

The JOURNAL
of the
AMERICAN COLLEGE
of DENTISTS

The Student Dentist and the Poor

The Student's Perception
of Professional Training

Dental Curriculum Development

British Dental Education

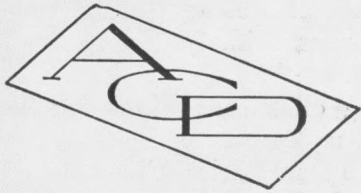
Program for Disease Control

APRIL 1972



MEMBER PUBLICATION
AMERICAN ASSOCIATION OF DENTAL EDITORS

THE JOURNAL OF THE AMERICAN COLLEGE OF DENTISTS is published quarterly—in January, April, July, and October—at 215 S. Tenth Street, Camden, New Jersey 08103.
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NEWS AND COMMENT

Section news announcements and items of interest should be sent to the Editor, Dr. Robert I. Kaplan, One South Forge Lane, Cherry Hill, New Jersey 08034.

Convocation to Be Held on Saturday, October 28

Because of a change in scheduling of the annual session of the American Dental Association, the meeting and convocation of the College have been moved up one day. The ADA meeting will begin on Sunday. The College will therefore meet on Saturday, October 28 at the Fairmont Hotel in San Francisco.

SECTION NEWS

Tri-State Section

The annual meeting of the Tri-State Section of the American College of Dentists was held in conjunction with the University of Tennessee Dental Alumni Seminar on March 2, 3 and 4. The following clinicians lectured: Dr. Milton Siskin, on "Interceptive Endodontics"; Dr. Billy Pernell "Treatment of Periodontal Disease" and Dr. Benton Neil "A Complete Denture Technique for the General Practitioner."

On Friday evening March 3, a gourmet dinner was served to 114 section members, wives and guests at the University Club. Dr. William R. Alstadt, Chairman of the Section, acted as master of ceremonies, and Dr. Earle Williams of Dallas, Texas, was the after dinner speaker.

On Saturday morning, March 4, Dr. Robert J. Nelsen, Executive Director, discussed the current operation and projected goals of the American College of Dentists, and Dr. C. Gordon Watson, Executive Director of the American Dental Association, speaking on the "Thou Shalt Nots of Dentistry", identified the negative fears involved in the thinking of many of our professional colleagues.

Following the morning program a luncheon was held at the University of Tennessee Student Alumni Center, with 75 Fellows and guests attending. The Deans' Award, presented by the Tri-State Section to that student in each graduating class selected as having brought about better communication and understanding between the faculty and the students, was presented to Dr. Charles Albert Davis. Dr. John Autian, Director of the Materials Science and Toxicology Laboratories of the University of Tennessee, spoke on "Hidden Toxicity Around Us".

The following officers were elected for 1972: chairman, Claude V. Pettey, Jr.; chairman elect, Robert K. Armstrong; vice-chairmen, Arkansas—C. C. Thompson, Mississippi—Peter B. Perkins, Tennessee—James E. Woodard; secretary-treasurer, Richard J. Reynolds.

Illinois Section

The Illinois Section held its annual Fall dinner meeting on November 18, 1971 at the headquarters building of the American Dental Association. The speaker was the eminent financier and philanthropist, Mr. W. Clement Stone, of Chicago. The subject of his presentation, "Success Through a Positive Mental Attitude," was enthusiastically received by the 125 members and guests in attendance. Officers elected for 1972 were: James H. Ridlen, chairman; Adrian L. Swanson, vice chairman; and Harvey W. Lyon, secretary-treasurer.

On Sunday, February 12, 1972, the Illinois Section held its annual luncheon at the Conrad Hilton Hotel. Awards of Merit were presented to three outstanding senior dental students. These awards are given to students who show superior academic achievement and demonstrate the potential for contributing to the advancement of dental science, art, literature and human relations. The award consists of a plaque and a check for 100 dollars. Students chosen this year were Kenneth D. Fritch, Illinois; Frank Pizzuro, Loyola; and Stephen Boger, Northwestern.

The luncheon address was delivered by Dr. William E. Brown, president of the College, who described the broad challenges facing the College today, and the need for self-evaluation by each Fellow of the status of one's own professional capabilities.

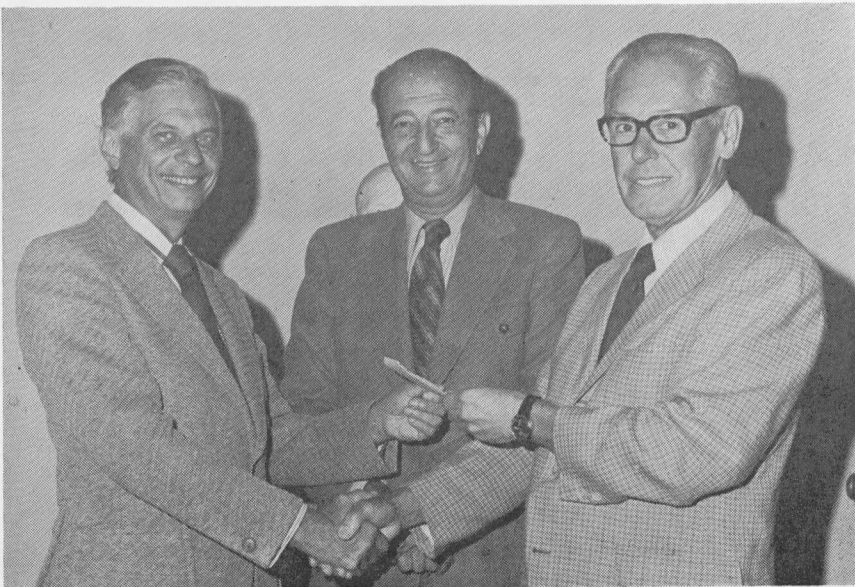
All visiting Fellows at the Chicago Midwinter Meeting are always welcome to attend this luncheon which, by custom, is held on Sunday at noon on the opening day. Reservations can be made in advance by corresponding with Bill Lyon at 211 East Chicago Avenue, Chicago, Illinois 60611.

Georgia Section Contributes \$1,000 to American Fund for Dental Education

The Georgia Section of the American College of Dentists has contributed \$1,000 to the American Fund for Dental Education with a request that the contribution be used in behalf of the dental schools at Emory University and Medical College of Georgia.

A check in the amount of \$1,000 was presented by Arch McEwen, D.D.S., President of the Georgia Chapter, to Marvin C. Goldstein, D.D.S., of Atlanta, a member of AFDE's Board of Trustees. Dr. Goldstein, a prominent Atlanta orthodontist, is a Fellow of the American College of Dentists.

"I would like to see all of our chapters follow Georgia's good example," Dr. Goldstein commented. "An annual gift of \$1,000 or more to the American Fund for Dental Education would be a fine gesture of support of AFDE's efforts to help the nation's dental students and their schools. We all know how much they need whatever help we can give them."



Dr. Marvin C. Goldstein (left) receiving check for \$1000 for the American Fund for Dental Education from Dr. Arch McEwen (right), president and Dr. Marvin Sugarman (center), secretary-treasurer of the Georgia Section.

Colorado Section Honors Fellow Kenneth F. Grove



Left to right: Dr. Kenneth F. Grove; Dr. Ray G. Perschbacher, president, Colorado Section; Dr. Jack B. Caldwell, presenting the award.

The Colorado Section held a luncheon meeting on January 11, 1972 at the Denver Hilton Hotel during the 65th Annual Midwinter Meeting of the Metropolitan Denver Dental Society.

Dr. Kenneth F. Grove received the "Man of the Year" award from the Section for his contribution to the advancement of dentistry.

Dr. Grove is a past-president of the Colorado Dental Association, and a member of the Board of Directors of the Colorado Dental Foundation.

Section officers for the coming year will be: Ernest T. Klein, chairman; Sholom Pearlman, vice-chairman, and Roderick L. Lister, secretary-treasurer.

(Continued on Page 126)

the JOURNAL of the AMERICAN COLLEGE of DENTISTS

A QUARTERLY PRESENTING IDEAS IN DENTISTRY

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ROBERT L. HEINZE LOUIS G. TERKLA

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New Regents of the College

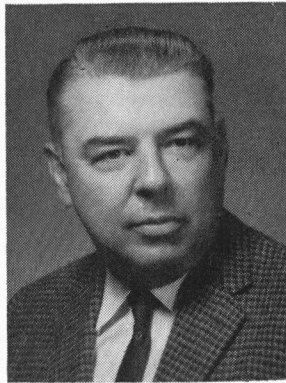
Walter A. H. Mosmann

Walter A. H. Mosmann, teacher and international clinician in orthodontics, was named a Regent of the College at the annual meeting last October in Atlantic City. He took his dental degree at Northwestern University and his graduate education in orthodontics at Columbia University.

Dr. Mosmann taught orthodontics at Columbia for a number of years before becoming director of the School of Dental Hygiene at Fairleigh Dickinson University in Teaneck, N. J. When Fairleigh Dickinson established its dental school in 1956, he was named professor and chairman of the orthodontic department. He also heads the graduate orthodontic program at F. D. U.

He has held the presidency of the New York Academy of Dentistry, the Columbia Orthodontic Alumni Association, the Eastern Component of the Angle Society, and the Bergen County Dental Society. He is a founder and past-president of the Strang-Tweed Study Group and past grand master of the Psi Omega New Jersey Alumni Society. He is currently president elect of the Northwestern Society of Orthodontists.

Dr. Mosmann is a member of Omicron Kappa Upsilon honorary dental society and holds the honorary degree of Doctor of Science from Fairleigh Dickinson University. He is married, and the father of three children, and lives and practices in Ridgewood, N. J.



William P. Humphrey

Regent William P. Humphrey, a Denver pedodontist, is widely known as an author and clinician on the use of steel crowns and appliances in dentistry for children. He is a graduate of the University of Kansas City Dental School and served as a Major in the U. S. Army Dental Corps in World War II.

Dr. Humphrey is a past president of the Metropolitan Denver Dental Society, the Colorado Dental Association, and the Colorado Unit of the American Society of Dentistry for Children. He is a former trustee of the University of Missouri at Kansas City Dental School, and past president of its Alumni Association. He is past vice president and director of the Colorado Dental Foundation and former member and chairman of the Council on International Relations of the American Dental Association.

Dr. Humphrey is chief of pedodontic services at Denver General Hospital and a member of the pedodontic staff of Childrens Hospital of Denver and the Colorado General Hospital. He served on the board of directors of the American Academy of Pedodontics, and is a life member of Delta Sigma Delta fraternity. He is married and the father of three children.



Editorials

Is the School Dental Therapist the Answer?

A new type of practitioner, the "school dental therapist," patterned after the New Zealand dental nurse, has been advocated by a prominent dental dean as a means of solving the manpower shortage and providing dental treatment for the school population. Speaking at a conference of dental examiners and dental educators in Chicago recently, Dr. John Ingle, dean of the University of Southern California School of Dentistry made some proposals which are rather revolutionary, to say the least. He stated:

"What I am proposing is a nationwide dental health program home-based in the nation's elementary schools. Under the supervision of the profession, a totally new category of dental paraprofessionals, who might be called "School Dental Therapists," backed in turn by a corps of assistants, will be responsible for a well organized and aggressive program in prevention and treatment. The School Dental Therapists will be trained specifically and limited to restoring carious teeth, treating initial periodontal conditions, extracting deciduous teeth and guarding the integrity of the dental arches by space maintenance. They will be trained to make their own examinations, diagnosis and treatment plan. They will be thoroughly trained to make their own injections and carry out a full scale preventive program. In all of this they will be *remotely supervised* by the dental profession and will be assisted by the School Dental Therapist Assistants".

These therapists would be licensed to practice only in schools and nowhere else. Dr. Ingle suggests a training course of one to two years duration, made flexible enough so that students could graduate when they had satisfied certain criteria for completion of the course.

According to his figures, there are some 85,000 elementary schools in the United States with some 27,500,000 students. He gives statistics on the present unmet needs of the child population, and builds a case for a system paralleling that which presently exists in New Zealand.

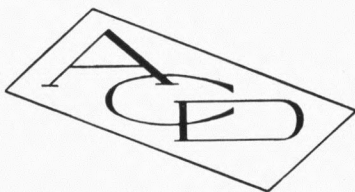
Hardly anyone would disagree that a program to provide better dental health for more children is needed. But in this or any proposed plan, does the end justify the means? To equip a dental clinic in each of 85,000 elementary schools, assuming the space was available, would cost millions of dollars. If the government could be persuaded to make the heavy financial commitment necessary to establish school clinics, and set up educational facilities to train 85,000 school dental therapists and at least the same number of therapist assistants, the cost would be astronomical. Assuming its availability, would this money not be better spent within the framework of existing clinic facilities (which could be greatly expanded) and in providing private office treatment?

We question the wisdom of setting up a whole new category of dental paraprofessionals. If this group grew large enough, it could one day easily challenge the dominance of the dental profession, as has happened in certain areas by the dental laboratory industry. If a substantial number of school dental therapists should band together to demand the right to practice outside of school facilities, to engage in private practice if they so desired, the profession, in resisting such demands might find itself in the embarrassing position of being accused of opposing dental care for children. This may sound far fetched, but it could conceivably happen.

We do not favor a two level system of dentistry. We believe that the profession is making earnest efforts to solve the manpower shortage through accelerated schooling, through expanding duties of auxiliaries, through training in expanded auxiliary management and other innovative programs.

In spite of what Dean Ingle proposes, we resist the thought of surrendering professional responsibilities to paraprofessionals under remote supervision who would not have the education, background and clinical judgment that dentistry insists is required to perform irreversible services for patients. We are ill-advised to compromise with quality by offering a lesser professional service to children just because it would be expedient.

R. I. K.



Journal Introduces Editors' New Symbol

On the inside cover of this issue the Journal of the American College of Dentists introduces the newly designed symbol of the American Association of Dental Editors, a non-profit organization founded and perpetuated for the mutual benefit of those who are concerned with raising the standards of dental communications, dental science and dental health.

The American Association of Dental Editors was organized by the American College of Dentists in 1931 as an outgrowth of its Commission on Journalism which labored to free dental journalism from the domination of trade and commercial interests.

The Association has over 300 members associated with dental journalism in the United States, Canada and South America. In addition to its continued efforts toward maintaining and raising the standards of ethics in the dental press, the AADE conducts an annual educational meeting on dental communications and publishes a bulletin on dental journalism three times per year.

The Journal takes pride in printing the symbol as evidence of our membership in and support of the principles of the American Association of Dental Editors.

Words of Wisdom

Service ceases to be professional if it has in any way been dictated by the client or employer.

Professional independence is not a special privilege but rather an inner necessity for the true professional man, and a safeguard for his employer and the general public. Without it he negates everything that makes him a professional person and becomes at best a routine technician or hired hand, at worst, a hack.

—HYMAN G. RICKOVER

The American College of Dentists— A Forward Thrust^{*}

WILLIAM E. BROWN. D.D.S.[†]

THE AMERICAN COLLEGE OF DENTISTS still holds as its primary objective the improvement of the standards of professionalism in order to bring more high quality oral health care to more people. Secondarily, it serves to honor those professionals who exemplify these high standards and by their example give others a goal to attain.

Some have suggested that the time honored mark of a professional, service before self, has become less clear and that rewards above all else have become a general characteristic. Although this trait is undoubtedly true of some, most dentists still believe that service is primary and that the rewards flow naturally. The new young graduate, in fact, is highly idealistic and is searching, perhaps even more vigorously than his predecessors, for ways to serve his fellow man. It would appear, then, that the long standing goals of the College are not dead, nor even dying, but rather simply need renewing and visibility.

The College is changing. One visible sign is the move of its Central Office from St. Louis to Bethesda in 1969 in order to be closer to the scene of major decision making, e.g., the Congress and various federal agencies. This was in no way an attempt to lobby for favorable legislation but rather an effort to be in continuing communication with those who should be well informed about dentistry and oral health care before decisions are made. This activity is well under way through the leadership of Robert Nelsen, the Executive Director of the College. In addition to this basic function, Dr. Nelsen and his three secretaries manage the multitude of tasks associated with the nominations for fellowship, arrangements for the Annual Meeting, the business functions of the Journal, and the activities of the various committees.

^{*} Presented to the Illinois Section, Chicago, Illinois, February 13, 1972.

[†] President, American College of Dentists.

The Regents have agreed that the College should concern itself with the major issues facing the profession to the extent of its resources and without duplicating the efforts of others. They have agreed, further, that the College should not spread its efforts too thin but rather should focus its attention on two or three major issues and pursue these well.

During 1971-2, the College is cooperating with the National Medical Audiovisual Center in the development of self-instructional packages designed for use in dental schools and ultimately for the continuing education of dentists. These packages will take a variety of forms including slide-audio tapes, slide-texts, film strips, and videotapes. They can be used by dental students in a system of self-paced instruction and by dentists in the quiet of their own libraries to keep current. This project is complex and will take some time to accomplish.

The College is developing a self-assessment program similar to those conducted by several other professional organizations. This program will consist of a continuing series of written examinations so that the dentist can test himself on his current knowledge. The examinations will be machine graded and only the dentist will know the results. If his knowledge of an area is not current, he can seek the resources needed to fill the gap. Information derived from this program can be helpful to dental schools in developing courses of continuing education that more effectively meet the needs of the practitioner.

The College is becoming more vigorously involved in the health scene. Its membership roster includes many bright minds, and it is an apolitical body. It is sensitive to the current stresses and strains within the ranks of health providers and is concerned that there appears to be more pulling apart than putting together. The College makes no pretense that it can solve all of the dental world's problems. Yet, it believes that it can play a sizeable role by providing an objective forum and by catalyzing the actions of others.

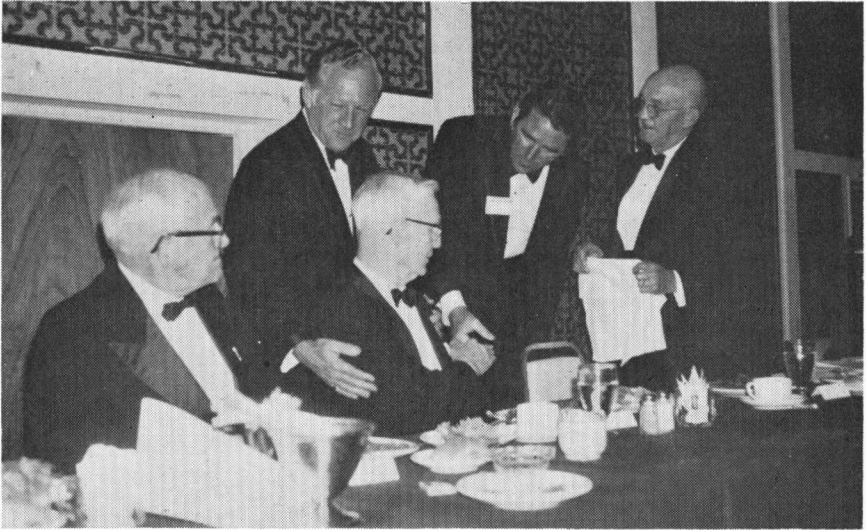
The College is aware that it needs to become more responsive to its members and to involve a much greater cross-section in program planning and operations. It is concerned that some of the sections have not had sufficient support to remain enthusiastic and active. In order to stimulate greater activity within the sections, the Regents have assigned James L. Cassidy and his Committee on Sections the responsibility for developing programs that will be precise and realistic so that the sections can elect program options that will be most suitable to them.

For the past two years, the College has planned carefully for a new plan of action that will thrust it forward into the oral health problems of the 1970s. It knows that the problems of the day require solution, and to these solutions it will lend its support. Yet, it believes that these solutions will be less than adequate if the high ideals of professionalism are diminished.

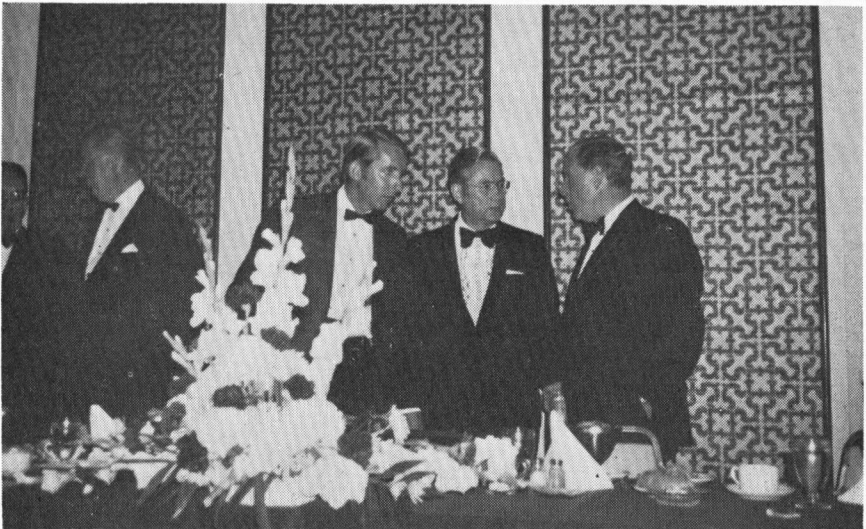
636 N. E. Fourteenth St.
Oklahoma City, Okla. 73104



Luncheon in Honor of President Otto W. Brandhorst
Atlantic City, N. J.—October 10, 1971



Left to right: Dr. Thomas J. Hill, Dr. Frank P. Bowyer, Dr. Otto W. Brandhorst, Governor Winfield Dunn of Tennessee, and Dr. Gerald Timmons.



Left to right: Dr. J. Lorenz Jones, Vice President; Dr. Howard Rusk, recipient of the Honorary Fellowship; Dr. John Zapp, Department of Health, Education and Welfare; Dr. C. Gordon Watson, ADA Executive Director and Convocation Speaker, and Dr. Frank P. Bowyer, Past President.

Presidential Address*

OTTO W. BRANDHORST, D.D.S.

Fellows of the American College of Dentists, Ladies and Gentlemen:

At this time as I am about to bring to a close my various activities with the American College of Dentists, it seems desirable for me to make a report to you on my stewardship. Not that I propose to place value on it, but I would like to mention some of the things that have marked the activities of the College over the years and thus give you an opportunity to place them in proper perspective in relation to their effect upon the profession and its future opportunities.

I was invited to Fellowship in the College in 1934 and immediately became associated with its activities. This is how it came about.

When the American Association of Dental Editors was established by the Commission on Journalism of the College, I was elected Secretary of the Editors' Association in 1932. Because I was at that time a person interested in dental journalism due to my connection with the Bulletin of the Missouri State Dental Association and believing in the principles that were projected by the newly formed Editors' Association, I accepted this position feeling that it might enable me to help carry forward the ideals and principles of the Editors' Association.

I soon found my self engulfed with Drs. William J. Gies, John E. Gurley, Walter Hyde, Thomas F. McBride, Elmer Best, Edward Ryan and many others, trying to set up among other things, a code of ethics for the acceptance of advertising in dental publications.

When the Chairman of the Commission on Journalism of the College, Dr. Bissell B. Palmer, retired from the Commission to devote his time to the field of socio-economics, I was asked to become the Chairman of the Commission on Journalism in 1935. Knowing something of the relations between the American College of Dentists and the American Association of Dental Editors, I accepted this appointment in the hope of possibly coordinating the activities of the two groups.

* Presented at the fifty-first annual convocation of the American College of Dentists, Atlantic City, New Jersey, October 10, 1971.

In that same year another opportunity was offered me. Dr. Albert L. Midgley, who had been Secretary of the American College of Dentists for a number of years, expressed a desire to relinquish that position, I was asked to take his place as Secretary. In the fall of 1935 I assumed this position and thus became involved in the activities of the College almost from the very beginning.

On January 1, 1969, I became Secretary-Emeritus of the College and at the close of that year you elected me President-Elect and here I am today making my report to you as President after thirty-five years of service. Not for one moment would I wish to leave the impression that what transpired in those years should be credited to me. Credit should go to the courageous and valiant men who were determined to see that the American College of Dentists moved forward to the attainment of the goals laid down by its Founders.

Perhaps it would be well here to mention a few of the areas that were of concern to the officers, regents and committeemen in the forward march of dentistry. Among these were the following:

Journalism in its effect on the profession and the public, resulting in the establishment of the American Association of Dental Editors.

The Cost of Medical and Dental Care and an evaluation of ways of meeting those costs. This resulted in the book entitled "The Way of Health Insurance" by Simons and Sinai.

The Actual Cost of Service as projected in the study made by the Committee on Socio-Economics, under Dr. Chas. E. Rudolph. Again, this brought forth a manuscript by Dorothy Fahs Beck entitled "The Cost of Dental Care under Specific Conditions."

Dental Prosthetic Service, to determine the proper place of the dental laboratory in this relationship.

Finding the real place of Oral Surgery as well as hospital dental service in the treatment pattern;

Control and Prevention of Dental Disease and the benefits of fluoridation in these efforts;

Medico-Dental Relations in the interest of the patient;

Human Relations in Health Service;

Education in its various aspects. Career guidance, continuing educational opportunities, financial aid to dental education were also given much attention.

Public Esteem for dentistry was a field of great interest.

These are all important studies which were made by committees of the College.

Research was one of the very early interests of the College. One of the first committees that was appointed in 1928 was the Committee on Education, Research and Relations.

The Journal of Dental Research had been established by Dr. Wm. J. Gies in 1919 and the International Association for Dental Research in 1920.

Thus, the College's interest in research was logical. Early in the activities, the College helped support the Journal of Dental Research and aided in the establishment of the Endowment Fund of \$50,000 for the Journal of Dental Research.

In 1934 Research became a committee in its own rights and has continued in that category until 1970.

In the early 40's when funds for research were scarce, the College made available small amounts of money to researchers to meet emergency needs. At one time the Board of Regents pledged its total resources of \$25,000 to attract money for research. It was at this point that the federal government saw the need and made substantial funds available. The College was never called upon to meet this commitment, and the situation eased only to take on a new turn.

Money was now available but researchers were few. It was felt that valuable time could be gained if young researchers could be brought together for an exchange of knowledge and methodology in research procedures.

So it came about in 1962 that the American College of Dentists was asked to serve in the capacity of fiscal agent to conduct an Institute for Advanced Education in Dental Research to be financed with federal funds, bringing together experienced persons, called Mentors, and young men just trained, called trainees, to pool their research knowledge. The plan has continued for the past nine years with great benefit to all participants.

Workshops, panel discussions and seminars on specific topics were all held to arouse interest in areas of importance to progressive action. Some of these like *Student Motivation* and *Public Interest in Prevention* were often assigned to special agencies, such as the N. K. Kohn & Associates and the National Opinion Research Center for study and evaluation. Whatever the findings, they were always made available to anyone interested in the particular subject. Thus, the College proved itself a good catalyst in bringing many of these things to the fore and it has become a resource of material when needed.

Project Bookshelf was another activity of note. Through it and with the cooperation of "Hand Clasp" of the U. S. Navy, we have been able to supply books to many countries. This project was suggested by Dr. Norman O. Harris and Dr. Walter J. Reuter—tested in Texas and finally activated to its present status by Dr. James P. Verneti and his committee.

Time will not permit the details that need to be considered in the above enumerations in order to have a clear picture of what has happened in the past fifty years, but I have no intention of pointing it up further. It is for you to make the final evaluation of what has happened during those years and the benefits that have accrued.

Miss Joanna Carey, Assistant Director of the Bureau of Public Information of the American Dental Association, in her script for the 50th Anniversary of the American College of Dentists at Las Vegas in 1970, made an unusual summary of American College of Dentists' contributions to the progress of dentistry.

This, my Fellows, is our heritage. Let us guard it well. Those courageous men who formed the American College of Dentists have set a noble example for us to follow—service of high order, coupled with those other qualities that make an organization great and enhance the good will of an appreciating public.

CHANGING TIMES

We are in the midst of rapidly changing events. Not that the last fifty years have been static, for on many occasions it was necessary to apply new methods to meet the problems that faced the profession. Witness the Institute for Advanced Education in Dental Research just mentioned.

But, they were met, always keeping in mind the purpose of the College as expressed by the Founders.

At the 50th Anniversary meeting last year, a number of challenges were brought to us. As I stated in accepting the challenges, "the College is not so naive as to think it has the answers to all the problems facing the profession, but it does have the courage and willingness to help find the answers to meet these challenges." So, we offer our services, when and where needed. This calls for the cooperation of all. And it is the profession's responsibility to find the solution. All the facets of dentistry as a health service will be involved. And who knows the involvements as well as does the professional man.

CONCLUSION

I wish to close this report by expressing my appreciation to all those who have participated in the work of the College and the profession of dentistry in carrying forward the ideals and objectives of the Founders of the American College of Dentists. One cannot review its history without realizing the great contribution they made to the future of the profession.

Then, I also wish to express my appreciation to those who have labored with me over the past fifty years in the work of the College.

And here I want to make special mention of the services of Miss Fern Crawford in her devotion to the College since I became Secretary in 1935.

To those who are responsible for the activities of the College in the future, I take this opportunity to wish them well in their undertaking and I can assure them of the cooperation of the membership as we forge ahead.

The College is on a sound foundation. We should continue to build on that foundation.

To the young men just entering the College, I would say that your help is needed to meet the problems ahead. Please give freely of your time and talents for the advancement of our profession.

Again my thanks for the opportunity of serving you these many years. It has been a pleasure.

16 Hampton Village Plaza
Suite 212, Medical Bldg.
St. Louis, Mo. 63109

He removes the greatest ornament of friendship who takes away from it respect.

—Cicero

Think for Yourself

So long as you live and in whatever circumstances the kaleidoscope of life may place you, think for yourself and act in accordance with the conclusions of that thinking; avoid so far as possible drifting with the current of the mob or being too easily influenced by the outward manifestation of things. Take your own look beneath the surface and don't trust others to look for you. If you will follow this rule consistently, I am sure you will keep out of much trouble, will make the most out of your life and, what is more, will contribute most of value to the community life.

—DR. FRANK B. JEWETT

The Student Dentist and the Poor^{*}

A Study of Expressed Willingness to Serve the Indigent Patient

MARCEL A. FREDERICKS, Ph.D.

PAUL MUNDY, Ph.D.

JOHN J. LENNON, Ph.D.

IT HAS been asserted that "the movement toward a better level of health for all mankind is painfully slow, so slow as to give proponents of modern medicine some pause in their explanations of disease—for it seems that the great cause of disease is poverty; in more neutral terms, disease is a phenomenon of ecology, of the struggle for existence, of sheer numbers of people in relation to food, water, air, shelter and goods."¹ The same certainly holds true for dentistry. In the United States, the poor are also seeking the alleviation of their social, economic and medical indigence. There is a demand for high quality, yet compassionate medical and dental services for all citizens.²

In recent years, attempts have been made to confront the poverty cycle—not merely the health problems, but the syndrome of low education, unemployment, unemployability, social isolation, disability, powerlessness, and related factors. In the effort to deliver dental care to the nation's poor, certain institutions, such as public health clinics and local public health departments, have taken an increasing role in alleviating the illness of low income patients. Such institutions, however, face serious problems in securing the necessary dental staff partly due to the fact that the salaries they offer cannot compete with the incomes derived from private practice.

In view of the importance of the problem in the face of vast reservoirs of unmet dental needs for the care of the poor, and with the shortage of trained personnel everywhere, the present paper attempts to explore some selected background characteristics and atti-

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tudes of student-dentists, and particularly, their expressed willingness to serve the indigent patient upon completion of their formal dental education.

METHOD

The sample consisted of 123 first-year students attending a large private university school of dentistry during the academic year 1969-1970 in a highly metropolitanized area. The data for this study were gathered through self-administered questionnaires and attitude inventories given on a voluntary basis at the beginning (September, 1969) of their dental education. Additional data were obtained at the beginning of their second year of professional training. Completed questionnaires were identified by code number in order to preserve the anonymity of the respondents.

The subjects were first divided into five social classes on the basis of Hollingshead's two-factor index of class position, based on the education and occupation of the fathers of the respondents.³ For the purpose of data analysis in this study, Class I and Class II were combined into a single category comprised of 52 (42 percent) subjects and Class IV and Class V into another comprised of 34 (28 percent) subjects. Class III remained unchanged with 37 (30 percent) subjects. Subsequent to the regrouping, the classes were identified simply as 1 (formerly I and II), and 2 (formerly III), and 3 (formerly IV and V).

The concept of socio-economic class is used throughout this study to refer to the kinds of psychological and social characteristics found differentially distributed among dental students classified by the weighted index of their father's occupation and education.⁴

One question asked the respondents: "Would you accept any of the following positions after you have been established in practice?" A list of four alternatives followed: (1) full-time position with a teaching hospital; (2) full-time research position with a university; (3) full-time dentist with a neighborhood health center; and (4) full-time dental officer in a poor community in Appalachia. A special checkmark was required to signal that the respondent would not leave his present position for any of the above positions.

SOCIAL BACKGROUND CHARACTERISTICS

Of the 123 dental students, ninety-two percent were 20-24 years old, while eight percent were 25-29. The majority of the subjects, 62 percent, were single prior to their entry into dental school. In high school, the overwhelming majority (98 percent) had followed

a college preparatory course, while two percent had pursued either a vocational or a business course. Extra-curricular activities of the students while in high school were primarily social and/or job oriented. Many were working at outside jobs.

The occupational backgrounds of the fathers of these dental students are indicated in Table 1. Most (77.0 percent) of the respondents came from homes where the father was engaged in white collar—principally non-professional—work; 23.0 percent had fathers occupied in blue collar or manual work. This finding roughly parallels Pavalko's investigation of occupational backgrounds of predental students.⁵ It would appear that the available data concerning white collar occupational backgrounds of medical and dental students are approximately the same.⁶ Sons have, by and large, aspired to occupations with the same or greater prestige than those of their fathers.⁷

The respondents in the study group came, in general, from fairly well-educated families: 38 percent of the fathers of the respondents had completed four years of college. Most were from urban communities of reasonably high socio-economic level. Almost 47 percent of these students lived in either a big city or a suburb of a large urban center. (See Table 2.) As to ethnic background, 12 percent of the respondents are of German ancestry and 10 percent are of Polish descent; in both cases the parents and grandparents were primarily from the lower-middle and upper-lower classes. Students of Italian and Irish backgrounds represented 8 and 5 percent of the sample. The balance of the group could not be readily categorized as to nationality descent.

DECISION TO ENTER THE DENTAL PROFESSION

With some understanding of the students' background, it is possible to analyze their reasons for choosing dentistry as a career and to ascertain those factors which may contribute to work satisfaction in their future role as a dentist. The desire to help people, the opportunity to identify diagnostic problems, and professional satisfaction were listed in that order as reasons for entering the dental profession.⁸ Factors deemed most important to future satisfaction in their professional careers were: (1) opportunities to help the poor, (2) to do research, and (3) to teach future dentists.

To ascertain the breadth of activities the student-dentists might pursue, they were asked about their concern for hippies, drug addicts, and school children from poor families, as well as their willingness to work for the welfare of these or other disadvantaged

TABLE 1
Occupation of Fathers of 123 Dental Students
By Percentage Distribution

Occupational Category	Percent
Professional	28.2
Managers, proprietors and officials	26.6
Clerical and sales	22.2
Skilled workers, craftsmen and foremen	20.2
Semi-skilled workers	2.8
	100.0

TABLE 2
Type of Communities Dental Students Lived
By Percentage Distribution

Type of Community	Percent
Big city (1,000,000+)	18.9
Suburb of big city	28.1
Medium sized city (250,000-1,000,000)	8.9
Suburb of medium sized city	6.1
Small city (25,000-250,000)	14.1
Town (2,500-25,000)	15.2
Rural	8.7
Total	100.0

groups. It is noteworthy that four out of five students in the sample asserted that they were concerned with these groups, especially those who lived in slum areas of cities, as well as rural areas where the number of dentists is inadequate. These students indicated that they were interested in working with these groups through various organizations. In addition, over 60 percent of the respondents asserted that they were willing to give these people free professional care as future dentists.

ATTITUDES IN DIFFERENT SOCIAL CLASSES

The respondents' attitude toward their profession was explored in relation to the most important problem facing the dental profession. The factor which is most important was the inability of dentists to deliver good dental care to the poor, the aged, and other disadvantaged people. The data indicated that 46.2 percent of the respondents in Class 1 while 56.8 percent in Class 2 and 47.1 percent in Class 3 agreed with the above statement. Regardless of social class, the factor which is least important to this sample of students was the shortage of dental manpower in the country.

The data (Table 3) also show that differences in the respondents' social class background are reflected in their attitudes toward the

TABLE 3
Dental Students' Attitudes Toward the Poor
By Social Class
(123 Respondents)

	<i>Social Class Categories</i>		
	Class 1 Percent (N = 52)	Class 2 Percent (N = 37)	Class 3 Percent (N = 34)
Respondents agreeing with the following statements:			
We in this country should reduce our consumption of luxuries so that the standard of living can be raised in the less fortunate areas of the world.	11.6	8.1	24.7
Since the dentist is primarily concerned with the diagnosis and treatment of his patients' oral illnesses, he should leave the social problems to other trained people.	11.5	18.8	14.8
For a private practitioner it is important that Medicaid pa- tients be separated from other patients.	27.3	8.1	20.5
Those who accept charity lack dignity.	1.9	2.7	—

poor. More dental students in Class 3 than in either Class 1 or 2 agreed with the statement: "We in this country should reduce our consumption of luxuries so that the standard of living can be raised in the less fortunate areas of the world." Similarly, a corresponding difference emerged in the general view of poverty as a human condition. The answers to the statement: "A Dentist should leave the social problems of his patients to other trained people" suggest that students in Class 1 in contrast to their colleagues in Classes 2 and 3 are least likely to agree with such an attitude. In contrast to these divided opinions, less than 3 percent of the students, regardless of social class, approve of such a suggestion as: "Those who accept charity, lack dignity."

EXPRESSED WILLINGNESS TO WORK IN POVERTY PROGRAMS

Dentistry as a profession has some general features which are important in identifying a student's expressed willingness to accept certain positions once established in his profession. Table 4 shows the respondents' willingness to accept a variety of new positions. These data indicate that students were nearly unanimous in their

TABLE 4
Dental Students' Willingness to Accept Certain Positions
Once in Practice
By Social Class (123 Respondents)

Respondents' willingness to accept the following positions:	<i>Social Class Categories</i>		
	Class 1	Class 2	Class 3
	Percent (N = 52)	Percent (N = 37)	Percent (N = 34)
Full-time salaried position teaching in a dental school.	75.0	81.1	97.1
Full-time dentist in a poor community of Appalachia.	48.1	62.1	58.9
Full-time research position with a university.	61.5	67.5	82.4
Full-time dentist in a neighborhood health center.	84.6	83.8	88.2

Percentages add up to more than 100 because some respondents checked several alternatives.

willingness to work full-time in neighborhood health centers irrespective of social class. Given this expressed willingness to work in such a center, one may assume that students would be interested in health-related social action as well.

To explore this assumption a question was asked about a hypothetical community problem, a nursing home with bad conditions located in the student's neighborhood. The data in Table 5 indicate that about 36 percent of the students (who were willing to work in neighborhood health centers) asserted their willingness to contact the department of health for improving the situation. Approximately 41 percent of these respondents noted that they would volunteer their services to help alleviate the situation. On the other hand, students who were willing to accept full-time research positions in universities and those who were willing to work in poor communities of Appalachia were most likely to leave action to people in authority and least likely to volunteer their services.

A further hypothetical question was posed to discover the respondents' attitudes regarding financial matters and the appropriate means of collecting dentists' fees from patients who do *not* pay their bills; the assumption being that members of the study group are revealing simultaneously their own judgments toward finances. The data in Table 6 indicate that the students who were willing to work in poor communities of Appalachia were least likely to turn unpaid bills over to a collection agency. They were also least likely to help the patient on a charity basis.

DISCUSSION

Within recent years, many dentists have participated in the various health-related and other community programs to fight poverty and to deal with the many problems of the poor. The data presented here suggest that the majority of the student-dentists in the sample were most concerned with the problems of the poor, the aged, and the disadvantaged in today's world. Indeed, 60 percent of the respondents asserted a willingness, as future dentists, to give these people free professional care.

Given the above finding, and the fact that the indigent population is demanding that "Americans consider and deal with their problems, social, economic, medical"² some implications for dental schools are in need of careful consideration.

It would appear that the dental school, in addition to its traditional duties of teaching the dental skills and sciences, patient care, and

TABLE 5

**Dental Students' Willingness to Change Positions
And their Involvement in Social Action**

	Acceptable Positions			
What would you do when reading in the newspapers that conditions in the nursing home near your place are very bad?	Full-time position in a teaching hospital Percent (N = 70)	Full-time in poor community of Appalachia Percent (N = 20)	Full-time in neighborhood health center Percent (N = 42)	Full-time research in a university Percent (N = 70)
Leave action to people in authority.	4.3	65.0	4.8	65.7
Try to contact the state department of health.	34.3	25.0	35.7	25.7
Volunteer your services.	50.1	—	40.5	—

Percentages add up to more than 100 because some respondents checked several alternatives.

TABLE 6

**Dental Students' Willingness to Change Positions
And Attitudes Toward Financial Matters**

Dentist's policy as regards to the patient who does not pay bills.	Full-time position in a teaching hospital Percent (N = 70)	Acceptable Positions		
		Full-time in poor community of Appalachia Percent (N = 20)	Full-time in neighborhood health center Percent (N = 42)	Full-time research in a university Percent (N = 70)
Turn it over to the collection agency.	22.9	—	26.2	4.3
No attempt to collect but help him as a welfare patient.	7.1	—	7.1	—
No attempt to collect but drop him as a patient.	12.9	20.0	11.9	31.4

research would have to re-examine its main aim and structure in relation to the dental aspects of the poor and the impact of poverty programs across the country. Can the dental school fit this concern of student-dentists into context without seriously disturbing its traditional tasks? Any answer to this question must take into consideration the fact that systematic dental care for the poor appears to be a social requirement of lasting nature.

In the past, poverty programs have labored under the handicap of a serious manpower shortage. The data in this study suggest that a social orientation is becoming more common among the student-dentists and, consequently, in the whole dental profession. There are few signs in the present survey that socially sensitive attitudes of student-dentists are consistently linked to an expressed willingness to serve personally the indigent patient.

Of further import, since many dental schools are involved in a searching analysis of their methods for evaluating applicants and of their educational programs, it seems incumbent upon their faculties to study ever more critically the overwhelming concerns of present-day dental students toward the poor, the aged, and the disadvantaged.

Since the representatives of the three social classes covered in the study came from predominantly white, urban settings, further research is required to determine whether or not the results would be similar for all regions and subcultures.

SUMMARY

1. This paper has presented a summary description of the social class backgrounds and attitudes of student-dentists, and, particularly, their expressed willingness to serve the indigent patients upon completion of their formal dental education. It has not considered the variations that might exist with students from other dental schools.

2. Seventy-seven percent of the students came from white-collar families based on the occupational status of their fathers. Almost 47 percent of these respondents live in either a big city or a suburb of a big city.

3. The desire to help people, the opportunity to identify diagnostic problems, and ultimate professional satisfaction were the primary reasons for entering the dental profession.

4. The factors which were important to personal satisfaction in their professional career were: opportunities to help the poor, to do research, and to teach future dentists.

5. A majority of the respondents were concerned with disadvantaged groups in slum areas of their cities and in rural areas where the availability of dentists was inadequate. The respondents were most interested in working with these groups. In addition, over 60 percent of them asserted that they were willing to give these people free professional care as future dentists.

6. Another aspect of the respondents' attitude toward their profession was explored in terms of the most important problem facing the dental profession. The factor which is most important was the inability of dentists to deliver good dental care to the poor, the aged and other disadvantaged people.

7. In terms of the students' social class backgrounds and their attitudes toward the poor, results indicate that more respondents in Class 3 than in either Class 1 or 2 agreed with the statement, "We in this country should reduce our consumption of luxuries so that the standard of living can be raised in the less fortunate areas of the world." Responses to the statement, "those who accept charity lack dignity," indicated that less than 3 percent of the students were in agreement.

8. The dental students, irrespective of their social class positions, were nearly unanimous in their willingness to work full-time in neighborhood health centers.

9. A further hypothetical question was posed to discover the respondents' attitudes regarding financial matters and the appropriate means of collecting dentists' fees from patients who do not pay their bills; the assumption being that members of the study group are revealing simultaneously their own judgments toward finances. The data indicate that the students who were willing to work in poor communities of Appalachia were most likely to leave action to people in authority.

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The Dental Student's Perception of His Professional School Training

A Descriptive View

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DENTAL educators have ideas about the way their students perceive teachers, fellow students, the clinic patients, and their professional education in general. However, most such notions are almost inevitably based on scattered observations and chance conversations. Since such an unsystematic procedure is necessarily unreliable, any conclusions and generalizations reached must be uncertain.

Then too there is a strong tendency to see the situation from the viewpoint of the educator. This is necessary for administrative and educational purposes. It obscures nevertheless how students might be perceiving the situation.

Even apart from the considerations mentioned, there is the question of how much any student body is going to reveal its true beliefs and feelings to school authorities. An occasional student may express himself with little hesitation, but it is unrealistic to think that any large number of students will do so. The crucial career deciding power of school administrators and faculty members is of such a nature as not to evoke uninhibited and frank statements, particularly if they are of a negative kind.

In this article, data are analyzed from a social psychological study which at least partially circumvented some of the difficulties indicated above. The study focused on the dental student in the school situation. An attempt was made to obtain a systematic picture of the perceptions of the student as he went through school. An examination was made of what happened to the student, both of a formal and informal nature, *as the student himself saw and interpreted various experiences.*

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Data were gathered by personal interviews, averaging around an hour and a half in length, with 160 statistically chosen respondents drawn from the students at a state and at a private school. A stratified random sample comprising 28 percent of the universe being studied was obtained. Not only were all pre-designated respondents interviewed, but an exceptionally high degree of rapport was obtained since the interviewers themselves were accepted as also being students, albeit in sociology. This role helped assure the dental students that their remarks would not be specifically identified for school authorities. The data so collected were subjected to both a quantitative and qualitative analysis.

Reported below are some of the major findings from that part of the study which specifically dealt with the perception by students of: (1) dental school itself and (2) dental education. A future article will discuss the perception by students of fellow students, science and clinic faculty members, and clinic patients. Still other findings of this and a related study of still two other dental schools have been reported elsewhere.¹

DENTAL SCHOOL: HOW GENERALLY VIEWED BY STUDENTS

Half of our respondents received an initial unfavorable impression of dental school. For them, the reality encountered was in sharp contrast with their expectations. This negative first impression stemmed in part from a failure to find the interpersonal relationships that had been anticipated. Thus, 48 percent of our sample were disappointed in the students they found, 28 percent over the way students were treated, and 22 percent in the faculty members encountered. How respondents verbalized about these matters is illustrated in the following comments:

A big shock was the students. I don't think they are as professional as they should be. They are just common everyday guys. They are not as intelligent as I thought they would be. I saw that in the first quarter and it hasn't changed this quarter. A lot of the guys take it real easy. Many of them, you wonder how they got in school. They are not dedicated to their work. They often act like a bunch of kids. They don't seem to realize how serious it is. You can see that, too, in their moral side. That surprised. Their principles aren't any loftier than anyone else. It makes you wonder what standards the school used to let them in. Doesn't look to me like they used any standards at all.

One thing I'm critical of and surprised me a lot. We freshmen are treated on a juvenile level. More on a disciplinary level. I mean things like being told how to hand in a test. Making a real point of putting your name on the right place in a test and things like that which are asinine. It's more like a grammar school. Just too much nonsense like that which

was rather different from what I expected. I thought they would treat you like a professional person. They say they do, but they don't.

The teaching is very much less than what I expected. Real bad teachers. The majority are quite poor. They are not wholly tuned to help you if you get lost. They are interested in research and not in helping the student so much. You see it in that they come in and talk of their own research project. And even that is usually presented in such a garbled fashion that it's all a waste of time.

The negative first impression of students also derived in part from unexpected academic matters. Thirty-five percent cited the heavy work load and 20 percent the detailed memorization required.

Contrary to what might have been expected, there were no significant correlations between negative first impressions and motivations for entering dentistry, familiarity with dentists and dentistry, or previous educational attainments. Instead the evidence clearly indicates an unfavorable attitude was associated with perceived deviations from expectations. That "reality shock" is the basis of negative first impressions is also supported by the remarkable lack of specificity by those respondents who were favorably impressed. Their positive reactions were almost always couched in terms of it not being different than anticipated. In the ratio of two to one, students perceived dental school as harder than college. Nevertheless, a majority (52 percent) found it easier than they had anticipated, and another 20 percent no harder than they had expected. This seeming discrepancy is accounted for by the fact that students enter dental school with a stereotyped image of the extreme difficulty involved in getting through professional school. (This is true even though 85 percent of our respondents had friends who were already in a dental school). Most students soon discover however, that while the work is hard it does not match their pre-school anticipations. As one respondent observed:

I figured that it was going to be quite a bit harder than it was. It was a hard push, sure. But I expected something more like a slave camp. Apparently I thought, built up a picture of it being forty hours of school and four hours of studying every night. But it was nothing like that. Once you settle down here, there is time for other things, extra-curricular activities, dates once in a while, and so on. There's more work than in college and you have to keep up with it, but there's no staying awake several nights a week like I had heard tales about.

As might be expected, students who have the most difficult time in school, as measured by grades, are also those who find it harder than anticipated. Likewise, there is a tendency for those with only

two years of college work to perceive school as more difficult than anticipated than do those with more schooling.

As well as finding dental school easier than expected, our respondents in the ratio of three to one, also saw it as becoming easier every year until graduation. This view was not only held by seniors looking at the situation in retrospect, but it was also the belief of freshmen looking at it in prospect. All class levels singled out the freshman year as the most difficult.

In contrast, the interest cycle of students followed a different and multilinear pattern. For some students the cycle of interest was trimodal. They were most interested at the beginning of their professional education, when starting clinic work, and just prior to graduation. One senior said:

When I first came in I was all fired up about it. Then about the end of the first year and the beginnings of the second, I was disappointed. I was down in the dumps. I thought to myself at times, am I in the right place? Is this what I am interested in? But when we got into clinic work I really got to like the field again. And as I improved I liked it more and more. That is, until the middle of this year, when I got pretty listless again. However, with only a couple of months to go, the drag is disappearing, and I'm taking more interest in the work.

For other students however the interest cycle was unimodal. Their interest was moderate at the beginning, reached a peak in the first clinic year, and then subsided as graduation time approached. As a senior observed:

Like in everything else, there are certain high points in dentistry. I was pretty much interested when I first started but that came to a high point the first day you entered the clinic. When you put on your gown and met your patients. Of course after a while you get used to it, and after a little while longer, at least for me, you start looking forward to getting out of the clinic. I would say that's the high point, the beginning of the junior year. But after that, well, it just marks the end of any romance with dentistry you might have had. It's downgrade from then on, at least in dental school. Your main interest is when you first start in the clinic.

The interest of students additionally tended to vary depending on how relevant they defined their school work to what they thought they would be doing as dentists. Certain symbolic events, like the first wearing of the white gown, also served to spur interest. One respondent stated it as follows:

It was the first thing that showed you were getting forward. Here it's marked by the fact that they hand out the gowns, four clean ones each week. You couldn't wait for the day when they gave you yours. You'd put it on and run around in it even on cold days, just so as to show it off. It was a big thing when you could put it on, and it seemed to make every-

thing you did a little more interesting than it had been before. Might seem silly to you, a gown doing that, but it did.

Despite an initial unfavorable impression, the finding of dental school harder than college, and fluctuating or irregular interest, the commitment of our respondents to getting a dental education was high. Only 7 percent of them had ever given serious consideration to leaving. Important in preventing withdrawal and particularly to giving even serious consideration to it was the feeling that to do so would be to violate the expectations of some persons whose opinions were very important to the student. Factors of a material sort, e.g., the already heavy investment of time and money, were less important than the idea of being a "quitter" from the viewpoint of significant others. Additional evidence that dental students have high identification with their field is indicated in that only 15 percent of our respondents had any doubt at all that they would enter dental school again if they had a second chance. Just 4 percent would definitely not.

DENTAL EDUCATION: HOW SPECIFICALLY VIEWED BY STUDENTS

The Basic Science Courses. The great majority of our respondents at the time they took the courses, saw at best only a partial relationship (41 percent) or no relationship at all (40 percent), between the sciences and dental work. They were unable to do so even while almost unanimously acknowledging a feeling of pressure from the educational framework to see a relationship. Very rarely was the lack of perception of a relationship attributed to incompetence or failure to note one on the part of instructors. In fact, 70 percent of our respondents made similar comments as the following senior:

I couldn't see a connection to dentistry, although they tried to drill it into you. Most of the instructors told you and tried to point it out all the time. But there was absolutely no correlation that you could see. Or at least any that seemed important. They tried to integrate it to the later work and they kept saying and trying to show you, but you couldn't see it.

The chief obstacle involved was the pre-dental school conception of dentistry that most students had. It simply did not encompass the sciences as either a necessary prerequisite for or an integral part of dentistry. Even students with dental family backgrounds showed no greater ability than did students from non-family backgrounds in perceiving a relationship. Only students who had considered no other career but dentistry indicated they saw how the sciences integrated with dental work.

In retrospect, more students were able to see a connection. Exposure to clinic work frequently brought about a marked shift in perception. However, less change occurred than might be expected considering that a correlation between the sciences and dentistry is supposed to be established in clinic work. Thus, a majority of our respondents (54 percent) could still see only a partial relationship even after they had clinic experience. In fact, some senior students only weeks from graduation were unable to see but a minimum connection. Their sometime bewilderment over the inclusion of the sciences in the dental curriculum is illustrated by the remark that:

I've never understood why we took most of those courses in science in the first two years. They just don't seem to fit in. Take something like the histology course . . . I couldn't see any bearing, the why. What in the world did brain tissue have to do with dentistry. And I still am waiting for someone to tell me, what does it have to do with dentistry?

Such reasons as our respondents verbalized as to why science courses were given, points up their lack of perception of a connection between such courses and dental work. Thus, students said the courses were offered to broaden the dentist's general educational background, to elevate the status of the profession, to eliminate the incompetent, etc. This is one of many discrepancies between the way a situation is defined by the institutional structure and the way it is perceived by students.

Only a few more of our respondents believed the science courses were important than saw a significant relationship to dentistry. This attitude of discounting the importance of the courses is acquired early and persists even when the student is no longer a lowerclassman. Two factors are involved.

Most beginning dental students have the idea that science constitutes absolutely established facts about which there is no doubt. In the face of the insistence by their science teachers on the tentative nature of scientific knowledge, they react very negatively. They consequently downgrade the importance of science courses particularly as to their practical dental applications. As one respondent, ending in a sarcastic tone observed:

I don't like courses where theories are piled upon theories. And at the end they say all of them are disproved. We've just had a lecture that illustrates what I mean. It was a very involved thing, and he took twenty minutes spelling it out. I think I got the general hang of it, although it was very vague. Well, at the end, after all that, he says that it was all wrong! Knowing something like that is going to be of tremendous help to me when I start practicing.

Additionally, lowerclassmen acquire a discounting attitude towards the basic science courses as a result of contact with already disillusioned upperclassmen. They learn from some of the more advanced students that the material they are being exposed to is either apparently inapplicable, or in some mysterious way becomes something different later on in their dental education. This is illustrated in the remarks of the respondent who said:

Of course maybe I have an advantage in that I have a junior roommate. I hear things from him that I shouldn't hear until I get to certain courses where I'll learn that they'll be thrown out of the window. Well, by that I mean that in some of these earlier courses we are being told certain things, but when I talk to him about it, he says that in the later courses, they tell you to forget about it. Or they change it around in such a way that it's no longer the same thing that you were taught. I've come to be a little skeptical about some of the things they say and stress.

This example perhaps may serve as a warning to dental educators. The growing tendency in some schools to having upperclassmen informally assist lowerclassmen does not take into account that some of the consequences of such a step might be dysfunctional for the intended result.

In the light of the findings just cited, it might be expected that our respondents would have disliked the basic science courses. This was not the case. In the main, the courses were liked even though students could neither see a relationship nor believe they were really important. Nor were courses particularly selected as interesting because they were perceived to have a special or specific relevance to dentistry. An examination of various factors however failed to uncover any reasonable explanation for this moderate interest in the sciences. A consequence nevertheless is that students probably derived more from these courses than would appear to be the case if one considered only their perception of relevancy and importance.

The Clinic Work. Almost without exception, all our respondents looked forward to working in the clinic. This positive orientation arose from the feeling that clinic work was "real dentistry." However, this anticipation was not unambiguous. Over 78 percent of our respondents reported that they felt concerned or worried about what they were going to do in the clinic. Particularly and significantly more anxious were those students who had had a negative first impression of dental school. The initial shock over the discrepancy between their expectations and reality in that situation, made them somewhat uneasy about another new school situation.

Pre-clinic anxieties center around expected problems in inter-

personal relationships. In fact, about three fourths of our respondents were anxious only regarding interpersonal relationships. Singled out most of all, by 39 percent of our sample, were expected difficulties in relating to clinic patients. Difficulties were visualized in establishing purely social relationships with patients. Students think such a kind of relationship is important because they feel patients cannot respond to them on the basis of their dental skills or abilities.

Additionally our respondents worried over assuming some of the responsibilities and obligations involved in a dentist role. Many saw this in terms of such matters as necessarily having to hurt others, as taking steps perhaps of an irreversible nature, or as giving orders to other human beings. What students thought might be involved is illustrated in such remarks as:

The biggest thing is that you've never worked on people before, just teeth. Now you're going to get a person to go along with the teeth where you didn't have before. And well, I can't help thinking I'll be hurting them. Not intentionally of course, but it will happen, and I haven't got used to that idea yet.

I think I might have some trouble because I've always been kind of bashful, and I've never liked to tell people what to do. I know that I've got to get little more confidence in myself that I can do it, and letting the patients know what I expect of them.

I'm kind of a little scared of the idea of going up in the clinic in a way. Kinda gives you a funny feeling. You'll be doing what you've been practicing, but you wonder if you're capable of doing it with human beings. I don't know. That's when your mistakes start counting. That's when your mistakes start counting, when you have a live person.

Relatively few respondents, a bare 15 percent, thought there might be difficulties with clinic instructors.

About 38 percent of our sample did foresee problems in the more technical aspects of working in the clinic. However, almost all students felt prepared in the more strictly technical phases of dental work. The possible difficulties here instead were seen as mostly in mechanical matters of adjusting to time schedules and unfamiliar working conditions. As one student said:

I'm a bit apprehensive about it. Not so much over doing the work, but the time you have to do it in. That's my biggest apprehension. I feel I have good preparation, so I'm not worried about the work I'll have to do. But it remains for you to meet the requirements, so it doesn't matter how well prepared you are. Not just having to make a denture, put in an inlay, or anything like that. I think I have sufficient training for that. It's the amount of work in the time you have. Will I have enough speed?

Over 97 percent of our respondents with the experience encountered problems in their clinic work. However, contrary to pre-clinic forecasts, most of the difficulties developed in the technical-mechanical work area rather than in the inter-personal relationship area. For example, around 76 percent of our respondents had anticipated problems only in the area of relationship to other people. But only 17 percent encountered difficulties solely in that area. In contrast, 61 percent found certain non-personal but technical and mechanical aspects affecting both the quality and quantity of their clinic work.

Nearly a third of our respondents complained that their clinic work was not up to the standards which they had expected to achieve. Genuine surprise was expressed that the work could not be made to conform to textbook specifications. A consequence of this failure to achieve an expected level of work is the development of a conception of dental problems as involving unavoidable variations. Or in the words of one senior:

One thing I've learned is that you can't do the ideal things like you've been taught in techniques and read about in books. You just can't do the perfect work they teach you about before you get up there. When you get into the clinics you sometime wonder where in the world did they get the examples they write about. Everything you run across seems to be different and you have to make all sorts of adjustments to get any work done. You have to treat each case as different.

Another consequence of the inability to perform at expected pre-clinic levels is a weakening of the student's belief in himself as either a good or a bad dental operator as such. The experience serves as a turning point for a shift from an absolutistic to a more relativistic perception of self. The idea emerges that one is not simply a good or a bad dental operator, but rather that one is likely to do relatively good work in certain areas and relatively poor work in others.

Our respondents found another problem to be that of adherence to the detailed clinic rules and regulations. From the viewpoint of students the official rules cover many inconsequential matters, or even worse, make no difference even if carried out to the letter. They were typically characterized as "bureaucratic red tape" and viewed as fundamentally useless except as a hinderance to the student. Violations were consequently widespread. This is another instance of a discrepancy between the demands and intent of the institutional structure and the perception of students on the same point.

While violations of clinic rules most frequently involved written regulations, at times it also involved the ignoring of direct

orders of clinic instructors. In the situations studied, it was particularly likely to occur if the student discovered that the violation could not be easily detected and had no apparent consequences on the work. One student gave an excellent illustration of the process as follows:

Just as you don't have to go by the book, you don't have to always listen to the instructors. For instance, you have a beautiful preparation and an instructor comes over and says deepen the floor another $\frac{1}{2}$ millimeter. That's pretty insignificant. So I do that and he's likely to come over and tell me to deepen it a tiny bit more. Well, when I started in the clinics I used to do everything they told me. But they never seemed satisfied, and I couldn't see what difference it made in the work.

Well, one day I did a preparation that was satisfactory to me and I called an instructor over. Sure enough, he said OK but deepen it a bit more. I said OK. He went away. I went on with some other work and then I called him back. He comes back and looks at it, says that's fine. He praised me for the work I had done and said it was OK to go ahead now. And I hadn't done a thing! Well, when they jag you like that, you know that you don't have to take it seriously, like a lot of their little rules. But I learned my lesson. If it really doesn't matter and you can't get anyone to see a difference, you just ignore it when they tell you to do it.

Working with the physically unclean is disturbing to very few students (but only 6 percent of our sample). However, many of our respondents were bothered by other people defining dental work as disgusting or degrading because it took place in the mouth. The deep annoyance felt by students over this point is exemplified in such a remark as:

People talk about how can you work in anyone's mouth. That really gripes me. Where in the hell else can a dentist work? Besides, they make it sound as if you were slopping around in a lot of garbage all the time. They take such an odd view of it. Makes you feel like telling them a thing or two.

As the last sentence implies, the problem as seen by our respondents was that they did not perceive any satisfactory way of replying to the charge.

It might be expected that the extreme, almost intense dislike most dental students have about giving prophylactic treatments might be related to this. The calling of therapeutics "the garbage clinic" would certainly suggest it. Actually however, the negative attitude stems from the perceived responses of patients to such dental work. At best patients are seen as indifferent or unappreciative, at worst irritated and annoyed over a seemingly unnecessary dental procedure (and in the instance of beginners, a very time consuming

activity). The lack of positive response by patients and consequent student dissatisfaction over doing such dental work, is illustrated in the following comment:

I dislike most cleaning teeth. Seems more of a thankless job. The public is little aware of its importance. As far as they can see, the mouth is not much different when you've finished than when you started. It's hard work, too. There is a lot of scaling to be done. You have to go a lot of times beneath the gums, and it's hard to get in, and it sticks and is tenacious. But the patient thinks you're crazy if you have to take five periods just to clean his teeth. He just doesn't appreciate the work that is involved. The results are not as obvious as when you put in a bridge.

Another discrepancy between the institutional definition of the situation and the perception by students of the same, is that students do not accept the school designation of clinic work as a "miniature private practice." Over 98 percent of our respondents felt they would proceed somewhat differently as private practitioners. Seventy percent of them particularly thought there would be substantial changes in their technical work procedures. In the school clinics, students see themselves restricted to a relatively few traditional ways of doing things, and barred from experimenting with the newer advanced techniques. In contrast to the large number of students who expected to change and experiment with technical procedures, only 30 percent of our respondents foresaw any changes in their professional relationship to their patients. These anticipated they would cater more to the wishes of their private patients than they did to their clinic patients.

There is also the expectation that while the work done in private practice will be functionally adequate, it will be of poorer quality than that done in the clinic. At school, students feel they are under considerable pressure to produce qualitatively superior as well as functionally adequate dental work. As one respondent observed:

In private practice you'll do adequate work, but it will be something that could be better. It will not affect the longevity of the work, just the appearance of it. The work here in the clinic is not any more functional. Just prettier, better quality. Takes a lot of time to give it that quality, but you often need it, since you might not get passed by the instructor if he's looking for that.

In this relatively brief overview of some selected points, a lack of congruence between the intent and/or perception of educators and the perception of the same activities by students has been noted for a number of areas. Differential perception exists. The question then is, what if anything should be done about it. Dental educators

might well consider to what extent such discrepancies are dysfunctional to the manifest intent of the professional school to turning out professional dentists. If the differences are of such magnitude to weaken the full attainment of this goal, then changes to bring about a congruence in perceptions would seem to be in order.

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THE STUDENT DENTIST AND THE POOR

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The Development of the Dental Curriculum

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EARLY DEVELOPMENT

When dentistry knocked at the door of medicine, seeking fellowship, and was turned away, the leadership that founded the earlier dental schools, aiming to raise dental practice from the status of a mechanical trade to that of a healing art, endeavored to give it the quality of a branch of surgery. For the attainment of this goal, the procedures of the medical schools were closely followed.¹

Although all of the courses were directed to the particular needs of dentistry, the medical sciences were made the basic subjects in the dental curriculum. The degree of Doctor of Dental Surgery was awarded as the distinctive mark of proficiency in the practice of the art.

The formal title of all but one of the dental schools that were established before 1863 contained the designation "College of Dental Surgery."

From 1840, when the first dental school was founded, to 1884, when the first association of dental schools was organized, the curriculum in each school was developed more or less independently, and in its details represented local or independent views. However, owing to the common purpose of making dentistry a branch of surgery and giving it the foundations of medicine, the main features of the curriculum were similar.

The four professorships in the first dental faculty were doctors of medicine, and the first curriculum which served as a guide for dental schools, was much like the medical curriculum of the period. It consisted of anatomy, pathology, physiology, therapeutics, and their dental aspects, as well as clinical dentistry and related principles of surgery, all of which, with the exception of anatomy, were taught solely through the agency of lectures and demonstrations.

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MECHANICAL CONSIDERATIONS

As late as 1867, when the first permanent dental school was founded, the dental curriculum continued to develop on a medical foundation and included anatomy, chemistry, histology, materia medica, therapeutics, mechanical dentistry, operative dentistry, pathology, physiology, and surgery. By this time, less attention was given to anatomical dissection and the reconstructive aspects of dental practice acquired increased importance, as the mechanical improvements of dentistry multiplied and the popularity of artistic dental restorations grew.

The earlier dental colleges gave materia medica, therapeutics, operative dentistry, pathology, and surgery, for their second-year studies. Neither the length of the courses nor the hours of instruction per week were specified, and the curriculum continued to be repetitive in part.

THREE YEAR CURRICULUM

In 1891, the National Association of Dental Faculties lengthened the dental curriculum to three years, without raising the requirements for admission.

This curriculum divided the earlier mechanical dentistry into prosthetic technique and prosthetic dentistry, giving these mechanical aspects a larger share of attention, substituted oral surgery for general surgery and devoted the third year mainly to clinical dentistry.

By 1899, the minimum admissions requirements had been raised. There was a growing tendency to elaborate the mechanical aspects of dentistry without material change in the depth or extent of the mechanical basis, except for introducing lectures in bacteriology.

FOUR YEAR CURRICULUM

Although there were numerous minor changes in the curriculum, it did not appreciably change until 1916 when the minimum entrance requirements were raised, requiring a high school diploma.

Beginning in 1917-1918 the academic year was lengthened to 32 weeks and the dental curriculum extended to four years.

Individual schools gave the council's specifications wide variation in scope, year assignments, hour allotments and sequence as the council encouraged experimental deviation.

The council's curriculum continued to overemphasize dental mechanics in the training of dentists and further reduced the number of hours devoted to the correlations between clinical dentistry and

clinical medicine. The difference between the medical and dental curriculum became more and more pronounced.

THE TWO-THREE GRADUATE PLAN

Gies, in 1926, suggested that dentistry attain the service equivalent of an oral specialty of medicine and recommended what has been called "The Two-Three Year Graduate Plan" of dental education. Gies recommended specifically; reorganization of the undergraduate curriculum in dentistry with three academic years instead of four, each suitably lengthened if necessary. In this curriculum, the course should be equal in quality to those in the corresponding subjects in the undergraduate curriculum in medicine: the degree of B. S. to be awarded at the end of the second or third dental year, or the B. A. to students who complete three years of work in an academic college, before admission, and the professional degree on graduation to be that required for admission to the license examinations, which at present is D.D.S. or D.M.D.

In suggesting the two-three graduate plan, Gies pointed clearly to the need for elimination of much of the repetition and many of the redundancies of the dental course and the need for modification of control and instruction.²

Although the two-three year plan was adopted with some modifications by only five schools, experiments with the plan indicated that the time devoted to elementary dental technology and clinical dentistry, could, under satisfactory conditions, be reduced without loss of proficiency in the clinical phases of operative and prosthetic dentistry.

AMERICAN DENTAL ASSOCIATION SURVEY, 1934

The need for modification of dental education was effectively demonstrated in 1934 in a report of the Curriculum Survey Committee of the American Dental Association³ which recommended and adopted:

1. That the objectives of undergraduate education be the education of the students, in order that they may:

- a) Be competent in the maintenance of oral health and the treatment of oral disease, disorders and deficiencies with an understanding and appreciation of the relationships between oral and systemic conditions in health and disease.

- b) Cooperate effectively with persons engaged in allied fields of service.

- c) Have interest in, and desire for, continuing professional study after graduation.
 - d) Practice dentistry with due regard for its social, economic and ethical relationships.
 - e) Cooperate effectively in community life.
2. That the two years of education in the liberal arts and sciences be required for admission to the dental school.
 3. That a minimum of six semester hours in general chemistry and biologic sciences be required in the pre-professional curriculum, and that courses in English, Sociology, Economics and Psychology be recommended.
 4. That the undergraduate curriculum be a four-year course.
 5. That the curriculum to be submitted by the Curriculum Survey Committee be adopted as a guide to the member schools of the association.
 6. That provisions be made in the students' schedules for extra class study in accordance with the hours included in the recommended curriculum.
 7. That the member schools of the association be urged to develop library facilities that are adequate and to promote their effective use.
 8. That dental education be further developed as an autonomous field of professional endeavor.
 9. That provision be made for a medium of publication to stimulate interest in the study and discussion of the important problems of dental education and to disseminate information on these problems.
 10. That the faculties of the member schools of the association be urged to appoint standing committees to study the recommendations of the Curriculum Survey Committee and to investigate current problems in dental education.

A. A. D. S. CONFERENCE: 1934

At a conference held in 1934 by the American Association of Dental Schools,⁴ a four year course of study was suggested with Physics and Organic Chemistry included in the curriculum.

It was left to the discretion of the dental schools as to whether either or both subjects should be included in the requirements for admission to the schools or in the dental curriculum to be taught by the university departments of physics and chemistry, or by the dental school itself.

The first alternative proved to be the most acceptable as physics and organic chemistry are now universally required for admission and are not included in the curriculum of any of the dental schools in the United States.

The Association took formal action in 1935, requesting that the two-four year program of dental education be put into effect in the September, 1934 school session.⁵

The council fixed the minimum limit of the four-year curriculum at 3,800 clock hours and the maximum at 4,400 and provided that the schedule be arranged to provide at least ten free hours each week.

The dental curriculum was crowded, and in general, did not permit the addition of new content unless some of the older and questionable material was eliminated.

Relatively small amount of change took place from 1934-59 despite the arguments and pleas of many dental educators for significant increases in the time to be devoted to periodontia, endodontia, dentistry for children and oral diagnosis.

COUNCIL ON DENTAL EDUCATION — 1940

In 1940, the Council on Dental Education published its "Requirements for the Approval of a Dental School," and one of the two rigid "musts" prescribed that the four-year dental course should consist of not less than 3,800 clock hours and not more than 4,400 clock hours, distributed in such a way as to provide at least ten free hours each week.

In the typical dental school, the transition from the study of the basic sciences to the clinical practice of dentistry is abrupt, often confusing and frustrating to the student. It is evident that any successful solution must demand a better orientation of students to dentistry, a review of the content of the basic science courses, and improved correlation of both.

Since it is impractical to lengthen the dental curriculum, the problem may be solved only by changes in course emphasis within the present time limitations of the curriculum.

HORIZONTAL VERSUS VERTICAL TEACHING

Traditionally, dental students, during the first two years, have been instructed in the basic sciences and pre-clinical techniques: then, in the next two years, in the clinical applications of the knowledge and skills they have acquired in those courses. An increasing

number of dental schools, however, have questioned the validity of such a horizontally organized curriculum and there is a definite trend toward a vertical arrangement of teaching in which the basic sciences and clinical dentistry are taught concurrently. The result of this change is that students are being introduced to clinical dentistry in their freshman or sophomore years and that basic sciences courses may be found in the junior and senior years as well as in the first two years.

The advantages of teaching dentistry in this manner are evident. Student motivation should improve and the opportunities to integrate knowledge from the basic sciences should greatly increase. The early initial contact with the patient should markedly stimulate the student toward a greater interest and desire for dental knowledge.

AIMS OF CURRICULUM

In keeping with the aim of developing a qualified, thinking practitioner, an undergraduate curriculum should be designed to develop:

1. An understanding of the oral cavity and its relationships to the rest of the body.
2. An appreciation of the prevention of diseases in the maintenance of oral health.
3. An ability for the diagnosis and treatment of abnormal conditions of the oral cavity.
4. A sensitivity to one's needs and the needs of the community.
5. The skills necessary to carry out treatment.
6. An awareness of the need for continuing education and an appreciation for research and adequate background for specialization.

The faculty of each school must help develop the detailed objectives of its institutional program, drawing from its expansive knowledge and experience. Each should have an active curriculum committee to keep its educational program under constant surveillance. This program must be evaluated regularly to see that it maintains its stated objectives. The total faculty should be kept informed of the school's educational philosophy.

The most difficult task facing a curriculum committee is deciding what will be added or deleted from the curriculum. Outdated and

extraneous material must be eliminated and some courses must be discontinued to create more free time and to permit other subject matter to be introduced.

Dental students manifest strong desires to treat patients and eagerly await clinical experiences. They frequently consider the basic sciences as obstacles they must overcome in order to reach the clinic.

At a Conference on Problems of Dental Teaching, Professor Frederick L. Redefers, one of the discussion leaders, stated, "The structure under which we work tends to focus attention on mechanics rather than on basic scientific principles. The specific needs of clinical practice for basic science correlations should be stated and discussed with the teachers of basic science. Conversely, the need for correlation of clinical practice with the basic science teachings should be undertaken by both groups of teachers."⁶

SPECIAL PROGRAMS

Dental schools also require hospital affiliation where dental students can receive instruction and hospital experience.

Programs must be developed for the above-average students to enable them to participate in basic science research or receive advanced instructions in a clinical discipline of their choosing. Active faculty guidance teams should be established to direct either formal or informal assistance programs for the below-average students.

THE CHANGING CURRICULUM

The movement of questioning the status of the dental curriculum has spread throughout the country. The dental literature is replete with articles in reference to the problem. An article "The Dental Curriculum of Tomorrow",⁷ questions the dental curriculum as to its rationality and as to whether it abides by known public needs and accepted principles of pedagogy.

It questions whether the current dental educational program keeps pace with the changing socio-economic demands placed on society.

The article expresses the sentiments of this writer in that student selection, the educational program, and the certification processes themselves, must follow known educational principles, and that present dental faculties require the aid of professional educators.

The curriculum must have continuity, sequence and integration. Continuity requires that all basic ideas be stressed repeatedly throughout the program. Sequence mandates that the basic ideas be used in an ever-widening context and integration requires con-

tinued cross-reference among all the courses taught at the same time.

Finally, teaching methods must be aimed at understanding and ability to learn.

The interrelation between the basic sciences, techniques and clinics should not only be rational, but also capable of maintaining the students' career interests.

In keeping with the newly-developed philosophies of curriculum development, dental schools have already made significant changes in their curriculum, or are planning modifications from the usual, conventionally planned curriculum.

The hospital appears destined to play a greater role in tomorrow's effort to provide comprehensive health care of a treatment and preventive nature, to greater numbers of the population.

Present undergraduate dental education cannot be expected to produce a graduate who is fully qualified in all the arts of dental practice. Thus, the hospital will be expected to augment their dental training. At the present time, most dental schools provide some hospital experience for the undergraduate dental student, but the length of the exposure ranges from five to 378 hours.⁸ Two main objectives of the hospital program are (1) the introduction of the students to operating room techniques and protocol and (2) the orientation of the dental student to hospital procedures. Other objectives are: reinforcement of the student's concept of total patient care; understanding of the team concept in health services, and the introduction of the student to treating the chronically ill, the mentally ill patients and the physically handicapped.

With the advent of the growth of hospital dental programs, acceptable to the American Dental Association, greater stress will be placed upon university-related teaching staffs to augment the present undergraduate program of dental education.

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A Report on British Dental Education

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A study of British dental education was conducted during the period January to June, 1970.

This education is provided by fifteen universities in twenty-one dental schools in the United Kingdom and Ireland. In addition, there are four Royal Colleges that offer diplomas and fellowships. Three of the four do not have undergraduate schools and the fourth has an undergraduate school in Dublin, Ireland.

The schools have an average intake of 55 students per school. The last official statistics published by the Government in 1970 showed that as of December, 1967 there was a total of 3,576 students enrolled in all schools of dentistry. The total population of the United Kingdom and Ireland at the time was approximately 55 million.

Time would not permit a visit to all dental schools, so a group was chosen that included new or upgraded facilities, with the hope that the most current thinking in British dental education would be reflected in these schools. The schools visited were:

University of London

Kings College Dental School	1965 new building
The London Dental School	1965 new building
The Royal Dental Hospital of London	1964 old building extended
University College Hospital Dental School	1963 new building
University of Liverpool	1968 new building
University of Bristol	1963 old building rebuilt
University of Birmingham	1965 new building
University of Wales	1965 new building

All education, including medical and dental education in the United Kingdom is now under central government control. The general public education is handled by three central government departments: The Department of Education and Service for England and Wales; the Scottish Education Department and the Ministry of Education for Northern Ireland. These government departments fund the general public education in combination to the standard school leaving age of 15 years. A student may continue on in education

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to higher levels provided he shows suitable ability and will then take the General Certificate of Education examinations at the Ordinary Level ("O" levels) at age 16. If the student wishes to continue further into higher education, he must decide on the field of endeavor he wishes to enter, since the next examinations are the General Certificate of Education, Advanced Levels ("A" levels), usually taken in a few specialized subjects at age 18 years. Students who wish to enter dental education are generally required to have attained G. C. E. "A" level passes in Physics, Chemistry and either Biology or Zoology, along with passes in other subjects at the "O" level. The dental course of instruction following the completion of the prerequisite training mentioned, is $4\frac{1}{2}$ years for most British dental schools. The prerequisite education required for entrance to British dental schools is roughly equivalent to the prerequisite requirement laid down by the American Dental Association for entrance to American dental schools, except that in Britain this level of education is usually acquired by age 18 and most British dental school students have not gone further in general education beyond these requirements. In contrast, the pattern in American dental education is to pursue undergraduate studies to the degree level and then enter dental school, with the corresponding increase in age.

Admission to British dental schools is handled by the Universities Central Council on Admissions, a body established in 1961 that is responsible for all admissions at the university level in the country. Through the Council, a student may apply to a maximum of five dental schools. The individual dental schools have the right to reject an applicant and are selective on this basis.

INTERVIEWS AT THE DENTAL SCHOOLS

In an effort to standardize the school interviews, a basic list of general questions was asked and the following is a composite of all the answers received:

Question #1: What is Class Size?

In general, the class size was 50 students, though some of the very new schools have a potential of 80. Similar to new construction in this country with Federal assistance, new construction in the United Kingdom is predicated upon the expansion of facilities to increase the output of dental graduates. There was general agreement among those interviewed that the support by the Ministry of Health, which made possible the construction of new dental facilities and the up-

grading of others, would not have occurred without the introduction of the National Health Service. There appears to be a dental student loss rate of 5-10% in the schools interviewed.

Question #2: Are there problems in filling the entire class?

The problem here seems to center around getting the quality of applicant rather than the quantity, though the applicant-place ratio is not as high for dentistry as it is for medicine, where it is estimated that there are 8-10 applicants per class place. Since dentistry is more closely allied to medicine in Britain than in America, it is felt that the applicants tend to form a pool in which both dentistry and medicine are competitive. Dentistry does not seem to have quite the competitive edge in this situation because of two factors: 1) in many cases, the primary choice is medicine; 2) the "image" of dentistry is less desirable.

For these applicants, the prerequisite passes at "A" levels in the courses mentioned earlier are the same for both medicine and dentistry; however, there are 5 levels of "pass" at "A" levels, varying from A to E. Medical schools apparently are able to expect and receive applicants with 3 subject "A" level passes of 2 B's and a C, whereas dental schools tend to receive "A" level passes of 2 C's and a D or 2 D's and a C for the same subjects.

The foregoing led to Question #3.

Question #3: What is your percentage estimate of dental students whose original choice was medicine?

This question turned out to be a very difficult estimate to make, since unsuccessful medical applicants did not necessarily broadcast the fact. Estimates ranged from 5% to 33 $\frac{1}{3}$ %. Hopper¹ states that this figure varies between 20-30%.

Question #4: Is there any national program attempting to influence student choice of career toward dentistry?

The national body involved in this activity is the General Dental Council, which was established under the Dentists Act of 1957 as a replacement of the earlier Dental Board. The General Dental Council's membership is composed of 27 individuals nominated by the Government, universities and Royal Colleges; 11 individuals elected by the dentists in the United Kingdom; 6 individuals nominated by the General Medical Council whose function on the G. D. C. is limited to dental education and examinations.

The Council's major function is to maintain the Register of those legally entitled to practice dentistry in the United Kingdom and to

assess the standards of dental education programs and examinations leading to the degrees necessary to practice dentistry. It also has the power to remove a dentist's license to practice dentistry. The auxiliaries (dental hygienists and dental assistants) are also controlled in the same manner. In addition, the Council has other activities roughly comparable to the American Dental Association, so that, in function, it appears to be a combination of the A. D. A. and the State Boards.

The effectiveness of the Council's promotion of dentistry as a career choice is somewhat in doubt, it being felt that the individual school's efforts in this direction were more productive. Most schools stated that their faculty members participated actively in programs designed to reach out into the educational community at lower levels and influence students toward dentistry, or at least to improve the image of dentistry. Some schools had programs where students at lower levels were invited to spend time in the dental school and became involved in projects set up for this purpose. Howe² states that comparatively few members of the (British) public realize the intellectual challenge, scope and variety that modern dental surgery has to offer. He continues: "The ignorance displayed and bad advice given by headmasters and careers masters on this topic are bywords amongst those who interview applicants for places in dental schools."

Question #5: What is the cost of dental education to the student?

The tuition fees for all schools studied were roughly the same, i.e., \$240.00 per year. In most schools the bulk of the instruments needed were supplied by the school and in a few cases, where schools operated a central sterilizing department, the total armamentarium was furnished.

The question of cost becomes academic, however, since virtually all students received money awards or grants from various sources which covered their financial needs. The most common student financial source was an award made by the local Education Authority for the area where the student did his preliminary studies. This award could be a "Full Value award" which covers the full cost of fees and maintenance for the student, or a "Lesser Value award" for part of the total cost.

The decision on the type and amount of award a student may get is based on the family income, but a minimum award of at least \$120.00 is made.

The situation for a medical student is virtually identical.

Question #6: What is the School calendar format?

Nearly all schools operated on the basis of three terms of 10 weeks duration each, with two weeks vacation at Christmas and Easter and four weeks in the summer. There is an additional clinical period after the 30 weeks of term work, bringing the total program length to 46 weeks yearly. The overall program for all dental schools occupied $5\frac{1}{2}$ years, generally broken down as one year pre-dental prerequisites; 1 year Anatomy, Physiology, etc.; 1 year Dental technique courses and $2\frac{1}{2}$ years Clinical dentistry.

Question #7: What type of curriculum plan does your school follow?

While the general format for most schools follows the pattern outlined in Question #6, in that the first two years of the dental curriculum are concerned with "basic science" and lab technique courses, with clinical dentistry occupying the rest of the time, there have been some innovations. Some schools have changed this format into what may be called a "clock" pattern, utilizing small "blocks" of students, rotating through departments, with the incorporation of electives and free time periods. In the British system, it is necessary to conform to some extent to the timing of the four major Bachelor of Dental Surgery examinations (B. D. S.) of which the third and fourth are usually divided into two parts each.

Another important facet of the system which was found generally throughout dental schools visited was the use of laboratory technicians, both internally and commercially, to reduce the student work load in the clinical years.

Full time faculty for a dental school usually entered the educational field by becoming a "House Officer" in a dental school following graduation. These posts are usually held for six months or a year and are similar to an internship. The Diploma of Fellow in Dental Surgery of the Royal College of Surgeons (F. R. C. S.) requires a term of service of this nature in addition to examinations. After this service, a graduate may be offered a staff post with the understanding that the higher degrees of M. D. S. or Ph.D. will be pursued. There is usually a time requirement, varying from 2 to 5 years, before the M. D. S. examination may be taken.

There are a number of part-time faculty in the schools, whose situation appears comparable to American practice in that they have a private practice and serve the school on a limited basis.

The question was asked if there was enough time in the overall pattern. Most schools felt that with the onrush of new material, it

was becoming increasingly difficult to maintain adequate coverage in all phases. One school (the University of Wales) has shortened the total course by one semester.

Question #8: What kind of teaching aids are used?

All schools used slide projection and 16 mm films. There was some interest in the use of Super 8 film and cassette configurations, but little real activity in this area as yet. The newer schools showed a real interest in closed circuit television, with some having facilities set apart and constructed for this purpose. Other schools used the system confined to the technique labs. No use of color television was observed. A few video tape recorders were seen, of American manufacture, but apparently these machines have not lived up to the claims made for them. In the area of electronic equipment, it was impressive to note that every school visited had an electron microscope in operation and several schools used radio system to page individual faculty and staff members via personal "beep" receivers.

While most schools had access to a computer for research purposes, virtually no attempt had been made to use this device for patient records or patient-student control.

Question #9: What has been the effect of the National Health Service?

The majority of qualified dentists are engaged in private practice, which includes practice under the National Health Service. Patients who belong to the N. H. S. and are accepted for treatment by a dentist, know that the dentist has agreed to accept a scale of fees and to abide by the regulations set by the N. H. S. The dentist may or may not accept an N. H. S. patient and he may treat patients by private contract as well. Some dentists do not belong to the National Health Service and treat private patients only and others practice in conjunction with consultant duties associated with N. H. S.

It is necessary for National Health Service dentists to receive permission to perform services not listed in the standard operational N. H. S. schedule. In the past, permission to perform such services as periodontia and fixed partial denture work was rarely given, but this situation appears to be changing. The lack of "recognized" specialties as known in this country may be responsible for the poor extension of dental treatment at the public level, since surveys report, for example, that 50% of British children from 15 to 19 years had periodontal pockets (three times American experi-

ence)³ and that 55% of a group aged 50 years were wearing complete dentures.⁴

It appears that a graduate of a British dental school today who enters general practice can look forward to a career consisting mainly of extractions and the placement of amalgam and synthetic restorations. In fact, the N. H. S. has legislated against the performance of more elaborate restorative measures by (1) making approval a drawn out administrative process; (2) setting a non-incentive fee scale for this type of service and (3) making the patient pay approximately $\frac{1}{2}$ the cost for dental services, even though treatment for medical ailments is essentially free.

In 1970, a government social survey on dental health in England and Wales was published. This was the first epidemiological survey carried out in the dental field on a national scale. Survey results show that even among those aged 16-34 who have had the opportunity of National Health Service treatment for a large part of their lives (N. H. S. started in 1948) 45.3% said they attended the dentist on a regular basis and 41.3% only went when in pain or on other emergency basis.

The President of the General Dental Council reported in 1971 the results of a sociological study in which the observation is made: "The general outcome is that the dental service is not being used as well by the working class as the middle class, although it was originally designed to help those in greatest need."

Some doubt has been cast on the future availability of dental care under the National Health Service with the change of the party in Government power at the last British general election. It is generally agreed that the costs of National Health Service care to the nation were grossly underestimated, and the current economic difficulty that England is experiencing is forcing the present Government to institute further economic controls. If the controls are sufficiently severe, it may well be that the role of dentistry within the National Health Service, and indeed the Service itself, may quietly fall into disuse with consequent collapse.

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A Pilot Program for Dental Disease Control

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INCREASES in the demand for dental care are known to have high positive correlation with population growth, increased education levels, increased family incomes, and increased utilization of prepayment systems in the form of public and private insurance payments for dental services. The trend toward increased demand for dental services is expected to accelerate in the next decade if a National Health Insurance program is implemented.

Pressures on the already short supply of dental health manpower, as well as the rapidly increasing cost of training dental health personnel, will make it mandatory that the various dental health agencies, the dental profession and the institutions which train dental personnel, begin to investigate the newer methods of using manpower and resources more efficiently. Even more imperative is the need to test for feasibility and effectiveness of the innovative programs designed to reduce the incidence of dental disease in the population.

Recent investigations have demonstrated the strong positive correlation between mature plaque and the incidence of dental disease (dental caries and periodontal disease). Empirical studies from the offices of private practitioners have shown that plaque control measures can be effective in reducing dental disease and maintaining optimum oral health. However, considerable research is needed to determine the methods and feasibility of application to large population groups. Additional research is necessary to study dental disease control as a teaching-learning experience with dental and hygiene students.

A pilot program in dental disease control has been designed for implementation and study in association with the teaching of oral

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diagnosis and treatment planning in the College of Dentistry at the University of Iowa. The program has as its purpose the organization of facilities and services to study the effectiveness of a particular teaching-learning program for students and to study the effectiveness of a plaque control strategy in a program of oral health maintenance for clinic patients.

OBJECTIVES FOR THE OPERATION OF THE DENTAL DISEASE CONTROL PROGRAM

A. For the Patient

1. The patient will be made aware that the College of Dentistry offers a service in addition to treatment services, which may effectively reduce the need for continuous and recurrent dental treatment and which can, if followed carefully, maintain the esthetics, function and comfort of subsequent restorative and treatment services.
2. The patient will learn the causes of dental disease problems and will assist in their diagnosis by identifying the habits, beliefs and attitudes that contributed to the problem.
3. The patient will learn the currently accepted methods of plaque control and will be given the opportunity to practice the necessary skill in the use of the various aids to plaque control and dental health maintenance under the direct supervision and guidance of a student-faculty team.
4. The patient will be encouraged and reinforced in learning by returning to the dental clinic for periodic evaluation and additional learning in order to monitor and improve the continued performance in prevention and control of dental disease.

B. For the Dental and Dental Hygiene Students.

As the result of their participation and experience in the dental disease control program, the students will demonstrate:

1. That they can effectively control plaque in their own mouths, not only for the duration of the disease control assignment, but for the remainder of their course of study at the College of Dentistry.
2. That they can effectively diagnose the cause and consequences of the dental disease process for each assigned patient and are able to communicate the information to the patient in such a way as to motivate the patient to participate in a planned, long range program of dental disease control and oral health maintenance.
3. That they can successfully assist the assigned patient in acquiring the necessary skills to control dental disease and maintain optimum oral health.
4. That they can effectively monitor each patient's performance and make such corrections and adjustments in the procedure that will enhance the ability of the patient in controlling dental disease, maintaining oral health and preserving any subsequent dental treatment.

C. For the Faculty.

As the result of their observation, well-planned research, constant evaluation and improvement in the program, the project administrator and teaching faculty will:

1. Do a systematic analysis of the information and data obtained from the program in order to provide evidence of the effectiveness of the student learning process.
2. Do a systematic analysis of the effectiveness of the program in reducing plaque and maintaining oral health for those patients who participate in the program.
3. Develop suitable reports on the progress and findings from the program for the administration and faculty as well as to the practicing profession of dentistry in order to add to the body of knowledge and experience in dental disease control and oral health maintenance.
4. Make such observations, changes, evaluations and improvements in the program in order to provide the guidelines for future expansion of the learning experience and to suggest such curricular changes as may seem appropriate and feasible.
5. Through continuing education courses, provide opportunity for dentists in practice to personally participate in the dental disease control program and secure the guidelines to develop prevention-oriented dental practices.

PATIENT EDUCATION AND MOTIVATION

The first step in an oral physiotherapy program for disease control is education, not simply patient education, but dentist, student and teacher education as well. There can be no motivation or behavior change without a mutual learning process between the motivator and the motivated. The patient must recognize the relationship between his clinical disease problem and the bacterial microbes he is hosting. Disclosing tablets or solution as well as the phase microscope can be used to demonstrate to the patient the presence of plaque and the bacterial microcosm. The patient must recognize the importance of thorough plaque removal and understand that he alone is responsible for disease control and oral health maintenance. The success or failure of any subsequent restorative or treatment services will depend on the patient's understanding, motivation and skill in a long term plan or prescription for disease control.

The education phase of the control program must emphasize the essential element of patient participation in the long range planning as well as attitude and behavior change in his oral health maintenance. Old habits are hard to break and new habits are difficult to establish. Repeated instructions and constant encouragement are essential for the patient to acquire the desire and the skill to master

the proper cleaning technique. The dentist, the student, or the teacher can do nothing to overcome what the patient will not do for himself.

Getting to know the patient requires the student-teacher to listen. The student-teacher is expected to find out what the patient's goals in life are, what does he want to achieve for himself and his family as long range goals. His changed habits or behavior as well as his attitude about health must be seen as a necessary and contributing sub-goal in a journey to personal achievement. It is the student-teacher's responsibility to listen, question and learn what those goals are and then use his knowledge of dental health to establish the obvious relationship between oral health and the patient's goal achievement.

It is the philosophy of the teaching faculty that many plaque control programs have failed because they have depended too heavily on "hardware" such as audio-visual tapes, slides, and printed materials and not enough on the "software". The student-teacher is expected to become so familiar with dental disease etiology and prevention that he can communicate the necessary information and motivate the patient to become as enthusiastic about prevention as he is. Students must believe in what they are teaching and are expected to be walking examples of the principles they teach. The teaching faculty believes that the time spent in two-way communication, in listening as well as speaking, is essential for motivation and behavior change.

In teaching the skills required to control plaque, the patient is guided carefully through the procedures. Each step is mastered before another is added and the equipment needed to perform the desired task or tasks is held to a minimum. Rewards in the form of praise, encouragement and attention to observable improvement in conditions are much more effective than reprimand or embarrassment in producing motivation and habit formation.

Several practice sessions are usually required in order to master the skills of effective plaque control. The patient should be given an opportunity to demonstrate his improvement in skill upon returning for control checks. The patient is instructed to use disclosing tablets at home in order to discover for himself where special attention is needed and where plaque is being missed. Even after the student-teacher is satisfied that the patient is able to successfully remove all plaque and can maintain a disease-free oral environment, periodic checks are necessary to reinforce habit formation and evaluate the continued patient performance.

Plaque control programs often fail when there are no follow-up performance checks. A regular program of periodic checks is usually required. Patients should be informed that they will be going *into* a disease control program rather than *through* the program. The word connotations are entirely different. The patient will need to stay in the program for as long as he has teeth and recall systems need to be developed to insure that the patient is reminded of the need to return for evaluation of his cleaning effectiveness and possible additional skill training. Only through a program of patient responsibility and constant vigilance by the dental health team can a patient expect to control disease and maintain oral health.

RESEARCH

Two research studies will be conducted as part of the pilot program. The first study will attempt to measure the effectiveness of the program in maintaining a plaque free oral environment for those patients who participate in the study. The second study will attempt to evaluate the effectiveness of the teaching-learning experience for students, and it will attempt to identify the critical parameters of the teacher-patient communication process.

It is expected that the findings from these studies will contribute additional evidence to the growing belief that responsibility for the control of dental disease and oral health maintenance is a partnership venture which requires the active and effective participation of the patient and his family as well as the members of the professional dental health team. The patient must be made aware that optimum oral health is a fundamental and critical to the achievement of social, educational, economic and psychological goals. The patient must know that he can acquire the knowledge, the skills and the habits to become independently healthy and that he can maintain healthy, comfortable and attractive teeth and gums for a lifetime.

The pilot program for the control of dental disease is expected to provide additional information for certain curricular improvements in order to facilitate the changing emphasis in dental education and dental practice. The program is expected to provide guidelines for the organization and operation of prevention-oriented dental practices for future dentists as well as those already in practice. In addition, the program is expected to provide a resource of information for the expansion of the teaching-learning experience and to provide additional information for agencies and organizations which teach dental disease prevention to community groups.

SECTION NEWS

(Continued from Page 68)

New England Section

The section held a breakfast meeting at the Sheraton Boston Hotel on January 10, 1972. Plans for the coming year were discussed. Two meetings are held each year. A breakfast meeting precedes the educational meeting of the Massachusetts State Dental Society. A dinner meeting is held in May, with wives of Fellows present, at the opening of the Massachusetts Dental Society annual session.

Section officers this year are: chairman, Dr. Charles Zumbrunnen, of Concord, N. H.; vice chairman, Dr. L. Walter Brown, Auburndale, Mass.; and secretary-treasurer, Austin T. Williams, Salem, Mass.

Pittsburgh Section

The Pittsburgh Section held a dinner meeting at the University Club on February 24, 1972.

The speaker was Fellow Wilvor Waller who directs the dental portion of the Model Cities Program at Montefiore Hospital. His presentation was both interesting and instructive.

At the section meeting of April 22, 1971, it was unanimously decided that the Pittsburgh Section would underwrite the cost of the three bronze plaques of our former deans, H. Edward Friesell, Lawrence E. Van Kirk and William F. Swanson, which have been installed in the corridor adjacent to the dean's office. An appropriate plaque will be placed in the area in acknowledgement of our contribution.

News of Fellows

Dr. D. Walter Cohen has been named dean of the University of Pennsylvania School of Dental Medicine. He will succeed Dr. Lester W. Burket, who retires in June. Dr. Burket, who has been dean for 21 years, will continue on the faculty as professor of oral medicine. Dr. Cohen has been professor and chairman of periodontics at the school since 1963. For the last two years he has also been associate dean for academic affairs.

Dr. Philip E. Blackerby, past-president of the College, and vice president for programs of the W. K. Kellogg Foundation, was awarded an honorary degree by the Universidad Peruana Cayetano Heredia during a visit to Lima, Peru, recently. Dr. Blackerby received the University's highest honorary degree, Doctor Honoris

Causa, in recognition of his "contribution to the advancement of the health professions in general and of dental science and education in particular."

Dr. Norman H. Olsen, chief of dental service at Children's Memorial Hospital and chairman of the department of pedodontics at Northwestern University, has been named dean of the University's dental school. Dr. Olsen succeeds Dr. George W. Teuscher, who resigned as dean after serving in this position since 1953.

Dr. Wesley O. Young has been appointed professor of community dentistry at the School of Dentistry of the University of Alabama in Birmingham.

Dr. W. Harry Archer, former professor and chairman of oral surgery at the University of Pittsburgh School of Dental Medicine, was presented with the Horace Wells medal by the Brazilian Dental Association for his original research on the life of Horace Wells.

Dr. Floyd E. Dewhirst has been appointed to the Council on Legislation of the American Medical Association, representing the ADA.

Dr. Peter J. Coccaro has joined the staff of the Institute of Reconstructive Plastic Surgery of New York University Medical Center, as Research Associate Professor of Clinical Surgery (Orthodontics) and Director of Research of the Center for Craniofacial Anomalies.

Dr. Coccaro, a retired career commissioned officer in the United States Public Health Service, has done clinical research in the area of craniofacial anomalies at the National Institute of Dental Research.

Dr. Mario M. Chavez of Washington, D. C., has been appointed program director of the Latin American interests of the W. K. Kellogg Foundation. He is current associate director of the Pan American Federation of Associations of Medical Schools and of the Latin American Association of Dental Schools.

Dr. Harold Fullmer, director of the Institute of Dental Research at the University of Alabama dental school, is editor of a new internationally edited and distributed "Journal of Oral Pathology" published by Munksgaard of Copenhagen, Denmark. Among the 20 associate editors is Dr. Richard W. Tiecke of Chicago, ADA assistant executive director for scientific affairs.

Dr. Herbert J. Bloom, chief of dental and oral surgery at Sinai Hospital in Detroit, has been named winner of the Michigan Cancer Foundation's Distinguished Service Award for 1971.

Dr. Clive I. Mohammed has been named acting dean of the University of Detroit School of Dentistry.

Dr. Albert Wasserman of San Mateo, California is currently president of the Academy of General Dentistry, and also a Benefactor of the University of the Pacific School of Dentistry.

Dr. John S. McQuade of Ventnor, New Jersey, has been named president of the Board of Managers of Ancora Psychiatric Hospital, near Hammonton, N. J.

Dr. Kenneth R. Goljan of Summit, New Jersey has been appointed associate professor of oral diagnosis and radiology at the College of Medicine and Dentistry of New Jersey.

Dr. Charles T. Pridgeon of Severne Park, Maryland, has been appointed assistant dean for continuing education at the University of Maryland School of Dentistry.

Dr. A. James Kershaw of West Warwick, Rhode Island, was elected president of the New England Dental Society at its 108th annual meeting.

Dr. J. Robert Short has been re-elected for a second term as chairman of the Kalamazoo, Michigan Board of Health for 1972.

Correction

In the News and Comment section of the last issue, there was an item that the College had, in Dr. Irving W. Eichenbaum and Dr. Naomi A. Dunn of New Britain, Connecticut, its first husband-wife dental team. Dr. Leon H. Ashjian has called attention to the fact that there has been such a team in Southern California since 1967 when Dr. Donald J. Hodge and his wife Dr. Grietje Christian of Dana Point were inducted into Fellowship.

THE DEVELOPMENT OF THE DENTAL CURRICULUM

(Continued from Page 113)

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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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