The JOURNAL of the AMERICAN COLLEGE of DENTISTS

Prevention in the Dental Curriculum

Trends in Dente

Dental Licensure

Production of Quality Instructional Media

JANUARY 1973

MEMBER PUBLICATION
AMERICAN ASSOCIATION OF DENTAL EDITORS

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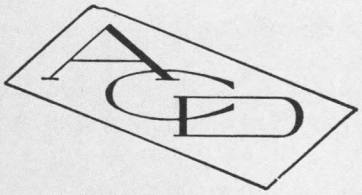

NEWS AND COMMENT

SELF ASSESSMENT PROGRAM BEGINS SHORTLY

Fellows of the College are urged to support and promote the Self Assessment and Continuing Education Program which is now in the enrollment period. This is one of the most significant programs the College has ever undertaken, and a good sized enrollment is necessary to make it a success. Descriptive brochures and registration forms have been mailed to every dentist in the country. Fellows are requested to promote the program at local dental meetings and among their colleagues. Registration is $40 and is open until February 28. The first test will be mailed to participants shortly thereafter.

BOARD ACTIONS AT ANNUAL MEETING

The Board of Regents at the annual meeting in San Francisco in October, took the following actions:

- Approved the contract with the Educational Testing Service of Princeton, New Jersey for the development and operation of a Self Assessment and Continuing Education program for the dental profession.
- Accepted the report of the Self Assessment and Continuing Education Committee on the initial planning stages for the program.
- Approved an adjusted salary schedule for employees of the Central Office.
- Accepted the report of the Committee on Education concerning the Audio Visual Conference sponsored by the College in cooperation with the National Audio Visual Center in Atlanta.
- Received the report of the Committee to study the Executive Office and considered procedures relating to its operation.
- Approved and forwarded to the Committee on Constitution and By-Laws recommendations by the Committee on Sections which would

a. Require every Fellow to be affiliated with a Section.
b. Allow a Fellow to choose which section he prefers to belong to, regardless of section boundaries.
c. Establish a section-at-large, and a category of Fellows-at-large, with appropriate dues structure, for areas where not enough Fellows reside to establish a Section.
d. Set up rules for the organization or disestablishment of a Section.
e. Make it mandatory that each Section meet at least once a year.
f. Develop a manual of procedure for the Sections.

– Reaffirmed its support of Project Bookshelf.
– Endorsed Project Library and approved the appropriation of $1000 to get it under way.
– Reviewed proposed changes in the Constitution and By-laws and referred them to Committee for development in proper form for consideration by the Board at its April 1973 meeting.
– Recommended a study of the feasibility of publication of a College Newsletter in the intervals between issues of the Journal.

SECTION NEWS

Pittsburgh Section

The third regular meeting of this year of the Pittsburgh Section was held at the Pittsburgh Press Club on the evening of September 21, 1972 with 29 in attendance. Following dinner the secretary reported that a check from the section had been presented to Dean Forrest to meet the cost of bronze plaques installed in the corridor adjacent to the Dean's Office, in memory of 3 former deans – H. Edmund Friesell, Lawrence E. Van Kirk and William F. Swanson, all of whom had been Fellows of the Section.

Dr. Harold Hillenbrand, recently returned from Africa and other distant points, was the speaker of the evening. Other guests at this meeting were Drs. Stephen Garza, from HEW; George Gillespie, from WHO; Lawrence Kerr, immediate past-president of the New York State Society; and Pham Thi Than from Saigon.

The annual "Ladies Night" meeting of the Pittsburgh Section was held at the Press Club on Thursday, November 30, 1972. After a social hour and dinner the three newly elected Fellows from the Pittsburgh area, Thomas G. Barker, F. Eugene Ewing, and Arthur C. McFeaters were inducted into the Section.

Officers of the Pittsburgh Section, American College of Dentists, presenting check to Dean Edward J. Forrest, University of Pittsburgh School of Dental Medicine, to defray costs of three bronze memorial plaques installed in the School, honoring three former deans. They are left to right: Dr. Charles F. McDermott, Regent; Dr. Marvin Sniderman, Chairman; Dean Forrest; Dr. David H. Ehrlich, Chairman-elect; Dr. Milton E. Nicholson, Sec'y-Treas.; Dr. W. Arthur George, Associate Dean.

Two awards for outstanding achievement were made. The awards, recently created by the Pittsburgh Section, are in the form of an attractively printed certificate on vellum type paper, signed by the chairman and secretary, and suitably framed, reading as follows: "THE AMERICAN COLLEGE OF DENTISTS PITTSBURGH SECTION AWARDS THIS CERTIFICATE TO IN RECOGNITION OF OUTSTANDING PARTICIPATION AND ACCOMPLISHMENT IN THE FIELDS OF HUMAN RELATIONS AND ORGANIZED COMMUNITY EFFORT TOWARD THE BETTERMENT OF SOCIETY."

The recipients of this year's awards were Charlotte G. Kisseleff, Secretary of the philanthropic Addison Gibson Foundation, which has provided scholarships and other grants for the School of Dental Medicine; and Dr. Jay R. Wells, III, a local dentist who has been extremely active in the Pennsylvania State Legislature for the last several years.

The speaker of the evening was Irene Pasinski, an outstanding artist, who spoke on, "What You Always Wanted to Know About Looking At Art But Were Afraid To Ask." The talk was profusely illustrated with excellent color slides.

Section officers for the coming year were elected and are: David H. Ehrlich, Chairman; Homer D. Butts, Jr., Vice Chairman; Milton E. Nicholson, Secretary-Treasurer; and Carl Flecker, member of the Executive Committee.

Maryland Section

The Maryland Section sponsored an "American College of Dentists Day" at the School of Dentistry of the University of Maryland on October 16, 1972, Dean John J. Salley welcomed the fellows and the student class of 1973, and Dr. Charles T. Pridgeon, chairman of the Maryland Section spoke on the significance of the American College of Dentists.

Dr. C. Adam Bock, program chairman, presided and introduced the speakers, Dr. Carl A. Laughlin, President of the American Dental Association who spoke on "What dental organization has meant to the development of dentistry in the United States," and Dr. William K. Collins, Secretary of the Northeast Regional Board of Dental Examiners, whose topic was, "What dental licensure has meant to the development of dentistry in the United States." Herman J. Schutze, President of the class of 1973 discussed the papers and the summary was presented by Dr. Joseph P. Cappuccio, Fourth District Trustee of the American Dental Association, and secretary-treasurer of the Maryland Section.

the JOURNAL of the AMERICAN COLLEGE of DENTISTS

A QUARTERLY PRESENTING IDEAS IN DENTISTRY

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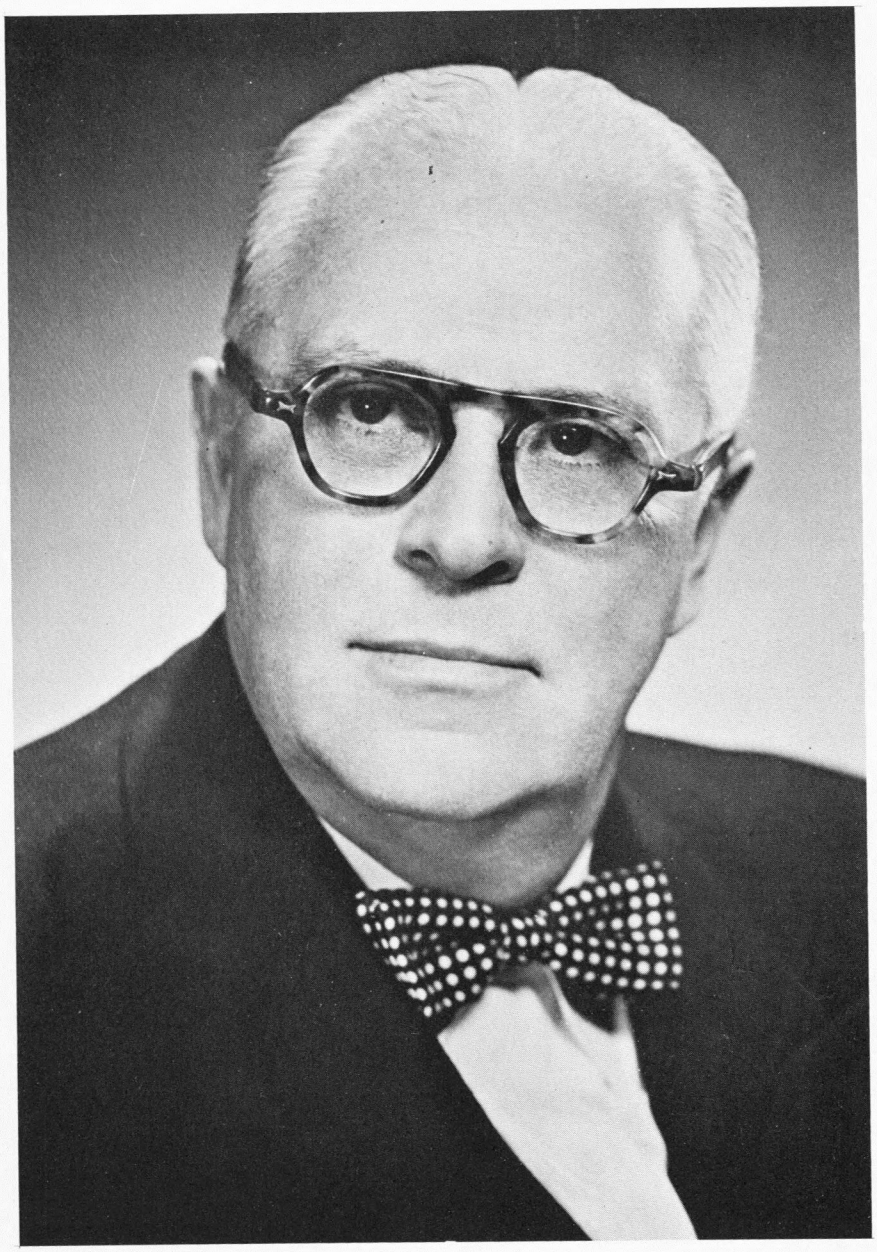

ORMONDE J. MCCORMACK
President, 1972-1973

The President of the College

Dr. Ormonde J. McCormack, an oral surgeon of Syracuse, New York is the fifty-third president of the American College of Dentists. Born in Syracuse, he received his pre-dental education at Colgate University and his dental degree from the State University of New York at Buffalo in 1923.

In dental organizational activity, Dr. McCormack has been president of the Syracuse Dental Society, the Onondaga Academy of Dentists and the Dental Society of the State of New York. In his State Society he served a six year term as a member of its Board of Governors. He is a life member of the American Dental Association, and has served for ten years in its House of Delegates. He was also a member of the Council on Hospital Dental Service, and the Liasion Committee of the Joint Commission on Accreditation of Hospitals.

In his chosen specialty area he has been Senior Attending Dental Surgeon and Chief of the Dental Services at Crouse-Irving Memorial Hospital in Syracuse, president of the Hospital Staff and member of its Executive Committee. He was also Senior Attending Dental Surgeon of Midtown Hospital, and is a diplomate of the New York Board of Oral Surgery, and former commissioner of the Board.

Dr. McCormack holds memberships in the American Dental Society of Anesthesiology, Federation Dentaire Internationale, American Association for the Advancement of Science and honorary membership in the American Association of Hospital Dental Chiefs. He is also a member of Delta Sigma Delta Fraternity.

He was honored as Man of the Year in 1963 by the Alumni Association of the State University of New York at Buffalo for his contributions to dentistry, and in 1968 received the Jarvie-Burkhart Award at the centennial meeting of the Dental Society of the State of New York for his distinguished service to the science and art of Dentistry. He has had a number of papers published in various dental journals on hospital dentistry and related subjects.

Dr. McCormack has been a fellow of the American College of Dentists for twenty-three years, and served as a member of the Board of Regents and as chairman of the New York Section. Last year he was named president-elect of the College, and at the recent San Francisco Convocation was elevated to the presidency.

Dr. McCormack is a quiet, friendly, unassuming individual, held in high regard by all who know him. His devotion to the high principles of the College has been amply demonstrated, and his years of service to dentistry have given him the breadth of vision necessary to provide the leadership the organization requires. The Fellows of the College wish him nothing but success in all his efforts.

President's Message

Today we live in an era of social transition that requires a keen perception of health matters. We must constantly adapt ourselves to a changing local, national and world environment or become a static profession left behind by the trend of the times.

The present state of professional conduct is cause for considerable concern. The self-interest of many practitioners is often placed before the welfare of the patient. On a larger scale some groups and government agencies have begun to take precedence over the welfare of the public and the entire profession. If the individual dentist is to survive as a professional, he must present himself to the patient dedicated to upholding that which he professes, which is placing the welfare of the patient clearly first and foremost.

Dentistry is not a static profession and should not be satisfied with anything resembling the status quo. It is time for reassessing the role of our profession, both with regard to what it cannot do and where it can make a conclusive contribution.

As Dr. Phillip Blackerby in his Presidential address to the American College of Dentists in 1963, commenting on the Mission of the College, said: "The primary purpose—the real mission—of the College is *leadership*—to promote the highest ideals of the dental profession as stated in the preamble to the Constitution. . . .

The College must be a symbol of the ideals that have made our profession great—as Fellows it is our duty to uphold and promote those ideals. The College should be a *catalyst* stimulating and facilitating intra and inter professional reactions that serve the cause of progress—

The College should be a *stabilizer* . . . helping to provide the weight of solid truth and objective judgment that will balance the forces of extremism that can threaten the solidarity and the future of our profession. And the College should be a *resource,* a court of appeals in a sense, to which the profession can turn for guidance in matters of ethics, of philosophy, of principle—based on the experienced judgment of our mature professional men who typify the membership of the College."

What every Fellow thinks about the American College of Dentists is a personal thing which he must rationalize. But if we are to continue to enhance the image the College has created, then it becomes increasingly necessary with each succeeding year, to accelerate still more the spirit of effort which is guiding and has guided our capable and devoted predecessors.

Ormonde J. McCormack

Editorials

On the Teaching of Dental History

In darkness dwells the people which knows its annals not.

One of the sad and largely unheralded casualties of World War II was the quiet elimination of dental history courses from the curriculum of most dental schools. The exigencies of a great national effort seemed to make it necessary to put aside for the time being, the teaching of the fascinating history of dentistry. The concentration and focus fell on only the pragmatic and technical aspects of our profession. The crisis has long passed, but because of our natural apathy, a lack of dental historians, and the pressures of a "now" philosophy, such courses of study have not been reintroduced. Today's students are seriously short changed in their total dental education by not being taught and inspired by the intriguing story of our profession's heritage and traditions.

Ours is a history replete with noble motives, scholarly examples of elegant erudition, technical accomplishments of the most exquisite refinement, broad visions of service to humanity, realistic (and unrealistic) philosophies of altruism, marvelous instances of serendipity, fascinating personal feuds of tremendous intensity, a little chicanery thrown in here and there, and some smashing scientific insights – in short – a total picture of an ongoing saga from the crude but well meaning barberism of medieval days to the present time of a totally respected and still growing profession.

What a shame that most of today's dental students know little or nothing about their chosen profession's very special history. What a pity that the dental giants of yesterday: Black, Angle, Kells, Morton, Wells, Pare, Fauchard, Fonzi, Hunter, Taggart, Miller, Gies, and an outstanding host of others are only rusty names from the past that their prodigious efforts and accomplishments are hardly remembered or honored except by a few.

Some may argue that in this very practical world of ours there is no longer time or a need for learning about the past. They would be quite content to let the dust of a past time settle and be swept away forever. Their thoughts are only of today and the future. May I

gently suggest to these pragmatists that such preoccupation with only the now and tomorrow may be part of what is wrong with our rushing, bustling, and unhappy world of today. Perhaps it would be wise to stop for a while for some quiet contemplation of our past. Permit us even a little romanticism or sentimentality about our professional inheritance, for surely we all recognize that the past holds some of the best clues to our future. It seems to me that the negation of one's history is accompanied by an insidious and devastating feeling that one is now merely a dull cog in a dreary and coldly repetitive system that can only produce boredom and insensibility until the inexorable release of death finally ends it all.

History, on the other hand, when properly and imaginatively taught can bring excitement, vitality, stimulation, and inspiration, for it is the very stuff of our lives, it is the essence of where we have been and what we have done, and it holds the limitless promises of where we can ultimately travel and what we can accomplish. Surely there is still a huge wellspring of sensitivity in today's dental students that merely needs to be tapped. I think that students would truly like to know something about dentistry's past, something of its record of accomplishments as well as its failures, and I am convinced that were this reservoir of sensitivity to be released, it would result in future generations of dentists with a firmer sense of their participation and responsibility in their own profession.

One of the hallmarks of the true profession is that subtle sense of belonging to a group whose primary purpose is to serve humanity. The history of dentistry reveals it to be such a group, solidly built on this cornerstone of service. Yet today, some dental schools may be fairly faulted for not imbuing students with this sense of a mission. It is never enough to just teach technical competence. All young people need a continuing identification with an honest and unselfish tradition of service to mankind, for without this, dental students merely become skilled technician tradesmen.

If dental history courses were again introduced into the curriculum in the imaginative, enthusiastic, and zealous way that history should be taught there well might be the start of a magical renaissance of cohesion and dedication to the fundamental principles of our art and science.

This hiatus without dental history has been too deplorably long. It may not be easy to restore, but the Deans of every dental school working with their faculties and with the cooperation of the American Association of Dental Schools should have the vision and sensitivity to reintroduce the teaching of the history of dentistry to its rightful and proper place in the schema of dental education.

Stanley R. Korf

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*Indicates those who signed the Articles of Incorporation of The Foundation at San Francisco, California, October 28, 1972.

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MEMORIAL

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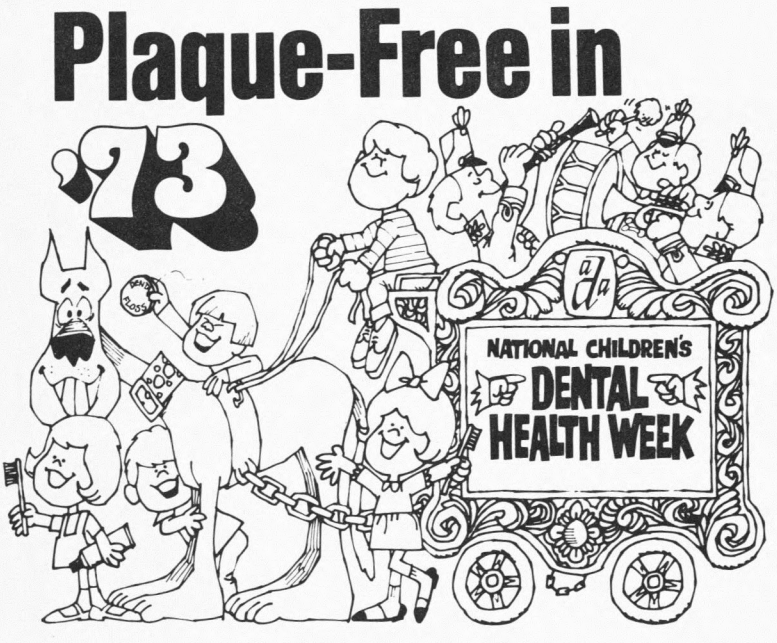
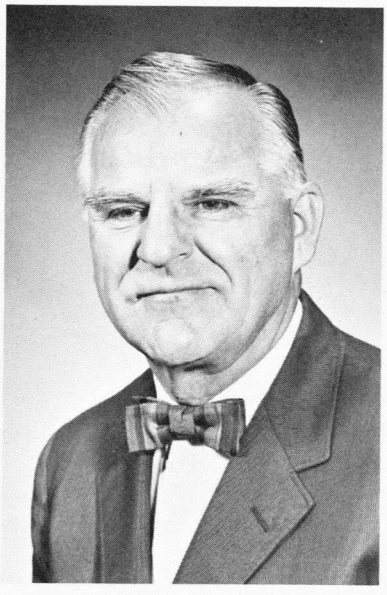
In Memory of
Dr. Quentin Royer



W. HARRY ARCHER

MAYNARD K. HINE



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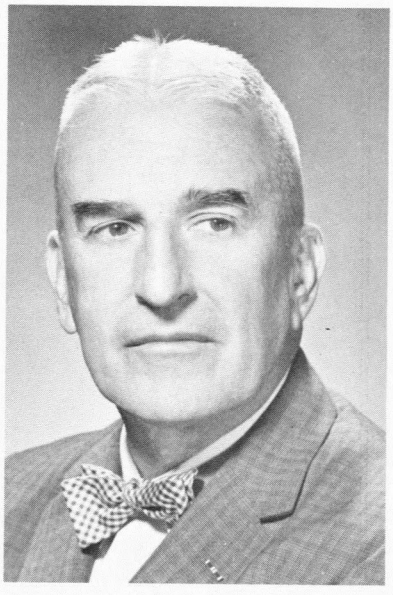

LAURISTON S. TAYLOR

Honors and Awards

Citation for Honorary Fellowship to Lauriston S. Taylor

Presented by Robert I. Kaplan

Mr. President, Fellows of the College, Ladies and Gentlemen. I am pleased to present the following citation for Dr. Lauriston S. Taylor, President of the National Council on Radiation Protection and Measurements.

Lauriston S. Taylor, researcher, administrator, radiation physicist, consultant, advisor, author, and esteemed citizen of his community, was born in Brooklyn, New York in 1902.

He was educated at Stevens Institute of Technology, Cornell University, Columbia University, and has honorary Doctorate of Science from the University of Pennsylvania in 1960 and St. Procopius College in 1965.

Dr. Taylor's hobbies are collecting woodworking and other carpentry. He collects old x-ray tubes and scientific instruments associated with radiation measurements. He rebuilds furniture and has among many of his certifications, honorary degrees and medals, a license as plumber, steamfitter, and electrician.

From 1927-1943 at the National Bureau of Standards, he served as Chief of the x-ray section, Chief of the Proving Ground Section and Assistant Chief of the Ordnance Development Division.

From 1943-1946, he served the United States Air Force as Chief of Operational Research Sections of the 8th and 9th Fighter Command and the Scientific Advisor to General Hoyt Vandenberg of the 9th Air Force.

From 1946-1965, he served as Chief of various sections of the National Bureau of Standards including the Radiation Physics Section, Atomic and Radiation Physics Section and as Associate Director of the Bureau.

In 1965 at the National Academy of Sciences, he served as Special Assistant to the President and the Executive Director, Advisory Committee on Emergency Planning.

Presently, he is the President of the National Council on Radiation Protection and Measurements. Dr. Taylor has been most effective over more than a quarter of a century in the area of Radiation Hygiene and in the development of scientific criteria for Protection

and Measurement recommendations. Formerly, for many years, the National Committee on Radiation Protection and Measurements was under the sponsorship of the National Bureau of Standards. The present National Council on Radiation Protection and Measurements was chartered in 1964 by Congress as a non-profit corporation. There are thirty-four Scientific Committees which operate under the Council. These committees are composed of experts having detailed knowledge and competence in the areas of the committee's interest draft, the recommendations which the Council issues as Reports. These committees have issued some 24 Reports on Radiation Protection and Measurement including the Dental X-Ray Protection, Report #35, published in 1970 by Scientific Committee 16. The critical direction and guidance for the organization and compilation of the very complex scientific information involved in these reports has been provided by Dr. Taylor. His exceptional qualities of leadership, his tenacity to purpose in an area often subject to much controversy has developed a spectrum of recommendations for the safe use of ionizing radiation which are acknowledged to be the best organized compilation of criteria for the management of a potentially hazardous form of energy. That the use of radiation in our society is so well managed is due primarily to the work of the National Council on Radiation Protection and Measurements. We in dentistry certainly recognize the great diagnostic value of the x-ray, and we wish to acknowledge the competent guidance in its safe use as provided by the National Council on Radiation Protection and Measurements which reflects much of the dedication to purpose of Dr. Taylor.

For his leadership and many contributions to the mission of the National Council on Radiation Protection and Measurements and for the significant benefit of its work to both the health professions and to the public, I am proud to present Dr. Taylor for Honorary Fellowship in the American College of Dentists.

CITATION FOR THE WILLIAM JOHN GIES AWARD TO HARRY W. ARCHER

Presented by Regent Charles F. McDermott

President Brown, members of the Board, Fellows of the College, Ladies and Gentlemen, I am indeed very pleased to present to you this citation for Dr. W. Harry Archer of Pittsburgh, Pennsylvania.

Dr. Archer was born in Cambridge, Pennsylvania, March 6, 1905. He received his Bachelor of Science and Doctor of Dental Surgery from the University of Pittsburgh in 1927. He received the Master of

Arts Degree from the Graduate School of the University of Pittsburgh in 1947.

Harry Archer, oral surgeon, teacher, historian, author, lecturer, and world traveler, has contributed to the furtherance of the art and science of his profession in many significant ways.

He is the author of textbooks on Oral Surgery, Anesthesia, and the History of Anesthesia. His textbook *Oral Surgery* has been published in six languages, it is used in 36 dental schools, and it is now in its fourth edition.

He is a diplomate of the American Board of Oral Surgeons.

Dr. Archer was instrumental in getting the Pennsylvania Practice Act to include the right to administer local and general anesthesia. He was the first dentist to be Chairman of the Executive Committee of the Eastern Society of Anesthesists, the largest anesthesia society in the United States at that time with 95% of the members being physicians. He led the long and difficult fight that prevented dentists from being disfranchised by the International Anesthesia Research Society.

He was the first dentist appointed Professor of Oral Surgery and Anesthesia at Pitt, a position traditionally held by a physician. He taught the first Master's Degree course at Pitt and helped plan and supervise the first doctor's degree course.

As an educator, Dr. Archer describes himself as "strict." During his 42 years as a teacher at the University of Pittsburgh, he claims he has never won any popularity contests.

In October, 1968, the Oral Surgery Department of the Pittsburgh Dental School was dedicated as the W. Harry Archer Oral Surgery Clinic. As a part of the dedication, a three-day International Conference on Oral Surgery was held in Pittsburgh, in which many of the world's leading oral surgeons participated.

Dr. Archer began lecturing to dental audiences in 1927. He has given hundreds of lectures, not only in every corner of the United States, but in nearly every country in Europe, South America, the West Indies, the Orient, the Near East and the Soviet Union.

In addition to his scientific writing, Dr. Archer wrote the *Life and Letters of Horace Wells.* He has done extensive research on Horace Wells and is an authority on the history of anesthesia, with 24 published articles on that subject.

For these and many other notable contributions to his profession, it is my privilege to present Dr. W. Harry Archer for the William John Gies Award of the American College of Dentists.

CITATION FOR THE WILLIAM JOHN GIES AWARD TO MAYNARD K. HINE

Presented by Regent James L. Cassidy

President Brown, Members of the Board, Fellows of the College, Ladies and Gentlemen. I am privileged to present to you this citation for Dr. Maynard K. Hine of Indianapolis, Indiana.

Maynard K. Hine, periodontist, administrative educator, researcher, lecturer, author, a dedicated worker and an inspiring leader at all levels of organized dentistry, received his dental degree and the Master of Science from the University of Illinois. After two years in research at the University of Rochester and eight years at Illinois, he was appointed Professor and Head of the Department of Oral Histopathology and Periodontics at the School of Dentistry, Indiana University, and on July 1, 1945, was appointed Dean. In 1968, he was appointed Chancellor of Indiana University—now Indiana University-Purdue University.

Dr. Hine has received honorary Doctor of Science degrees from Case Western Reserve University, University of Illinois, Boston University and Ohio State University.

He is co-author of five books: *Periodontia* (with Edgar Coolidge), *Preventive Dentistry* (with Muhler and Day), *Symposium on Preventive Dentistry* (with Muhler), *Textbook on Oral Pathology* (with Shafer and Levy), and *Review of Dentistry,* and has contributed to numerous scientific journals. He has been Editor of the Journal of Periodontology since 1950, and during that time, the circulation has increased sixfold.

Dr. Hine is past president of the following organizations: American Association of Dental Schools 1953; International Association for Dental Research 1952; American Association of Dental Editors 1948; American Association of Endodontists 1947; Indianapolis District Dental Society 1952; Indiana State Dental Association 1957-58; American Academy of Periodontology 1964; American Dental Association 1965-66.

He was formerly Chairman of the Council on Dental Research of the American Dental Association; a member of the Council on Dental Education of the ADA, and a member of the Board of Trustees of the ADA. He has been a Biomedical Consultant to the Director of Defense Research and Engineering and a member of the Board of Regents of the National Library of Medicine. He has served on numerous committees at Indiana University, as well as the dental organizations of which he is a member. He is a member of the

Association for the Advancement of Science (Vice President 1959), Sigma Xi and Omicron Kappa Upsilon Honorary Dental Society. He served on the Executive Board of the Indiana State Board of Health from 1948 to 1963; and served two terms as Chairman. In 1962, Dr. Hine received the distinguished Dental Alumnus Award of the Year from the University of Illinois Alumni Association. He has twice been a member of the National Advisory Dental Research Council of the Department of Health, Education and Welfare. Dr. Hine has also served as Chairman of the Sub-Committee on Dentistry for the Committee for Institutional Cooperation.

Dr. Hine was made a Councilor of the Federation Dentaire Internationale, a member of the Commission on Classification and Statistics for Oral Conditions (adviser) and adviser to Commission on Dental Practice of the Federation Dentaire Internationale.

At the present time, he is serving as a member of the Council on Dental Education of the American Dental Association, representing the American Association of Dental Schools and as a member of the Dental Research Institutes and Special Programs Advisory Committee of the National Institutes of Health.

In 1970, Dr. Hine was named National Treasurer for the United States for the Federation Dentaire Internationale.

For these and his many other contributions, his exceptional leadership, and his dedicated service, I take great pleasure in presenting to you for the William John Gies Award of the American College of Dentists, Dr. Maynard K. Hine.

CITATION FOR THE AWARD OF MERIT TO JOHN W. KUMPULA

Presented by Vice-President Robert L. Heinze

President Brown, members of the Board, Fellows of the College, and Ladies and Gentlemen: I am pleased to present the following citation for Mr. John W. Kumpula—instrument maker and craftsman superb—who has made his career in improving dental health service through his unique contribution through instrumentation.

He first applied his unusual abilities to the development of the Panoramic x-ray in 1949-50 at the University of Washington, Seattle, where he worked with Dr. Robert Nelsen of the University and Dr. Eyjo Paatero of Helsinki, Finland. From this early experimentation, and later at the National Bureau of Standards, evolved the present day panoramic x-ray apparatus. Mr. Kumpula joined the staff in the

Dental Materials Section at the National Bureau of Standards in 1951 where he continues to contribute his unique talents to many projects.

During the past twenty years, he has applied his unusual skills to the building of the first high speed turbine contra-angle handpiece, considered to be one of the most significant advances in dental instrumentation for it revolutionized the surgery of hard tooth tissue making dental care more acceptable to the patient and less a task for the dentist. Few persons today realize that this advance in dentistry was made through the cooperative program of the American Dental Association and the National Bureau of Standards. In this same program, Mr. Kumpula has published reports in a number of areas. The instruments he has built have helped characterize turbine contra-angle headpieces, using a phantom head, he measured the level of radiation produced by the panoramic equipment and that of conventional procedures. He has designed a centrifugal testing machine to determine tensile properties of small specimens without the need to grip them with a clamp. This is most useful in tests of amalgam. He has designed instruments to determine the compressive properties of human enamel and dentine, has built a tooth fluorometer and a device for adjusting dental interferometers, has developed instrumentation for using closely ruled lines as diffraction gratings to measure the strain of dental materials and is presently working on a system to produce stereoscopic films with the panoramic x-ray. This shows great promise.

The National Bureau of Standards has awarded him with its Bronze Medal for his unique insights and talents, which he has applied so consistently.

It is for these reasons and in addition for his quiet accommodating manner and his sterling qualities as a citizen that I take great pride in presenting to you for the American College of Dentists Award of Merit, Mr. John W. Kumpula.

Fellowships Conferred

Fellowship in the American College of Dentists was conferred upon the following persons at the Annual Convocation in San Francisco, California on October 28, 1972.

Albert M. Abrams, Los Angeles, Calif.
Phillip G. Accardo, Cheyenne, Wyo.
Arnett A. Anderson, Washington, D.C.
Dale Howard Andrews, Bethesda, Md.
Alvin Antelyes, Sherman Oaks, Calif.
Philip G. Armi, Mountain View, Calif.
R. Leslie Arnett, Pasadena, Calif.
Walter P. Auslander, New York, N.Y.
Eldon Douglas Bailey, Midland, Mich.
Ralph P. Baldini, Ithaca, N.Y.
Thomas G. Barker, Pittsburgh, Pa.
Jack R. Benton, Appleton, Wis.
John R. Bland, Rogers, Ark.
Bertram Blum, Jamaica, N.Y.
Saul M. Blumenthal, Baltimore, Md.
Robert Bonda, Newark, N.J.
Donald K. Boyden, Mitchell, S.D.
Richard W. Brand, St. Louis, Mo.
Lawson Kelly Broadrick, Atlanta, Ga.
Paul J. Bruel, New York, N.Y.
Raul G. Caffesse, Ann Arbor, Mich.
Leroy Donald Cagnone, San Francisco, Calif.
Melvin Lyle Calton, St. Louis, Mo.
James E. Carter, Jr., Augusta, Ga.
O. V. Cartwright, Grand Prairie, Texas
Constantine J. Cavalaris, Columbus, Ohio
John P. H. Clark, Cleveland Hgts., Ohio
Lawrence Cohen, Wilmette, Ill.
Duane Edward Compton, Indianapolis, Ind.
Robert B. Cornwall, Southfield, Mich.
Kenneth Herbert Cusick, Berkeley, Calif.
Benjamin F. Davis, St. Louis, Mo.
Lloyd Diedrichsen, Sparks, Nevada
Frank A. Dolle, Towson, Md.
Bryant Winfield C. Dunn, Nashville, Tenn.
William E. Dunn, Sioux Falls, S.D.
Henry E. Ebel, Jr., Detroit, Mich.
Roy Oscar Elam, Jr., Nashville, Tenn.
Frank N. Ellis, Bethesda, Md.
James A. Englander, Milwaukee, Wis.
F. Eugene Ewing, Pittsburgh, Pa.
Caswell J. Farr, Bellingham, Wash.
Stuart L. Fischman, Buffalo, N.Y.
Wendell Earl Fitts, Concord, N.H.
Eugene J. Fortier, Jr., New Orleans, La.
Erastus W. Foster, Jr. Oklahoma City, Okla.
Quentin Z. Frazier, Cynthiana, Ky.
Winston W. Frenzel, San Francisco, Calif.
Edwin N. Fujimoto, Hilo, Hawaii
John Masato Fujioka, Honolulu, Hawaii
George E. Garrington, Kensington, Md.
Ronald E. Geistfeld, Northfield, Minn.
George Georgieff, Santa Ana, Calif.
Robert Anthony Germann, Oceanside, Calif.
Albert F. Germon, Casper, Wyoming
Harold Gerstein, Chicago, Ill.
Richard H. Gilmore, Saginaw, Mich.
Leonard Hunsdon Goddard, Chatham, N.J.
David Goldstein, Brooklyn, N.Y.
Ronald E. Goldstein, Atlanta, Ga.
Robert Parker Graham, Sr., Nashville, Tenn.
Russell A. Grandich, Norfolk, Va.
Ronald G. Granger, Potomac, Md.
George William Greco, Travis AFB, Calif.
Henry I. Greene, Fresh Meadows, N.Y.
George E. Grenfell, San Mateo, Calif.
Niles M. Hansen, Jr., Indianapolis, Ind.
Roland Wentworth Hansen, Palos Verdes Peninsula, Calif.
James Andrew Harrell, Elkin, N.C.
Roger M. Hehn, Jacksonville, Fla.
Richard A. Helffrich, Pasadena, Calif.
Carl M. Herrera, Reno, Nevada
George W. Hindels, New York, N.Y.
Jack D. Hoffman, Santa Clara, Calif.
Perry W. Hollembeak, Shreveport, La.
Gaylord D. Holmes, San Mateo, Calif.
Roger Hombs, Alexandria, Va.
Jerome M. Horowitz, Millburn, N.J.
S. Robert Howell, Virginia Beach, Va.
James Richard Hull, San Francisco, Calif.
Rowland A. Hutchinson, San Rafael, Calif.
Jerome Jacobs, Miami Beach, Fla.
Clinton C. Johnson, Arlington, Texas
Thomas J. Kaep, Glenview, Ill.
Saul Kamen, Rego Park, N.Y.

Ralph S. Kaslick, New York, N.Y.
Henry K. Kawamoto, Monterey Park, Calif.
James G. Keagle, Tacoma, Wash.
Douglas Doyle Keller, Bastrop, La.
Bert Klatskin, Staten Island, N.Y.
Robert M. Knight, Jacksonville, Fla.
Stanley R. Korf, Chicago, Ill.
Roy E. Koski, San Francisco, Calif.
Howard Stanley Kramer, Jr., Oakland, Calif.
Harold Kresberg, Rego Park, N.Y.
George E. Krueger, Waukegan, Ill.
William H. Lady, Washington, D.C.
Ira Larsen, Tucson, Arizona
Harold R. Laswell, Lexington, Ky.
Laurence LaBar Lathrop, West Chester, Pa.
Sherman A. Levenson, Duluth, Minn.
Clarence O. Lewis, Jr., Washington, D.C.
Joseph Paul Libassi, Brooklyn, N.Y.
Robert D. Londeree, Jr., Dallas, Texas
Clarence A. Lorio, Jr., Baton Rouge, La.
William G. Low, Stockton, Calif.
Arthur L. Lundblad, Orinda, Calif.
James D. Lytle, Cincinnati, Ohio
Rollin E. Mallernee, Atlanta, Ga.
Arthur M. Maris, Des Moines, Iowa
F. James Marshall, Portland, Oregon
Philip John Maschka, Omaha, Nebr.
John P. McCasland, Washington, D.C.
Richard J. McConnell, Colesville, Md.
Arthur C. McFeaters, Jr., Pittsburgh, Pa.
Frederick J. McGovern, Hayward, Calif.
Charles McNeill, Walnut Creek, Calif.
Norman Menken, New Rochelle, N.Y.
Dale G. Mlinar, Austin, Minn.
Dudley S. Moore, Santa Rosa, Calif.
James Kent Moore, Santa Cruz, Calif.
George J. Muench, Short Hills, N.J.
H. Lindsay Mussells, Westmount, Quebec
Alvin I. Orlian, Flushing, N.Y.
José Oynick V., Mexico, D.F.
Martin George Pesek, Lake Forest, Ill.
William V. Peters, Golden, Colo.
Nolan E. Petry, Akron, Ohio
H. Vance Phillips, So. Holland, Ill.
James B. Poindexter, Jr. Ashland, Ky.
Jack P. Pollock, McLean, Va.
Milton H. Powers, Burbank, Calif.
Charles Frederick Rau, Louisville, Ky.
Wilbur T. Reece, Springfield, Ill.
Arthur H. Richter, Jr., Greenwood, Miss.
James Robert Robinson, Toledo, Ohio
M. William Rose, Cleveland Hts., Ohio
Richard E. Rossi, Rochester, Minn.
Marvin K. Rubin, New York, N.Y.
Donald A. Rudee, Palo Alto, Calif.
William F. Runyon, Fort Worth, Texas
Gene Sargent, Burlington, Wash.
John Norman Say, Prineville, Ore.
Roger Hal Scholle, Chicago, Ill.
Chris Charles Scures, Orlando, Fla.
William M. Selden, Louisville, Ky.
Victor I. Sendax, New York, N.Y.
Mortimer Louis Shakun, East Setauket, N.Y.
Francis G. Shimokawa, Wailuku, Hawaii
Terry Welles Slaughter, Salinas, Calif.
A. Wade Smith, Little Rock, Ark.
Herbert G. Spieske, Albany, N.Y.
Robert Stevens Staffanou, San Francisco, Calif.
Ralph H. Stern, Los Angeles, Calif.
Herschel L. Stroud, Topeka, Kansas
William L. Stroup, Jr., Tupelo, Miss.
Carlton K. Swerdlove, Brooklyn, N.Y.
Earle Anthony Sylva, Sacramento, Calif.
Norman P. Tanz, Suffern, N.Y.
Joe A. Teaff, Muskogee, Okla.
John Lowell Thorsness, Spooner, Wis.
Michael J. Till, Minneapolis, Minn.
Lewis C. Toomey, Silver Spring, Md.
Richard G. Topazian, Augusta, Ga.
Herman Dale Tow, Potomac, Md.
Hubert E. Vande Voorde, Moline, Ill.
Sunder J. Vazirani, Washington, D.C.
Walter H. Vendes, Bicknell, Ind.
Charles John Voeker, St. Louis, Mo.
John Leonard Walker, Washington, D.C.
Edwin Forrest Weaver, III, Hershey, Pa.
William Allison Welker, Dayton, Ohio
B. G. West, El Dorado, Ark.
Robert L. Wheeler, Jr., Chicago, Ill.
Louis J. Williams, Casper, Wyoming
Peter Guy Chew Wong, Honolulu, Hawaii
Charles G. Wood, Yucaipa, Calif.
Walter E. Wright, Columbus, Ohio
Frida A. Xhonga, Los Angeles, Calif.
John S. Zapp, Reston, Va.
Paul Eugene Zeigler, San Diego, Calif.
Gerald J. Ziebert, Milwaukee, Wis.
George A. Zurkow, Wilmington, Del.

Necrology Report

The following Fellows are deceased since the 1971 Convocation:

John R. Abel, Los Angeles, Calif.
Earl C. Bean, St. Louis, Missouri
*John Hall Best, Woollahra, Australia
Edward E. Beveridge, Los Angeles, Calif.
*Harry H. Bleecker, Sr., San Marino, Calif.
Albert L. Borish, Philadelphia, Pa.
*Lester E. Breese, Oakland, Calif.
*Frederick Brophy, New York, N.Y.
*John V. Blasi, Chestnut Hill, Mass.
*Paul W. Clopper, Peoria, Ill.
*Charles W. Craig, Esparto, Calif.
Edwin L. Crosby (Honorary), Chicago, Ill.
Sydney Cross, Los Angeles, Calif.
James S. Dailey, Los Angeles, Calif.
*Walter W. Dalitsch, Lake Bluff, Ill.
John Boatman Davis, Morgantown, W.V.
Jean Deliberos, Paris, France
*Gerard A. Devlin, Matawan, N. J.
*Larry J. Dupuy, New Orleans, La.
Marvin R. Evans, Chapel Hill, N.C.
*James H. Ferguson, Jr., Baltimore, Md.
*Leslie M. Fitzgerald, Dubuque, Iowa
*Edwin A. Flancher, Milwaukee, Wisc.
Bruno G. Floria, St. Leonard, Md.
*Carleton Fox, Birmingham, Mich.
*Thomas B. Garvey, Lancaster, Pa.
*Albert Goho, Harrisburg, Pa.
Angus W. Grant, Millbrae, Calif.
H. Roy Green, Wheeling, W. Va.
Paul R. Gaylord, Hamilton, Ohio
Irving Glickman, Boston, Mass.
Frederick C. Hadeler, Palo Alto, Calif.
*Clarence A. Hanson, Tallahassee, Fla.
G. Ronald Heath, Lansing, Mich.
*Oliver E. Hartman, Berkeley, Calif.
Donald J. Hodge, Dana Point, Calif.
*Frank J. Houghton, Bloomfield, N. J.
*Wm. P. Harrison, Los Angeles, Calif.
Robert C. Ingram, Chamblee, Ga.
*Allison G. James, Beverly Hills, Calif.
Edward J. Joseph, Wheeling W. Va.
*Arthur H. Jones, St. Louis, Mo.
*James D. Kelly, La Crosse, Wisc.
Harry Klenda, Wichita, Kansas
*John F. Knudson, Berkeley, Calif.
*Paul W. Kunkel, Portland, Ore.
*Paul C. Kitchin, Fife Lake, Mich.
Carl W. Lattner, St. Louis, Mo.
*John W. Leggett, San Mateo, Calif.
*Samuel J. Lewis, Monroe, La.
*Gottfred R. Lundquist, Chicago, Ill.
*Duncan MacMillan, Long Island, N.Y.
*William G. Maison, San Francisco, Calif.
Chester W. Merrill, San Jacinto, Calif.
Monte G. Miska, Chapel Hill, N.C.
Salvatore L. Monaco, Ballwin, Mo.
Leonard M. Monheim, Pittsburgh, Pa.
Jerome I. Moray, West Orange, N. J.
Michael J. Murray, Omaha, Nebr.
*Walter G. McLeod, Pensacola, Fla.
*Karl H. Metz, Valhalla, N.Y.
*Emil Mueller, Highland Park, Ill.
*Charles O'Malley, Limerick, Ireland
*Edward J. Ortion, New York, N.Y.
William B. Parsons, San Antonio, Texas
*Ernest L. Pilkington, Portland, Mich.
*Earl J. Poe, St. Louis, Mo.
Russell S. Poor (Honorary), Bethesda, Md.
Herman K. Rendtorff, Ft. Lauderdale, Fla.
*C. W. Roberts, Berkshire, England
*Martin A. Rushton, Seven Oaks, England
*Wm. F. Scheumann, Buzzards Bay, Mass.
Rocco V. Setaro, Huntington, N.Y.
*Richard F. Simmons, Norfolk, Va.
Doyle J. Smith, Memphis, Tenn.
*Charles R. Singleton, Charleston, W. Va.
*Arthur W. Spaulding, Inglewood, Calif.
*Ralph L. Spaulding, Monticello, N.Y.
Gilbert Stanton, Malverne, N.Y.
*Carl H. Stricker, Cincinnati, Ohio
*Earl W. Spencer, Pueblo, Colorado
*Daniel E. Shehan, Baltimore, Md.

(Continued on Page 40)

*Life Member

Dental Information In Libraries

ASHTON E. WICK, D.D.S.*

An attempt was made by the Wisconsin Section of the American College of Dentists to study the availability to the public of dental information in libraries. The motivation for this project was the suggestion and challenge by Dr. Robert J. Nelsen, Executive Director of the American College of Dentists.

The project was accomplished during the first eight months of 1972. A general interest letter and questionnaire to the forty-six Wisconsin Section members indicated a willingness of the membership to participate in the group project. More enthusiasm was expressed at a subsequent annual section meeting.

Each member participant was furnished with an instruction sheet, (Figure I) and questionnaire (Figure II) for librarian interviewing. These were secured through the executive office of the College.

The sample information received was but a very small part of the total information desired. However, it appeared that this kind of a study had not been done and a small amount of information would have value. Keeping this small sample factor in mind, the results of the librarian questionnaire information are as follows:

1. The forty-two libraries in thirteen Wisconsin cities were of five different types; public, college, high school, elementary school, and technical school.
2. The thirteen public libraries offered the greatest number of dental information items. These libraries had the second greatest number of total volumes. A total of 1,454,879 volumes revealed 139 dental items. The nine college or university libraries with a total of 1,790,000 volumes recorded 79 dental items. One single university had 57 dental items among 1,000,000 volumes. The seventeen high school libraries representing 185,820 volumes reported 45 dental items. The two elementary school libraries with 7,000 volumes reported one dental item. The one technical school with 4,325 volumes had 30 dental items. This technical school had a dental assistant training program; hence the unusual number of dental items. Totals may be noted from Table 1.

*Chairman, Wisconsin Section, American College of Dentists.

The number of libraries having no dental items available were as follows:

Public libraries – one
Elementary School libraries – one
High School libraries – eight
College libraries – six

Sixteen of forty-two libraries then had no dental information. This fact alone could justify concern.

Further summarizing of the library questionnaire answers revealed that librarians were almost unanimously receptive to receiving gifts of dental publications. The privilege of prior review was often requested. A label denoting the donor organization was not indicated to be a deterrent to placement of dental items in libraries. Two thirds of the librarians indicated their willingness to display posters for National Children's Health Week.

The character of the dental items attracted interest. A list of the texts appearing more than twice and their frequency is as follows:

1.	*Dentistry and Its Victims,* 1970, by Revere	8
2.	*Understanding Dentistry,* 1969, by Lantner	7
3.	*Your Future in Dentistry,* 1960, by Cohen	7
4.	*Teeth, Teeth, Teeth,* 1971, by Garfield	7
5.	*So You Want To Be A Dentist,* 1963, by Greenberg	7
6.	*Fifty-two Pearls and Their Environment,* 1965, by Muhler	6
7.	*Your Child's Teeth,* 1957, by Bacon	6
8.	*History of Dentistry in Wisconsin,* 1970, by Campenni	6
9.	*Your Future in Dental Assisting,* 1964, by Frost	5
10.	*Modern Family Guide to Dental Health,* 1971, by Cronin	4
11.	*Your Wonderful Teeth,* 1954, by Schloat	4
12.	*The Story of Dentistry,* 1954, by Bremmer	4
13.	*The Strange Story of False Teeth,* 1968, by Woodforde	4
14.	*Your Future as a Dental Hygienist,* 1969, by Paige	4
15.	*Your Children's Teeth,* 1968, by Berland	4
16.	*Sagebrush Dentist,* 1941, by Frackleton	3
17.	*Dental Aptitude Test,* 1963, by Gruber	3
18.	*The Dental Assistant,* 1964, by Brauer	3

This list of books was incomplete in one respect: the university with fifty-seven dental items of 1,000,000 volumes failed to list the names of the publications as requested in the questionnaire.

Perusal of these books on dentistry selected for library usage arouses question about what motivations were responsible for their purchase and placement in libraries. Such inquiry was not made in this study, but it is significant that a controversial book, *Dentistry and Its Victims,* by Revere, heads the list as being the most frequent.

SUMMARY

Evidence is presented that dental information in libraries reported in this survey is not consistant or adequate; in sixteen instances it was found to be completely void. A logical sequence to this study might be an attempt to place dental information in libraries with definite objectives in mind:

a. to promote general knowledge of dentistry.
b. to promote recruitment for a career in dentistry.
c. to disseminate scientific information of dentistry.
d. to dispense current concepts and recent advances of prevention and control of dental diseases.

With guidance from a knowledgeable librarian source, a package of dental information material could be offered the members of the American College for placement in libraries in their local areas. This package could be a donation and an individual effort of each member to upgrade the locally available dental information of his area.

2819 North Eighth Street
Sheboygan, Wisconsin 53081

TABLE 1

Type of Library	#	Volumes Least	Volumes Most	No. of Libraries with no information items	Total Dental Information Items
Public	13	8,000	294,000	one	139
College or University	9	21,000	1,000,000	six	79 (one university had 57)
High School	17	1,300	24,000	eight	45
Elementary	2	3,000	4,000	one	1
Technical	1	4,325	***	***	30
	42	1,300 – 1,000,000		16	294

Total Volumes In All Libraries – 3,442,024

FIGURE I

DENTAL INFORMATION IN LIBRARIES

You are requested to visit a local public or school library and obtain the information asked for below. This will take about fifteen minutes of your time in the library. Send this information to at the above address. It will be compiled and a report made at the next meeting of the Section.

THIS IS WHAT YOU ARE ASKED TO DO

1. In a local area having more than one Fellow of the College, determine by a phone call which Fellow will visit which libraries. This is important to avoid multiple reports from the same library. You should visit more than one library if you can.

2. Call the library and make an appointment to see the head librarian. Tell her the local section of the American College of Dentists wishes to determine the needs for dental literature and reference material on dental health in libraries and that you are asking her help in this effort. Explain that it is quite possible that appropriate literature and up-to-date reference books will be made available later on at no cost to the libraries and that you would like to discuss this program with her for about ten minutes.

3. Bring the enclosed Library Report Form with you to the library. Explain again the purpose of this program, that there is an apparent need for more reference material on dental subjects and that the College is attempting to meet this need by placing reference material at no cost to libraries, when it is determined what kinds of material are needed and if the library would be willing to receive it.

4. Show her the questionnaire enclosed and ask if she would have one of her people help you complete it. Ask if all material would be listed in the card index. Have it returned to you in the self-addressed stamped envelope provided. Explain that you will keep her advised of the program as it develops.

5. She may wish to show you the material on dentistry in the library. If so, review this with her. She may not have time to do this. Librarians, like dentists, are all different, and like dentists, some will become very interested while others may not be so enthusiastic in this matter. Of course you will never know unless you, as the dentist, and as a Fellow of the College, make the first effort in this area of "public relations."

6. When you complete the report on the library, add any comments you wish to make and mail it to me immediately. Thank you very much for your help.

_____

_____

_____

FIGURE II

LIBRARY REPORT
on
Information Available on Dentistry and Dental Health in General Libraries

The _____ Section of the American College of Dentists asks your help in determining what reference material on dental subjects is generally available in libraries. Because space limitations are critical in all libraries, it is anticipated that libraries would welcome as a gift a selection of pertinent and current reference books on dentistry and dental health subjects.

To determine the needs of libraries in this area, it is necessary to learn what is available, and the types of materials libraries prefer to manage. Would you complete the following report form and add any comment you wish? Please return in the self-addressed envelope. Thank you for your help.

Type of library. Public _____ High School _____ Jr. High School _____ Other _____

Name of library _____ Street _____

City _____ State _____ Zip _____

Total number of volumes in library _____

Name of Head Librarian _____

List from the card index reference, material on dental, dental health, dentistry, mouth, oral health, teeth, etc., on the other side of this sheet by title, author and date.

Does this library receive free or subscribe to dental periodicals or dental health liberature? (Name of publication) _____

Does this library accept gifts of books subject to prior review?
Yes _____ No _____ or comment _____

What type of reference material do you accept? Bound books _____ Paper back reference books _____ Pamphlets _____ Typed bibliographies and reference lists _____
Other _____

Would the library object to a small label being placed on gift material indicating that it was placed in the library through the courtesy of the American College of Dentists?
Yes _____ No _____ or Comment _____

Does the library display cards or signs announcing or bringing attention to National Programs such as Children's Dental Health Week?
Yes _____ No _____ or Comments _____

If material or posters in good taste and not of commercial origin were made available would the library display it? Yes _____ No _____ Against policy _____
Comments _____

If you have need for additional information, please call Dr. _____ at _____.

Prevention – Its Role in the Curriculum Of a New Dental School*

WILLIAM E. BROWN, D.D.S.†

Preventive procedures and philosophies have been presented to dental students for as many years as I can remember. Yet not all students have learned them, and even fewer have practiced them. The gap between what we know and what we practice has been large but now appears to be closing at a rapid rate. Dental schools, in general, have not been the prime movers in the recent closure and find themselves in a secondary position of trying to catch up. At the same time, many dental offices have practiced prevention effectively for many years.

This paper concerns the role of prevention in the curriculum of a dental school which started its first class this year and has a faculty of 20 with a wide variety of backgrounds and experiences. Most have graduated from dental schools within the past 15 years and possess attitudes that are objective and flexible. They agree that prevention should be considered in broad terms and should form one of the strong footings for curricular development.

Characteristics of Graduates

Before initiating the planning of its curriculum, the College of Dentistry set forth its aims by describing the characteristics of its graduates. The faculty determined that its graduates should:

1. Be good diagnosticians and know how to use every examining tool available, and be motivated to use new tools as they come along to evaluate a patient's oral health and, subsequently, to develop a detailed program of treatment that will meet the special needs of each patient.

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*Presented at the annual meeting of the American College of Dentists, San Francisco, California, October 28, 1972.

†Dean, College of Dentistry, The University of Oklahoma, Oklahoma City.

2. Be oriented to the principles of prevention of oral disease and to the maximal maintenance of healthy oral structures.
3. Consider oral health as a part of total health and be prepared to work collaboratively with the other members of the health professional team.
4. Be good clinicians whose clinical abilities are based on sound biological principles.
5. Be competent scientists and have an understanding of research and research methodology.
6. Have comprehensive knowledge of the growth and development of the human organism in order to guide the development and maintenance of a healthy dentition.
7. Have comprehensive knowledge concerning the management of a small business and be comfortable working in a variety of settings.
8. Know how to interact effectively with peers, teachers, patients, and members of various communities.
9. Be involved in professional affairs and motivated to advance the state of their profession.
10. Use the various dental auxiliaries effectively and efficiently and not be threatened when certain of the dentist's traditional responsibilities are delegated to others.

From these broad aims flowed the specific behavioral objectives of the various parts of the curriculum, the knowledge and skills required to advance from one step to the next, the courses themselves, including subject matter and the appropriate learning systems, and lastly methods of evaluation.

OBJECTIVES OF TEACHING PREVENTION

Before determining the role of prevention in the curriculum, one must determine first just what it is the student should know and be able to do. Some of our objectives follow:

The student shall

1. Practice preventive procedures on himself, regularly and effectively.
2. Bring his own oral health to an optimal state.
3. Instruct his patients on preventive procedures and supervise their performance.
4. Provide preventive services to his patients and accommodate to individual needs.
5. Review the results of research and make sound judgments on new methods and materials.

ATITUDES

The successful learning of prevention will depend in large measure on the attitudes of the students, patients, faculty, support staff, and the administration. Of this group, the faculty and administration are the key figures because they determine curricular content and provide the role models.

The reasons for the relatively minor role of prevention in old curriculums are unclear and probably complicated. One can only speculate that one of the prime reasons is the old requirement system which emphasizes treatment procedures and provides little or no pay-off to the student for preventive procedures. The technical procedures concerned with prevention are relatively simple and probably have been taken for granted. The attitudinal and motivational factors, however, are complex and have been overlooked. If the faculty and administration are committed to a strong role for prevention in the curriculum, it should not be difficult to develop the appropriate attitudes in the students and support staff.

The establishment of receptive attitudes among patients, especially over the long haul, is difficult, and the results are often less than expected. Students have not learned to be effective teachers in spite of the fact that teaching patients and auxiliaries should be one of their major functions. This void is being filled with the inclusion of the behavioral sciences in the dental curriculum, but the road to understanding and teaching effectiveness is long and bumpy and will take time to reach the end.

CURRICULUM

At the University of Oklahoma, students learn about prevention in the first semester of the first year. They work in pairs in the clinic and with dental hygiene students and develop individualized programs of personal care for each other. Their first contact with patients, in the second semester of the first year, will focus on prevention and teaching patients how to care for themselves. Each twelve operatory clinical module will include a consultation room designed for effective instruction of patients regarding home care. Each patient who presents for treatment will first be placed on a home care regimen and the results observed before a final treatment plan is prepared. All activities concerning prevention will take place in the general clinics rather than isolating them in separate special clinics. It is expected that this geographical arrangement will further the concept that prevention is an integral part of patient care rather

than something that is done only under special circumstances. Students will be evaluated on their effectiveness in teaching patients how to care for themselves.

Weekly seminars, based on patient histories, will help to correlate the basic and clinical sciences. These will be attended by dental and dental auxiliary students and faculty and will include a review of a patient's needs and treatment, e.g., health history, examination, diagnosis, treatment planning, prognosis, and treatment. In addition to discussing clinical problems, appropriate faculty will tie in the basic and social sciences and review the methods employed to prevent oral disease. In this fashion, students should learn to consider the total patient and his needs rather than isolated segments.

All students will be exposed to research methodology, biostatistics, and the scientific literature. This should prepare them to evaluate new methods and materials objectively without being swayed by the over-zealous salesman. Enthusiasm for new things must be tempered by judgment in order to provide the best for the patients over the long haul.

Students will learn how restorative procedures bear on the prevention of oral disease. They will learn that faulty contours and margins can produce a breakdown of the supporting tissues. They will learn that faulty finishes can increase the accumulation of plaque. They will learn that faulty occlusion can produce neuromuscular dysfunction and contribute to supporting tissue damage. They will learn that faulty dentures can produce soft tissue lesions and loss of underlying bone. In short, students will know that prevention is tied intimately to treatment.

Practice administration has been a sadly neglected part of the curriculum, and most graduates have been ill-prepared for the onslaught of duties facing them even before they see their first patient. There is evidence to show that many dentists dislike this part of their professional lives. As undergraduate students, many of them are not motivated to learn about this area, and only after they have really faced the problems do they get the message that they are short of knowledge. Several schools enable their students to spend time in the offices of practicing dentists so that they may see the problems before graduation. There is probably no better way to stimulate their interest to learn all that they can while there is still time. Learning how prevention fits into their practices surely must be part of this process.

Many schools provide additional extra-mural experiences for their students which expose them to different population groups and

community-wide health problems. If done properly, students will get a broader view of health needs and will learn that there is much variation in attitudes about oral health and prevention in particular. They will find out in a hurry that those who seek dental care only when they have an emergent problem must often be approached quite differently with a system of prevention. Contrariwise, patients who are well-informed about the prevention of oral disease should not be treated as though they know nothing or they may be driven away. Above all, the student must learn how to individualize his approach.

SUMMARY

Dentistry has at its disposal the preventive and treatment tools to maintain the natural dentition of all people for a lifetime. This does not mean, however, that the eradication of dental caries and periodontal disease will be accomplished in the foreseeable future. Total prevention will occur only when a person has to take no action himself but rather comes by prevention naturally or automatically by drinking water, or breathing air or eating foods that contain agents which prevent these oral diseases.

In the meantime, oral diseases will be reduced through motivating, educating, applying the available preventive systems and treating oral disease when it is already present. Dental curriculums should blend these factors into a reasonable combination and continue to change as new findings warrant.

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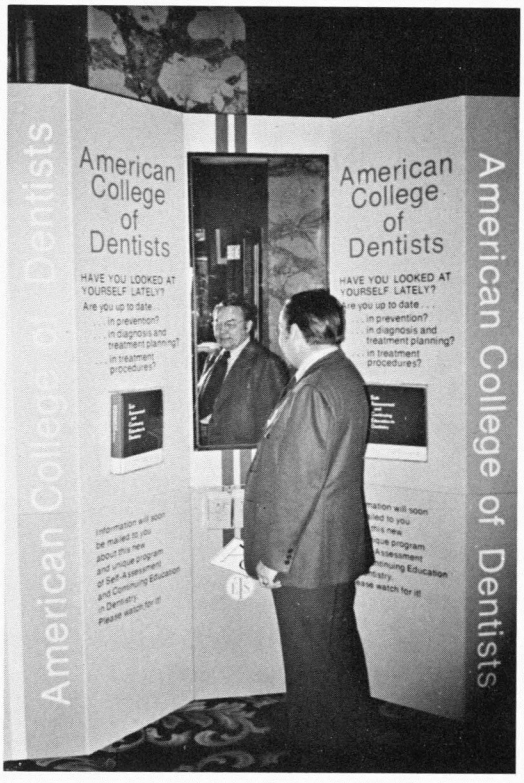
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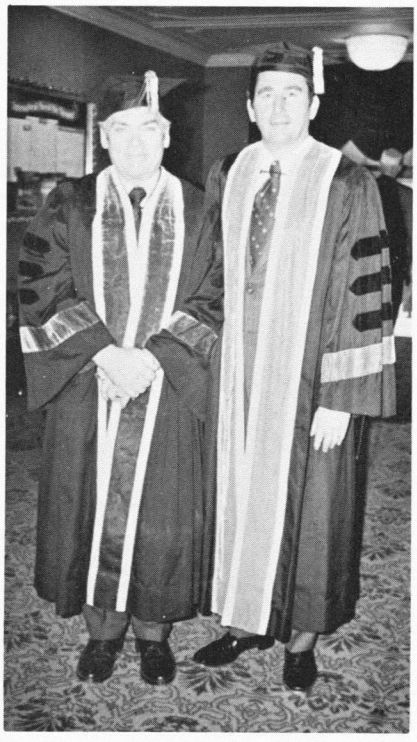

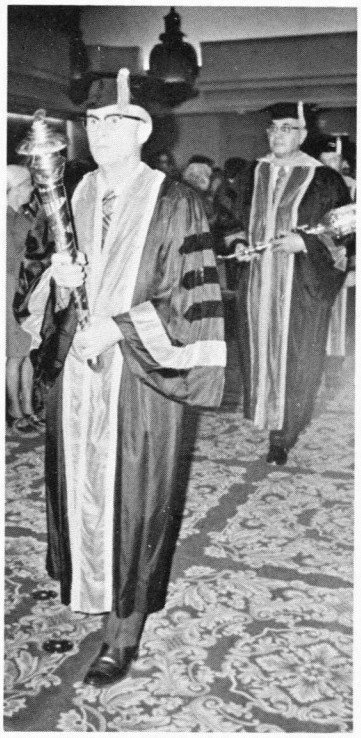

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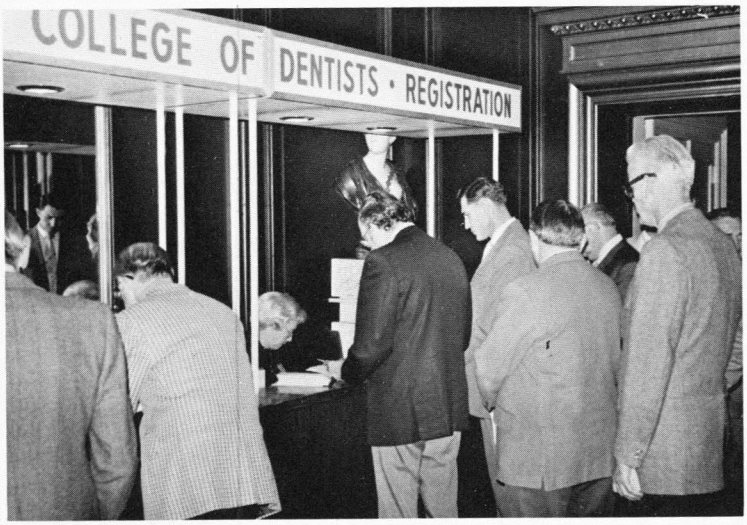

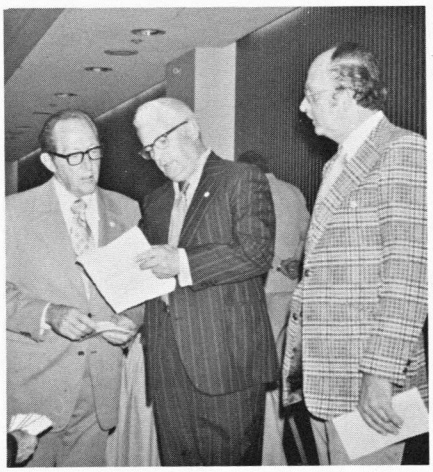

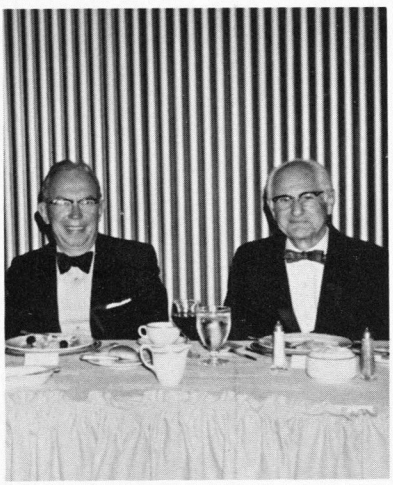

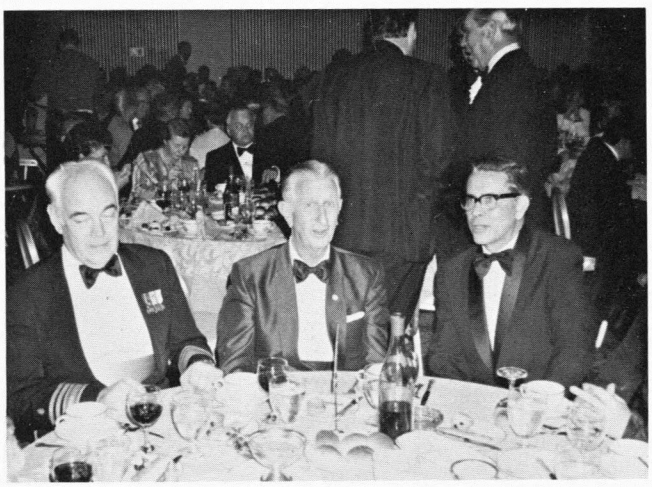

OCTOBER 28-29, 1972

Photos Courtesy of Dr. Jack D. Carr

WILLARD C. FLEMING
1899 – 1972

Dr. Willard C. Fleming, former Chancellor of the University of California Medical Center, dean emeritus and former professor of operative dentistry of the University of California School of Dentistry, and past-president of the American College of Dentists died on November 2, 1972 in Oakland at the age of 73.

He served his profession and his University with honor and distinction for nearly half a century. He had a lifelong interest in dental research and was a national leader in academic dentistry.

Dr. Fleming was a past president of the American Association of Dental Schools, Chairman of the American Dental Association's Council on Dental Education, Vice President of the American Association for the Advancement of Science, Commissioner of the Western Interstate Commission on Higher Education, and Special Commissioner for the 1960 Survey of Dentistry in the United States. For his many contributions he received honorary doctorates from the University of Southern California and the University of Toronto. Dr. Fleming's writings concentrated in the field of dental education and administration, manpower problems in dentistry and the impact of changing social, political and economic philosophies on the profession of dentistry and dental education.

His publications include: "Dentistry Tomorrow," "The Role of Dental Research in Dental Education," "The Second Mile," and "The Attributes of a Profession and Its Members."

In 1966, on the occasion of the dedication ceremony of the University of California, Los Angeles School of Dentistry he presented an address in which he expressed his philosophy and attitudes toward current problems confronting dentistry. His was a challenging voice, for he was among the first to recognize the social, political and economic changes which were rapidly overtaking the profession.

His address, which was previously unpublished, was "Trends in Dente." It was forwarded to the Journal by Dr. Reidar Sognnaes, former dean and currently professor of Oral Biology and Anatomy at the UCLA School of Dentistry. We print it herewith, as Dr. Fleming's last published article, and as perhaps his finest and most durable memorial, with sincere thanks to Dr. Sognnaes.

Trends in Dente*

WILLARD C. FLEMING, D.D.S.

The title of this paper refers to trends in dentistry and in general deals with the inequality of health services for the American people. By this I mean that the quality and availability of health services varies according to geography, education, social status, economic level, and so on. It is evident that the peaks and valleys of quality and availability of health services have begun to disappear. We have seen the beginning of a great leveling process in the availability of health services. This is part of the evolution of this country which began with the foundation of our government in the eighteenth century. The first step in this evolution was the avowed intent to provide education for all. There was the eventual abolition of slavery and other political and new social changes, I might add, including the income tax, that entered into this leveling process. However, the field of health has not been affected until the last twenty to thirty years, but it is now upon us, and we should be aware that we are dealing more with a fact than a mere trend. We are dedicating an educational institution and here we lay the foundations for future practise. What are some of the factual bricks in the foundation?

Up until the time of the thirties, everyone had accepted the idea that there were three necessities of life: food, shelter and clothing. With the depression of the thirties came the New Deal, social legislation, insurance, welfare funds of the unions growing out of the fringe benefits during the wage freeze of World War II, Veterans' benefits, welfare programs of county, state and federal government, social security, and more lately Medicare. All of these lead one to realize that the people of this country recognize there is a fourth necessity—health services for all of the people. This has led the health professions to the realization that social and community problems must be included in our total health service programs. We have approached this goal with somewhat less than unanimity on the part of the professions. In fact, many members of our professions have demonstrated active opposition. They believe that health services are

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*Presented at the dedication of the U.C.L.A. School of Dentistry, September 30, 1966.

very much a matter of private relations between the patient and the dentist, physician, pharmacist, or nurse. To these people, the advent of Medicare has been a shocking experience.

It is axiomatic that when government acts to meet a health manpower shortage, it is concerned primarily with quantity of health services and secondarily with quality of these services. This has been said so many times it is hardly worth repeating. What is worth repeating and emphasizing is that action is needed to get the health professions going as active participants in these health programs. The professions are the only ones that can provide the guidance to develop these programs on a quality basis.

The specific action required is not developed in a ten minute dedication speech, but there is time to consider two items that relate to the complexities of any plan for action, items that might well be overlooked. The first item has to do with the uneven distribution of the quality and availability to the American people. We speak of a "new look" in health education where our medical centers develop educational programs, with the growing recognition of the fact that the modern concept of health following the world health organization's program is "A state of complete physical, mental and social well being and is not merely the absence of disease." Put in another and "ear catching" way is the idea that our educational units known as medical centers must be thought of in the future more as campuses of human ecology for the study of man and his total environment: The air he breathes, the water he drinks, the homes he lives in, transportation, and his general social problems. However, this classification of man covers wide ranges. One of the simplest and most easily understood range is that of the economic variations in man and in groups of men. It is all very well to provide more manpower in clinics, hospitals, nursing homes, etc., but this is not going to suffice in the years ahead. We have a special problem with the low income group. Strauss puts it rather neatly when he says, "The medical system has never adequately serviced low income groups in the past because it is not designed to do so. Lower income styles of life are sufficiently different so that they must specifically be taken into account in organizing medical care for these sectors of the population. Professions have not been trained and generally are not now being trained in the special skills necessary to deliver quality care to these people." The lower income modes of life are different and our professions are not trained in the necessary skills to handle these problems. How do we speed up the initial visits of these people; improve the home regime; the problem of revisits; etc. The identification and solution of these problems will have to be a special

program of professional, institutional and governmental groups. It will not be handled by traditional courses in social science or herding low income patients into out-patient clinics.

Where is the so-called teaching patient of yesteryear; the indigent who had no choice but to sit on a bench for hours and return time after time for service. With the advent of Medicare and its various titles, the welfare plans of both unions and government, the teaching patient of yesteryear has become the private patient of today and tomorrow. Our educational institutions are the reproductive core of our professions. It is the job of the faculty and the administration in the school we are dedicating today to see that the graduates are both prepared and willing to look upon teaching patients as private patients and that, so far as availability of health services is concerned, we are entering a "classless" society. Basically, this requires that our graduates accept the idea that there is a fourth necessity—availability of health services to all people.

The second item, and the last, is to preserve our status and the status of others as members of the health professions. The professions and their members vary in some respects from other callings. One does not have time to discuss the attributes that distinguish between professions and other callings such as vocations. However, there is one outstanding attribute that all members of the health professions must demonstrate, both in their organization and as individuals; that attribute is the willingness to put the welfare of others ahead of their own welfare or convenience. I am the first to admit that there are members of the professions of medicine, dentistry, nursing and pharmacy and other professions that do not have this attribute, but these members are few in number and are not recognized by their organizations.

As we enter the period of increased socialization and increased availability of health services to more people, we see professional people employed on salary—salaries paid by both private and governmental services. We see the leveling experience of fee schedules, and so forth. We see the beginnings of professional groups using the union's instrument of strikes for the betterment of conditions. I refer to the physicians' strikes in Belgium, Canada, and more lately the strike of public health physicians in New York. Of very recent vintage is the nurses' strike in California.

In my opinion, these members of the professions put their most valuable attribute—that of a professional person (the welfare of others above self)—on the scales, and were found wanting. They are no longer serving patients, but are now dealing with customers.

Please do not confuse what I have said with the thought that I feel these people have no grievances or that they are not underpaid. You and I and all of us have played upon their traditional dedication to service to drive them to this action. I simply say that members of the health professions cannot strike and still maintain the attributes of a professional person, which require that the patient's welfare be put ahead of his own. In my opinion, you cannot have both.

Today we dedicate this school as an educational institution for years to come. We see it as bricks and mortar with a faculty dedicated to science and clinical teaching and research. We see the beginnings of a modern curriculum that will emphasize man and his total environment. These are all prolongations of buildings, faculty, curriculum of years past. These should be fairly easy to continue to improve. However, the big tasks in the years ahead are to enhance our attitude toward the needs of the low income group, and not to lose our most precious attribute, "The welfare of others ahead of self."

The attainment of these objectives will not be easy with our changing customs and social structure. They will be impossible of attainment if our students graduate with exaggerated materialistic concepts of practice. However, with this school and this faculty, one can assume that the impossible is improbable, the improbable is possible, and the possible is most likely.

NECROLOGY REPORT

(Continued from page 23)

*Elbert W. Taylor, Memphis, Tenn.
*Kurt H. Thoma, Newtonville, Mass.
*Earle H. Thomas, Babson Park, Fla.
*Harry S. Thomson, Moncton, New Brunswick
*William E. Thurman, San Angelo, Texas
Donald L. Truscott, St. Petersburg, Fla.
*Charles H. Tweed, Jr., Tucson, Ariz.
*Robert H. Vollmayer, Farmington, Mich.
*Milton G. Walls, St. Paul, Minn.
*William K. Waltmon, Herne, Texas
*Leuman M. Waugh, Kent County, Md.
*Paul Gardiner White, Narberth, Pa.
Henry M. Wilbur, Louisville, Ky.
*W. Ira Williams, Stuart, Fla.
Morris J. Wilson, Greenville, Ky.
*William A. Wood, Phoenix, Arizona
*J. Galvin Woodworth, Buffalo, N.Y.
*Clarence J. Wright, Lansing, Mich.
Anthony J. Zechella, Newport, Ky.
*Paul W. Zillman, Buffalo, N.Y.

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*Life Member

Dental Licensure and the Development of Dentistry In The United States*

WILLIAM K. COLLINS, D.D.S.†

One of the responsibilities of state governments in the United States is the regulation of professional people and the control of professions. Those of you who have given even a cursory study to the history of the medical (and dental) professions know that public control of the practices of the members of the profession has existed for centuries. There have been practices in dentistry, which constitute a history which we have done well to correct, and insofar as you gentlemen will shortly take your places in the profession, the subject of control is of great interest to you.

We might do well to think in terms of (a) the control of dental licensure in the recent past, (b) control practices extant in America today and (c) the probable direction which controls will take in the immediate future.

The rather desultory practice of dentistry as an uncertain part of the practice of medicine was clarified, in the eyes of the founders, when the Baltimore College of Dental Surgeons established dentistry as an independent profession in 1840. However lofty may have been the intentions of the sponsors of this concept, the deterioration of this new profession at the hands of unscrupulous operators of proprietary schools began almost immediately. The precipitate decline of dentistry reached its nadir by the early 1870's when incompetent schools of dentistry existed in great profusion alongside medical colleges of dentistry, whose standards were infinitely higher. Dentistry, the new profession, had by this time been dignified by inclusion in the curricula of several respected medical schools; and there remained the problem of how this profession could be rescued

*Presented on American College of Dentists Day, University of Maryland, School of Dentistry, October 16, 1972.

†Secretary-Treasurer, Northeast Regional Board of Dental Examiners.

from charlatans and quacks who still operated the incompetent schools, and how the public could be protected from the ignorant practices of their "graduates."

The solution to the problem was found in the discrediting of ignorant, incompetent practitioners of dentistry. By the simple device of the requirement of a license to practice dentistry, all dentists who presented themselves, after a given date, for a state license were required to stand an examination before a Board which would determine their fitness for licensure.

Schools which produced incompetent graduates, who could not satisfy the Board's examinations, quickly collapsed. Older dentists, who held licenses through some sort of "grandfather clause" eventually outlived their usefulness and ceased to foist their poor work upon a trusting public. In time, as had been planned, the public was served only by competent, properly examined and licensed dentists.

STATE LEGISLATION

Alabama was the first state to regulate the practice of dentistry through restrictive legislation. Between 1868 and 1876, New York, Ohio, Georgia, New Jersey and Pennsylvania followed with prohibitory laws. Today each of the states and territories has dental practice acts with prohibitory laws against unlicensed practice of dentistry. The practice acts require that licensure candidates present a diploma from an accredited school and satisfactorily perform during a pre-doctoral and/or a post-doctoral examination.

The success and meritorious achievements of the dental state boards of examiners during the past 100 or so years is unquestioned. This independent profession of dentistry has gradually been ridded of all incompetent dental graduates, and the profit motivated, unsatisfactory proprietary schools of dentistry have been eliminated. Today every American Dental College is the companion of a school of medicine, ethical and competent. The initial purpose of the state board system has been, therefor, fully realized.

The present day state board of dental examiners is far from being purposeless or (to coin a phrase) irrelevant. Almost without exception, licensure candidates who stand for state board examinations have been trained in competent, fully or provisionally accredited schools, which have been staffed by scholars in the dental and medical profession, who are dedicated to the training of new dentists.

Today's state board constitutes a part of a system of checks and balances represented by educators on the one hand and examiners on the other. This system is too important to be abandoned or replaced, for fundamentally it is the method by which the public is protected, and the profession stimulated to steadily attempt to progress towards perfection.

CURRICULUM CHANGES

The increase in the knowledge gained in the dental and medical professions over even a very short period of time is astounding. The wealth of information which is available for dissemination to any entering class of medical or dental freshmen creates no little problem for school administrators as to what must be taught. The so called "core curriculum" in dental colleges constitutes a compromise in which the virtually unlimited store of knowledge of the profession must be compressed and taught with uncompromising acceptance of time allotted for that curriculum. In the face of these circumstances, dental educators have broken with the old lock-step curriculum with its rigid academic requirements, in favor of increasingly flexible curricula. Insofar as the government and the public is clamoring for more doctors, dental educators feel they must arrange their curricula for shorter training periods (less than 4 years), although this is the very time when more information must be imparted, more courses taught and actually more teaching time required.

Indeed some of the innovative programs of some dental schools may constitute a hazard for the public who may eventually be treated by men whose training was incomplete, and who are actually incompetent in their capacity as dentists. There should certainly be no restriction placed upon any school of dentistry in its teaching procedures or course content nor is it hereby implied, but there *must* be a competent agency to pass upon the capabilities of the graduates, before they are granted licensure.

NATIONAL AND REGIONAL BOARDS OF DENTAL EXAMINERS

Since 1928, the testing of the knowledge of dental school graduates has been delegated by the dental state boards to the National Board of Dental Examiners, who operate under the direction of the American Dental Association. Accepted by only a few state boards at its inception, the National Board is relied upon today for the knowledge testing of dental licensure candidates by practically every state dental board.

Performance testing of dental licensure candidates is usually done by the state board of dental examiners in which a given candidate may request his license. The progress toward national testing of candidates in this area has been slower, because of the need for the large numbers of dental examiners. Presently the eleven state Northeast Regional Board of Dental Examiners is the closest approach that our profession has made toward that goal. This group began testing as a unit in 1969 and hopefully points the way towards national performance testing which will parallel (and augment) our already established national board in knowledge testing.

In the Maryland area, candidates for licensure will meet a situation which is superior to that of just five years ago. At that time, a candidate was obliged to stand for examination before every state board which might possibly be the jurisdiction in which he, as a dentist, might someday set up his practice. That candidate was examined in the state of his particular choice, by that state's examiners only, and, unless his dental school lay within that jurisdiction, in a clinic with which he was totally unfamiliar. He carried the patients he would present during the examination to the test site, at great cost and difficulty.

Today's licensure candidate in Maryland fares better. By virtue of a single performance demonstration in his own school clinic, close to his usual source of patients, a licensure candidate qualifies himself for acceptance as a dentist in any of the eleven participating states. During the course of his performance examination, the candidate is privileged to make use of the technicians and assistants with whom he has long since established contact, and he is permitted to follow these techniques and procedures which were taught to him in his school of dentistry.

The examination itself is uniform throughout the entire region. It has been created by distinguished educators and examiners of the region. It is designed to reflect as accurately and fairly as possible the professional performance and judgment level of each candidate in relation to the entire group being tested. That level must be at least a minimally acceptable one, that assures and guarantees the safety of the public who will be entrusted to his care by the process of licensure. In the event that a licensure candidate fails in any one of the four sections of the examination, he has the privilege of re-examination, in that section only, for a period of five years. The examination is given at every school of dentistry (and school of hygiene) throughout the region in the spring, a late summer examination is given at a few selected sites and a third period of

examination is scheduled in early winter at other selected sites.

While the examination is composed by educators and examiners in the NERB, it is administered exclusively by dental examiners. The latter, as you may know, are selected by various state governments to form a Board, which will (among many other duties) pass upon the competence of any person who requests the privilege of practicing dentistry within that state. Dental examiners are usually selected from a list of dentists, which is given to the governor of the state by the dental state society. In the typical state, the dental society holds an election in which several dentists may be nominated for office as a state examiner. Usually the list, with the number of votes polled, is given to the governor. Usually the state law requires that the governor name the examiner or examiners from that list. As a rule, but not necessarily, the governor names the dentist(s) with the larger number of votes to the state dental board.

Now although these examiners have demonstrated a certain popularity with their peers, insofar as they have been voted upon as choices, they are no longer servants of the profession, once they take their oath of office as examiners. Instead they become protectors of the public, sworn to the principle of maintaining the standards of the profession in such a way that the public may solicit the services of any man who holds himself out as a dentist without fear of unprofessionalism, negligence through incompetence or ignorance, or moral turpitude.

PROVINCIALISM

Despite the lofty purposes of each examiner, human factors are constantly at work. There are no two state dental boards of examiners which are exactly alike. However well intended they may be, they do become provincial with the passage of time. This is true of any group under similar circumstances, and is not intended as a criticism. The evaluation of such a board, typical as it may be, will vary with the candidates that it reviews. The fact is well known, and is seen repeatedly, where dental graduates will be successful before one board of examiners and unsuccessful before another. While many variables are at work under such circumstances, not the least will be the peculiarity of concepts of professional competence by one board in contrast to another. Quite similarly, that the concept of competent dental education by one faculty in contrast to another often varies greatly must not be overlooked. For provincialism is as easily a characteristic of a faculty as it may be of a board.

Nevertheless, the disqualification of a licensure candidate, because of the provincialism of a board, or of a faculty, is deplorable under any circumstances. Recognizing the identical purpose for which they function during the administration of a state board examination, several state boards have worked diligently to standardize their performance tests through close association with their included dental colleges. They have sought to overcome the provincialism, which will ever be the weakness of the individual state board; and thus to create a quasi form of reciprocity between the states which participate. (NERB).

THE NORTHEAST REGIONAL BOARD

The Northeast Regional Board, just as the National Board, creates statistics about a group (licensure candidates). In our specific case, we are called upon to give a description of a group of candidates for licensure in terms of acceptable or non-acceptable. Now any group may be one of two kinds, either complete or incomplete. If we discuss the performance of every American candidate for dental licensure in 1972, we have discussed a complete group. But the performance of such men who appear before the dental board examiners of any *single* state is the discussion of an incomplete group. The graduates of any specific dental college who presented themselves for licensure in 1972 were an incomplete group. In the words of the statisticians, all candidates of 1972, a complete group, constituted a *population.* Each group surveyed by an individual state board, as well as each group graduated from a specific school, constituted an incomplete group, which we can call a *sample.* The dental examiner is called upon to make certain inferences in his study of the sample he studies as to whether the candidates therein have attained a satisfactory level of training. The faculty that has produced a graduating class has produced a sample of the candidates in the country. To this faculty, the class was a population; but to the state board examiner it is but a sample. The examiner must study that sample and determine how it relates to the population from which it has come. As the examiner checks the performances in the various areas of operative, prosthetic, or other types of dentistry of his sample, he produces grades on each candidate which can be called descriptive statistics. When the examiner generalizes from this knowledge of a sample to the population from which this sample came, he makes inferences on the basis of his partial knowledge. He is then enabled to use this knowledge of various samples which he has studied to produce inferential statistics.

On the basis of this rationale, a concept of the future in which members of state boards pool their talents to form a regional group of external examiners who will conduct tests on graduating dental college seniors rather than upon graduate dentists would certainly appear wise. In short then, we can intelligently advocate the scheduling of performance tests to a period which would be some time prior to graduation rather than afterwards.

Presently the Northeast Regional Board examines nearly one-half the dental graduates of this country. Over a period of several years the examiners (who constantly rotate throughout the region) have become aware of the variability of performance levels by licensure candidates. The examiners attempt to produce data which can answer certain questions about these men who have just graduated into practice –

(a) What is the general picture that emerges with relation to the performance potentials of the graduating population?
(b) Of each individual in that group, what is the best prediction about him in terms of his ability to render satisfactory performance in the profession of dentistry?
(c) What is the margin of our error in such predictions?
(d) Insofar as our measurement is of many variables in this candidate, how much will knowledge of one variable improve our prediction of the others? How extensive should our testing be? How many areas shall we cover?
(e) Most importantly, how does a single individual compare with the rest of the group in terms of competence?

Those are the questions. When they have been answered correctly by our testing agency, the group will have been described as completely as our statistics can describe it. The study of these facts and the ultimate description is enough when the group is complete. This is the situation which is closely approached through the use of the National .Board's knowledge testing. But when the group is a sample only of a far larger population, as the graduating class of a specific school or the candidates appearing *before just one dental state board,* description of that group by the faculty or the examiners is an important and interesting first step, but it is certainly not enough by itself.

If it were possible in a hypothetical situation to bleed an individual dry and spill not a drop, then the red blood cells in the blood that has been collected are a complete group of this individual's red blood cells. We could call that complete group a population.

If instead, however, we extracted only a pint of this individual's blood, the red blood cells available for our inspection would be an incomplete group, since not all of them would be included. The pint of blood would be a sample, which is in itself a kind of population. For while we do not have *all* of this individual's blood, we have all that we have; and we can speak of the population of cells extracted and available-for-analysis. Inferences can be refined only as the numbers of samples and their portions of the whole increase.

For dental examiners are concerned with groups—aggregates of individuals. Groups are of two kinds: complete and incomplete. A complete group would be one that includes all of the individuals of this specific type—dental graduates.

The only manner in which dental examiners can assure themselves of satisfactorily and fairly evaluating any particular individual will be in relating that individual's variable capacities against as large a group of similar individuals as possible. The larger the number of candidates drawn into a single performance test, the more nearly safe can be the inferences drawn about any one individual as to his professional probabilities. And this is our responsibility as examiners.

As a collateral, the only manner in which a faculty can assure itself that it graduates dentists with the capacity to perform at a nationally acceptable level is to offer these graduates to a competent testing agency which has at its disposal the knowledge of the performance level of a far larger sample (or the entire population). This knowledge will be the reference point for the testing agency's judgment of this small sample of the larger group or population. It is this very thing which the National Board attempts to do on a national scale, and which the eleven state Northeast Regional Board attempts to do in performance testing on a regional scale. The new eight state Central Regional will do the same.

The post-doctoral testing of licensure candidates as presently practiced constitutes a bulwark of the profession against retrogression. Necessarily exerting a reflexive action upon the curricula of the dental colleges of the present, the existing licensure process of board testing has to a large extent ordered the various curricula of the dental schools. This significantly magnifies the responsibility of the entire board system of evaluation.

If we would now attempt to postulate what the board system should become in the future, we must first recognize the difficulties that attend the preparation of new dentists today.

PROBLEMS IN DENTAL EDUCATION

In the typical dental school many types of teachers and students are found. Joined together, they constitute and comprise the characteristics by which the school is identified. The actual creation and maintenance of a school of dentistry is no mean task. The school must be capable of drawing into itself a large number of competent teachers and acceptable students. Through their interaction over a period of three or four years, the school must eventually graduate dentists who are competent to carry out the unsupervised dental care of the public. The operation of the typical dental school is not one in which there is assurance that success will flow from the effort, however conscientious the administration may be.

The recruitment of faculty in the dental school of today is a never ending problem for its administration. The shortage of competent teachers is a universally accepted fact of life for all dental schools. The inducements to join other new faculties which are extended to competent faculty members by neighboring schools goes on constantly in a sort of game of musical chairs. Eventually the poorer schools find it necessary to accept teachers who have professional qualifications, but no formal training in education. And eventually it becomes necessary to recruit teachers whose communication with students is miserably poor. At worst, it becomes necessary to recruit some teachers whose professional ability itself is marginal, and whose motivation is selfish and not school oriented.

There are no obvious success symbols in this milieu, and an incompetent member of a dental faculty can escape detection indefinitely unless there are searching external evaluations made of the school. Characteristically, however, organizations endure longer than their specific membership. In fact, the degree of change which occurs in a school when its members are replaced may be a good indication of its organization. When a dentist decides upon teaching as a lifetime career, the advancement ladder for him is a relatively short one. Indeed, unless a teacher eventually forsakes his role and enters private practice, in order to advance he must seek a form of solace in a substitute "horizontal advancement system" based upon prestige. With the phenomenon of tenure in most dental colleges, a lifetime career teacher of marginal ability may cause the nearly interminable retardation of a department, with or without knowledge of the school's administration. The concurrent mediocrity of students under these circumstances is, of course, unavoidable. In

order that the weaknesses of dental schools may not go undetected, the profession has adopted the accreditation system. Many educators have contended that as a consequence of accreditation, graduates of their schools are competent to enter directly into the practice of their profession. Their graduates should not be subjected to any form of board examination, insofar as they are the products of competent schools.

However, it does not necessarily follow that an accredited school produces fully trained graduates. There are far too many factors at play to categorically state that every dental college graduate is fully qualified to practice on the public and is possessed of even minimal competency in the dental profession.

If we examine the accreditation system carefully, obvious weaknesses are apparent. The accreditation survey is done at intervals—it is not a continuing evaluation. There are intervals regularly of four to seven years between visits of accreditation teams to schools. During such periods of time, wholesale changes of faculty and curriculum content may take place with concurrent alteration in the competence of the school. Variation in the knowledge and professional judgment of students, graduating from schools which make dramatic changes in faculty and curriculum between accreditations, is unavoidable.

Notice that the high failure rates in the National Board examinations of graduates of certain accredited schools is well known. Despite their accreditation, there are several dental schools whose failure rates in one or more subjects have been over 50%, and not just for one year but for a number of years.

Every good dental school faculty is proud of its performance. The high morale of the typical good faculty carries with it the assumption that every department in the school is competent to produce students of more than minimal competence. Through their screening processes a good faculty assumes (and correctly so) that every student in the school is able to learn the subject matter in each category of training to a degree that is more than minimally acceptable. They like to feel that their students are motivated to study diligently, without the pressure of the knowledge of the coming board examinations.

But we are dealing with people, and they are highly variable. Their variability makes for a world of uncertainty, in which the best we may hope for is not surety, but varying degrees of probability. While the typical dental school may well assume that its graduates are probably entirely competent in their profession, it is an unrealistic man indeed, who will positively insist that there is no possibility at

all that there may be one or more graduates *not* entirely minimally competent. Nor would it be wise for an administrator to insist that every department in his school in unvaryingly capable of teaching its students as it should.

For many years dental educators have been confronted with the problem of a certain inability to objectively evaluate their curriculum. During the past decade there have been substantial changes in the curricula of many of our nation's dental schools. There is a question as to whether there have been developments in the technique of evaluation of the impact of these changes that can parallel the changes that have been made. Many different methods of evaluating these newer concepts in dental education are presently under trial. Not the least of these are studies of graduate and undergraduate dental student performances on state and national board examinations. How dependable these evaluations are remains to be determined. The dental state board system is our only solution at present, and I would be the first to say that it, too, must yet be significantly improved.

EFFECTIVENESS OF BOARD EXAMINATIONS

As to the effectiveness of state and regional boards in clinical performance tests for licensure candidates a few facts, however, are incontrovertible. There have been numerous instances where candidates, lacking minimal competency, failed clinical performance tests and were denied the right to practice. Among the failing candidates state board examiners have found an appalling lack of clinical judgment and skill. Some of these candidates have literally destroyed entire crowns of teeth in preparing a cavity for a simple Class II filling. And while many failing candidates return later as repeat candidates for licensure and succeed, this obviously follows their having attained additional training and experience.

It is an undeniable fact that state and regional examinations do succeed in protecting the public from incompetents, at least to a modest degree. This alone constitutes proof of the fact that such licensure examinations are essential for the public welfare.

A further advantage derived from the state and regional boards is their acting as a constant stimulus and motivation for dental schools. For every conscientious dental school dean is highly interested and concerned in the performance of his students on National Board examinations. There is a case in regard to one school in which the dean complimented his divisional directors by letter where the

school's students had performed well or excellently; and he requested improvement in those subject areas or courses in which his students did not fare so well. Every dean is in effect competing with other deans on National Boards and each demands of his faculty as high a performance rating as possible. This holds equally true with regard to state and regional board performances.

Certainly no dean will close his eyes to poor or failing performance ratings of his graduates, especially when he is quite aware of the fact that his graduates are being compared to graduates of many other schools taking the same examination. State and regional boards have proven effective in detecting weaknesses of schools in curricular subjects and courses. This has been true particularly in regard to our Northeast Regional Board Diagnosis, Oral Medicine and Radiology examination. In at least two known instances during the past two years, the aforementioned weaknesses were specifically corrected and the failure rates in these areas immediately dropped precipitately.

FUTURE OF THE LICENSURE PROCESS

No paper on the licensure process could be complete without a few predictions. The evaluation of licensure candidates by board examinations must be constantly improved. Our profession must attempt to find out, (1) whether a true determination of the actual learning by candidates is revealed by present day type examinations, (2) whether there is a relationship to practice potential in the future in present day board evaluations.

Examinations will be devised in the future which determine the judgment of a licensure candidate to a greater and more accurate degree than is presently the case. Evaluation of a candidate's knowledge alone is an incomplete factor unless it is related to that candidate's capacity to reflect upon this knowledge and make proper decisions based upon it.

Finally, there must be a greater infusion of educators into the state boards of the future. Several state boards have recently opened up to this new concept. NERB permits, by its constitution, a 25% infusion of educators into its ranks. When this becomes commonplace, state boards will definitely become "external examiners," performing their most useful service by reviewing classes prior to graduation, then arriving at decisions in concert with faculty. Eventually no dentist will graduate who has not qualified for licensure without any further post doctoral examinations. Dental examiners who are faculty men will always examine the candidates

of schools other than their own. They will constitute an active liaison between examiners, who are in practice, and faculty men who are not associated with dental boards.

These will be solid improvements in the licensure process. The profession must strive to bring them into being as soon as possible. I would like to urge each of you, after graduation, to actively participate in your state societies to speed these changes and bring them to reality.

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Production of Quality Instructional Media*

ERNEST F. MORELAND, Ed. D.†

I have been asked to talk about the production of quality instructional media. For convenience of this discussion, I have broken down the presentation into six general topics:

1. the definition of quality instructional media;
2. some characteristics of quality instructional media;
3. a systematic procedure for producing quality instructional media;
4. three important categories of concern when producing instructional media;
5. some principles governing instructional media influences on students; and
6. some conclusions regarding technical aspects and techniques which influence the quality of instructional media.

Quality of Instructional Media

In recent years there has been increasing awareness of the contribution which instructional media can make to dental education. Likewise there is an increasing awareness of the contributions which self-instructional media have to offer. With the increasing emphasis being devoted to self-instruction—and more and more schools producing such media—there is being voiced an increasing concern about the quality of instructional media in dental education.

There are probably as many definitions of quality instructional media as there are persons discussing the problem. For example, teachers tend to place emphasis upon the difficulty of the subject matter in the program. The more difficult the subject matter, the higher the quality. Others, such as media specialists, often place emphasis upon the degree to which the materials accomplish their purposes. The greater they achieve the stated objectives, the higher the quality. Some personnel involved in the production of media are

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only concerned with the technical quality of the programs. The artist may view the quality of an instructional program from an artistic point of view; the photographer from photographic, etc. In education, resources are combined in different ways to achieve desirable goals. Likewise in the production of quality instructional media, many aspects must be considered.

Rather than becoming involved in a long discussion of the definition of quality, I will try to discuss quality largely in terms of accomplishing whatever worthwhile ends one wants from instructional media at a high level of efficiency. This concept of quality will tend to put emphasis on doing whatever the materials should do in the shortest time possible, and at the highest level possible.

The central problem, as far as quality production of media are concerned, is that of determining how they can be best adapted to meet the requirements for effective academic learning. This cannot be done by subjective judgment or superior reasoning or even by committee decision, however well-qualified the members are. The effective production of quality instructional media requires the use of empirical methods resulting from the difficult work of testing such material out on students.

Each major audiovisual technique that has been adopted for classroom use has generated a certain amount of opposition and disdain among professional educators and academic learning specialists who have judged the audiovisual materials to be an extension rather than an integral part of the instructional situation. The same is true for self-instruction. Even among those who have accepted the new techniques willingly, the tendency has been to consider them as aids to education serving mainly a motivational purpose.

A crucial difference exists between designing instructional materials to be used for instruction and designing materials which are to be used as supplementary "aids."

Since most instructional decisions are left to the classroom teacher by curriculum planners, audiovisual materials enter the instructional process at the classroom implementation level.

At this point, the consideration of quality usually receives little attention since the materials are supplementary. In other words, the supplementary aids could be removed without a great loss of information gained by the student.

Where quality becomes paramount, instructional decisions, previously made at the classroom level by the classroom teacher, have been shifted to the curriculum planning level and are arrived at by

teams which include curriculum personnel, instructional technologists, media teachers and classroom teachers. Here courses are broken down and specific instructional assignments made—assignments to media alone and to media and the classroom teachers.

The curriculum planning and development level has become the center of instructional strategy where decisions are made regarding the tactics of instruction.

CHARACTERISTICS OF QUALITY INSTRUCTIONAL MEDIA

Quality instructional materials have certain characteristics. They must be interesting, accurate, and authentic. They are up-to-date in setting, costumes, and environment. They are suitable for the maturity level intended; they are unified and/or sequential; they are technically satisfactory. The vocabulary is right. They encourage creativity or lead to further study or activity. They involve the student by raising questions. They are suitable for the curriculum. How can these characteristics be incorporated into "quality" instructional materials?

SYSTEMATIC PROCEDURE

In order to design and develop "quality" instructional materials for use in dental education, a systems approach is necessary. That is, a systematic series of steps designed to accomplish a desired outcome.

This approach differs from the traditional intuitive method of preparing instructional materials in that: (1) great care is taken in the design and development of the instructional product during each step of the production process; and (2) a constant focus is maintained upon the performance of the learners after exposure to the instructional product.

This systematic approach includes five steps, each of which represents certain basic decisions with regard to the design and development of the instructional materials.

Step 1: Task Analysis

The first step, task analysis, begins with an audience analysis. This enables the instructional designer to assess the entry level of the students and to determine what information and skills they *know*. From this point, the instructional task is analyzed in order to identify the information and skills the students *need to know*. This needed information provides the basis for the preparation of the

instructional materials, and is phrased in the form of behavioral objectives.

The objectives should include a statement regarding the student's performance. If it is appropriate, the necessary equipment and aids or conditions needed for this performance should be mentioned, along with the standard acceptable performance, a range for this performance, and in some cases, a time limit. An example of such an objective is as follows:

> **Given a plastic model of the teeth, the student will be able to identify three of the four types of teeth within one minute.**

Performance: identify
Equipment or Aids: plastic model of the teeth
Standard of Acceptable Performance: three types of teeth
Range of Performance: of the four types
Time Limit: within one minute

By stating the information and skills to be learned in behavioral terms, direction and purpose are added to the design of the instructional materials. In addition, objectives provide a means for test construction in order to assess whether or not the material presented accomplished the desired outcome. Furthermore, the students benefit in knowing exactly what is expected of them.

Step 2: Design

Having determined what information you want to present, you must now decide how you are going to present it. This involves selecting the most appropriate methodology. Since one method of presentation may be more effective then another, care must be taken in this selection process. The question is, "Where does one start?" Perhaps the best advice is to strive for: "The highest quality production, providing the greatest educational value, for the least amount of money, in the shortest amount of time."

For example, after a careful examination of your objectives, you may decide that color and motion are relevant cues for learning in your instructional product. But which method would most effectively accomplish your desired outcome? While color video tape, 16mm. film, or 8mm. film would, for the most part, be equally as effective in providing the necessary cues, practicality might eliminate one or two of these methods due to cost, time limits or media characteristics. For example, while a 16mm. motion picture might be highly desirable due to the large screen projection capability, the personnel, facilities, cost and time involved in such a production may

eliminate this method as a possible choice.

Having selected the most appropriate methodology for meeting your objectives, the initial version of the instructional product is prepared. This involves preparation of a script with both audio and visuals. This enables you to examine both aspects of the script simultaneously, insuring that one portion coincides with the other. Furthermore, through frequent references to the objectives during scripting, appropriate revisions can be made maintaining the proper focus on the instructional product.

Step 3: Editing

The editing step involves reviewing the initial version of the script with other specialists. This procedure includes an analysis of the content, organization, development, and visuals in accordance with the objectives. Suggestions for revisions are made at this time in a further attempt at designing a "quality" instructional product.

Based on these suggestions, information is added or deleted from the initial version. In addition, particular attention is given to all visually presented material to insure the proper standards for technical quality have been maintained.

Step 4: Developmental Testing

This step of the production process involves testing the "rough" version of the instructional product with colleagues and students who represent a small sample of the intended audience. It is recommended that only one student be tested at a time, and that his comments, responses, and reactions be recorded.

After careful analysis of this information, the necessary revisions are made, and the product is retested with another student. This procedure is repeated and the product revised accordingly until the point is reached where numerous students are able to master all of the objectives.

Again, as in previous steps, frequent reference should be made to the objectives. This may result in slight revisions in other steps of the production process. These revisions are necessary, however, in tailor-making the instructional product for the intended audience.

Step 5: Validation Testing

During the fifth and final step of the instructional design and development process, the product is presented to the intended audience and its overall effectiveness is examined. This involves a measurement between what the student *should know* according to the objectives, and what he *actually knows* based on his terminal

performance. This data can readily be obtained by a slight rewording of the objectives into question format. For example, the objective previously stated in the Task Analysis read:

> Given a plastic set of teeth, the student will be able to identify three of the four types of teeth within one minute.

Stated orally, in a question format, the objective may be presented as follows:

> Using this plastic set of teeth, you are to name three of the four types of teeth. You have one minute. Begin.

Should the intended audience master the objectives set forth for the instructional product, the effectiveness of the product is validated.

It is important to keep in mind that several exposures to the instructional product may be necessary to accomplish the objectives. More often than not, this will reflect the individual differences within the learners and not flaws within the product. However, care should be taken to record such information in order to pinpoint the problem area.

CATEGORIES OF CONCERN

The quality of instructional media can always be improved, but to do so steps must be taken all along the line from origin of idea to the utilization in instruction, and not simply at the production stage.

The effectiveness of instructional media in instruction depends on the relationship of the program content to the students and on the content of their use and not simply on the program itself. There are, therefore, questions which should be asked to help in producing a higher quality of instructional media. These questions may be broken down into three categories of concern:

curriculum category;
technical category; and
technique category.

There are, of course, overlaps in these three areas of concern.

Regarding the curriculum aspect, some of the questions are:

1. Is the program an integral part of the curriculum of the school or is it just an extra program of little educational value?
2. Could the classroom teacher have done just as well without the materials? . . . how about the students?
3. Can the learner bridge the gap between programs and the real situation?

4. Does the program satisfy a major goal or specific objectives?
5. Is the content truthful, unbiased, typical, up-to-date?
6. Is it properly suited to the needs, age, and abilities of the students?
7. Is there a good balance between verbal and pictorial symbols—optimum for the objectives?
8. Does the program call for vicarious experiencing, thinking, reaction, recall?
9. Is the program sufficiently rich in number of examples to warrant sound conclusions?

Regarding technical:

1. Is its mechanical quality satisfactory, accurate impressions of relative size, lack of distortions?
2. Are images clear, concise and absent of irrevelant material?
3. Are desirable details shown in proper size and number for optimum observation and correct conclusions?
4. Is sound intelligible and realistic?
5. Is content free of conflicts in music, speech or dialogue?
6. Is the color realistic and desirable?
7. Is there sufficient action and/or continuity?
8. Is the artistic quality complementary or "too" artistic?
9. Are visuals free of distortions because of good balance between the artist's technique and educational needs?

Regarding techniques:

1. Were the purposes of the materials made clear in the presentation? . . . objectives, questions, cues, such as "remember," "note"?
2. Was an opportunity given the student to become involved, to participate or were students mere spectators at a show?
3. Were the points clinched by means of repetition or review?
4. Is the program about the right length? . . . 15 minutes or less, attention/retention/second viewing/mastery before going on?
5. Are the steps in the content small enough to minimize errors and prevent unnecessary repetition?

PRINCIPLES GOVERNING INFLUENCES ON STUDENTS

Within the program, treatment of the content in terms of psychological and instructional principles governing a student reaction is of great importance. Some of these, for your consideration, principles governing the quality of instructional media influences are briefly mentioned.

REINFORCEMENT – Generally, instructional media are of greatest influence when their content reinforces and extends previous knowledge, attitudes, etc. When they are in opposition to students' attitudes their effectiveness is often limited. (so with instructors.)

SPECIFICITY – the influence of instructional media should be specific rather than general. Generalizations are developed from specific information. It is probably better to allow instructional media to disseminate specific information and provide a conducive environment where the student may develop generalizations.

RELEVANCE – the influence of a program increases as the content is directly relevant to the student. Utilization increases as students realize relevancy.

AUDIENCE VARIABILITY – reaction to instructional media varies with age, intelligence, education and previous knowledge in the subject. The more the audience knows about a subject, the more it learns from programs on the subject.

PICTURE PRIMACY/AUDIO PRIMACY – effectiveness of instructional media is unaffected by "slickness" of production; many of the clever tricks have little effect upon the main idea; the content is the important aspect to consider in quality production. Content is both *audio* and *visual.*

SUBJECTIVITY – the more one can identify with the content the better he will remember. This may be why some students do better with instructional media than others.

RATE OF DEVELOPMENT – influences the impact of instructional media on students. The tightly packed program is easily understood by an expert but not necessarily by the student. The rate of development must be geared to the rate of the receiver.

INSTRUCTIONAL TECHNIQUE – Instructional techniques built into the instructional media substantially increase the instructional effectiveness of a program. Built-in instructional devices promote learning, but if every program were the same, students might become bored. Therefore, use instructional techniques where they are really needed.

Incidentally, students usually learn more if they are instructed in what to look for. They also usually learn more if they expect to be tested on what they have learned and a second viewing of instructional media increases learning dramatically.

There are certain unique contributions which instructional media can make in the instructional process. Some of the contributions may be quickly summarized. They are necessary in quality instructional materials. Properly produced, programs can:

compel attention
heighten reality
control time factors in any operation or series of events
bring the distant past and present into the classroom
easily reproduce a record of an event or an operation
enlarge or reduce the actual size of objects
present process that cannot be seen by the human eye
promote an understanding of abstract relationships
build a common denominator of experience.

In order for these contributions to be realized, some general conclusions may be made which will increase quality and contributions from media.

TECHNICAL ASPECTS

For recognition of detail, photographic and shaded drawings are usually poorer than cartoon-type drawings. Where elaborate or artistic presentations might serve to introduce and to stimulate interest, they are not appropriate for instruction in specific verbal and perceptual-motor skills. An important conclusion that can be drawn from much audiovisual research is that the teaching effectiveness of instructional media depends on a careful integration of the verbal and the pictorial or graphic materials.

Special embellishments of films and graphics do not increase learning unless they aid specifically in making important discriminations or in promoting understanding.

Production techniques involving special effects and elaborate musical scores are of minor importance.

Very realistic pictures are desired and color should not be used unless it is realistic. The amount of detail and action in a picture should be limited to the important points to be illustrated to avoid confusing or misleading the viewer.

The use of simple animation techniques such as pop-in labels or arrows to emphasize important points have proven effective. It is important to remember that the items or sequences which are especially emphasized may be learned better at the expense of other items not so emphasized. Thus, any special attention-focusing or participation technique should be tested empirically to see whether it interferes with learning other aspects of the entire task.

In general, active participation during self-instructional programs aids learning but covert participation may be just as beneficial as overt. Instructional media, however, should be designed to elicit the desired responses, either overtly or covertly. Design factors should enhance the participation and aid the learner to refine and integrate his responses. The relative advantages of different types of responses depend in part on program difficulty, probably because it affects the level of participation.

Errors as such are not detrimental to learning if they are corrected immediately and if the learner understands why he is wrong. The easy programs do not always promote the highest achievement scores.

Recorded lectures presented without coordinated visual materials do not hold the attention of a class very well. With nothing to stabilize or direct visual orientation, both students and adults after ten minutes, begin to look around, shift positions, chew their finger nails, read, or talk. However, the addition of almost any kind of visual slides serves to sustain the attention of the audience. The consistency of orientation toward the visual presentation varies with the rate of changing slides up to a rate of about two slides per minute.

In order for quality instructional media to be produced in dental education, teachers should be assisted in techniques for preparing instructional media so such materials can be produced to fit specific curricular needs. Such assistance is generally useful in that it provides insights into good teaching procedures and the nature of meaningful learning.

When it comes to the teaching of basic knowledge and skills that are to be used adaptively by the individual in countless different situations throughout life there can be no simulation training as such. The best we can do for the learner is to provide him with a diversity of sensory experiences and to encourage him to react in diverse ways. In view of the clearly detrimental effects of restricted sensory and social environments, we cannot afford to give a student anything less than broad opportunity for reacting variously to many different kinds of stimulation. An individual extends his knowledge, understanding and control of the environment by responding to it under many varieties of feedback. In this way, he establishes an ever-expanding accumulation of adaptive response patterns and stable symbolic meanings. In this way, he transfers a learned response from one situation to another and recalls in one context a response learned in another.

General knowledge and skills should be taught under a wide variety of feedback conditions with many materials and techniques to help the learner achieve broad understandings and control, and stable learned patterns.

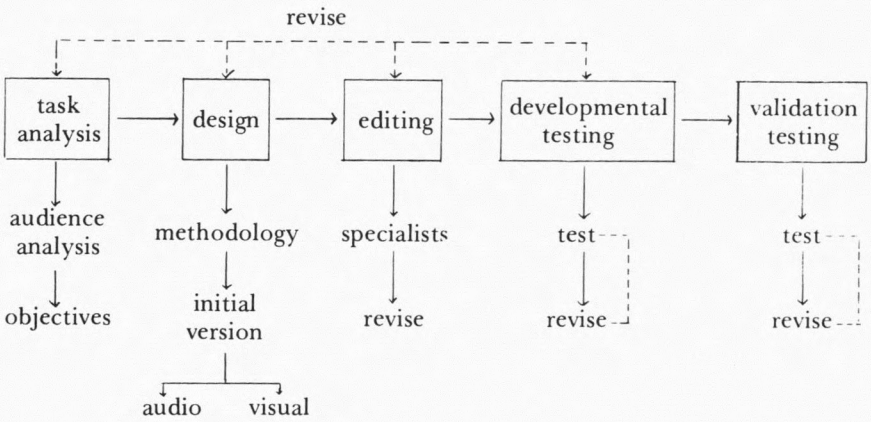
SUMMARY

We can provide quality instructional materials through the combined efforts of all personnel using a systematic approach in their development. The quality of materials cannot be proclaimed until they have been tested on students.

Certainly, there is a challenge for faculty to produce quality instructional materials. At the same time, critical eyes of the students and colleagues are upon the producer and the materials.

And teachers must be receptive to suggestions; take suggestions seriously and act accordingly.

SYSTEMATIC APPROACH TO PRODUCTION OF TEACHING MATERIALS



Conference on Newer Technology In Dental Education

Representatives from all but five of the dental schools throughout the United States met October 4-6, 1972, at the National Medical Audiovisual Center in Atlanta to participate in a conference on instructional technology in dental education. The conference was co-sponsored by the American College of Dentists and the Office of Audiovisual Educational Development, Bureau of Health Manpower Education.

The primary purpose of the conference was to determine the interests of the schools in utilizing new education technologies to develop and maintain a central core of basic training units, and to participate in group discussions, work sessions and seminars leading to the development of recommendations for preparing and sharing instructional materials among all dental schools. The Conference concluded that the American College of Dentists, in conjunction with the schools' representatives, should pursue an action program to bring about a more standardized approach to the utilization of basic communications design and development technologies in the educational process.

The first day included presentations by Dr. Robert Crounse, Medical College of Georgia, (representing the Southern Medical Schools Consortium) on sharing of materials through collaborative arrangements between schools; Dr. Bruce Bell, University of Florida, on standardization of instruction methods in Project ACORDE (A Consortium on Restorative Dentistry Education); Dr. Ernest Moreland, University of Maryland, on production of instructional materials in dental education; Dr. Marvin Dunn, Division of Physician and Health Professions Education, BHME, on faculty directions for support for health professions education, and Dr. Virginia Sturwold, Division of Dental Health, BHME, on surveys of instructional materials in dental education.

The president of the American College of Dentists, Dean William E. Brown of the College of Dentistry of the University of Oklahoma spoke on the benefits to the profession from using new educational technologies and systems engineering approaches for the development and production of instructional materials.

The second day, participants were divided into five groups and rotated among seminars to discuss defining content and establishing objectives; implementing learning objectives by utilizing programmed media instruction; validation and field testing; acquisition, cataloging, dissemination of teaching materials and general information in the field of educational technology; and training of faculty and resource personnel in standardized procedures of instructional development.

Participants were also given a demonstration of computer assisted instructional programs of the Ohio State University School of Medicine and Massachusetts General Hospital on the Tymshare Model 311 computer terminal.

Left to right: Dr. William E. Brown, President, American College of Dentists; Dr. William R. Patterson, Member, Education Committee, A.C.D.; Dr. George E. Mitchell, Member, Education Committee, A.C.D., and Chief, Office of Audiovisual Educational Development, Bureau of Health Manpower Education; Dr. James P. Vernetti, Regent, A.C.D.

New Jersey Section

The New Jersey Section met on October 19, 1972 at the Holiday Inn, North Brunswick. The featured speaker was Dr. Carroll M. Leevy, Professor of Medicine and Director of Hepatology at the New Jersey College of Medicine.

Section officers are Dr. L. Deckle McLean, chairman; Dr. James W. Hipple, vice-chairman, and Dr. H. Curtis Hester, secretary-treasurer.

New York Section

The midwinter meeting of the New York Chapter was held on Sunday, December 5, 1972 in the Skytop room of the Statler Hilton Hotel.

A number of distinguished guests were present, including Dr. C. Gordon Watson, Executive Director of the American Dental Association, Dr. Leo Roohan, President of the Dental Society of the State of New York, Dr. I. Lawrence Kerr, American Dental Association Second District Trustee, and Dr. Ormonde J. McCormack, President of the American College of Dentists.

Recipients of the American College of Dentists Senior Student Award were Kenneth Hirsch of Columbia University and Joel A. Hirsch of New York University. These awards were given in recognition of their outstanding academic achievements in the study of dentistry.

Officers of the New York Section are Dr. Lester Eisner, chairman; Dr. Andrew Linz, vice-chairman; Dr. Michael Turoff, secretary-treasurer, and Dr. John Dolce, historian.

News of Fellows

Dr. Joseph Zielinski, of Chicago, dental director of Illinois Dental Service, was recently awarded a special citation from President Nixon and Governor Ogilvie for his 16 years of service as the Illinois State Chairman of the Advisory Committee to the U.S. Selective Service System for dentists. Dr. Zielinski has long been active in dental affairs in Illinois. In addition to holding a number of offices at the state and component society levels, Dr. Zielinski, a former ADA vice president, has served as president and treasurer of IDS since its formation in 1967.

Regent Walter A. H. Mosmann of Ridgewood, N.J., professor and chairman of the Department of Orthodontics and director of the graduate program in orthodontics at Fairleigh Dickinson University, is the new president of the Northeastern Society of Orthodontics.

Dr. John I. Ingle, Dean of the University of Southern California School of Dentistry for eight years, recently announced his resignation. He will become senior staff officer in the Institute of Medicine of the National Academy of Sciences in Washington, D.C.

Letters

Dear Doctor Kaplan:

I read the July issue of our Journal with great interest particularly the program of self-assessment and the Barish article on the dental hygienist's dilemma.

These articles, in my opinion, fortify the position of the Academy of General Dentistry with its major emphasis on both the need for continuing education as well as the means to evaluate the effectiveness of continual study.

Dentists in greater numbers have over the past twenty years become habitual students, especially those who have become members of the Academy. Also, the third-party programs, private and governmental, have directed the practicing dentist to the necessity of remaining a student. Currently, with several states already having passed the legislation and others considering laws along similar lines, continuing education as a prerequisite for re-registration may not be too far in the distant future.

However, the Academy also realizes that membership only is not sufficient to warrant effective education and the practical application of continual learning. Serious thought is being given to the incorporation of the self-assessment similar to the one advanced by the College. It may be premature to state at this time, but it appears inevitable that some form of self-assessment testing in addition to evidence of continuing education may become necessary to insure the highest standard of performance for the welfare of the public. Thus, for the General Practitioner, membership in the Academy of General Dentistry would serve as the ideal vehicle toward the total objective with the incentive of self-improvement.

I am greatly heartened by the indications of the excellent progress in Dentistry's policy of professional autonomy. We are currently overtly discussing re-registration with continuing education, self-assessment testing for the evaluation of the dentist's advancement in study and peer review for maintenance of high quality and excellence in performance.

Our vigilance in these areas must be constant and must be understood by our colleagues as *the* method whereby governmental influence may be kept at a minimum and concern for the public at a maximum.

With best wishes for your continued success as Editor, I am

Respectfully yours,

George D. Kudler, D.D.S.

President-elect
Academy of General Dentistry

The Objectives of the American College of Dentists

The American College of Dentists in order to promote the highest ideals in health care, advance the standards and efficiency of dentistry, develop good human relations and understanding and extend the benefits of dental health to the greatest number, declares and adopts the following principles and ideals as ways and means for the attainment of these goals.

(a) To urge the extension and improvement of measures for the control and prevention of oral disorders;

(b) To encourage qualified persons to consider a career in dentistry so that dental health services will be available to all and to urge broad preparation for such a career at all educational levels;

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

(d) To encourage, stimulate and promote research;

(e) Through sound public health education, to improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient;

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

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

(h) To make visible to the professional man the extent of his responsibilities to the community as well as to the field of health service and to urge his acceptance of them;

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

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