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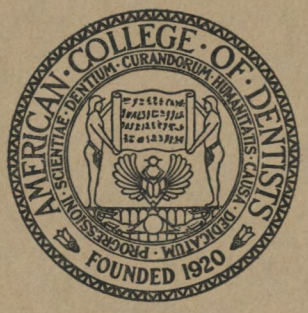
Journal

AMERICAN COLLEGE OF DENTISTS



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JOURNAL

American College of Dentists

Presents the proceedings of the American College of Dentists and such additional papers and comment from responsible sources as may be useful for the promotion of oral health-service and the advancement of the dental profession. The Journal disclaims responsibility, however, for opinions expressed by authors.

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American College of Dentists

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

Announcements

Next Meeting, Board of Regents: St. Louis, Sept. 5, 1952

Next Convocation: St. Louis, September 7, 1952

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

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CONTENTS

"Not all men are of equal value. Not many Platos: only one, to whom a thousand lesser minds look up and learn to think. Not many Dantes: one, and a thousand poets tune their harps to his and repeat his notes. Not many Raphaels: one, and no second. But a thousand lesser artists looking up to him are lifted to his level. Not many royal hearts—great magazines of kindness. Happy the town blessed with a few great minds and a few great hearts. One such citizen will civilize an entire community."

Newell-Dwight-Hillis

EDITORIALS

GREAT MEN

Too often are we inclined to think of great men as those whose years and efforts have been spent in the area of politics or some field reaching out over all the activities of all the people. The latter is a plane where men rise and fall and some do "stay up," yet in each field of man's activities there are great men also.

Too often are we inclined to think of great men as those who hold high positions or many positions. In this there is a mis-application of terms—such a person is "popular" or a good "leader," but his greatness will not show until he has been sifted and found not "wanting." Or again the great man may be that man who is not known at all, save only as some have recognized his "royal heart" or "good magazine of kindness."

Hillis[1] is undoubtedly correct in his description of man as expressed in language of the street, but there is another, the language of the Scriptures which says, "He who would be greatest among you must be servant of all."

The servant goes quietly about his work which, well done and himself dependable, makes for Terra Firma upon which the *popular* man or the leader may stand. He then is really the *great* man.

Of course, there are great men in front seats and front lines of service, but there again is the word "serve," whether servant or service, and there are great men in the back seats who may not even be discerned. But which is it that makes men great? Does it depend on the position or number of positions that men occupy? Does it depend on his money making prowess or his financial position in the community? Does it depend on his knowledge, his understanding or even his wisdom? Does it depend on his kindness, his charitablness or his gentleness? Do we see him and think of him as a nice man or a good man? Is there any difference? Is he ethical and/or moral in his practices? Is he tactful, honest, or is he a strategist? Is he an idealist, a realist or what may he be?

No doubt the answer lies in all of these—he must be all of that

[1] See opp. page.

and more or perhaps underlying all of that which a great man is, is a fundamental principle of honesty commonly called "intellectual honor." This may best be discerned as that which gets inside of a man and directs him in all of his thoughts and activities. To be an idealist is well, but difficult. It's an imposition on one and is one that he cannot bear. It may be termed "an imposed ideality." Better for one to get that thing that gets into men and directs them so that they feel no imposition and which may be known as "an exposed reality." Such a man is real—is always to be counted upon, is responsible and honest—he doesn't have to think twice before acting—he is a *great man*!

The underlying principle of great men then is not the offices or appointments they hold; nor the ideals they proclaim; but to be summed up into a simple term, it is the "intellectual honor," which they possess.

Such men will not allow conflict between policy and law, personal desire and self interest, but will have law express in words, the policy which they maintain, and they will think objectively rather than subjectively. Some may go through many phases of activity and of popularity and come out great. Some may be great without any popular acclaim. Always must the *great* and the *popular* be distinguished between, hoping if one desires, that the popular may come out great and in time that the great may get some popular acclaim. Generally the popular man and the great man are two different people. But it need not be so.

In this profession seven men of all the centuries were selected as the "Seven Immortals of Dentistry." Why?

TEACHER TRAINING FELLOWSHIPS

Teacher Training Fellowships are being offered by the American College of Dentists. Final plans have been made and any one interested in teaching may address the Chairman, Dr. Harry Lyons, Dean, College of Dentistry, Medical College of Virginia, Richmond. Full details will be published in the June issue of the Journal of the American College of Dentists.

WORLD HEALTH PROBLEMS AND ACTIVITIES[1]

LEONARD A. SCHEELE, M.D.,[2] *Washington, D.C.*

During the last three years, the world has seen greater improvement in health conditions than in any similar period in history. In fact, whole centuries have passed without such notable advances as have taken place in some parts of the world in these few years.

Precarious economic conditions notwithstanding—and in spite of the troubled political outlook—there is now far greater security of life in most free countries than ever before. Low death rates are no longer a monopoly of North America, Australia, New Zealand, and Northwest Europe,—as was practically the case before the war. Forty years ago, we thought that any country which managed to make its general death rate dip below 15 per 1,000 population was doing very well indeed. Primitive countries at that time had death rates twice as high.

Now, in the second half of the century, several tropical countries, by a few years of intensive effort, have reduced their death rate to the level of more advanced regions. In Ceylon, for example, the death rate was brought down from 22 per 1,000 population in 1945 to 12.6 in 1950. In Venezuela, a pre-war rate of 17.2 per 1,000 fell to 11.0 in 1950. Italy reported in 1950 a general death rate of 9.7 per 1,000—the lowest on record—which placed her in the same group of nations as the United States with a rate that year of 9.6 per 1,000.

What has made possible these startling improvements in the overall health of these countries? There are two basic answers to that question. In the past decade, the public health professions have acquired new methods whereby we can deal effectively, and at low cost, with several groups of diseases which for centuries have taken enormous tolls of life and health. Also, new channels for the application of these methods have been established and perfected. Through international health programs, even the poorest countries now have access to expert assistance in combating disease by methods which they can afford.

The attack on malaria is a good example. Even today, it is estimated that more than 300 million persons have malaria throughout

[1] Delivered at the Convocation, October 14, 1951, Washington, D. C.

[2] Surgeon General, Public Health Service, Federal Security Agency.

the world, year after year. Until the development of residual spraying with DDT during World War II, the only methods of combating the malaria-carrying mosquito were drainage of breeding areas or treating such areas with oil or Paris green. The disadvantages of these methods were their high cost and the fact that they were not too effective in protecting populated areas from the adult mosquito.

Residual spraying of dwellings with DDT has overcome these disadvantages. The residue left on the walls of homes in protected areas will kill most mosquitoes for as long as a year. The method can be applied by unskilled labor after very brief instruction; and it is cheap.

In Ceylon, malaria has been reduced to a vanishing point at a cost of 20 cents per capita. Northeastern Ceylon, hitherto chiefly wasteland, is now being resettled and opened to modern agriculture. In some areas of India, the cost of DDT spraying was only 15 cents per capita, an outlay that even the poorest countries can afford. The immediate economic return on this small investment in Bengal, for example, was a 15 percent increase in the rice crop.

Today, 50 million people in tropical and subtropical countries are protected against malaria solely by DDT residual spraying. This protection should be expanded as rapidly as possible to another 500 million.

The same method will control certain other insect-borne diseases such as filariasis, also spread by a mosquito. Dusting with DDT has proved its worth in halting louse-borne typhus. In North Africa, the disease has been practically eradicated by this means. A malaria team of the World Health Organization, working in the State of Mysore, India, stopped an outbreak of bubonic plague in a week by spraying floors and rat holes in the area with DDT, thus destroying the flea vectors.

Similar victories are taking place in various parts of the world in the battle against other diseases. Yaws, for example, is so prevalent in some tropical and semi-tropical areas as to affect nearly the whole population. Haiti, Java, and East Africa are among the most heavily infected areas. A single injection of penicillin will usually cure this debilitating, ulcerating, and disfiguring disease. The use of penicillin is also the method of choice in combating syphilis which, in some parts of the world, is believed to infect up to one-third of the population.

Tuberculosis is another disease of world-wide significance. Many Western nations, such as our own, Great Britain, the Netherlands, and the Scandinavian countries, have succeeded in reducing their tuberculosis death rates to a point where systematic case-finding and sanatorium care of open cases are required for ultimate eradication. Such methods are too costly and cannot be applied in countries with large populations living under primitive conditions.

In these areas, and in some war-devastated European nations, a large-scale tuberculosis control program is being attempted through the joint efforts of the World Health Organization, the United Nations International Children's Emergency Fund, and the Danish Red Cross. Over 30 million children have been X-rayed and over 16 million vaccinated with BCG against tuberculosis. The results of this program, however, will become visible only over an extended period as data are collected as to the incidence of tuberculosis among the vaccinated children.

CURRENT WORLD HEALTH PROGRAMS

The World Health Organization, which came into being in 1948 as a specialized agency of the United Nations, is the main center from which the new public health knowledge and methods are being disseminated to the free peoples of the world. The Pan American Sanitary Bureau, the oldest international agency for health purposes, is a regional organization acting in its own behalf and also as the World Health Organization's Regional Office for North, Central, and South America. Other specialized agencies of the United Nations—such as the International Children's Emergency Fund, the Food and Agriculture Organization, and the Educational, Scientific and Cultural Organization conduct some activities related to health. More and more these secondary health programs are being developed in cooperation with the WHO.

In spite of the fine work of these international agencies, there are still hundreds of millions of people in Asia, Africa, and parts of South America who cannot be reached by the meager programs of the international agencies and their own governments. The United States therefore has not contented itself with working only through the international organizations, but has developed programs of aid to friendly countries through bilateral agreements with individual nations.

Technical assistance in public health is made available to underdeveloped countries through the Institute of Inter-American Affairs and the Technical Cooperation Administration—both parts of the State Department—and through the Economic Cooperation Administration. Supplies and equipment are provided to a limited extent in some of these programs.

The United States Public Health Service staffs the health programs of the Technical Cooperation Administration and the Economic Cooperation Administration. One of our medical officers also heads the health programs of the Institute of Inter-American Affairs. In all, about 150 Public Health Service personnel are on assignment to international health work, either through international agencies, or through special agencies of the United States.

STRATEGY IN INTERNATIONAL HEALTH

In planning our foreign aid programs, we must always bear in mind the old public health precept: Attack first the preventable causes of sickness and death through methods that can be applied to large groups at relatively low cost.

Thus when we think of world health problems today, we must have a world view, not a national view. The major health problems of our own country are the chronic diseases, dental diseases, the problems of aging, and the disabilities resulting from accidents and other injuries. The same is true of other advanced industrial nations. But for the world as a whole, the focus of attention is upon communicable diseases—some of which we ourselves have already wellnigh conquered, and some of which are endemic only in tropical and semitropical areas.

It is difficult for us to realize that in many parts of the world, the average life expectancy is only about 30 years, as compared with our own 67 years. This fact tells us that living conditions and health conditions for nearly one-half of the world's more than two billion population are about as favorable as they were in Europe in the Middle Ages.

Furthermore, the underdeveloped countries are poor countries. The very prevalence of disease and the cutting off of so many millions in early adulthood are major contributors to their poverty. In providing aid to these countries, we take the position that lasting benefits come only from the initiative and action of the people

themselves. Hence, we must plan with their governments—not in terms of our own pocketbook and our own technology, but in terms of their means, their problems, and their capacity for solving the problems. We must emphasize strongly the training of their health workers so that programs begun may be carried to successful conclusion.

Often we begin with an impact program against a specific disease. The swift reduction of malaria, for example, has at once produced a major advance in the standard of living and well-being of a large section of the population. On the basis of such a triumph, it is relatively easy to demonstrate the values of a permanent, comprehensive health program. In fact, the experience of our American experts on foreign assignment and my personal observation at the World Health Assemblies indicate that governments often want to go farther and faster than they are prepared to go, following a successful impact-program.

Overwhelming prevalence of infectious diseases—poverty—low standards of living, of education, agriculture, and health protection, —and the virtual absence of health personnel and facilities in many areas: these are the factors which have caused the World Health Organization and the United States bilateral health programs to move boldly into the attack on preventable disease and into the establishment of strong national health departments in under-developed areas.

These same factors have caused the same agencies to move slowly and cautiously in the development of certain other programs which have been developed in the more advanced nations. The construction of hospital facilities, for example; the development of mental health and dental health services—all are desirable, even essential in a total health program. But in most of the countries, the premature development of such programs would absorb funds and scarce personnel that must be first directed against the first causes of sickness and death.

This is not to say that the World Health Organization and the United States bilateral programs are disregarding these and many other essential health services. It is a dilemma of small resources and order of priorities. The total resources of the international agencies for health purposes amount to less than $20 million a year. Although the United States will undoubtedly spend more

on bilateral than on multilateral health programs during the current fiscal year 1952 than last year, these sums obviously are small in comparison with the problem of upwards of one billion cases of preventable disease throughout the world. I believe you will agree that world health strategy must be planned to deal with these problems according to urgency of need.

DENTAL HEALTH IN THE WHO

The World Health Organization, however, has given serious consideration to dental health. At the meeting of the Third World Health Assembly in 1950, a resolution was passed requesting the Director-General to study the problem and report to the Fourth World Health Assembly last May 1951.

A consultant was appointed to WHO in September 1950 and he spent the remaining months in gathering information. Four countries, with different levels and types of development in the field of dentistry and with different social and economic characteristics and systems of health organization, were visited. Conferences were held with the International Dental Federation and with members of the dental profession in other countries.

As a result, the World Health Organization was able to report to the Fourth World Health Assembly that there is a definite interest in dental health problems among public health officials and the dental profession. It is of interest, too, that the International Dental Federation was one of 20 international organizations who sent representatives to the Fourth World Health Assembly as observers.

The report to the Assembly by WHO revealed that as yet, in most countries there are no reliable data on the prevalence of dental disease. Although some countries have comparatively well-developed dental treatment programs, there is little evidence of a concept of dental health or active concern for the prevention of dental disease.

Critical shortages of dental personnel exist in many countries and there is very little evidence of planning to meet the long-range needs for dentists or for auxiliary dental personnel. In some countries, there is confusion as to the objectives of dental education. For example, many of the dental schools visited by the WHO consultant lacked qualified teaching personnel, as well as adequate library facilities, teaching equipment and supplies.

Most countries, including our own, are conducting very little dental research. The training of research personnel and the integration of research with dental education and dental health services was recommended.

Advanced training in dentistry and in public health will be required for those individuals who eventually will develop modern dental education and dental health services in the countries now lacking adequate dental treatment and dental hygiene programs. The WHO consultant also recommended that when countries are planning their comprehensive, long-range health programs, they should give dental health a proportionate share of attention.

Upon receipt and discussion of this report, the Fourth World Health Assembly adopted unanimously a resolution requesting the Director-General to include a dental health program in plans for the future work of WHO and to start dental health activities in connection with WHO demonstrations as soon as such activities may be financially feasible. Finally, the Assembly urged that the WHO encourage the training of dental health personnel through its fellowships program. It is likely, therefore, that a few dental health fellowships will be allocated this year.

THE ROLE OF THE UNITED STATES IN WORLD HEALTH

The speed with which the free world's need for better health services and better facilities is met depends in no small measure upon this country's maintaining its participation in international health activities—both through the WHO and other international agencies and through our own bilateral programs. The progress that has been made in the past three years has been made possible on the proverbial "shoe-string." We cannot afford to let down the countries that have made a good beginning, nor to fail in extending the frontiers of world health to other nations now struggling to remain free. A reduction in United States support will force the international agencies and our own bilateral health programs to curtail their already too meager efforts for a healthier, happier, peaceful world.

A few weeks ago, the Honorable Estes Kefauver told the Convocation of the International College of Surgeons that "the few United States dollars being spent for public health in our international

programs are more productive in end-results and in good will than any other money we spend in the whole international field."

I heartily agree with the Senator. In the short time since his address, I have been on a mission to Japan and Korea. In the war area, human suffering on a vast scale is developing as millions of new refugees and displaced persons are being forced into already disease-ridden and poverty-stricken areas. The costs in dollars and cents merely to prevent the spread of disease to the armed forces and into other areas will be tremendous. Control of disease at the source has ever been the method which has given public health the victory. In the troubled state of the world, I can think of no more economical way of preventing the spread of war and strengthening our own defenses for the future than through our programs to help the under-developed nations rid their people from the burden of preventable disease and death. The world health program is indeed mutual aid—for the free peoples of the world, that is the road to peace and prosperity.

Life, if you would get the best out of it, must be lived under the spell of vision.

S. Barfoed, Engineer,
Pacific Gas & Electric Co.

DENTISTRY IN CIVIL DEFENSE[1]

RUSSELL W. BUNTING, D.D.S.,[2] *Washington, D.C.*

What I have to say to you tonight is in complete accord with the theme of this meeting, "Preparation For Service." The role that dentistry can play in civil defense is a most important service in which every member of the profession will be involved, and for which he should be prepared. I can think of no better way to initiate such a program than to present it before such a distinguished group of our profession from every section of the country.

When I was appointed as the Dental Consultant in the Federal Civil Defense Administration, I went to Washington in about the same frame of mind as most of you would have. I, too, thought that very little was being done on civil defense and that we had waited too long for some official plan to direct our local and state activities.

When I arrived I was attached to the Health and Special Weapons Defense Division of the Federal Civil Defense Administration where, much to my surprise, I found a very active and progressive organization. Here is assembled a considerable staff of highly trained individuals who have had long experience in the several fields related to civil defense. Each is outstanding in his special field. In close cooperation with all others, each one is doing his utmost to develop programs for these various services. Manuals for guidance and instruction are being prepared in the general fields of medical and nursing care of patients in disaster, the procurement and stockpiling of medical supplies, including blood plasma and plasma substitutes, laboratory services, food-handling, radiological monitoring, sanitation, and biological and chemical warfare. Many of these are in their final stages and will soon be ready for distribution.

This is a big job for it must be remembered that all such programs are largely speculative, built not on practical experience, but on deductions made from atomic bomb explosions in Japan and experimental bomb tests in this country and elsewhere and on the observations of bombing in England during the last war. Such inductive reasoning as to what will happen here may be very

[1] Delivered before the Annual Convocation, Washington, D.C., Oct. 1951.

[2] Dental Consultant, Civil Defense Administration, Washington, D.C.

complicated and involve many probabilities all of which must be explored. This all takes time.

It was into such an atmosphere of intensive effort that the dental consultant was introduced. He was expected to develop the dental activities in a similar manner. He found a very cordial reception in the Federal Civil Defense Administration, in which dentistry is given full consideration as an integral part of the general scheme of defense planning. In a consultation held between representatives of the American Dental Association and the Federal Civil Defense Administration staff held in Washington, it was agreed that every effort should be made to activate and organize the dentists of this country in civil defense activities. In response to a widespread demand, the first duty of the consultant was to prepare a manual to outline and describe the part which dentistry would play and to outline the scope of preparation of dentists for emergency disaster service. This was no small task. The manual has been written and rewritten and now is in the final stages of review. It is hoped that it will soon be available for all dentists engaged in civil defense activities.

But some may say, why should we be so concerned over the atom bomb? Russia would never dare use it. If she did, our air service could intercept their planes. Why should we, as dentists, do anything about it?

Are we realistic in this attitude or are we simply shutting our eyes to something we dislike to contemplate? We know that Russia, in spite of all her protestations of peace, is preparing for war. We know that she is devoting a large part of her economic resources to the manufacture of war materiel. Could it be that all this effort is to be directed toward peace?

It is fairly certain that she now has a stockpile of atomic bombs and more are being built. She has 400 to 500 long range bombers of the B-29 type capable of reaching any part of this country. It is acknowledged that, with all our radar and airborne defense, we could not intercept more than 30% of a hostile enemy air invasion. If 10 planes come over 7 will get through. If 100 come, 70 would probably find targets somewhere in the United States or Canada. These are the cold facts based on the mature judgment of our armed forces.

It is roughly estimated that for each successful hit on an average

metropolitan area there may be 60,000 to 80,000 injured. Of these 40,000 will be so seriously wounded that they must have immediate help to survive. Perhaps 40,000 will be ambulatory and can make their own way to relief centers.

The contemplation of such a disaster, which would be multiplied by the number of bombs dropped, is too stupendous to be grasped by the human mind. When we consider the catastrophic effect of the Coconut Grove disaster in Boston where there were but 300 casualties, and the theater collapse in Washington, with 100 killed or injured, a situation involving 80,000 casualties would be tremendous. And yet, that might happen here and, at the present time, there is not a city in this country that could adequately care for such an eventuality. Do we dare to ignore such a possibility? Russia boasts that she has 20,000,000 civilians trained for defense—we have less than 1,000,000.

It is true, it may not happen, but can we bank on it? There is not a person in this room that does not carry fire insurance on his home or property. Year after year you pay the premium, but few of you have ever collected a dollar for losses. Nevertheless you would not dare to be without such protection. Do you dare to be without any protection against a much greater disaster? No, we must do everything possible to be ready for such an emergency if it comes and pray that it never does.

In all disaster planning it is expected that dentists will work side by side with physicians and nurses in first aid stations and in hospitals. When no physicians are available in first aid units the dentists will be in charge. Will we be ready to assume these responsibilities?

After the bomb has exploded, after the buildings have fallen, fires will spring up to add to the chaos and devastation. For a time most everyone in such an area who is still alive will be stunned and many will be in a state of extreme shock and collapse. Many will be buried under the rubble. Gradually the survivors will take stock of themselves and their injuries. Those who can, will help themselves and will give aid to those more seriously injured, and very soon, under civil defense planning, organized units of first aid will begin to move into the area of impact. In these units dentists will be included. The effectiveness of these rescue services will depend on amount of predisaster planning and training.

Those who have had first aid training will be able to help themselves and others about them. Everywhere in the area of destruction people will be dying or in severe pain for whom immediate aid must be given if they are to survive. At a time like this everyone will wish that they knew just what they should do.

It is into such a picture of widespread calamity that dentists are expected to move and do their part in the salvage of lives and the relief of pain. In this they will find it necessary to perform many duties outside their scope of training. Everywhere in the bombed area there will be hundreds of seriously injured people who must have immediate attention. These emergency services will tax the knowledge and experience of the dentist far beyond any previous conception. He should be prepared to meet the emergency. He should be attached to a unit in which physicians, nurses and first aid workers will be trained to give aid to the injured both at the scene of action and in first aid stations. Such training should begin **now**.

For such emergency service the dentist has much to offer. With his high technical skills and finger dexterity and with his basic training in the health sciences, the dentist is pecularily qualified to render emergency casualty relief above and beyond that of other first aid workers. This was amply demonstrated during the last war when dentists worked side by side with surgeons in the Army hospitals and, when there was no medical officer available, the dental officers temporarily took charge of emergency clearing stations and acted as medical officers.

Dentists are accustomed to working with their hands and are capable of great precision in the performance of surgical techniques. Their intimate knowledge of the face and jaws makes them specially valuable in the handling of face and jaw injuries.

However, the casualties of atomic warfare present certain major problems which are wholly unprecedented and which should be given special consideration. The types of injuries will be different from other forms of warfare and the number of casualties will be greater than even the most disastrous battle. In order that these newer phases of emergency relief may be efficiently conducted it is necessary that all relief workers shall be familiar with types of injuries which will occur and the most approved methods of handling them. To that end it is most essential that physicians, dentists and nurses shall receive training in the medical aspects of atomic war-

fare to prepare them for such an emergency. In every city, town and hamlet there should be study groups devoted to the nature of atomic warfare and the most approved methods of casualty relief.

The injuries will be of three types, blast, burns, and radiation. The initial blast will be terrific, will last but a minute or two, and will do little bodily harm, except near the center of impact. Its greatest damage will be secondary from falling buildings and flying missiles which will produce 60% of bodily injuries. Many will be killed outright by these impacts, many will have serious contusions, fractures and head injuries. These will require first aid measures and transportation to a first aid station. In Hiroshima the greatest number of deaths and serious injuries came from falling walls and imprisonment by collapsed buildings. There, little was done to rescue the trapped casualties and thousands burned to death or died from injuries because they were not rescued in time. This must not happen here.

Dentists with other emergency relief workers should be prepared to move into the bombed area where they will supervise the rapid treatment and evacuation of the injured. The dentist must control hemorrhage, give first aid to burns and traumatic injuries, treat shock and relieve pain and determine whether casualties should be moved or allowed to remain where they are. In this he must work fast for there will be much to be done. Other dentists will be attached to first aid stations and hospitals where they will work with medical and nursing staffs to care for the wounded. Others, who have had training in oral-maxillofacial surgery, will be stationed in hospitals where they will have special care of head and face injuries.

Burns will be a major consideration. The initial heat wave will be of short duration—about two to three seconds, but it will be hot. At the center of the fire ball it will be 70,000,000 degrees C, practically the heat of the sun. On the ground it will be 3000 degrees to 4000 degrees C. This will incinerate all those in the immediate vicinity and produce serious burns within one mile radius on all those who are not protected. There will be slight skin burns $2\frac{1}{2}$ miles from the center, and all gradations of first, second and third degree burns at lesser distances, depending on the exposure and the distance from the initial impact.

The care of burns then becomes an important first aid measure. Dentists must be familiar with the accepted methods of treatment.

You, no doubt, have believed that vaseline, cod liver oil, or salt and soda should be applied to burns before dressing; but a recent opinion of the National Research Council is quite to the contrary. They recommend that in first aid treatment of mass casualties no ointments be applied. Mild burns and those not circumferential may be left open to the air. They also recommend a specific type of dry dressing which has recently been manufactured and is now on the market. These newer methods of handling burns should be learned by every dentist.

The treatment of radiation injury and sickness is even more specific. The dentist should understand the nature of atomic radiation injuries, the dangers of handling such cases, the symptoms by which the extent of the injuries incurred may be determined and the approved methods of handling such cases. It should be remembered that in case of high atomic bursts there is little or no danger to the rescue workers who enter such an area immediately after the explosion. In case of low air bursts, or ground bursts, precautions should be taken with respect to contamination, but relief workers may go into the irradiated areas immediately for short periods of time.

The general principles of caring for casualties resulting from atomic bomb explosions are set forth in a manual issued by the Federal Civil Defense Administration, entitled "Health Services and Special Weapons Defense" (AG 11-1). This should be carefully studied by every dentist. Special manuals will also be issued devoted to the treatment of shock, burns, fractures and radiation sickness. These will be available to every civil defense group and should be the basis of courses in training.

All this is a great challenge to the dental profession. We must prepare to meet it. Dentists are known as good organizers. We must organize ourselves and our communities to meet this great emergency when, and if, it comes. Every local and district dental society should have a study group and training should begin at once in order that our membership will be able to do its utmost to save everything possible out of the holocaust.

We must be prepared to save lives and it may be that they will be our own, or the lives of our families and friends. For each bomb there may be 40,000 casualties that will die if there is no help for

them. Organized civil defense can save half of them. 20,000 people are worth saving.

The American Dental Association through the Special Committee on National Emergency Dental Service is cooperating with the Dental Consultant in the Federal Civil Defense Administration in stimulating interest in, and planning for dental participation in civil defense. The formation of state civil defense committees in each state society is being encouraged. These, in turn, will organize local civil defense committees in each component society and will assist in the setting up of training programs in every part of their respective states, preferably in conjunction with medicine and other health workers. Medicine, in its Council on National Emergency Medical Service has made considerable progress in civil defense organization:

It is hoped that all dental civil defense committees will be closely coordinated with similar committees in medicine on all levels. The training of all health workers in preparation for a national disaster should be a joint project of medicine and dentistry.

As Dental Consultant in the Federal Civil Defense Administration I beg your cooperation, your tolerance and your patience. Such an unprecedented situation takes time to develop. Let us all, individually and collectively, lend our might to civil defense planning and prepare ourselves to render the high quality of services which dentistry can and will perform at the time of a national emergency.

IMPORTANCE OF DENTAL LITERATURE TO THE PROFESSION[1]

HARRY B. HAMBLY, JR., D.D.S.[2] *San Francisco*

Television, radio, telephone, motion pictures, transcription recordings—what splendid mediums we have today to impart to others the philosophies, the learning, the skills, the knowledge that is ours! The mountain peaks, the valleys, the oceans, the continents, the skies, which, over the countless ages have been barriers to most people, have been leveled and the world can be reached with little effort, thru these miracle agencies. The world is ours!

A standard dictionary at hand gives the definitions of literature:

(1) "the written or printed productions of the human mind, collectively:

2) the writings that pertain to a particular epoch, country, subject, or branch of learning.

(3) the best expressions of the best thots reduced to writing."

So, as the countless ages roll on the spoken voice is stilled, the language even forgotten. The carvings on the walls of stone, the symbols on the papyrus, the written word, and pictures in books, are indeed the treasure. Read and reread, studied and restudied, the story can be told and re-told, not once, but for always.

Apropos of the definition of literature, many writings give proof of its contention, and dentistry is no exception. In an editorial in the College Journal it is well said, "Answer to this must be found in his writings or whatever may have been written about him by his contemporaries."[3] From *Muses and the Toothache Polka* I quote; "In brief Doctors Charles De Costa and John Brown lived and had their being as the saying goes, in a circumscribed area of the City of New York, and so far as we can find out, made no significant contribution to the art and science of Dentistry, to belles-letters, to economics or to politics. If their names had not appeared in the directories they would have been as nebulous as the composer S. Ehrlich."[4] It is evident that the literature, or lack of it, had

[1] Delivered at the Washington D.C. Convocation, Oct., 1951.

[2] Chairman, Journalism Committee: other members are, J. E. Gurley, C. C. Sheppard.

[3] Journal American College of Dentists, Vol. 17-No. 4, Editorial.

[4] Journal American College of Dentists, Vol. 17-No. 4, pgs 419–420, Taber

great bearing on the evaluation of these two gentlemen's lives; likewise in the evaluation of the profession. Then too, to the Glory of Dentistry, there is ample evidence that from Paul Revere's time, down to the present day, that, "among *free* men, is the American Dentist,"[5] so ably recorded in, "The Dentist is an American Tradition" found in the Journal of the College and worthy of all to read.

I must commit you further to the reading of the "Centenary Commemoration Proceedings of Dentistry" and particularly to the excellent volume, "Horace Wells, Dentist[6] compiled by Wm. J. Gies, to whom this whole profession can justly give homage, for his life's contribution to the literature of our profession, placing it on a footing, second to none. From the introduction of this book I quote, "Raper's history of anesthesia is not only informative and inspiring for members of the health service professions, but also entertaining and instructive for lay readers. Raper's book, by careful coordination of many conflicting reports, and by studious clarification of the multitude of perplexing details, has recovered from the maze of accumulated disagreements and distortions, the historically important story of the discovery and introduction of general surgical anesthesia, which were accomplished successfully in 1844 and 1846 by Wells and Morton. Their immortal associated activities—which created the boon of general anesthesia—constituted "the greatest single gift ever made to suffering humanity" (Osler) and established the Dental Profession's most exalted tradition."

Were it not for the literature, neither the learning, nor the knowledge thereof would be available to the countless generations to come. In fact it is this very literature that has pulled the cloak of fallacy from the subject matter, established the truth, evaluated the writings and created the very status the Dental Profession enjoys.

In the study of our young profession we find book literature in the United States to be over 150 years old, and periodical literature over 100 years old. Dental Journalism has been found to fall into the following classifications over the years, in the manner of its publication.

[5] Journal American College of Dentists, Vol. 18, pgs. 18–25.
[6] Horace Wells, Dentist, American Dental Asso., 1948, pg. 10.

1. Private publications
2. Dental Organization publications
3. Manufacturer publications
4. Dental School and College publications
5. Commercial publisher publications.

From 1910 to 1940 a pronounced increase in the number of dental periodicals took place. In the last ten years the change has been small (except during World War II years.) These thirty odd years could be called the years of solidification toward professionally owned or controlled publications.

Compilation of dental book literature for the years 1900–1920 shows about 362 works, when the United States was third in the world in such publications. An increase in subsequent years has been a certainty. In the last 50 years in the U. S. the change has been noted gradually changing from textbooks, on general work in dentistry, to specialized work.

There is little doubt that most of us have a keen appreciation of the value of periodicals as a medium for promoting the education and improving the status of the dentist. Tradition credits Chapin Harris with inaugurating the movement for the first journal, in and about the year 1835. The first volume of the American Journal of Science as a result appeared in 1839. In the earliest years we find, quoting from one of the journals, "that the heavy responsibility of editing the Journal, and the difficulties in collecting funds to pay the printing costs, were the important causes for extending Vol. I over a period of two years."

The same reasons are found in many parts of our country today to be "stumbling blocks" in the publishing of dental journals. One of the legs upon which the profession of dentistry is founded, is literature. We may confidently say that it has been carrying its load nobly, even tho at times, under adverse circumstances.

Like the founders of our country, when writing the Declaration of Independence and our Constitution, the writers of our early periodicals and journals in dentistry emphasized certain objectives with clarity. They sought:

1. Accumulation of known knowledge from the then practitioners of dentistry.
2. Dissemination of this knowledge to improve practices.
3. To "convince people of its utility when judiciously practiced,

and to enable them to discriminate between a scientific dentist and a charlatan."

4. To unite the profession, that standards, licenses and educational means might be developed to improve the practice of dentistry, "that all might derive much profit."

5. To organize a national society of dentists.

Is it not amazing to you, how well in these short years and to what degree, these accomplishments have been brot about? Without the medium of the written word, most of it could not have been possible.

Books and journals are invaluable, but the periodical literature of dentistry gives the progressive month by month cross section of the discoveries, inventions, technics, philosophies, personalities, experiments and controversial matters so excellently, that it might be said to be the most important historically. They record the change, the pulse of the times, the progress so important to a moving, growing, vibrantly active profession. There is little doubt that most of us have an appreciation of the value of our periodicals and as a medium for promoting constant education among the profession who avail themselves of their worth, however seemingly disinterested and apathetic the membership appear to exhibit themselves to the editors and editorial boards, in their never ending labors in the membership's behalf. As President Harold W. Oppice said to me at the recent San Francisco Meeting of the American Dental Association, "You may think the membership doesn't read the periodicals, that they are apparently unappreciative because of their silence,—but just make a mistake, or print something controversial —and from the four corners of the country you will be deluged with letters attempting to put you on the right track; don't you believe your journals and periodicals are not being read!"

The Council on Dental Education[7] of the ADA in 1940 laid down requirements for the approval of a Dental School, which revealed the accelerated interest in dental libraries. Adequate library facilities were held to be essential in any program of dental education. The past few years excellent work in the improvement of the ADA[8] library and its services to the membership, and the dental index

[7] American Dental Asso. Journal, pg. 789, Vol. 40, No. 6, G. P. H. Foley.
[8] Misc. reading.

development are evidences of the importance of literature to the Dental Profession.

There are various modern vehicles used in education, such as television, radio, motion pictures, technical exhibits, clinics and displays of various kinds, all of which are laudable. Many are expensive to use, and short lived, tho stimulating. Turn to your present ADA Journal[7] and count the departments within its covers. Study the coverage and multiplicity of subjects, and you will be startled at your "moneys worth." Most of the other professional dental journals or periodicals strive to fall into the same category in value. Books have stood the test of time.

Schools of Journalism today give courses in—

reporting	psychology
copy reading	sociology
editorial writing	political science
feature writing	economics
history of journalism	history
the law of libel	literature
	language

Fortunately we have had a few dentists and friends of the dental profession who have by their good fortune had training in some of these subjects. They have worked tirelessly for the dental profession, and its literature has been enriched by their self-sacrifice, but they are few, too few among our members. We need more young men to be prepared to carry on in this field, along with their dental professional activities, so I place a challenge before you, to make this objective realizable. The College could well use its offices to stimulate the creation of Dental Journalism scholarships in various sections of the country, and strive to develop anticipation in certain graduates to be, to acquire them as post graduate training. There may be some of you here today who would find it gratifying to grant such a scholarship to your own Alma Mater.

Truly, our predecessors have made the way possible for us, and it is now time for us to lay the road for the future generations.

Is there any wonder? Can there be any skepticsm left in the shallowest of minds of the great importance of literature? Even the least among us in knowledge and intellect has gained some of

his mental prowess, his social position, his economic status, thru the medium of literature and can always augment his learning to the fullness of his capacity, in its use.

And so it is, as we look back on the one hundred and eleven years of our recorded American dental profession, from the beginning, even as today, the literature, has been the corner stone and the foundation upon which rests the entire well being of the profession. Build it constantly, guard it jealously.

TO LIVE OR MAKE A LIVING

Educated men, then, are men for whom full communication is possible, but evidently if they are merely educated they will not be particularly useful citizens. A man is useful when he is engaged in some sort of activity, professional, artistic, or economic. Most men must be engaged in some such activity or else they cannot live at all, since they must earn their living by these activities—"make their living" as it is quite commonly and properly called. A very few are under no compulsion to do so, but even these find it advisable to have some special business in the world, if only to save themselves from being bored.

Max Radin, the Pacific Spectator, 1, 12; 1947 (Winter)

OPPORTUNITIES FOR CONTINUING EDUCATION AND RESEARCH IN DENTISTRY

PHILIP JAY,[1] D.D.S., *Ann Arbor*[2]

For many years, dental societies provided the principle source of continuing education. Through their meetings and journals they have provided the means by which all practicing dentists could, if they desired, keep in touch with the development of new operative and preventive measures. The American Dental Association through its component district societies has served the largest number of practitioners.

The earliest departure from this primary source of continuing education was the development of dental study clubs in some of the larger metropolitan areas. These had advantage of providing an opportunity for participation by all members of the group in exercises designed to improve operative skills. In more recent years the seminar method has been adopted wherein a faculty of specialists is selected to meet with practitioners for a period of several days. These meetings are as a rule, held in a resort area in off season, when the atmosphere is conducive to informal discussions and conferences. Seminars of this type are held annually in the West, Northwest, Middle West and in the Northeast.

In cooperation with their dental associations several of the state health departments have provided lecturers and clinicians to meet with dental and other interested groups throughout the state. This is a particularly effective method since it gives the teacher an opportunity to relate instruction to the conditions found in the various areas. Some of the states have sponsored workshops in which dentists interested in special fields are enabled to view their common problems collectively. The Universities are using the workshop method of postgraduate education with a great deal of success.

There are societies with programs and journals designed to meet the needs of the various specialties. The greatest number of dentists receive their postgraduate instruction by virtue of the many professional societies. The American Dental Association has expanded

[1] Delivered at the Washington, D.C. Convocation, Oct., 1951.

[2] School of Dentistry, University of Michigan.

its activities in the educational field through its councils to a very marked degree in recent years.

The Dental Schools have naturally provided the majority of essayists and clinicians for the various society programs. With the help of philanthropic organizations the educational institutions of this country have been able to offer postgraduate and graduate training to dentists and others interested in dental problems on an ever increasing scale.

The Forsyth Dental Infirmary in Boston, and the Eastman Dental Dispensary in Rochester, have offered opportunities for postgraduate training in Dentistry for children and orthodontics for many years. Later the Guggenheim Clinic was founded in New York City, to provide dental care for needy children and specialized training for dentists in this field.

The W. K. Kellogg Foundation, during the past ten years has given financial aid to twelve schools in the United States and five in Canada, for continuing education programs. These grants have provided an important impetus to the development of postgraduate and graduate teaching. The United States Public Health Service, the Army, and the Navy have for many years provided postgraduate instruction for their dental officers.

The Council on Dental Education of the American Dental Association has prepared a comprehensive survey of the status of graduate, postgraduate and refresher courses offered by dental schools and the Army, and Navy of the United States. The summary published on April 1, 1951, indicates that thirty-seven of the forty-two dental schools offered advanced courses in 1950–51. A further breakdown shows that 174 graduate, 334 postgraduate, 180 refresher courses, and 523 new or potential courses, or a total of 1,216 courses were offered in 1950–51, which represents an increase of 35% over the previous year. Three hundred forty-nine graduate and 1,381 postgraduate students were enrolled in the dental schools of the United States in 1950–51.

The School of Medicine and Dentistry of the University of Rochester and the Walter G. Zoller Memorial Dental Clinic of the University of Chicago, provide excellent opportunities to prepare for careers in teaching and dental research. A University of Rochester publication of 1950 lists some interesting statistics relative

to the activities of former Dental Fellows. Ph.D. Degrees had been granted to 10 and M.S. Degrees to 18. Five former Fellows occupy dental school deanships. Twenty-two have attained professorial rank. Fifty-two have held Fellowships at the University of Rochester between 1930 and 1950. As of June, 1951, there were six Fellows enrolled with the possibility of two additional appointments being made. The Eastman Dental Dispensary also as of June, 1951, had six Fellowships available which offered an opportunity for clinical experience, as well as research training in either the Dispensary laboratories or those in the School of Medicine and Dentistry.

The Rochester Fellowship program has received financial support from the Rockefeller Foundation, the Carnegie Corporation and the Eastman Dental Dispensary. More recently, others have held appointments at Rochester on National Institutes of Health Fellowships.

The Zoller Program at the University of Chicago parallels that of Rochester in the opportunities offered for advanced training. Since its beginning in 1936 the Zoller Clinic has made outstanding contributions to dental research and at the present time, fifteen Zoller Alumni are engaged in some phase of dental education. The Zoller Fellowships, like those of Rochester, may lead to the granting of Masters and Doctors degrees. This program was made possible by a gift to the University of Chicago, of over three millions dollar by the late Walter G. Zoller.

Since the war, Government Agencies have had a marked influence on graduate education and research. The G. I. Bill of Rights provided substantial financial assistance to many dentists who were candidates for advanced degrees. The National Institutes of Health have awarded Fellowships since 1945, which permitted the recipient to select the institution and field of study of his choice. The National Institute of Dental Research had funds for fifteen such Fellowships in 1951–52. Both the American College of Dentists and The American Dental Association have established Fellowships for graduate students in Chemistry, who spend a part of their time in the American Dental Association Bureau of Chemistry laboratory. These Fellowships serve the purpose of attracting chemists to the Dental field as well as to provide much needed assistance in the important work of the Bureau of Chemistry.

DENTAL RESEARCH

Organized Dentistry was quick to appreciate the necessity for research in the field of etiology and prevention of dental disease as well as the development of suitable dental materials. The American Dental Association Fellowships in The National Institute of Dental Research, as well as the substantial financial assistance to the Bureau of Standards, have been rewarded with the publication of scientific reports of unusually high caliber. There are many instances in which local Dental Study Clubs have supported short term research projects.

The American College of Dentists has provided financial support for dental research and in some instances has done so on very short notice in order to prevent the collapse of valuable experiments. The College has recently established two funds for research purposes: 1) "The Wm. J. Gies Research Travel Grants" are made to research workers for the purpose of visiting the laboratories of contemporary workers in order to gain first hand information about new developments which might aid in the pursuance of their own studies; 2) A fund was established to provide immediate financial assistance in the event of accident to equipment or laboratory animals, the loss of which would endanger the course of valuable investigations.

The International Association for Dental Research which was founded by Wm. J. Gies in 1920, has developed into an influential research body which has contributed substantially to the stature of dental research throughout the world.

Aside from the financial assistance obtained from Dental Societies the major support in the past was obtained from University Faculty Research Funds and Grants from various philanthropic Foundations. More recently Government Agencies have entered this field. Grants are now being made for research purposes to Civilian Institutions by the Army, the Air Force, the Navy, the Veterans Administration and the United States Public Health Service, through the National Institutes of Health. These agencies have all contributed substantial funds to dental research projects.

The shift from private agencies to the Federal Government in Research sponsorship is being watched with interest. The grants are being allocated with the help of advisory councils in which practitioners, educators, and research workers have equitable repre-

sentation. All such awards are necessarily dependent upon the annual Congressional appropriations. Should dental research become increasingly dependent upon Federal Subsidy, changes in Congressional policy would affect an increasingly large proportion of dental research activity. Government participation in this field is providing a much needed stimulus. It would be very encouraging at this point if some of the newer foundations sponsored by industry would express an interest in dental research.

The area awaiting investigation by dental researchers is limitless. All of the phenomena of the oral cavity are complex and the technics of all of the allied sciences must be employed to study them. This requires highly specialized personnel and the means and ability to conduct experiments under scientifically controlled conditions. A comparison of the annual proceedings of the International Association for Dental Research during the past fifteen years indicates that researchers in dentistry are well aware of these facts.

Ethics is restricted morality,—
Morality is restricted to religion—
Religion is restricted by our particular beliefs and practices.
Author unknown

A REVIEW OF SOME OF THE FACTORS CONCERNED WITH THE ETIOLOGY AND PATHOGENESIS OF ACID EROSION, ABRASION, AND CARIES OF THE TEETH[1]

JAMES NUCKOLLS,[2] D.D.S., *San Francisco*

The role of acids in the pathogenesis of dental caries has caused much controversy since the promulgation of what is known as chemico-parasitic theory of Miller at the turn of the present Century. The original concepts of Miller (1, 2, 3, 4, 5, 6) of the oral flora and dental caries were broad, and his speculations were without prejudice. However, with the passing of time, these hypotheses have undergone amazing modifications until at the present time, it is generally agreed by practitioners of dentistry and by many researchers as well, that dental caries is primarily an acid decalcification. It is conceded by some that decalcification is followed by a secondary breakdown of the organic constituents of the enamel (7, 8). The acid is a by-product of bacterial metabolism. The organism (Lactobacillus) undergoes an increased metabolism when supplied with a sugar milieu and, therefore, more acid is formed to dissolve the enamel. This is the widely accepted basis for the disease of dental caries (8, 9, 10). The concept is so thoroughly embedded in the matrix of the literature that it must be given consideration. However, the hypothesis, at best, has a questionable foundation when evaluated by the yardstick of scientific scrutiny (11, 12, 13, 14, 15, 16, 17, 18), although the efforts put forth in attempting to establish this concept as a theory have been prodigious (8). With the wide acceptance of the acid decalcification dental caries hypothesis, it, therefore, follows that any substance such as beverages or fruit juices with a sufficient acidity to cause a dissolution of the enamel would receive considerable attention as being detrimental to the integrity of the teeth.

This has been particularly true following a demonstration on laboratory animals that beverages with an acidity of pH 3 or lower would produce a pronounced dissolution of enamel under laboratory

[1] From the Section of Oral Pathology, Division of Preclinical Sciences, University of California College of Dentistry.

[2] Deceased April 19, 1952. This is his last work—a little yet not published. The College started him and presents his last.

conditions. In one experiment, seven solutions were listed, of which six produced a weight loss through the removal of the mineral complex from the teeth (19). Since 1943, no less than fifteen publications have appeared in the scientific journals incriminating some nineteen or more solutions having an acidity sufficient to produce erosion of the enamel (19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33). These include hydrochloric acid, sulphuric acid, phosphoric acid, lactic acid, citric acid, ginger ale, Cola beverages, grapefruit juice, cranberry juice, apple juice, orange juice, tomato juice, pineapple juice, prune juice, Guava juice, Java plum juice, mango juice, lemon juice, and grape juice. Of these acid solutions used in the erosion experiments, twelve were natural occurring fruit juices; three were inorganic acids; two were organic acids; one a carbonated beverage; and one a beverage containing phosphoric acid. In the majority of these experiments in which laboratory animals were subjected to a continuous intake of an acid beverage, it was shown that a solution of enamel and dentin of the clinical crowns of teeth occurred. It is inferred that since acid erosion in monkeys and dogs has been observed (25), the results of erosion experiments in rats might be applied to man (19). This attitude has since been taken up by some, who, with little scientific background, have condemned all beverages with an acid pH and sugar as being the chief etiologic agent of dental caries (34, 35, 36). It is pointed out that these articles almost completely overlook the erosion potentiality of the twelve natural occurring fruit juices previously discussed. The latter publications are characterized by great enthusiasm but supported with little scientific evidence of a fundamental nature. When evidence is cited to support their contentions, it is often the reviewer's conclusions of the experiment rather than the data of the original researches.

When the lesion of dental caries is compared to that of acid erosion, the clinical picture is entirely different. The early or preclinical carious lesion in the enamel presents the appearance of a whitened area or a brown spot in the unbroken enamel. This lesion may not be detected by physical exploration or by X-ray. However, when these areas are prepared for microscopic observation, they show a complete breakdown of the organic component of the enamel, and these positions are often filled with bacteria (37, 38, 39, 40). It has also been demonstrated that these brown colored areas contain a pigment known as melanin, which is formed by the action of bacte-

rial enzymes on the amino acids, tyrosine and tryptophane (41). A recent but unpublished research confirms this earlier work with regard to pigmentation and, in addition, the enzyme tyrosinase has been identified, which is responsible for the breakdown of the amino acid tyrosine to form melanin (42). These amino acids are constituents of the organic part of the enamel and dentin (43, 44).

The organic framework of the enamel was formerly thought to comprise only a fraction of its volume by weight and, therefore, could not be a factor in the disease of caries. However, later studies have shown the organic framework to constitute a far greater proportion by volume of the structure than heretofore thought (37, 38, 45, 46, 47, 48, 49). Histochemical methods have also shown organic material in considerable amounts and in specific areas in the enamel where caries most frequently occurs (50). A study by electronic microscopy of the organic framework of the enamel in which all of the mineral had been removed supports the foregoing concepts of a relatively greater ratio of organic material to the mineral part of the enamel (51). As the lesion progresses, the dentin is invaded by bacteria, and the whole area finally undergoes a breakdown and an open cavity is formed. These carious cavities most frequently occur in pits and fissures on the chewing surfaces of teeth and in areas where two adjacent teeth come together. It has also been shown that animals produced in a germ free environment do not have dental caries regardless of the diet (52). Thus, both bacteriologically and biochemically, the evidence strongly indicates that the lesion of dental caries is the result of the action of microorganisms.

It is recognized that bacteria, acid decalcification, and protein breakdown are a part of the caries process. The relative importance of these factors and the substrates and enzymes involved in caries are, for the greater part, an unexplored field (18, 43, 52). It has been suggested by two independent researchers that acids which have a sufficient strength to decalcify enamel may be derived directly from a breakdown of the organic components of teeth which are undergoing decay (16, 18, 43). Another investigator advances good biochemical evidence that teeth of rats fed a high sugar diet produce better calcified incisor teeth during development than the control animals which are fed a normal diet (54). Not only were the teeth more densely calcified but they had a higher ratio of phosphate to calcium which might cause them to be less reactive to acids. If one

is familiar with carbohydrate metabolism at the cellular level in structures undergoing mineralization, this evidence makes for sound biochemical reasoning (55, 56). A study of three groups of children on varying diets showed that the children on a generally superior diet which included a high sugar and carbohydrate intake, together with good dental care and good dental hygiene, may have better teeth than those with poorer dietaries and poorer dental care (57).

Other investigations tend to show that the basic structure of the tooth may be the chief factor in caries susceptibility (58, 59). Excessive intake of sugar is known to promote the metabolism of Lactobacilli organisms which produce lactic acid. However, no conclusive evidence to date has been advanced to show that lactic acid is the only acid which is a part of the caries process or of acid erosion (18, 43).

On the other hand, the lesion of acid erosion presents an entirely different picture. The eroded areas are generally confined to the surfaces of teeth next to the tongue, cheek, and lips. In appearance, they present a shallow cupped out appearance. The eroded surface is hard and smooth, and may be grooved. Both enamel and dentin have a similar hard smooth texture. The clinical appearance of erosion must be contrasted with the brown or whitish appearance of caries of enamel and with the soft or leathery discolored texture of dentin caries. It should also be emphasized that dental caries most generally occurs in pits and fissures and between the teeth, whereas erosion is most often confined to the labial buccal and lingual surfaces.

It seems that in certain instances in the erosion studies that the researchers have confused their results with their speculations, since it is questionable to make inferences from animal studies about humans when the animal experiments do not parallel the existing conditions in the human (19). The question arises, does the composition of rat's enamel simulate the composition of human enamel? It should also be pointed out that acid beverages were the sole source of the fluid consumption of the animals. The average human drinks other solutions in far greater proportions than he does acid beverages. If the rat consumes 10 ml. of an acid solution in 24 hours, how long will it take a human to consume an equivalent amount based on the average daily consumption of acid beverages per capita? One also wonders what the influence of the average per capita intake of acid

beverages really has on the alkalinity of the oral cavity (32). In one experiment, extracted human teeth were placed in acid beverages for periods of time, and it was noted that the teeth became soft (19). Extracted teeth are not necessarily equivalent to vital teeth in the oral cavity. Neither can the salivary milieu in which they are continuously bathed be compared with acid solutions in which the extracted teeth were suspended. The hydrogen ion concentration of the saliva is about 6.7 to 6.8, which is above the level at which acid decalcification takes place (32, 60, 61, 62). Recent observations of the pH of enamel surfaces show a range from 7.50 in youth to 6.47 in later life (63). One also wonders what would happen if, in addition to acid beverage studies, extracted teeth had been placed in natural occurring fruit juices. It has been suggested that oxalates might be incorporated in beverages as protective agents against erosion (19, 24, 29). It is thought by some that the ingestion of oxalates may inhibit the processes of normal calcification of growing bones (64).

Opportunity was recently afforded to examine a series of experimental animals in which erosion has been produced by a variety of fruit juices which have an acid pH (30). It is noteworthy that in these experiments, the animals which ate whole fruits did not evidence acid erosion. It was also noted that there was no greater evidence or extent of caries in the control animals which were fed a normal laboratory diet than those which consumed acid solutions, even though the experimental animals had lost all the enamel from their teeth by chemical erosion. From this experiment and others, it has been shown beyond a doubt that beverages or fruit juices with an acid pH below that of 5.0 will produce a complete loss of enamel from the clinical crowns of teeth in animals when these solutions supplant all of the drinking water.

The question is: Does a similar condition occur in man when an excessive amount of fluid with an acid pH is taken into the oral cavity? In the author's opinion, it can and does occur. Decalcification of enamel and dentin has been observed following exposure to acids among acid dippers and workers in explosives factories (65).

In twenty-five years of clinical and private practice, this author has seen only three clear-cut cases of acid erosion. These case histories included one individual who regurgitated following meals and had an erosion of the lingual surfaces of the upper anterior teeth; another had a condition known as achlorhydria, and as a result, con-

sumed hydrochloric acid; another consumed excessive amounts of fresh citrus fruit juices. Two of these cases had an erosion of enamel so marked that the dental restorations stood out like islands, while the one with the hydrochloric acid deficiency had lost a major portion of the enamel from the crowns of the teeth. None of the three patients had marked dental caries. The patient who suffered from achlorhydria, although he has little enamel left, is caries free.

There seems to be considerable confusion in the minds of many investigators as to the differential diagnosis between acid erosion and mechanical abrasion. There is little doubt that abrasion accompanies erosion, since any decalcification in the human or in animals will be followed by an abrasive action by the tooth brush, in man, or by the functional scouring by foods in animals. In making a differential diagnosis between abrasion and erosion, it must be borne in mind that the clinical pictures of both conditions may appear to be similar. Therefore, in differentiating between the two lesions, one must consider the food habits as well as the abrasive habits and the occupational hazards of the patient. One must also consider the position of the lesion as to whether these lesions could be produced by a mechanical abrasion by improper use of the tooth brush. From the author's observations of the smooth, hard V-shaped lesions which occur predominately at the level of the cervical areas of the labial surfaces of the upper cuspids, these are primarily the result of mechanical abrasion. This is also true of teeth which have been displaced to the labial or buccal of the dental arch. There are undoubtedly conditions when these lesions are of mixed etiology of both erosion and abrasion; however, the establishment of the chief etiological factor in these conditions would be most difficult.

Recently, investigators have concerned themselves with the pH of the cervical areas of teeth where abrasion occurs most frequently (66). Their findings indicate that the pH of both clean and dirty tooth surfaces (approximately pH 6.60) are not sufficiently low to produce an acid erosion. These observations seem to be in line with what is known of the pH of saliva (pH 6.7), and the pH of enamel surfaces (pH 7.50) (63).

CONCLUSIONS

Based on present day concepts of the etiology of dental caries, it seems that this disease is a complex process. One of the many factors

being the inherent pattern of tooth development which determines the caries susceptibility and non-susceptibility of the teeth; secondly, that bacteria are a factor in caries pathology. To those who have actually worked in the field of fundamental caries pathology, it is evident that the processes of acid erosion and dental caries are two separate etiological entities. The clinical appearance of the two lesions bear no resemblance.

It is also apparent that a review of the literature does not support the contention that the conditions under which acid erosion is produced in laboratory animals is similar to the nutritional environment of man. From available evidence in man and laboratory animals, it seems that acid erosion induced by acid solutions in the oral cavity may not influence the development and extension of the caries lesion. The introduction of sugar into a solution with an acid pH does not seem to materially increase or decrease the rate of acid erosion in experimental animals (28, 32). Acid erosion in animals can be produced by a wide variety of solutions which include inorganic and organic acids, beverages with an acid pH, and many of the natural occurring fruit juices. A critical evaluation of the researches as to the causes that are responsible for the deterioration of the teeth permits a clear distinction between dental caries and enamel erosion. Whereas, it is possible to produce acid erosion of the teeth of laboratory animals, a similar condition seems not easily obtained in man.

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Education is the preparation for complete living.
. . . Herbert Spencer

AMERICAN COLLEGE OF DENTISTS

MINUTES OF THE BOARD OF REGENTS, CHICAGO, FEBRUARY 3 AND 4, 1952

(Abbreviated)

O. W. BRANDHORST, D.D.S., *St. Louis*, Secretary

FIRST MEETING

The Board of Regents of the American College of Dentists convened at 9:05 a.m., on Sunday, February 3, 1952 in the Conrad Hilton Hotel, Chicago, Ill., President Fleming presiding, 13 members present.

Minutes of the Washington, D. C. meeting of October 12 and 15, 1951 were approved as corrected.

The Secretary's report on the minutes was approved.

Reports of Officers

President Fleming reported on section activities and outlined plans for Counsellors' meeting to be held on Sunday afternoon, February 4, 1952.

Treasurer Hodgkin reported a balance in the general fund of $17,111.40. Also Government Bond investments in the amount of $24,000.00. He also reported on the H. Edmund Friesell Endowment Fund which showed a balance of $3,553.47.

The Secretary reported on ad-interim activities.

The following deaths since the Washington, D. C. meeting were reported:

Norman Hempstead Baker, Charleston, W. Va.	October 29, 1951
Harry B. Pinney, Chicago, Ill.	October 18, 1951
J. Sim Wallace, London, England	July 13, 1951
James T. Sweeney, Lodi, Calif.	June 24, 1951
Donald H. Miller, San Leandro, Calif.	November 16, 1951
Myron E. Lusk, Minneapolis, Minn.	November 25, 1951
Henry O. Lineberger, Raleigh, N. C.	December 7, 1951
Edward J. Jennings, Trenton, N. J.	December 12, 1951
Jack LeRoy Loop, Alhambra, Calif.	October 22, 1951
Edward H. Strayer, Philadelphia, Pa.	December 16, 1951
Walter H. Wright, New York, N. Y.	December 31, 1951
John F. Christiansen, Los Angeles, Calif.	January 15, 1952
Clayton L. Miner, St. Cloud, Minn.	January 17, 1952
Edward L. Williams, Houston, Tex.	January 18, 1952

The Regents reported on the activities in the various areas.

Hood

It was voted that a dental hood should be worn during the ceremonial exercises by the Officers and Regents.

American Association for the Advancement of Science

Dr. George C. Paffenbarger was appointed as the American College of Dentists' representative on the Council of the American Association for the Advancement of Science, to replace Dr. Walter H. Wright (deceased).

Adjournment at 12:15 p.m., for the Illinois Section luncheon and the meeting of the Counsellors which followed the luncheon.

SECOND MEETING

The second meeting of the Board of Regents convened at 9:10 a.m., February 4, 1952, 12 members present.

Reports from the following committees were received: Cooperation, Dental Student Recruitment, Journal and Oral Surgery.

The report of the Committee on Ethics and Oath was presented in combined form and it was voted that the material be prepared for printing in brochure form to be sent to the membership when ready.

Committee activities

President Fleming outlined a broad plan for the re-organization of committees activities and will propose a plan embodying these suggestions at the fall meeting.

Ad-Interim Committee

It was voted that the President, President-Elect, Vice-President, Treasurer and the Secretary constitute the Ad-Interim Committee for transacting any business between meetings of the Board.

Adjournment, 12:55 p.m.

AMERICAN COLLEGE OF DENTISTS

Minutes of the Board of Regents, October 12 and 15, 1951, Washington, D. C.

(Abbreviated)

O. W. BRANDHORST, D.D.S., *St. Louis*, Secretary

FIRST MEETING

The Board of Regents convened at 9:00 a.m., on Friday, October 12, 1951, in the Mayflower Hotel, Washington, D. C. President Lineberger, presiding. 12 members were present.

Minutes of the Chicago, Illinois, meeting of February 4 and 6, 1951 were approved.

Secretary's report on minutes was accepted.

Reports of Officers:

President Lineberger reported on Section activities and Committee activities throughout the year.

President-Elect Fleming reported on plans for the year, in which he would project the idea of Extension Study Courses by the Sections.

The Treasurer's report showed the following:

General Fund—Cash on hand	$18,853.72
Government Bonds	24,000.00
H. Edmund Friesell Endowment Fund	3,300.00
Accrued Interest	210.05

The Secretary reported on ad-interim activities and state of the College, indicating 1658 regular members and 18 Honorary Members as of Oct. 1, 1951, and thirty deaths during the year. The editor's report was received and filed.

SECOND MEETING

The second meeting of the Board of Regents convened at 1:30 p.m., on Friday, October 12, 1951, President Lineberger presiding, 12 members present.

Reports were received from the following committees: History, Journalism, Research, Certification of Specialists, Cooperation, Med-

ico-Dental Relations, Dental Oath, Ethics, Code of Conduct, Preventive Service, Education and Memorial Book. (All reports will appear in the Journal—watch for Committee Reports.)

It was voted to combine the reports of the committees on Dental Oath, Ethics and Code of Conduct into a brochure for distribution to the membership and prospective members.

Adjournment, 5:30 p.m.

THIRD MEETING

The third meeting of the Board of Regents convened at 7:30 p.m., on Friday, October 12, 1951, President Lineberger presiding, 10 members present.

Nonimations for Fellowship pending before the Board of Regents were discussed.

Adjournment, 10:00 p.m.

FOURTH MEETING

The fourth meeting of the Board of Regents (first meeting of the new Board) convened at 9:00 a.m., on Monday, October 15, 1951, President Fleming presiding, 12 members present.

Reports were heard from the following committees: Research, Prosthetic Dental Service, Budget, Reference Committee on the report of the Committee on Cooperation, Oral Surgery, Dental Student Recruitment and Medico-Dental Relations. Reports received.

The film "A Career in Dentistry" presented by the Committee on Dental Student Recruitment was approved.

It was voted that a booklet containing many of the facts on "Dentistry as a Career" be prepared which would accompany the film "A Career in Dentistry" as an explanation.

It was voted that the problem of distribution of the film be worked out by a committee consisting of the Chairman of the Dental Student Recruitment Committee, the Secretary of the College and the Secretary of the Council on Dental Education of the American Dental Association.

Committee appointments for 1951–1952 were approved and appear on cover page 3 of the Journal.

AMERICAN COLLEGE OF DENTISTS

Minutes of the Convocation, Washington, D. C., Oct., 1951[1]

OTTO W. BRANDHORST, D.D.S., *St. Louis*, Secretary[2]

MORNING SESSION

The session convened at 9:00 o'clock with President Lineberger presiding.

Invocation by Chaplain (Major General) Roy H. Parker, Department of the Army, Washington, D. C.

Minutes of the Convocation of October 29, 1950, Atlantic City, N. J., were read and approved.

The report of the Nominating Committee was presented and the Secretary was instructed to cast one ballot for each candidate. Those elected were:

President-Elect, Fritz A. Pierson, Lincoln, Neb.; Vice-President, Ernest N. Bach, Toledo, Ohio; Treasurer, William N. Hodgkin, Warrenton, Va.; Secretary, Otto W. Brandhorst, St. Louis, Mo.; Historian, William J. Gies, New York, N. Y.; Regents (four years each), Lloyd W. Johnston, Denver, Colo., and Gerald D. Timmons, Philadelphia, Pa.

President Lineberger presented his President's Address in which he urged the membership to continue its support of the ideals of the College in furthering its objectives at both local and national levels.

The report of the Necrology Committee was presented by the Chairman Arthur H. Merritt. (See p. 219.)

LUNCHEON SESSION

The luncheon session, under the auspices of the Washington, D. C. Section of the American College of Dentists, Henry A. Swanson, presiding, convened at 1:00 o'clock in the Williamsburg Room. Invocation by Chaplain (Rear Admiral) T. C. Miller, Department of the Navy, Washington, D. C. Leonard A. Scheele, A.B., M.D., L.L.D., Surgeon General, U.S.P.H.S., Washington, D. C. spoke on

[1] The Theme of the Convocation was, "Preparation For Service."

[2] Dean, Washington University, School of Dentistry; President-Elect, American Dental Association, and Secretary of the College.

"World Health Problems and Activities." Attendance 377. Adjournment 2:30 p.m. (See p. 155)

AFTERNOON SESSION

The afternoon session convened at 3:00 o'clock. Following the academic procession, with President H. O. Lineberger, presiding, Lloyd E. Blauch, A.B., A.M., Ph.D., Associate Chief for Education in the Health Professions, U. S. Office of Education, Washington, D. C., spoke on "The Professional Man in our Times."

Fellowship in the American College of Dentists was then conferred upon the following persons:

Josephine May Abelson, New York, N. Y.
John Davis Adams, St. Louis, Mo.
Leslie Lloyd Anderson, Clearwater, Fla.
Robert M. Appleman, Chicago, Ill.
David B. Ast, New York, N. Y.
Byron Wright Bailey, Bradford, Vt.
John Henry Bajuk, Alameda, Calif.
William Herman Banks, Montezuma, Ga.
Charles E. F. Barrett, Jr., West Hartford, Conn.
Don H. Bellinger, Detroit, Mich.
Woodson T. Birthright, Washington, D. C.
Clay A. Boland, (Navy)
Paul J. Boland, San Antonio, Tex.
Stanton N. Bordner, (Veteran's Administration)
Kenneth M. Broesamle, (Navy)
William Bogan Brooks, Chattanooga, Tenn.
Eugene L. Brown, Ft. Worth, Tex.
Vivian Z. Brown, (Army)
Henry Newman Brownson, Hollywood, Calif.
Amos Sumner Bumgardner, Charlotte, N. C.
George A. Bunch, Columbia, S. C.
Carl A. Bumstead, Lincoln, Neb.
Henry F. Canby, (U.S.P.H. Service)
James Wilson Carson, Los Angeles, Calif.
Daniel Raymond Clark, Minneapolis, Minn.
Walter Edgar Clark, Asheville, N. C.
John Joseph Clarke, Jr., Artesia, New Mexico
Geo. B. Clendenin, Bethesda, Md.
Charles Pearson Cleveland, Jacksonville, Fla.
M. Edward Coberth, Baltimore, Md.
Henry E. Colby, Minneapolis, Minn.
Robert Allinder Colby, (Navy)
Cecil Hickman Collins, Los Angeles, Calif.
Walter Thomas Colquitt, Shreveport, La.
E. Milburn Colvin, Jr., Washington, D. C.
George Bernard Crozat, New Orleans, La.
Milton Cruse, Chicago, Ill.
Leland Thomas Daniel, Orlando, Fla.
Clinton Lindale Davies, Worcester, Mass.
William Daniel Diessner, Waconia, Minn.
William Richard Dinham, Portland, Ore.
John Willoughby Douglass, Jr., Greenville, S. C.

Marion L. Drake, Cleveland, Ohio
P. M. Dunn, Minneapolis, Minn.
Harold Leonard Emmons, Saco, Maine
Francis J. Fabrizio, Washington, D. C.
W. Marion Falls, Washington, D. C.
John Frederick Folley, Jr., New Hartford, N. Y.
William W. Franklin, (Army)
Ferd Edwin Garrison, Ft. Worth, Tex.
Ralph Richard Gibson, Denver, Colo.
W. Ormond Goggin, New Orleans, La.
William McCullough Goodwin, (Veteran's Administration)
Willis H. Grinnell, Pittsfield, Mass.
Paul Howard Hamilton, Los Angeles, Calif.
John F. Harkins, Wesleyville, Pa.
Eldon E. Harris, Austin, Tex.
James A. Hartman, Cincinnati, Ohio
Maurice John Hickey, New York, N. Y.
Jerome Joseph Hiniker, (Veteran's Administration)
Thomas Edwin Hinkson, Wilmington, Del.
Grover Cleveland Hunter, Jr., Atlanta, Ga.
Spence Atwell Hutt, Jr., Houston, Tex.
Rex Ingraham, Glendale, Calif.
Arthur L. Irons, (Army)
Laverne H. Jacob, Peoria, Ill.
Frank Ernest Jeffreys, (Navy)
Vincent Merrill Johnson, Atlanta, Ga.
E. Horace Jones, Cincinnati, Ohio
Stephen Thomas Kasper, (Navy)
Horton Duncan Kimball, Detroit, Mich.
Sheldon W. Koepf, Buffalo, N. Y.
Herman H. Kothe, (Army)
Hugo M. Kulstad, San Francisco, Calif.
Burt Lyle Lageson, Medford, Ore.
Arthur Lankford, Baltimore, Md.
Alex. N. Lifschutz, Brooklyn, N. Y.
Cecil Franklin Lindley, Seattle, Wash.
William Ernest Ludwick, (Navy)
Earl Fabian Lussier, San Mateo, Calif.
Douglas M. Lyon, St. Louis, Mo.
Roger Neil MacMillan, San Francisco, Calif.
Dallas Ramsey McCauley, Beverly Hills, Calif.
Carl Ernest McMurray, Philadelphia, Pa.
Clare Kenneth Madden, Greenwich, Conn.
Herbert I. Margolis, Boston, Mass.
Edward J. Mehringer, Buffalo, N. Y.
Jack Menneffee Messner, (U.S. Air Force-Army)
Charles Edward Meyers, (Navy)
Donald Howard Miller, San Leandro, Calif.
Paul Anderson Miller, (Army)
Leonard M. Monheim, Pittsburgh, Pa.
George H. Moulton, (Army)
Phelps John Murphey, Dallas, Tex.
John Victor Niiranen, (Navy)
Philip Munro Northrop, Ann Arbor, Mich.
Joseph J. Obst, Brooklyn, N. Y.
V. John Oulliber, San Francisco, Calif.
James Rembert Owings, Greenville, S. C.
Charles W. Pankow, Buffalo, N. Y.
Gerald Linscott Parke, (Navy)
George Garnet Perdue, Detroit, Mich.
Stanley J. Phillips, Oshawa, Ont. Canada
Bernard Marcel Prejean, Carville, La.
Frank Hawley Pratt, Seattle, Wash.
Thomas A. Price, Miami, Fla.
V. Arthur Prindle, San Francisco, Calif.
Walter A. Rath, Washington, D. C.
Stella Risser, Houston, Tex.
Aubrey Palmer Sager, Philadelphia, Pa.
Jacob Amos Salzmann, New York, N. Y.
Francis Mathias Schneider, New Haven, Conn.
Charles J. Schork, (Navy)
Wiley F. Schultz, Cleveland, Ohio
Jerome M. Schweitzer, New York, N. Y.
Otto W. Silberhorn, Chicago, Ill.

Howard Edward Sippel, Buffalo, N. Y.
Isaac Sissman, Pittsburgh, Pa.
Alfred E. Smith, New Orleans, La.
Rowe Smith, Texarkana, Ark.
Raymond Douglas Snider, Houston, Tex.
John Monroe Spence, Oak Park, Ill.
Wm. Robert Stanmeyer, (Navy)
Wayne Karlson Stoler, Valparaiso, Ind.
John S. Stone, Clarksburg, W. Va.
Otis L. Swepston, Dallas, Tex.
Isidore Teich, New York, N. Y.
Harold Knight Terry, Miami, Fla.
Kenneth Wilson Thomas, San Antonio, Tex.
John J. Tocchini, San Francisco, Calif.
John Wellington Truitt, Gainesville, Texas
Robert Franklin Tuck, Chicago, Ill.
Clarence Frank Tuma, Cleveland, Ohio
Juanita Wade, Dallas, Tex.
Walter Frank Wade, Erie, Pa.
Donald Todd Waggener, Lincoln, Neb.
J. Lewis Walker, Jr., Norfolk, Va.
Tyler James Walker, (Army)
Richard Thorp Weber, Austin, Tex.
Edward C. Weinz, Syracuse, N. Y.
Richard Royal Wier, Wilmington, Del.
F. Harold Wirth, New Orleans, La.
Wendell Leroy Wylie, San Francisco, Calif.
Percy A. Wynn, Houston, Tex.
Fred Miller York, St. Petersburg, Fla.

Honorary Fellowship was conferred upon John A. Kolmer, M.D., D.P.H., F.A.C.P., Professor of Medicine and Director of the Institute of Public Health and Preventive Medicine, Temple University, Philadelphia, Pa., in recognition of his interest and devotion to the relationship of the dental and medical sciences.

At the close of this session, a reception was held for the new Fellows.

EVENING SESSION

The evening session was preceded by a dinner served at 7:00 o'clock, 478 present.

Invocation by Edw. B. Dunn, Regent, School of Dentistry, Georgetown University, Washington, D. C.

The Secretary, acting for President Lineberger, introduced the guests at the head tables.

Following the introduction of guests, the program as announced was presented, (this issue) at the conclusion of which President Lineberger installed the new Officers and Regents and then called upon Dr. Willard C. Fleming, San Francisco, Calif., to present his Inaugural Address.

Dr. Albert L. Midgley, Providence, R. I., was then asked to present the Past-President's Key to Dr. Henry O. Lineberger, retiring president.

The meeting was adjourned at 10:15 p.m.

AMERICAN COLLEGE OF DENTISTS

Reports of Committees, 1950–1951

Standing Committees:

Special Committees:

MEDICAL-DENTAL RELATIONS

Comments on the Status, Growth and Operation of an Acceptable Program

ALBERT L. MIDGLEY, D.M.D., Sc.D., *Providence*[1]

INTRODUCTION

This report is presented in the hope that it will increase active interest in organized and united effort to solve the interrelated problems of medicine and dentistry. To attain this objective, there is urgent need for much closer cooperation and understanding, with more and better collaboration between physicians and dentists.

The principles, doctrines and potentials of a comprehensive interprofessional health-service program were recognized in the earlier days of its consideration, but progress was restricted and retarded chiefly because of preprofessional and undergraduate educational

[1] Other members are: J. R. Cameron, M. W. Carr, S. D. Mead, L. M. S. Miner, R. S. Vinsant.

inequalities. Two additional chief obstacles have been lack of opportunities in hospital relationships for advancement in education and practice, and our deplorable failure to utilize the all important intrinsic potential of a *united organized effort operating at national, state and local levels.*

At the present time, united organized effort at a state level is in operation in Rhode Island, through a health-service program which combines the ideal with the practical, and pays due regard to the independence as well as the interdependence of the two professions. Plainly, such an organized and operating plan opens the doors to a medical-dental relationship of far-reaching influence. As far as we know, this is the first time in the annals of medical and dental history that a state medical and state dental society pooled their interests, drafted a pattern, assembled the mechanism, and put in motion an effective, workable, intimate program of medical-dental relations.

Recent activities indicate unmistakably that the present surge of interest and action in medical-dental interrelations is not a spasmodic or sporadic outburst, so characteristic of many well-intentioned former efforts. Undoubtedly, current interest reflects the conviction that unity of continuous effort through organization, operating at national levels, holds the master key to nation-wide growth.

UNIVERSITY STANDARDS

Conspicuous in the development of worth while medical-dental relations is insistence upon wider application of university standards of education. Translation of this ideal into realities for medical-dental relations creates an evergrowing force that contributes immeasurably to results of enduring value. The potential of this ideal and its inherent practical values were portrayed impressively through the medical-dental seminars that were held under the auspices of Brown University in 1949, and Providence College in 1950. They were sponsored by the Rhode Island State Dental Society in accordance with a program which was formulated by a joint committee of the Rhode Island Medical and Dental Societies, and accepted in principle by both organizations.

This historic rendezvous of dentistry and medicine, through a series of seminars held entirely under university control, in an en-

vironment of teaching and learning, added a richer meaning and deeper significance to the phrase "medical-dental relations." Addresses by eminent practitioners, who were also members of the faculties of several leading medical schools—Harvard, Tufts, Temple and Columbia—brought luster, refinement and force to the instruction, with attendant favorable comment. The enthusiastic reactions to these seminars, the benefits accruing therefrom, and the profitable contacts that arise when such a program is operated under university control suggest that such seminars should be held recurrently.

As the vision of the medical-dental relations unfolds, we find ourselves adhering more closely to university ideals and practices. More and more frequently we conduct our activities on the campus and utilize its science buildings and laboratories, with the equipment and facilities of biological departments. Whenever university facilities are not available, we use affiliated hospitals for clinical practices, and libraries of medical societies for meetings and other purposes.

So it appears axiomatic that seminars, addresses, essays, conferences and other forms of didactic instruction for physicians and dentists jointly should be sponsored by medical and dental societies, and operated when and wherever possible under the ideals and auspices of a university or college with or without a medical or dental school. It is evident also that certain phases of clinical medicine and dentistry may be effectually presented, under university control, in hospitals affiliated with universities or colleges.

BASIC SCIENCES

The advent of the focal infection theory sharply established a pressing need for intimate medical-dental relations in education, practice, teaching and research for the promotion of a comprehensive health-service program for the whole man. Recognizing certain educational inequalities that precluded effective medical-dental collaboration, dentistry set itself the task of meeting standards of professional excellence in education and practice. One of its early ensuing acts was the establishment of an acceptable standard of preprofessional collegiate education. A series of advances in the triumphant progress of dental education followed the enforcement of this admission standard. Especially notable was the broadening of dentistry's scholastic and professional outlook, and the expansion

of dentistry's ideal of health service. Enforcement of higher predental standards has proved a potent influence in developing wider knowledge, broader understanding and skilled application, of the practical aspects of internal medicine in dental practice. These higher predental requirements have been accompanied by desirable incentive and ability in dentists to apply effectively the principles and teachings of the basic biological sciences in private practice and in hospital service. As a further consequence, many dental doctrines, ideals and tendencies acquired invigorated motive powers.

These forward steps, as well as many other recent advancements, have invited and retained the interest and support of influential educators and agencies engaged in health service and in other fields. And it is of more than passing significance that noted laymen have been observing the trends, experiments and acknowledged accomplishments of dentistry since the publication of the monumental study and survey of dental education by Dr. William J. Gies, under the auspices of the Carnegie Foundation for the Advancement of Teaching.

DENTISTRY IN HOSPITALS

The action of the Council on Medical Education and Hospitals of the American Medical Association in advocating the inclusion of dental departments in hospitals throughout the country, and the support given that action by the Commonwealth Fund in its report on Hospital Care in the United States, mark an epochal era of far-reaching opportunities and possibilities. This recommendation, by implication at least, is an obvious mandate to medicine and to dentistry to create a joint medical-dental advisory committee to promote the interrelations of the two professions, in education and practice, without hindrance or interruption. The advocacy of these two agencies brought a much needed impetus to complete health-service programs, that is destined to wield continuing influence in directing the consciences and shaping the ideals of dentists in maintaining the unequalled excellence of American Dentistry. Also, this action has revealed vistas of opportunity and related obligations from which are emerging, in firm outline, the form and structure of group and individual study, teaching and practice, which are so desirable in the mastery of medical-dental problems.

These historic pronouncements in effect were a plea for a practical interpretation of what the phrase, "unity with organized continuous effort," means. They brought to dentistry a golden opportunity for achievement at a time when dentistry is well qualified and prepared to do its part in establishing harmony between the basic sciences and the correlated medical and dental clinical phases of professional procedures.

The program of the American Dental Association in formulating standards for dental internships and residencies, and the establishment by the Council on Hospitals of the American Dental Association of an accredited list of hospitals having acceptable dental departments, also indicate sharply that the evolution of medical-dental opportunities and problems rests in organized joint committees.

The attainments of well organized and operated dental departments in hospitals throughout the country will indelibly inscribe on dentistry's shield of progress many of the potential and reciprocal values of acceptable medical-dental relations. This certainly will give a lasting moral vigor and a stabilizing influence to continuance of the autonomy of dentistry. The power of unity in action that joint hospital activities holds is immeasurable and will create an atmosphere of faith and hope, saturated with a spirit of harmony, that predicts unbounded success in the operation of approved medical-dental relations.

ORGANIZATION

In the further development of the medical-dental relations, there is urgent need for correlations in understanding and cooperation, without impairment of the organization or functions of either profession. The organization of dental departments in hospitals is an outstanding favorable condition in this relation. The increasing improvement in the cooperation of medical and dental schools also accords with this need. In these correlations, and in many others, it is gratifying to note that unemotional coordination without psychological domination or subordination prevails.

The creation of a joint medical-dental committee, with representatives from the American Medical Association and the American Dental Association operating at a national level in education and

practice, would eventually preclude all emotional irritations that tend to retard natural and non-political evolution of the ideal of medical-dental relations.

The accomplishments in Rhode Island of a joint committee, operating at a state level, has proved already that such a committee is essential for the growth of medical-dental relations and could provide acceptable leadership for each profession. Moreover, it could effectually present simultaneously persuasive appeals and plans to both professions. For instance, a joint committee could prepare for simultaneous publication in medical and dental journals, a well organized series of statements that would successively point the way to related constructive procedures in medical-dental relations. Failure to make full use of medical and dental journals is one of the weaknesses of former activities. Actions by the Research Committee of the College and other organizations, pursuant and openly responsive to proposals by a joint committee of the American Medical Association and the American Dental Association, would have a stimulative influence that physicians and dentists would neither ignore nor misinterpret.

To maintain achieved progress and to promote further interest in medical-dental activities, a medical-dental study club has been organized as an auxiliary of the Rhode Island State Dental Society. This club functions in the study and application of interrelated medical and dental practices, and operates as do those instituted for study of the technical phases of dentistry's procedures. It holds meetings occasionally, and its activities are limited to discussions of medical-dental cases in private and hospital practice. Interested members of the State Medical Societies are invited to attend these meetings.

GENERAL CONCLUSION

How medical-dental relations may grow in character, appreciation and usefulness, and how they may be improved and utilized, rests precisely with organized medicine and organized dentistry. Growth of such relations occurs through a process of evolution, nourished by enlightenment, with the height of its level of accomplishment measured solely by the moral and intellectual advancement of both professions. Like every other thing that lives and seeks to grow, dentistry, today and every day, must face the problem of adjusting

itself to an everchanging environment. We shall enjoy its fruits only in direct proportion to the extent, content and quality of unified continuous effort supported by vigilance.

PREVENTIVE SERVICE

JOHN C. BRAUER, D.D.S., *Chapel Hill*, Chairman[1]

The Committee on Preventive Service during the past year has been exploring and trying to determine among its memberships the intended function of the Committee, and to determine further the scope of activity best suited for such a group. It is recognized that this Committee has a great opportunity to be of service to the College and to the profession, if properly oriented and briefed as to its intended functions and assignment.

The term "preventive dentistry" has enjoyed a rather vague and loose meaning both within educational circles as well as within the practicing profession. What is preventive dentistry, and what can the dentist prevent with his present knowledge and preventive technics? These questions are in the minds of most every practitioner and teacher of dentistry. In a consideration of the question(s), one must determine and define also that which is palliative or interceptive treatment.

One of the committee members presents the following areas which may be considered within the scope of preventive dentistry. He states there may be others.[1]

1. Discriminatory operative dentistry, begun early and continued regularly.
2. Application of amply-tested caries-control technics.
3. Proper care of soft tissues by the patient, and the dentist, and the referral of the patient to the internist if a systemic condition is suspected to be contributing to the periodontal disease.
4. Maintenance of teeth without premature loss.
5. Timely interference with certain borderline malocclusions in their incipiency.
6. Motivation of public to accept or practice these measures.

[1] Other members of the committee are: F. Arnold, J. M. Dunning, K. A. Easlick, G. F. Lundquist, W. J. Pelton.

Your committee on Preventive Service, this year, submits its report in the form of recommendations to the incoming President, for his consideration in making committee appointments to the committee and in outlining the scope of activity for the coming year. The recommendations are submitted:

1. Preparation of a definition of preventive dentistry.
2. Appraise critically the current available scientific information in all areas related to preventive dentistry.
3. Define and assess quantitatively the effectiveness of preventive practices.
4. Appoint of committeemen in all areas of dentistry dealing with preventive dentistry.

PROSTHETIC DENTAL SERVICE

C. A. NELSON, D.D.S., *Amery*, Chairman[1]

During the past year the Prosthetic Dental Service Committee has continued its program of the previous year. 2000 reprints of the report as contained in the September, 1950 issue of the Journal of the American College of Dentists became available to the profession at large. The reprints have been distributed thru the office of our Secretary, in the main, and by your chairman. It has been reported that its contents was well received and therefore it was a worthwhile project for the College. As the relations between the profession, the commercial dental laboratories and the dental laboratory technicians becomes more acute, there will be additional calls for these reprints. The 1950 report contains the opinions of 51 leading dentists from all areas in the U. S. on the prosthetic problem, and their opinions are as authoritative as can be had.

At the beginning of the year our president, Dr. Henry Lineberger, urged greater activity in the several Sections of the College. In line with this objective this committee has sent two communications to the officers of the several sections. First the objectives of the committee were stated as appears on page 116, of the June 1951 Journal of the College. Toward the end of the year these objectives were

[1] Other members of this committee: Earl Eton, W. H. Mork, Chastain Porter, Saul Robinson, Walter Thompson.

restated in a second communication and a request made for a report from the several sections. As we do not have a general session for action on committee reports, this procedure seems to be the most logical approach for relaying information to the Fellows. From the replies received the sections concur in the objectives of the committee.

Education of the profession to the danger confronting it, as it is now being besieged by allied professions, ancilliary crafts, social reformers and unscrupulous labor leaders is urgently needed. Eternal vigilance must be exercised if we are to preserve our established practices of oral surgery, children's dentistry and prosthetic dentistry. Apathy in the ranks of the profession should be of real concern with the leaders of the profession.

UNIONIZATION OF DENTAL LABORATORY TECHNICIANS

The profession of dentistry does not oppose unionization. We hold it to be the right of any citizen to belong to a union if he so desires. We are concerned, however, when some uninformed labor leaders interfere with our rendering of a health service to the public and make disparaging remarks concerning the profession. Our services are in the interest of public welfare and there should be no outside group interference with our duties.

A brief account follows the experience in two large metropolitan areas. The laboratory owners were of the opinion that the dental laboratory technicians were well satisfied with their employment in spite of rumors that unionization was threatening. A policy of non-concern over the issue was adopted by both the laboratory owners and the profession. With no further warning the laboratory owners were faced with a master union contract and practically forced to sign the contract at once and en masse, or else. In these areas the profession and the laboratory owners had no mutual or co-operative professional-laboratory relations program. The individual laboratory owner had no group policy to follow and no liaison with organized dentistry with which to seek council and fall back on. They hastily signed the union's contract to their disadvantage and later regret. Some of the provisions of the union contract were not in the interest of the profession or the laboratories.

The reactions to the allegedly forced or hastily signed contracts resulted in much dissatisfaction between the non-signers and the

signers of the contracts. It also caused controversies within the profession and split it into opposing groups. Charges, counter charges, rumors, and gossip caused much dissention.

During the past year the dental technicians were unionized under the Optical and Dental Workers Union C.I.O. in another state. They are to spread the unionization movement throughout that state and later expect to unionize the dental hygienist and assistants. The union contract consists of nine pages, single spaced, letter sized and covers everything that the union now demands.

1. A forty hour week with time and a half for overtime.
2. Double time on Sundays and holidays.
3. All regular employees to receive one week's vacation with full 40 hour pay.
4. All regular employees with three or more years service—2 weeks pay at 80 hours full pay.
5. When holidays fall during employee's vacation, the employee receives one days pay.
6. The international representative of the union shall be admitted to the plant to ascertain whether the provisions of the agreement are being lived up to.
7. The employer has to deduct $1.00 per week for union dues and agrees to send union dues once a month to the union officers.
8. Wages range from $1.05 per hour after six months to $1.75 per hour.
9. Instructions by the employer to the employees must be made through a lead-man or steward.

The employer who knows the requirements of his customers cannot give specific instructions to the technicians but must relay it thru the lead-man or steward. He cannot stand along side the technician to observe and instruct him while he is working.

The dental technicians were assessed an added weekly tax to help support the optical technicians when they were on strike. They belonged to the same union. Aside from his $48.00 a year union dues this became an addition drain on his take-home pay.

The unions want a low ceiling price under O.P.A. on prosthetic service and higher wages for the technicians which will eventually drive many dental laboratories to the wall. They fear that dentists will do more processing in their own laboratories; send processing out of state; send their cases to commercial laboratories not

unionized or to the smaller laboratories having only two or three technicians.

DENTAL LABORATORIES ADVERTISING DIRECTLY TO THE PUBLIC

In some areas, telephone directories carry classified advertisements of dental laboratories offering their services directly to the public. Also other mediums of direct advertisement to the public are being employed by some unethical dental laboratories.

A recent court decision in the State of Iowa is of interest to the profession. The court restrains the Child's dental laboratory of Davenport from the practice of dentistry thru all advances directly to the public. Further the court enjoins him from repairing, adjusting, relining or producing any dental appliances except at the request of a duly licensed dentist and from publicly advertising in *any form* and *in any medium* except a regularly published dental journal and from accepting any work from any source whatsoever except a duly licensed dentist without having first obtained a license as required for the practice of dentistry by the laws of the State of Iowa.

The following are excerpts of the Iowa Case which is similar to the law in Alabama and New Jersey:

In the District Court of the State of Iowa in and for Scott County.

State of Iowa, exrel *
Dr. Walter L. Beering *
Commissioner of Public Health *
of the State of Iowa, *
Plaintiff *
* Findings of Facts, Conclusions of
* Law and Judgement and Decree.
v.s. *
B. E. Childs and B. E. Childs *
d/b/a Childs Dental Laboratory *
Davenport, Iowa *
Defendant *

Usual Preliminary Statement

It is therefore ordered, adjudged and Decreed by the Court that the Defendant B. E. Childs and B. E. Childs d/b/a Childs Dental Laboratory, be and he is hereby restrained and permanently enjoined from engaging in the practice of dentistry by holding himself out to the public as being engaged in the practice of that profession and from actually engaging in the practices of said profession as defined and set

forth in the provisions of Section 153.1 of the Code of Iowa 1950, within the State of Iowa without having first obtained a license as required for the practice of dentistry by the laws, of the State of Iowa.

It is Further Ordered that a Writ of permanent injunction issue out of the office of the Clerk of this Court permanently restraining and enjoining the defendant B. E. Childs and B. E. Childs d/b/a Childs Dental Laboratory from publicly professing to be a dentist, dental surgeon or publicly professing to assume the duties incident to the practice of dentistry and restraining and enjoining the Defendant by himself or the Defendant d/b/a Childs Dental Laboratory from treating or attempting to correct by any medicine, appliance, or method, any disorder, lesion, injury, deformity, or defect of the oral cavity, teeth, gums or maxillary bones of the human being, or give prophylactic treatment to any of said organs, and enjoining him from repairing, adjusting, relining or producing any dental appliance except at the request of a duly licensed dentist and from publicly advertising in any form and in any medium except a regularly published dental journal and from accepting any work from any source whatsoever except a duly licensed dentist, without having first abtained a license as required for the practice of dentistry by the laws of the State of Iowa.

Judgement is thereby ordered entered against the Defendant, B. E. Childs and B. E. Childs d/b/a Childs Dental Laboratory, for the costs of this action.

(Signed) GLEN D. KELLEY
Judge

LEGISLATIVE VS. NON-LEGISLATIVE MEANS OF CONTROL

Legislative Approach to the Solution of the Problem

On page 57 of the Transaction of the American Dental Association, 1949, definitions read as follows:

"*Licensure.*—The granting of a formal permission by proper authorities to perform certain acts or to carry on in certain business which, without such permission, would be illegal."

The profession is now definitely opposed to licensure.

"*Registration.*—The placement in a legal record of the names of individuals and agencies who are performing or rendering certain services which, without such registration, would be illegal."

Only one state is advocating registration at the present time.

Non-Legislative Approach to the Solution of the Problem

Self Regulation.—We find in some states that the profession has just naturally, over the years, demanded the ethical principles set up in the plan of Accreditation and the dental laboratories have just naturally followed the requirements of the profession and developed with these demands. The dental profession is satisfied with

conditions as they are and has no major problems. The commercial laboratories point with pride to their ethical procedures in serving the profession. They believe they have already met all the conditions found in a plan of Accreditation. They are of the opinion that the satisfactory situation they have just naturally established should not be disturbed. The commercial dental laboratories however, point to advertising in the classified telephone directories and the patronage by many in the profession of the sub-marginal or the unethical laboratories. The profession is requested to help eliminate these practices.

Auxillary Membership of Dental Laboratories is State Dental Societies.

The plan is voluntary on the part of the dental laboratories. The state dental Society recognizes the dental laboratory as an auxillary to the dental profession. The requirements are very simple for auxillary membership. They must have the recommendation and approval of 4 members in good standing in the State Society; of 4 members in good standing of the State dental laboratory association; be a member in good standing with the state dental laboratory association; must abide by the codes of ethics and any rules and regulations set up by joint committees of the State Dental Society and the laboratory association.

Accreditation is the approved principle for professional-laboratory relationship of the American Dental Association. Accreditation is a means of recognition of dental laboratories who wish to co-operate with organized dentistry in our sincere attempt at a solution of a mutual problem. It is a voluntary and mutual co-operative principle which will serve as a means to establish a desired saluatory relationship between the profession and the craft in the interest of public welfare. It means giving official recognition by the dental profession to commercial laboratories that meet established standards of quality, ethics and fair practice.

Accreditation is the approved *principle* for professional laboratory relations because it does not require additional enabling legislation in the various states. The principle of accreditation has been readily accepted. The *plan* has been controversial and slower in acceptance. From the "Survey of the Dental Laboratory Situation" found on page 45, 1951 Reports of Officers and Councils of the American Dental Association, 5 states have the Accreditation Plan in opera-

tion, 9 states are interested in establishing the Accreditation Plan and 6 state laboratory associations are interested in establishing the Accreditation Plan.

The original *plan* of Accreditation was idealistic in nature and was not readily accepted by many state Societies. It was formulated by a committee of the profession without the mutual co-operation of committees of the commercial laboratory industry.

The simplified and revised *plan* of Accreditation has now been set up and contains only the following requirements which should be more acceptable:

(1) The observance of the current dental laws of a state by both laboratories and technicians;

(2) Conformity by the laboratory to the regulations and prevailing standards of sanitation, health, labor and safety of the state and community in which it operates;

(3) Limitation of the service of the laboratory to legal practitioners of dentistry in compliance with written instructions;

(4) The strict limitation of advertising to the dental profession;

(5) The observance of a prescribed code of ethics and

(6) The employment by the laboratory of a staff of trained technicians with equipment adequate for the prosecution of the work undertaken.

The above 6 items contain the essence and basic requirements of the profession from the dental laboratories. We are concerned with the preservation of the present unified practise of dentistry, quality of prosthetic services, ethics and fair practises in our constant protection of the public.

Currently, sub-level dentistry is a real threat to the profession. Sub-level dentistry would not serve the best interests of public welfare.

RELATIONS

HOLLY C. JARVIS, D.D.S., *Cincinnati*, Chairman[1]

The Relations Committee of the College has confined its work the past year to section activities and promoting the Speakers' Bureau.

[1] D. F. Lynch, L. W. Money, M. G. Roberts, C. A. Sweet.

Early in the year our Committee made contact with the secretaries of the various sections to ascertain the dates of their anticipated meetings to be held during the year. Also, contact was made with the officers and regents of the College in an effort to secure their itinerary. Wherever possible, arrangements were made for an officer or regent to visit a section during some one of their meetings. So far as we can determine, most of the sections were visited by some one of the official family or some other selected speaker during the year. Complete reports have not been received at this time in order to give an accurate report of the visits made.

The Speakers' Bureau is growing rapidly, and promises to be a big factor in the activities of the College in the future. Essayists and Clinicians in all areas of the United States have been asked to participate in our Bureau, thereby accepting a speaking engagement before a lay group in connection with their professional engagement.

The response of the sections, officers, regents, clinicians and essayists have been most gratifying, and your committee believes this work should be continued through the next year, and so recommends to the officers and regents.

RESEARCH

PHILIP JAY, D.D.S., *Ann Arbor*[1]

The Research Committee met for breakfast at the Claridge Hotel in Atlantic City on October 29th, 1950. Dr. Midgley reviewed the past activities of the Research Committee. In recognition of the pioneering work by Dr. Midgley in the field of Dental-Medical Relations, the committee recommended to the Board of Regents that a new committee be established under Dr. Midgley to further this work.

The committee also recommended that two funds be established for one thousand ($1000.00) dollars, each. The first, to be known as the "William J. Gies Research Travel Fund," is to be used for grants-in-aid to Dental Research workers who wish to visit contemporary laboratories in order to obtain first hand information which will be useful in the pursuance of their own problems. These

[1] Other members of this committee are: L. E. Blaush, W. H. Crawford, H. T. Dean, T. J. Hill, P. C. Kitchin.

grants were to cover the cost of first-class transportation plus a modest per diem which was not intended to cover the full expenses of the trip. It was further intended that these trips be of very short duration.

The second fund is to be used for emergency relief to laboratories which have suffered accidents to laboratory animals or equipment.

During 1950–51, three grants were made from the William J. Gies Fund, totalling $637.68.

DENTAL OATH

FREDERICK H. BROPHY, D.D.S., *New York*, Chairman[1]

In presenting this report which is the result of the committee's deliberation, may I inform you that the committee decided in favor of the term "Dental Pledge" instead of "Dental Oath" for the reason that the word Pledge more completely expressed what the committee felt was in the minds of those initiating this project.

An "*Oath*" defined by Webster is, "A solemn appeal to God or a sacred or revered person or sanction (as the Bible, the temple, the altar) by way of attesting the truth of one's work, the inviolability of a promise, etcetera, also the affirmation of a promise supported by the oath or its form of expression."

Whereas, a "*Pledge*" is described as a "promise or agreement by which one binds oneself to do or forbear something; a promise."

It is true that the dedication of self to the service of humanity in an impressive manner at the time of graduation, which the committee desires to convey in its "Dental Pledge," follows the general idea and formula of the "Hippocratic Oath" as administered to the graduates of medical schools. However, it is our understanding that this ancient and revered document is presently in the process of modernization, in order that its substance and structure may be more applicable to present day conditions and needs.

That this would seem a desirable accomplishment is understandable to all those who have read it, even with a tempered spirit

[1] Other members of this committee are: M. W. Carr, Arthur Corby, Wm. J. Gies, E. B. Hoyt, Jacob Shapiro, W. H. Wright*

* Deceased.

of judgment, for its language though classical and impressive fails to convey to the present recipients those attitudes of conduct implied, with the directness and forcefulness obtainable in modernly phrased verbiage. The committee has the highest respect for this document, and acknowledges gratefully the inspiration drawn from it.

To chronologically orient the College on the various events leading up to the presentation of the committee's report it is necessary for me to turn back the pages to a date in April 1946, when at the dental school commencement exercises held at Gould Memorial Hall, New York University, reference was made to the "Hippocratic Oath" administered to the medical graduates and the thought expressed by the speaker, that a similar instrument might desirably be developed to be administered to classes graduating in dentistry.

Information was later forthcoming that several oaths or pledges were already in existence and being administered to the graduates of at least one dental school, namely the College of Physicians and Surgeons, a School of Dentistry in San Francisco. (Dr. E. Frank Inskipp, Secretary of the College of P. and S. kindly supplied the committee with a copy of their "Pledge".)

It was the hope of the speaker at the commencement exercises, that the Council on Dental Education of the American Dental Association might take up the suggestion and create a dental pledge having universal acceptance, not only on a national basis, but one that could be adopted by the dental schools of all countries throughout the world.

The idea was taken up later by Dr. Jacob Shapiro, a Fellow of the College and editor of the New York University Dental Journal, and through his interest Dean Walter H. Wright, proceeded to make it a project of the American College of Dentists, by recommending to the College the appointment of a committee for this purpose.

The appointment of Drs. William J. Gies, Malcolm Carr, Earle B. Hoyt, Jacob Shapiro, Arthur Corby, Dean Walter Wright and Fred Brophy to this committee was officially made in December 1949 and the committee proceeded to the task of creating such an instrument.

The committee well realizes that the importance of a dental pledge or oath does not terminate with the acceptance of such a

solemn obligation, but must continue to be reflected in the conduct and behavior of the individual subscribing to it through the entire period of his or her existence. To consider anything else than this as the desirable end to be attained would make the creation and adoption of such an instrument a futile and purposeless gesture.

Therefore the attempt has been made to produce a pledge which no self respecting individual, embarking upon a career of service to humanity, conscious of the tremendous responsibilities implied, and desirous of accepting those responsibilities in the spirit and conscience of those who have blazed the trail, leading to the wider vistas of dental knowledge now open to all members of the profession, should hesitate to accept completely and without mental reservation.

The pledge, it was decided, must be brief enough to be repeated by the graduate when being administered at commencement and it was the committee's opinion that it should be expressed in modern and easily comprehended language and phraseology.

Brevity prevents the inclusion of those thoughts which reason indicates are desirable, but it is hoped that by inference the graduate may read into the brief and concise pledge the following thought.

(1) That the first and most important attribute should be loyalty to our country and a pledge to support and defend it at all times and under all circumstances. This is the basic foundation of Americanism and failure in this duty and obligation would nullify all of the promises to follow which have to do with the maintenance of the strength of our citizenry through the creation of oral health.

(2) A promise to live up to the traditions of the dental profession and to skillfully and sympathetically render dental health service to all who entrust themselves for this purpose.

(3) To seek constantly to improve ones knowledge of methods and procedure through the medium of dental literature, post graduate instruction and attendance at organizational meetings.

(4) To give freely and generously of the knowledge possessed or developed through study, observation, experimentation or research to all fellow practitioners, by means of the written or spoken word, through publications, essays or clinics, as the material may best be submitted, all of this without thought of recompense or reward other than the knowledge that humanity is best served when those in a position to do so give their all.

(5) In order that the profession shall continue to merit the confidence and esteem in which it is now held that all suffering individuals in need of dental ministrations shall be made comfortable without reference to color, creed, religion, political, economic or other mitigating circumstance. Only through the conscientious application of this principle does the graduate prove his worthiness to merit the dental degree conferred and the rights granted through special legislation recognizing the attainments and qualifications to render oral health service.

(6) To continue constantly to enlighten the public in those measures accepted by the profession as tending to check the ravages of dental disease and which when observed and practised will provide the maximum of dental and oral health and comfort.

(7) To endeavor to keep alive the relations with ones "alma mater" in order that this source of knowledge which has prepared you for your professional service up to this moment of your dental career, may continue to contribute to your professional maturity and knowledge while at the same time it, the school, is afforded inspiration and encouragement through the medium of your sustained interest.

(8) To realize that there are obligations and responsibilities not expressed in any dental pledge or oath which can possibly be created by man, which must at all times govern you in your professional conduct in relation to the public, as well as in relation to your confreres and members of allied professions.

At all times a careful search of one's conscience, when in doubt, will bring forth the correct conclusion and amplify that written Code of Ethics and Guide to Conduct which can only serve as a basis or guide in the establishment of a yardstick for ones professional conduct.

In conclusion and before presenting the Dental Pledge, may I state that the committee is fully cognizant of the fact that no perfect instrument will ever be created expressing the thoughts of all men on the substance of a "Dental Pledge." However, it feels that in presenting this evidence of at least serious acceptance of the task assigned it is placing before this body a *tentative pledge* for its consideration the substance of which may be added to, subtracted from, or completely deleted as the group sees fit to decide. It may be used as the foundation for the continuance of the effort by the

present or another committee. Whatever its fate the committee has only one desire and that is to see the completion of a pledge which will embody the collective thought of as many of the profession as possible, as to what best expresses dentistry's highest ideals for the inspiration and guidance of its future members and the perpetuation of its service to humanity.

Should this pledge receive favorable consideration the committee wishes to recommend that it be printed and a copy sent to every member of the college with the statement that it is a tentative pledge submitted for their consideration and suggestions and that they make their recommendations to the committee chairman. It is to be understood a complete instrument or document will be presented to the college at its next annual meeting embodying such changes as the committee decides will make it more acceptable and mutually agreeable.

I now take pleasure in presenting to you the following "Dental Pledge"

THE DENTIST'S PLEDGE

By my faith in the spiritual nature of man, under divine guidance, I promise that I will keep this pledge to the best of my ability and judgment.

I will practice the science and art of dentistry for the prevention and alleviation of human suffering.

In practicing my profession, I will faithfully administer to those in need of treatment or counsel, and will abstain from any word or act which may prove deleterious to their physical or mental well-being.

Whatever I see or hear in my professional relations which ought not to be spread abroad, that will I not divulge, keeping it secret as in honor bound.

I will respect and honor the preceptors who have taught me the science and art of dentistry and I will respect the precious gift of their devoted teaching by passing on to those worthy of receiving it, that knowledge of the art with which my preceptors have thus endowed me.

While I continue to keep this pledge inviolate, may God grant me enjoyment of life and the privilege of continuing in the practice of my profession, self-respecting and respected of all men, in conscientious service to humanity.

AMERICAN COLLEGE OF DENTISTS

IN MEMORIAM

(Report of the Necrology Committee)

ARTHUR H. MERRITT, D.D.S., *New York*, Chairman[1]

As we come together each year as an organization, it is altogether fitting that we should pause in our deliberations to take note of the loss that has taken place in our membership in the passing year and to pay our tribute of respect to the memory of those who have left a vacant place in our ranks.

We honor them for their contributions to professional progress; for the ideals which animated them in all the relationships of life, and for the heritage they have bequeathed to us, of lives well spent. Their places in our ranks cannot be taken by others. "Nothing can be as it has been before."

We mourn our loss as we rededicate ourselves to the unfinished task to which they gave the last full measure of devotion. The flowers on the platform have been placed there as a tangible expression of our sense of loss—a tribute to the memory of those whom we would honor.

"And here we pause. With trembling lip,
We strive the fitting phrase to make,
Remembering our fellowship,
Lamenting Destiny's mistake—
We marvel much when death offends
And claims our friends.

"Again a parting sail we see,
Another bark has left the shore;
A nobler soul on board has she
Than ever left the land before—
And as her outward course she bends—
Sit closer friends."[2]

Since our meeting one year ago, the following have been called to their reward:

[1]Other members of this committee are: C. G. Mersel, Brissel B. Palmer.

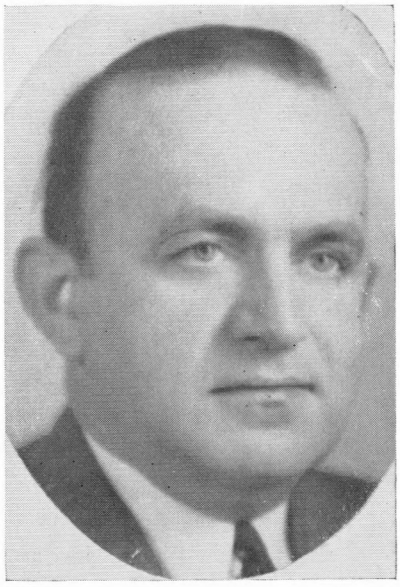
[2] Written by Arthur Macy (two of seven verses) and read by him following the death of a fellow member of a social club in Boston. Given to me later by one of those present.

Henry L. Banzhaff, D.D.S.
Milwaukee, Wis.
1865–1951

Fellowship conferred in 1921
Graduated from University of Michigan, School of Dentistry in 1886
Past President American Dental Association
Past President Wisconsin State Dental Association
Past President American Association of Dental Schools
Past President American College of Dentists
Member American Dental Association, Wisconsin State Dental Society, Milwaukee County Dental Society, American Association of Dental Schools, American Academy of Dental Surgery

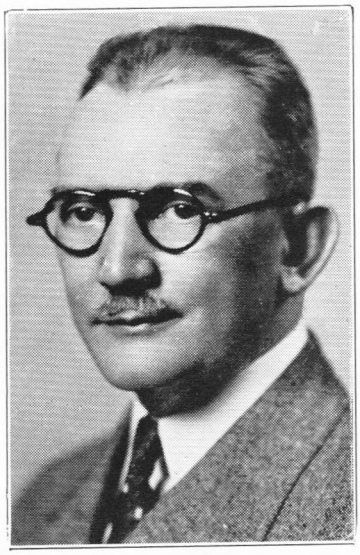
Samuel Birenbach, D.D.S.
New York, N. Y.
1897–1950

Fellowship conferred in 1940
Graduated from New York University College of Dentistry in 1917
Past President Oral Surgery Section, First District Dental Society
Member American Dental Association, First District Dental Society of New York, New York Academy of Dentistry



Peter John Brekhus, D.D.S.
Minneapolis, Minn.
1874–1951
Fellowship conferred in 1934
Graduated from University of Minnesota, School of Dentistry in 1910
Member American Dental Association, Minnesota State Dental Association, Minneapolis District Dental Society, International Association for Dental Research

John Kenneth Carver, D.D.S.
Montreal, Can.
1901–1951
Fellowship conferred in 1950
Graduated from McGill University, Faculty of Dentistry in 1923
Past President Montreal Dental Club
Past President Canadian Dental Association
Member College of Dental Surgeons Province of Quebec, Canadian Dental Association



Henry Duley Chipps, D.D.S.
Corinth, Miss.
1883–1950

Fellowship conferred in 1935
Graduated from University of Louisville School of Dentistry in 1904
Past President Mississippi Dental Association
Past President Northeast Mississippi Dental Association
Member Mississippi State Dental Association, American Dental Association, Honorary member North Alabama State Dental Society

William P. Delafield, D.D.S.
Dallas, Texas
1886–1951

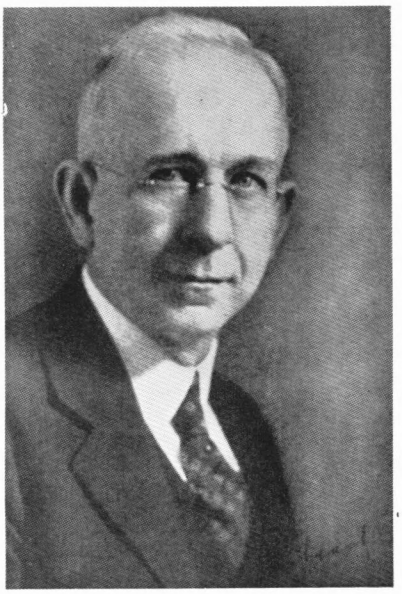
Fellowship conferred in 1943
Graduated from Vanderbilt University School of Dentistry in 1907
Past President Texas State Dental Society
Past President Northeast Texas Dental Society
Member American Dental Association, Texas State Dental Association, Dallas County Dental Society

Wilson Case Dort, D.D.S.
Boston, Mass.
1880–1951

Fellowship conferred in 1937
Graduated from Harvard Dental College in 1901
Past President Massachusetts Oral Hygiene Council
Past President New England Dental Society
Member, New England Dental Society, American Academy of Dental Science, Massachusetts State Dental Society, Boston Society for Dental Improvement, Harvard Odontological Society, Harvard Dental Alumni Association

Archibald Graham Fee, D.D.S.
Superior, Wis.
1866–1950

Fellowship conferred in 1926
Graduated from Pennsylvania College of Dental Surgery 1891
Past President Wisconsin State Dental Society
Member, National Dental Association, Wisconsin State Dental Society, G. V. Black Dental Club of St. Paul



William Lincoln Fickes
1869–1951
Fellowship conferred in 1923
Graduated from the Philadelphia Dental College in 1891
Chairman of the first Commission on Dental Index, American Association of Dental Teachers
Past President Pennsylvania State Dental Society
Past Treasurer Pennsylvania State Dental Society

Karl Frederick Grempler, D.D.S.
Baltimore, Md.
1895–1951
Fellowship conferred in 1942
Graduated from University of Maryland School of Dentistry in 1924
Member American Dental Association, Maryland State Dental Association, Baltimore City Dental Society

James Oscar Hall, D.D.S.
Waco, Tex.
1875–1951
Fellowship conferred in 1933
Graduated from Vanderbilt University School of Dentistry in 1901
Past President Texas Dental Society
Member American Dental Association, Texas State Dental Society

James Leo Hanley, D.D.S.
East Orange, N. J.
1896–1951
Fellowship conferred in 1948
Graduated from New York University College of Dental and Oral Surgery in 1921
Past President New Jersey State Dental Society
Past President Newark Study Club
Member American Dental Association, New Jersey State Dental Society, Essex County Dental Society

Paul John Hanzlik, M.D.
San Francisco, Calif.
1885–1951

Fellowship conferred in 1933

Graduated from Western Reserve University in 1912

Member American Medical Association, American Physiological Society, Society of Experimental Pharmacy, American Society of Biological Chemistry, California Medical Association, American College of Physicians

Thomas B. Hartzell, D.D.S., M.D.
Minneapolis, Minn.
1866–1951

Fellowship conferred in 1921

Graduated from University of Minnesota, College of Dentistry in 1893

Graduated from University of Minnesota, College of Medicine in 1894

Past President National Dental Association (advocated change of name of this society to American Dental Association)

Member American Dental Association, Minnesota State Dental Association, Minneapolis District Dental Society, American Medical Association, Southern Minnesota Medical Society

Guy H. Hillman, D.D.S.
Plainfield, N. J.
1878–1951
Fellowship conferred in 1950
Graduated from University of Buffalo, Dental School in 1901
Past President New Jersey State Dental Society
Member American Dental Association, New Jersey State Dental Society

Pope B. Holliday, D.D.S.
Athens, Ga.
1890–1950
Fellowship conferred in 1950
Past President Georgia Dental Association
Major World War II
Member American Dental Association, Georgia Dental Association, Eighth Dist. Dental Society

Walt E. Hoppe, D.D.S.
Portland, Ore.
1903–1951

Fellowship conferred in 1946

Graduated from University of Nebraska, College of Dentistry in 1928

Past President Southeastern Dental Society (Ore.)

Member Nebraska State Dental Society; Southern Oregon Dental Society, American Dental Association

James Keltie, D.D.S.
Boston, Mass.
1866–1950

Fellowship conferred in 1931

Graduated from Boston Dental College 1899

Member Massachusetts Dental Society; Northeastern Dental Society, Boston and Tufts Dental Alumni Associations

Andrew Athy Rafferty, D.D.S.
Worcester, Mass.
1894–1950

Fellowship conferred in 1942

Graduated from Harvard Dental College in 1918

Past President Worcester District Dental Society

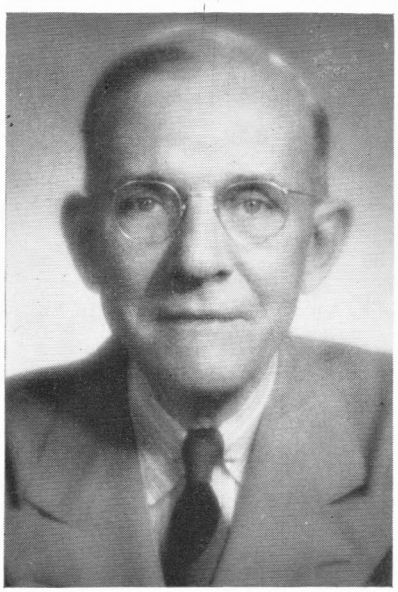
Member American Dental Association; New England Dental Society, Massachusetts State Dental Society, Harvard Dental Alumni Association, Odontological Society of Harvard University

Benedict Francis Sapienza, D.D.S.
Birmingham, Ala.
1898–1951

Fellowship conferred in 1937

Graduated from University of Buffalo School of Dentistry in 1920

Member American Dental Association, Alabama Dental Association, Birmingham District Dental Society



Walter Henry Scherer, D.D.S.
Houston, Tex.
1880–1951

Fellowship conferred in 1934
Graduated from Ohio College of Dental Surgery in 1900
Past President American Dental Association
Past President Texas State Dental Society
Past President Houston Dental Society
Member American Dental Association; Texas Dental Society; Illinois Dental Society, American Academy of Periodontology

A. Malcolm Smith, D.D.S.
Tampa, Fla.
1895–1950

Fellowship conferred in 1937
Graduated from Vanderbilt University Dental School in 1917
Past President West Coast District Dental Society
Past President Tampa Society of Dental Surgeons
Member American Dental Association, Florida State Dental Society, West Coast District Dental Society, American Association of Dental Editors, American Society of Oral Surgeons and Exodontists

T. Sydney Smith, D.D.S.
San Francisco, Calif.
1866–1951

Fellowship conferred in 1930

Graduated from University of Buffalo Dental School of 1901

Member American Dental Association, California State Dental Society

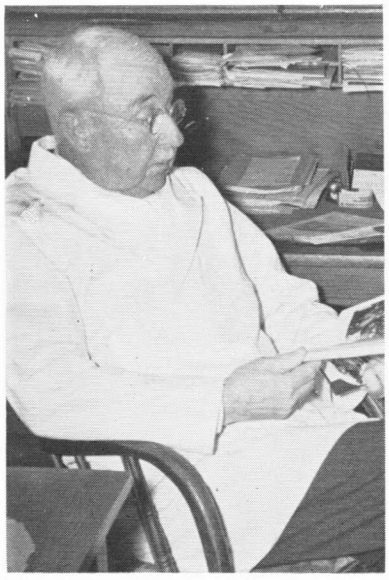
John S. Spurgeon,
Hillsboro, N. C.
1863–1950

Fellowship conferred in 1932

Graduated from Vanderbilt University, School of Dentistry in 1886

Past President North Carolina State Dental Society

Member American Dental Association, North Carolina State Dental Society, Raleigh Dental Society



Edwin G. Van Valey, D.D.S.
New York, N. Y.
1894–1951

Fellowship conferred in 1939

Graduated from University of Pennsylvania Dental School in 1919

Member American Dental Association; New York Academy of Dentistry; New York State Dental Society; First District Dental Society; American Association for the Advancement of Science; International Spanish speaking Association of Physicians

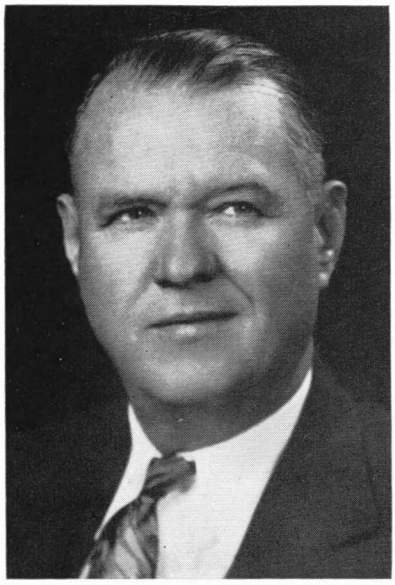
Alfred P. Watson, D.D.S.
Portland, Ore.
1886–1950

Fellowship conferred in 1934

Graduated from North Pacific College of Oregon, Dental School in 1901

Past President Oregon State Dental Association

Member American Dental Association; Portland District Dental Society; Oregon State Dental Association; Portland Academy of Dentists

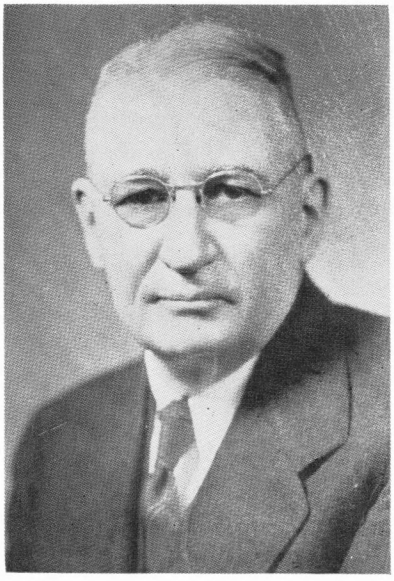


Marion Francis Webster, D.D.S.
Dallas, Tex.
1897–1951

Fellowship conferred in 1950
Graduated from Baylor Dental College in 1924
Past President Full Denture Society of Texas
Member American Dental Association; Dallas County Dental Society

Raymond C. Willett, D.D.S.
Peoria, Ill.
1877–1950

Fellowship conferred in 1936
Graduated from Washington University School of Dentistry in 1899
Past President Peoria District Dental Society
Past President Chicago Association of Orthodontists
Member American Dental Association, American Society for the Promotion of Dentistry for Children, Illinois State Dental Society, American Society of Orthodontists, Chicago Association of Orthodontists, Peoria District Dental Soc., American Association for the Advancement of Science

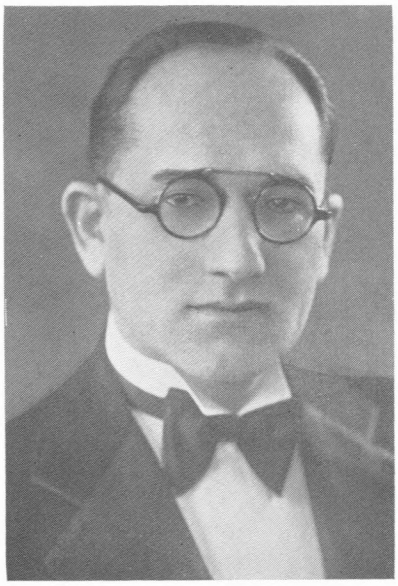


Gordon Richmond Winter, D.D.S.
Philadelphia, Pa.
1896–1951

Fellowship conferred in 1943
Graduated from University of Pennsylvania, School of Dentistry in 1919
Past President Sixth District Dental Soc. of the State of New York
Past President Broome County Dental Society
Member American Dental Association, New York State Dental Society, Sixth District Dental Society of the State of New York, Broome County Dental Society

James L. Zemsky, D.D.S.
New York, N. Y.
1884–1951

Fellowship conferred in 1938
Graduated from New York University, College of Dentistry in 1915
Past President Bronx Dental Clinical Society
Member, American Dental Association, New York State Dental Society; First District Dental Society; International Association for Dental Research; International Society of Anesthetists



A SHORT ANSWER TEST SUITABLE FOR EXAMINATIONS IN HISTOLOGY

A Consultant Presentation[1]

CHARLES F. BODECKER, D.D.S.,[2] *New York*

The purpose of histology is to acquire a knowledge of the microscopic appearance and location of various minute structures of the body. Consequently, examinations in this field usually include the requirement of numerous sketches. Examination periods, however, are often too short to make many careful drawings; besides, many students lack the artistic ability to do these well. As a result, most examinations in histology are composed of detailed, worded descriptions of the structures that can be memorized quickly for the examination, but also are soon forgotten.

The short answer test eliminates the making of sketches. It shows within ten minutes whether or not the student knows the location and appearance of many histologic structures and, what is even more important, this knowledge is such that it will be retained long after the examination. Only under these conditions will the course in oral histology be of benefit in the practice of dentistry.

The technic of the test is as follows: Each student is given a prepared sketch, such as shown in figure 1, depicting an axial section of a premolar and surrounding tissues under low magnification. On this more than 60 histologic structures can be located; some may be seen on the sketch under low magnification (p.p.D.E.). Others are visible only under high magnification.

Some of the structures seen under high magnification and located in the areas shown by the sketch are:

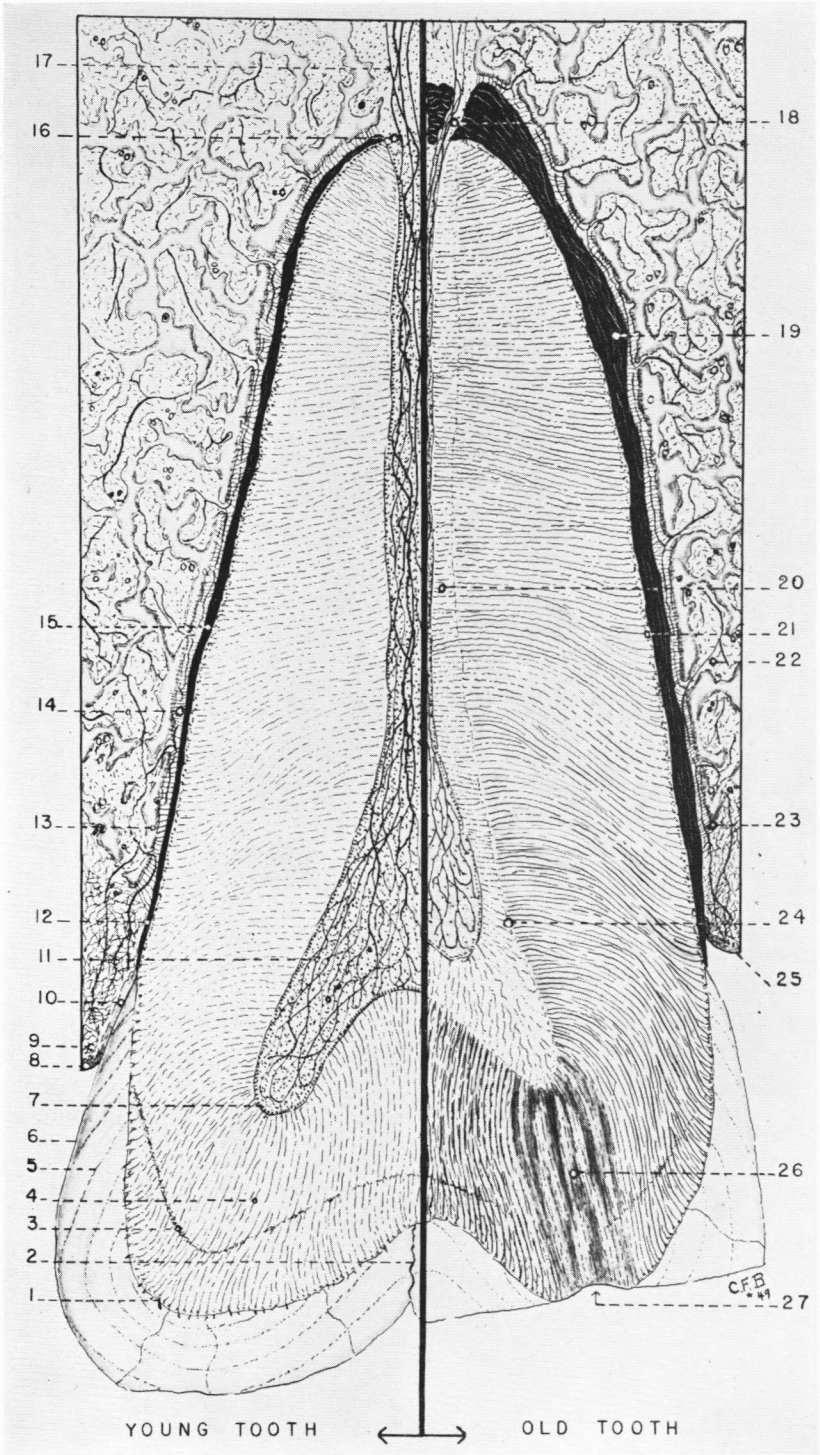
Area 1: Dentino-enamel junction, enamel spindles, enamel tufts, rods, cement substance, transverse striations of rods, terminal branches of dentinal tubules, Tomes fibers.

Area 2: Enamel lamella.

[1] CONSULTANTS:

Paul C. Kitchin, D.D.S., Professor of Histology, Ohio State University, College of Dentistry; James Nuckolls, D.D.S., Professor, Oral Histology and Oral Pathology, University of California College of Dentistry, Hamilton B. G. Robinson, D.D.S., Editor, Journal of Dental Research, Professor of Oral Pathology, Ohio State University College of Dentistry.

[2] Professor Emeritus, Columbia University; Editor, New York State Dental Journal


17
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23
24
25
26
27
C.F.B.
YOUNG TOOTH
OLD TOOTH

FIG. 1

Area 3: Interglobular dentin, Tomes fibers, dentinal tubules, imperfectly calcified dentin matrix.
Area 4: Dentinal tubules in young tooth, dentinal fibers.
Area 5: Striae of Retzius in enamel, rods, transverse striations, cement substance.
Area 6: Enamel cuticles, primary and secondary.
Area 7: Odontoblasts, predentin, dentinal fibers, nerve filaments, capillaries.
Area 8: Epidermis, strata germinativum, spinosum, granulosum, cornium.
Area 9: Dermis, fibroblasts, blood and elements, capillaries, nerves, lymphatics, fibrous connective tissue.
Area 10: Epithelial attachment.
Area 11: Pulp, intercellular substance, embryonic connective tissue, arterioles, venules, capillaries, nerves, lymphatics, blood and its elements, Rouget cells.
Area 12: Acellular cementum, fibers of periodontal membrane.
Area 13: Lamina dura, osteocytes, lacunnae, canaliculi, subperiostal bone, periosteum, osteoblasts, octeoclasts (?).
Area 14: Periodontal membrane, connective tissue fibers, fibroblasts, cementoblasts, osteoblasts, osteoclasts (?) arteries, veins, capillaries, lymphatics, nerves, epithelial rests of Malassez.
Area 15: Cellular cementum, cemental lamellae, cementocytes, lacunnae, canaliculi, fibers of periodontal membrane, cementoblasts.
Area 16: Open apex of young tooth, blood vessels, blood and its elements, lymphatics, nerves, fibrous connective tissue.
Area 17: Blood vessels, nerves, lymphatics, blood and elements.
Area 18: Closed apex of mature tooth.
Area 19: Hypercementosis, cemental lamellae, lacunnae, canaliculi, cementocytes, fibers of periodontal membrane.
Area 20: Secondary dentin.
Area 21: Tomes granular layer, dentinal tubules, Tomes fibers, dentin matrix.
Area 22: Marrow spaces, fat cells, capillaries, nerves, lymphatics, fibroblasts.
Area 23: Crest of alveolus, periosteum, osteoblasts, osteoclasts (?).
Area 24: Border between primary and secondary dentin.
Area 25: Stratum cornium, keratin.
Area 26: Dentinal tubules, undergone sclerosis and protective metamorphosis.
Area 27: Area of attrition.

TEST I

There are two methods of setting up the short answer tests utilizing a prepared sketch. One is to give the following instructions:

Insert the proper number or numbers of one or more of the 27 areas noted in the accompanying sketch in which the following structures are normally present; if absent, insert "O."

EXAMPLE

Dentinal fibers: 1, 3, 4, 7, 20, 21, 24, 26, 27

STRUCTURES	AREAS	STRUCTURES	AREAS
Dermis:	9	Interglobular dentin:	3
Epithelial attachment:	10	Hypercementosis:	19
Cellular cementum:	15, 19	Lacunnae:	13, 15, 19, 23
Keratin:	25	Nephrons:	0
Sclerosed tubules:	26	Korff fibers:	7
Stratum intermedium:	0	Rests of Malassez:	14
Chondrocytes:	0	Nerves:	7, 9, 11, 14, 16, 17, 18, 22
Marrow spaces:	22	Enamel niche:	0
Erythrocytes:	7, 9, 11, 14, 16, 17, 18, 22, 23	Enamel lamella:	1
Prickle cells:	8	Secondary dentin:	20, 24

The above test includes 20 structures which require the naming of 40 areas. The reason for including some structures not present in and around adult teeth forms an added test of the student's knowledge. As only 20 of the more than 60 structures located in the sketch are named in this test, two subsequent examinations can be set up without duplication.

This short answer test was used at three recent examination by the New York State Licensing Board. The results were satisfactory and clearly differentiated the failing from the passing candidates. The simple evaluation of the number of correct, incorrect and missing areas gave the exact grade of each candidate.

TEST II

Another type of test can be set up on the basis of a distributed sketch by instructing students to:

Name the designated number of structures normally visible under low and high magnification in areas:

3: (four structures)

11: (ten structures)

12: (two structures, etc.)

An elaboration of the test may be made by adding to the margins of the sketch six or eight circled drawings of histologic structures under high magnification. These could be used either with test I or II.

The above described methods using previously prepared sketches

for examinations in histology are merely suggestions. Some teachers may devise other tests.

Mention must be made regarding the manner in which the sketch is reproduced. Naturally, it is essential that it be as clear as possible. The best method to date has been to use a combination of a line cut and a very fine screen half tone. If the half tone is used alone, the outlines and black areas will not be as precise as when a line cut is included.

An even better means of presenting this material would be to print the sketch in color. This would add greatly to the clarity and scope of the test. Since one sketch can be used for a number of years, the cost of producing them in color would be worth while.

Thorough as this test is, it does not seem advisable to confine examinations wholly to an objective test. Essay questions are necessary, so as to test the student's ability to reason as well as to make clinical applications of histology. At the above mentioned recent examinations, 20 per cent was composed of the objective test while the remaining 80 per cent was devoted to essay questions including a few sketches under high magnification.

The value of a knowledge of oral histology is enhanced if clinical applications are made of this science. A few examples which can be brought out by essay questions follow:

1. Can smoker's stain be removed from exposed dentin. Explain.
2. Discuss the structure responsible for the hypersensitivity of exposed cervical tooth areas.
3. Mention two reasons why recently denuded cervical tooth surfaces are more sensitive than those which have been exposed for some time.
4. Name nine age changes which occur in and around teeth.
5. State two reasons why teeth of a middle-aged person are less sensitive to cavity preparation than the permanent teeth of a child.
6. Why do slice preparations cause more pain than the usual form of cavity preparation.

The advantages of the above described short answer type of examination are:

1. It tests the student's knowledge precisely regarding the location and form of many structures in and around the teeth, irrespective of artistic ability.
2. More than 60 structures may be located in an axial section of a premolar and surrounding tissues under low and high magnification.
3. The test is so comprehensive that the same sketch may be used at many subsequent examinations.

4. No harm is done if copies of the sketch fall into the hands of students before the examination; this, in fact, is an advantage. If they know all the structures located in areas shown in the sketch, they will have a good concept of oral histology.

5. Students will not readily foregt this knowledge because the structures are visualized and not memorized from printed descriptions.

6. The student's knowledge of histology must be precise to pass the test, thus eliminating padding or bluffing.

7. The long neglected application of oral histology to clinical procedures will become more general if the knowledge of undergraduate instruction is retained.

DISCUSSION BY CONSULTANTS

Dr. Kitchin:

I am in full accord with the suggestions relative to "A Short Answer Test Suitable for Examinations in Histology." For some time I have been using a mimeographed outline sketch of the tooth and surrounding structures for examination purposes. This was based on Dr. Bodecker's previous illustration for that purpose.

Dr. Robinson's suggestions for slight modifications of the questions seem reasonable.

Dr. Nuckolls:

I have studied the paper on "A Short Answer Test Suitable for Examinations in Histology." It appears to me that this is a most excellent and practical way of examining a student on a weekly basis. This type of examination should also be valuable in State Board Examinations. However, for the most comprehensive examination, such as mid-term and final examinations, I prefer the essay type.

An examination of the level of final examinations, I feel, should test, among other things, the standard of knowledge as well as the standard of information, and should include the ability of the candidate to use his knowledge. For these reasons an essay type examination should be carefully prepared and carefully integrated and should carry full-range extent from theory to practice. In this type of examination, I prefer to divide them into several parts in line with their relative importance. Let me elucidate.

1. The first 50 per cent of such an examination might be concerned with and so devised as to bring out the candidate's knowledge of the subject on basic information.

2. The second part, of 25 per cent of the examination would indicate his understanding of the subject in terms of general rules, general laws, and a general understanding of the subject.

3. The remaining part would be directed toward the provocative and a general integration of the subject with related subjects. This part of the question could be argued from the first and second parts. The first two questions would serve toward the scoring of a passing grade, whereas a third would establish the candidate as to his average or above-average ability.

This manner of planning and directing a final examination does not permit a candidate to score on book learning alone, or, on the other hand, go completely into rationalization. It would tend to give both types of students, the one who excels on theory and the one who excels in clinical procedures, an equal chance and at the same time allow the examiner to evaluate the candidate on a sound basis. Should the examination be based on the third, or provocative type of question, it is quite possible for the student to conceal his lack of basic knowledge through generalization.

I should, however, like to point out that the foregoing discussion does not detract in any way from the practical value of the short-answer test. I believe that this type of examination should be employed in the interim, but the more comprehensive type should be used for mid-term and final examinations. The short answer type of test serves to integrate the student's microscopic slide studies with his theoretical knowledge. It is also an aid in identifying structures in laboratory slide quizzes.

I should like to commend the author's continued interest in the field of integration of the ancillary with the clinical sciences.

Dr. Robinson:

I have read the paper "A Short Answer Test Suitable for Examinations in Histology." I certainly agree that this is one of the most practical methods of examining in oral histology. If the student can visualize the structures he has a distinct advantage over the individual who merely has a number of words which may or may not be meaningful in a practical sense.

I prefer personally to vary the examination sometimes, leaving the periodontal membrane blank and having the students fill in

the principal fiber groups. In this way the student shows that he has knowledge of the direction in which the various groups run.

I believe that the practical questions are of a great deal of value. I would modify the first question on page 6 to read: "Can smoker's stain be removed from exposed dentin without removing the dentin itself?" The fifth question should read: "State two reasons why teeth of middle-aged persons *usually* are less sensitive to cavity preparation than the permanent teeth of a child."; and sixth: "Why do slice preparations *often* cause more pain than the usual form of cavity preparations?"

I agree that even though the students may know that this is the type of examination they are going to be asked, if they are able to recognize and localize the structures they have the knowledge which is important for them to carry from the laboratory into the clinic.

Education includes whatever we do for ourselves and whatever is done for us by others, for the express purpose of bringing us nearer to the perfection of our nature.

. . . John Stuart Mill

BOOK ANNOUNCEMENTS

HANDBOOK OF DENTAL PRACTICE: This is the title of a book, second edition, edited by Louis I. Grossman, D.D.S. This is a book of 503 pages, including an index, 388 illustrations and five color plates. Including the editor of the book, there are twenty contributors, representing various phases of dental practice, and all of whom are well known in the profession as authorities and capable teachers. Published by Lippincott & Company. Price $10.00.

DENTAL FORMULAS: This is a compilation of formulas, including, some which may be original together with original comments and dissertation by the author, Dr. Louis I. Grossman, D.D.S., associate professor, oral medicine, school of dentistry, University of Pennsylvania. It consists of 318 pages, with an index, 25 illustrations, and one in color. Published by Lea & Febiger, Phil.

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℞ FOR MEDICAL WRITING: This is a little book of 112 pages with an index, designed to assist those who write theses, reports or whatnot for their professional confreres. It may even be helpful in similar undertakings for the lay public. Instruction is included pertaining to the use of illustrations, statistics, foot-notes as well as the body of the text with special consideration to both ends—the beginning and the ending. The chapter devoted to building the index is very good. Publisher, W. B. Saunders Co., Philadelphia. Price, $2.50.

CLINICAL DENTAL ROENTGENOLOGY: This is the third edition of this book by the authors, John Oppie McCall, D.D.S. and Samuel S. Wald, D.D.S. Clinical Professor, Oral Cancer and Roentgenology, New York University, College of Dentistry. It consists of 380 pages with an index and is profusely illustrated. This edition contains great extension of material over preceeding issues. It should be of greater usefulness to the profession. Published by W. B. Saunders Co., Philadelphia. Price, $8.50.

CURRENT THERAPY: This is an annual publication under this title and is a book of much real information as to the modern methods of treatment. The idea of the book is that two or more men of recognized ability in practice of medicine are asked to submit their methods of treatment of certain diseases. There are 359 contributors, 12 consulting editors and editor-in-chief, Howard F. Conn, M.D. It consists of 849 pages with an index, and is designed primarily for practicing physicians. It is of no small value to the dentist as a book of information. Published by W. B. Saunders Co., Philadelphia. Price $11.00.

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