

# THE JOURNAL

OF THE

## AMERICAN COLLEGE OF DENTISTS

**The Dentist as a Citizen**

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**Dental Research, U.S.A., 1964**

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**Dental Education  
In Denmark**

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**Recommendations  
Of "The Survey"**



**JULY 1964**

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OF THE

## AMERICAN COLLEGE OF DENTISTS

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JULY, 1964

## Training for Dental Editors

After years of talk about training dental editors, something is being done about it. A seminar was held last month for 23 editors, mostly of state society journals, at the Ohio State University. More are planned.

For five days editors faced the facts of publishing life: that many editors are not trained, that many journals lack direction, that goals need to be defined and standards need to be set. They also faced a faculty that kept them in the classroom seven hours a day, then gave them difficult overnight assignments.

The trauma began the first day. Upon arrival each editor was handed a four to five-page critique of the three best journals he had published in the last year. A team of professors from the School of Journalism served as faculty for the seminar and prepared the critiques. No punches were pulled.

Samples of comments about writing and editing: "Your chief editing and writing problems are vagueness, lack of needed emphasis, and pompous language." Another: "Leave out rambling introductory and transitional material. . . . The first 20 paragraphs could be omitted." Still another: "That 'brief' fifth paragraph you mentioned wasn't very brief." Still more: "In a number of articles your authors have trouble getting to the point. Commentary about the obvious buries essential scientific data."

The critiques also covered handling of news, editorial writing, book reviews, scientific articles, content, organization, readability, layout, illustrations, typography—all the fields an editor should be acquainted with, if not expert in.

The journalism professors had spent months preparing the critiques. The content of the seminar was based on the need shown by their analyses of the journals and by a three-year study of nationally circulated dental journals, a continuing study supported by the National Institutes of Health. The critiques were so blunt that some journalism faculty members felt they might offend the editors. The opposite happened. The editors expressed delight and voted unanimously that each editor should receive copies of all critiques—not



just his own. These totaled 80 pages and proved to be a powerful teaching tool during the seminar.

It soon became apparent to the editors that the role and functions of the state dental journal had never been defined and needed to be. Some journals were merely newsletters filled with insignificant personal items. Others tried to serve a more serious professional purpose. Seminar participants agreed that a state journal must have dignity and purpose and that lack of these qualities contributed to the wasteful *30 per cent turnover per year* in editorships. The seminar participants defined the role of the state journal. The statement said in part:

The state journal possesses unusual opportunities to raise professional standards, to develop the profession's insight, and to help mold and reflect its outlook on social, economic, legislative, and educational matters relating to the profession.

The dentist usually looks to the national and specialty journals for information about scientific developments and to local bulletins and newsletters for personal notes. Between these two channels of communication stands the state journal. In its strategic position it too can publish scientific articles; but it also can direct the practitioner to other publications for scientific reports that he may wish to study. It can call attention to reports on technical developments that he may want to use and to discussions of problems and events that may affect the future of the profession.

The state journal . . . should find ways of interesting and informing the practicing dentist on issues vital to the profession and the state association. It should serve as a forum for debate of these issues, and as an instrument for reporting activities and decisions of the state society. Each editor and his board must decide what is important to their readers. The emphasis may vary but the general goals should be to help the dentist provide better health service, to improve his professional competence, and to broaden professional knowledge and outlook.

The seminar taught the profession, as well as the participants, important lessons. The American Association of Dental Editors and the Council on Journalism of the American Dental Association have been discussing for years the problems of the dental journalist. Six years ago the Ohio State University began offering science writing courses in the Colleges of Medicine and Dentistry under the supervision of Prof. George J. Kienzle, Director of the School of Journalism. The science writing courses now are staffed by four full-time specialists in the field, and Ohio State invests over \$60,000 a year in the program. Professor Kienzle also is a member of the dental faculty.

Four years ago the National Institutes of Health gave Ohio State

a research grant to study dental journals and ways of improving them. Three years ago Ohio State, the AADE, and the ADA joined forces. Last year Ohio State announced it would set up a Dental Communications Center to do research, to train editors, and to educate teachers of dental writing from other dental schools.

This year the seminar for dental editors was conducted under an NIH grant, with the co-sponsorship of the ADA. The editors who attended were unanimous in their praise of the seminar. Their only complaint: it was too short. Two of the editors plan to return to Ohio State to study dental communications and earn masters' degrees in this field. Both are on faculties of dental schools.

No one group can claim credit for the giant strides that have been made in the study of dental communications and the training of dental editors in the past four years. Ohio State provided the professional know-how, locale, and financial support at its Dental Communications Center. The Council on Journalism of the ADA and the American Association of Dental Editors helped in the planning and gave their enthusiastic support. And the NIH provided the research funds needed to take the problem out of the talk stage and to move ahead swiftly in the study of dental journals and in the training of editors. Cooperation brought results. There is promise of more ahead.

ISAAC SISSMAN

(Dr. Sissman is Chairman of the Council on Journalism of the American Dental Association. He has also served as Chairman of the Committee on Journalism of the American College of Dentists.)

## The Image Has Improved

In 1947, the National Opinion Research Center at the University of Chicago reported a study (by North and Hatt) on the prestige positions accorded to 90 American occupations. At that time dentists were ranked 18th, in a tie for position with the nuclear physicist, chemist, lawyer, architect, corporation director, and priest.

NORC completed a similar study last year (by Hodge, Siegel, and Rossi) on the change and stability in the prestige of occupations in the intervening period. Dentists now were ranked 14th, tied with architects and county judges.

Justice of the U. S. Supreme Court remained in the number one

spot, and physicians held to the number two position. Nuclear physicists and scientists moved up to the third position.

The list shows the ratings of the top ranking occupations 16 years ago compared with the ratings in June, 1963. The same number indicates a tie.

<i>Occupation</i>	<i>1947</i>	<i>1963</i>
U. S. Supreme Court Justice . . . . .	1	1
Physician . . . . .	2	2
Nuclear physicist . . . . .	18	3
Scientist . . . . .	7	3
Government scientist . . . . .	10	5
State governor . . . . .	2	5
Cabinet member . . . . .	4	8
College professor . . . . .	8	8
Congressman . . . . .	8	8
Chemist . . . . .	18	11
Lawyer . . . . .	18	11
Diplomat . . . . .	4	11
Dentist . . . . .	18	14
Architect . . . . .	18	14
County judge . . . . .	13	14
Psychologist . . . . .	22	17
Minister . . . . .	13	17
Corporation director . . . . .	18	17
Mayor, large city . . . . .	6	17
Priest . . . . .	18	21
Department head, state government . . . . .	13	21
Civil engineer . . . . .	23	21
Airline pilot . . . . .	24	21
Banker . . . . .	10	24
Biologist . . . . .	29	24
Sociologist . . . . .	26	26

Recently, dentistry has become increasingly conscious of its image and means to improve it. It will be interesting to note our future rating in the continuing "periodic readings of . . . the occupational weather."

T.McB.

# The Dentist: A Citizen

FRANK P. BOWYER, D.D.S.

There is concern these days about the image of dentistry. I see the image of our profession determined by two factors: first, our professional service; and second, the recognition, acceptance, and fulfillment of our social responsibilities.

The primary obligation of a dentist to his community and his profession is to render the best possible dental health service at a justifiable fee. By and large I believe this phase of our image is good, although concern must be expressed over some high-powered "practice management trends" which tend to establish fees that cannot be justified for a health service.

In many aspects of our modern civilization we have developed faster in technology than we have in our cultural and social responsibilities. This is particularly true in dentistry. We have made tremendous advances in technology and therapeutics; we have not made similar progress in our social responsibilities.

Dentistry by its very nature is a confining work. Unfortunately, too many of us exist in the confines of our office and "view the world through a mouth mirror." When we leave the office it is for the comforts of home, or the relaxation of the golf course, or the favorite fishing spot. I realize that dentistry is hard work and I am not belittling these worthy undertakings. But I do say to you, *this is not enough*. There is much more that needs to be done, and you are needed to do it. No matter what our knowledge and ability, we can exercise them only in proportion to the extent that the media and atmosphere in which we exist and practice will permit. Therefore it behooves us to be aware of this media; to become and to stay informed in regard to all details of it; to use our individual and group abilities to keep it as favorable as possible.

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Presented at the Meeting of Section Representatives, American College of Dentists, St. Louis, April 8, 1964. This address was adapted from a paper read at the Sixteenth Annual Dental Health Workshop, Nashville, January 17, 1964, and published in the *Journal of the Tennessee State Dental Association*, 44:111-18, April 1964.

Dr. Bowyer is a Regent of the College; President of the Tennessee State Dental Association; and President-elect of the American Association of Orthodontists.



I think this can be done best by fulfilling our responsibilities as citizens of our respective communities. If we expect to have a fine community in which to live and practice, to raise and educate our children, it is up to us to do our share to see that it is that kind of community. It is difficult to find one who enjoys more privileges in a community than the dentist. St. Luke tells us, "Unto whom so much is given, of him shall much be required." Oliver Wendell Holmes said, "A man should share the action and passion of his times at peril of being judged not to have lived." Edmund Burke stated, "All that is necessary for the triumph of evil is for good men to do nothing." One of the main objectives of the American College of Dentists is "To urge upon the professional man the recognition of his responsibilities in the community as a citizen as well as a contributor in the field of health service."

What the Scripture, the poet, the statesman, and our own objectives are saying to us is, that for every privilege we enjoy, we have a corresponding responsibility. All of us realize this fact, but are we doing something about it every day? That is the question.

There are those who believe that because they live in a democracy, because they live in this great republic of the United States of America, they have the right to do as they wish. Living in this great country does not give us the right to do as we wish; rather, it gives us the privilege to do as we should. Fortunately, we still have in this nation of ours the privilege of freedom of assembly, the privilege of freedom of speech, the privilege of freedom of education. Without these precious privileges we would not be here today. I am wondering, do we sincerely and fully appreciate these great privileges, or do we just take them for granted, and think it was ever so and will forever be so. It is for us to remember that these privileges were bestowed upon us by our forefathers at tremendous sacrifice. They impose upon each generation an obligation to make whatever sacrifice is necessary to preserve them. I am not referring here to the sacrifice of life in armed conflict. Rather, I refer to the sacrifice of our time, of our efforts, of our finances, of our abilities and intelligence. I refer to the sacrifices necessary to provide leadership in our communities to make certain that this media and atmosphere in which we live and practice remains favorable to the free enterprise system of economy in which we believe.

It is not easy to be a good citizen; one has to be dedicated to the

idea, and work hard at it. You may have to give up a golf game or two, you may have to give up a fishing trip or two, you may have to attend a few luncheon meetings which disrupt your daily schedule, you may have to attend a few evening meetings when you are exhausted from a busy day in the office, you may even have to give up a few Sunday afternoons. The question you must decide, is it worth it? How much do you cherish the privilege of private practice and a free enterprise economy? How much do you enjoy being your own boss? How badly do you want good schools for your youngsters, and good recreational facilities? How much do you want honest, progressive political leadership in your community? How much do you want a new civic auditorium that will bring the finest in entertainment and cultural art to your community? Do you and your family want these things, and many others, enough to work for them—with perseverance and determination—shoulder to shoulder with fellow citizens who feel the same?

To accomplish many of the things that need to be done in our communities, that in the long run are for our personal benefit, we must accomplish as citizens working with other citizens on projects of community interest. When we lend our time, effort, and intelligence to community projects completely non-related to health services, but which are constructive projects, we earn the respect of our fellow citizens for our interest and activities in these areas. Then when we have an interest in establishing a new school, a dental clinic, or a new speech and hearing center, or want a new dental facility with modern equipment in our crippled children's hospital, or when we take the initiative as citizens to establish community programs for the physically handicapped, the mentally retarded, the chronically ill, the indigent young and old, we will find understanding, receptive lay citizens eager and willing to cooperate with us. They will do so primarily because we have proven ourselves as fellow citizens dedicated and interested in the total welfare of our community. They have grown to respect us as citizens, they will cooperate with us as citizens, and the fact that we are doctors working on a health project becomes a secondary factor. On the other hand, if we restrict our community activities only to the health field this presents to the lay citizenship a suspicious picture of selfish motivation.

You will note that I am speaking to you in broad terms. I am not attempting to say to you, specifically, what you should do to be a

good citizen in your community. Obviously, this will vary tremendously with the community in which one lives; the needs and the opportunities are many and varied, so logically I cannot be specific here. What I am attempting to do is, first, make you realize that you have definite responsibilities as a citizen in your community, and second, to motivate you to seek ways by which you can serve. If you will but take the time to put forth the effort, you will find that your community is in great need of citizenship service that none in your community can render better than you. "Seek and ye shall find"; but remember, "He who waits until he is asked, has waited far too long." No man who contributes to the material, intellectual, and moral well-being of the place in which he lives is long left without proper reward. This will be a reward of the spirit which "rust doth not corrupt, nor thieves break through and steal."

As practicing dentists and respected citizens in our communities it is our further responsibility to encourage and guide into our profession young men who manifest high professional potential. We must not sit idly by and let the increasing public need and demand for dentistry bring into the profession, and eventually into our communities, individuals who do not possess the basic qualifications of true professionals. We are responsible to our profession and to our communities for the next generation of dentists. Let us fulfill this obligation with serious determination.

We must never lose sight of the fact that the practice of dentistry is a privilege not assured solely by our education, but it is a privilege granted to us by our fellow citizens in the State Legislature. The dean of your college of dentistry can give you a D.D.S. degree, but you cannot practice dentistry in any state in this nation until you pass the state board examinations. Let us remember that the state board does not represent our state dental association; the board is an agency of the state controlled by a Dental Practice Act passed by the State Legislature. You are privileged to practice dentistry in your state, not by virtue of your education or your ability to do so, which you must prove to the board, but you are entitled to practice because of an Act passed by your Legislature. They could take that privilege away from you just as they gave it to you.

Who influences the thinking of this legislature that grants you the privilege to practice dentistry? Their constituents, of course. And these constituents are not just the patients who come to your office

to receive rehabilitation service. These constituents are not just the people who get excellent partial and complete dentures. These constituents are not just the parents of the children who get fine orthodontic care. These constituents are not just the parents of the children who receive wonderful pedodontic service. These, unfortunately, may even be in the minority. A vast number of the constituents of these legislators are the masses of the people who today are not getting adequate dental care in your state, and certainly are not getting it throughout this nation. So let us be ever cognizant that our profession is created in the mind of society and it is only maintained by us, the members of the dental profession. Therefore, it behooves us as citizens in our communities to do everything possible to motivate ways and means to make adequate dental health care available to all fellow citizens who will accept it. This is an obligation we assumed when we accepted the title of *DOCTOR*.

If we do not do an adequate job at the local level the state comes into the picture—and when the state cannot do the job the federal government is both interested and involved. We may not like it, but the blame is ours. We have not accepted our responsibilities as citizens and taken the initiative to establish community programs of dental health service. So now, the handicapped, the chronically ill, the indigent young and old cry out to the federal government—and their cries are being heard.

As yet all is not bad—as yet all is not lost. By no means is some federal aid undesirable—if it can be received into the state and the community in such a way that there is still state and community control. But, if we do not awaken and rise to meet the problem, if we—as citizens—do not take the initiative to establish and maintain control over the federal aid that comes into our state and community, it will not be long before there is not only federal aid but also federal control. Then truly all will be lost. Here, again, the answer is up to you. Which is more important—the golf game Thursday afternoon, or that meeting you can arrange with fellow citizens who are equally interested and concerned with the health and welfare problems in your community?

Let us take a brief look at our responsibilities as citizens at the national level. There is no need to remind you that there are strong destructive forces at work in America today. These factors are hard at work building stumbling blocks on the path to peace, stumbling



blocks on our highways to happiness, and on the road of free enterprise economy. They build their blocks with the cement of Communism, the sand and gravel of Socialism, and the steel of Totalitarianism. We can no longer hide our heads in ostrich-like fashion and keep saying it cannot happen here. It is happening here! As citizens of this nation we must avoid the frustration that could so easily beset us, and realize that as individual citizens there is something we can do about it.

The survival of our nation, in my opinion, depends on the continued renewal and the strengthening of the qualities and the character that in the beginning made us great. I do not think that just because we have social changes confronting us that we have to discard all of our past heritage and start from scratch. I think we can build on the heritage of the past. After all, "The heritage of the past is the seed that brings forth the harvest of the future."

Our nation was founded on the integrity and dignity of the individual. It has grown to its present greatness by preserving this integrity and dignity, and only by continuing to do so shall we be able to remain as our founding fathers intended this nation to be. So, starting with a strong, basic belief in a nation under God, we must then continue to build this nation, our communities, and make our plans for the future based on the dignity and integrity of the individual.

Next, we must preserve the integrity of the home: the moral, spiritual, and the ethical dignity and integrity of the family unit. This is basic America.

America was established on certain basic documents—The Constitution, the Bill of Rights, The Declaration of Independence, and yes, I include the Holy Bible. America is our constitutional system of government, versus a socialistic or totalitarian system of government. America is our private enterprise system of personal ownership, of profit and loss, of a competitive market economy. These are a few of the things that have made America great. These are a few of the things that will keep America great.

These are not intangible things, they are real and specific things. These are things that we can understand. These are things that we can do something about. But the big question is, again, are we willing to take the time? Are we willing to be concerned? Are we willing to stand up and be counted? Are we willing to put forth the

effort? The hour of decision is here. Each of us can play some important part. You say, oh well, this is fine; you are talking here on a big national problem. What can I, as an individual, do about this thing? I can't do anything about this. You are wrong, this is not only for statesmen, and for the President of the United States to be concerned about. It is for you, and me, the individual citizens of this nation, to be concerned about. Each of us can do something.

It is true, some will have more ability than others; some will have more opportunity than others, but *everybody can do something!* You ask, what can I do? I will mention two things. If you are concerned about the future of your family, your profession, and your community, you must rededicate yourself as an individual to these basic principles of Americanism. Then, in your own individual home, you and your family unit must do likewise.

I ask of you—rededicate yourself and rededicate your family unit. You *can* do that, so I am not asking you to consider anything that you, as an individual citizen, cannot do. If each of you will do that, there is no challenge that cannot be faced; there is no problem that cannot be solved. It has been said, "One strong, unselfish soul in every community could redeem the world." Are you willing to be that person in your community?

Today there is no place in America for part-time patriots. If our nation is to survive, if we are to continue to enjoy the fruits of *liberty*, we can do no less than follow the examples of the men who won that freedom for us.

Freedom, while a heritage, must be *preserved* for each generation. With blazing intensity of spirit our forefathers dedicated their lives first to securing it, and then to preserving it. They *knew* that life without freedom was intolerable. Patrick Henry could sum up that feeling in, "Give me liberty or give me death." Benjamin Franklin could say simply and eloquently, "Where liberty dwells there is my country." When the salute of cannon celebrating the Fourth of July reached his ears, a dying John Adams could arouse himself long enough to whisper, "Independence forever."

Freedom, liberty, independence, are words that ring like exulting bells. You ask for whom the bell tolls? If we continue our complacency the Liberty Bell will not continue to toll for us.

It is not too late; but it is much later than we think. The past is gone; that past is static. There is nothing we can do that will change

that. But the future is before us, and this future is dynamic. There is great opportunity. There is great challenge.

So, as we daily enjoy the privileges that are ours to enjoy as dentists in the communities of this great nation, let us realize that we also have corresponding obligations and responsibilities as citizens.

Truly, this age calls out for vision, for courage, for action from each individual—from you and me, who are the builders of eternity.

Isn't it strange that princes and kings,  
And clowns that caper in sawdust rings,  
And common folk like you and me  
Are the builders of Eternity.

To each is given a bag of tools,  
A shapeless mass and a book of rules,  
And each must fashion ere life is flown  
A stumbling block or a stepping stone.

—R. L. SHARPE

What you do as an individual citizen each day, whether you build stumbling blocks or stepping stones, is the main factor that will determine the destiny of dentistry.

Let us fear not the challenge of this changing world, but with courage and with vision supported by wisdom, let us build stepping stones to a more glorious future for our profession and the people we serve. Let us be filled with determination that we will continue to build a strong America by building strong communities in which to live, practice, and raise our families. But let us be certain that we build on the energies of a free and dedicated people.

## Career Guidance

NATHAN KOHN, JR., M.A., LL.B., Ed.D.

The image of dentistry in the eyes of the public results from the interaction of each person's own experiences with dentistry as this has been influenced by his interpretation of the profession of dentistry, and as he experiences the reactions of others both professional and lay.

The selection of dentistry as a career is strongly influenced by the cultural milieu at the present time. There is some controversy about the real needs of the country for additional dentists. There are some who feel that with high speed equipment, the possibility of pharmaceutical treatment, preventive dental hygiene including use of fluorides, and better use of auxiliaries, the present number of dentists is adequate to provide for the dental care of our country.

It is the feeling of others that in addition to the above, the increased number of college students will, just by the pressure of numbers, give the necessary impetus to fill dental schools, both those which are now in existence and those to come.

There is surely considerable truth to the thinking expressed above, but it is important to understand that except for the contact of the dentist with his patient the dental schools have no direct contact with students. Undergraduate faculty do not tend to be familiar with the opportunities or privileges of the profession. In addition, it is important to recognize that in our modern age there is ever-increasing competition for the competent college student. In the first place, there is a rapidly expanding number of professional fields, each of which is itself expanding. This is not only true of engineering, but tends to be true in the sciences—biology, chemistry, physics, mathematics, etc., not to mention the social sciences—psychology, economics, statistics, etc. The broadening base of our economic system has

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Dr. Kohn is a psychologist and personnel consultant with the St. Louis firm of NK and Associates, Inc. He is a faculty member at Washington University. It will be recalled that Dr. Kohn's organization conducted the studies on "The Dental Student" for the American College of Dentists, 1958-62. The results were published in the March 1961 and September 1962 issues of the JOURNAL.

This is an abstract of his remarks at the meeting of the Section Representatives, April 8, 1964, St. Louis.



led to more and more competition which, in turn, has led to more and more corporations having felt the need for intellectually competent college graduates. This is still another element for competition for students who might be appropriate candidates for dentistry.

Part of the image of dentistry is contaminated in the public mind because of the frequent use of dentistry as the butt of jokes or sarcasm; the fact that some people think it would be unpleasant to work in people's mouths; the value of the profession has not been adequately defined for many people; too many people associate dentistry with pain; and some, perhaps many, individuals who would be very much interested in dentistry are fearful of giving pain and arousing the hostility of the public. There are those in the public who feel dentists charge a great deal for a little bit. Perhaps this can be understood in terms of the fact that very few dentists charge a significant fee for diagnosis, and yet it is this clinical knowledge, experience, education, and diagnostic device which, by enabling a dentist to make appropriate decisions concerning his patient, helps him to perform a service he would otherwise not be able to perform.

This contamination of the image of dentistry with the public is further hurt by the attitudes of some dentists toward dentistry. Not only, as has been stated, do many dentists feel they would like more patients, but it is also an absence of feeling on the part of many dentists that dentistry is a desirable profession in which a person can secure good status. Perhaps there are some dentists who have entered dentistry for secondary reasons, such as not being able to become a physician. This infers, and it is true, that for any profession the image of the profession itself, of itself, is of critical importance. Dentists do not always project an adequate picture of dentistry.

The opportunity for a young man of ability to go into a profession and to earn according to his own ability, using his intelligence and a chance to be creative, being able to work with his hands and mind alike while being associated with people, offers to many an unparalleled opportunity for self-development. Dentistry provides the dedicated individual with high ethical standards, who desires to be of service to others, an opportunity to earn status, respect, and fulfillment through the use of his abilities as well as economic security.

The image of dentistry in terms of dentistry as a career will mature and develop as:

1. The dental profession helps or works with dentists to improve their own image.
2. The facts about the profession of dentistry and its importance are well presented to the counselors, principals, teachers, and other school people.
3. The dental hygiene and educational programs are promoted in as many medias as is plausible.
4. That each dentist educate his patients and through the nature of his relationships with his patients acts as a focus of infection for good dental education through his patient to other members of the public.
5. Information about dentistry as a career needs to become available to students from the Junior High through College.

Dentistry needs to systematically project its own image on a continuing basis that is thoroughly programmed.

A profession such as dentistry maintains its status and increases its position in the community in terms of the services it renders. It is known to the community by the nature and kinds of individuals who respect it to the degree that they desire to make it their own profession. It recruits people in terms of its own concept of itself—that is, the nature of its own service, its respect for the contribution it makes, and for what it means to have the opportunity to be a dentist. From this standpoint, then, there is no better way to build an effective profession than through constant recruitment of competent, interested, vital, intelligent people who will become a part of the discipline.—*The Dental Recruitment Program*, Missouri State Dental Association, 1961, p. 2.

# Some Perspectives of Dental Research in 1964

GEORGE W. BURNETT, D.D.S., Ph.D.

The theme of the 103rd Annual Session of the American Dental Association, at Miami Beach, was "Better Dental Health in the Americas." Perhaps it would be wise for the dental profession, as represented by the American Dental Association, to adopt a continuing national policy for "Better Dental Health for Society," whose benefits would extend not only to the Americas but also to all free peoples. Certainly a national policy of those engaged in dental research could be "Better Dental Health for Society," for this is precisely their goal.

Scarcely three decades ago the dental profession was satisfied, and with some justification, with simply meeting the demands for dental care. Since World War II, in keeping with a changing relationship between dentistry and society, dentistry has broadened its objective to making "Better Dental Health" available to all who want it (1). For dentistry to fulfill its obligation to society requires not only the development of better and more efficient means of dental care, but also the more wide-spread use of existing techniques and the development of new ones in preventive dentistry, and an increase in basic and applied research programs supporting prevention and treatment. Basic and applied dental research programs require funds for research *per se*, for personnel, and for facilities. The perspectives of these factors are discussed in connection with requirements of the dental profession to furnish "Better Dental Health for Society."

No one can predict exactly what the future holds for dental research in terms of funds, personnel, or facilities, and it must be realized that the projections are calculated guesses made on the basis of past actions in regard to dentistry, medicine, and biomedical sciences. One thing is certain, however, dental research cannot stand

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still; it must either progress or regress. If it regresses, dentistry certainly will not be able to furnish better dental care for all society.

#### FINANCIAL PERSPECTIVES

In 1939, when Einstein wrote to President Roosevelt concerning the potential of the atom and the need for research on it as a matter of national policy and even of national survival, the federal government was contributing about \$75 million annually for research of all types (2). It is of interest that Einstein did not suggest that the federal government actually support atomic research, but rather that it could be financed by private persons and industrial laboratories. The attitude and relationship of government to research has undergone much change since that time, for within recent years science has become more dependent on the federal government for financial support than has almost any other national activity. By 1950, total federal funds for research had risen to \$1.1 billion and between 1950 and 1961 the increase was about seven-fold to \$8.8 billion (3). Also as an example of the profound change in philosophy since World War II concerning the role of the federal government in research, was its commitment, within the last few years, to placing an American on the moon by 1970 at an estimated cost of \$20 billion or more. Over a ten-year period this will involve an expenditure of \$5.5 million per day (4). In contrast, however, it was not until 1958 that the National Institute of Dental Research, the prime source of dental research funds, received \$5,218,000 as a *yearly* budget for the support of dental research.

Some idea of the general increase and magnitude of federal support of scientific research can be seen in the fact that in 1940 the federal research and development expenditure was slightly less than 1 per cent of a national budget of over \$9 billion, was 2.74 per cent of a budget of \$40 billion in 1950, and by 1961 was about 11 per cent of a budget of \$81 billion. Of the total amount currently spent on all types of research and development, the federal government furnishes about 75 per cent, the remainder coming from private funds. The current rate of annual increase of federal and nonfederal research funds is about 20 per cent. Such an increase is consistent with the rate of increase established after World War II, for the annual rate of increase in all federal and nonfederal funds for research was rather steady from 1930 to 1940, increased slowly between 1940 and 1950,



and has risen rather sharply since 1950 (5). The amount of federal funds used for research was 0.18 per cent of the gross national product in 1930, 0.34 per cent in 1940, had reached 1.02 per cent by 1950, and was 2.78 per cent by 1961, an overall increase of about 2.0 per cent in the last decade.

How much of the gross national product can be devoted to research and development is not known but the amount is certain to increase, whatever the source, in order to maintain our technological society. Even if the research expenditure remains near 3 per cent of the gross national product for the next decade, federal funds will become increasingly available, for the gross national product nearly doubled between 1951 to 1961, and will probably do so again during the next decade. Consequently even if the per cent of the national product devoted to research remains constant, the total amount of funds available should double between 1960 and 1970. If the present trend continues, however, by 1970 the research and development expenditure should rise even more, to at least 5 per cent of double the present gross national product. Therefore, federal research funds could continue to increase at an average annual rate of about 15 per cent for an indefinite period without devoting an undue amount of our economy to research. However, in final analysis the amount of research funds available will depend, at a given time, on the general state of the economy.

In 1950, \$148 million was spent on medical and health related research. This expenditure increased to \$715 million in 1960, to \$890 million in 1961; it is estimated that it will be between \$2.3 billion and \$3.3 billion by 1970. Using 1961 as an example, medical and health related research derived 56 per cent of its funds from the government, 28 per cent from industry and 16 per cent from private sources (6). Who used these funds? Industry used most of its 28 per cent, although some of these funds were allocated to academic institutions, the federal government utilized 17 per cent of the total for its own intramural program, academic institutions used 40 per cent, and other nonprofit biomedical institutions used 15 per cent (6).

The total amount of federal funds devoted specifically to dental research during FY (Fiscal Year) 1963 by the United States Public Health Service, U. S. Army, U. S. Navy, Veterans Administration, and U. S. Air Force was \$15,057,815 (7). This amounted to less than 1 per cent of all funds for FY 1963. There is no reliable data avail-

able as to how much nonfederal money is devoted to dental research though it has been suggested that 30 to 40 per cent of the total dental research funds currently used are nonfederal, but such an estimate has no validity and is mostly speculation. The principal federal support of dental research is the U. S. Public Health Service. The National Institute of Dental Research and associated activities in the National Institutes of Health contributed over \$13 million in FY 1963 (91 per cent) of which 26 per cent was used intramurally and 74 per cent was used extramurally.

Most of the dental research programs of the other federal services are geared to the special mission of their particular service. The U. S. Army contributed a total of slightly over 3 per cent and the U. S. Navy slightly less than 2 per cent of total dental research funds, both services about equally dividing their funds between intramural and extramural research. The Veterans Administration contributed about 1.41 per cent, over 98 per cent of which was used intramurally. The U. S. Air Force spent the least amount of dental research (0.82 per cent), dividing it equally between intramural and extramural activities. The compilation of federal funds for dental research is not entirely all-inclusive, for some dental research, both intramural and extramural, is supported by funds other than those specifically allocated for dental research. Also, in some instances, the intramural budgets of some federal services, such as the Army, Navy and Air Force do not include salaries for military personnel engaged in research.

How do research funds for dental disease compare percentagewise with appropriations for other medical and health related sciences? Using the National Institutes of Health as an example, dental appropriations for both intramural and extramural research (excluding education and training) from 1950 to 1962 averaged less than 1 per cent of all Public Health Service appropriations, the range extending from 0.2 per cent in 1950 to 1.3 per cent in 1962. When compared with the other National Institutes of Health, the National Institute of Dental Research appropriations averaged 1.78 per cent, the low being 0.9 per cent in 1950 and the high being 2.7 per cent in 1957.

Perhaps more important than past dental research money is the extent of future financial support of dental research. Obviously the amount of money needed for dental research in the next five or ten

years is closely associated with the availability of research personnel and facilities, each of which will be discussed in a separate section. From the foregoing discussion it becomes obvious that dental research is certainly not getting its fair share of research funds. Apart from whether dental research has gotten its fair share of funds in the past is the realistic view of what it should get in the future. With some agencies, dental research funds have increased and with others they have remained relatively constant. As an example, dental research funds in the Army have remained relatively constant for the last decade, with usually 30 per cent allocated to intramural and 70 per cent allocated to extramural research. Funds available for FY 1964 will amount to about \$500,000, with half allocated to intramural research and half allocated to extramural research. The projection for the future in the Army is an annual increase of about 10 per cent.

In the Public Health Service, the chief supporter of dental research, it is hoped that the amount of federal funds for dental research will keep pace with past increases and at least rise in proportion to funds for other phases of medical research. They should also rise in proportion to, but no faster than, the number of qualified research personnel available for dental research. Related to the availability of research funds *per se* is also the availability of facilities described below. From 1950 to 1963, the average rise in all funds for dental research in the National Institute of Dental Research increased at an annual rate of 42 per cent, in comparison to the rather steady state of dental research funds in the Army (6, 8). This computation takes into consideration a phenomenal increase of 259.7 per cent in the funds of the National Institute of Dental Research which took place between 1956 and 1957. If this single year is disregarded the annual rise was about 24 per cent. It seems likely that for the next five years the average annual rise in all federal research funds should be about 15 per cent, a conservative estimate considering that overall federal research funds have increased annually from 10 to 35 per cent over the last decade. If federal dental research funds increase at an annual rate of 10 per cent about \$25 million would be available yearly after five years.

#### FACILITIES

Realizing that medical and dental research cannot be conducted without facilities, federal moneys have been made available concur-

rently with research funds for the construction of research facilities for medical, dental, and associated health sciences. In a recent year about \$230 million was given in 1,039 grants to 368 institutions in 49 states. Of this amount, medical schools utilized \$117 million, Public Health Schools received \$6.2 million, and other health related institutions utilized \$55 million, while dentistry received \$2,953,000 or approximately 1 per cent of the available money (6). Considering the importance of dentistry to the nation's health and its obligation for "Better Dental Health for Society," it is evident that dentistry is neither getting nor utilizing its fair share of the money available for facilities. Certainly dentistry and dental research cannot expect to keep pace with other aspects of medical research unless facilities are made available in which to conduct the research.

One may wonder why dental schools have not utilized more of the available federal funds for research facilities. There are a number of reasons. Fear of federal control of education and universities is sometimes a factor. Another factor, unfortunately, is that some dental schools are simply not interested in research for one reason or another, but chiefly because the faculty is not given time in which to conduct research or because they have no basic science of their own, depending on the medical faculty, who has other research interests, to teach basic sciences. Another reason is that, even if dental research facilities were built in connection with dental schools or health centers, the number of qualified personnel available to staff them is limited. The federal money available to build research facilities are matching funds, i.e., for each dollar that the government gives for building research facilities, the recipient must obtain a matching dollar from a nonfederal source. Dental schools, even more so than medical schools, find it difficult to obtain matching funds in a competitive university budget or from such nonuniversity funds as the various private foundations.

One suggestion that has been made in recent times is that Dental Research Institutes be built that would be either integral parts of dental schools, in some instances only administered by the dental school, and in other instances independent units of the university. The separation of the Dental Research Institute from the dental school has both advantages and disadvantages. One advantage is that it allows full time intense effort to be applied to dental problems. Separation of research institute and teaching facility on the other hand deprives the dental school of use of some of its most capable

teaching staff and in turn isolates the undergraduate dental student from contact with either clinical or biological research. The latter is a most important consideration in obtaining a continuing flow of dental research personnel.

#### PERSONNEL

Of the items needed for a balanced national dental research program, personnel, at the independent investigator level, is the item most difficult to obtain for many reasons. Money for research or research facilities can be regulated almost on a yearly basis. But due to the lag period required for training, which averages between 20 to 24 years or longer in dental research, the demand for independent investigators cannot be regulated on a year to year basis. Under any circumstance vocations and professions are not subject to regulation in the ordinary sense, for students have a free choice of vocation or profession. Many factors operate to regulate what vocation or profession a student may enter: mental ability, length of training and difficulty of training, cost and the availability of funds during the training period, particularly if the training period is lengthy, prestige of the profession in academic circles and in society in general, availability of employment and pay, etc.

Even after an individual enters into the medical field (medicine, dentistry) and closely associated fields (biomedical sciences, public health, physical and mathematical sciences, social and behavioral sciences, and some types of engineering) dental research as employer must compete with other branches of federal and state government, academic institutions other than dental schools, nonprofit, nonacademic institutions, and even research laboratories abroad, and finally, but not least importantly, with the practice of dentistry, particularly the specialties, in terms of prestige and earning power.

At the undergraduate level, between 1946 and 1960, 41,154 dentists were produced; between 1961 and 1970 it is estimated that 34,586 dentists will be produced, indicating a slow increase in yearly output. At the present time there are about 1,300 persons engaged in dental research, less than 25 per cent with Ph.D. degrees in comparison to 40,000 in biomedical and related health fields, 70 per cent of whom have the Ph.D. (9).

It is from the groups of graduating dentists and those that can be



enticed from the biomedical sciences and public health fields, that dental research will get its manpower during the next decade if it can compete with regard to the pay and prestige with other competitors. The Armed Services have in some measure solved their demands for research personnel by instituting educational programs to train their own personnel in the specialties of dentistry and dental research. Various nonfederal foundations and private philanthropies have and are contributing to education in dental research. Examples are the Rockefeller Foundation, Eastman Dental Dispensary, University of Rochester, University of Chicago, Harvard University, and associated institutions, etc.

But, currently, about 90 per cent of dental research education is supported by the U. S. Public Health Service. Education of research personnel is supported through the Regular Fellowship Program which includes predoctoral, and special fellowships; through Research Training Grants to universities; through Career Awards of two types: Career Development Awards to develop young people into independent investigators and Career Research Professorships for the mature and nationally recognized research individual; and finally, indirectly perhaps, by utilization and training of graduate students and newly graduated Ph.D.s, in Project Research Grants.

As of August 1, 1963 the regular fellowship program has produced 218 dental research workers with 90 individuals currently in training. The Graduate Training Grants Program had 209 people in training and 403 individuals who received training in the past. Of the trainees currently in the Graduate Training Grants Program, 77 were studying in the clinical sciences and 131 training in the biomedical sciences. As of August 1, 1963, 337 training spaces were available in the Public Health Service of which 74 were in the clinical sciences and 221 were in the biomedical sciences. The most popular fields of training in the clinical sciences have been respectively: periodontics, oral surgery, and prosthodontics. The most popular field of training in the biomedical sciences has been pathology, followed in decreasing order by anatomy, biochemistry, and microbiology.

#### CATEGORICAL ANALYSIS OF DENTAL RESEARCH

In the following section is a discussion of the categorical distribution of funds and projects in the U. S. Public Health Service accord-

ing to disease and condition, or by clinical science, or by biomedical science. In a given year an active project is assigned to only one category, although it might be of a type that could be assigned simultaneously to a disease, a clinical science, and a biomedical science.

The somewhat arbitrary categorical distribution of the ten most prominent diseases or conditions as to number of research projects and amount of money spent by the National Institute of Dental Research for FY 1961 through FY 1963 indicates that dental caries and periodontal disease, the most common oral diseases, were respectively in second and sixth places with regard to the amount of money spent on each. Congenital anomalies consumed the most funds, while bones and calcification and saliva and salivary glands and pulp respectively occupied third, fourth, fifth and seventh places. Neoplasms occupied eighth position in money spent for research in spite of the fact that pathology was the favorite subject of the biomedical sciences for graduate training. The temporomandibular joint and germ-free animal studies utilized the least amount of funds. Based on the number of projects for the same period of time, dental caries led with a total of 123, followed closely by bone and enamel with 120. Salivary glands and saliva had 89 projects, and congenital anomalies followed closely with 82. In addition, in decreasing order of number of projects were periodontal disease (66), calcification (65), pulp (27), neoplasms (22), germ-free studies (2) and temporomandibular joint (1). While our most common oral diseases, dental caries and periodontal disease, are not being neglected, considerable effort is being directed towards the investigation of such fields as calcification, bone and enamel, and congenital anomalies.

With regard to the projects assigned primarily to the clinical sciences, public health dentistry leads the way both in money and number of projects, followed closely by prosthodontics and operative dentistry. With regard to the biomedical sciences, microbiology was most prominent both in regard to money and number of projects. Growth and development was next, followed closely by biochemistry and dental materials.

#### RESEARCH PROGRESS AND PERSPECTIVES

During the 41st meeting of the International Association for Dental Research, March, 1963, some 684 investigators presented more than 386 papers in the general field of dental research and 48 papers

concerning dental materials (10). The exact division of these investigations into clearly defined categories was somewhat difficult for the program committee, for as an example, an investigation concerned with a basic science (microbiology) often belonged also in a disease category (dental caries or periodontal disease). Strangely enough with the exception of investigations depending on some particular technique or method, such as electronmicroscopy or microradiography, the number of papers presented were fairly evenly divided between the groups of regular basic sciences (anatomy, microbiology, biochemistry, etc.), the composite basic sciences (oral biology, radiobiology, histochemistry, etc.), the teeth and periodontium, and clinical techniques and procedures. Whether such a division represents a proper distribution of dental research effort is difficult to assess and depends a great deal upon the interest of the individual investigator and the support that he can obtain. Investigations, some years ago, of Army inductees indicated that about 80 per cent of the dental treatment effort was devoted either directly or indirectly to dental caries and periodontal disease and their sequela (11). Based on such an observation, a great deal of the efforts of dental research should be devoted to these subjects and so it has been true for past decades.

#### DENTAL RESEARCH TRENDS

As was pointed out in a recent editorial in *Science* (12), American scientists, following Madison Avenue psychology that something new is better, tend to regard a new breakthrough as being the ultimate in science. While this is true it often leads to the abandonment of previously active and important areas of research, before they have been thoroughly explored, for a massive attack on the new discovery because work on it will normally be highly productive and much money will be available to support it. Dental research is no exception to this rule and in a sense it governs our trends in research. Actually in the field of scientific research something new, in the sense of a new discovery, is not only better, but it is in essence essential for the survival of a science or some particular field of science. It might also be pointed out, in a particular science or field, research tends to repeat itself in the sense that often after a number of years or even decades have elapsed, if no new breakthroughs are made, what was discovered in one era is repeated in another era in slightly different form or simply with the refinement of new electronic equip-

ment in order to publish, which is a most important criterion of success in the scientific community and essential to obtaining funds for research (13).

What do we need in dental research and what should we be working on in dental research? It seems to me that dentistry, in addition to supporting "refinement" or "bookkeeping" types of research to supply peripheral information in the "old" or "settled" fields of dental research, should support considerable of the "frontier" type of research that may only occasionally produce a finding and a publication, but the finding, once discovered, could have a profound influence on dentistry and dental practice. At the same time, dentistry needs to contribute also to fundamental research in the basic disciplines.

What are some of the types of "frontier" research that we need in dentistry? How long has it been since the development of a new, usable filling material for operative dentistry and how much effort is being devoted to such an activity? One research area where more effort might be expended is in the development of an adhesive filling material for operative dentistry. Admittedly, this is a complex problem, but a recent workshop at the University of Indiana which included experts from many fields, concluded that it is not an insurmountable problem. One might even go where "angels fear to tread" and suggest that support be given to investigations concerned with restoring carious lesions by a process of calcification or recalcification. But, you will say, recalcification of a carious lesion does not take place in the oral cavity. And yet we must also admit that calcification occurs daily in the mouths of almost everyone in the form of calculus, a substance not greatly different in composition from enamel and dentin. Furthermore calculus is evidently immune to dental caries, for who among you has seen dental caries in calculus? Which in turn raises the question of why calculus is not subject to dental caries, although it closely resembles dentin. Is it impossible that a nidus or matrix, similar to that in which calculus forms, could be created in a cavity resulting in its calcification or recalcification similar to that which occurs in calculus formation? If such a substance followed the same pattern as calculus, it would henceforth be immune to dental caries. Or is it impossible that a mixture of inorganic salts perhaps similar to the inorganic components of enamel be devised which

would be inserted into a cavity to form a "natural" type of filling material?

In the field of general and oral pathology, within relatively recent years, considerable research effort has been devoted to the study of carcinogenic agents such as polycyclic hydrocarbons, estrogens and hormones, to the effect of ionizing radiation on oral tissues and structures, and to tobacco smoke as a carcinogenic agent. Considerable evidence has been accumulated establishing a relationship of viruses singly or in combination with other factors as a cause of many animal tumors. The relationship of viruses to oral cancer, either as primary or ancillary agents, is one that dental research should be vitally interested in for many questions of the relationship of viruses to cancer are unknown: Can viruses *per se* produce cancer in human beings? Do viruses require other carcinogens for potentiation? Can viruses potentiate and activate substances which are not normally carcinogenic? Can substances, not normally carcinogenic be activated by human viruses not in themselves carcinogenic? What is the mechanism of cancer or tumor production in either man or animals by viruses? Perhaps most importantly, if viruses are involved in human neoplasias, can a method be found to prevent or arrest them? Until some method is found to prevent oral cancer, the earliest diagnosis possible remains a very important lifesaving procedure. The possible use of exfoliative cytology in early diagnosis is a distinct possibility, and several studies have been instituted to test the use of this method. Perhaps oral exfoliative cytology should be investigated as a means of detecting early nutritional deficiencies or for the early detection of blood dyscrasias?

Considerable effort is being expended by medicine, with some success, in the transplantation of heterografts and body organs between individuals. Present indications are that undoubtedly this problem will be solved successfully for medicine. But what of dentistry? We have not yet become very successful in the transplantation of tooth buds within the same individual much less between individuals? Should dentistry make studies of implantation and transplantation a major effort? Or simply because a problem is difficult or seemingly impossible should we disregard it for more productive but easier tasks?

The use of thalidomide produced a tragedy that the world is not likely to soon forget. But it also had another side in that it showed



that chemicals do exist that can cause congenital and developmental anomalies, including those of the oral regions. Thus new avenues have opened in the study of oral congenital and developmental anomalies. This should be particularly so, for recently it has been reported that a small marmoset develops spontaneous malocclusion, thus giving those concerned with this field a suitable experimental animal. Henceforth, orthodontics need not be limited to clinical observations by practicing orthodontists.

And so one might go on *ad infinitum* but my time is limited and there is no time to mention the many new research perspectives of such fields as preventive dentistry, oral surgery, dental caries, periodontal disease, epidemiology, and pharmacology, to which dental research should be devoting much more effort than it is at the present time. In order to meet dentistry's obligation for dental service to all who wish it, we must continually strive for greater efforts in dental research.

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# Dental Education in Denmark

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Tandlæge, literally meaning tooth-doctor, is the professional title of the Danish dentist. Formally, he is granted the degree of Candidatus (ta) Odontologiae when he graduates from dental school (Tandlægehøjskole). The prestigious Doctor of Odontology which is analogous to, but cannot be equated with, the North American degree of Doctor of Philosophy in the biological sciences, is earned only by much additional scientific research, the publishing of a thesis and its public, oral defense.

There are two Royal Dental Colleges in Denmark. The first college was established in Copenhagen in 1888, and its present building, upon which a rebuilding program resulted in a 200 per cent extension, was inaugurated in 1941. The second is the large modern structure in Aarhus, constructed of brick and other material indigenous to Denmark, whose first class enrolled in 1958. The information in this report is based on observations made at Aarhus, but is in the main applicable to both institutions. Although the colleges enjoy liaison with the Universities of Copenhagen and Aarhus, and some of the dental faculty also have University appointments, the dental colleges are autonomous with final responsibility to the Ministry of Education. Good progress has been made under this system which originated in the historic limitations of the university faculties to Law, Medicine, Theology, Science, and Humanities. There is duplication of faculty and physical facilities because the Medical School and Dental College each have their own professors and departments of basic preclinical sciences. The arguments for and against this arrangement gravitate around academic prestige, autonomy of decision, and funds for ordinary and research expenses.

Each college is administered by its own Dean (Rektor) who is responsible for academic matters and presides at faculty meetings (which are routinely limited to clinic chiefs or professors and are

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considered to be of sufficient importance to be held during the working day—not evenings). The Dean is elected by the professors from their own number for a period of five years after which, by precedent, he may be once re-elected or return full-time to his professional duties. The recommendation of the faculty is forwarded to the Ministry of Education for confirmation and the appointment is by decree of the King. The appointment of the Chief Administrative Officer (Inspektør) by the Ministry of Education is likewise confirmed by Royal decree. The term of office of the Inspektør is indefinite, his professional training is in law, and his responsibilities are administrative.

The Dean is, as in North America, the director of the Dental College, and represents the College in external affairs. He is concerned with all decisions which are not reserved to the Ministry of Education. In matters which brook no delay he may make immediate decisions which are, as soon as possible, relayed to the Teachers Council, Clinic Chiefs, and Ministry of Education. The Dean also submits to the Ministry of Education the recommendations of the Teachers Council and the Clinic Chiefs, with such comments as he judges appropriate, and the annual report. He is obviously concerned with the qualifications of the faculty and the academic schedule and course content. In addition he has supervision of matters concerning the physical plant (4). The Inspektør, under the supervision of the Dean, is responsible for daily looking after of the Dental College activities and the physical plant, all cash, the bookkeeping, and directing of the clerical staff of the administrative office. He administers those regulations of the Dental College which insure a harmonious daily routine, and resolves all doubtful questions in concert with the Dean and the concerned faculty. Finally, as secretary for the Dental College, he acts as secretary for the Dean, the Teachers Council and the Clinic Chiefs Council (4).

Under such a system it is possible for the Dean either to actively supervise or to delegate to the Chief Administrative Assistant the responsibility for the physical plant; justifying, obtaining, and allocating the annual appropriation; planning for future growth; and the assigning for accomplishment the many details which so often dilute the time which the North American Dean can devote to academic pursuits. The advantages and disadvantages of the limited term of office are related to its effect on the academic and/or techni-

cal orientation of a dental college, and on interdepartmental cooperation. Apparently the benefits predominate.

An adequate explanation of the Danish educational system is very complex, but in summary every student applying for dental college has had at least 12 years of education. Nine years of schooling lead to an examination which, when successfully passed, is followed by three years of Gymnasium. There are two lines of study in the Gymnasium: 1) Languages: Classic or modern, and 2) Science: Mathematics-physics-chemistry, mathematics-biology, or mathematics-social study (statistical). "The subjects taught are Religious Knowledge, Danish with the history of the language and Swedish, History, French, and Classical Civilization, physics and chemistry, mathematics (not the modern language line), English and German (Science and Mathematics Line, only one of these languages). Greek is taken in the Classical Languages Line, while Music and Physical Training are taken by all" (5). A recent revision adds to the language line a modern exposure to the sciences which were formerly omitted. After the completion of these studies and successfully passing a rigid examination the student may apply for admission to any faculty he wishes to enter (2, 5).

The Danish educational system is a great deal more selective than that in the United States of America. In 1960, of the approximately 500,000 seven-year-old children who enter the first grade of school annually, only 16,500 completed the "Realeksamen" (grade 9, age 15) and 4,500 the "Studentereksamen" (grade 12, age 18). Therefore less than 1 per cent of the student population qualify to enter University. The majority of the children now stop school at age 14, but the compulsory school-age will be prolonged at least 1 year. Admission to Dental College is based on the grades obtained in the "Studentereksamen." There is no aptitude test—so familiar to the students in the U.S.A., but obviously there is a limit to the number that can be admitted to the limited facilities of a Dental College. In the academic year 1960-1, which may be considered as typical, there were 84 men and 48 women accepted in the school at Copenhagen and at Aarhus, the respective figures were 40 and 30 (3). Of those students at Aarhus one transferred to Copenhagen and 25 of the students withdrew, 10 in the first year, and 15 in the second. These withdrawals were voluntary and for the most part indicated a lack of interest in the profession rather than a lack of academic achievement,

as the numerically graded examinations which determine class standing are not given until the end of the 4th semester. Such a program assures the retention in the dental curriculum of those who are, in the majority of cases, interested and academically excellent students. Such students have obviously demonstrated considerably more academic achievement in gaining entrance to Dental School, and perhaps achieving clinical standing than their United States counterpart (1). Conversely, there is much unrewarded effort on the part of the teaching staff, and a loss of time for the student who disenrolls. One knowledgeable observer, in comparing the Danish and United States selection methods, remarked that the end result is the same ratio of graduates compared to applicants in both countries. There is also a similar concern about the decrease in number of applications from those who are qualified for admission to Dental College.

The academic year extends from August 1 to July 31 with lectures during the months of September-December and February-May. Examinations are in January and June with summer vacation during July and August. There are numerous, traditional, one and two day holidays in addition to the two weeks at Christmas and one week at Easter, all of which lengthen the school year. There is no "short" summer clinic session, because the student clinics continue until the last of June, except for seniors, who finish a month earlier to prepare for comprehensive examinations concerning the entire three years of clinical training.

The dental student, like the Danish University student, is not as strictly governed by regulations regarding attendance at classes as is the North American. Each student is entitled to five years of education, and if he requires a longer period than usual for a given department a written application requesting permission to continue in that department must be submitted a semester in advance. Permission for the extra study is granted if there is adequate space and enough instructors to meet the need of the students taking the course for the first time (4). Since the Danish student is quite independent in his academic pursuits, the latter requirement is seldom a problem. Habitual absence from the clinic does not meet with approbation, and is sharply checked, but attendance at lectures is voluntary.

It strikes the North American that the lack of direct compulsion in academic pursuits continually encourages the student to make his



own decisions. The result is an apparently earlier intellectual maturity. Since there is leeway to set one's own pace during professional schooling, women marry and have children, the mother absenting herself for a month about the time of delivery. Such a permissive program in the United States might help solve the problem of encouraging women to study dentistry, and simultaneously increase the academic level of applicants by increasing the competition for places (1).

Dental education, like all other education in Denmark, is virtually without direct cost to the student. There is a state fund available for students for grants and/or loans, the maximum is 5,500 d.kr. pr. year (7 kr. to one dollar). Besides that the student is expected to have some sort of work during one of the summer months, earning about 1500 d.kr. The student budget per year is supposed to be about 7,000 d.kr., the largest portion of which is for the cost of living. The former modest charges for tuition have been eliminated. Books (4), which are well divided between those printed in English and the Scandinavian languages, are purchased by the student or borrowed from the library. The College furnishes all instruments. In the clinics the instrument kits are assigned to one dental chair and are used concurrently on alternative days by more than one student. Adjacent to each clinic is a central supply equipped with an excellent battery of autoclaves making such a practice eminently satisfactory. Students purchase the noble metals used for treatment, and are responsible for inducing the patients to pay. There is no charge to patients for most services, a philosophy of treatment which brings the North American to a sharp halt for reflection, and not without reason. Gratuitous services are in the highest traditions of a profession in terms of total service to patients and the training of students. It is almost superfluous to point out that this policy meets a welcome from many department heads because there is no economic limitation to the prescribing of diagnostic or treatment procedures and no compulsion to produce revenue. A philosophy of "free" services may not, in the opinion of North American dentists, instill in the patients an appreciation for treatment rendered, but this philosophy has evolved as part of the Danish culture, and the visitor is very apt to misjudge the case.

There are two major examinations in the Dental College program.

The first is at the end of the 4th semester, and the second at the end of the 10th semester. These examinations are held twice a year, December-January, and May-June. They may be written, oral, "spot-tests," or in some disciplines, a combination of two or more of these. Preclinical students take seven examinations, known as "kursusprøve" preliminary to the 4th semester final examination. The general areas tested are physics, chemistry, anatomy, genetics, and tooth morphology including bite function. The "kursusprøve" may be in all respects like the final graded examination except the former is graded "pass" or "fail." It was introduced in 1959, and in effect induces the student to study while at the same time removing the dread of the former "all-or-none" annual final examinations. To be eligible to take the "kursusprøve" the student must have performed acceptably the laboratory or other assignments. A "pass" is acknowledged by an attestation of success which must be forwarded by the department head to the administrative office prior to the final examination. In anatomy both the "kursusprøve" and the final numerically graded examination must be taken, but in some areas, such as pharmacology and biochemistry, only the "pass" or "fail" is recorded on the transcript. No student can take the "kursusprøve" or the final examination more than three times. If the student is not through ten years after enrolling, he must have permission from the Ministry of Education to continue in school (4).

Because of the difficulty of the preclinical basic science examinations such as biochemistry and anatomy, which are given at the end of the 4th semester, it is usual for students to study an additional 6-12 months before attempting them, or to repeat the examinations at least once. As an example, only 5 of the 70 who enrolled in the year 1960-1 were advanced to clinical status at the end of the 4th semester. However, when promoted to the clinic in the 5th semester, students seldom experience difficulty in finishing the prescribed requirements within the six semesters allotted. The former four year program was extended, and "according to a Royal Decree of July 30, 1959, the five-year curriculum is as follows (6):

#### Part I.

*First year:* elementary physics for students with previous specialization in languages. For all students: genetics and biological statistics; physics; dental technology and materials; dental anatomy and histology; and chemistry.

*Second year:* anatomy and histology; dental technology and materials; biochemistry, physiology, and orientation in clinical dentistry (end of second year).

Part II.

*Third year:* bacteriology; pathology; physiology of the masticatory apparatus; pharmacology, fundamentals of oral diagnosis; periodontology; prosthetic dentistry; radiology; and dental pathology and operative dentistry.

*Fourth year:* general surgery; oral surgery; dental (oral) histopathology; orthodontics; periodontology; fundamentals of oral diagnosis; prosthetic dentistry; radiology; and dental pathology and operative dentistry.

*Fifth year:* general medicine; nutrition; surgery; dental (oral) histopathology; orthodontics; periodontology; prosthetic dentistry; paedodontics; forensic dentistry; and dental public health and social dentistry.

The student week is Monday through Friday with clinic scheduled 8-11:30 a.m. and 2-5 p.m. The intervening period is used for lectures and the result is that the lunch time is variable. The physiologically sound program encourages attention at lectures and reduces fatigue associated with unbroken hours in the clinic.

In addition to the formal lectures, given in a format familiar to North Americans, there are scheduled clinical conferences. The latter involve the presentation of patients, or discussion of problems pertinent to their treatment, by the staff, or the students. These, as part of the academic schedule, are held in the lecture hall with the entire class in attendance. There are also technical demonstrations, scheduled in advance but not on the routine calendar, which are held in the demonstration operatories adjacent to each clinic. And finally, impromptu demonstrations or discussions of interesting patients who present for emergency or other treatment.

The student has no academic commitments on the weekend, or during the two month summer session. The required Military Service for men is deferred until after graduation.

The lectures are given primarily in Danish, but frequently visiting lecturers speak in Norwegian, Swedish, or English. The faculty itself is quite cosmopolitan and there are presently Danish, Norwegian, Finnish, and American clinic chiefs. The majority of these have permanent appointments, but visiting staff are cordially welcomed.

The 5th semester student is introduced to clinical operative dentistry in September, but it usually is mid-October before he has finished his preparations on extracted teeth and starts to treat patients. There are no requirements as to numbers of restoration required,

and it is in the 7th semester that the student's record is first evaluated. The quality of the treatment rendered is the first consideration, although an obviously lagging student will be counselled to increase the number of restorations.

In the 8th semester the total number of operative procedures performed by each student is tabulated, and from this a class average. Any student falling below 50 per cent of the class average is notified, and unless the deficiency is remedied the delinquent may expect to spend an additional semester or more in the clinic. Thus, although the emphasis throughout is on proficiency and quality, there is a pragmatic approach to the amount of work performed.

It will be noted from the curriculum that several courses continue three years, i.e. periodontics, operative dentistry, and prosthetics. In the 10th semester the student presents for examination, in these areas, a patient (fællespatient) for whom the student has planned and completed all treatment. The standard of the professional care rendered to the test patient is rigorously evaluated by the faculty, and is an integral part of the final examination. "Test Boards," after due consideration, have been eliminated from the Danish Dental College.

During the 9th and 10th semesters the students prepare diligently for the final examinations, which cover all the material given in the 5th-10th semesters. It is a credit to the system, and to the students' preparation that there are very few who are not successful in finishing their clinical years in six semesters.

The grade scale runs from a high of "udmærket godt," a great distinction (8 points), through a geometric number series to "slet"—the lowest possible mark (-23 points). "Slet" in one subject obliges the student to repeat the entire battery of examinations because a grade average of five points is required in all numerically graded final examinations. The earliest opportunity to repeat the examination will be six months later. Parenthetically, "kursusprøve" examinations must have been passed six months prior to taking the final examination. Three chief grades are recorded on the graduate's transcript: 1) "Første karakter med udmærkelse" awarded to those with a grade point average of 7.50 on the first and second examinations; 2) "Første karakter" with the average of at least 6.00; and 3) "Anden karakter," second class, which requires an average of at least 5.00 (4).

Very few achieve distinction and the majority graduate in the second of the three categories.

The examinations are, for each discipline, administered by the professor and two censors (external examiners) approved by the Ministry of Education. The final grade for a subject represents either the unanimous or the compromise opinion of the three examiners.

Students transferring between Aarhus and Copenhagen receive credit for examinations passed, but foreign students must take all graded and "kursusprøve" examinations. However, upon request of the Danish faculty, the student may be granted an exemption from all except the final graded examination if his minimum grade point average corresponds to the Danish "godt" (5 points). In practice this means that a student or graduate from a foreign country will have to spend one or more years in the dental clinic.

After passing part II of the required examinations, the designation of *candidatus (ta) odontologiae (cand. odont.)* is conferred. The competency of the individual to practice has been decided by the time of the final examination, and there is no "state" or national board. Reciprocity of practice between the four Scandinavian countries is at present limited to the privilege of practicing in the office of another. For example, the Swedish dentist can practice as an associate, but at least must pass the second part of the Danish dental examinations if he wishes to establish an independent private practice. These restrictions on reciprocity will be removed so that all Scandinavian dentists may establish their practice within Denmark, Finland, Norway, and Sweden.

Denmark has a unique law that requires the graduate to work two years with a recognized practitioner or dental clinic before establishing an independent practice (6). There is no lack of opportunity to meet the requirement; men must spend at least 14 months in military service, the city-school clinics can always utilize dentists, and Denmark's 2,900 dentists maintain over 2,000 offices, in addition to which there are a limited number of teaching positions.

Postgraduate courses are sponsored by the Danish Dental Society and are held as evening, one day, or longer sessions. The sessions meet in the provinces, and at the Dental Colleges. There are formal courses leading to the Licentiate Degree, the equivalent of the Master of Science in Dentistry, but in general those who wish to become



qualified for periodontics, oral surgery, or orthodontics, etc. apply for a position as instructor in the Dental Colleges. The Danish Dental Society recognizes only one specialty, orthodontics, and has licensed 31 specialists. The requests for other specialties are receiving deliberate consideration.

The Doctor of Odontology was until 1956 the only post-dental school degree awarded by the Dental Colleges. It requires that the candidate be of demonstrated scholarly aptitude, and have graduated with Dental College marks of the "første karakter." The former aptitude however, is the real criteria for there are no formal courses. The candidate usually engages in extensive research in one area, eventually publishing a thesis which is publicly and orally defended. While there are great advantages to this system, an obvious weakness appears to be that all research problems may not lead to the comprehensive outlook that is desirable, particularly since the Doctoral Degree is a prerequisite to a full professorship. At this date only 11 earned Doctor of Odontology degrees have been awarded in Denmark, and two honorary degrees to one Dane and one Englishman of great academic distinction.

In summary, the Dental Colleges in Denmark are state-supported autonomous institutions under the supervision of the Ministry of Education. Each college is administered by a Dean who is provided with a competent Chief Administrative Officer to whom is delegated many responsibilities. Classes entering the two colleges are, in terms of previously demonstrated academic accomplishments, more rigorously selected than their North American counterparts, and a large proportion of the classes are women. The Dental Curriculum is five years during which the student, in the midst of excellent physical surroundings, is given a greater opportunity to develop independence of thought than the North American, and is constantly exposed to an academic environment which actively encourages the study of basic sciences as the foundation for clinical competence. Research by the faculty is strongly encouraged in fact as well as word, and a Professorship requires the Doctor of Odontology or its equivalent. Postgraduate education is being developed, but only orthodontics is recognized as a specialty. The post-doctoral degree is the Doctorate in Odontology which is awarded on the basis of academic interest and research proficiency as demonstrated in the publication and defense of a thesis.

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# "The Survey of Dentistry"

## RECOMMENDATIONS

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*The final report of the Commission on the Survey of Dentistry in the United States was published in 1961 by the American Council on Education. This was a 600-odd page hardback edition, in which seventy-eight recommendations were made.*

*Some loose, muddled, and sometimes addled, presentations and interpretations of these recommendations have appeared in the dental periodical literature.*

*For the record, the JOURNAL here lists the recommendations.*

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"The Commission recommends that":

### DENTAL HEALTH

1. The dental profession take the necessary steps to organize a national voluntary council on dental health. This citizens organization should be responsible for stimulating interest in the dental health problem and for developing support for programs of dental care, research, prevention, and education. (p. 12)
2. All public agencies, with the assistance of voluntary associations and professional societies, make greater efforts to promote water fluoridation and community topical fluoride programs. (p. 42)
3. A special federal grant-in-aid be made to states to assist communities in meeting the cost of initiating fluoridation programs, on a matching basis. The funds should be specifically earmarked for this purpose and should be granted on the basis of need. Priority should be given to the smaller communities. (p. 42)
4. State dental practice acts be modified to allow both dental hygienists and dental assistants to apply fluorides under the supervision of a dentist. (p. 42)
5. The American Dental Association expand the activities of its Bureau of Dental Health Education; the Public Health Service increase its dental health education activities directly and through provision of assistance to states; and state and local public health

- agencies and dental societies initiate or expand public health education programs. (p. 45)
6. The number of trained health educators employed by official health agencies and dental societies be markedly increased, and that educational efforts be guided by their recommendations. (p. 45)
  7. Dental public health agencies, in cooperation with dental societies, dental schools, and schools of public health, expand their efforts in areas of continuing and professional education for all health and health-related disciplines. (p. 46)
  8. Official health agencies assert their proper leadership in the initiation, planning, and administration of dental care programs, giving first priority to school-age children. (p. 50)
  9. Existing crippled children's service programs be expanded as rapidly as possible to include comprehensive care for children with oral clefts and other severe dentofacial deformities requiring orthodontic treatment. (p. 51)
  10. Dental public health agencies place greater emphasis upon research and investigation, particularly in areas such as social and behavioral studies, epidemiological investigation, development of more effective administrative procedures, and the evaluation of health education methods; and that the U. S. Public Health Service encourage these types of investigations. (p. 53)
  11. Training courses and workshops in research methods be established, and such education be offered to dental public health personnel by the Public Health Service and by the schools of public health. (p. 53)
  12. The Public Health Service and state and local dental health agencies expand demonstration projects and experimentation in special problem areas such as radiation protection, rehabilitation of the handicapped, and the provision of dental care for the homebound, aged, and chronically ill. (p. 54)
  13. The federal public health traineeship program and the dental officer career development program of the U. S. Public Health Service be expanded. (p. 56)
  14. Recruitment activities for all types of dental personnel be greatly expanded, and better methods be developed to present the potentialities of a career in public health to dental and dental hygiene students. (p. 56)

15. Dental public health programs make greater use of adjunct personnel including dental hygienists, health educators, statisticians, engineers, social scientists, and administrative and dental assistants; and that experimentation be initiated to discover more effective ways of utilizing adjunct personnel. (p. 56)
16. Health agencies establish dental salary schedules comparable to incomes in private practice in order to attract and hold competent individuals. (p. 57)
17. Every effort be exerted by the dental profession, in cooperation with other groups, to secure more adequate financing for dental health programs at the local, state, and national level. (p. 61)
18. Official health agencies make more aggressive efforts to obtain funds for dental health programs. (p. 61)
19. A federal grant-in-aid to the states be established, specially earmarked for dental public health programs. (p. 61)
20. States and local communities design and initiate incremental-care programs for children, covering six-year-olds the first year and adding new groups of six-year-olds each year until all children through high school are covered.
  - a) The cost of such care be met by the family if family income is sufficient.
  - b) All children from indigent families receive care at community or state expense, with assistance by financial grants from the Federal Government.
  - c) Programs be developed under which communities or states would provide partial payment for dental care, also with federal assistance, for children of low-income families who are not indigent. (p. 65)
21. All parents provide dental care for their children or utilize the services or public programs until the children are able to assume the responsibility for their own care. (p. 65)
22. Programs be established to provide care, under a system of priorities, to adults who are unable to provide for themselves, giving first priority to the relief of pain and infection and to those who may be made employable through the provision of dental services. (p. 65)
23. Experimentation in methods of providing and paying for dental care through organized group action be increased; that founda-



- tions, labor unions, corporations, and governmental agencies provide funds to support such experimentation. (p. 76)
24. Dental service corporations be organized by all state dental societies to facilitate the development of plans for the group purchase of care. (p. 77)
  25. The scope of training in schools of public health be broadened to provide instruction in administrative methods which would be useful in education, research, and dental care management, as well as in the traditional public health programs. (p. 94)
  26. The profession give greater recognition to the importance of developing administrative skills; encourage formal training for those who may become engaged in administrative dentistry; and encourage outstanding dental students and dentists to enter the field. (p. 94)

#### DENTAL PRACTICE

27. Dentists and patients have a mutual understanding of treatment plan, including fees for service, before treatment is begun. (p. 100)
28. All dentists participate vigorously in community public health projects. (p. 109)
29. Dentists recognize increasingly the pre-eminent importance of preventive dentistry by utilizing all available preventive measures in their practices and by educating their patients in the value of prevention. (p. 112)
30. The dental profession and the dental schools take appropriate action to narrow the gap between the need for prevention and treatment of malocclusion and the services available to meet the need. (p. 131)
31. Local, state, and national dental organizations promote studies designed to provide information that will help dentists establish a sound basis for determining fees. (p. 143)
32. A larger number of carefully supervised dental internships be developed in hospitals and clinics and dental students be encouraged to enter internships following their graduation. (p. 157)
33. Cooperation be encouraged between the dental profession and health insurance programs of nonprofit and commercial sponsors, developed and operated to meet the public's need for health care. (p. 158)

34. In the interest of total health care of patients, both hospitals and dental societies work for the establishment of more hospital dental departments, and encourage dentists to participate in hospital service. (p. 160)
35. Hospital dental departments be delegated authority and administrative responsibilities similar to the authority and administrative responsibilities of other hospital services. (p. 160)
36. Dentistry be represented on the Joint Commission on the Accreditation of Hospitals. (p. 161)
37. Dental schools develop courses through which practicing dentists interested in appointments to hospital staffs may receive basic instruction in hospital procedures. (p. 161)
38. The dental profession explore the possibilities of various programs which might be adopted to ensure the continuing qualification of dental practitioners. (p. 165)
39. Local and state dental societies be encouraged to establish and maintain mediation committees to adjudicate disputes between practitioner and patient. (p. 165)
40. An effective relationship between state licensing boards and the Council of the National Board of Dental Examiners be developed, and all states accept the results of the National Board examinations. (p. 167)
41. Dentists utilize a greater number of well-trained dental assistants. (p. 237)
42. The number of schools for assistants be increased. (p. 237)
43. The dental profession conduct studies designed to develop and expand the duties of auxiliary personnel. The broadening of services should begin with the dental hygienists because there is already an approved program of education and licensure for this group. The legal and educational restrictions against male hygienists should be removed. (p. 237)
44. As soon as the dental profession standardizes the educational programs for dental laboratory technicians and for dental assistants, consideration be given to expanding the duties of these auxiliary groups. In the public interest, the education of auxiliary personnel should be carried out under the guidance of the dental profession, and the services performed by all auxiliary personnel should be under the supervision of licensed dentists. (p. 238)
45. Dentists in all states be required by law to provide dental tech-

nicians with written prescriptions for the fabrication of dental appliances, and these regulations should be strictly enforced. (p. 238)

#### DENTAL EDUCATION

46. The admissions standards of the dental schools be reviewed for the purpose of improving the quality of the students admitted. (p. 281)
47. A national recruitment program be established to attract better students, both men and women, in larger numbers to the study of dentistry. Such a program should be under the sponsorship of the American Association of Dental Schools and should include a scholarship and loan program based on merit and need. This program would complement the programs of individual schools and should be integrated with the recruitment programs of other organizations and agencies. It should also provide for recruitment of well-qualified applicants, both men and women, to dental hygiene programs and to other training programs for auxiliary personnel. (p. 283)
48. Both full-time and part-time teachers generally be encouraged to devote more time to laboratory, clinical, and educational research and to other university activities. (p. 308)
49. Dental schools improve the quality of teaching by:
  - a) Enlarging the number of teachers employed;
  - b) Raising the qualifications required for beginning teachers;
  - c) Improving the teaching skills of present faculty members;
  - d) Employing a larger proportion of teachers on a full-time basis;
  - e) Employing part-time teachers generally on at least a half-time basis. (p. 310)
50. Organizations such as the American Association of Dental Schools arrange and conduct a series of institutes or conferences for dental teachers to improve the content and correlation of courses. (p. 328)
51. The dental schools give students more experience in working with auxiliary personnel, especially with dental assistants. Students should understand completely the importance that effective utilization of such personnel plays in the practice of dentistry. (p. 332)

52. Dental schools have active hospital affiliations, and dental students receive instruction and experience in hospital procedures. (p. 332)
53. Dental schools give students more instruction in how to establish and administer a dental practice. (p. 334)
54. Dental schools make their curricula more flexible and stimulating. Where possible, honors programs should be arranged for gifted students. (p. 335)
55. Dental schools develop or improve faculty in-service programs on the fundamental principles of teaching and the problems facing dental education. (p. 354)
56. Every dental school expand or develop a program to evaluate the effectiveness of its teaching. The methods to be employed should be decided upon by the dean and the faculty cooperatively, but provision should be made for student participation. (p. 355)
57. The dental schools develop or improve organized programs for the counseling of undergraduate dental students. (p. 367)
58. Because of the importance of dental education and research to the welfare of the nation, and because evidence shows that most dental schools are facing difficult financial problems, greater financial support be contributed by:
  - a) Alumni of dental schools,
  - b) Benefactors,
  - c) Business corporations,
  - d) Foundations,
  - e) State and local tax bodies. (p. 378)
59. Universities give more financial support to their dental schools. (p. 378)
60. The Federal Government assist dental education by providing funds for operational expenses, as well as for new construction and remodeling and for scholarship and loan funds for dental students. This assistance should not interfere with university autonomy in admissions policies and curriculum content. (p. 378)
61. Consistent with high standards, present schools be expanded and new schools constructed to permit the graduation of at least 6,180 dentists annually by 1975. Also, additional facilities should be provided for the training of auxiliary personnel both in dental schools and other institutions. (p. 380)

62. All state boards of dentistry accept the results of the National Board Dental Examinations in lieu of their own written examinations, thereby restricting their evaluation to technical and clinical procedures. (p. 398)
63. Every effort be made to improve the quality of state board examinations and to ensure the appointment of well-qualified dentists to the examining boards. (p. 399)
64. The American Dental Association re-evaluate the activities of the Council on Dental Education for the purpose of permitting the council to perform its function of accreditation more effectively. (p. 416)

#### DENTAL RESEARCH

65. There be an expansion of facilities for the evaluation and standardization of pharmaceutical preparations used in the treatment of dental disease. (p. 433)
66. Communication of research findings to dental teachers and to practitioners be accelerated, and federal and other assistance be provided for the dissemination of research information by the use of publications, seminars, and institutes. (p. 440)
67. Dental schools enlarge their faculties to provide more time for research for those who are competent to engage in it. (p. 454)
68. Dental schools initiate or reinforce programs designed to stimulate faculty interest in research in order to improve the interest in scholarly pursuits. (p. 459)
69. Dental schools develop and improve programs which are designed to interest dental students in research and teaching. (p. 459)
70. A form of fellowship be created between the postdoctoral and the senior fellowships for career development and that it be supported by federal funds. (p. 461)
71. Financial support for fellowship and training programs be augmented. (p. 462)
72. Federal assistance provided under the Health Facilities Act be liberalized to provide effective assistance to all dental schools for the expansion and improvement of their educational facilities. (p. 463)
73. The Federal Government, in its support of research and training in the fields of health, adopt the principle of payment to universities of the full overhead costs. (p. 465)



74. Financial support for dental research be increased, not only from federal sources but also from individuals, philanthropy, and corporations. The increase in financial support should be commensurate with the increase in the availability of research personnel. (p. 466)
75. A nongovernmental agency be established for the solicitation and distribution of grants from industry and philanthropy for the advancement of research in the cause and the control of oral disease. (p. 466)
76. Universities assume more responsibility for the development of close relations among their dental schools, other health science schools, and graduate departments in order to promote exchanges of knowledge and ideas. (p. 468)
77. Substantial federal funds be made available for the recruitment and training of competent scientists from dental and other fields of science to do research in dental schools. (p. 468)
78. Research efforts be broadened to include more projects in the fields of the social sciences and education, and the collaboration of the appropriate university departments be enlisted for such studies. (p. 469)

Because the dental profession is so tightly woven into the fabric of our national life, its ways of doing things, its philosophical outlook, and its forms of organization reflect our whole society. Therefore, to ask how dentistry can or should be improved raises, in some instances, fundamental social, economic, and even political questions. But such questioning and self-criticism are well-known characteristics of American life; no people in history have been more conscious that a dynamic society must keep restating its goals and seeking new ways to attain them.—*The Survey of Dentistry*, Introduction, p. 2.

## Base-Lines for Guidance

### IN CONSIDERING THE RECOMMENDATIONS OF THE COMMISSION ON THE SURVEY OF DENTISTRY

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*When the Committee on Professional Relations of the American College of Dentists reviewed the recommendations of the Commission on the Survey of Dentistry, it was impressed with the wide scope of the studies involved and with the need for careful analysis of the suggested recommendations and their activation.*

*Accordingly, the Committee recommended to the Board of Regents a series of base-lines for guidance in considering the recommendations of the Commission. The Board of Regents, after incorporating some additional suggestions, approved the base-lines as being in the interest of the public and the profession and of value in the further consideration of the recommendations of the Commission on the Survey of Dentistry.*

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1. The profession should recognize that it has a distinct responsibility to the public in regard to dental health, as well as the obligation to advise the public in all dental health matters. Both the profession and the public should cooperate in the establishment of sound community health programs. Every dentist should share in the dental health program of the community.

2. The privilege of giving relief from pain must not be abrogated.

3. The efficient use of auxiliary personnel in the practice of dentistry should be encouraged, thereby making it possible to serve more patients. Such auxiliaries should serve only under the direction and supervision of the dentist. Services requiring the knowledge and competence of the dentist should not be assigned to lesser qualified personnel. The *dentist* is responsible for all services performed under his direction.

4. Preventive service must be stressed more and more in daily

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These base-lines were published in the JOURNAL, 29:82-4, June 1962, and appear here again for general information and guidance.

practice. The dentist should take the time to explain that the preventive aspects of his service are essential to dental health.

5. Fluoridation is a recognized public health measure and should have greater support at all levels.

6. Hospitals, serving as the communities' resources for total health care, should have dental care available.

7. The profession should be prepared to make its services available to the home-bound and institutionalized.

8. Although public clinics are recognized as necessary facilities in many instances and circumstances, the private dental office should continue to be the chief facility for dental care.

9. The efficient use of auxiliary personnel and better practice administration can contribute greatly in meeting the anticipated demand for dental care for an ever-increasing and more dental health conscious population.

10. The strict application of the law requiring the dentist to provide a written prescription for laboratory services is the best way to control this service. This, in turn, requires that the training of the dentist be such as to acquaint him with the details of all procedures upon which he is to give instructions through prescription.

11. Human relations with patients and an understanding concept of health service should become the keynote of dental practice. A broader interest in the patient's over-all well being will create greater confidence in the dentist in the field of total health care.

12. The public image of dentistry will change from that of a skilled technician to an important servant in health, only when diagnosis, thorough treatment planning, and prevention become the first consideration; these, coupled with the application of technical skills, will bring about a greater appreciation by the public for oral health service.

13. The respective roles of the government and the profession should be defined *clearly* in proposing new base-lines and standards in dental health service.

14. In the expansion of training facilities for dental personnel, attention must be given to concurrent expansion of teacher training programs. With these two steps every effort should be made to improve student recruitment, with special attention to methods of financing able and talented students who are unable to meet edu-

cational costs unassisted. Increased facilities, without more teachers, will diminish the teaching effort and lower present standards. Also, increased facilities with an insufficient supply of qualified students will produce dire results.

15. Dental schools are teaching institutions and, as such, have a responsibility to teach "health" and the application of adequate treatment procedures. However, the schools should not be the means of establishing service clinics in competition with private practice.

16. Dental health care programs should be planned carefully to provide service for those for whom the program is designed. The cost of such care should be met by the individual, the family, the community, the state, or the federal government, in that order.

17. The profession must be prepared at all times to discuss dental health matters with groups seeking such information.

18. Present tendencies are to lean heavily on government for funds for facilities, research, fellowship grants, etc. Strong and effective efforts should be made to interest non-governmental agencies in the needs of dentistry.

When federal funds are available for matching local monies for the construction of dental training facilities, considerable effort will have to be made to obtain funds from private sources with which to match federal funds. Federal assistance for construction, as now provided, will not be enough to match all possible applicants. All institutions, therefore, should proceed to develop plans for construction whether or not federal funds are available, in order to determine what their needs may be.

19. Funds for dental education might well be designated as falling in the following categories—each lending itself to special developments and sources of funds: Facilities; operating budgets; research; teacher training; fellowships and scholarships; public health programs; and student loan funds.

20. The integration of graduate education in dentistry with the universities' graduate school effort will bring more rapid recognition to dentistry as a health profession.

MINUTES OF THE MEETING OF THE  
BOARD OF REGENTS  
and the  
REPRESENTATIVES OF THE  
COLLEGE SECTIONS

April 8 and 9, 1964, St. Louis

The Board of Regents of the American College of Dentists met with the Representatives of the Sections of the College in the Coronado Hotel, St. Louis, April 8 and 9, 1964. The meeting was called to order by President Jack S. Rounds; the invocation was pronounced by Historian Henry A. Swanson.

Representatives from 31 of the 35 Sections were present; all Regents, except one, were in attendance. The following also were present: Harold W. Krogh (Washington, D. C.), Kenneth A. Easlick (Ann Arbor, Mich.), and Nathan Kohn and William S. Brandhorst (St. Louis).

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After greetings from the President, and instructions from the Secretary, the representatives were asked to report on their Section activities, responding particularly to the questions:

1. Meetings held—type, number, attendance?
2. Programs at these meetings?
3. Do you have a Planning Committee?
4. Special interests of your Section?
5. Special projects?

The responses indicated a variety of activities—ranging from a short get-together breakfast or luncheon at the time of the annual state meeting, to a full day meeting devoted entirely to College matters. But the question remained: How can the Sections be stimulated to greater action? The program of this two-day meeting was designed to offer suggestions.

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Kenneth A. Easlick, speaking for the Committee on Social Characteristics, elaborated on the "image of dentistry." He stated that the Committee was planning a Workshop on this topic on January



18-21, 1965, St. Louis. He outlined the plans and subject matter that would be considered, and solicited suggestions from those present.

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The recommendations of the Commission on the Survey of Dentistry were discussed. Carl J. Stark acted as moderator, with a panel consisting of Percy G. Anderson, George S. Easton, Stanley A. Lovestedt, and Harold W. Krogh. Four specific points, related to the recommendations, were discussed: where do we stand; what have we done; what needs to be done; and an evaluation of the vocal opposition.

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Henry A. Swanson discussed "Operation Bookshelf." He pointed out, described, and explained some of the difficulties that were being encountered in the promotion of this worth-while project. He expressed hope for an early solution.

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Nathan Kohn, of N.K. and Associates, Inc., St. Louis, discussed career guidance as related to prospective dental students. (An abstract of his talk is presented in this issue.)

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(After dinner, the group visited the Central Office and inspected the new facilities.)

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The first speaker on Thursday morning was Frank P. Bowyer who discussed the role of the dentist as a citizen. (Dr. Bowyer's paper is presented in this issue.)

"Nominating for Fellowship" was presented, in detail, by Secretary Brandhorst. General discussion by the Section Representatives followed.

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The participants were then divided into groups, covering broadly the special lectures and discussions that had been presented, and devoted the rest of the morning discussing and evaluating these

matters. Reports and recommendations were prepared by each group, and these were read at the afternoon session:

*Group I. The Dentist as a Citizen:*

Recommendation: That the College conduct a study on how to best disseminate information on how to be a good citizen, on professional ethics, and on the obligations of the dental professional.

*Group II. The Image of Dentistry:*

No specific recommendations were offered. This group stressed that, in the final analysis, the development and improvement of the "image of dentistry" can be achieved only by the individual dentist in his office and in his community.

*Group III. The Survey of Dentistry:*

This group was in general accord with the objectives and recommendations of the *Survey*. It was suggested that the Sections be provided with copies of the *Summary Report* of the *Survey* for further study. (The Central Office has done this.)

*Group IV. Career Guidance:*

This group recommended that the Central Office prepare and up-date a manual similar to the Missouri booklet for distribution to the Sections. (In addition to the Missouri manual, "dental health guides for teachers" for Ohio and Tennessee have been sent to the Sections.)

*Group V. Operation Bookshelf:*

No conference was held. Dr. Swanson's discussion sufficed.

*Group VI. Nominating for Fellowship:*

Recommendations: (1) That the Secretary send to the Officers of the Sections the names of all nominees in their area, who have been approved for Fellowship by the Board of Regents, prior to the extension of the invitation to Fellowship; objections, if any, must be registered within ten days; (2) That a brochure covering the problems of nominating to Fellowship, with questions and answers fully covering such matters, be developed; and that this brochure be made available for the files of the Section secretaries.

(*Note:* The Board of Regents approved both of the above recommendations, limiting the list to the persons approved for Fellowship by the Board of Regents, and requesting that the names be

held *in confidence* until invitations are released by the Secretary of the College. The April-June *ACD Reporter* will present information on nominating for Fellowship. For other actions on the recommendations of the Section Representatives, see the Minutes of the Board of Regents that immediately follow.)

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Dr. Henry A. Swanson described plans for a questionnaire to the membership requesting information on each Fellow's activities and contributions *since* becoming a Fellow.

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A lengthy period of questions and answers, moderated by the Secretary, followed. The meeting was then adjourned.

## MINUTES OF THE MEETINGS OF THE BOARD OF REGENTS

April 10 and 11, 1964, St. Louis

The Board of Regents of the American College of Dentists met in the Central Office, St. Louis, Friday and Saturday, April 10 and 11, 1964. All members of the Board were present except President-elect Lyons who was attending important conferences in Washington, D. C.

### *First Meeting*

President Rounds called the meeting to order; Dr. Henry A. Swanson pronounced the invocation. The minutes of the Board meetings in Atlantic City, October, 1963, were approved, and the report on the minutes received.

*Reports of Officers* were given by the President, Vice-President, Editor, and Historian. Treasurer Pierson reported a balance in the checking account of \$19,090.89, and securities (Treasury and Saving Bonds) of \$90,000.00.

The Secretary reported on the membership—3,358 as of January

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These Minutes have been summarized by the Secretary, O. W. Brandhorst.

1, 1964. The deaths of the following Fellows since the Atlantic City meeting were reported:

Julian S. Bernhard	Shreveport, La.	March 13, 1964
Monte M. Bettman	Portland, Ore.	December 10, 1963
Louis A. Cohn	New York City	December 12, 1962
William H. Crawford	Minneapolis, Minn.	February 20, 1964
Leland T. Daniel	Orlando, Fla.	
Sir Kelsey Fry	London, England	October 25, 1963
Leon J. Gauchat	Buffalo, N. Y.	November 15, 1963
William H. Hatcher	St. Petersburg, Fla. (Vet. Adm.)	October 5, 1963
B. Carl Holder	Cuerro, Texas	March 5, 1963
Arthur O. Klaffenbach	Iowa City, Ia.	December 9, 1963
George W. Mackay	Millinocket, Me.	October 24, 1963
Lawrence L. Mulcahy, Sr.	Batavia, N. Y.	February 23, 1964
John J. Ogden	Memphis, Tenn.	December 29, 1963
G. Thomas Quigg	San Francisco, Calif.	November 3, 1963
Paul C. Salisbury	Chicago, Ill.	November 7, 1963
Erwin J. Shields	Pittsburgh, Pa. (Vet. Adm.)	December 22, 1963
John H. Shackelford	Detroit, Mich.	February 27, 1964
Charles M. Smith	Peoria, Ill.	December 12, 1963
Arthur R. Sample	Memphis, Tenn.	February 20, 1964
Grover C. Taylor	Billings, Mont.	September 26, 1963
James J. Vaughn, Sr.	Nashville, Tenn.	April 3, 1964

*Reports of the Regents* were received. These consisted of comment on College activities in their respective areas, and general comment on numerous College projects.

### *Second Meeting*

Reports of several standing committees were presented, and the following actions were taken:

*Education:* A plan for sending a questionnaire study on recruitment to the Fellows in the United States and Canada was proposed. The cost, including processing and mailing, would be \$600.00. This was approved.

*Health Services, and Professional Relations:* Plans were approved for developing a full day (Saturday) program for the 1965 Las Vegas meeting on "An Approach to Optimum Health." This would be sponsored by the two committees above.

*Journalism:* The Board approved the committee's recommendation to discontinue the Writing Award Competition after the 1965 contest. This was because of declining interest in the College com-

petition. However, it was noted that similar essay contests are growing and being sponsored by other dental organizations.

*Research:* It was recommended that the Board approve a modification of the "development" committee for the Institute for Advanced Education in Dental Research. This was approved.

*History:* The Board approved a recommendation that a questionnaire be sent to the membership seeking information on each Fellow's accomplishments and contributions since receiving Fellowship.

*Social Characteristics:* The Secretary reported on the plans of this committee to conduct a workshop on "The Image of Dentistry." This is to be held in St. Louis, January 18-21, 1965. The project was approved.

*World Relations:* A meeting of this committee was held in Chicago, February 3, 1964; the Secretary reported. Some of the difficulties associated with membership in countries other than the United States and Canada were discussed. It was agreed that Fellowship in other countries should be considered on an individual basis, that Sections—as such—should not be encouraged, and that the United States and Canada be considered the "home base" of the American College of Dentists.

*Operation Bookshelf:* Dr. Swanson, consultant to the committee, described some of the problems that were being encountered in this project and urged that these be given immediate attention. His suggestions were approved.

The Board of Regents reviewed the report of the *Board of Censors* and approved 240 persons for Fellowship to be conferred at the 1964 San Francisco Convocation.

### *Third Meeting*

The request of the Fellows in Hawaii to be recognized as a Section of the College was approved.

It was decided not to hold a meeting of representatives of the Sections in 1965, and to await the development of activities at the Section level to determine the value and need of such future meetings.

The Fellows in Connecticut were granted the privilege of affiliating with the New York Section, if that is more convenient for them.

The Board approved an Exchange Fellowship for Dr. James



Oosting, Henry Ford Hospital, Detroit. He will be a resident in oral surgery at Queen Victoria Hospital, East Greenland, Sussex, England.

The Board considered the reports and recommendations that had resulted from the meeting of the Representatives of the Sections held just prior to the meetings of the Regents that week. General approval of the discussions was expressed, and it was the consensus that a better understanding of College matters was developing. The reports and recommendations that came out of the group discussions were considered and actions taken as follows:

*Group I. The Dentist as a Citizen:* A specific recommendation "that the College conduct a study on how best to disseminate information on how to be a good citizen, professional ethics, and obligations as a professional person" was referred to the Committee on Social Characteristics. It was approved that Dr. Bowyer's paper, "The Dentist as a Citizen," be published in the JOURNAL, and reprints be obtained for future use. (The paper appears in this issue.)

*Group II. The Image of Dentistry:* No specific recommendations were offered. The group stressed the fact that, in the final analysis, the development of this image can be achieved only by the efforts of the individual dentist in his own office and community.

*Group III. The Survey of Dentistry:* This group was in general accord with the objectives of the Survey. The group suggested that Sections obtain copies of the report of the Commission on the Survey for study. The Board approved this, and requested the Secretary to procure copies of the *Summary Report* and send them to each Section.

*Group IV. Career Guidance:* This group recommended that the College prepare and up-date a manual, similar to the booklet prepared by the Missouri State Dental Association in 1961, for distribution to Sections and members on request. The Board voted to have the Secretary obtain copies of the Missouri material, as well as material available from the Ohio and Tennessee dental associations, and send to the Sections.

*Group V. Operation Bookshelf:* No group conference was held.

*Group VI. Nominating for Fellowship:* Two recommendations were submitted and approved: 1) That the Secretary send to the Section officers the names of all nominees in their area who had been approved for Fellowship by the Board of Regents, prior

to the extension of the invitation to Fellowship; objections, if any, to be registered with the Secretary within ten days; and 2) That a brochure covering the problems of nominating to Fellowship, with questions and answers fully covering such matters be developed. This brochure to be made available for the files of all Section secretaries.

The Board then considered *Central Office Personnel and Facilities*. The Secretary reported that the expansion of the facilities was practically completed, and that plans for additional personnel were well in hand.

The *Budget* (July, 1964-June, 1965) was presented.

Anticipated income .....	\$129,820.00
Anticipated expenditures .....	137,915.80
	<hr/>
Deficit .....	\$ 8,095.80

It was pointed out that the budget provided funds for additional personnel that might not be needed for the full 12 months. The fact was pointed out, however, that with expanded activities, it would be necessary to provide more funds for operating the College.

#### *Fourth Meeting*

This session was concerned chiefly with reports of the Ad-hoc Committees of the Board, summarizing their activities.

*Future Development:* It was recommended that some time, money, and effort be expended in bringing together in the Central Office, appropriate persons—experts in their fields—to examine all that the College has to offer, to examine possibilities of sociological structures in which dentistry may now or eventually be involved, and to examine other areas in the everyday pattern of dental practice. Then, coupled with the wisdom and experience of the Officers and Regents, plot a course for the future activities of the College. This was approved, and the committee urged to hold an early planning meeting. The committee of the Board was made a standing committee of the College—the Committee on Future Development.

*Survey of Dentistry:* It was suggested that a copy of the recommendations of the Commission on the Survey be sent to each Section

secretary with the request that the recommendations be studied by all of the Sections. Approved.

*Facilities and Personnel:* The committee expressed its pleasure with the new Central Office facilities, and its satisfaction with the development of plans for additional personnel. The following directive was approved:

The Committee on Facilities and Personnel recommends that Dr. O. W. Brandhorst, as Executive Secretary of the College, represent the Board of Regents in the administration of the affairs of the College and in the direction of the Central Office.

*Communications:* The Board approved a recommendation that this committee limit its activities to a study of methods to further communications within the College through the JOURNAL and *The Reporter*, and other additional ways.

*Potentials:* Suggestions were presented for the evaluation of the potentials of a person being considered for Fellowship.

*Re-organization of the College:* In an effort to give the membership a greater voice in the selection of the Officers and Regents, the Board approved amending the Bylaws to permit holding such elections by mail ballot.

*Nominations:* After reviewing the present method of nominating to Fellowship, the committee re-affirmed and the Board concurred in support of the present method including the maintenance of secrecy connected therewith.

*Constitution and Bylaws:* The Board instructed the Secretary and this committee to prepare amendments to be presented at the 1964 San Francisco meeting covering the following items:

1. Providing for the establishment of the office of Executive Secretary.
2. Setting up plans for electing the Officers and Regents by mail ballot.
3. Increasing the membership fee to \$250.00.
4. Increasing the annual dues to \$35.00.
5. In the event of the increase of the annual dues, to reduce the eligibility for Life Membership from 75 years to 70 years.

The Board discussed plans for the 1964 Convocation. All activities of the American College of Dentists will be held on Sunday, November 8, in the Fairmont Hotel, with morning, luncheon, afternoon, and evening sessions.

## Looks at Books

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**GENERAL ANESTHESIA IN DENTAL PRACTICE.** By Leonard Monheim, B.S., M.S., D.D.S. 2nd Ed. 467 pp. St. Louis: C. V. Mosby Co. 1964. \$10.50.

This text was written as a guide and reference in the use of general anesthesia in dentistry. Dr. Monheim is eminently qualified to present this subject; he is a dentist who limits his professional practice to the specialty of general anesthesia. The book stresses the basic sciences as they relate to general anesthesia and the practical techniques involved in general anesthesia for dentistry. It details each step from pre-anesthetic evaluation through post-anesthetic care. Its scope makes it desirable as a textbook in undergraduate and graduate courses of dentistry. It should be used as a reference by everyone administering anesthesia for dental procedures.

Photographs and drawings complement the written text. The reproductions are of good quality. They are done in detail, giving the reader the advantage of having the written word placed into a descriptive picture. Discussion of an anesthetic agent is augmented by chemical formulas.

The author has used tables to further emphasize the important features of the text. These will be referred to many times as they will enable one to readily find valuable information. Reference tables are supplied in the appendix and augment the information given throughout the book. A glossary provides common understanding between author and reader.

The contributors have added significantly to the book. Dr. Thomas' chapter on fire and explosion hazards is important to every specialist in this field. The medicolegal aspects of this important part of dental practice are discussed and will serve as a guide to everyone who utilizes general anesthesia. Because Dr. Harper is a dentist and an attorney, the content of this chapter is more meaningful. The chapter devoted to anesthesia in dental procedures for children serves as an excellent guide to an important phase of general anesthesia in dentistry.

The second edition has been expanded to include the new drugs introduced for use in this field. It includes the most recent developments in general anesthesia. The book is complete, concise, and well written.

*William R. Wallace, Columbus, Ohio*

**MECHANISMS OF HARD TISSUE DESTRUCTION.** Edited by Reidar F. Sognaes, D.M.D., Ph.D., AAAS Symposium, Vol. No. 75. 776 pp. Washington: American Association for the Advancement of Science. 1963. \$13.00. (AAAS members' cash orders: \$11.00.)

This book is based on a symposium presented at the Philadelphia Meeting of the AAAS, December 29-30, 1962. It contains the papers of 49 outstanding co-authors on destruction of mineralized structures by organisms and by physical and chemical agents. The destructive processes considered include boring canals, attrition, abrasion, erosion, caries, resorption, osteolysis, chelation, and proteolysis.

The proceedings of the 1962 Section Nd (Dentistry) meeting were prepared by Dr. Sognnaes with the title "Newer Concepts on the Mechanisms of Hard Tissue Destruction" and appeared in the JOURNAL in June 1963 (30:143-51). Those interested in the book are referred to that paper for a detailed review.

*T.McB.*

#### BOOKS RECEIVED FOR REVIEW

HOLLENBACK, GEORGE M. Science and technic of the cast restoration.

St. Louis: C. V. Mosby, 1964. \$7.85. 230 pp.

SCHWEITZER, JEROME M. Oral rehabilitation cases. 2 vols. St. Louis: C. V.

Mosby, 1964. \$44.50. 1014 pp.

STINAFF, ROBERT K. Dental practice administration. 2nd ed. St. Louis:

C. V. Mosby, 1964. \$7.85. 266 pp.

THE YEAR BOOK OF DENTISTRY, 1963-64. Chicago: Year Book Medical

Publishers, 1964. \$7.50. 511 pp.

## CALENDAR OF MEETINGS

### CONVOCATIONS

November 8, 1964, San Francisco

November 7, 1965, Las Vegas

November 13, 1966, Dallas

October 29, 1967, Washington, D. C.

1968, Chicago



## *The Objectives of the American College of Dentists*

The American College of Dentists, in order to promote the highest ideals of the dental profession, advance the standards and efficiency, develop good human relations and understanding with our patients, and extend the benefits of dental health services to the greatest numbers, declare and adopt the following principles and ideals as ways and means for the attainment of these goals:

(a) To encourage qualified persons to consider a career in dentistry so that the public may be assured of the availability of dental health services now and in the future;

(b) To urge broad preparation for such a career at all educational levels;

(c) To encourage graduate studies and continuing educational efforts by dentists;

(d) To encourage, stimulate, and promote research;

(e) To urge the development and use of measures for the control and prevention of oral disorders;

(f) To improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient through sound public dental health education;

(g) To encourage the free exchange of ideas and experiences in the interest of better service to the patient;

(h) To cooperate with other groups for the advancement of interprofessional relationships in the interest of the public; and

(i) To urge upon the professional man the recognition of his responsibilities in the community as a citizen as well as a contributor in the field of health service;

(j) In order to give encouragement to individuals to further these objectives, and to recognize meritorious achievements and potentials for contributions in dental science, art, education, literature, human relations and all the other areas that contribute to the human welfare and the promotion of these objectives—to confer Fellowship in the College on such persons properly selected to receive such honor.

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This is the Preamble in the Constitution and Bylaws of the American College of Dentists.