. This probably explains the reason for the relatively greater emphasis that teachers place upon this phase of the subject. The American period from the beginning to 1840 has been largely neglected, probably because there is little authentic material in usable form bearing on this period. This condition is due to the lack of research devoted to this period and the consequent lack of accurate knowledge and understanding of the growth of American dentistry before 1840. No true picture of dental history can ignore or disregard 18th century dentistry in American and the period in America from 1800 to 1840. It was a time of virile preparation that contributed the tremendous influences back of the beginning of the first school, the first journal and the first society. The greatest emphasis is placed on the era between the years 1840 to 1940, or the period marked by the first century of professional dentistry—a period in which dental literature has recorded the spectacular achievements of the profession and
in which may be found data readily available to those teachers or students in dental schools equipped with good dental libraries.

A careful study of the facts compiled by the survey leads one to conclude that there are certain major difficulties which must be adjusted before dental educators will be convinced of the importance of the subject as an essential part of the dental curriculum.

The major difficulty is the lack of a suitable text. There have been a number of valuable contributions to dental history but there is in all of them a sameness manifest in the tendency to place stress on mere incidents, and to applaud and to glorify individuals for their personal achievements rather than to emphasize the fundamental principles that have contributed character and strength to the profession. Guerini’s history is from every point of view the best, but it is too biographical, lacks documentation to guide the student and thus obscures the fundamental principles underlying the movements in the progress of dentistry. Koch and Thorpe, in their three large volumes, wrote more from the legendary point of view; while they did some original research, and included a bibliography, the research was not carefully done and in many instances is quite unreliable. Dexter’s history is more carefully written than others, but is not sufficiently comprehensive. Taylor’s history is a loosely compiled account gleaned from other histories; it reflects no research at all and from the standpoint of present-day teaching is unacceptable. In the circumstances, both teacher and student are at a great disadvantage in any effort to promote interest in a study of the subject. It would be as reasonable to expect one to teach a course in United States History with nothing from which to secure information but old newspapers and public documents and these so scattered and so inaccessible that any assemblage of essential facts would be impossible.

The second major handicap is the lack of qualified teachers to plan and to offer a competent course. Many schools frankly confessed this to be the chief difficulty. There is not readily at hand resources of self training by the teacher and the curriculum of the past has not prepared the student to qualify even as a beginning
teacher. No sound course in dental history can be administered under these conditions.

The third major difficulty revealed by the report is the lack of student interest. I think every teacher can readily understand the lack of student interest when he considers the lack of a suitable text and the absence of a qualified teacher to present the subject in a capable, clear, and interesting manner. A student cannot be expected to place much value on any course that is offered in an incoherent, uncertain manner. Student interest will be stimulated when the teacher understands his subject, when he appreciates its value and when he becomes as enthusiastic about it as are the teachers in the biological and technological subjects of the curriculum. In discussing the matter of student interest with certain qualified teachers of dental history I have found that their students are just as enthusiastic as those in any other course. A correction of the first two difficulties just described will, to a large degree, correct this third difficulty.

The fourth major difficulty is the lack of library facilities. This is in general a too frequent weakness in all our dental schools and is not limited to dental history. The tardy growth of interest in dental literature has been one of the greatest weaknesses in the whole program of dental education. As dental libraries are now growing with great rapidity and are becoming more useful to all dental teaching, this major difficulty, from the dental history point of view, is diminishing. Our general literature will make available to the student of dental history much of interest and value. However, it remains for the researcher and the investigator to organize this material, to correlate it, to interpret it and to make it readily available for teacher and student.

The fifth major difficulty suggested by those answering the questionnaire is the lack of time in the curriculum for a course in dental history. This is a presumed difficulty that should be rejected promptly. There can be no such thing as lack of time in the dental curriculum for important and essential courses. Curriculum ar-
rangements too often reflect the personal choice and preference of
the curriculum builders who are ever ready to find time for expan-
sion in technological or biological subjects, but cannot find time for
addition or expansion of cultural subjects that are of equal if not
superior value. There is no doubt that a small amount of time can
be found in every dental curriculum for proper attention to dental
history if those responsible for the curriculum have an appreciation
of its values.

Obviously there is a growing interest in dental history. It is being
stimulated to a degree by the increased academic background of
dental students and to a greater degree by growing interest in his-
torical research that has produced sharp, incisive discussions among
members of the profession which, on their surfaces, may appear per-
sonal and controversial, but which provoke keen interest and stimu-
late the student to investigate every claim in order to substantiate
or to controvert whatever theories may be advanced. Also, the lead-
ers in dental education are becoming more and more conscious of
the necessity for a well defined philosophy of dentistry based on the
facts of history, and supported by clear interpretations of the pro-
cesses that have brought dentistry to its present status. Year by year
authentic information is being added to our field of historical knowl-
edge and these contributions are rapidly creating a foundation for
suitable textbooks for dental students; these materials will con-
tribute also to the development of more capable teachers.

We should dedicate ourselves to the task of abandoning our too
ready emphasis on the crudeness and growing pains of the pro-
fession as if they are the true facts peculiar to our history; and in
their places substitute a substantial interest in the processes and
principles which have marked the growth of the profession with
particular emphasis upon its cultural background, rather than to
continue to place stress on doubtful tradition and spectacular incidents.
A keener appreciation of the true purposes of dentistry will be stimu-
lated by the practitioner's understanding of the philosophy of dentistry
as revealed through a knowledge of the development of dentistry
from its crude beginnings to its present state of scientific quality.
INTRODUCTION

The topic, "Dentistry's Place Today" and the position the American Dental Association occupies in maintaining this place, might appear upon casual reflection to suggest thoughts of great magnitude. It may even suggest a description of the dental profession in very complimentary terms. The subject might readily resolve itself into pleasant and indefinite platitudes as is customary with professional and fraternal groups in considering the achievements and highlights of their organizations.

But today we propose a different line of discussion; an analysis of dentistry's progress and of dentistry's means of continuing that progress. Dentistry's place today among the sciences and professions can be properly understood only by a comparison of the position it now occupies with that of the position which it occupied in the past. By this comparison, we, as practitioners of dentistry, are able to evaluate the great advancement dentistry has made.

HISTORICAL

All of us know man's earliest endeavor toward remedying dental defects were extractions and attempts to restore the functions of the teeth. This the Egyptians and Hindus did as early as 1500 B.C. Until the last century, dentistry's only improvement on these procedures was in the greater finesse with which these operative efforts were accomplished.

The first intelligent research on teeth was directed by Hippocrates, shortly before the birth of Christ. The result of his research might well have been recorded somewhat in the following words:

Development and health of the human body depends on nutrition;
The tooth is a part of the human body; therefore, Development and health of the tooth depends upon nutrition. Had the civilization of Greece survived, the result of this research might have determined for dentistry the nutritional requirements of a tooth; what physical and chemical properties were combined in the formation of a tooth; which of these were susceptible to disease; the nature of the disease; and how that disease might be combatted. These are the very problems which the Research Commission of the American Dental Association hopes in the very near future to discover for American dentistry.

From these early times until about two hundred years ago, practically all problems connected with the care of the teeth were solved by that great “amputator,” the barber. However, in the early years of the eighteenth century the people of France, having become alarmed at the charlatan practices of those to whom they had to resort for dental relief, demanded that those who practiced dentistry must be licensed. A record of this was made in 1728 by a published statement of Fauchard, known as the father of dentistry.

From this time, dentistry came to be regarded more and more as a separate and specialized branch of medical science. Early in the nineteenth century this unexplored field of research claimed the attention of a number of medical men including the Americans, Hayden and Harris, and later in the century the Englishmen, Blake, Fox, Johnson and Naysmith; the Frenchmen, Rousseau and Bertin; and the Germans, Weber and Muller.

**Organization**

With this brief, early history of dentistry, we may now turn our thoughts specifically to the year 1834, significant in the minds of all dentists as the date when the first effort was made to organize dentistry as a separate profession. Pausing here for a moment, it may be observed that most of the arts and sciences had far outdistanced medical art and science. Architecture, literature and other

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arts were nearly as far advanced then as they are today. Physics and chemistry were well along the road of development; but medicine in general, and dentistry especially, were too complex; their pathological mysteries were too great, for individual practitioners working unorganized, to investigate thoroughly in the short span of one man's life. Progress had to wait until dental scientists, appreciating the need of organization, were enabled to stimulate among themselves a desire to know all there was to be known about dentistry.

The obvious wisdom of thus cooperating so that dentists might have a means of acquiring the collective knowledge of all dentists soon became so apparent that in the year of 1834 just referred to, there was formed in the city of New York a dental organization known as the New York Society of Dentists. This organization lasted only three or four years. Shortly thereafter, in 1839, the Journal of Dental Sciences was established and published by Chapin A. Harris, an outstanding dentist of that era. This publication was founded in order that information could be disseminated among and be exchanged between members of the profession.

In this same year another distinguished dentist, Horace A. Hayden, in collaboration with Dr. Harris, established the Baltimore College of Dental Surgery. These men practiced the specialty of dentistry in the city of Baltimore. It was hoped that the establishment of this college would put an end to the indifferent dental education provided by apprenticeship, and that by teaching a separate course of study in dentistry, establish once and for all the independence of dentistry and gain for it recognition as a profession, separate from that of medicine.

Once more the year 1839 was to be outstanding, for it was also during this year there was organized the first nation-wide dental association, the American Society of Dental Surgeons, which continued until 1854. So far, organizing the dentists seemed about as successful as piling sand. They could be joined together, but they kept drifting apart. However, increasing realization of the problems to be solved, soon served to weld together the conscientious
practitioners into a lasting mold, and so in 1859, at Niagara Falls, founded on the avowed purpose of promoting the art and science of dentistry, providing for research, elevating professional character and education, enlightening public opinion in relation to oral hygiene, and enacting just and uniform dental laws in the several states, the present American Dental Association began its existence.

This organization was almost immediately threatened with dissolution by the secession of the Confederate States from the Union. However, its existence continued, and another organization, the Southern Dental Association, was formed within the Confederacy. These two organizations existed separately until 1897 when they were united to form the National Dental Association. In the meantime state societies began to spring up within the different states, and in 1913 these state societies were absorbed by the National Dental Association. Thus the organization took its present shape of a pyramided structure, having these various state constituent bodies as its base.

The Association was renamed the American Dental Association in 1922 in Los Angeles. Its present organization was then firmly established. It now was in a fair way to set about accomplishing the purposes its founders had envisioned for it sixty-three years earlier.

Today the American Dental Association is a workable and efficient organization. It functions smoothly and economically. It provides ample means of accomplishing any objective dentistry may wish to attain, provided that the human element is right, and if its members are sufficiently zealous in seeking the completion of the tasks they undertake.

The main purpose justifying the existence of the American Dental Association is to aid each individual dentist in the exercise of the public duty he shouldered when enfranchised by his State to practice dentistry. It must also aid him in the fulfillment of that deeper sense of moral duty which every dental man must possess in order to qualify as a genuine and desirable part of a great scientific professional body, dedicated to the alleviation of human
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suffering and to the making of life a more healthy, productive, and enjoyable existence. The American Dental Association now has a membership of more than 50,000 men and women who are participating in this collective enterprise.

No individual dentist, consistent with the ideals and traditions now governing the dental profession can consider himself to be performing his duty toward the safeguarding of the public's health, unless he is in some active, cooperative way aiding his profession in the accomplishment of this broad purpose. To accomplish this purpose he must hold membership in the American Dental Association.

EDUCATION

The most important function of the American Dental Association is to educate; to educate the public, to educate the government, and to educate its members in the ideals and in the advancement of the profession.

Education of the public is carried on mainly through the activities of the Bureau of Public Relations within the American Dental Association. This Bureau cooperates in Federal, State, and community health programs. It supplies lectures, films, pamphlets and other informative materials to dentists, health workers, and schools. It also prepares presentations for various types of audiences. It provides radio talks. It educates the school children to awaken their interest in their teeth at a time in life when this knowledge will be of the greatest value to them.

There are many ways in which the American Dental Association seeks to provide for its members that they may continue to advance in dental education. The Bureau of Chemistry and the Council on Dental Therapeutics investigate dental medicine, and counsel and protect individual dentists from becoming unwitting advocates of harmful dentifrices and proprietary remedies issuing from the factories of unscrupulous manufacturers. This work is paralleled by that of the Research Commission which has, however, up to the present time, given most of its efforts towards cooperating with the United States Bureau of Standards located in Washington, D. C. Since the establishment, in September, of a Fellowship in
Dental Disease at the National Institute of Health in Washington, it is hoped that the work of the Research Commission may soon be extended to a more thorough scientific study of biologic problems involved in the cause of dental decay as well as in other dental diseases. In fact, this very thing has been done, in that the Research Commission has, under the editorship of Dr. Wm. J. Gies, published one report of dental researches (1939), under the title, *Dental Caries*, with the second edition just now coming from the press.

There is also the Judicial Council which educates dentists on matters of ethics, in preserving the high standards upon which has been built a public confidence and which gives to every American Dental Association member a just feeling of pride in contemplating his affiliation with the dental profession. All of these mentioned sources of education for members of organized dentistry find their expression ultimately through the Journal of the American Dental Association. Through the Journal's pages, it is possible for every dentist to keep himself abreast of new advances in dentistry. The Journal substitutes for long and tedious hours of research.

The education of the government in dental problems has in the past few years commanded the increasing attention of the American Dental Association. With the ever widening scope of public health legislation, the advice of specialists in the health professions has been sorely needed. We should all feel pleased in reflecting upon the fact that the profession of dentistry, through the Association's National Health Program Committee, has done its part well in keeping the nation's law makers intelligently informed on health requirements. The Public Health Service of the United States, the Army, Navy, and public officials, have all benefitted from the advice and cooperation of the Association. At the present time our National Health Program Committee is working for a proper solution of the rehabilitation of the draftee.

The Association, ever desiring to be of assistance to the government and to its members, has cooperated to its fullest extent
through the Committee on Dental Preparedness. The function of this committee is to assist the United States government in every possible manner in formulating dental policies for the armed forces of our nation, during this present national emergency. Such questions as the deferment of the dental student, commissions for qualified dental practitioners, deferment of dental practitioners, and many other problems are constantly being presented for solution. The Dental Preparedness Committee is ever alert to fulfill its obligations.

The work the organization has been doing in these and other fields, has grown tremendously in the past few years. It is apparent that dentistry must not only continue along these lines, but must increase its efforts in bringing to a satisfactory conclusion the activities it has already commenced. In surveying the work of these bureaus, together with the maintenance of the library service, the activities of the central office, and the functioning of the relief fund for the benefit of those members to whom the uncertainty of fortune has become a problem, one cannot help but be impressed by the great advancement made in dentistry. It is the advancement made in dentistry during the last one hundred years that has made of it a science. Our profession, too, has been elevated by these efforts in a comparatively short space of time, to that plane on which it now enjoys the confidence of an enlightened populace.

Organized dentistry needs and now feels free to ask every practicing dentist in the United States not only to become a member of organized dentistry but also to give of his time and effort towards assisting in the solution of those perplexing problems now before us. It is a known fact that problems of pressing importance still confront the dental profession.

CIVIC RESPONSIBILITIES

The matter of health insurance has been presenting itself for the past several years with all the propelling forces which enthusiastic state and national officials can bring to bear upon a public awakened to the need of dental health service. This makes them gullible
victims of those who seek to sell them cheap contracts to provide health service.

It is incumbent upon dentistry to campaign for the immediate clarification of the present confused thought on this subject. Medical and dental care depend for their value upon the painstaking personal services which the ideals of the profession have impressed upon every practitioner. The growth and future development of dentistry can only be guaranteed by the personal initiative, pride, and honor, of independent scientists. An intelligent study of health insurance can only convince any thinking person that an agreement whereby a stipulated sum is exchanged for health service by a person unknown to the patient can be no security for the quality of the services rendered.

Our crusade in this matter should be directed mainly toward civic, public health, and legislative bodies, with a view toward acquainting these groups with the necessity of preventing corporations and the laity from practicing, or directing the practice, of dentistry. We must prevent the control of the profession passing into the hands of laymen and politicians unqualified by scientific education to make it possible for the public to receive the services to which they are entitled.

**RESEARCH**

Our greatest task is the promotion of scientific research. We must awaken in the public a realization of the value of preventive rather than restorative treatment. It is common knowledge to those in the profession that today dental care plays a large part in the preservation of general good health. Every person must be made cognizant of the fact that the development and the care of the teeth are largely an embryologic and biologic matter requiring prenatal care and childhood supervision. The patient and the future patient must be made to recognize that by the time a decayed or malformed tooth has become distressing there have probably been a myriad of physiological reactions throughout the body which are very difficult to trace back to the offending tooth, and which
may have so far progressed that the removal or correction of the
dental defect cannot affect a cure.

Every means of public education at dentistry’s disposal must be
directed toward this task, but we in dentistry must recognize the
limitations which exist within ourselves. Are we now able to go
any further than merely talk in generalities regarding preventive
dental care? Are we possessed of any greater knowledge with
respect to tooth disease than was Hippocrates when he said dental
health was dependent upon nutrition? We may say yes, but with
the reservation that there is a long way yet to go.

The real problem in preventive dentistry is finding the cause
and cure for caries. This one issue presents a continuing challenge
to dental scientists. The challenge comes from the greater part
of humanity which is affected with some form or other of dental
disease. The challenge is directed toward us. We now represent the
only group capable of taking up that challenge. Let us be able to
say that we are the only group which has been able not only to meet
it, but to keep that challenge from ever again being presented.

Not only is it our hope and expectation to remove the cloak
from this mystery and to expose it in its naked helplessness, to
the scientific world, but we may rest assured that this is exactly
what we intend to do. The American Association for the Advance-
ment of Science and the medical profession in general are justified
in relying upon dentists to discover and destroy dental diseases,
for these dental defects not only affect the teeth, but they use
every nerve and blood vessel in the human body as avenues of
approach to points of attack.

Research into the cause and nature of caries is not a problem
beyond the province of dental science. Somewhere in the physical
make-up of the human anatomy lies the answer, and wherever it
is, it is certainly a factor to be considered as a part of the dental
system. It therefore becomes a necessary problem for the attention
of men specializing in dentistry. For us to be assured that the
source of decay exists outside of the mouth, and upon that ground
divest ourselves of any further duty of solving this problem, is to
relegate ourselves to the status of the dental craftsmen of a century ago, and to renounce ourselves as men of science. It is a source of keen satisfaction that through the American Dental Association we are steadfastly increasing our means of pursuing this investigation, and of acquitting dentistry of this obligation to society.

FINALE

Dentistry's place today has been earned by a century of conscientious and idealistic public service. Dentistry's place today is assured through confidence of a vast public. Dentistry's place today is one of recognized, readily assumed and well performed duties and obligations. Most of all, dentistry's place today, a lofty and honorable place, is justified and deserved only by the unwavering resolve of an organized dental profession to leave nothing undone so far as lies within its power, to increase and maintain the health and happiness of humanity.
SOME REMARKS ON DEMAND VERSUS NEED FOR DENTISTS

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It has been only during the last few months that the dental profession and the public have had their attention forcefully directed towards the problems of mass dental neglect. The appalling mouth conditions of huge masses of the nation's young men, and the consequent effect on man-power waste, suggests among other things a critical review of (1) current professional attitudes towards present needs for dental services and of (2) the demand and supply of both dental services and dentists.

In discussing the demand for dental services, a sharp distinction must be made between that and the need for such services. That the need for dental service has increased tremendously during the last two decades, is evident from reviews of reasons for physical disqualifications during the draft of 1918 as compared with those for the National Selective Training and Service Act of 1940. The requirements to pass the physical examination in 1940 have been advanced over those of 1918, except for dentistry, yet the percentage of rejections has dropped from 48.6 in 1918 to 32.3 in 1940. Of those rejected in 1918, 3% were disqualified because of "teeth and skin," while in the current draft (from a sample of 65,000), of those rejected, 18.55% were disqualified for teeth alone. This makes dental neglect by far the most frequent cause for physical disqualification, although requirements to pass the dental part of the physical examination have not been advanced, as were other parts since World War No. 1.

There can be little doubt that a part of the apparent increase in unsatisfactory oral health is accounted for in that men of higher age levels have been included in the present, as compared with the former groups, examined. The obvious current increase in need for dental services in this country is mainly because of a sharp
decrease in the demand. This decrease in demand was most pronounced in the early 30's, since which date it has slowly but not entirely adjusted itself. Mass and individual prosperity have been important factors in influencing the demand for dental services, and the rise of current need.

But still another factor plays a consequential part in this important picture. Public appreciation of the wisdom and economy of timely and adequate dental care has played its part and is certainly likely to be of increased weight in the future. If prosperity and public appreciation are important factors in reducing accumulating dental defects and in increasing the demand for dental care, we are obliged to determine whether or not we can, and then whether or not we, as a profession and as individuals, should endeavor to influence either or both of these factors. It is obvious that the dental profession (or practically any other similar group) cannot alter greatly the cycles of prosperity and depression. But dentists always have been, and always will be, largely responsible for the public's appreciation of or lack of concern for dental services. There can be little doubt that the quality of dental services and the personable characteristics of dentists influence this appreciation. These two elements, however, are not susceptible to measurement. The number of dentists in a community in proportion to the community's population is measurable and is consequential in influencing public appreciation. Although strange, it is apparently true that those communities which have relatively large ratios of dentists per thousand population are the same areas in which dentists have the highest average annual income. If in this observation, we have not confounded cause with effect, we should be guided accordingly.

Although the American population has steadily increased, the number of dentists in practice in the United States has decreased by approximately 8000 during the last ten years. The Selective Service System, in advocating dental student deferment, estimates that the additional decrease in dentists through death and retirement, during the next four years, must be 2073 in excess of graduates.
The now well known need for dental services, the accumulated reduction of the ratio of dentists to population, and the known added decrease in the number of dentists during the next four years all presuppose that the profession should do something about this problem. But an increase in need for service, and a decrease in the ratio of dentists in the population, should not be the only criteria upon which to base such a deduction. The current and future demand for dental services (and therefore the demand for dentists) must be evaluated and integrated with the other factors before arriving at a valid conclusion. That the current demand is not preponderantly in excess of the supply is abundantly evident; first, in that the average income of dentists is not nearly at the level of twelve years ago, and second because there is little evidence of people seeking services and not being served. Except for the altogether too little understood and appreciated paradox, that an increased ratio of dentists in a community nearly always means that the average dentist (and therefore presumably nearly all dentists) does more and better dentistry, it would be a folly to take steps to increase materially the dental population until and unless need for services can be and is transformed into a demand for such services. Granting, for the purpose of analysis, that we need more dentists, the question as to how this may be accomplished should be reviewed. Though there are many ways of doing this—but four are practical.

1. Reduce the quantity of pre-professional education.

2. Reduce the quality of work required for admission to first-year standing.

3. Eliminate the college vacation period, which in the four year course, amounts to one college year. Through this shorten the calendar years from four to three and thus make it possible to increase the graduates by one-third per year.

4. Develop a concerted program through which dentists are made to appreciate the problem ahead, anticipating that they will do something collectively and as individuals, to the end that likely
young men are sought out and encouraged to make dentistry their life work.

Considering the quantity and quality of pre-professional education, it will be found that very few of those who have been concerned during the last twenty years with the kind of men graduated, and the excellence of services afforded by such graduates, will concede that either of these adjustments would be of public benefit.

Changing the course of dentistry from the present four years of study, to be completed during a three-year period, would increase the number of dentists by one-third, provided however that the number of applicants accepted over a four-year period were proportionately increased. Substituting the "quarter" system for the two semesters a year offers an excellent vehicle for making this change.

Dentists concerned with the future of their profession should always be on the alert to influence well qualified young men to consider the opportunities which dentistry offers. If, as it is assumed, an increase in the number of well qualified dentists in a given community increases rather than decreases the average amount of services rendered by each dentist, it follows that dentists should and will concern themselves with favorable changes in the ratio of dentists to population.

The reasons why people should avail themselves of dental services are known to a much larger proportion of our people, than at present receive dental care. The reasons why people do avail themselves of dental services are that they are convinced of the validity of the reasons why, and because their neighbors do have, and are satisfied with, such care.

It is an illogical but a consequential fact that aborigines stain their teeth black because other aborigines stain their teeth black; that men wear neckties because other men wear neckties; and that parents want the teeth of their children well cared for because the teeth of their neighbors' children are well cared for. Casual remarks by dentists at their chairs to their patients, and at the dinner
SOME REMARKS ON DEMAND VERSUS NEED FOR DENTISTS

Table and elsewhere to other dentists' patients, are tremendous factors in creating a demand for dental health.

Food, shelter, and clothing have been the traditional listing as the necessities of life. During the last few decades, health services (medical care) have been generally accepted as the fourth indispensable. The last mentioned category includes dental services. There is no doubt that the dental profession agrees that the dental services are an important segment of health service, and are therefore to be included among the necessities. The per capita use of dental service in the United States (about 1 cent per person per day) is greater than that of any other country. And, yet the Selective Service System (and many others) estimates that 22% of our population avail themselves of this service. It follows therefore that, while the American people concede that such service is a necessity, in actual practice it is treated as a luxury. More and more public education is the only remedy available under our present system for this situation.

The problems involved in needs and demands are different for the immediate as compared with the distant future. For our purposes it is assumed that the immediate future is the duration of the present emergency, and the distant future is to be the reconstruction period following the emergency.

The thing of paramount importance for the immediate future is the development and prosecution of plans to check the torrent of wasted man-power, so necessary for national defense, and which has been and is being lost through dental neglect. While this is not solely the profession's problem, we should not be the last to recognize it and we must be prepared to take an important part in its solution. If the emergency lasts as long as is generally anticipated, this country most likely will be confronted during the part of the period immediately ahead with a very unusual form of economy and prosperity. The nation's production capacity will be taxed to its limits. The purchasing power of individuals will be tremendously increased. A drastic curtailment of production of such things as automobiles, refrigerators, radios, and a host of other manufac-
tured items, requiring machine tools and metal, will produce the peculiar situation of buyers aplenty with little to buy. Curtailment of production is bound to come. The availability of dental service will not be curtailed. This set of circumstances augurs well for an increase in demand for dental service and a corresponding decrease in current accumulated needs.

Most of those who heretofore treated dentistry (insofar as their own persons were concerned) as a luxury, will be able to afford this necessary care.

Dentistry will face altogether different problems during the distant future, or the post-war reconstruction period. Three factors of consequence are likely to create a situation different from any the profession has experienced in its history. These are:

1. A definite statistical knowledge of the deplorable dental health of 1941, its measurable costs in lost man-power, and its probable costs in depleted health.

2. The knowledge only recently gained that barring war or catastrophe, one-third of the population can feed, clothe, house, and provide health services for itself and the other two-thirds as well.

3. A decreased individual buying capacity coupled with a tremendously increased federal income.

Only the third of these three factors should require additional explanation. Individual dislocation always follows major wars. Closing of war industries, which cannot be rapidly followed by substituted peace-time industries, leaves millions without employment. And peace-time production can never parallel production accomplished during the peak of an all-out war period. This lack of work means depression. In the meantime the government has increased its tax rate two or three-fold. Will taxes be revised down? Governments rarely do this. Therefore, the Federal Government will have an abundant purchasing power and will be faced by a population eager to shift the bothersome and uncertain costs of health services to a government anxious to assume it.

The need, as compared with the demand, for dental services in 1941 will be an influencing factor in these problems of tomorrow.
LETTERS PATENT AND THE DENTAL PROFESSION
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Our government grants to any individual who invents a new machine, a new material, or a new process, letters patent, which give to that individual the exclusive right to exploit his invention. However, that right must be defended by the patentee and not by the government, which means that the chief protection a patent gives to an inventor is the right to litigate.

Patent rights, including process-patent rights, are applicable to everyone, even the dental profession. For a number of years I believed that dentistry had, by litigation in a series of cases, established a legal exemption from process patents. This belief, which probably is shared by many dentists, was dispelled by Dr. M. D. K. Bremner, Chairman of the Committee on Process Patents of the American Dental Association. From him it was learned that the only way by which anyone could invalidate any patent legally would be to prove either that there was no invention or by showing prior art. "Prior art" means that someone previously used the method or device. It was upon this latter principle that the all-important case of Taggart vs. The Dentists' Mutual Protective Alliance was decided in favor of the Alliance, which represented the dental profession.

Opposition of dentistry to process patents. Dentistry is opposed to process patents as a matter of principle, not as a matter of law. The dentist is, of course, just as subject to Federal law as any other citizen. Nevertheless dentistry stands against the payment of license fees for the privilege of using processes or technics involved in any health activity. Any other position is untenable because, for example, if one had to pay a license fee for, or a royalty on, every denture, every injection in block anesthesia, every tooth extracted by a specified patented technic, every time an atomizer sprayed a certain medicament into the mouth, and so on, manifestly the best interests of the public would not be served. The health-service
professions would be commercialized. Aside from all that, it is
the professional duty of the dentist to communicate to his fellow
practitioners his knowledge on new methods of practice so that all
may serve to the best of their ability. In fact this free interchange
of information constitutes one of the outstanding differences
between professional and commercial practice. It is for these
reasons that it is written in Section 11, item F, of Chapter XI of
the Administrative By-laws of the American Dental Association1
that “no process patent shall be compromised.” This means, in
effect, that the American Dental Association will, if necessary,
contest the validity of any process patent by court action and will
do everything in its power to protect dentists from being directly
harassed by the owners of such patents. This stand of the A.D.A.
is predicated upon the court experience of the profession in the
Goodyear vulcanite, International Tooth Crown Co., and Taggart
cases, and in many others of more recent occurrence. A brief review
of some of the important litigations follows; the data were obtained

Vulcanite episode. In 1840, Charles Goodyear was granted a
patent on the vulcanization of rubber. Soon thereafter the utiliza-
tion of rubber in the making of artificial dentures was attempted.
Thomas W. Evans, the famous American dentist of Europe, was
said to have made vulcanite dentures for Mr. Goodyear, but did
not apply for any patent because of professional ethics. However,
Mr. Goodyear did, and in 1855 he received the patent on several
of the steps used in processing vulcanite dentures. Other patents
were granted of a somewhat similar nature, resulting in a legal
contest among the patentees. Later they settled their differences,
pooled their interests, and formed a corporation to collect fees and
royalties on each vulcanite denture made. The corporation was not
content to make a profit on the materials, that is, on the rubber,

1American Dental Association Charter, Constitution and Administrative By-Laws
and Code of Ethics, 1939.
2Bremner, M. D. K.: The Story of Dentistry; Dental Items of Interest Publishing
Company, New York, 1939.
flasks, molds, vulcanizer, etc., but demanded a fee for each denture. The annual fee ranged from $25 to $50. In addition, royalties of $1.00 for each denture having less than six teeth, and $2.50 for a denture having six or more teeth, were sometimes specified. These were high fees, considering the purchasing power of money at that time (1860-1880). Of course, not all dentists cooperated. Those who did not were relentlessly harried in the courts by Josiah Bacon, treasurer of the Goodyear Vulcanite Company, the patent-holding firm. Mr. Bacon, through the Federal District Court, had enjoined Dr. Samuel P. Chalfont, of Wilmington, Delaware, from using the vulcanite process in making dentures because he refused to pay the royalties. In St. Louis, where Dr. Chalfont later moved, he again found himself confronted by the Goodyear Vulcanite Company. Bacon pursued Chalfont to San Francisco, where Bacon haled Chalfont into court again. The episode ended when Chalfont shot Bacon in the latter's hotel room. This practically ended the Goodyear Company's efforts to enforce the vulcanite process-patents. But these patents were not defeated in litigation, and courts had held that dentists must abide by them. It was only when the last of the patents expired, in 1884, that the dental profession was lawfully freed from liability for infringement. During the life of the patents it is estimated that approximately 5000 dentists paid upwards of three million dollars for the privilege of making vulcanite dentures.

*International Tooth Crown Company episode.* The vulcanite precedent had many repercussions because it was shown that process patents could be enforced against the dental profession and could be made lucrative also. No wonder then that the International Tooth Crown Company was organized to exploit the profession! This company, after acquiring a number of patents on crowns and bridgework and on the minute details in the construction thereof, started to intimidate dentists into paying fees from $100 to $500 a year in order to be able to practise dentistry without being sued. It isn't difficult to scare men individually in this way, because they do not have the time or the money to litigate. The only way to
combat such vicious practices is to organize. Fortunately, the dental profession had one man who almost single-handed created the United States Protective Association to defend practitioners against the tooth and crown patents. That man was a practising dentist in Chicago, Dr. J. N. Crouse. He was of the crusading type—a man who fought for what he thought was right, even though it meant much personal sacrifice. Consequently he neglected his practice to interest dentists in the cause, and finally succeeded in raising about $60,000 to fight the patents in the courts. A judicial contest of this kind almost always drags along for a number of years. It was not until 1900 that all of the crown and bridge patents were invalidated by court action, either on proof of no invention or of prior art. In no case, however, was it established that dentists would not be liable if they infringed on a valid process patent.

Taggart case. In 1907 Dr. William H. Taggart of Chicago, Illinois, presented his system of inlay casting before a dental society in Brooklyn, New York. At the time he read the paper he had already filed patent applications on the process. Later, when Dr. Taggart attempted to license dentists to use his method, a long and bitter fight developed. It was fought between Taggart, with the support of his many friends, on one side, and on the other the Dentists' Mutual Protective Alliance, organized largely by Dr. M. D. K. Bremner of Chicago, Illinois, and the National Dental Protective Association, organized under the leadership of Dr. Mark Finley of Washington, D. C. The first serious attempt by Taggart to force dentists to pay license fees was made in Washington, D. C., against Dr. Boyton. Taggart lost the Boyton case and, since it involved only two of the minor patents, dropped it; but he started suit against a Chicago dentist, Dr. Moll, who lost the case. As a direct result of this loss, Dr. Bremner and his associates founded the Dentists' Mutual Protective Alliance to defend themselves and to test the validity of the Taggart patents. In the end the Taggart patents were declared invalid because of prior art, as it was shown conclusively in court that Dr. B. F. Philbrook of Iowa had cast
inlays by a similar method nearly twenty years previously. Again the profession, by strictly legal methods, had circumvented a process patent, and were spared the payment of fees for the right to administer health practices.

*Direct and indirect levies on process patents.* Regardless of the foregoing experience against the holders of process patents, the dental profession has not escaped the payment of royalties for such patents. The profession has avoided to a large extent the payment of royalties or fees directly levied, but cannot legally use patented material without paying indirect royalties. For example: consider the use of the chromium-containing base-metal alloys which are so extensively used in denture prosthesis. These alloys, their accessory materials and the processes of fabricating them, are covered by patents. The owners of the patents license dental laboratories to make these appliances upon the prescriptions of the dentist, who when he purchases the finished appliance pays indirectly a fee on process patents.

*Patents on the use of methyl methacrylate resin.* Of more recent date the question of patent rights in the processing and use of methyl methacrylate resin for dentures interested the profession. Patents covering the process of molding a monomer-polymer (powder-liquid) methyl methacrylate resin, and the use of the resin for denture bases, are controlled by E. I. duPont de Nemours & Co. The validity of these patents has never been tested in the courts. The owners of the patents instituted suit against the Cosmos Dental Products Inc., makers of "Densene" for infringement, but this case was never brought to trial, the DuPont Company having withdrawn the suit. The DuPont Company, in a circular letter indicating its patent position, issued this statement: "It is our policy to hold anyone infringing, or contributing to the infringement, of

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4An open letter to the Dental Profession—advertising brochure of Cosmos Dental Products Incorporated.

5Circular letter by the DuPont Company to dental laboratories, November 2, 1939.
these patents accountable for all profits and/or damages resulting therefrom." If this policy had been carried out, and if the DuPont Company had instituted a suit against a dentist, the American Dental Association would have been involved in all probability and the validity of the patents would have been tested.

The DuPont Company, as holder of the patent, attempted to restrict the use of methyl methacrylate to the plastic-cake form. The Research Commission of the American Dental Association⁶ pointed out to the DuPont Company certain advantages of the resin when supplied in the powder-liquid form, and requested that the material be supplied in this form as well as in the plastic-cake form. This the DuPont Company did, and thereby graciously sacrificed its patent position with respect to the dental field.

Every unlicensed dentist or technician who uses methyl methacrylate resin from a source other than that licensed by the DuPont Company infringes that Company's patents. To permit such wholesale infringement without taking action would legally weaken a patent and, if continued for very long, would probably invalidate it. Therefore, the DuPont Company had to devise a plan which would legalize the wholesale dental infringement of the patents, yet at the same time protect their patent rights in fields other than dental. The patent department of the DuPont Company evolved the licensing-form agreement whereby the company granted, upon request, a royalty-free license to any dentist or dental technician to use methyl methacrylate resin in making dentures. This licensing form bearing the signature of the DuPont Company, and an announcement bearing the signature of the L. D. Caulk Company, were forwarded to dentists and dental laboratories under date of April 1, 1940. This announcement and its accompanying licensing form created considerable opposition among dentists. Probably only a small percentage of dentists signed it. The Process Patent Committee of the American Dental Association counseled against signing the licensing agreement, because to do so might establish a

dangerous precedent'. The Committee asked the DuPont Company to grant a blanket license to the American Dental Association. This the DuPont Company refused to do, stating that the blanket license would be confusing and embarrassing, since the former individual licensing plan had been in operation for two months; that it would not be as sound legally; and that A.D.A. members probably used only about 25 per cent of the total amount of acrylic denture material consumed. As the Committee thus failed to secure from the DuPont Company a blanket license for the members of the Association, the Committee suggested to the dentist the following alternatives:

1. To use only licensed materials, i.e., Vernonite, Crystolex, or Lucitone.
2. Send his dentures to be processed at laboratories which have accepted the DuPont license.
3. Sign the license agreement.

Process Patent Committee of the American Dental Association. The Dentists' Mutual Protective Alliance, founded in June 1914, was dissolved in January 1931, and its functions were taken over by a standing committee of the American Dental Association. The Alliance gave to the American Dental Association approximately $12,000, the balance left in the treasury of the Alliance. This A.D.A. Committee, with Dr. M. D. K. Bremner as Chairman, is very active when the need is evident. During the last few years the committee participated in the defense of the profession in the case of Webb vs. Frisch. This case involved the use of a high frequency apparatus in the treatment of pyorrhea. The court decided that the Webb patent was invalid. Once again the dental profession defeated a process patent.

7American Dental Association: Proceedings of the Board of Trustees and Reports of Officers and Committees, page 120; Cleveland, Ohio, September 9-13, 1940.
9American Dental Association: Proceedings of the Board of Trustees and Reports of Officers and Committees, page 134; Milwaukee, Wis., July 17-21, 1939.
Patents and the Code of Ethics. The following quotation\textsuperscript{10} is related to the official attitude of the American Dental Association on the question of patents obtained by dentists:

"Changing conditions in the modern world have brought about a situation wherein the ethics and propriety of members of the dental profession owning patent rights or having financial interests in instruments or devices for use in dental practice or the administration of dental treatment should receive reasonable interpretation.

"The procurement of patent rights, the whole or part ownership, or the financial interest in any instrument or device for use in dental practice or the administration of dental treatment, which procurement, ownership, or financial interest may have for its objects, purposes other than the protection of the public, the profession, and the rights of the individual, is unethical."

This is certainly reasonable and in accordance with present legal interpretation, for, after all, an invention is the product of a man's mind. It is his. The law so recognizes it. So did and so does dentistry. Thus if a man chooses to enrich himself, while at the same time giving his fellowmen the benefit of his invention, he is not ostracised. Witness the case of Edward H. Angle, who obtained a number of patents on orthodontic appliances and instruments; or the similar position of J. Leon Williams in the field of porcelain teeth. Both were men of high ethical standing, who capitalized upon their inventions; yet they were almost universally accepted in the highest dental circles, and rightly so. But far above Angle and Williams and other men of sterling character in dentistry, who were geniuses and profited therefrom materially, stand men who, like G. V. Black and W. D. Miller, gave much and, to their everlasting credit, asked for nothing.

\textsuperscript{10}American Dental Association Charter, Constitution and Administrative By-Laws and Code of Ethics, 1939.
The only real value in a critical study of any human problem is the achievement of the goals suggested by that study. These things must be attempted—the old replaced by the better new; the present improved by the experiences of the past—or the analysis of the problem stands either as a colossal error or an indictment against the intelligence, sincerity, or ability of the members of the group involved.

In 1926, the Carnegie Foundation for the Advancement of Teaching completed a survey of dental education in the United States and Canada and made several recommendations for its improvement. Now, fifteen years later, it would seem wise to review the changes suggested in the Carnegie report to see if dental educators have taken seriously the implications of that study. Such a review might disclose mistakes in method which could be corrected as dental education moves forward into another era of self-criticism and study. At least, a decade and a half is time enough to expect some result from the excellent work of Dr. William J. Gies and the Carnegie Foundation, and perhaps raise some questions for future critical study.

If we examine the general conclusions of this 1926 study of dental education, we readily see that many of the broad statements defining dental practice and its close relationship to medicine and the biologic sciences are accepted generally today. Some of the suggested changes that were quite definite, such as the two-year pre-dental course, have been adopted. The subsequent three years in the dental school have already been increased to four years.

But in some of the conclusions, for example where "regeneration of dental education" is proposed, it is quite difficult to be certain of the extent of the accomplishment. This is due to the

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difficulty involved in attempting to measure objectively such progress. It is easy enough to point to an example of better medicodental correlation here, or curricular improvement there, or perhaps improved teaching methods at another point, but it is quite different to measure accurately and impartially the progress of any one of the suggested changes in all the schools, or the extent of total improvement in any one institution. This is due largely to the fact that definite goals were not generally adopted by the schools, with means of measuring objectively the result within a given period of time. If such a plan had been followed, we could now record the results and proceed intelligently. Within the structure of the new curriculum very definite improvement programs could have been arranged in each school in measurable terms: hours, equipment, additional subject material to be incorporated into a given course in a given time, and so on. At the end of the period allotted, a survey then would have indicated what progress toward the goals had been made.

This does not imply, however, that no progress has been made. Undoubtedly the general adoption of the 2-4 plan, the Report of the Curriculum Survey Committee of the American Association of Dental Schools in 1935, graduate courses for dental teachers—like the 1936 Harvard course—and numerous other efforts, represent achievement of real value. But with the American Dental Association, through its Committee on Dental Education, now conducting another survey of dental education with further suggestions for improvement, it is essential that definite goals be considered which are possible of objective measurement over reasonable experimental time.

For example, fifteen years ago, improvement in the quality of teaching, better trained teachers, and more full-time teachers, were all suggested. These things, as one can see, are measurable. The quality of teaching doubtless would improve if more full-time instructors were better trained. Are there more full-time teachers now? How many courses in a university school of education, in such subjects as educational method, theory, and practice, have the
members of dental faculties taken? How many books from the educational shelves in the library have faculty members read? Progress in research likewise can be measured. How many problems are now actively under investigation by students and faculty? How many reports have been presented by faculty members at research meetings? How many articles have been published by faculty members in available periodicals? Endowments can be measured. Oddly enough the increase here is easily measured, but obtaining the increase is most difficult. Endowments reflect an interest in dental problems which will be awakened when more and better reports of dental research convince philanthropic groups that dentistry and dental education must have financial support over and above student fees and infirmary profits.

Thus, since many of the goals in this improvement plan can be measured, why not proceed along definite lines that can leave no doubt as to progress? Broad, pleasing platitudes on improvement may satisfy some who do not care to be too definite about their progress from year to year, but anyone who is really concerned about the future of dental education should be willing to face honestly the results of his efforts, and thus be stimulated to try again or move forward into areas of greater improvement. Intelligent, continued, and effective progress can be expected only by a study of the past, proposed changes for the present, and an objective evaluation of effort at a future time; then a re-study, more suggested improvements, and further checking of results.
Dentistry existed for several centuries before it adopted the scholastic system of education. Knowledge of dentistry first developed as a “skill,” as did that of the artisans from whom dentists originally derived their technique. Artisans made objects by fabricating inert materials. The result of their art was very much admired and appreciated by all who could comprehend. That principle of art is now recognized as technology.

The adoption of dentistry as a preferred occupation, by a few physicians, introduced some radical ideas into dentistry, the influence of which upon the mass-mind produced a very remarkable change. The culture of the physician-dentists impressed their dental colleagues—it was mistaken for dental knowledge. It was subjective “medical” knowledge, not yet recognizable. Medicine, as the healing art, had developed a nomenclature. The euphony of medical terms was very impressive during the infancy of scholastic dentistry. The early physician-dentists cultivated pedantism in order to impress their colleagues with their erudition, i.e., superior education. It was a relative superiority so far as dentistry was concerned, to be identified only by an ugly antonym, and the artisan-dentists developed an inferiority complex as now comprehended by psychologists. It will not long be endured by the individual dentist who possesses it, for a remedy now exists.

The adoption of the term “prosthesis,” to supersede “mechanical dentistry” as a curricular subject, introduced the first correctly named subject which dental education ever possessed. “Prosthesis” identifies a principle which had existed ever since dentistry was recognized as an occupation. Artisan ideology did not require subjects, and dentistry possessed none when the first dental curriculum was compiled. But a school requires subjects to be taught. The term “prosthesis” had long lain dormant in medical nomenclature and it was there the artisan-dentists discovered it.
The errors of infancy are usually amusing to maturity and as such are condoned. Dentistry has outlived its adolescence and is now recognized as a profession, scholastically at least. When dentists first adopted the idea, “I’m a surgeon,” a century passed before the ideal was validated. Oral surgeons are now recognized subjectively by all surgeons. They not only “dress the part” and play the rôle—oral surgery has “arrived.” Despite dental-college education, and all technological procedures relating to dental prosthesis, the art of oral surgery is *biological* dentistry. It can be comprehended by all dentists as “a branch of the healing art.”

Dentistry now possesses *two* arts, but the application of each is incomprehensible to the other. The acceptance of this opinion is dependent upon a recognition of the basic or fundamental meaning of the term “art” as “something to be done.” There are various kinds of art, and each identified art possesses its own material. Some art material is ideological and therefore invisible, though comprehensible. Thus, literature is an *ideological* art, and all literati (authors) are dependent upon “assembled” material prior to the creation of their own art. Technological-art’s ideology recognizes a purpose and has a means for its accomplishment. In dentistry, that purpose is now properly recognized as *prosthesis*. The purpose of all prosthesis is to *make* an inert object (frequently called artificial) to replace a lost part of a human organism.

So long as mental interest concentrated upon lifeless material, technological ideas dominated the intellect of all dentists. Artisan ideology persisted for several centuries after dentistry became an art entity. The idea, “Now that I have made you a ‘set’ of artificial teeth, you must learn to wear them,” precludes recognition of the purpose for which that set of teeth was made. It also reveals the paucity of biological knowledge of the dentist who expresses that idea.

Subjects cannot be comprehended under an objective method of thought. Health is a subject. Only an organism can “heal.” Thus biological art, the healing art, adopted an organism as the
material of that art. Hence that which is "done" in the name of art is actually accomplished by the organism and not by the physician. (The basic idea, here, is an attempt to comprehend the purpose of the healing art.) The recognition of that principle, by physicians, came to them as a revealed truth closely related to what we call "life." The term "medicine," which now identifies the occupation of physicians, originated from concoctions they prescribed as having a known or assumed influence upon the physical welfare of an individual organism—"a patient." Having accepted the principle that an organism is the material of the healing art, and that the recovery of health ("ease") is to be accredited to that art, "hand-work" (surgery) was at first regarded by physicians as heresy. The term "surgery" was adopted in their language as an epithet. That idea no longer exists. Truth thrives upon opposition, and it is impossible to suppress it once it has been recognized as truth, even though its comprehension is immature. It was so with "surgery" when it first emerged as a theory in "healing art." Symptoms, as significant components of diseases, had been recognized by physicians prior to a comprehension of the nature of diseases. Thus symptoms, both objective and subjective, dominated thought, when pathology was an immature science. "Symptoms" always refers to "something else."

Long before dentistry was recognized as an occupation, physicians became interested in the symptomatic changes induced by the operation called "blood-letting." Its phenomena were apparently undeniable, especially regarding the syndrome associated with pyrexia. Those physicians who opposed surgery most violently recognized "blood-letting" as being more closely related to the art of surgery than to their own precious theories. Such ideological culsacs are not unknown in dentistry. No benign motive can be recognized when those physicians who disapproved of surgery in toto induced barbers to adopt "blood-letting" and tooth extraction. Thus the "barber-surgeon" emerged. These two "operations" had very disagreeable implications for physicians relating to their own personal principle of practice; and, besides, the physician-surgeons dis-
approved of barbers for obvious reasons. The ethical principles of that day permitted the idea of competition for personal gain regardless of motive. The occupation of barber-surgeons then lost patronage for two reasons. First, came the recognition that the practice of blood-letting was actually harmful; and, when physicians unanimously disapproved, that phase of "surgery" died. Second, dentists acquired a subsequent interest in extraction, and the public approved of free (from expense) tooth extraction. Thus the barber-surgeon reverted to his original occupation. The "tonsorial artist" today is a barber.

... ...

No motive should be imputed lest injustice occur. It is enough to recognize the fact that no dentist aspired to be known as a physician before certain physicians had recognized dentistry as a personally preferred occupation. These brought culture to dentistry; and that should be recognized as having had a benign influence upon dentistry. As dentistry is now understood, by dentists, it is a debatable question whether dentistry owes much to physicians besides the contribution of a cultural impetus. Both dentistry and medicine have developed knowledge and services which have benefited the physical welfare of civilized people.

Dentistry will one day be recognized as "a branch of the healing art coequal to medicine." That formula in the realm of ideas is like a human infant—comparable to the fond assertion of its father: "Some day that baby will be President of the United States of America." That is at least a possibility under democracy.
A DISCUSSION

SHOULD PRECLINICAL SUBJECTS BE TAUGHT TO COMBINED CLASSES OF MEDICAL AND DENTAL STUDENTS?

CONDUCTED BY

Dean, College of Dentistry, University of California, and Chairman of Committee on Education

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In accordance with the policy of this publication, namely that among its qualities, it should be a "journal of opinion," the following controversial question has been submitted to members of the American College of Dentists:

Is it desirable to have preclinical subjects (anatomy, bacteriology, pathology, physiology, etc.) taught by medical school teachers to combined classes of medical and dental students?

This question was submitted to members of the College recently appointed as consultants to the Committee on Education. There were twelve replies with opinions equally divided. The following answers, arguments and opinions were returned:

HENRY L. BANZHAF—Preclinical courses in the fundamental biological sciences such as anatomy, bacteriology, pathology, or physiology, should not be taught by medical school teachers to combined classes of medical and dental students because of a number of practical reasons. To me it is amazing that there should be a desire at

1Appointed by President Wilson as consultants to the Committee on Education.
this time to resume a practice which was found to be undesirable as well as impractical during the period when dental and medical education was undergoing such marked improvement and reorganization a little over thirty years ago.

In those days the objection, most often repeated by dental educators, to the practice of putting medical and dental students in the same classes was that dental students were usually given less attention and less consideration than their medical classmates and what was worse, a separate standard was maintained for them. The teachers did not expect a dental student to know as much as a medical student and educational standards for dental students were thereby lowered. A degrading situation for dental students was thus created, the effects of which have not yet been entirely dissipated.

I do not believe that this same objection could ever again be raised even if the practice of combined classes were to return since medical educators teaching in universities in which dental schools are also conducted have come to have a real respect for the standards now insisted upon by the dental schools in the United States.

The reason why combined classes are impossible except in an institution which would deliberately want to waste hundreds of hours of time for the dental student and at the same time lessen the efficiency of the instruction received by the medical student may be seen at a glance by studying the table given below.

The university with which I am connected has organized dental and medical curricula which are typical of those found in most other schools since they have complied with the suggestions laid down on the one hand by the Council on Medical Education and Hospitals of the American Medical Association, and on the other by the Curriculum Survey Committee of the American Association of Dental Schools as well as by the regulations of the Council on Dental Education of the American Dental Association. A comparison of the number of hours required in certain of the basic biologic sciences in the medical (column one) and the dental (column two) schools will reveal the number of hours of ineffective instruction which
would be received by the dental student if classes were combined (column three):

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours instruction in medical curriculum</th>
<th>Hours instruction in dental curriculum</th>
<th>Hours instruction not appropriate to dental students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy</td>
<td>530</td>
<td>272</td>
<td>258</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>255</td>
<td>119</td>
<td>136</td>
</tr>
<tr>
<td>Physiology</td>
<td>299</td>
<td>170</td>
<td>59</td>
</tr>
<tr>
<td>Pathology and bacteriology</td>
<td>447</td>
<td>306</td>
<td>141</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>240</td>
<td>102</td>
<td>138</td>
</tr>
</tbody>
</table>

*Plus 128 hours of “dental anatomy” not included in the medical course.

A dental student should obviously not be required to listen to hours and hours of detailed instruction on the anatomy of all parts of the body without exception such as, for example the hand, or to the writing of prescriptions for every known ailment, many of which he will be prohibited by law from writing later, or to the intensive study of micro-organisms which do not concern him directly in the practice of dentistry. Instead he should in some respects receive instruction, far exceeding in effectiveness and detail that which is given to the medical student, in the anatomy of the head and neck or the most modern scientific methods employed in the diagnosis and treatment of oral diseases.

This is the practical common sense reason why the two groups of students should never again be combined in any classes as they were in the old days when we knew less about efficient methods of giving dental instruction than we do today. One other reason, which I will not discuss here in detail but which may be learned by talking to any full-time teacher of medical students is the fact that these teachers are all carrying heavy teaching loads and would certainly protest if they were requested to add dental students to their classes thus increasing their teaching responsibilities, to the detriment of both student groups.

The two objections that I have raised will be found to apply at Harvard University and at the University of Louisville when those institutions begin their announced programs. The objections to the Harvard plan have been so often and convincingly stated that it is
unnecessary to repeat them here. The lesser known because more recently announced Louisville plan of combining medical and dental students presents similar though not identical difficulties (at Louisville the Dental School is not to be discontinued) but if carried out it will present certain baffling problems of a practical nature which cannot be solved within the plan except at the cost of the lowering of the standards for dentistry. Short cuts are always out of place in education. When they are tried, ideals usually suffer.

C. W. HAGAN—In reply to your first question, I do not consider it desirable to have the basic sciences or preclinical subjects as you call them—anatomy, bacteriology, pathology, physiology, etc.—taught by medical school teachers, to combined classes of medical and dental students. Of course, in some places where they have been unable to interest or train dentists or dental teachers to properly teach those subjects, the schools may have to depend on men who do not have the dental training to do the teaching. However, if you will examine the situation as it exists in medical schools you will find that a majority of the teachers of the basic sciences do not have the medical degree. In our school we believe that if the basic sciences deserve a place in dental education, then there must be something in them of particular value in their application to dentistry, and the teacher who is to discover, bring out and apply those principles best will be the one who has had dental training and experience.

I do not believe that it is desirable to combine classes of medical and dental students because my experience is that where such has been done the dental students either are treated as unimportant lookers-on or the work for the dental students is assigned to the least experienced members of the department. We have tried the teaching of our basic sciences in the school with which I am connected under medical teachers and later under dental teachers and we have accomplished much more under properly trained dental teachers than we were ever able to do with the medical teachers. As rapidly as we have been able to train dental men with teaching ability to become interested in teaching the basic sciences, we have
done so, and we believe the results shown unquestionably demonstrate the soundness of that procedure. Many of our men who have gone into this work have, of course, gone on and taken graduate work for advanced degrees or have spent special time in fitting themselves as fully as possible for teaching the basic science in which they were interested. For example, our Dr. Walter H. Wright started as an assistant in anatomy, was then assigned to half time in the department of anatomy and half time in clinical prosthesis, and as a result of this arrangement has not only made the teaching of anatomy much more valuable to our students, but has brought into the field of prosthetic dentistry anatomical knowledge that has solved many of the problems that previously had been unsolvable for us. Dr. Wright, as time permitted, carried on his studies in anatomy and other phases of biology, and eventually earned his Ph.D. degree in the Graduate School of the University, and his accomplishments in prosthetic dentistry are known and appreciated wherever that subject is taught, as you doubtless very well know.

Physiology, in our school, is taught by men who are dentists and who have taken special work in physiology. We would be pleased to have that work compared with the courses in physiology in any dental school or in any of the better medical schools. The same applies to the teaching of biochemistry, histology, embryology, bacteriology, anesthesia, oral surgery, etc.

While it is necessary for a dental student to be well grounded in all the basic sciences, there are certain phases of these which are particularly applicable to him in his work and must be emphasized in his education. I believe that under the plan of combined classes of medical and dental students this important emphasis would be lost.

It would seem to me that anyone at all familiar with the educational requirements of both medicine and dentistry in the various basic sciences would readily see the unsuitableness of attempting to teach them to groups of dental and medical students. Of course, individuals who know only one side of this question sometimes as-
sume that the other side is perfection while recognizing certain shortcomings in the side with which they are familiar, but an intelligent analysis of what is involved would readily dispel such confusion.

Now what is the argument for the combination of two classes or the teaching of the basic subjects in the same manner to both groups of students? Dental and medical practices are very different in many ways. One could spend four years studying anatomy or physiology, or physics, or chemistry, and still not exhaust the field. True, certain fundamental facts are basic in each subject to all of its applications, but why for the sake of a little questionable economy, teach these subjects in a way that can not be best for two groups of practitioners in which the applications must necessarily be divergent at important points. Why not teach the given subject to the specific group in the way that will give that group the best training for its purpose in that subject?

It is not in my province to criticize the present plan of medical education, but I do believe that rather than attempt to conform dental to medical education it might be well to reverse the process and have the medical profession give some thought to providing special education along lines of the present dental course for some of their branches such as nose and throat, the eye, etc.

Houghton Holliday—In my opinion it is desirable to have the same teachers teach the basic sciences in combined classes to professional students preparing to enter any branch of health service. The sham and inadequacy associated with the teaching of the basic sciences in the proprietary dental schools by dental teachers was one of the chief reasons for the Carnegie Survey of Dental Education. On the other hand, there are still numerous schools in which the basic sciences are taught to dental students by medical school teachers who regard the dental students as unwelcome guests, and where the teaching of the dental students is delegated to the less promising teachers who are not quite good enough to teach medical students. Under such conditions it is little wonder that the dental student fails to become enthusiastic about research in the basic prob-
lems of dental disease and often is graduated with an inferiority complex.

The answer to the question “is it desirable to have preclinical subjects (anatomy, bacteriology, pathology, physiology, etc.) taught by medical school teachers to combined classes of medical and dental students?” involves more than appears on the surface. Is it important that diseases of the mouth be studied and treated by individuals having a background and a training equal in every respect to that deemed necessary for study and treatment in the fields of internal medicine, ophthalmology, or obstetrics? Should dentistry be as attractive to our young men and women as are the other branches of health service? Or should the public expect to have to deal with an individual with inferior training when he consults his dentist and should the applicants to a dental school consist largely of those unable to secure admittance to medical schools? It is my conviction that all properly qualified students entering any branch of health service should be taught the basic preclinical sciences by university departments of anatomy, etc., and not by departments of either the medical or dental schools. The subject matter is fundamental to all such students and should constitute the work of the last two years toward the baccalaureate degree. With a common fundamental preparation and after having had a chance to feel out their interests and abilities students could determine their particular fields and enter upon training to render competent service in the chosen branch. Some would apply for a course of training in preparation for the practice of obstetrics, others would apply to dentistry, etc. All would have qualitatively equivalent training leading to equally attractive degrees and would be prepared to give real service to society.

Unfortunately, such an educational program would necessitate some readjustment in the program of medical education and while medicine has often referred to the mote in dentistry’s eye, it has not been very eager to consider the beam in its own.

The arts colleges\(^2\) are already offering cultural courses in many

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of the biological fields. These courses could be strengthened and still leave ample opportunity for the training of those who are preparing for non-professional but nevertheless inestimable services to society. Short correlation courses in the professional schools (or institutes) would serve to apply the basic sciences to the specific professional field. The end result would be that the public would be better served. No longer would physicians spend nearly all of their productive years in school. Dentistry would no longer be the step-child of medicine but would share in the contributions to research and would have an equal opportunity for development with the other branches of health service and other departments of the university. Dental students would be selected from those who had successfully passed the basic sciences and who saw at least an equal opportunity in studying and treating diseases of the mouth and teeth.

Educators, philanthropists, and the thinking public can see no logical reason for having a double standard of training for those engaged in health service, but in spite of that a change can not be readily effected.

However, as a move in the right direction, in those universities where the basic science departments are still regarded as the sole property of the medical school, it would seem wise to have the basic sciences taught by medical school teachers to combined classes of medical and dental students.

J. Stephenson Hopkins—Anatomy—The science of the structure of the animal body and the relation of its parts. Anatomy is the most important fundamental subject in the dental curriculum. While a thorough knowledge of the subject is essential to any medical or dental student, it is not necessary that it be taught by a medical school teacher. Anyone, granting he is a good teacher, who knows the structure of the animal body and is skillful in making dissections, should be qualified to teach the subject.

Hutchins, Robert Maynard: The Higher Learning in America; Yale University Press, 1936, Chap. 1.
Physiology—The science of the manner in which individual parts of the body carry out the processes of life. This science deals with the normal body in a healthy state. Strictly speaking there is no reason why this subject should be taught by a teacher with the M.D. degree. In many of our arts and science colleges the subject is taught by teachers who do not have this degree.

In teaching the subject to dental and medical students it should be taught by a medical school teacher. There are instances in which the physiologist, being familiar with pathology, can give comparative examples of a state of disease and a state of health. The students will in turn gain much valuable and practical knowledge.

Bacteriology—The science which treats of bacteria. One might argue that in studying bacteria a dental student would gain nothing from having the subject taught by a medical school teacher. In a broader sense, when the behavior of bacteria is considered in various diseases, a well-trained medical teacher should be in a position to give the student a much more comprehensive knowledge of the subject.

Pathology—that branch of medicine which treats of the essential nature of disease, especially of the structural and functional changes caused by disease. In the study of general pathology we get nearer to the clinical and practical part of dentistry. Here a teacher with an extensive knowledge of diseases is to be desired in treating this subject.

Many of our leading dental educators at this time believe that dental students must have a broader medical training. If this be true, then the student must be taught by medical school teachers.

B. E. Lischer—In some university schools dental students receive their basic science instruction in the same classes with students of medicine. This is considered ideal, gives the dental student the broadest possible foundation and is claimed to be more economical. Usually, this plan also offers more clock hours of instruction than the dental student would receive when he takes these sciences separated from the medical classes.
Under this plan dental students also receive instruction in practically every science included in this category which is of no particular value to them; they acquire much information which they never use in dental practice, and which they rapidly forget. A more intensive study of those parts of each science which are of fundamental value to dentistry is not possible (or at least rarely given) in this plan. The instructors who do the teaching are rarely interested in dentistry and its problems, seldom do any research in dental fields, and do not dwell on the value of their sciences in clinical dentistry. A science may thus become a mere hurdle to the student which he must, in some manner, leap in order to graduate. This weakness may not be inherent in the scheme but it does exist. A good way to overcome these defects is to have each science taught by a capable man who makes the teaching of dental subjects his primary object, shows its relation to clinical dentistry and does research which may be of value to dental practice. This can be done if these sciences taught in medicine and dentistry are each of them administered as a single unit in the university, but with sufficient personnel to assign capable, interested men to give the major part of the instruction to dental students, yet belong in their respective university divisions on an equal basis and rank as their medical colleagues.

W. H. O. McGehee—After an experience as an educator in several universities, during which opportunities existed for close observation and study of these matters, I am convinced that it is not to the best interests of either medical or dental students to attempt to unify the teaching or to place them together in the same classes, for study of the basic biological sciences. Some have argued that in so doing the close relationships established tend to stimulate mutual friendships and understandings which will in later years accomplish better cooperation in professional life. Others have stated that the future activities of the dental student demand that he acquire the same knowledge of these subjects as the medical student.

I believe there is little ground for either of these theories. Cooperation between the two professions must, and eventually will,
be established, not for reasons of sentiment or friendship, but through gradual development of mutual respect for their separate scientific attainments. This will result from professional contacts in active practice. As dentistry further advances, the present comparative lack of cooperation will decrease, and the medical profession will be awakened from its false attitude of superiority by the increased skills, knowledges and personalities of dental practitioners.

I am convinced that dental students should be taught these subjects in separate classes, but under similar auspices, in the same laboratories, and with the same modern facilities as are now offered medical students, and for the following reasons:

1. Since dentistry is an autonomous profession and we have determined to keep it so, its future practitioners should be educated separately, and by specially trained and equipped teachers who understand and are in sympathy with the scope and objectives of dental practice. Training of such teachers is now being proposed.

2. In the practice of his profession the physician treats the entire body. Therefore, he should possess wide knowledge of the biological sciences. To the contrary, since the functions of the dentist are confined to a specialized field, it is not necessary, or even advisable, in view of the additional specialized training he must have, to devote the same time and effort to these fields. This does not mean that his knowledge should be superficial—quite to the contrary. But it should be concentrated on those particular aspects of the subjects having definite bearing on his future activities.

3. The functions of the dentist are largely technical and surgical, and his skills must be developed to a high order. With the time available in a course of four years, the attainment of these skills will be seriously hampered by devoting the same, and entirely unnecessary, attention to the biological sciences as does the medical student, whose needs are different.

4. At present the predental educational requirements are two years of college work, while those of medicine are higher. As a result, the average dental student is younger and mentally less developed. Placing him in the same classes with older students of
more advanced mental growth puts him under an obvious handicap, to his own detriment and to the disadvantage of the teacher responsible for the advancement of combined classes.

5. Training of the dentist should be concentrated on those matters which, with the time available in an already crowded curriculum, will best make him capable of serving the public, and not on efforts to make him a highly trained biologist or medical-dental specialist, with resultant lack of technical skills.

RAY V. SMITH—It is assumed that the question implies that pre-professional training would be the same for both groups and that the dental school would not have contact with its students before the third year of professional training.

Where medical and dental schools exist as a part of the same university it is my opinion that the school should provide courses in such medical subjects as may be required of dental students. Dental teachers especially trained in those subjects might be used as laboratory assistants in order to correlate the subject matter with the specific needs of dental education and dental practice.

There are several reasons why it seems to me to be inadvisable at this time to merge the medical and dental courses during the first two years.

1. Dental students have the same amount of pre-professional training as medical students in order to compete fairly with them in combined courses. I do not think it wise to add a third year of pre-dental training at this time because many of our dental schools are still adjusting themselves to the two-four plan and should be allowed to complete that adjustment before making further changes. I believe such a move would also tend to further decrease our already low enrollments.

2. Medical subjects taught to dental students should have a dental emphasis in order to make them more meaningful. For example, it is more important that dental students know more thoroughly the anatomy of the head and neck than the extremities. The emphasis would more likely be placed on medical than dental needs if the classes were merged.
3. The merging of the first two years of dental and medical courses would undoubtedly result in a decreased dental enrollment. Many students who had intended to take dentistry would be inclined to continue in medicine rather than switch to a field requiring abilities not yet proven. The higher grade students would most certainly be encouraged to continue in medicine while it would be only natural to shunt the poorer ones off on dentistry. Thus dentistry would become dependent on medicine for the selection of its students.

4. Two years is not sufficient time in which to train dental operators. To make one efficient in the great variety of dental operations and services required in general practice at least three years of training is necessary. It should be remembered that dentists upon graduation must be competent to render complete dental service.

5. It not infrequently happens that dental students who successfully pass their medical subjects encounter difficulty directly traceable to a lack of manual and mechanical aptitudes. In other words, the special aptitudes required in dentistry are not indicated by one's ability to master medical subjects. Furthermore, these special aptitudes are more difficult to develop, the older one becomes. They should, therefore, be tested and developed in the preclinical years in order that the student as well as the school have a better understanding of the individual's potentialities in dentistry. To put off this determination until the third and fourth years is unfair, both to the student and the school.

Dentistry should continue to shape and direct its own educational program, select its own students, and maintain an independent status. I believe this can continue to be done in close co-operation with medicine, borrowing all that is necessary from it and from other fields to provide a well rounded training. There is so much in dentistry that is unique as compared to medicine that it should continue to prepare and to serve as a separate profession. In our endeavor to arrive at a balance between the biological and restorative phases of dentistry we must be sure that we do not lose our independence or force dentistry onto two educational levels.
ROBERT L. SPRAU—Dental and medical schools, in many instances, are units of a university which employs the instructors and pays their salaries. The university also enrolls the students and accepts their tuition. Under these conditions “Medical School Teachers” should be available to all students, and students should be eligible for their classes, provided they meet the entrance requirements.

Students of law or art may desire a course in anatomy. Other students may wish to specialize in teaching or in research in physiology, anatomy, bacteriology, or some other subject. It would be desirable for these students to study under medical school teachers. Dental students in a greater measure need these basic studies.

The inference may be drawn from the question as stated, that medical school teachers are all graduates in medicine. Such is not the case. Many medical school teachers are specialists in these basic subjects, holding various degrees, including dentistry, other than the degree of Doctor of Medicine.

There are certain provisions to this question. If the school or college of a university objects, under university discipline it should not be viewed as separate and distinct, but as an integral part of the university. Under these conditions group or school favoritism would be eliminated. Then all students would be recognized as students of the university and would receive the same attention and consideration. Classes taught under these conditions would be desirable. The teachers would be recognized as university teachers. Certainly they would be just as much dental school teachers as medical school teachers. The instructors would present their subjects, develop and maintain student interest and demonstrate the practical application of the subject to advanced study and practice.

This unified instruction would develop a social relation and a professional acquaintance between these two groups, which would lower the barrier between medicine and dentistry. It would stimulate medico-dental relations resulting in an increased appreciation of the services of each group. The university would welcome the economy of such an arrangement.
Edward C. Stafne—Before answering this question there must be a clear conception of what is meant by so-called "medical school teachers," particularly as it concerns the preclinical subjects mentioned. In the university system, the teaching staff of the departments of anatomy, bacteriology, and so forth need not necessarily be spoken of, or referred to, as medical school teachers. True, the majority of the students enrolled for the courses offered by those departments are medical students, but these departments are provided for and do have enrolled in them students in other lines of endeavor, and many of the teaching staff of these departments do not as a matter of fact have a medical degree, but are specially trained as teachers and for research in their particular fields.

Most of the dental schools are now affiliated with, and many are a part of the university system. Departments of anatomy, bacteriology and so forth, with excellent teaching personnel and facilities, are almost without exception, long since established in these universities, and these departments are best prepared and qualified to teach the fundamental subjects regardless of the future application of the knowledge attained. Since these preclinical subjects are a requirement for the dental student, we should consider them in terms of dental sciences as well as medical sciences. It is obvious that a duplication of staff, equipment, and material for study for the teaching of dental students only is wasteful. The dental phase of these subjects must of course be taught by teachers trained in dental work, preferably at a time when clinical application can be made.

There can be but few, if any, disadvantages in teaching combined classes of medical and dental students provided space and physical equipment are adequate. There may be several advantages. If the size of the combined groups in a given university is such that combined teaching is feasible, much time and effort can be saved without detracting from the efficiency of the course.

An advantage of teaching combined classes is to bring together early, two groups which later will be engaged in a health service. An early association will result in better co-operation and more congenial working relationships following the interval when both groups have completed their respective clinical courses.
Teaching of combined classes will do much to eliminate the
double standard of proficiency which has unfortunately existed.
The requirements for successfully completing the courses offered
will be the same for both groups. There is no reason why dental
students, if carefully selected, are not equally capable of fulfilling
the same requirements.

The dental student who has successfully completed the pre-
scribed courses under these conditions cannot be denied full credit
should he choose to continue graduate work after the dental degree
has been conferred.

There can be no disadvantage to the dental student in combining
courses which are prerequisite and mutually necessary for both
groups. The goal of dental education should be to reach and main-
tain a level equal to that of other professional schools in the uni-
versity.

R. P. Taylor—The answer to your question is “yes.” Also I am
of the opinion that dental school teachers are required to teach both
groups that which the medical school teacher or the student know
nothing about.

Students entering medical schools are for the most part select,
much more so than students entering dental schools: for instance
Yale receives each year eight hundred applications for entrance to
the medical school and only fifty-five are accepted. Harvard and
Johns Hopkins receive about the same number of applications and
each accepts seventy-five to eighty. It would appear in fairness to
both, dental students entering the same class room as medical stu-
dents should be as carefully selected as the medical students.

In the last decade dental schools have greatly improved the per-
sonnel of their student body by selecting more carefully from those
who make application for entrance; however there is yet room for
much improvement.

If the four years that are now required to get a dental degree
were more completely utilized by placing less emphasis on a few
of the somewhat obsolete techniques, and by eliminating the three
months vacation, then this time actively used in working for the de-
degrees of D.D.S. and M.D., something of real importance to the dental profession might be attained.

The many holidays and long summer vacations now in vogue in professional schools are a great waste of time and money to the student who is preparing himself for his life work.

GEORGE W. TEUSCHER—The primary objective of teaching the so-called preclinical subjects to the dental student is to give the latter sufficient understanding of the human organism, its functions and diseases, to enable him to practice dentistry with the view of giving treatment which is best for the whole patient.

Dental education needs teachers of preclinical subjects who are acquainted with the existing problems of clinical dentistry and who have an interest in helping to solve those problems. They should be persons who are able to see the relationships of their own special subject matter to clinical dentistry and who can indicate them to students. Obviously, these conditions may fail to be met in preclinical teaching even though the teaching is done in the dental school, exclusively for dental students. And it does not do to say that they can not be met by medical school teachers teaching combined classes of medical and dental students. It can be safely said, however, that they will be met oftener, and to a greater degree, where teaching is done by dental school teachers.

To be considered, too, is the continued increase in the importance of the preclinical subjects to clinical dentistry and research. As that importance grows, more time will need to be given to the problems of correlation. Anyone connected with a dental school which enjoys its own preclinical teaching staff will attest to the existing and potential advantages of such organization. In the latter situation one sees more correlation and more research directed toward the solution of dental problems than one could reasonably expect to find in the school teaching preclinical subjects to combined classes of medical and dental students by medical school teachers. In the latter case, teachers simply cannot find time for dental problems. Medicine has so many of its own—and that number is constantly increasing—that it seems absurd to think that it is in a position of
advantage to solve those of dentistry. Every scientific individual will, however, stand ready to accept change, when that change becomes feasible. But as things are now in dental and medical education, it seems best that dental school teachers should continue to teach preclinical subjects to dental students.

J. L. Wilson—An answer to this question cannot be given in a simple “yes” or “no.” Some of the subjects named might well be taught by medical school teachers to combined classes, while others seem to be of such nature that an adequate course might be difficult to present to one class made up of students with different objects in view.

In such subjects as anatomy, it does not appear that a student of dentistry would need the detail of general anatomy, particularly of the lower extremities, that a student of medicine would need, and on the other hand he would need more detail on the head and neck anatomy than the student of medicine would need. Again the student of dentistry would hardly be benefitted to the same extent that the student of medicine would be by an elaborate course in neuro-anatomy. A thorough course in dental anatomy would need to be added for the student of dentistry.

A course in general pathology, histology and embryology, and bacteriology might be arranged, provided the students of dentistry were given additional training in pathology, histology and embryology as related to dentistry. It might also be advisable to include bacteriology as related to dental problems.

There seem to be a number of difficulties encountered in such an arrangement but if they can be overcome so that dentistry can benefit by the contact I do not believe it should be denied.

Dentistry has, according to history, come a long way in development through the ages. This development has been largely of a mechanical nature, and is a thing to be proud of as such. However the time is at hand when it can not progress much further unless it takes into account the biological side of the problem.

In preparing to do this there is no reason to neglect the mechanical part which has been developed, but in addition to this we should
take advantage of whatever assistance the medical schools can give us in the way of biological training.

I am opposed to any plan, hidden or otherwise, which attempts to train dental students to be pseudo-physicians instead of dentists. Medicine would doubtless resent such a move. If dentistry wants to bring down the wrath of the medical profession on its head let it embark on such a program, but if it wants assistance and recognition, then let it accept the counsel the medical schools are offering. In such a way dentistry can maintain its autonomy and rise to the position it deserves as a health service profession.

**Summary**

In summarizing the above opinions one can not help but note that those favoring the teaching of preclinical sciences by medical school teachers also recommend certain fundamental changes. For instance, in our educational policies, several of the consultants recommend improved selection of dental students. Others feel that these preclinical subjects should not necessarily be taught by medical school teachers but by the university departments of these subjects.

The advantages to be gained by teaching combined classes of medical and dental students might be summarized from the above opinions as follows:

1. Will broaden the dental students' medical background and encourage a biological approach to the problems of dental practice and research.
2. Will reduce the duplication of teaching effort on the part of dental and medical school teachers.
3. Will eliminate the present double standard of proficiency that now leaves the dental student with a feeling of inferior preparation.
4. The early association of dental and medical students will result in better cooperation and working relationships between these two groups during later years of practice.

The consultants who do not favor the idea of teaching combined classes have for the most part emphasized the disadvantages growing out of such an arrangement. Following is a summary of their argument:
1. The medical school teachers will pay less attention to dental students, who will be relegated to the rôle of "lookers-on."

2. Will use dental students' time for instruction on subjects that will be of little value to them. This time might better be used to attain clinical and surgical skill.

3. Will not be well received by medical school teachers as it will increase their present heavy teaching loads.

4. Will set up different standards of proficiency as two groups with different degrees of preparation will be offered the same instruction.

5. Research in these preclinical fields will not be directed toward dental problems as the teachers are not dental minded.

This paper is presented as an experiment to determine the reaction of readers toward controversial problems facing the profession today. It was felt that it might be to the advantage of all concerned to bring such questions up for free and frank discussion. It is indeed timely that the College has seen fit to appoint consultants to the various committees as these men are in a position to be of great assistance in further developing such discussions.
EDITORIALS

"Dental Caries:" A New Form of Scientific Literature

The second edition of "Dental Caries," in active compilation for the Research Commission of the American Dental Association since April, 1940, has just been published. Its 277 pages include summaries of findings and conclusions on the causes and control of caries by 237 authors or groups of authors in twenty-six countries. Page 2 presents this statement: "This volume has not been copyrighted. It is an 'open book'—for unrestricted use in the advancement of research, and for the promotion of knowledge and efficiency, in oral health-service."

It is not generally understood that the first edition of "Dental Caries" (1939) created a new form of scientific literature, which the second edition (1941) extends and reinforces. Its contents are subject neither to bias, nor to accidental distortion, by an abstractor or reviewer, nor to a publisher's or an editor's prejudgment or censorship. Instead of being a collection of reviews, abstracts, or "write-ups" of particular publications, or an assembly of the opinions of selected or preferred authors, it contains brief and concise original summaries of the findings and conclusions of all individual observers, or groups of workers, who—on a world-wide "open invitation"—crystallized their views, in their own way as the authors, for associated publication in this book, and included references indicating where related details in prior publications may be found, if wanted. Arranged in the alphabetic order of the surnames of the authors, these original summaries, notable for their directness and brevity, are a readily accessible series in one volume of many independent personal publications—source material—on the causes and control of caries. The book answers such important questions as this: Where may one who wishes to study the "caries problem" find—instead of a reviewer's, abstractor's or editor's opinion on this subject—a summary of an author's findings and conclusions, which, stated by him as of a recent specified date, are regarded by that
author himself as the outstanding, enduring, basic results of his experience in the study of caries, and which represent what any reader would now be justified in deducing in general from all of that author’s previous publications on this subject? To illustrate: Dr. Bunting’s excellent summary of the outcome of his many published studies of caries, as he now evaluates the findings in general, occupies only three pages.

“Dental Caries” presents the realities in the accumulated agreements and disagreements on the causes and control of caries; affords convenient opportunity for close study of the situation by every practitioner who wishes to ascertain, from original sources, the strength or weakness of current theories or procedures; and indicates general and specific avenues for further inquiry in many relationships. The book has been compiled to promote critical study, broader understanding, clinical observation, and productive research in this field. The sharp disagreements among competent observers on many phases of the caries problem, which the book shows clearly in detail, should arouse widespread study of the pros and cons on each important aspect.—W. J. G.

[Copies, bound in cloth, may be obtained at the headquarters of the American Dental Association, 212 E. Superior St., Chicago, Ill. First edition (1939), $1.00. Second edition (1941), $2.00.—Ed.]

Need for More Research in Medicine and Dentistry

Knowledge is rapidly extending in scope and in details. Divisions of classified knowledge—science—are multiplying and, in turn, are subdividing into new specialties, analogous to the development of branches on a growing tree. The totality of information that even the most learned person can acquire in a life-time is a very minute portion of the whole of recorded experience. Consequently, the most intelligent and best informed readers who stray only short distances from the fields of their direct information know that in these ramblings they are unable, without verifications from accredited sources, to distinguish truth from error. In their helplessness, in
regions remote from the fields of their direct or intimate knowledge, they are unavoidably superficial readers.

Some very superficial readers—owing to mental laziness, preference for entertainment, desire for “quick results,” etc.—want short cuts to definite conclusions and comfortable assurances and are attracted by plausible assertions that, regardless of reliability, create impressions of finality. Such readers find “predigested generalities” a palatable literary diet and are indifferent to the nourishment afforded by study and analysis of, and reflection on, the details and import of what they read. Unfortunately, grossly superficial readers, who have ceased to be “continuing students,” are not uncommon in the professions.

For such superficial readers the second edition of “Dental Caries” (see the preceding editorial), like the first, will be a great disappointment, because the many findings and conclusions in the book require study, analysis and reflection. Instead of stating with assumed authoritativeness the cause of caries, and the way to control (prevent, arrest) caries, the book shows that as yet there is no authoritative agreement on the cause of caries, nor on the way to prevent it. The book presents many discordant findings and conclusions on which current opinions are variously based. Further study of these contradictory data, by earnest practitioners and in centers of dental research, will undoubtedly be corrective of many present delusive assurances, and also stimulate renewed endeavors—in clinical skepticism and observation—to dispel erroneous ideas, to formulate realistic deductions, to achieve effective procedures, and to attain adequacy and accuracy in all phases of professional understanding of caries.

Having come to the general conclusion indicated above—that dental caries is not yet among the preventable diseases—would it not be appropriate to suggest that, if dentistry had been dismembered and the mental part made a specialty of medical practice, the causes of caries would now be well known and caries would no longer occur? Such an easy suggestion would accord with the wish-
ful thinking that is typical of the grossly superficial reading and thinking to which we referred, above, in the opening paragraphs. But very little study, analysis, or reflection is required to discern related realities. It is obvious that in research in caries, as in many other fields of research, obstacles in the way of understanding must be removed before complete success can be attained. But this is quite as true of many phases of medicine as it is of any part of dentistry. Thus the causes and control of many degenerative, metabolic, infectious and other types of widely prevalent disorders continue—despite active and prolonged research—to elude understanding. Ailments in regions near the teeth—eye, ear, nose, throat and scalp, for example—afford instructive comparisons. Glasses are worn more commonly than ever before; the incidence of hardness of hearing is not decreasing; “head colds” are universal experiences; tonsillectomies are every-day occurrences; and the business of selling patent “hair restorers,” which do not even restore hope, was never more prosperous. Research in all of these fields is actively in progress, in ardent expectation of ultimate success in each. The failures of medicine and dentistry, to prevent various diseases, are due honorably to the same reason: to inherent difficulties that the most competent, devoted, and ingenious efforts have not yet been able to surmount. Failure to attain agreement on the way or ways to prevent caries is a continuing challenge to each center of dental research, as well as to the dental profession as a whole—and to all who seek to promote the public welfare by perfecting the resources of oral health-service.

—W. J. G.

CONCERNING COMMITTEE CHAIRMEN

That which makes the wheels go ’round in most dental organizations is efficient committee work. Largely, that work is dependent on the leadership and guidance of a capable chairman. It is the chairman who can tip the scales of a committee’s activities toward either success or failure. The present writer has observed several classic types of chairman, and also has observed at least one type which is so practically ideal and productive as to serve as a model.
First, there is the honored chairman. He is noticeably and childishly happy over his appointment. No time is lost before his friends and colleagues begin to hear that he is chairman of the Committee of the Association. Usually a news item appears in his local and state bulletins. This type is so pleased with the sound of the title of the position that the work is neglected. As the time for the annual meeting draws near, a reminder from the president or secretary that a report is expected causes a mild flurry. Result: a hurried and inadequately written report.

Another type is the procrastinating chairman. At the beginning of the appointment a year looms ahead as a long, long time. The work is put off and put off until a few weeks prior to the annual meeting. There is then too little time to write to the members, and the meeting is imminent. Result: a one-man report. (Sometimes the members do not even see the report until it is published.)

The non-corresponding chairman is a third type. He seldom bothers his committee members with letters asking for their opinion and action. Usually he is a regular attendant at the several large dental meetings held during the year. At these he tries to see some of the members of his committee. A conference over the breakfast table, in his hotel-room sandwiched between other meetings, or in the bar—thus the committee work is planned for the year. Much later, a letter goes out to those members who were unable to attend the meetings telling them that this and that has been done, and asking if they have any suggestions. He then prepares the report. (Sometimes, it is suspected, before all the replies are received.)

There are several other types which warrant brief mention. The busy-bee chairman: he is already on too many committees, and seldom has an opportunity to get much work done on any of them. The dictator chairman: he attempts to force his committee to approve the report he has written. The inexperienced chairman: he knows nothing of conducting committee affairs, resents advice, and
generally succeeds in botching up all constructive activities. The outside-help chairman: he seeks the advice and suggestions of men not on his committee and incorporates their findings in his report, with little regard for the opinions of his committee members. The forgetful chairman: about the time of the meeting, he recalls that he did receive a letter about a chairmanship some while back but “d’you know, I forgot all about it.”

Then the real chairman of a committee. He is appointed primarily because he knows something about the specific problem or project at hand, is interested in it, has shown such interest in previous activities, and is familiar with effective committee procedures. He acknowledges promptly his acceptance of the appointment. He begins by studying the report of the committee of the previous year, and he reviews the instructions of the organization concerning the work to be done by the committee. Within a short time, he writes to his committee members and informs them that, after considerable thought, he feels the objectives of the committee work for the ensuing year should be such and such, and that they should attempt to do this and that in the manner he has outlined. He asks specifically for their comment, suggestions, additions, and deletions of his proposed aims and outline of activities. He sets a reasonable dead-line for their replies. When he receives their comment (and he sees to it that he does) he analyses this material, makes a composite of all the views, and re-submits a revised set-up of aims and activities to the members for further study and change. Again he receives the replies, and now he correlates all the data in such fashion as to make a first draft of the committee report. This is submitted to all members, and again each has an opportunity to change, add to, or delete portions. Finally, a finished report is drawn up and sent to all members for final approval. When this is forthcoming, the final draft is prepared and copies made for each member. The work of the chairman is about finished: a report has been prepared leisurely, efficiently, and democratically, which represents the opinions of all members of the committee. There remains only the presentation
of the report to the organization in general session. If the chairman is unable to attend the session, he delegates a member of his committee to present the report. If this is not possible, then the secretary is so informed and a copy of the report is given him in ample time for presentation.

This type of chairman is knowingly active in behalf of the organization he supports. He initiates the work of his committee. He sees to it that the work does not lag and is kept on schedule. He acts, properly so, as the correlator for the opinions of his committee members. He prepares a report which represents these opinions, and in a form approved by his committee. He presents a report to the organization which shows mature, unhurried, deliberate thought and study. His report is a credit to the organization, and a progressive step in the activities of the organization. Chairmen of this type should be sought by all organizations. Presidents and governing boards of organizations should study carefully the qualifications of the men they appoint as chairmen. Friendships and nebulous capabilities and interests should not be the criteria for appointing chairmen. If the work of organizations is to be fruitful and intelligent, then organizations should exercise caution and intelligence in appointing the chairmen of their committees.

So that these observations may escape the brand of jeremiad, they are being concluded on a constructive note. Notwithstanding all the care exercised in appointing chairmen, it will likely happen that some of them, for all their capabilities, may know little about conducting committee affairs. The following suggestion, therefore, is given freely (and hopefully) to any dental organization which considers its committee work an essential part of its functional machinery.

Let an organization prepare, or have prepared, a brochure titled "A Technique of Conducting a Committee," or "An Acceptable Method of Conducting Committee Work," or some similar explanatory title, in which would be outlined a method, or methods, to efficiently conduct committee activities. This brochure would be given to the chairman of each committee at the time of his appoint-
ment. It would explain just what is expected of him and what he has to do, and would offer suggestions as to how he might best proceed. This would be the chairman's *vade mecum*. There might be the seed of an idea in this proposal. In which dental organization will it germinate? To paraphrase Huxley, the great end of organizations is not knowledge but action!—*T. McB.*

**Calls Upon Dentistry**

*Calls* upon dentistry may be divided into two groups—those of the past, retrospective, and those of the future, prospective. Nor is there a clear line of distinction between them, for always has there been and always will there be some over-lapping. The line of demarcation is not straight and narrow, but zig-zag and broad.

Thinking then in retrospect, relief from pain has always been a call upon the profession, and regardless of all else that was and is the chief business of dentists. The law requires only average ability in all save one, the dentist must be able to provide relief.

However, through all these years the *call* upon dentistry has been to find more effective methods of providing that relief, and the question may well be asked, has that been done? The answer must be an unqualified "yes." With increasing knowledge of chemistry, anatomy, bacteriology, and pathology, there has been an increasing understanding of illness and, in our field, of dental illness; with increasing knowledge of physics and chemistry, there have been provided safer and better anaesthetics, both local and general, that any operative procedure may be more easily and more comfortably accomplished, and further through improved methods of diagnosis, to which the x-ray has added so much. Chemistry and physics have placed at our command restorative appliances, including the inlay on the one hand and the partial or full denture on the other, with bridges, jacket crowns and alloys of metals in between. All of these have added much of comfort and satisfaction to those whom we serve.

Teeth possess three functions; mastication, enunciation and aesthetics. With materials and appliances available today, these have
been fully met—lost tooth tissue, whether only a part of one tooth, a whole tooth or many teeth may be restored to perfect function in enunciation; in aesthetics, from mouth appearance to renewal of facial form; and in most cases masticatory efficiency will be satisfactory.

These are the calls that have been made upon dentistry, but all the way up through the years and the labors, there has been at least one more, namely, prevention. It is important to cure an ill, but it is more important to prevent that ill. Some accomplishment has been made in the field of prevention, but perchance it is really a matter of "holding off" or of postponement, rather than actual prevention. It may be observed that some three factors are involved in our present preventive practices, which if not followed, allow trouble to enter and trouble does enter in spite of constant care. These factors may be enumerated, (1) nutrition, (2) hygiene and (3) operative procedures. Discussion of these cannot now be undertaken other than to suggest each is important and each must be continued. Real prevention involves the production of an organism, including the teeth, with a natural immunity or resistance, so that these troubles do not occur.

The College has begun a study of prevention, by the creation of a section on Preventive Service. This is well and from this study, which may last over a period of years, new knowledge and new procedures are sure to be developed.

This is a promise for the future; and just as preventive practice has intertwined past calls in past practice, so must another intertwine practice of the future. Reference is made to the need of people who have grown older and require attention in a different way. Through all the years, there have been older people requiring attention, but now their number has increased and their demands appear to take on a different form. A new specialty therefore appears on the horizon—one which has for its aim, the care of elderly people.

As early as 1914, the 'cardinal principles and objectives' of such a specialty, termed geriatrics, were stated. Geriatrics involves the
“treatment of senile diseases, the care of the aged, the causes of senescence, and measures for prolonging life.”¹ The dental profession must give similar attention, and while this is a special call of the future, yet it is clearly to be seen that dentistry has given attention in the past. The future requires the same attention but perhaps with more thought of the patient, specifically.

One year ago, the College inaugurated a study of prevention, through the creation of such a committee. The time is now here, when a committee for the study of geriatrics should be created. Thus will dentistry, through the College now, and later by the profession in practice, in research and in administration, meet this new call upon it. It is now time for the creation of a new committee, Geriatrics.

A Splendid Heritage: Shall It Be Destroyed?

After a hundred years of successful professional practice dentistry suddenly finds itself the prospective victim of what may not inappropriately be termed the gentle art of hijacking. We refer, of course, to the plan for forcibly placing dental education under the control of medical education, lately recommended by a committee of the Harvard Faculty of Medicine, and more recently put into operation at that institution. As announced, a majority of the committee who recommended the new program consisted of doctors of medicine. One is the Director of a medical school in a university that has never had a dental school. All served under the chairmanship of the Dean of the Medical School at Harvard.

In considering this Harvard Plan it should be borne in mind that there is nothing sacred about the portals of a university. If the universities ever existed in an atmosphere of sanctity, it has long since been dissipated. Today they are “Big Business;” and if, in stressing this point we seem to dwell on the obvious, it is because a small minority among the leaders in dentistry appear willing to accept the plan without protest, either because of its Harvard origin—or be-

¹Knouff, R. A., M.D.: Messenger of Theta Kappa Psi; 38, 17; 1941 (July).
cause, as dentists, they have an inferiority complex which they hope to relieve by seeing dentistry become the tail to the medical kite.

Although the Harvard Plan has been the subject of active and prolonged debate, no convincing evidence has yet been advanced to indicate that dental education under the control of medical education would result in a more effective attack upon the problems of dental health and of the education of dentists than if it remained autonomous. The chief argument in favor of the plan is the opinion that medical training would soon determine means for complete prevention of dental diseases. For years on end graduates having this medical training have been trying to determine means for the prevention of the common cold—to mention only one ailment—and still the common cold comes and goes, and still no man knows whence it comes nor whither it goes. Research does not necessarily depend upon adventitious aid, and it may be conducted by anyone without regard to color, creed, or previous condition of servitude. The ex-slave George Washington Carver, eminent in research, is a case in point. As to the amount and quality of education necessary for research, that too is questionable. As the late Alexander Graham Bell was wont to say: "It's mighty fortunate I know so little about electricity, or I could never have invented the telephone." Coming down to cases, however, it would seem that the best promise for research in dental diseases would be found among dental graduates in practice long enough to have become familiar with the problems to be solved. And what might be accomplished, if the money contributed to dental research by the American Dental Association and the American College of Dentists were supplemented by even a fraction of the sum collected by Harvard to finance its "blitzkrieg" in dentistry!

How the fathers in dentistry would react to this Harvard threat may be gathered from dental history, which shows them to have been men who could fight as well as build, and who brooked no encroachment upon their personal or professional responsibilities. They established dentistry as an independent health-service, not because it had been rejected by the medical profession—Dean J. Ben Robin-
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son recently exploded that myth—but because, even then, dentistry was being recognized as a full time, man-size job. And so it proved, and so it has been transmitted into our keeping, with a full century of professional service to its credit; with educational qualifications that have been continually and consistently advanced, to keep the dental practitioner abreast of modern scientific developments; and with innumerable local organizations, which the dentists themselves have formed, for study and mutual improvement. A splendid heritage—being nibbled away!—C. F. H.

TRUTH (?) IN ADVERTISING

Why should an advertisement published in a journal issued by a dental society counterfeit the truth? "Get this:" Use "Haha" Acrylic on that next plate, gentlemen, because "Haha" spells denture success. You'll enthuse over the wonderful results if you use "Haha" Acrylic. Here's why. No liquid is used in the "Haha" process—only a powder. (Of course the powder is heated so hot that some of it breaks down into the liquid, but that was after all a minor matter to the copywriter of the advertisement or the manufacturer, his employer.) There is nothing to cure. (Nothing, incidentally, but the liquid which resulted from a breaking down of the powder.) There are no curing variables. (How wonderful—a resin that has no curing variables. Page the resin chemists. They would like to see one.) There is no curing shrinkage. (So shrinkage has been eliminated! As there is nothing to cure and no curing variables, it just follows that there would be no shrinkage on curing.) Now, don't forget, gentlemen, to use "Haha" Acrylic for complete denture success. (There is nothing like it and there probably never will be.)—G. C. P.

PROBLEMS CONFRONTING DENTISTRY

In his Presidential Address, delivered before the New Jersey State Dental Society, Dr. F. J. Houghton suggests the three most important problems confronting the dental profession today.

They are:

1. “The extent of dental disease in the population which we have shown through surveys on numerous occasions and which the draft board findings have again substantiated;

2. “The threat of subjugating dental education to medical education as proposed in the new Harvard Plan;

3. “The eradication of illegal dental practice and all its allied problems, including the laboratory problems.”

The editor of the Journal of the American Dental Association concludes an editorial on “Scientific Dental Literature” with the statement: “The future of dentistry is indeed bright, with a broadening horizon that constantly urges and demands the broadening of the scope of our knowledge.”

The editor of the Journal of Periodontology, writing under the caption, “The Cloud Has a Silver Lining,” refers to the above concluding remark, with the wonder if it were but “a whistle in the dark, since we are daily conscious of the uncertain future of dentistry as we now know it,” and continues, referring to this as the “Golden Age” (italics in original) of dentistry; but looking ahead, “we see a weakened professional personnel due to increase in educational requirements and army needs; propagandizing of full denture prosthesis has resulted in more extractions, meaning time saved for the dentist and an economically sound and easy procedure for him; women are being discouraged from entering the profession—several schools refusing admittance to them; dental caries is on the increase; costly inlays and expensive restorations become causes of pulp destruction; periodontal disease is allowed to progress until teeth must be extracted; the public has not sufficient comprehension to recognize a correct diagnosis of dental health service; and finally there is expressed the fear of socialized dentistry.” The editorial is concluded with the statement, “... the efforts of dentistry are largely scattered to the four winds and much of dentists’ refined skill and

2 Editorial: J.A.D.A., 28, 975; 1941, June.
3 Editorial: J. Periodont., 12, 106; 1941, July.
higher education wasted . . . we are inclined to wonder just how bright is the future of dentistry."

A guest editorial\(^1\) by A. H. M. in the New York Journal of Dentistry appears favorable to the "Harvard Plan," though the author suggests that his is not a plea for the plan, but that we should not condemn it at present. He still holds to the trial and error method.

These constitute some of the thoughts occupying the minds of some writers. What about them? Most of them may be summed up and considered under two headings of one word each, education and administration.

Any education must be broad in its scope. The object of education is to fit men to live. Dental education of the past has been in reality, training. Dentists have been trained to make restorations. But recent years have demonstrated a decided change and dentists are now being educated. The future augurs still better. We are developing a biological concept. But dental practice is peculiarly different from any other line of endeavor in which men are engaged, so that in the development of the curriculum and in the selection of dental teachers, we must have constantly in mind the dental viewpoint. The biological concept in medical practice is primarily chemical and anatomical (bio-chemistry), while in dental practice it is more particularly physical and anatomical (bio-physics). Biology from the viewpoint of general education is physiological and psychological. There is a common ground on which these three meet, or from which they start, but ultimately each follows its own path.

With this common understanding, dentistry must go on with its own development. Illustrations may be similarly presented concerning specific phases of dental practice as well, e. g., the cause of caries must lie somewhere within the field of bio-chemistry, while the treatment of most dental disorders points toward bio-physics. These lines are today being followed in dental research, in dental teaching and in dental practice.

This is a time of change and many of us may only "see through

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\(^1\)Editorial: N. Y. J. Den., 11, 275; 1941, July-Aug.
the glass dimly" if at all, and we may be momentarily dis-
appointed. In such times our vision and our confidence must be
enlarged. Faith or confidence always sheds light and supplies rays
of hope. Dentistry is needed and it will be provided. The people
will see to that. The line of progress has not, nor will it be straight,
but it forges ahead. We must defend that which is right and oppose
that which is wrong. We require the latter because it serves to
strengthen the former. It is ours to see to it that our interest lies
in that of greater good to the greater number, and not to dentists
only.

In administration, dental organizations are laboring earnestly to
further all educational phases, not excluding the legal as well. The
American Dental Association, the American Association of Dental
Schools, the International Association for Dental Research, the
American College of Dentists, and the American Dental Editors
Association, to mention only these, are promoting education and
research in all fields of dental practice, and State Boards of Dental
Examiners, including the National Association of Dental Examiners,
are working tirelessly for better service.

Some of these problems suggest challenge only; others express
doubt, even disappointment, and still others may be over optimistic.
The findings of surveys and draft boards serve to re-awaken the
people (not dentists) to the need of better care for themselves.
Good dental care is available but who gets what he needs before he
gets what he wants? Birthrights have always been sold for messes
of pottage—there have even been those of the fifth column—there
are always some who are disloyal, even ashamed of present com-
pany. They, however, only deter, they do not bring about perma-
nent change, for by their own incompetency they fail. Men and
things that stick are those that count. For every good accomplished,
it often appears as though two evils spring up—so with dishonor-
able attitude and practice, they must be opposed and in that utopian
life, they may be disposed.

The future of dentistry is bright—just as bright as we make it.
Not by folding our hands and waiting, but by rolling up our sleeves
and pushing ahead. Even though prosthodontists may be overdoing their publicity, elderly people and those requiring substitutes are better off and in this they are consciously or unconsciously bringing in that new day when people of that age group will be receiving better care. We are developing *geriatrists* and how they are needed. Pedodontists are pushing forward their beneficences. Isn't it true then that with this better care at the two ends of life, dentistry is meeting her mission?

There is a silver lining to the cloud, if we look for it and what appears to some as “a whistle in the dark” is, in reality a clear, clarion call to be up and at it.

**Standards for Dental Materials**

The unique qualities of dental therapy are due, to a great extent, to the fact that the hard tooth-structures have little or no ability to repair injuries. Consequently, the dentist uses a variety of therapeutic agents and techniques which are foreign to other forms of health practice. There should be standards for these. In fact, standards for drugs and pharmaceuticals used by the dentist have been available for 120 years, but it was not until 1925 that a standard was formulated for the various materials used in restorative work. This specification, for dental amalgam alloy, was prepared by Doctor Wilmer Souder and co-workers at the National Bureau of Standards.

Since 1928 the American Dental Association has maintained a fellowship at the National Bureau of Standards, under the auspices of the Research Commission of the Association, to cooperate with the Bureau in the formulation of specifications for certain types of dental therapeutic agents, i.e., restorative and accessory materials. Since the work was initiated there have been formulated twelve specifications covering both organic and inorganic materials. In order to transfer the usefulness of the specifications to actual dental practice the Research Commission of the American Dental Association adopted a policy, the essential items of which follow:

After a specification is prepared and adopted, the Research Commission invites manufacturers of the products concerned to certify
formally to the Association that the products of their particular manufacture conform to the specification requirements. The manufacturer, in submitting a formal certification to this effect, has also to demonstrate that he has adequate testing facilities and adequately trained personnel to use them, and to submit typical test-data obtained upon materials of his production. After these formalities have been complied with, the Research Commission procures in the open market a representative sample of the material which has been certified. This sample is tested at the National Bureau of Standards to determine whether it complies with the specification requirements to which the manufacturer has certified. If the material is found to comply, it is placed on the list of certified products which is published periodically in the *Journal of the American Dental Association*.

Because the program has been found mutually useful to the manufacturer, the dental profession and the public, it is believed that it could be developed in other fields—not only on manufactured products, but even to a degree in professional service.—G. C. P.

**ERRATUM**

On the cover page, June, 1941, issue of the Journal, the Research Report was listed as having been made by Albert L. Midgley, Chairman. On page 128 of the text, Dr. Paul C. Kitchin, Secretary, was indicated as having made the report. The latter is correct and should so appear on the contents page.
CORRESPONDENCE AND COMMENT

UNWARRANTED DENTAL PESSIMISM

An editorial on page 26 in the issue of the Journal of Periodontology for January, 1941, opens on this note:

"At a time when the need for a larger number of dental practitioners was never more urgent, or the opportunities for constructive service more abundant, the dental schools of the country are confronted with a decreasing number of students [sic]."

Then with this as a text—and noting that dentistry, which is restricted to practice on one region of the body, does not attract as many students as are intrigued by opportunities for practice on the body as a whole—the author of the editorial goes on to deplore the fact that dentistry is not a specialty of medical practice; if it were, then (hallelujah) dentistry would be as popular among prospective students as are "many of the present-day specialties of medicine."

Since the number of dentists in active practice in this country is about half the total number of all types of physicians, including all of the specialists of medical practice, one wonders why dentistry should be expected to have as many practitioners as, or more than, the number of physicians who collectively include in their "domain" the body as a whole; often, also, the teeth.—(7). 1

Comment. The author of the said editorial, in deploring the "decreasing number of [dental] students," seems to have written from information that is not up-to-date; and also without regard for the successive waves of reconstructive influences, including higher admission requirements, that were initiated by the reports of the prolonged studies of dental education under the auspices of the Carnegie Foundation (1921-26) and the American Association of Dental Schools (1930-35). That the said editorial, in noting present effects of earlier conditions, overlooked the import of current tendencies

1The terminal numbers in parenthesis are inserted for purposes of identification in the records of this Journal.—[Ed.]
may be seen from the following data in a recent report by the Council on Dental Education (J. Am. Den. Assoc., 28, 835; 1941, May):

NUMBER OF UNDERGRADUATES IN THE FOUR CLASSES: 1940-41

<table>
<thead>
<tr>
<th>Freshmen</th>
<th>Sophomores</th>
<th>Juniors</th>
<th>Seniors</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2305</td>
<td>1973</td>
<td>1841</td>
<td>1601</td>
<td>7720</td>
</tr>
</tbody>
</table>

These data show that each successive first-year group, during the past three years at the present high level of requirements, was larger than the preceding group. The Council’s report ascribes the smallness of the senior class “to an accumulation of definite causes, in part to the general economic situation and in part to the advancing of requirements in recent years.” Higher standards for any type of education, by requiring more in time and in educational quality for admission to and transmission through the schools, invariably have such effects, which usually have been only temporary.

The desirable influences of the new conditions affecting the length and quality of pre-dental education are indicated by these striking data, in the Council’s report, on the pre-professional education of the 2305 Freshmen in 1940-41: Years in an approved academic college, supplementary to graduation from a high school—2 years, 1,201 students; 3 years, 421 students; 4 years—received a bachelor degree, 601 students; did not receive a bachelor degree, 64 students; received degrees other than a bachelor degree, 18 students. Now that prospective dental students have adapted their plans to advanced pre-professional educational attainment, and presumably will continue to do so, the number of dental students (on a higher educational level than ever before) may be expected to increase steadily until the need for dentists (actual demand for oral health-service) will be met and perhaps exceeded. These views are supported by the following additional data in the same report by the Council on Dental Education:

ENROLMENT OF UNDERGRADUATES IN THE 39 U. S. DENTAL SCHOOLS: 1937-41

<table>
<thead>
<tr>
<th></th>
<th>1937-38</th>
<th>1938-39</th>
<th>1939-40</th>
<th>1940-41</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number</td>
<td>7184</td>
<td>7331</td>
<td>7407</td>
<td>7720</td>
</tr>
<tr>
<td>Average per school</td>
<td>184</td>
<td>188</td>
<td>190</td>
<td>198</td>
</tr>
</tbody>
</table>
There is nothing in these trends to discourage dentists, or to imply lack of public esteem for, or appreciation of, oral health-service as compared with any other kind of health service. On the contrary, these trends show very clearly that men and women who have been as well educated as those now entering medical schools are, in increasing number, selecting dentistry for their life-work. This tendency would be accelerated if dentists, in their conversations with laymen, were more fluent in expressing appreciation of the actual worth, and real dignity and importance, of dentistry as a profession—in harmony with the editorial plea of G. C. P. on pages 140-41 of the issue of this Journal for June, 1941.—[C. Ed. (7)].

Two Points of View

On page 9 of Special Text No. 51, DENTAL ADMINISTRATION, of the Army Extension Courses, sub-section 9 is entitled: "Dental Corps a part of the Medical Department." The first paragraph of this section states why the Dental Corps exists in the Army organization. To quote:

"The Dental Corps exists as a body separate from the Medical Corps because of an educational policy that has separated the education of dental surgeons from that of practitioners of other specialties within the field of medicine and surgery. Were it not for this fact there would probably be no Dental Corps as such, and professional dental work would be done by general medical men who saw fit to pursue a post-graduate course designed to qualify them as dental specialists."

The italics are not in the original but have been added to emphasize the philosophy of the Medical Department of the Army in relation to the Dental Corps. It is, in fact, very close to that of the so-called Harvard Plan.

In contrast to this philosophy, consider the statement of Theodor Blum, M. D., D. D. S., on page 143 of the Second Volume of the Transactions of the Ninth International Congress of the F. D. I. (1936), in part as follows:

"If our discussion here is expected to be of any value at all, it must be frank and open. It was stated that it was the fault of medicine that the separation took place. We should be very grateful because the great advance
in dentistry was due to it. I have seen much dental work from all over the world and what I think is that we need more teaching of dentistry.”

This statement was made during a free discussion on the various reports given before that congress on dental education. Doctor Blum concluded his discussion by saying:

“I am certain that in the future you will agree with those of us who believe that the practice of dentistry is a separate health service intimately cooperating with medicine and medical and dental specialties.”—(8).

Comment. The foregoing quotation, from “Special Text No. 51,” indicates very clearly a condition that exists in medical circles not only in the Army but also in other fields. It should warn the dental profession to continue to be alert to any tendencies in Army dental service—under the influence of superior medical officers—to facilitate the substitution of technicians for dentists in intraoral care. That a preferred portion of dentistry should be made a specialty of medical practice, “the common work to be done by technicians,” is a form of wishful thinking that is expressed recurrently, notably by some who in matters of organization or administration seek to acquire superficial conveniences, or in professional relationships permit varieties of covetousness to demoralize their judgments. The following related statement, on page 59 of the issue of the Jour. N. J. State Den. Soc. for April, 1941, will interest our readers:

“That there is ‘no new thing under the sun’ is attested by a controversy that raged in the dental profession nearly 60 years ago and which, under the proposed Harvard Plan, has been lately very much to the fore. In 1887 Dr. Norman W. Kingsley read a paper before the Central Dental Association of Northern New Jersey entitled ‘Dentistry not a specialty of medicine,’ and in that paper he quoted from a letter he had received from Dr. T. W. Brophy. As you will remember, Dr. Brophy was a graduate of medicine and a professor in a dental college, and this is what he said: ‘My experience as one of the founders of an institution of learning for the purpose of educating medical graduates to practice dentistry has convinced me, against my will, that it is impossible to make skillful dentists, as a rule, from such material. A young man who would be a successful dentist must begin his study with his mind fixed, as far as possible, on his life-work. I am in favor of dentists studying medicine, but not engaging in medical study until after they have become dentists. . . . Dentistry is not nor can it ever be, a depart-
ment of medicine, or a specialty of medicine in the sense that is ophthalmology, etc. These conclusions I have arrived at against my will. I have been forced to these convictions, and have abandoned a pet theory in consequence thereof, and these conclusions are not founded on a theory, but facts which have been established on the firm ground of an expensive and hard-earned experience.'

"The celebrated Dr. J. Foster Flagg was present on the occasion and he contributed the following to the debate: 'No one has ever said that dentistry never was in any way connected with medicine. No one has ever said that dentistry was not much indebted to medicine. No one has ever said that dentistry did not think—fifty years ago—that it was really a specialty of medicine. But what we do say now is, that dentistry has grown beyond all this; that dentistry owes vastly more to other sources than it owes to medicine—that it recognizes its indebtedness most gratefully to all—but that it feels its own ability in prehension, digestion and assimilation, and that it asserts, through these, its claims to individuality.' And he added: 'The more one knows of dentistry, the more these claims are recognized. The less one knows of dentistry, the less these claims are realized; and, this is why we find M.D.'s both in and out of dentistry, advocating for dentistry such marked dependence on medicine.'"—[C. Ed. (8)].

NOTES

Air Transportation of Wounded in the German Campaign in Poland

This interesting comment, regarding the treatment of jaw and facial injuries of the German soldiers, was published on page 416 of the issue of the United States Naval Medical Bulletin for July, 1941:

"The Inspector of the Medical Service for the German Air Force established in the German Dental Corps a group of dental officers trained and designated for duty with the air ambulance service. They flew in the ambulance planes and were in charge of selecting the most urgent emergency face and jaw cases from those wounded and brought to the landing fields by automobile ambulances. The wounded were placed in planes which carried 8 to 12 beds and 8 to 12 seated patients, besides the medical officer. The rest of the wounded were left for selection by the medical officer in the next ambulance plane and this selection continued until all cases were evacuated. [Italic not in original.]

"Jaw fractures and face casualties were one type of injury that were given precedence for air transportation. The treatment of jaw fractures is considered of such importance that most hospitals have special departments
for these casualties. Upon arrival, the wounded were rushed to these departments, where they were cared for by dental surgeons. Early immobilization of jaw fractures, the use of an emergency splint within 24 to 48 hours, and a permanent splint 2 to 5 days after the injury resulted in optimum healing and recovery.” [Italic not in original.][C. Ed. (7).]

**Medical and Dental Preparedness**

There is a move on foot to rehabilitate prospective draftees so that they will be physically fit for induction into the armed forces of this nation. More than 40 per cent of the examined men have been classified as unfit for general military service. Much can be done in this field, as many of the physical defects can be remedied. Especially can dental rehabilitation be carried out. As stated in the “Report of Commission on Physical Rehabilitation” (J. A. M. A. 117, 99; July 19, 1941):

“Only a small portion of the population can afford to pay or will be willing to pay for corrective measures which may make them available for military or industrial service but which do not as yet interfere with their present civilian occupations.”

If this cannot be placed on a voluntary basis, and financed on a national scale through some such facility as the Federal Security Agency, there is “in the opinion of the Commission the alternative to such a voluntary program” which “is lower physical standards of eligibility for selective service and compulsory physical rehabilitation after induction into the Army. Action is required along the lines of one or the other of these alternatives, for the present standards of physical eligibility have reduced the nation's reservoir of eligible registrants to a number far lower than had been anticipated.”

The Commission's report was signed by its members, consisting of six physicians and Dr. John T. O'Rourke, the dental representative on the Commission.—[C. Ed. (8).]

On August 16 the *N. Y. Times* published a lengthy statement, issued in Washington on the previous day by the Federal Security Administrator, in approval of the report (discussed above) of the Commission on Physical Rehabilitation. The Administrator's comment on the report included this opinion:

“While this program is directed primarily toward making more men
NOTES

available for military service, it has far greater implications on the future public health of the country, particularly in relation to the opportunities for the replacement of these registrants into civilian pursuits after the emergency is over.”

The Commission’s report, as publicly discussed by the Administrator, included these additional views:

“A comprehensive program for physical rehabilitation of the young men of the nation is important in order to maintain effective man power for industry as well as for military service. It will also have an influence in retarding the development of disabilities of middle age which are responsible for an unemployable group in every community.

“In all states and local areas rehabilitation committees should be created jointly by the Federal Security Agency and the Selective Service System to collaborate with professional groups, local governments and voluntary agencies in the development of local rehabilitation facilities.

“In order to meet the situation realistically, it is recommended that Congress enact legislation to defray the cost. As this is primarily a matter of vital necessity for national defense, the cost should be met directly by Federal defense appropriations to the Federal Security Agency, when needed, utilizing fully its available local medical, dental and hospital facilities. Without Federal legislation of this nature, it can be predicted that little progress in voluntary physical rehabilitation is to be expected.”—[C. Ed. (9).]

INVESTIGATION OF BASE-METAL ALLOYS IN GERMANY

In Germany, where precious alloys, like probably nearly everything else, are at a premium, considerable research has been done on alloys as prospective substitutes. An abstract in English by E. Fetz, (Metals and Alloys, 13, 649; 1941, May) of a German investigation of the mechanical properties and corrosion stability of dental alloys based upon high purity aluminum (published in Zeitschrift Metallkunde 32, 348; 1940, Oct.), shows a development of this type. The aluminum alloy investigated is a common one which has fair resistance to corrosion. The mechanical properties and corrosion resistance of such alloys indicate that they are not substitutes for precious-metal alloys, but in reality only very inferior replacements. Their use indicates the extreme inferiority into which this phase of dental therapeutics in Germany is being reduced.—[C. Ed. (10).]
NEW BOOKS

Dental Caries (Second Edition), now in press, will be ready for distribution early in September. The first edition, issued two years ago, presented summaries of findings and conclusions on the causes and control of caries by 195 authors or groups of authors in twenty-five countries, and contained 189 pages. The second edition will present revisions of many of the summaries in the first edition and also summaries by 42 additional authors or groups of authors in twelve countries. It will contain 280 pages. This volume has been compiled by the Advisory Committee on Research in Dental Caries for the Research Commission of the American Dental Association to promote understanding, clinical observation, and research in this field. Copies, bound in cloth, may be obtained at the headquarters of the American Dental Association, 212 East Superior Street, Chicago, Ill. First edition (1939), $1. Second edition (1941), $2.


Dental Education in the United States: By John T. O'Rourke, B.S., D.D.S., Dean and Professor of Oral Medicine, University of Louisville School of Dentistry; and LeRoy M. S. Miner, D.M.D., M.D., Sc.D., Dr. P.H., Dean and Professor of Clinical Oral Surgery, Harvard Dental School; Professor of Stomatology, Boston

(New Books continued on page D)
OUR ADVERTISEMENTS

*A policy intended to safeguard professional interests and to encourage the worthiest industrial endeavor*

The basis and conditions of our policy relating to advertisements are set forth below (*J. Am. Col. Den.*, 2, 199; 1935):

I. Advancement of the material aspects of civilization is largely dependent upon the expanding production and distribution of commodities, and their correlation with individual needs and desires. Successful practice of modern dentistry, on a broad scale, would be impossible without an abundance of the useful products of dental industries. Leading dental manufacturers and dealers have been providing invaluable merchandise for the dental practitioner. The business of supplying dental commodities has been effectually organized and, as an auxiliary to oral health-service, is more than sufficient to tax the greatest ingenuity and all the attention and integrity of each dental producer and distributor.

The American College of Dentists aims, in the public interest, to strengthen all wholesome relations and activities that facilitate the development of dentistry and advance the welfare of the dental profession. The College commends all worthy endeavors to promote useful dental industries, and regards honorable business in dental merchandise as a respected assistant of the dental profession. Our Board of Editors has formulated "minimum requirements" for the acceptance of commercial advertisements of useful dental commodities (*J. Am. Col. Den.*, 2, 173; 1935). These "minimum requirements" are intended, by rigorous selection on a high level of business integrity and achievement, to create an accredited list of Class-A dental products and services, and include these specifications: Advertisements may state nothing that, by any reasonable interpretation, might mislead, deceive, or defraud the reader. Extravagant or inappropriate phraseology, disparagement, unfairness, triviality, and vulgarity must be excluded. Advertisements relating to drugs or cosmetics, foods, dental materials, education, finance—to any phase of interest or activity—will be accepted for only such commodities or services as merit the commendation, approval or acceptance of the National Bureau of Standards, American Dental Association, American Medical Association, Council on Dental Therapeutics, Dental Educational Council, Better Business Bureau, and other official bodies in their respective fields of authoritative pronouncement.
ADVERTISEMENTS

The welfare of the consumer is our paramount consideration. In accordance with the recommendation of the American Association of Dental Editors, the placement of advertisements will be restricted to the advertising section.

II. An advertisement, to be accepted or repeated, not only must conform with the said "minimum requirements," but also must meet the special test applied through a questionnaire that will be repeatedly exchanged confidentially with numerous referees in all parts of the United States, and which contains the following inquiries:

Questionnaire for referees on acceptance of advertisements.—(1) Has __________ (person, company, service, etc.) always been honorable and fair in (his, their) dealing with you personally? (2) If not, indicate confidentially your experience to the contrary. (3) Has __________ (commodity, service, etc.) always been, in your use of it, what its advertisers claim for it? (4) If not, indicate claims that were unwarranted when made. (5) Would the accompanying (copy of a proposed) advertisement of __________ (commodity, service, etc.) be warranted, in your judgment, as a recognition and encouragement of useful dental commercialism? (6) If your answer to Question 5 is Yes, will you agree to test, critically, the above-named commodity (service, etc.) and to respond at intervals to our further inquiries as to whether all the claims published currently in its behalf, in advertisements in the Journal of the American College of Dentists or elsewhere, are justified?

III. The advertisers whose claims are published on the succeeding pages stand high in commercial character and on the recognized merits of their products (services, etc.). They are not among those who seek advantage from misrepresentation, and need no assistance from a prejudiced or insincere journalistic policy. They are above the temptation to try to control or influence any aspect of the conduct of this Journal, which in all its phases is completely independent, and fully representative of the professional ideals and the professional obligations of the American College of Dentists. We commend each advertiser in this issue to the patronage of all ethical dentists.
BECAUSE IT BEARS
THE NAME
Williams

FOR many, many years, the name "Williams" has been identified with the finest in dental prosthesis... That the profession so confidently accepts a product because it bears the name Williams is to us an obligation which we shall steadfastly fulfill.

WILLIAMS XXX
One of Dentistry's Finest Partial Denture Casting Golds
NEW BOOKS

(Continued from page 236)

University School of Medicine. With a Foreword by Raymond A. Kent, B.A., M.A., Ph.D., LL.D., President, University of Louis-
ville. 367 pages. Philadelphia and London: W. B. Saunders Com-
pany, 1941. Price $5.

Dentistry as a Professional Career: A Brochure for the use of Guidance Officers and Prospective Students; Arranged and Pub-
lished by The Council on Dental Education of the American Dental Association, 212 East Superior Street, Chicago, Ill.

Your Teeth: Their Past, Present and Probable Future, by Peter J. Brekhus, D.D.S., Director of Research, College of Dentistry, University of Minnesota; published by University of Minnesota Press, 1941, price $2.50.

DEATHS

Ralph Bullock Jones, Willimantic, Conn. May 9, 1941
R. Boyd Bogle, Nashville, Tenn. May 25, 1941
William Hopkinson, Milwaukee, Wis. July 23, 1941
Charles S. Kramer, Colorado Springs, Colo. July 30, 1941
Harris Reid Conley Wilson, Cleveland, Ohio July 9, 1941
Alex E. Bard, Tucson, Ariz. August 21, 1941
Harry E. Latcham, Baltimore, Md. August 20, 1941
H. W. Titus, Eugene, Ore. July 29, 1941
Jesse D. White, St. Louis, Mo. September 16, 1941
Certification of Specialists—E. W. Swinehart (45), chairman; Max Ernst (42), H. C. Fixott (44), W. E. Flesher (41), C. O. Flagstad (41), J. O. McCall (43).

Education—W. C. Fleming (44), chairman; A. W. Bryan (43), Harry Lyons (45), J. T. O'Rourke (43), R. S. Vinsant (41), L. M. Waugh (42), F. W. Hinds (42).

Endowments—A. H. Merritt (42), chairman; H. J. Burkhart (45), Dan U. Cameron (41), Oscar J. Chase (44), Wm. J. Gies (45), E. W. Morris (43).

History—W. N. Hodgkin (44), chairman; W. H. Archer (45), H. L. Banzhaf (41), E. E. Havercrock (42), J. B. Robinson (43).

Hospital Dental Service—Howard C. Miller (43), chairman; R. W. Bunting (44), E. A. Charbonnel (45), L. M. Fitz-Gerald (41), Leo Stern (42).

Journalism—J. Cannon Black (45), chairman; J. M. Donovan (45), W. B. Dunning (44), Walter Hyde (44), B. E. Lischer (43), T. F. McBride (41), E. G. Meisel (42), E. B. Spalding (44), R. C. Willett (42).

Necrology—J. V. Conzett (41), chairman; F. H. Cushman (42), P. V. McParland (45), R. H. Volland (43), M. L. Ward (44).

Nominations—H. E. Friesell (45), chairman; E. N. Bach (41), G. M. Damon (44), H. O. Lineberger (43), H. W. Titus (42).

Oral Surgery—M. W. Carr (41), chairman; E. R. Bryant (42), C. W. Freeman (44), W. I. MacFarlane (43), W. H. Scherer (45).

Preventive Service—L. A. Cadarette (45), chairman; Hermann Beck's (44), C. S. Foster (43), E. M. Jones (42), E. W. Swanson (41).

Prosthetic Service—W. H. Wright (43), chairman; W. H. Grant (41), C. A. Nelson (45), A. P. O'Hare (42), A. H. Paterson (44).

Relations—J. O. Goodsell (43), chairman; H. F. Hoffman (45), L. E. Kurth (41), T. E. Purcell (44), Nathan Sinai (45), Wilmer Souder (42), E. G. Van Valey (45).

Research—A. L. Midgley (42), chairman; L. E. Bleauch (44), W. D. Cutter (43), J. E. Gurley (42), P. J. Hanzlik (45), P. C. Kitchin (43), A. B. Luckhardt (41), L. R. Main (44), L. M. S. Miner (41), Irvine McQuarrie (45), Fr. A. M. Schwitalla (44).

Socio-Economics—C. E. Rudolph (43), chairman; E. H. Bruening (44), W. R. Davis (41), Waldo H. Mork (43), B. B. Palmer (45), M. W. Prince (45), Maurice William (44), G. W. Wilson (42).

Announcements

Next Annual Convocation: Houston, Texas, Sunday, October 26, 1941.

Fellowships and awards in dental research. The American College of Dentists, at its annual meeting in 1937 [J. Am. Col. Den., 1937, 41 pp. 100 (Sept.) and 256 (Dec.)], 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. Applications 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, Sep.]

JOURNAL OF THE AMERICAN COLLEGE OF DENTISTS

Issued quarterly. Subscription price: $2.00 per volume. Presents the proceedings of the American College of Dentists and such additional papers and comment from responsible sources as may be useful for the promotion of oral health-service and the advancement of the dental profession. Address: Journal of the American College of Dentists, 350 Post St., San Francisco.

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