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Auxiliaries, Manpower, and Decision

The federal health legislation of the past year, the rapid development of programs to carry out the provisions of these laws, and the almost certainty that these health benefits will be expanded, surely must have alerted dentists to the tremendous obligations the profession will have to assume. And perhaps sooner than we realize.

Funds are available now for comprehensive health care programs for those who receive public assistance, for those under 21 whose families although not receiving public assistance cannot afford the costs of their children's health care, for members of dependent families who cannot pay for health care, for the blind, the disabled, and the elderly. In addition, a national program of dental care for children is being developed. Then too there is the likelihood that the health programs will be broadened to cover all of the needy regardless of age.

Estimates of the number of recipients of this dental care are risky and varied; some indicate that eventually one third to one half of the population will be involved. This in a country of 179 plus millions. Obviously, manpower must be considered. The Public Health Service, looking to 1975, estimates that 120,500 dentists will be needed, and that there will be 95,000 dentists available. One approach to a solution, also obvious, is the expansion of the duties of auxiliaries.

The American Dental Association, in 1960, encouraged experimentation and research in the training and utilization of dental hygienists and dental assistants. Four training programs are underway: at the Naval Training Center, Great Lakes (this has been concluded); by the Division of Indian Health of the Public Health Service; at the Experimental Center of the Public Health Center, Louisville; and at the University of Alabama School of Dentistry.

Reports from these projects indicate that dental auxiliaries can be
trained to perform a variety of procedures under the direction and supervision of the dentist, that the quality of treatment is comparable to that given in conventional practice, and that the productivity of the dentist can be increased greatly by the use of such personnel.

This experimentation should continue, with the profession thoughtfully evaluating the results in relation to the mounting responsibilities of providing dental care to the public. The direction of the training will be of concern to both practitioner and teacher. The extent of delegation of duties to well trained, efficiently organized, and properly supervised auxiliaries will have to be determined precisely. But this can come later.

First and basic is the position and philosophy of dentists. Do we wish to delegate certain procedures to auxiliary persons that hitherto only we have been legally permitted to do? That is the pivotal decision that we have to make. We can train them, we can determine what they may do, and we can establish that by law. Do we want to? We are approaching the moment of truth. We should face it directly after searching intellectual self-probing; after sincere, rational, and unemotional discussion with our colleagues; and after a realistic appraisal of our professional obligations to the people we serve. It is a profound decision, but it is ours—now.

T. McB.

RESOLUTION FROM THE ADA COUNCIL ON DENTAL EDUCATION TO THE 1966 ADA HOUSE OF DELEGATES

Resolved, That the Association affirm the responsibility of the individual practitioner for determining the functions which can be delegated to auxiliary personnel under supervision of the dentist, and be it further

Resolved, That state dental examining boards and component and constituent dental societies be urged to proceed promptly with studies and decisions which will help meet the manpower needs of the public, including the identification of additional functions which can be delegated to auxiliary personnel working under the supervision of the dentist.
Not-For-Profit Dental Plans: 
NADSP Concept

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AT THIS early stage in the development of the National Association of Dental Service Plans, I feel it would be singularly inappropriate for me to arrogate to NADSP responsibility or credit for the synthesizing of the concepts which underlie dentistry's entry into the prepayment market place through the vehicle of the not-for-profit dental service corporation. In later years, as the mists of history tend to obscure factual origins, I may yield to the temptation to round out the image of the organization, as one which burst forth in adult vigor without having passed even through adolescence, by attributing to the leaders of NADSP a capacity for self genesis. For the moment, however, I must state clearly that any "NADSP concept" concerning not-for-profit dental plans is simply a reflection of the concept espoused by the dental profession through the actions of the House of Delegates of the American Dental Association.

As long ago as 1957, the House of Delegates, on the recommendation of the Council on Dental Health, adopted a resolution which said, in part:

Constituent societies which may anticipate the development of sufficient demand for organized plans for the group purchase of dental care should give consideration to the establishment of a dental service corporation. . . .

That resolution followed by three years the formation of the first dental service corporation by a constituent society, the Washington Dental Service established in 1954 under the auspices of the Washing-
ton State Dental Association. It also was two years post hoc the activation of California Dental Service by the California Dental Association. Accordingly, it might be said that the ADA's not particularly strong action in behalf of dental service corporations constituted only a belated recognition of a need that already had been experienced and met at the constituent level on the West Coast. I prefer to regard the action, however, as evidence of the healthily conservative attitude of the House of Delegates in demanding evidence of the utility of the service corporation mechanism, as applied to the group purchase of dental services, before adopting a policy position of far-reaching impact on the profession.

The service corporation concept certainly is not new in this country. It has been applied to hospital services, through what we commonly refer to as Blue Cross plans, since 1929. It has been applied to physicians services, through medical society sponsored Blue Shield plans, since 1939. Only its application to dental services is new, although the detractors of the dental service corporation would have us believe that the device was conceived by the faceless, invidious perpetrators of the alleged Washington-Moscow Axis for the sole purpose of immuring the dental profession in the confines of a nationalized dental service. This is the most illogical, unrealistic position imaginable, yet its proponents have their followers. The fact is that the hospital and medical service counterparts to the dental service corporation—Blue Cross and Blue Shield—constituted the strongest bulwarks against nationalization of health services and have contributed over the years, in competitive concert with the commercial insurance industry, to the preservation of the voluntary, private practice system of health care in this country.

A dental service corporation is the dental counterpart to the medical society sponsored service corporation, known commonly as Blue Shield. It is a not-for-profit organization, usually incorporated under a special enabling statute, and founded under the sponsorship of the state dental society in the state in which it operates. Its purpose is to permit the marketing of dental service plans to interested consumer groups, with the corporation acting as the underwriter of the plans and possessing, as its major resource, agreements with dentists practicing in its area of operation by which the dentists agree to provide the services covered in the contracts between the corporation and its group customers.
As was mentioned earlier, dental service corporations originated on the West Coast, as the result of demands placed upon the dental profession by representatives of the Health and Welfare Fund maintained by the International Longshoremen’s and Warehousemen’s Union and the Pacific Maritime Association. Those demands, exerted almost simultaneously in the states of Washington and California, were aimed at the development of professionally controlled and administered plans whereby the children of union members could obtain essential dental services with the Fund supporting the costs of the plans. The ILWU-PMA plans that were placed in effect proved successful, after experiencing early growing pains, but the evolution of other contracts was slow. Much of the activity of these early corporations in California and Washington was related to contracts with state and public welfare agencies. Slowly, however, other organizations, particularly in the field of negotiated health and welfare trusts, began to show interest in dental care as an area for inclusion in the collective bargaining process, and the pace of interest in dental service corporations accelerated, both within the profession and externally. Today, that interest has produced the passage of enabling statutes in 31 states, the formation of 24 corporations, and the activation of 11. Corporations currently operating are located in California, Colorado, Connecticut, Hawaii, Kentucky, Michigan, New York, Ohio, Oregon, Rhode Island, and Washington. Others are expected to begin functioning soon. This increase in activity has expanded the number of persons covered under group service plans to almost a million. It has been estimated that many millions will be covered by 1970, particularly if the National Association of Dental Service Plans is able to facilitate the negotiation of contracts involving consumer groups whose members are located in two or more states.

The evolution of dental service corporations has been slow because of a variety of factors. The demand for group coverage of dental expenses, through any type of third-party financing mechanism, was not felt until recently because priority was given by the public to the purchase of coverage for other, more catastrophic, health care expenses. The dental profession was reluctant to enter a field foreign to its normal scope of function. The practicality of attempting to prepay dental expenses was severely questioned. The need, in most states, for the passage of special enabling legislation, in order to create an ex-
ception to certain prohibitions or impositions in state insurance
codes, was felt to be an expensive and difficult obstacle to overcome.
Time has eroded the strength of these negative considerations, how-
ever, and the direction of the dental service corporation movement
appears definitely to be forward.

The not-for-profit status of a dental service corporation enables it
to enjoy freedom from taxation and permits it to operate, generally,
with less rigid regulation and control by agencies of the state govern-
ment. It is a quasi-public organization, often having lay representa-
tion on its governing body. As such, it usually is permitted to operate
on a low capitalization basis and is not required to maintain a high
level of underwriting and claim reserves. Its principal strength, and
its real capital resource, lies in the support of the dental profession.
Usually each participating dentist, through written agreement, agrees
to accept a temporary reduction in the fee payments due him from
the corporation, for services provided subscribers, if the corporation
should find its resources inadequate to meet its commitments. While
the implementation of this provision has seldom been necessary, its
availability is a foundation upon which the safety and integrity of the
service corporation's contracts may rest. The effect of this protective
requirement is to transfer some of the risk of adverse loss experience
to the individual participating dentists. This realization has not de-
terred the profession from supporting the service corporations, how-
ever, since the profession has recognized its responsibility to ensure
that the public has available for selection a type of prepayment
vehicle that offers health services rather than financial indemnity.

The structure of dental service plans has varied considerably. A
few open-end contracts have been marketed, contracts under which
the group purchaser agrees to pay a stipulated gross sum to the cor-
poration and the corporation agrees to provide dental services
through its participating dentists, to the members of the group until
the sum has been exhausted. When the money runs out, so does the
requirement to provide services. This type of arrangement, while
ideal in some respects, has not sold well since it often may result in
some members of the covered group not reaching the well until the
water has run dry. A much more common plan is one by which the
group agrees to pay a sum analogous to an insurance premium and
the corporation agrees to satisfy the full demand of the group for cov-
erred services during the period of the contract. This type of plan, of necessity, requires the application of actuarial factors based on the experience of similar groups. Initially, that experience simply was not available and its absence, which contributed greatly to the slow progress of all dental prepayment mechanisms, had a marked depressive influence on the development of dental service plans. The accumulation of valid statistics is now a continuing endeavor of dental service corporations, however, and the increasing availability and reliability of such statistics is loosening some of the bonds of fiscal conservatism that have restricted the spread of service corporation activity.

The bases for reimbursement of the providers of service have also varied considerably. Only a few service plans have used a rigid fee schedule and required that the dentist accept the scheduled fee as his full fee. Far more common has been a provision whereby the corporation agrees to pay the dentist a stipulated percentage of his usual and customary fee, with the dentist entitled to obtain reimbursement from the patient for the balance. This method has great attraction for the dentist since it permits him to retain control of his own fee practices. It also requires the corporation, however, to develop and utilize effectively a method for reviewing claims in order to be sure that the fees charged are reasonable. In this activity, the corporations lean heavily on their sponsoring dental societies.

The marketing philosophies of the functioning dental service corporations are divisible into two categories: active and passive. This division is a direct reflection of the attitudes of the sponsoring dental societies. Some societies do not believe that active, aggressive sales promotion is consistent with the dignity of the profession. They believe that contracts should be made available, but sold only to groups that request them. Other societies do not share this attitude and believe that, since the operation of the service corporation clearly is in the public interest, it should be free to compete in the market place, leaving the public to determine which prepayment vehicle it prefers.

The scope of benefits available through dental service plans has been determined by an intermixture of professional opinion as to the relative importance of various services to the health of the individual and considerations related to the financial resources of the purchasing group. As mentioned earlier, the plans initially developed on the
West Coast covered only children. That is one way to spread limited resources. The other way is to reduce the scope of benefits. This has been done frequently and to good effect since it has enabled the purchase of at least an austere plan, under which dental disease could be arrested, while permitting the group to negotiate for, or otherwise obtain, additional resources to be applied in the future to the broadening of the benefit structure. The logical long-range goal of both the profession and the public should be the widespread availability of comprehensive plans covering all types of services to the fullest extent possible.

The function of the National Association of Dental Service Plans will be to facilitate the attainment of the goal just expressed by representing the individual dental service corporations in the national prepayment market place. The Bylaws of NADSP recite the object of the organization to be as follows:

The object of the Corporation is to increase the availability of dental services to the public by encouraging the expansion of dental prepayment plans administered through dental society approved nonprofit service corporations, and by providing the means for active or associate members to cooperate with this Corporation in providing multistate and national group coverage.

It should be obvious that the fulfillment of the objective assigned to NADSP will require substantial acceleration in the activation of dental service corporations at the state level. Considerable effort is already being devoted to this end. A very practical assist has been given, indirectly, by the Congress of the United States, in its enactment of broad health programs which lend themselves to state-level administration by dental service corporations acting as fiscal intermediaries. President Johnson, in his April off-the-cuff, peek-in-the-door comments in San Antonio, also should have knocked a few mugwumps off the fence of indecision.

There is no question that prepayment of dental services is here to stay and that its influence on dental practice will be strong. The dental profession, organizationally, is in a position to guide the direction of that influence into channels which will benefit both the profession and the public. The dental service corporation, as the profession's prepayment vehicle, is the only device through which that in-
fluence can be projected effectively. The National Association of Dental Service Plans will do its part, if permitted to do so. Actions at the state level will determine to a great extent whether it can fulfill the role assigned to it.

CONTINUING EDUCATION—A DEFINITION

Continuing Education: Educational activities, using any means or devices of communication, by which a dentist extends his knowledge and skills in clinical dentistry, the sciences, and the humanities so that he may provide an increasingly improved health service to the public.

Continuing education may include:
1. Educational programs conducted under the auspices of recognized dental societies, approved dental schools, or other non-profit professional or educational agencies.
2. Participation in informed discussions of pertinent subject matter through the medium of seminars, workshops, conferences, assemblies, and study clubs.
3. Self-educational activities such as correspondence courses, study of professional journals, use of package libraries, and programmed self-instruction material.

This definition was prepared at a discussion meeting on “Continuing Education and Patient Care,” June 27-28, 1966, in the ACD Central Office. The groups represented were: American Dental Association (Council on Dental Education and National Board of Dental Examiners), American Association of Dental Schools, American Association of Dental Examiners, Academy of General Dentistry, the eight specialty Boards, the U. S. Public Service, and the American College of Dentists.
The improvement of education in the health sciences is one of the many health goals of the Public Health Service. Thus the prompt application of health measures through effective health communications has and will continue to be a primary concern of this federal agency. In recent years, the difficulty of managing the great volume and complexity of new knowledge spiraling from accelerated efforts in biomedical research has heightened the urgency for a corresponding effort in health communications. It is unmistakably clear that the nation must forge a strong educational link between the frontier of science and the scene of practice.

Quickened interest in continuing education has developed within various programs of the federal health family as a result of this concern for improved health communications. A concrete expression of this interest was the conference called by the Surgeon General to study the problems involved, and to consider possible solutions. The conference report emphasizes that the strongest invitation to action in health practice takes place in an educational setting and, further, that transfer from research to effective application must be a continuous process. Three areas of attack were specified:

1. A substantial enlargement of the continuing education function of the professional schools;
2. An increased responsibility of professional organizations to ensure professional excellence; and
3. Supplementation by health agencies through demonstration, professional and technical assistance, and experimentation.
It is evident that the long-range development of an effective continuing education system for the health practitioners of the nation will require participation by many official and voluntary organizations. However, major responsibilities rest with the health professions and educational institutions.

Let us now turn our attention specifically to dentistry. The communications process inherent in the informational, consultive, demonstration, and training activities of most federal programs is also tightly woven into most of the dental programs in the Public Health Service. However, in response to the immediate concern of the Public Health Service for improved continuing education, the Continuing Education Branch of the Division of Dental Health was established in recent years to assist the dental profession in solving this educational problem. This Branch is located at the Dental Health Center in San Francisco, a facility dedicated to applied research in dentistry and education.

The balance of this paper reflects the philosophy and approach of the Continuing Education Branch. Few guidelines from the professional organizations were available at the time the Branch began. However, considerable help was obtained from the Dryer report, *"Lifetime Learning for Physicians,"* which presents an imaginative approach to the development of a "university without walls." A summary of the problem, priorities for action, and goals as viewed by the Continuing Education Branch follows.

**The Problem**

A look at the present state of continuing education in the nation reveals extremes on each end of the spectrum. Continuing education opportunities are practically nonexistent for dentists in many communities; in some, they are more readily available, but usually limited in their scope of offerings. Often, however, they are not organized in a sequential or meaningful manner, and identifiable long-range educational goals are difficult to discern. Collectively, the limited resources available for continuing education in the nation can be utilized more effectively and efficiently through better planning and coordination among the various agencies and institutions pro-

viding or concerned with continuing education. An improved system for the future will be dependent upon the establishment of advisory, planning, implementing, and coordinating groups at the national, state, and local levels. These groups can provide the framework and channels for developing an improved continuing education system.

Another major factor which complicates the continuing education picture relates to the prospective students. The practicing dentists who make up the “student body” are scattered throughout the nation, and approximately half of them practice in areas remote from dental schools or other educational centers. Further, the degree to which dentists can be expected to participate fully, as broader educational opportunities become more readily available, is not known. There is evidence that a high percentage of dentists do not seek the continuing educational opportunities that are presently available to them. Frequently cited reasons for nonparticipation relate to time and economic factors. Also, little is known of the diversified needs of the various subgroups within the profession. It can be assumed that these needs will vary among different age groups, small town and urban dentists, and so on through a long list of other variables.

Another facet of the problem, requiring little elaboration since it is widely recognized by all, is the lack of human and financial resources for an improved system. The resources of universities and dental schools presently are stretched to the limit in maintaining a sound educational program for undergraduate dental students. A substantial financial base for continuing education is an urgent need. Also, a critical element, teaching manpower, is extremely limited.

In capsule, then, the problem appears to be an educator’s nightmare; the development of a comprehensive continuing education system for the 100,000 dentists throughout the nation certainly is no easy task. All of the essentials for any educational endeavor are lacking: a confined, captive student body; adequate numbers of teachers; an administrative structure within which good educational programs can flourish throughout the nation; and an adequate financial base to sustain an educational system of this magnitude.

**Goals**

The reciprocal to the problem is the need for a continuing education system that is efficient, effective, mobile, and economical enough
to provide a practical means for reaching the nation's dentists throughout their lifetime of practice, primarily at the community level to ensure convenience and accessibility. Integrated within this system must be comprehensive, well-organized programs; maximum extension of the talents of the best teachers; and, of course, adherence to sound learning theory and principles. In concept, it is a "university without walls," a long-range goal that can be achieved only through the coordinated efforts of all official and voluntary organizations concerned with the problem.

Quite apart from any choice of solutions to the problem, coordinating mechanisms and an expanded financial base are basic needs for supporting any total effort to develop a better system. Beginning efforts must give a national focus to the need for action. Although expanding the financial base is not easily achieved, governments and private organizations are not necessarily limited by financial considerations, particularly when there is a clearly recognized need for public action.

Secondarily, other immediate steps should be taken to attack specific facets of the problem. Of particular importance are a broader utilization of educational methods presently available, and an expansion of applied research aimed at finding practical solutions to the continuing education problem.

Many educational methods now exist which are not being fully used. For example, traditional university extension methods have not been used broadly in dentistry. Also, audiovisual methods have been greatly improved and are readily adaptable to serve a variety of educational needs and settings. Television, too, has hardly been touched except in undergraduate dental education.

Research in continuing education faces a deep, dark abyss to explore. For example, new instructional methods and media such as programmed instruction, teaching machines, and computer teaching must be evaluated and exploited to serve the specific needs of continuing education in dentistry. The dynamics of all learning situations and settings must be explored. The potential and limitations of educational resources must be determined. Financial, geographical, and other constraints to continuing education must be more precisely identified. There are many more.
The problems and goals discussed up to this point, of course, have been the backdrop for planning the program of the Continuing Education Branch. In accord with the realization that there are many unknowns in devising a sound formula for improved continuing education, the Branch has taken an experimental approach to the problem. Program priority was given to developmental and evaluative projects directed toward easing the teaching manpower and geographical problems.

Initial efforts have been focused primarily on evaluating, adapting, and demonstrating new educational methods which would be useful for continuing education programs in off-campus settings. As a result, a course development process using a team of specialists, automation, and a programmed instructional format has been developed. Also, a group teaching machine has been refined for special uses at local dental society meetings. Experience in using these methods extensively with dental groups has revealed a positive reaction to the approach.

In addition to experimentation in educational methods, efforts in the future will include pilot programs to demonstrate systems which will be fabricated by combining a variety of promising instructional methods and media. Also, emphasis will be given to the identification and expansion of human and financial resources for extramural research and developmental activities.

These are beginnings in the development of practical methods for communicating new health knowledge, ending, hopefully, in an approach that will ensure the availability of lifelong learning opportunities for all dentists.

**Summary**

It is unmistakably clear that the nation must forge a strong educational link between the frontier of science and the scene of practice. Quickened interest in continuing education has developed within various programs of the federal health family as a result of this need for improved health communications.

Most all of the essential requirements for a comprehensive continuing education system in dentistry are lacking. The reciprocal to the problem is the need for a system that is efficient, effective, mobile, and economical enough to provide a practical means for reaching
the nation's dentists throughout their lifetime of practice, primarily at the community level to ensure convenience and accessibility.

In accord with the realization that teaching manpower and geographical facets of the problem are the most difficult, the Continuing Education Branch has focused its initial efforts on evaluating new educational methods for off-campus settings.

Emphasis in the future will also be directed toward the expansion of human and financial resources for extramural research and developmental activities in continuing education.

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THE NEED FOR CONTINUING EDUCATION

Merely to keep up with the developments published in the biomedical sciences one would have to read the equivalent of twenty-seven books each day of the year ... it is estimated that approximately one-fourth to one-third apply to or have direct dental implication.
Fluoridation’s Benefits Not Limited to Health: Some Observations, Some Predictions

BRUCE L. DOUGLAS, D.D.S., M.P.H.

THE University of Illinois College of Dentistry presently is in the early stages of a study on the impact of community water fluoridation on dental practice. We do not have sufficient data as yet to present statistically valid interpretations of the differences in dental practice in fluoridated and fluoride-deficient communities, which accounts for the title of this paper.

Previous studies which have reported on the economic impact of fluoridation have been based primarily on DMF surveys of child populations, and projected evaluations of the significance of the “M” and “F” components of the surveys. One significant study was done in Gainesville, Florida, in which a cohort of children was followed for five years, and their needs for dental care observed (1). Our study concentrates solely on the office of the private dental practitioner and on what he records on his patient record cards. Our interest is in him and on the nature of his practice.

With the passage of time and the gradual acceptance by the public of fluoridation’s beneficial impact on health, water fluoridation is now being viewed from broader social and economic vantage points. We know that water fluoridation prevents about 65 per cent of all carious lesions from occurring, assuming optimal exposure to fluoride during the tooth formative years. There is also reason to believe that those carious lesions which do occur, following ingestion of fluoridated water from birth, are different from cavities occurring in the

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This paper was presented at the 17th National Dental Health Conference, sponsored by the Council on Dental Health, American Dental Association, ADA Headquarters Building, Chicago, April 25-27, 1966.

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absence of fluoride intake. Fluoride compounds combined with the apatite structure of enamel and dentin make teeth less soluble to the acid end products of the carious process; therefore, it seems logical to assume that caries progresses at a slower rate in teeth which have benefited from fluoridation than in those which have not.

If that caries which does occur is thereby delayed, because of increased host resistance, the end product of dental caries, pulp exposure, is less likely to occur, and fewer of the teeth which are attacked by caries are likely to be lost. It is not uncommon, in fluoride-deficient communities, for neglected first permanent molars to be lost by age eight or nine. Such is hardly ever the case in fluoridated communities (2). Even if neglected, they tend to resist caries for longer periods of time, bringing about certain obvious benefits. First, children tend to be older when urgent dental treatment becomes necessary (if it becomes necessary at all). Because they are older, they approach the dental experience with a greater degree of maturity and are better prepared emotionally to accept pain and some of the discomforts of dental treatment. The few years difference between the child in urgent need of care in fluoridated and fluoride-deficient communities could be marked enough to have a significant effect on the child's initial reaction to dental treatment.

Let me emphasize that these observations are hypotheses—that we do not as yet have documented evidence that the average child seeking dental care in fluoridated communities is significantly older than his counterpart in fluoride-deficient communities; but there is good reason to feel that such is the case. Numerous articles in the dental literature also bear out the facts that patients who have drunk fluoridated water since birth have less malocclusion and better dental health generally than patients from similar socioeconomic backgrounds who have been brought up on fluoride-deficient water.

A comprehensive review of the literature on the impact of water fluoridation on dental practice indicates that some other noticeable changes seem to be taking place in dental practice as a result of fluoridation (3):

1. the reduction in caries seems, to a limited extent, to be counterbalancing the inadequacy of dental manpower;
2. dentistry is gradually undergoing a transition from a profession preoccupied with an unending demand for dental repair to a more satisfactory concern for comprehensive oral health service;
3. the shift away from major attention to caries is leading to greater attention to periodontal treatment and interceptive orthodontics.

Undoubtedly the greatest effect of water fluoridation is on the practice of dentistry for children. Pedodontists from fluoridated communities all over the United States have indicated that profound changes have taken place in their practices since the advent of fluoridation (4). It is well established that fluoride intake changes the nature of the carious process, that different tooth surfaces are affected, and that, in concert with topical fluoride applications, caries arrestment is more likely to take place. Generally speaking, pedodontists in fluoridated areas indicate satisfaction with an obvious trend away from "emergency dentistry" and toward a greater emphasis on preventive orthodontics and tooth guidance.

Supervisors of pedodontic clinics in dental schools located in fluoride areas have expressed some concern for the dearth of patients. Such dental schools are apparently finding it necessary to alter their teaching approach to children’s dentistry, since rampant caries and the need for pedodontic endodontics has greatly diminished. Practitioners, in general, do not seem concerned about a decrease in numbers of child patients, but school clinics will apparently have to resolve the problem and find ways of attracting new families to dental schools for dental care. The great backlog of dental disease, the tremendous number of patients to be seen, and the inadequacy of dental manpower will certainly prevent any striking decrease of dental patient load in the foreseeable future, but there may be a lag for a period of time until those portions of the population who otherwise would not receive care are encouraged to seek it. It would seem that as government programs for dental care for children gather momentum, that the patient load will increase well beyond our ability to cope with it, irrespective of the impact of fluoridation. We would hope that a day will come in the foreseeable future where fluoridation plus an increase in manpower would bring a resolution of the dental disease problem within reach of the profession.

Pedodontics is apparently beginning to benefit much in the same way as pediatric medicine did from the decrease in infectious diseases of children a few decades ago. Pedodontists are finding it possible, therefore, to spend considerably more time, in fluoridated communities, on prevention and maintenance, and to spend less time with each patient and treat more children in the same amount of time.
Our surveys of pedodontic practice have shown that the preventive approach to dental treatment goes well beyond the passive acceptance by the practitioner of water fluoridation. Most pedodontists supplement systemic fluoride consumption with topical fluoride applications, as well as an organized program of dental health education, instruction in oral hygiene, and a periodic recall system, including prophylaxis and at least bite-wing radiographs.

**Economic Advantages of Fluoridation**

The economic advantages of fluoridation have been reported frequently in recent years (5). We now have good reason to believe that not only does the public benefit financially, but that the practicing dentist also tends to benefit. For reasons not yet clear to us, dentists who practice in fluoridated communities tend to have higher incomes than dentists in fluoride-deficient, but otherwise comparable, communities. Our data have begun to reveal evidence that larger numbers of patients, each needing less care, are seen by dentists in fluoridated communities.

Not only is there justification for expecting less direct costs accruable from a decrease in dental caries in fluoridated communities, but there is good reason to expect less malocclusion and less periodontal disease which might otherwise have occurred as an indirect result of decreased caries and tooth loss, with resultant lower dental costs.

There is already good evidence in the literature that fluoridation makes a marked impact on costs of dental care, at least with children. The Gainesville study, referred to earlier (1), was based on regular clinical maintenance care of a particular school population. The fluoride level of the Gainesville community water had been controlled at a level of 0.8 ppm since 1949. The study was started in 1954 and completed in 1959. It was done to determine the dental needs of first through sixth graders in a community having the benefits of water fluoridation. The services were completed in four series. In the first series, which took 17 months, an average of 1,270 children were completely treated per dentist year. By the fourth series the ratio had increased to one and half times as many children treated. An increase of nearly 60 per cent was shown in the third series when each dentist treated 2,000 children per dentist year. Also, during the first two series a child averaged 45 minutes of treatment time; in the last two series this had been reduced to 30 minutes. In the first series,
with 4,000 children under treatment, 9,000 permanent teeth were restored, one in 30 requiring pulp therapy. During the second treatment series, with approximately the same number of children, only 4,050 permanent teeth required restoration. This was less than half as many as in the first series. Since the dentists had more time available, they were able to treat 5,000 primary teeth as well. The third treatment series had nearly a thousand more children, but the number of permanent teeth filled was only 3,237, and only one in 60 required pulp therapy. In the fourth series about 4,000 children participated. Extractions and pulp therapy were reduced to a minimum in both the third and fourth series. The Gainesville study tells a very important story about the ongoing impact of water fluoridation on the practice of dentistry for children. We still have a great deal to learn about the long-range effect on adult dental practice.

Almost 65 per cent of New Mexico’s population is served by community water supplies having almost optimal or excessive fluoride content. Only 8 per cent of the population served by community water supplies is not drinking at least an optimal amount of fluoride. Striffler estimated that for every three dentists needed in New Mexico, another area with the same size population, fluoride-deficient, would need four dentists (6). Our preliminary data on comparison of dentist:population ratio in comparable fluoridated and fluoride-deficient communities has not, at least to this date, corroborated this observation.

As was shown by the continually decreasing services necessary in each consecutive series in the Gainesville study, with each dentist being able to treat more children in each consecutive series, the cost per capita for dental care decreases with each year of fluoridation. Each dentist is also able to treat more patients. In New Britain, Connecticut, a survey conducted ten years after the start of fluoridation showed a reduction in the ratio of decayed to filled teeth and the number of missing teeth (7). In 1951, the ratio of filled to unfilled teeth among the 12 and 13 year olds was one to one. In 1961 it had decreased to nearly three to one. In 1951 the average child in New Britain, six to 16 years old, had six and one half DMF teeth. In 1961 this had dropped to three and one half, a reduction of 44.5 per cent. The economic implications of these facts are readily apparent.

One potential benefit from fluoridation can be reduced premiums
for prepayment dental plans. A New York City dental prepayment plan urged fluoridation of the city's water supply in 1963 as a benefit to dental insurance costs (8). "As fluoridation's beneficial effects become apparent it will enable group dental health insurance to cut premiums or increase benefits. . . . With fluoridation we will pay for fewer fillings and extractions, especially among children," said one of the administrators of the plan. He continued, "It is no exaggeration to say that a large number of New York children may with regular care preserve their permanent teeth for life. Prepayment health insurance can increase its allowances for expensive replacements so desperately needed by so many who have already lost teeth, or reduce the premiums it charges."

In respect to the relationship between fluoridation and dental health insurance, Young and Pelton observed (9), "A community prepayment program to provide dental health care for children seems to offer attractive possibilities for improving oral health conditions and contributing to the satisfactions of dental practice. Experience has shown that the basic problem involving voluntary health insurance programs is to offer services that the people desire at a premium they are willing to pay. The premium rate is particularly important in dental prepayment because the fear of unpredictable catastrophic expenditures for dental health care is largely absent." Analysis of data derived from dental examinations in Nampa and Coeur D'Alene, Idaho, indicated a considerable reduction in treatment costs, thereby indicating the possibilities of a decrease in premium rates in a community such as Nampa where the drinking water contains an optimal amount of fluoride.

**Predictions**

Dental practice is changing dramatically. One of the major reasons for this is the growing impact of water fluoridation on the nature of dental practice. It is inevitable that anything which eliminates so much of the major disease problem with which dentists spend the bulk of their practicing hours must make a marked imprint on practice.

As fluoridation affects more and more people and more and more dentists, dentists will see less of the ravages of dental caries. Restorative dentistry will occupy less of their total practicing time. The
emphasis on restoration and repair will shift to a greater emphasis on diagnosis, prevention, and maintenance. Dentists will do less exodontics, and there will be a decreased need for endodontics as well. More attention will be given to periodontics and maintenance of the health of the supporting structures of the mouth.

The specialty of pedodontics will gradually change. Pedodontists will concentrate more on prevention and interceptive orthodontics than on reparative dental procedures. It would seem that, over the long run, oral surgery will be the most profoundly affected specialty of dentistry, and that there will be a gradual decrease in the need for oral surgeons, since the bulk of the oral surgeon's time is spent removing the ravages of dental caries.*

The practice of dentistry will probably undergo highly desirable changes. The dentist should have opportunities in the future to spend more of his working hours on the more scientifically-based aspects of practice, and less on the purely mechanical. Since prevention will play a more prominent role, he will find it necessary to utilize his knowledge of basic science more frequently than at present.

All these changes will make a marked impact on dental education. It seems inevitable that the emphasis on restorative dentistry in dental education will slowly be replaced, at least in part, by increasing attention to oral medicine, periodontics, pedodontics, orthodontics, preventive dentistry, and public health. While water fluoridation, alone, can hardly stimulate such changes, present indications are that it will play a major role in doing so, along with the other social, scientific, and economic changes taking place in society.

Appreciation is expressed to Sylvia Coppersmith, R.N., for her assistance in the preparation of this paper.

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* A nationwide survey of oral surgeons, conducted since the presentation of this paper April, 1966, indicates that oral surgeons practicing in long term fluoridated communities (and who practiced in those same communities for an adequate period pre-fluoridation) have noticed no marked impact of fluoridation on their practices. If anything, the great majority of them feel that they are busier. A few indicated that they seem to have less call for the use of general anesthesia, and a significant number noted that fewer children seem to need their services. This survey will be published elsewhere in greater detail.
FLUORIDATION’S BENEFITS NOT LIMITED TO HEALTH

REFERENCES


A Philosophy for Dentistry?

CLAUDIA R. BAKER, M.S., D.D.S.

THE aim of this paper is to synthesize rather than analyze, to assess reality in respect to dentistry, pointing out why certain philosophical changes will come about rather than to discuss how they should be accomplished; to show that no true picture of dentistry as a science is possible without including data from all scientific fields. It may be necessary to say something disenchanting about the dentist and about the present direction of dentistry. Not to do so would be to follow the culture-bound pattern of avoiding self-criticism.

HISTORY

The species Homo sapiens has infested the earth. He still survives. He is the dominant animal. He has partly adapted. His history is the story of how he has used the earth and himself. What he will do with this background is for prophets to guess. His biological capability to make changes is probably the fundamental reason why he survives. Other than for reproduction, his bodily comfort and physical convenience has been of most concern to him. He has many psychological blind spots and willful misapprehensions about himself. He is afraid of what he is. As a human he seems to want to preserve some of the delusions. It is best not to forget that the dentist is first a man.

Biology and the many areas of related knowledge have concentrated for a century on growing insights into organic evolution. These sciences collectively offer the opportunity to better our understanding regarding man's basic nature and his place in the natural order. The social sciences have also grown in this direction. For the individual sciences to progress they should now move steadily in the direction of cooperative integration. The enormity of this task is influenced by the vast bulk of the material being collected in each of the fields.

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Culture is man's ecology, and his most significant and conspicuous adaptation is biological in nature. It is easily understandable that the biology and sociology of man cannot remain for long isolated from each other. Part of the problem has been that the sheer bulk of the specialized knowledge tends to keep them apart. Man is an animal with peculiar biological traits which make him human. His human nature comes from the kind of body he has.

The dentist, in his occupational performance, is a specimen that possesses certain essential behavior characteristics that are the outgrowths of his biological uniqueness if he adapts to his professional selection and intent. If culture is man's ecology, and if adaptation to his environment includes his fellow man, then the human intimacies required in dental service mean a total evaluation of the present scope of modern dentistry in order for it to fulfill its social responsibilities. Epidemically, dental degeneration is seen over the earth. The effect of social customs and habits on oral diseases has been reviewed and classified. Davies (1) states that much work remains in order to determine whether they are cause-and-effect or coincidental relationships. He feels that future epidemiologic studies should attempt to evaluate customs and habits in the context of the culture in which they are practiced.

Our long developing symbolic word system communicates our views. A culture is often described as a pyramid of symbolic understandings. Perhaps in this sense dentistry could be thought of as a culture with a purpose. Living organisms have purposes, and the dentist is a living organism. The only real need for dentistry is the need for its service aspect; this is the basis for its very existence and is its purpose. The purpose supposes a social benefit. Any attempt to assess reality cannot exclude the man. The purpose may be imparted through the means of physical appliances that substitute for the loss of human teeth. Practically the whole of dental prosthetic literature focuses its attention, for very good reason, on the aspect how: the larger reality why is left mostly obscure (2). Our beliefs can by custom and habit alone be taken for truth and fact. History can offer ready access to proof of repeated instances in which we symbol-using animals make disastrously wrong analyses of reality and of ourselves.

**PHILOSOPHY**

There is background, right or wrong, good or bad, or parts of
both, for all knowledge and all doing and all things. One can always play that he points to the solution of something momentarily. Understanding may be assumed or even partly resolved. To know all about everything seems to be impossible to conceive. The total mind has yet to come into being. The margin of error in an endeavor is usually sufficiently wide to be recognized. To work with the margin of error brings personal satisfaction to most. When we work with something and acquire some knowledge about it we start to understand it, and the desire to continue to work with it increases as the already easily accessible imitated knowledge is increased.

The beginning of understanding starts the triggering of new thoughts. Perhaps this is the kind of thinking that initiates true creativity. Actual original thinking occurs, and it may be sufficient to inspire activity. An attempt to word a philosophy or to express some kind of understanding which gives meaning to a health service such as dentistry might either be evaluated as desultory, or the attempt might help to mitigate perturbation. The early history of health endeavors has an origin in mythology. Some of this can be found in the history of dentistry.

We go to great extent to avoid change. We want to standardize everything. Nature probably more wisely than we injects the flexibility of instability. This makes the adaptation to change possible. As counterpart to our spirit of enterprise, the deep seated naturalness of slow adaptation confuses the thinking. We know it exists but we remain almost unconscious of nature’s slow way of changing animals to adapt to their environments. It takes time and is hard work to sit and think. We avoid it. Thinkers repeatedly wonder if we really will turn or honestly mean to turn to the use of our mind to help guide us to any noticeable degree. If we do turn, it would be nice to have some whole knowledge there. The time required to get to this point offers the chance to learn from experience—provided of course we want to learn.

**TRUTH**

The early Greeks with their instinctive intelligence seem to have come close to comprehending reality. As Plato puts it in the *Phaidrose*, there are three ends: truth, beauty, and goodness. Man pursues these as knowledge, art, and morality. Plato further implies that the distinction between knowledge and wisdom concerns facts,
while wisdom includes values or both. The importance of words is
great and becomes increasingly so as we increase knowledge. With
what words we have to imply meaning into communication lies our
ability to think. We cannot think without words.

The truth that we pursue as knowledge involves a kind of cor-
respondence between the knower and the known. Knowledge is con-
cerned with what is, and we call subjective knowledge truth. We
call objective knowledge fact. It is fitting to protest the use of the
word truth both for knowledge and for fact; this has caused and is
causing endless ambiguity in scientific communication. It is orderly
to raise the problem of value as distinct from fact or truth, and for
most purposes term it as-it-should-be-ness. Values are the things to
consider. The as-it-should-be-ness of the objective we term beauty,
and that of the subjective we term good. It is obvious that it is the
beautiful that must determine the good and not the other way
around. If this is not too confusing, we might say that the good is
beautiful when objectively experienced. Proof is never more than
relative. Truth is not absolute, and though there is some understand-
ing when it is said that nothing is known until all is known, what we
really mean is that something more than nothing is known till all is
known (3).

**Deterioration**

Peter J. Brekhus, one of the brightest dental minds of our times,
challenged dentists in the early 1930's to look upon their problems
from a broader point of view. He favored the theory that decreased
functional demand might be responsible for dental deterioration in
civilized man. A brilliant account of his investigations and thinking
is found in his book “Your Teeth—Their Past, Present, and Prob-
able Future.” This treatise is probably the most helpful foundation
work available in this line of questioning (4).

The decay of one generation makes healthful fertilizer for the next.
History is important because of this. We learn from history that man
learns nothing from history. We have invented a long list of what
we have come to think of and call labor saving devices. These substi-
tutions remove the natural functional demand, and given time, they
mitigate the demand sometimes to the point where the natural part
is no longer required. Putting it out of use for lengthy periods brings
natural response through a change in form in natural structure. If a
natural atrophy takes place and if the loss of human teeth were to be considered as a natural atrophic phenomena, could we be confusing a natural adaptation with disease? This could pose multiple conflicts in purpose for all of dentistry. Our thinking can and often does become dreams of reason.

**FOOD TEXTURE**

The texture of man's diet can be pointed to. When he started to cook his food this decreased its resistance to being torn apart into smaller pieces for swallowing. Methods for refining food to make it easier to take has never been apart from man's interest. We can point today to the popular canned liquid foods as an example of possible future diet consistency. If we want to be honest we have to say that, from what we have observed, teeth are no longer essential to man's existence. A liquid diet can be completely nutritious. Today from this viewpoint a can opener is perhaps more important to survival than teeth.

Mastication is a process seen in its typical projection in the higher vertebrates only. Has man so changed his animal form of existence that teeth are not necessary for survival? It would not be easy to prove that he has not. Natural mechanisms are flexible, including means for change, in order to adapt to environmental circumstances. We know that in digestion the salivary fluid is induced by mastication, but we also have evidence to show that mastication is not essential to survival.

**PROSTHETIC DENTISTRY**

Dental prosthetics, a special form of physical therapy, a service area within the profession, takes the course of action regardless. Certainly the broad clinical picture of the loss of human teeth and a degenerating (adapting?) natural dental mechanism is constantly before us. This apparent change takes form in many different ways and seems so logically wrong that we hasten without question to act by making substitutions for the natural loss from suitable material engineered to a serviceable design. This can trigger the thought that we want to think that this biological change brought about by disease is bad. Nature provides disease in the life pattern, and as the counterpart of health it may be equally as important. Perhaps it could be
thought of as responsible for health through survival of the fit or the evolution of the species. Evolution means change, and adaptation makes survival possible. Most of us try to learn about health and disease from the mass of scientific facts accumulating in the bioscience areas. Our pattern for acquiring health knowledge seems to become more objective and less subjective. This, of course, makes researching the ideas easier because it limits the scope.

We seem to be compelled to assume a world objective to all consciousness and to act upon this assumption. Sometimes an understanding, true or not, is reached. The will or the consciousness can be an object of experience only as a result of the action or the deed. It is this that the early Greeks named the beautiful, since in conscious spirit the man himself is good. The word beautiful in the Greek sense keeps the distinction clear. People lose teeth. We are compelled as dentists to serve in the best way that we know how, so we substitute for them. This is our action, our deed, our service.

Prosthetic dentistry could be considered as being an imitative or reproductive theory of art. The prototype to be reproduced is the idea, instead of some chance particular. So far as dentists are concerned the idea is reached as fact, yet much of that which constitutes its value is ignored. It is probably reasonably correct to see our dental prosthetic efforts being expressed in the term pragmatism, since it seems fitting to logical development to meet a somewhat metaphysical problem by using a somewhat modified scientific method. Does our habit of substituting for lost teeth represent a human reaction against allowing natural adaptation sans teeth? Is artificial tooth substitution largely a drive to preserve masticatory and esthetic contentment or convenience? A scientific answer to these questions would be most valuable for future goal planning for dentistry.

Prosthetic dentistry is not unlike architecture to the extent that it lies in the elements or qualities within us that may or may not pursue beauty as an end. In pursuing the act or the deed, first comes the appreciation that understands beauty. We notice that from an origin in conscious emptiness and lack of being, that a sequence is followed from an initially vague and indefinite desire through to admiration as the object is reached. There is the enthusiasm and the effort, the straining, the striving, and the endeavor. Then comes the earnestness, the sacrifice, the unselfishness. If the balance is right we
could come up with the complete will toward honesty and honor. There is agreement that to continue to know more about something, particularly if it is desirable, is good since its application or utility is more likely to be desirable. Knowledge that is not immediately utilitarian is set aside for the time being, and with the changes of time it may at some future date become directly useful. Into this formula has come the utilitarian value from many of the ideas developed in research.

**Research**

Research is primarily an acceptable form or method of study which makes more trustworthy both newly acquired and existing knowledge. It also pursues and develops an acceptable form essential to the recording of material in an era already accelerating the use of the scientific method. These, it should be remembered, are all man's invented ideas limited by his own mind to fit what he thinks should be—not necessarily what is. Given time and generations maybe man will learn out of habit to use his mind or to develop it to think subjectively.

**Specialization**

History will most likely show that this age initiates the onset of specialization, or starting to learn to deal with objective material because it makes for convenience in acquisition. This kind of educational action exemplifies a further turning away from the subjective whole to the more pointed objective part. It does unpredictable damage also, because the educational and learning pattern fall within a limited scope. However, good or bad, this is the trend and it is what we are doing. Business enterprise, agriculture, and the professions have tended to organize into special areas of service so that man does not have to deal with the whole. It almost seems necessary to break up the whole into smaller parts in order to learn about it thoroughly. The whole kit of science or knowledge does not come in one gulp. It must be broken down into bites that can be taken in and digested by the mind. We know that the whole use of the mind is not immediately essential to our animal existence. Maybe we are preparing the way unknowingly for complexity in human existence that is beyond our present comprehension. An accurate evaluation of this change in the climate of dental educational effort preparatory to a satisfactory health service foundation has yet to come about (5).
The form educational pattern continues, and probably correctly, as a method of working out the mechanical means by which volumes of knowledgeable facts can be brought to masses of young people to memorize and imitate. There is ample evidence to show that the new generation of learners is already using different means to show their revolt against this required mass memory of recorded so-called facts. Educators are attempting to meet this reaction by mechanizing the material through programming and other mass memory schemes. It looks like there is a fair chance for some success.

The ability to imitate efficiently is often thought of as education. Various grades of certificates of attendance for attaining this proficiency are awarded with degrees. This kind of educational proficiency has its limits in dental education because the understanding and the knowledge must be translated further into valued public health treatments. It has been pointed out that service is dentistry, and the only cause for its existence. Dentistry, as a health service, is made known largely in the public mind because it “fixes teeth.” The very nature of its being requires the development of the skillful use of the dentist’s hands.

Educationally, in the academic sense, art and science intermarry because of need. There is evidence to suggest that man is starting to make actual use of his mind. We can also point to evidence that would show that while this is taking place the use of his hands is languishing. This biological difference is a change in magnitude. Dental educational effort over the past twenty years has also brought about selected changes that we must recognize as being partly responsible for certain directional change in concentration on these human anatomical parts in the dentist’s training.

What we do with dental educational responsibility or trust in a free society means that we can architect more or less what we are. We can, if we wish, at any time make plans for the future. We have the power to hold the line where we are, to plan future adaptation possibilities, or to destroy what has been done in a world confused by an accelerating change both within and without. If we as dentists do not set our own goals, others less qualified will immediately and willingly and willfully make our decisions for us. They will not only form our social but also our professional lives. The whole of science
seems to be the sane method to form a base for our valued judgments for long range policy.

We must grant that the origin and development of dental prosthesis exists as a postulate. All prosthesis could be considered to be a human expediency largely self-evident and totally reasonable and logical. It has become the customary thing to do when and where there is reasonable demand. Man has never liked to appear with observable tooth members deformed or missing. The principal foundation treatment continues to exist today with a few material refinements and the means for speeding up the number of units produced. Artificial substitution originally became the automatic answer, and the more nearly it imitated the natural so much the better. Perhaps we are preparing to meet the population explosion. No one knows and few care to think about it. It is pleasanter to think of man's actions on the stage of life as a comedy rather than as a complete tragedy, even if it is not completely accurate.

We like to think of prosthetic dentistry as a combination of an art and a science. As an art it probably best classifies as a mixed art. It has become a regulated operation or dexterity by which organized human beings pursue ends which have clinically been determined. The art, the doing, cannot in the widest stretch of the imagination be excluded.

SCIENCE AND ART

Science comes into the picture as applicable to the generalized and systematized knowledge which supports the doing. The known things are acted upon. The science within is more of a fundamental rather than a pure science. Mechanics is utilized because the laws of force and motion are involved and mentally divided into dynamics and statics. (Mechanics in the prosthetic sense does not utilize the term as in the original to denote principles in the construction of machinery.) Engineering is useful and important as it relates to correct or established clinical form or design, and it is usually meant to include consideration for the physical properties of material from which apparatus is constructed.

We find that sculpture, the art of imitating living forms in solid matter, relates in that the apparatus common to dental prosthetic services comprise to a very large extent this particular form of art. It is distinctly closely allied to sculpture by the mode of its expression,
and differs from architecture by its imitation of living form. We also find that the arts can be conveniently divided into the pure, which attempts to create beauty alone, and the mixed which while creating beauty also intends to be utilitarian, or didactic, or imitative, or significant, or personally expressive. All this seems to fit closely to this particular mode of treatment expressiveness. In sequence we have come to learn that we embrace knowledge or science since it is concerned with what is. We have invented a form or method for pursuing knowledge which we call research. Research attempts to install truth as a required part because the objective facts give trustworthiness to the account.

Dentistry, because of its very nature, does not demand deep insights into the social existence and culture of man in order to deliver its principal service. As has been pointed out, the treatment phase itself has become accepted without question to meet the circumstance. Human teeth are lost, or never did exist, or nature exhibits clinically undesirable tooth structure or tooth supporting structure to us at the time of examination which we call diseased. The situation is often met by the surgical removal of the offending tooth or tooth tissue depending upon the clinical circumstance. In this instance, the treatment is automatically prosthetic in nature, and we imitate as best we can with what we consider to be suitable substitution materials worked through acceptable procedures, to form a suitable engineered design for apparatus expected to stir a minimal degree of responding irritability.

Dentistry as an art pursues beauty and attempts to create beauty. This is mixed with knowledge concerned with what is. Both factors imitate nature. This principle of conjunction, connection, and the continuum originally involved the principle of necessity and we seem to think rather conclusively that it should continue to do so (?). It will hold until a manifestation of integrated knowing becomes more possible. Certainly inside must involve outside; space must necessarily involve time. If accuracy really means anything to us at all we must for the present be content to note this, and resist the temptation to consider what we think we know as cause and effect.

However, considering our performance to date in this matter, particularly under the cloak of our animal likeness, it would be safest to suspect that we will likely pay no heed to it whatsoever. Nevertheless, since we exist within an invented organized professional life in
which service in dental health matters is the fundamental concern and value, the individual can make doing dentistry become a satisfactory adventure in appreciation.

REFERENCES

4. Brekhus, Peter J. Your teeth—their past, present, and probable future. Minneapolis: Univ. of Minn. Press, 1941.

RECOMMENDED READING

A Point of View

Readers are invited to submit a “point of view” for consideration for publication in this new department of the JOURNAL. The observations may cover a variety of topics, but particularly in those expanding areas of the changing professional scene where problems always seem to be developing and solutions are lonely. Discussions on technical and scientific subjects are not solicited. Comment must not exceed 500 words and be limited to two double-spaced typewritten pages.

The Postoperative Appointment and The Referral

DAN E. WAITE, D.D.S.

ALTHOUGH new technics, anesthetics, and medicaments continue to provide increased scope and improved safety for various dental procedures, we should remain cognizant of the fact that we still are treating a human organism. Time-motion studies, budget plans, and 15-minute appointments tend to detract from the one basic responsibility of the dentist, namely that reflected in the statement, “I am your patient, Doctor.” With the protection from pain and the increased duration of action of local anesthetics, surgical procedures often are attempted without the recognition of the postoperative complications.

It appears to be an almost lost art to sense the need for spending time with the patient postoperatively. It is at this appointment that the dentist truly has his greatest opportunity to apply his diagnostic skill, professional maturity, and empathy. When a patient returns after a surgical experience swollen, sore, hungry, dejected, and despondent, a real challenge is presented to the doctor: if he is able to project true concern, compassion, and understanding for the patient’s welfare, the benefit to the patient will be his great reward. To
examine a patient in this condition with gentleness, kindness, and yet firmness is the point of view so necessary for the high level of patient care that our profession must continue to strive for.

We must recognize the fear that most people have of dental care, and replace this fear with confidence and understanding. Fear of pain probably is the cardinal concern of most patients, and yet by fairly appraising for them what is expected, and by being honest and forthright, usually we can achieve a good patient temperament. We, as dentists, often present a carefree attitude to the loss of teeth while, in reality, this dismemberment of the human body is of grave concern to some persons. Many a woman has been as emotionally involved over the loss of her teeth as a man would be over castration. Failure to recognize these attitudes is a tragedy.

II

The principles involved in referral of patients is another area in which constant attention is necessary. It behooves us always to have the best interest of our patients before us. A good motto, which is credited to P. Earle Williams, is to always allow the activity of our minds to precede the activity of our hands. This should mean that we are capable of thinking and planning through a complete procedure and anticipating the sequelae before we proceed. Having to settle for anything less than this should suggest the desirability of a referral. For this purpose, such statements as, "If I had small enough instruments, I would work on Johnny," or "If I had time, I'd do it myself," do nothing to prepare the patient for his new experiences.

To give a patient a list of possible specialists for his specific needs is a weak method of referral. The choice of referral should be made on the basis of a man's specific qualification, skill, and ability to handle the problem, and not on the basis of personal, fraternal, or chance acquaintance alone.

It may be that there will be different men within the same specialty who will manage a specific problem better than another. If so, the selection should be made accordingly.

The man to whom the patient has been referred has equal responsibilities. It is of paramount importance to ensure that the patient will return to the referring doctor; adequate communication between the parties about this point should not be left to chance.

The dentist assumes an ethical, moral, and legal responsibility
when he accepts a patient for care. There is still no substitute for the Golden Rule, which applies to the practice of dentistry as it does to all phases of living. It is important, however, to remember that the Golden Rule is only truly golden when it refers to golden standards. Let us always keep our standards high and shining brightly!

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Mergers—Progress or Domination?

RALPH ROSEN, A.B., D.D.S.

... division of ... The type may be small but the story is big business. For industry it represents mergers, expansion, or diversification; in a word, today's business trend.

But what significance does this small type have for dentistry? An increasing number of dental companies are being absorbed by larger non-dental groups. In a recent issue of the Journal of the American Dental Association, almost 20 per cent of the advertisements stated "division of" or "subsidiary of." Only three of the parent companies were of dental origin.

It was reported in Chemical Week (April 2, 1966): "Dentistry is shaping up as a growth market for specialty products ... and a spate of companies are moving to get a piece of the action.... Three latest entries: 3M Company broke into the 200 million/year dental supply market with a new plastic filling material.... Revlon Inc. (New York) purchased Graham Chemical Corp., manufacturers of local anesthetics and other specialities. Pennsalt Chemical Corp., Philadelphia, plans to buy S. S. White, Philadelphia, the country's biggest manufacturer and distributor of dental supplies (sales 50 million/year)." These are the cold facts of commercial ventures. What are the implications for dentistry? Will it be invasion and domination or will it be progress?

Certainly we have no right to impugn the motives of big business. Business aims to produce wealth. Wealth makes possible the expansion of industries. Industries produce and create products. Products
effectively marketed is business. In a nutshell this is the business cycle. However, in a nutshell there may be a worm as well as a kernel. It is when the dollar motive predominates that the cycle becomes vicious. Therein lies the worm. This is not peculiar to business alone. The professions, with the primary aim to render service rather than produce wealth, are subject to the same worm. Farsighted participants in both business and the professions have prescribed vermicides for this worm of avarice. Rules and codes have evolved. The failures lie in their application and enforcement.

The establishment of our profession, our science, our practice was the result of inspired individual effort. Communicating and combining these efforts made for more rapid growth. The complexities and pace of modern practice are hardly conducive to research and invention by an individual practitioner. Nor is pure research limited to ivory towers. Business and industry are interested in pure research as well as technical research. They aim to create the market as well as fill it. That industry has the capacity has been amply demonstrated from the A-bomb and antibiotics, to the moon landing by Surveyor I.

That industry recognizes its responsibilities, witness the care with which vehicles for outer space are fabricated to avoid contamination of stellar bodies. On the other hand need we be reminded of air and stream pollution, unsafe automobile construction, or pharmaceuticals that may reduce cholesterol but can produce blindness? Need we mention tranquilizers for expectant mothers whose progeny may be anatomically deficient? Since someone forgot the Golden Rule, federal intervention is necessary. These are the harsh facts of some commercial ventures.

What are the implications for dentistry with industrial mergers and expansion? Will it be domination or progress? Is it recognition of an opportunity to develop or to exploit literally a virgin field, a $200 million a year dental supply market?

Industry has the capacity, the facilities, and the researchers to produce much needed improved dental materials and equipment. What major improvements in dental practice of late have been perfected by individual dentists since the introduction of the inlay technic, the porcelain jacket, the silicate material, or the balanced alloy? Industrial research has improved our materials. The chemist synthesized acrylics and anesthetics, the metallurgist and ceramist improved our golds, and are perfecting porcelain baked on gold. The
carbide steel burs, the diamond points, the high speed equipment are all largely industrial developments.

Industry can produce what we need. But they must meet our specifications. We have the mechanism to ensure progress both aside and in conjunction with the Federal Trade Commission and the Federal Drug Administration. Standards of advertising and exhibits have been adopted by the American Dental Association and most of the constituent and component societies. To protect the public and the profession, these standards must not only be enforced but industry must be made cognizant of them. Maintaining these standards will mutually benefit the public, the profession, and industry. It is the way of progress.

7247 Delmar Blvd.
St. Louis, Missouri 63130

Dental Fraternities—A Force Within The Profession

GILBERT N. ROBIN, D.D.S.

THE four dental fraternities in the United States—Alpha Omega, Delta Sigma Delta, Psi Omega, and Xi Psi Phi—today are continuing to fulfill a need, and are contributing in many ways to the advancement of the profession. But the full potential of this group of over 80,000 dentists has not been completely realized.

The goal of the profession—better dental health for all of the people—must capture the minds, hearts, services, and abilities of all dentists. In dental education, research, and journalism there is a constant need for improvement and support. The vast problems of public health, in an ever-changing society with its swiftly growing population and enlarging educational environment, must be brought into focus and faced realistically. Continuing education for practitioners and recruitment of quality students must be given more attention. Philanthropic agencies should be made knowledgeable of the needs of dentistry. Wherever you look, there are things to be done.

Heroic efforts are being made by dental organizations, from the local society up to the American Dental Association, by the American
Association of Dental Schools, the American Association of Dental Editors, the Academy of General Dentistry, our own American College of Dentists, by federal agencies of the Department of Health, Education, and Welfare, and numerous other groups. But stimulating more than 100,000 dentists to participate in this march to advance dental standards is a giant task.

The American Dental Interfraternity Council should use the strength of its membership to bolster these efforts. Within the fraternity, the dentist can be reached on a human as well as a professional level, something not quite attained in professional relations alone. This rapport should be exploited. The ADIC can help other organized elements of the profession in achieving the ultimate goals.

The Council is aware of this opportunity. At a Workshop Meeting, May 13, 1966, at St. Louis, a new committee was created. This Committee on Development was charged with a study of the areas of involvement of the fraternities and the ADIC in the total affairs of the dental profession, and to recommend methods by which the Council can offer assistance and assume a proper leadership.

A peculiar mechanism is enveloped in the fraternity system that encompasses human relations as well as professional relations among the members of the dental profession. Let us use it to its fullest benefit.

Our Numbers Up

T. F. McBride, D.D.S.

NUMBERS are news in these days of outer space exploration and the comprehension of solar distances, of burgeoning population figures, and not to be overlooked—the towering governmental financial structure. The latter is of concern to dentists particularly with the plans to provide dental care to more and more people. Daily we read of multimillion dollars being spent. By this is meant many millions of dollars. At this rate we should be more precise, and really "get with it."

By way of elementary background: a million is one thousand thousand—the numeral 1 followed by 6 zeroes. A thousand million
is a billion, 9 zeroes tagging along; and a thousand billion count up to a trillion—1 followed by 12 zeroes.

A recent random survey (by an investigator who prefers to remain anonymous) revealed that few persons know where we go from there. Here a dictionary is informative, although one has to select a multipaged tome. A 1 with 15 ciphers behind it is a quadrillion. If there are 30 zeroes it is a nonillion. Sex comes into the picture when one reaches 21 aughts, a sextillion; and later when there are 51 naughts, a sexdecillion. (One sometimes hears of a zillion; this is not specific and is an arbitrary coinage, a colloquialism, and might be considered slang.)

And then, at the top, we find centillion with 303 zeroes. It has been noted that in one of Webster’s early editions this was stated as 300 zeroes. The error was corrected in later printings.

But mathematicians have not stopped at that peak. One United States calculator, Edward Kasner (1878-1955), came up with a googol. This is 10 to the 100th power, a 1 with 100 zeroes after it. (The dictionary says he adopted this word from a child’s expression for an enormous number.) Now, over the top! If you raise 10 to the googol power—a 1 with a googol of zeroes trailing after it—you have a googolplex. (Funk and Wagnalls “Standard College Dictionary,” 1963, p. 576.)

So the next time the discussion turns to astronomical miles, or the mid-21st Century population, or the number of cavities in the teeth of the 179,323,175 inhabitants of the United States of America, or just everyday public spending, you can be exact and you can be accurate. The words and figures are there to use. The voice of the arithromaniac can be heard throughout the land.

Patterns in the Use of Dental Services

HEALTH INFORMATION FOUNDATION
UNIVERSITY OF CHICAGO

THE proportion of people seeing a dentist at least once during the survey year rose from 34 per cent in 1953, to 37 per cent in 1958, and 38 per cent in 1963. Older children age 6 to 17 and young adults in the 18 to 34 age group are most likely to use dental services. The
youngest and oldest age groups are least likely to see a dentist. During the 10 years covered by the studies, some increases in the per cent seeing a dentist took place in all age groups. The increases were greatest in the older groups and least in the younger groups. For instance, between 1953 and 1963 the increase was seven percentage points for the groups 55-64 and 65 and over, compared to two percentage points for those 1-5 and 18-34, and three percentage points for those 6-17.

Use of dental care appears to be more closely related to family income than is any other major type of health care. The percentage of persons seeing a dentist rises consistently with increasing family income from a low of 16 per cent for those with incomes of less than $2,000, to 60 per cent for those having family incomes of $12,500 or more in 1963. The fact that older people, who are less likely to see a dentist, tend to have lower incomes can account for only part of this relationship. In addition, dental care is defined as less "necessary" and more "elective" than is physician or hospital care. Higher income people seem more likely to purchase such "elective" care than lower income persons. Also the relationship between income and use is not obscured by the presence of third party purchasers of services for dental care as is true for physician and hospital care.

Even though dental care is generally not covered by health insurance, insured people are more likely to see a dentist than are the uninsured for each income level. For example, among persons with a family income between $3,500 and $7,499, 38 per cent of those with hospital insurance saw a dentist compared to 25 per cent of those without hospital insurance. These data indicate that differences in health behavior exist between persons with health insurance and those without, for uninsured as well as insured services.

These data were presented in "Progress in Health Services," a bulletin reporting findings from three surveys conducted over a ten-year period by the Health Information Foundation and the National Opinion Research Center, University of Chicago, May-June, 1966.
The 1966 Dallas Program and Convocation

At 1:30 p.m. Saturday, November 12, in the Baker Hotel Ball Room, Robert L. Weiss, Chief of the Continuing Education Branch, Division of Dental Health, U. S. Public Health Service, will introduce a new continuing education method. This will be followed by a demonstration of programmed instruction on a group teaching machine by Dean W. Darby, Chief, Program Operations of the Continuing Education Branch. This will be demonstrated in the Texas Room for those who are interested in this phase of continuing education.

The panel discussion, at 2:00 p.m. in the Ball Room, will continue the theme of the 1965 meeting, “Dentistry and Optimum Health: Planning the Good Life.” This year the panel will consider dental services and planning at both the national and community levels in relation to the new health laws.


The panelists will present information concerning the provision of dental care to the people of the United States as enacted in the 1965 Health Laws, community planning for providing this care, and the responsibility of the dentist in these programs. The importance of these matters to all dentists should be apparent. This will be an open meeting, and Fellows may invite their friends.

On Sunday, at 9:00 a.m., there will be a short Executive Session. President Percy G. Anderson will present the President’s Address; President-Elect Carl J. Stark will outline plans for the year ahead; and Jay H. Eshleman will read the Indoctrination Address.

At 10:00 a.m., President Maynard K. Hine of the American Dental Association will speak on “The Challenge of Wise Reform.” This will be followed by a message from Dr. M. G. Candau, Director General, World Health Organization, Geneva, on “World Health.”

The speaker at the luncheon, in the Terrace Room, will be the Honorable Olin E. Teague, U. S. Congressman from the 6th District of Texas, and Chairman of the Subcommittee on the Manned Space Flight Project.

The address at the Convocation, 3:00 p.m. in the Ball Room, will be “The Hospital as a Community Asset in Health,” by Dr. Edwin L. Crosby, Director of the American Hospital Association.

The Fellowships will then be conferred, and the Awards presented.

There will be a reception in the Lounge Room at 6:30. After dinner, the guests will be introduced, Officers and Regents installed, and the Service Key presented to President Anderson. Entertainment will follow.
Fifth Annual
Institute for Advanced Education
In Dental Research

MAY 15-26 AND OCTOBER 9-13, 1967

SECRETORY PHYSIOLOGY AND SALIVARY FUNCTION

THE Institute for Advanced Education in Dental Research was conceived by the Committee on Research of the American College of Dentists. This group recognized that essentially all training efforts are directed toward either development of new investigators for careers in research, or specialized advanced training of individuals. They felt that there would be real value in a program that afforded experienced workers the opportunity to gather together under the guidance of a group of recognized senior scientists, acting as mentors, and discuss their research interests, problems, and goals.

The basic philosophy underlying creation of the Institute was that by a sufficiently prolonged association of this type the trainees, all with related but preferably non-identical interests, would gain a broader and deeper understanding of dentistry's problems and fruitful ways to attack them. From the personal standpoint, consideration of the specific details of each participant's own research activity would contribute to an insight into its significance and possible future direction, as well as into new and advanced experimental approaches that might be applied.

The Institute is entering its fifth year under support by a training grant from the National Institute of Dental Research. Determination of annual program content, invitation of senior mentors, and selection of trainees have become the duties of a continuing Subcommittee on Research of the American College of Dentists.

The programs are kept entirely flexible and mentors are invited on the basis of stature and competence in the field, and community
of interest with the participants. They are drawn from the ranks of general science as well as from dental research centers. In the selection of trainees, consideration is given to record of accomplishment and promise for the future, ability to add to the dialogue of the curriculum, as well as to the achievement of a balance between the various disciplines pertinent to the study areas. Ordinarily the basic group is comprised of ten to twelve trainees and four mentors, with added senior participants as special needs arise.

The Institute is held at locations where the atmosphere is conducive to serious discussion, informality, and minimal interruption. Sessions consist of a two week period in Spring, followed by a concluding week in Autumn. This arrangement has not only made scheduling more feasible, but the time for thought and trial between sessions has also contributed greatly to the effectiveness of the concluding week's discussions.

The subject for the 1967 Institute is Secretory Physiology and Salivary Function. Consideration will be given to the physiological, biochemical and structural aspects of secretory phenomena in general, and to the specialized areas of normal and pathological salivary function. Among the mentors will be Leo M. Sreebny, University of Washington, and Solon A. Ellison, State University of New York; the others will be announced. The sessions will be held May 15-26 and October 9-13, 1967, at the Carrousel Inn, Cincinnati, Ohio.

Research workers interested in attending should forward applications before December 1, 1966, to Dr. T. F. McBride, Assistant Secretary, American College of Dentists, 4236 Lindell Blvd., St. Louis, Missouri 63108. Material submitted should include a curriculum vitae, list of publications, and a detailed account of previous and present research activities, including a statement of the type of discussion subjects the applicant considers most pertinent to his own interests.

The Institute reimburses trainees for their travel expenses and pays a stipend based on the cost of living.

This announcement appeared in the July 1966 issue of the Journal. It has been sent to United States members of the International Association for Dental Research. If Fellows know other researchers who might be interested in attending the Institute, please call their attention to this notice.

Here is a uniquely different and comprehensive atlas of the developmental anatomy of the face, compiled by three experts in the field of cleft palate research. It is based upon an extensive sample from an unprecedentedly vast collection of 25,000 specimen sections. These embryos and fetuses were gathered over the past 12 years from some 250 hospitals in all areas of the United States and from several institutions in Japan. They contain not only normal samples, but also many kinds of abnormalities including clefts of the lip and/or palate.

This book offers the broadest possible comparisons between the normal and the cleft face at every stage of fetal development. More than 1,200 gross and microphotographs are included. These show clearly the nature of the cleft, the status of external body development, and the histologic details of the faces of both normal and cleft embryos and fetuses for each stage of maturation.

From their rich fund of specimens the authors have culled a highly representative selection of 35 cleft (out of the world's largest collection of 200) and 47 non-cleft examples, ranging in age from 33 days to full term. There are three specimens provided in each age group.

Along with these specimens a guide page is provided which gives the general appearance of the body at this stage, offers a lateral and a frontal view of the head, and indicates on drawings of the head where the sections that are represented are located. A photograph of the palate is also presented which gives an idea of the size and state of development of this structure at that particular age. This arrangement makes comparisons easy—both between facial areas and fetal age group.

The goals of this atlas are fivefold: it demonstrates anatomic variation, changes with age, facial differences between cleft and non-cleft palate embryos and fetuses, other malformations associated with cleft lip and/or palate, and special features related to palatal development. These special features include such subjects as oral and nasal epithelium; supernumerary, missing, and fused teeth in cleft lip and palate fetuses; nasal and primary palatal development; the pattern and chronology of palatal fusion; and a great deal of material on epithelial pearls.

As a final contribution, there is a special section on the laboratory procedures used in preparing, sectioning, and staining the specimens, and the special problems, presented by the age, state of preservation, and size of the embryos and fetuses.

At the end of this volume there is an informative bibliography which will give the prospective researcher in the field of orofacial development a good beginning.

More than just an atlas, this book is a really comprehensive source work which provides excellent perspectives of facial development not only for students and researchers, but also bi-
ologists and clinicians who are stimulated toward new understanding.—
L. Woodrow O'Brien, D.D.S., Lasky
Cleft Palate and Oral Cancer Rehabilitation Center, Washington University
School of Dentistry, St. Louis, Missouri.

W. Harry Archer, B.S., M.A., D.D.S.
4th Ed. 1,157 pp. Philadelphia:
W. B. Saunders Co. 1966. $23.50.

This 4th edition of Oral Surgery is
appeared in 1952. Previous editions have been translated into Spanish,
German, and Japanese.
The format essentially is unchanged.
The author presents his all inclusive subject matter to interest the oral surgeon,
the general practitioner, the undergraduate, and graduate student, as well as professional men in allied specialties.
Pertinent topics covered in the book include: complications associated with
tooth removal; management of facial trauma and infection of the jaw, head
and neck; cysts; tumors of the oral cavity, and oral surgery in the hospital.
The book also thoroughly evaluates the multidisciplinary approach to many of
the more complicated problems in oral surgery. Each subject is discussed ac-
cording to clinical features, pathological findings, and surgical treatment.
The scope of this edition has been enlarged to include information pert-
taining to anti-coagulant therapy, cortico-
stroid therapy, and anti-inflammatory agents. Proper consideration is
given to everyday problems involving surgical judgment.
A new chapter on dental facial orthopedics and current information
on principles of antibiotic therapy (Chapter 15), and diagnosis and treat-
ment of facial pain (Chapter 20), are typical examples of the degree and ef-
fort the author and his contributors have endeavored to make this text
most complete.

There are numerous case histories with good pre- and post-operative photographs. The captions and references are well indexed within contents of the text. Photographs and illustrations are all of high quality. In some instances the case histories tend to be-
come a little repetitious.
The author has made use of many valuable contributors which add stature
to this as a reference text. The high literary caliber of the edition
should be invaluable to those interested in oral surgery and total patient care.

This well written and excellently il-

lustrated book deserves a place in the library of every dentist and dental stu-
dent.—Leroy W. Peterson, D.D.S., Pro-
fessor of Oral Surgery, and Hamilton
R. Young, D.D.S., Associate Professor,
Clinical Oral Surgery, Washington
University School of Dentistry, St.
Louis, Missouri.

PRACTICE OF ORTHODONTICS.
Volumes 1 and 2. By J. A. Salzmann,
D.D.S., F.A.P.H.A. 1,074 pp. Phila-
$39.00.

These two volumes are an outgrowth
of the fine textbooks by Dr. Salzmann
Considerable new material is pre-
sented. The contents are directed both
to the orthodontist and the general
practitioner. The illustrations are
clear and well selected. The bibliog-
raphy is extensive and the index is ex-
cellent.

The 38 chapters represent a broad
spectrum of orthodontic theory and
practice. Perhaps a good way to re-
view what Dr. Salzmann has accom-
plished in his Practice of Orthodontics
is to list some of the chapter headings
and contents. And this list is only partial and selected.

The text considers the scope of orthodontics and its history and position in public health; an assessment of growth and development with growth standards; the concept of normality; a discussion of skeletal maturation; the influence of disease on growth; the origin of bone and its composition; the schedule of ossification, particularly of the wrist with an assessment of skeletal age; the embryonic origin and growth of the head; sex differences in facial growth; the origin and evolution of muscles of the jaws and face and their function; development of the dentition with the order of tooth eruption; deciduous root resorption and exfoliation; the meaning of dental age; the development of dental occlusion and its relation to facial growth; the etiology of malocclusion and dentofacial deformities, and their classification with a discussion of ectopic eruption and impactions; ankylosed teeth; prolonged retention of teeth; the effect of systemic factors in dentofacial growth changes and malformations along with nutritional deficiencies; classification of dentofacial anomalies with a history of this development; the orthodontic examination of the patient; roentgenography in orthodontics, cephalometrics and anthropometrics, with a discussion of different cephalometric analyses; stomatognathics; diagnosis and treatment planning; orthodontic treatment for adults; orthodontic case analysis; serial extraction; extraction in orthodontic therapy; biophysical principles in mechanotherapy; appliance construction; prevention and treatment of incipient malocclusion; interception of malocclusion; various systems of appliance therapy; dentofacial changes in orthodontic therapy; and tissue changes in orthodontic tooth movement.

The author is Attending Orthodontist, Head of Orthodontics and Director of the Cleft Palate Center at Mt. Sinai Hospital, New York; Editor, Reviews and Abstracts, American Journal of Orthodontics; and formerly a Director, American Board of Orthodontics.

He has presented a superbly organized and well-written text of the rapidly advancing specialty of orthodontics. It has its place in the graduate school as a text, and in the library of both orthodontist and general practitioner.—William S. Brandhorst, D.D.S., St. Louis.


This book, written by the Professor of Orthodontics and Chairman of the Department of Orthodontics of Loyola University School of Dentistry, Chicago, fills a need as does little in the literature on the management of an orthodontic practice. Few courses are given in this subject in orthodontic graduate programs; indeed little attention is given to the business aspects of dentistry in many dental schools. What is given, rarely is sufficient to provide young graduates with the knowledge needed to guide their development, both economically and ethically.

This book covers the following: the process of becoming an orthodontist, selection of a location and the establishment of a practice, beginning a practice, associations and partnerships, investments and preparing of an estate, case presentation, patient inter-relationships, the business side of an orthodontic practice, auxiliary personnel and their functions, and the methods and problems of transfers. This is candidly written, and in sufficient detail to start the thinking of young and older dentists alike.

Of particular interest are the au-
thor’s views on the cost of a dental education, the reasons why a man wants to become an orthodontist, the relative cost structure in an orthodontic practice, the reasons for orthodontic records, and the problems and ethics of patient transfer. Examples are presented of various secretarial forms that an office may use. Attention is given to the usage and broad job classification of auxiliary personnel.

Dr. Jarabak writes of the reasons orthodontics is a specialty, and how it is not a closed organization since there is abundant literature. He decries the narrow approach of some orthodontists, and champions the understanding of the basic principles of tooth movement, appliance construction, and use.

This book can be a text for a course in graduate orthodontics, or a stimulus to the young orthodontist. In fact, much of the material covered, with appropriate modifications, could be applied to the other specialties of dentistry.—William S. Brandhorst, D.D.S., St. Louis.

ORAL RESEARCH ABSTRACTS.
Volume 1, Number 1, April 1966.

This new periodical has just joined the family of ADA publications which includes the Journal, Dental Abstracts, Journal of Oral Surgery, and Journal of Dental Research. ORA is being given support by the U. S. Public Health Service, through the Division of Dental Health, the National Institute of Dental Research, and the National Library of Medicine.

The abstracts are factual and not critical. World periodical literature, both dental and nondental, that relates to oral health is covered. ORA is aimed primarily at an audience of dental scientists and researchers. The abstract gives sufficient information to enable the reader to determine whether he wants to read the complete paper.

The readers of Dental Abstracts are practitioners generally, and the abstracts are complete enough so that reference to the original is not necessary. There is no conflict between the two journals.

There are over 500 abstractors, most of them researchers. A group of 53 are based at the Hadassah School of Dental Medicine, Jerusalem.

The areas reviewed are the clinical, biological, physical, and social sciences, education, and public health. This first issue contains over 600 abstracts, and runs to 96 pages.—T. McB.


This is a reference source on oral surgeons and oral surgery that is worldwide. It contains biographic data on over 2,000 oral surgeons in the United States and Canada, and approximately 1,000 dentists practicing oral surgery abroad.

The diplomates of the American Board of Oral Surgery and the members of the American Society of Oral Surgery are listed. Also included are the officers of United States regional and state oral surgery societies, with the objectives and requirements of the societies.

In addition, the Directory contains the legal requirements of those states having specialization laws; dental schools having approved postgraduate and graduate courses; and hospitals with approved training programs in oral surgery.

Robert L. Moss is assistant editor, and the editorial board consists of Leslie M. FitzGerald, G. Thaddeus


When, almost 30 years ago, this book was first published, dental educators were only beginning to appreciate the need for instruction that would equip dentists to take into account the general health of their patients and to detect the early signs of systemic disease. Also just developing at that time was the recognition of the dentist’s responsibility to advise patients regarding the need for medical service and to call on physicians for assistance in the care of oral diseases related to systemic health. In the schools there was almost no agreement as to what the instruction should include, nor uniformity in the time allowed for presentation of the subject.

This book, then and through the subsequent editions, has done much to alleviate this situation and show direction. In 1938, the implied purpose was to provide “a speaking knowledge of Internal Medicine.” The authors now state that such information “is mandatory if the dentist is to practice his art with the satisfaction and peace of mind that is his due.”

The authors have revised and updated the 14 parts that range from diseases of the heart and blood vessels, the other body systems, to the allergies and antibiotics.

The “box summary” presentation that permits an easy study of essential information on the diseases and conditions is continued in this edition.

There is a bibliography at the end of each part; the dates of the references testify to the currency of this 6th edition. An appendix gives normal laboratory values of clinical importance; this will help dentists in the interpretation of laboratory studies.

In these days when dentists are thinking more and more of optimum health for the individual, this book will be of great value in a continuing education study.—T.McB.


This is an interesting atlas on step-by-step procedures in crown and bridge techniques. The author has developed the atlas in a systematic manner from diagnosis through trouble-shooting in full coverage restorations.

The drawings and illustrations are clear and concise. He has expanded a previous article on the “Rationale and Technique for Occlusal Equilibration” that is excellent.

A number of chapters, however, present techniques (such as a double casting procedure) that are quite tedious and involved, considering other techniques available that are much simpler to use and to accomplish the same result. Also, one would question the advantage of compound over elastic impression materials since compound is a distorting material by its very nature.

The book is a valuable one for reference and obtaining a step-by-step procedure for many techniques, however the cost of $25.00 seems high for an atlas of this type.—James D. Harrison, D.D.S., M.Sc., A.M., Chairman, Department of Crown and Bridge, St. Louis University.
The Journal of the American College of Dentists

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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 dental 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 development and use of measures for the control and prevention of oral disorders;
(b) To urge broad preparation for such a career at all educational levels;
(c) To encourage graduate studies and continuing educational efforts by dentists;
(d) To encourage, stimulate, and promote research;
(e) To encourage qualified persons to consider a career in dentistry so that the public may be assured of the availability of dental health services now and in the future;
(f) To improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient through sound public dental health education;
(g) To encourage the free exchange of ideas and experiences in the interest of better service to the patient;
(h) To cooperate with other groups for the advancement of interprofessional relationships in the interest of the public; and
(i) To urge upon the professional man the recognition of his responsibilities in the community as a citizen as well as a contributor in the field of health service;

(j) In order to give encouragement to individuals to further these objectives, and to recognize meritorious achievements and potentials for contributions in dental science, art, education, literature, human relations and 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.

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