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From The Editor

As this is the last issue of the *Journal of the American Academy of Gold Foil Operators,* it would seem appropriate for the Editor to mention that the readers are not witnessing its demise. Rather, two academies are joining forces to expand coverage of scientific and clinical interests in operative dentistry. There is no intention to discourage or delete substance that relates to rubber dam or the direct golds. The new *Journal* will provide broader informational resources that will benefit students, teachers, researchers, and clinicians who share interests in a more complete way.

Your Editor has served this *Journal* for the past ten years. It has been an enriching experience gained from close relationships established with the many colleagues who have given of themselves in support of our efforts. We have been grateful for the support given us by our perennial friends in the supply industry, and, of course, one would be remiss in not acknowledging the many authors who have contributed their knowledge and skill to the profession through our *Journal.* To all, we of the AAGFO give our deepest thanks. We would ask that all give similar support to our new *Journal,* and feel confident that your sustained interest will assure it a long and useful role as a fluid organ in disseminating knowledge to members of the American Academy of Gold Foil Operators and the Academy of Operative Dentistry.

Jack G. Seymour

President's Message

I have just returned home from our Board Meeting this week held at Greenbrier, West Virginia and I'm full of enthusiasm for our upcoming meeting, October 23rd and 24th, at Northwestern School of Dentistry. Dr. Hunter Brinker has sixteen excellent operators and four essayists to make this an outstanding program. It will be held in the new section of the Dental School, with excellent facilities for our type of program.

I had an opportunity to talk to Dr. Ian Hamilton about our new combined *Journal*, and I feel that this can and will be the Journal of the Future for Restorative Dentistry, and the Academy can be proud to be the guiding light in this new voice of organized Dentistry.

In reading the current literature during the last few months, one cannot help but notice that the emphasis is swinging back to the teaching of "Conservative Dentistry" and the realization that the drift away from this concept (for example, three-year programs and Public Health concepts, etc.) has spawned a generation of graduates that were not and are not equipped to go into General Practice, (hence, the increasing demand for the graduate programs, so that they can learn one portion of dentistry and hope to do it compentently). If there are any operative departments that might need some assistance in the teaching of Gold Foil, our school committee is anxious to help.

In closing, I would like to mention the passing away of one of our *great* Foil men on the West Coast, Dr. David Shooshan, who did so much for Gold Foil and Restorative Dentistry during his lifetime.

Freeman Slaughter

Expanded-Duty Auxiliaries (CON)

Ours is a nation of sovereign states banded together by a Constitution which grants police power to the states and allows them to enact whatever laws are needed to protect the health, safety, and welfare of the people. The North Carolina Legislature decided almost 100 years ago that the only way to assure the public of competent treatment by qualified dental practitioners was to enact laws that regulate and control dentistry. The other states have enacted similar laws, such that today anyone holding himself out to be a dentist has a specified academic background, a specified amount of training in the arts and sciences of dentistry, and has demonstrated his proficiency in dentistry before a Board of practicing dentists to receive a license granting him the privilege of performing dental operations on the people in that state.

Several years ago the federal government entered the dental auxiliary field saying that there was a health manpower shortage of crisis proportions requiring alterations in the delivery system. Funds were made available for research in utilizing dental auxiliaries to perform certain acts of dentistry previously reserved solely to the dentist.[1] Dental Auxiliary Utilization (DAU) programs were initiated in many of the nation's dental schools. They produced better trained and qualified dental assistants, and dentists more capable of utilizing such assistants in application of a "four-handed" practice of dentistry — thus initiating a flurry of programs for expanding the functions of auxiliaries, sponsored and paid for by the federal government often in disregard of state sovereignty and the right of the state to regulate the practice of dentistry.

TEAM (Training in Expanded Auxiliary Management) programs which were initially funded as a mechanism whereby dental students could learn to manage auxiliaries with expanded functions have been used, and are still

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This paper was presented at the Annual Meeting of the Academy of Operative Dentistry, Washington, D.C., November 9, 1974.

being used, to permit unlicensed, inadequately trained, unqualified, and even undefined individuals to practice dentistry on the public—all under the euphemisms of "research", and "demonstrations", and "academic freedom." Obviously, research that is authentic and valid must be done to enable dentistry to make proper decisions, but this research should be very restricted, closely supervised and controlled, and have proper safeguards. It should be conducted only at those educational instutions and centers where the proper environment can be provided for the faculty and staff to be involved in teaching, patient care, and research (and in the following order of importance: teaching foremost, patient care second, and research third), and where the human subjects are in the most controlled, protected environment possible and where these human subjects fully understand what is involved in the experimental study. Obviously, the same research does not have to be done in 30 different dental schools at the same time to be valid.

There seems to have been an evolution as DAU programs were converted to TEAM (Training in Expanded Auxiliary Management) programs, then to Therapist programs, and now to EFDA (Expanded-Function Dental Auxiliary) programs. Each new program requires that dental assistants be allowed to do additional functions previously done exclusively by the dentist, to such an extent that if the EFDA program were fully implemented in accordance with the present guidelines, it could cause the demise of the dental hygienist as a part of our profession and probably the phasing out of dentists from the field of restorative dentistry in the years ahead. Repeatedly, I have heard dentists in the Dental Division of HEW express the opinion that studies have demonstrated conclusively that dental auxiliaries trained in operative procedures perform those procedures as well as, or perhaps better than, senior dental students and practicing dentists.

It seems to be fashionable for some of our colleagues, representatives of the federal government, and some dental deans and faculty members to refer to operative dentistry procedures as being *reversible,* and therefore delegable, some even advocating the managerial principle of delegating functions to that person with the least amount of training who can perform the task. I do not agree that dental operative procedures are reversible. Each time you traumatize a tooth or abuse the supporting structures (and the greater the amount of trauma or abuse the greater is going to be the resulting damage), you produce irreversible damage. Those who contend that operative dentistry procedures are reversible appear to have forgotten their lessons in physiology and pathology: that the same blood which circulates through the teeth travels through the brain, heart, and the rest of the body. Damage to health by infection from teeth is no different from that produced from the bladder or other organs of the body. Those who tell me that a silver amalgam restoration is reversible (for if it is not done correctly it can be flicked out and done over), or that if the procedure fails and requires a second or third attempt it doesn't really matter, convince me that they are not health professionals.

During the past ten years, the federal government, the American Dental Association, and the dental schools have been brainwashing us with statements that the manpower shortage in dentistry is of crisis proportions, proved by stacks of meaningless statistics. Each year the predicted inundation of the dental profession by paying patients has failed to occur.

Dr. Dale F. Roeck, Associate Dean of Temple University, has been appointed Chairman of the Special Committee for the ADA Manpower Study to assess the adequacy of the supply of dental manpower. His report of June 1974[2] stated that between 1960 and 1972 (at a time when the population growth increased 16.1%) the number of dental graduates increased 22%, dental hygiene graduates increased 247%, and dental assistant graduates increased 632%. The number of dental schools increased from 47 in 1960 to 56 in 1972, and enrollment increased by almost 5,000 students. The number of dental hygiene schools increased from 37 in 1960 to 148 in 1972, and dental assistant programs increased from 33 in 1960 to 203 in 1972.

Recently, the North Carolina State Board of Dental Examiners sent out a survey questionnaire to all licensed dentists practicing in the state. The instructions to the dentist indicated that he did not need to identify himself. The results of this survey are rather surprising. We asked a series of questions:

Is there a shortage of hygienists in your area?	Yes _____	No _____
Is there a shortage of dentists in your area?	Yes _____	No _____
Is there a shortage of assistants in your area?	Yes _____	No _____
Are you too busy to treat all patients who request your services?	Yes _____	No _____

In all, 984 dentists responded to this questionnaire. Of these, 6.5% did not answer the question "Are you too busy . . .", 365, or 37%, of those who responded indicated that they were too busy to treat all patients . . ., 555, or 56.4%, indicated they were not too busy to treat all patients who requested their services.

On the reverse side of the survey was the question, "When the following duties are performed in your office, who does them routinely or most of the time?" with the instructions to mark "D" for dentist, "H" for hygienist, and "A" for assistant. This question was followed by a list of 26 functions all of which are permitted to be done by a dental assistant after training. A summary of the answers indicated that only six duties are currently being delegated to assistants by a majority — 50% or more — of the responding dentists. These six are:

1. Mix silver filling material
2. Mix anterior filling material
3. Mix cement for permanent crowns, bridges, etc.
4. Develop Xrays
5. Record patient history
6. Take oral temperature

That only six of the permitted 26 duties are being delegated by half of the responding dentists would indicate further that there is not an overwhelming crisis of dental manpower in North Carolina. Surveys in at least two other states of which I am aware, and I suspect that there are others, indicate similar results. If there is not a dental crisis in this country and a majority of dentists can still add patients to their schedules, then there would appear to be no justification for the government to continue to spend our tax monies in pursuit of additional programs for training dental auxiliaries in expanded functions.

A multitude of research and dental demonstration programs has proved that dental assistants can be trained to perform expanded duties. I don't know that this was ever a question, because you and I as dentists were trained to do these duties, and anybody with an average amount of intelligence can be trained to do the same. That was not the question. The question was, and still is, whether or not auxiliaries *should* be trained to do these duties. That question has not yet been answered. Also, why should it be desirable to train and delegate to somebody with less academic background and clinical experience the most intricate tasks in the performance of dentistry unless there is a shown need for it?

One reason we hear for such a proposed change in the delivery system is that in the very near future Congress will enact some form of national health insurance which, by removing the financial barrier, will result in our offices being flooded with people demanding dental care. If the money barrier were the only thing keeping people out of the dental office this would be a reasonable argument, but it is not. In Alabama, when dental benefits were added to Medicaid to cover the cost of dental care for eligible children up to twelve years of age, those eligible children were examined and instructed to see a dentist, but even after persistent efforts on the part of the profession to get these people in for dental care, the utilization rate increased only 2.8%[3]. Based on their experiences with Medicaid dental coverage, representatives from two state boards predicted that if tomorrow every person in the country were to have his dental needs covered by national health insurance and transportation paid to and from the dental offices there would not be a significant increase in the demand for dental care, and the current work force could adequately care for that demand.[4,5]

Another reason that we hear, especially from consumer groups, for expanded functions for dental auxiliaries, is that dentistry is too expensive. So is everything else, but to those who think that the cost of dentistry will be reduced by lowering its delivery to the level of an auxiliary, I have news for them: it won't. Dentistry is a bargain. If dentistry were practiced as other operative and surgical procedures, as in a hospital, the cost of having a tooth removed would not be several dollars, but would be probably several hundred dollars. Dentists operate their offices as hospitals, providing the operating room, anesthesiology services, nursing services, anesthetic drugs, X rays and other needed supplies and services, and still perform surgery and restorative procedures at a reasonable cost. And to my knowledge, the introduction of therapists in the military services has not produced a significant reduction in the cost of dental care there, but it has produced some profound problems.

Based on information currently available from the University of the Pacific and the UNC Dental Demonstration Program (in the UNC study, productivity and income were increased by 39%, the University of the Pacific study showed that expenses increased by the same percentage as income) and other studies, it is apparent that the introduction of EFDAs or EDDAs into a private practice will not produce significant savings for the patient, and it will not produce a significant increase in net income for the dentist.[6,7,8]

In North Carolina, we selected a highly productive dental practice which was well-managed, efficiently operated, and one which would lend itself readily to the placement of EDDAs or EFDAs in the delivery system. We

asked that a study be made of this practice which last year produced a gross income of more than $100,000 in a traditional type of practice. The income and expenses of this studied practice were extrapolated in the following manner: Two EFDAs could be added at a salary of $7,500 each (very reasonable salaries) and two supporting staff could be added to handle the additional traffic and appointments and sterilization of instruments at $5,200 each (again very reasonable salaries). A study of this practice indicated that for the dentist to increase his net income by $7,000 per year his office would be required to generate an additional $57,000 in gross income.[9] I don't know any dentist who would be willing to put in the time and effort to generate an additional $57,000 to receive only $7,000.

Several months ago, seven of us from the American Association of Dental Examiners went to Washington to meet with representatives of the Dental Division of HEW to discuss the EFDA programs. We came from Alabama, Tennessee, North Carolina, Texas, Virginia, and Oregon, and our secretary from Chicago. The purpose of this meeting was to discuss the philosophy and the guidelines for the training program for the expanded-function dental auxiliary (EFDA).[10] The guidelines list nine basic functions which must be in the program, including:

1. Making impressions for study casts
2. Finishing and polishing amalgam restoration
3. Polishing coronal surfaces of teeth (meaning prophylaxis, of course).

The document also lists fourteen advanced functions, including:

1. Placing and finishing silicate, resin, and composite restorations
2. Placing, carving, and finishing amalgam restoration
3. Constructing and placing space maintainers
4. Temporary stabilization (splinting)
5. Scaling and root planing
6. Soft tissue curettage
7. Administering local anesthetics by intraoral injection.[11]

The Division is soliciting contract proposals from schools on a competitive basis with funding priority being based on the schools' agreeing to teach auxiliaries the largest number of *additional* functions beyond those being taught now in current programs and with assurances that the auxiliaries will be legally employable in the state upon completion of the course. In other words, if they are taught unlawful functions in the training program, they must be permitted to do the functions legally when they leave the program.

The Board representatives drafted a statement of our concerns about this and other such programs which was presented to Dr. Merrill Packer, Acting Chief of the Dental Division of HEW. Probably you have seen a copy of the rough draft of this statement, which addresses itself to some deficiencies in the program:

1. The proposed guidelines for the program did not provide requirements of basic educational qualifications, either pre-dental or dental. and do not establish or require any method of proving proficiency.
2. The program offers federal funds to institutions which will undertake

to teach and train individuals of undefined qualifications to perform dental services in violation of state laws and in disregard of the standards imposed on the professionals who render health care now.

3. The program provides no federal funds for the recognized and approved dental auxiliary programs which have helped to maintain quality dental health care at reasonable cost, and thus discriminates against schools conducting legal programs and against qualified and licensed professionals, places a premium on mediocrity, and denies the consumer the right to receive care of an established quality from licensed health professionals.
4. The statement expressed criticism of HEW policy of contacting educational institutions and other organizations in the various states and offered funds for participation in EFDA and similar programs without prior consultation with, or cooperation of, the profession and state boards of dental examiners.

A copy of the verbatim transcript of the meeting, along with a copy of the stated concerns, was sent with a letter to Dr. Packer requesting that he and his Division carefully review all of the information that they have and reevaluate the EFDA program — not only the guidelines but also the justification for the program — and we earnestly asked that they scrutinize all additional programs of manpower development as to justification of the expenditures of such monies and as to the resulting consequences.

Even now, the federal government has funded programs to study the feasibility of allowing auxiliaries with minimal training to do other expanded functions. Examples:

1. *Forsyth Dental Center* — Dental hygienists have been trained in extensive cavity preparations, including cusp reductions and pins and the placement of filling materials. The experiment reported that the "study demonstrated conclusively that the advanced-skills hygienist is capable of providing high-quality restorative dentistry . . ." These hygienists, after 25 weeks working under identical conditions as staff dentists on the project, produced five surfaces of completed restorations for every hour spent with the patients (staff dentists produced six surfaces), and the hygienist with a chair-side assistant would require only half an hour supervision per day.[12]
2. *The University of Iowa* — Dental hygiene students are being taught aspects of restorative dentistry, periodontal therapy, and anesthesiology procedures.[13]
3. *The University of Colorado* — The contract indicates the scope of expanded functions to be taught as, "all functions listed in FY-74 EFDA guidelines (hygienists). Certified dental assistant will be trained also."[13]
4. *The University of Kentucky* — Dental hygienists have already been graduated with advanced skills in restorative dentistry. Now the dental hygiene curriculum is being reviewed to see if these additional duties can be taught without lengthening the time in school. The University of Kentucky is presently engaged in an EFDA training program with the contract period extending to July 1976. Dental auxiliaries in the EFDA program are required to have a high school diploma or equiva-

lent and are trained in seven of the nine basic functions and eleven of the fifteen advanced functions, including all of those traditionally done by the dental hygienist.[15]

There are many more programs, but these will give you an idea of the research and training being funded by HEW at this time. It has been our experience in the past that research programs have been followed by demonstration and training programs, with pressures to allow those trained to perform the services outside the confines of that institution.

When dentistry assigns operative procedures to auxiliaries, it is creating and fostering an auxiliary equivalent to a nurse or a physician's assistant in medicine, who could go into the operating room and perform operative procedures such as repairing hernias, removing appendixes, tonsils, and adenoids, and setting fractures as well as other medical operative techniques.

If this country suffered from a crisis in dental health manpower, whatever steps were necessary could be taken to assure that dental care of some quality be made available, as the Chinese have done in developing the peasant-doctor. But that course is not necessary in this country. It is my firm conviction that my children, and their children, deserve dental care from the hands of licensed professionals, and they will have it if we refuse to sacrifice excellence in the name of expediency.

The dental profession should reevaluate its present attitude toward "expanded duties" which tolerates the haphazard and often unlawful delegation of acts of dentistry to undefined, non-professionals. This course of action is creating a large reservoir of people who are inadequately trained to be licensed as dentists but who are trained enough to go to the various legislatures to seek and obtain licensure of some kind — perhaps a kind to allow working directly for the public.

The federal government should reevaluate its present course of disregarding state sovereignty and sponsoring programs creating dental paraprofessionals. It should rigidly adhere to a policy that any additional programs which train dental auxiliaries in expanded functions be based on an honest and precise assessment of actual demands for dental health care and on the productivity capabilities of the present dental health manpower.

If we as a profession are to maintain the excellence which has characterized dentistry in this country, we must not allow delegation to an auxiliary of any function that should be performed only by the dentist. It is my opinion, and one shared by other examiners, that the programs currently proposed for training dental auxiliaries for expanded functions are not in the best interests of the public or the profession and will be harmful to both. These programs will produce fragmentation of the dental profession and independent, autonomous auxiliary groups — both of which are detrimental to the people whose health, safety, and welfare we are sworn to protect.

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NOTICE OF MEETINGS

The American Academy of Gold Foil Operators will hold their Annual Meeting October 24, 1975 at Northwestern University with the Palmer House as the Headquarters Hotel. This precedes the ADA meeting in Chicago. The Operative Academy will hold a business meeting on Saturday, October 25 at 9:00 a.m. at the Palmer House. All interested members are invited to attend.

John W. Hein

An Educator's View of the Education and Utilization of Auxiliaries

I view the entire subject of the education and utilization of expanded-duty auxiliaries as one of the most constructive and significant challenges to be addressed by the dental profession in many decades. I do not agree with those prophets of doom who see this as an issue that will rend and destroy the profession. Quite the contrary, I sincerely believe that this challenge offers an outstanding opportunity for bringing the research, the education, and the practicing arms of the profession closer together than ever before and into a much more realistic and meaningful relationship. Furthermore, in the process of this happening, I see a significant increase in the stature of dentistry. The reason why I am so optimistic about the eventual outcome is that in its full scope the matter of education and utilization of dental auxiliaries for expanded duties not only touches every aspect of our profession but it requires all of us jointly to review and reaffirm many of the most fundamental responsibilities of our profession. Hence, like it or not, with tears or smiles, in rage or joy, representatives from every part of dentistry are going to have to get involved with each other and stay involved with each other in a way that has never occurred up to now. I believe this sort of total involvement will be immensely beneficial for our profession because those who participate in the process will rise to the stature of dental statesmen capable of a comprehensive view of dentistry (fettered, though we are, by our separate biases as educators, practitioners, examiners, or researchers).

If I could have my wish, it would be that the dental examiners would by some accelerated process be the first to enjoy the privilege of becoming these dental statesmen of the future. My reason for favoring dental examiners

Dr. Hein graduated Magna Cum Laude from Tufts College Dental School, and subsequently received his Ph.D. degree from the University of Rochester School of Medicine and Dentistry. His involvement in the field of dental medicine as a teacher, administrator, and researcher has resulted in numerous published papers. He holds offices in many professional societies and has received a number of honors, among which are Fellow of the American Association for the Advancement of Science and Fellow of the International College of Dentists. Dr. Hein is currently Director of the Forsyth Dental Center in Boston.

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in this way is that, because of the subject of education and utilization of dental auxiliaries, dental examiners have quite suddenly been thrust into a position of great power over matters related to research as well as education. At the same time, dental examiners are being confronted with the need to defend the principle of academic freedom, to preserve and foster the spirit of free inquiry, and to uphold the traditional right of faculties to decide what they will teach and to whom. The position of dental examiner is not an enviable one, because as far as I am aware there is no dental practice act in the nation which deals adequately and separately with the special needs of dental research, dental education, and dental practice and which protects the fundamental freedoms which are so necessary for the continued well being of the research and educational arms of our profession.

Thus, dental examiners are faced with the dilemma of whether to apply the letter of a law (intended for governing dental practice) to the detriment of research and educational endeavors. Many practitioners will hope that that is exactly what examiners will decide to do while many educators and researchers will hope that examiners will do just the opposite. I believe that the easiest solution to this dilemma is to revise practice acts so that they clearly address and foster the separate needs of research, education, and dental practice. I have a feeling that that is the path which our future dental statesmen would choose to follow.

I have said that the education and utilization of auxiliaries was a profound challenge which would require us to reexamine and reaffirm many of the most fundamental responsibilities of our profession. What are these responsibilities and what has the education and utilization of auxiliaries to do with them? I think we would all agree that our overriding responsibility is to deal with the oral health problems of the nation as efficiently and effectively as possible. Our first efforts should be to find and implement acceptable preventive measures. Should we fail in this, our responsibility becomes the search for and application of evermore effective treatment procedures. At this time, we also adopt the responsibility of assuring that high standards of the quality of care are maintained. Up to this point, I am sure we are all pretty much in agreement and, if that were the end of our responsibilities, I believe that there would be little point in discussing dental auxiliaries of any type — past, present, or future. But since dentistry in this country is based upon a private enterprise system that has been granted the privilege of operating as a monopoly, I believe we are obliged to add two more responsibilities, if we really want to assure the retention of private practice as the predominant method for the delivery of dental care. The first of these is that we must seek to fulfill every one of our responsibilities in the most economical fashion. The second is that we must explore and utilize every possible technique that will enable the private practice system to reach every segment of the population. In summary, the full spectrum of our professional responsibilities is not just prevention and provision of more dental care of higher quality, but rather it is prevention and provision of more dental care of higher quality for more people at the lowest possible cost.

I realize that our dental education has made us ill-prepared to accept the full spectrum of responsibilities I have presented. Indeed, it has made us crippled capitalists who are ill-prepared to defend the ramparts of the private

enterprise system. Think back and recall when in dental school did you devote time to study ways of decreasing the cost of various types of dental treatment, or even to discuss why this might be a good idea. When did you study ways of expanding your ability to deliver dental care into untapped markets? When did you study how the private practice system could best compete against alternative systems of delivering dental care, or that it might ever need to do so? If your dental education was like my dental education, the answer to all these questions is "never". In blissful ignorance, we just assumed the privileges of our monopoly but never faced the responsibilities of our monopoly. But this monopoly of private practice is now threatened and we are entering, I believe, upon an era of competition among various systems for the delivery of dental care.

How much easier it would have been for those of us who believe in the private enterprise system, had we begun to build our defense years ago. Instead, we are now faced with the fact that as fast as we develop techniques to increase our competitive stance, they may be adopted by the competition. This observation applies particularly to the use of dental auxiliaries in expanded duties and it can lead to a very negative attitude toward their utilization among private practitioners. I believe this negative attitude will seriously weaken the defense of the private sector because it will discourage the fullest exploration of the use of auxiliaries in expanded duties in the private practice system of delivering dental care. I view any such hindrance of research as a most serious threat because I frankly do not see how we, who are advocates of the private enterprise system, can demonstrate the full competitive potential of that system without a thorough exploration of the use of auxiliaries in expanded duties. I also view hindrance of this research as very unwise, because, if the research proves promising, we may be able to use it to buy a little time to improve our competitive stance.

You will have realized by now that I view the matter of the education and utilization of dental auxiliaries as a facet of a bigger issue involving the economics of dental care. To go one step further, I will say that I see no justification for the education of any dental auxiliaries, other than perhaps chairside assistants, unless the long-range prospect from their use is to help the profession deliver dental care in a more economical fashion. The dental manpower issue has beclouded this point over the short haul, but I believe that we must eventually return to this most basic reason for producing dental auxiliaries.

If you have read my remarks carefully, you will have noted that I have used the words *research, exploration, investigation,* and *study* in reference to the use of dental auxiliaries in expanded duties. I have done this because I sincerely believe that we are still in an era of research in this field. Furthermore, I believe that we, in research and education, are open to serious criticism for often having failed to impose sufficiently rigorous criteria in our evaluation of the research we have done in this area. We have accepted results from uncontrolled demonstrations as if they were the product of the best scientific methods. From the fact that something could be learned, we have extrapolated the idea that it should be learned without having adequate evidence to prove what this could and should mean when translated to the dental marketplace. Certainly the practitioner who is hiring an auxiliary for expanded duties ought to know how productive the individual will be, how much additional income

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will be generated, the associate costs, the amount of time involved in supervision, the probabilities of risks to patients, the acceptability of the auxiliary by patients, etc. If the answers to these questions are not based on solid data, we in education and research should not be surprised that this type of auxiliary is given a cool reception by the practicing arm of the profession. Of course, some researchers and educators will say at this point that the reception will be just as cool if the evidence is overwhelmingly favorable. I don't agree, because others (besides practitioners) will also be interested in the findings and they will in time encourage a favorable attitude if this means that dental care of high quality can be purchased for less money. Therefore, my concern is that we get the best possible data to the practicing members of the profession so that they will have an opportunity to formulate a constructive decision as to whether this type of auxiliary will help them improve their competitive posture.

I know these matters are disturbing to practitioners, but I hasten to assure you that the prospect of auxiliaries for expanded duties is equally disturbing to the dental educators, for if it is proven that, by having auxiliaries perform many routine procedures, the productivity and efficiency of a dentist are markedly increased, then our entire approach to dental education and a large portion of our educational plant must be changed. Dental schools will need to train superb generalists and this means that a great deal of the training now left to dental specialties would be drawn back into the undergraduate curriculum. As a result, most of our postdoctoral training programs would become obsolete, since the need for specialists would be greatly curtailed. Indeed, if this happens many specialties may continue to exist only in the academic world.

Instead of shortening undergraduate programs, we would probably need to lengthen them to train a really rounded generalist. A move in this direction, however, would require a whole new approach to the federal support of dental education because at present such support favors increasing class size and shortening the curriculum.

Furthermore, dental schools would have to become much more deeply involved in the training of auxiliaries so that a mission which has been essentially a side line at most dental schools would become a major activity. Indeed, in terms of sheer numbers of students, training of auxiliaries could become the major activity. Equally worrisome to the entire field of dental education is the prospect that most of our schools for dental auxiliaries (and it is in these that the bulk of auxiliaries will be trained) are not equipped, staffed, or set up to handle truly advanced education for expanded duties.

I believe it is obvious that many years would be required to accomplish such a transformation in dental education. I hope that everyone will remember this point when we find ourselves getting too heated in our discussion of dental auxiliaries for expanded duties. Our worlds will not be changed overnight!

But let us return to the main question and ask ourselves if such changes would be good for dental education. It is my personal opinion that such changes would be a very good thing, providing we have adequate proof that the use of auxiliaries for expanded duties will enable the private sector to deliver care in a more economical fashion.

What are the chances that adequate proof will be forthcoming? I believe

the chances are excellent, and to support this opinion I give you a question and some data. Would it be of any use to train a dental hygienist to drill and fill teeth under your direct supervision if it took 11 weeks and cost less than $1,500 to give her this training? If it took 30 minutes a day of your time for direct supervision of her work? If working with her chairside assistant she averaged 5 surfaces of operative dentistry per operative hour? If all of her work met rigorous standards of quality? If she were well received by patients from all socioeconomic levels, and if you could supervise three such teams and still have adequate periods of free time to perform dentistry yourself? Naturally, these data are still very preliminary, but think what this type of auxiliary might mean to the private practice system of delivering dental care, if the data were to be convincingly established. The most rigorous PSRO committee would be welcome to visit every office every day. There would be no fiscal basis for a New Zealand Dental Nurse program in the schools and no fiscal basis for federal- or state-operated dental clinics in your neighborhood, because the private sector would be well prepared to move in and handle any demand for more restorative dentistry of high quality for more people in the most economical fashion.

In summary, I have indicated that I believe the subject of the education and use of auxiliaries for expanded duties lies at the heart of the challenge to preserve the private practice system as the method of choice for the delivery of dental care. I see it as the only viable way by which the private sector can become fully competitive. I have also indicated that I believe that this is so far ranging and fundamental a matter that it can be resolved only by an unprecedented, cooperative effort by all three arms of dentistry. I have stated that I believe that the education and use of auxiliaries for expanded duties need much more investigation but I have also indicated that I believe there is sufficient evidence to suggest that the question is no longer "Should we or shouldn't we move in this direction?" but "How and what should we do?" Finally, I have given you my impression of the impact that this will have on dental education as well as on the specialties, and I have indicated that I believe the end result will be good for dentistry.

Charles M. Strother

Clinical Dentistry Today — Excellence or Mediocrity

It is traditional to feel that things are not as good or as bad as they were "in the good old days". Education was better, times were harder, we walked through deeper snow to get to school, and so forth. I am told that the only thing worse than living through a depression is having a father who did. It would then seem normal to feel that present-day graduates are not as well trained in the clinical aspects of dentistry as they formerly were.

No one needs to be told that we are in an era of inflation; our dental schools are certainly aware of that. The financial pinch has been felt particularly by private schools. The costs of operation have increased all along the line, resulting in greater involvement with federal programs. Although these programs are well meant, they have added to the problems of administration. The Health Professionals Education Systems Act has increased the size of the classes and has thus increased the student-teacher ratio. Faculty salaries have not kept up with rising costs of living. The affluence of recent years has kept many good teachers in their offices rather than moving them to give, for less pay, a portion of their time to education. Too often we find a department with a fine chairman and some of last year's graduates as teaching staff — and little else in between.

Programs for minority races have great merit but do pose additional problems to our schools when the admittance requirements are not the same for all students.

Three-year programs certainly will need careful observation. I am told that the curriculum is not shortened but is compressed. I suggest to you that education is like a liquid, which cannot be compressed, and any attempt to do so will

Dr. Strother practices dentistry in Glendale, California. He is a graduate of the University of Southern California School of Dentistry and following graduation taught at USC for a number of years. He was Director of the Strother-McIlwain Gold Foil Study Club and a member of the Jones Gold Foil Study Club. He is a member of the Examining Committee of the Board of Dental Examiners for the State of California and a Consultant to the Council for Dental Education of the American Dental Association.

This paper was presented at the Annual Meeting of the Academy of Operative Dentistry, Washington, D.C., November 9, 1974.

result in springing a leak and losing some of the product. The proponents of the three-year program point to dental education during World War II and the success of shortened programs. I am a product of those times, and looking back on my student training in endodontics, periodontics, occlusion, and some other phases of dentistry leaves me a little embarrassed. The obligation to teach so many disciplines of dentistry today creates greater problems for our educators and seems to indicate the need for a careful look at a shortened curriculum.

Changing times and needs dictate that our Deans must now be politicians, fund raisers, and faculty recruiters, thus concerning themselves with fiscal problems more and education less.

Attitudes of students are changing, they demand participation in decision making, faculty selection, and so on. They show resistance to authority of any kind: resistance to State Board examination; resistance to being restrained from practicing anywhere they choose; and resistance to discipline itself. Dental education *is* a discipline, dentistry itself is a discipline. There is no place in our profession for the undisciplined.

The affluence of our society and programs of prepaid insurance have reduced the number of patients available to the schools for teaching certain disciplines.

Continuing Education is now a requirement for relicensure in California. None of us can disapprove of continuing education. But it is not a substitute for undergraduate training. I have heard educators say, "We will show the students how to do a certain procedure and then they can become more proficient in it by taking courses in continuing education after graduation." This scheme is no panacea and will never take the place of undergraduate clinical training within the confines of a dental school.

The United States Public Health Service conducted a survey a few years ago and determined that the "dentist doesn't know what he doesn't know". It would therefore be difficult for him to select the proper courses to complete his dental education even if they were available. The records of a new graduate who recently presented himself for examination revealed that he had done eight gold foils and eleven Class II silver amalgam restorations. The minimum requirement in the junior and senior years combined was three passing foils and eight passing Class II amalgams. I question these criteria for proper clinical training. Poor amalgam carvings are the result of less emphasis on this aspect of dentistry because it is assumed that soon amalgam will be carved by auxiliary personnel.

There has been a move away from the traditional grading system toward pass-fail system. The pass-fail grading system encourages a "good enough" attitude, breeds mediocrity, and never challenges the student to perform to the best of his ability.

Over the past two years, the Board of Dental Examiners of California has taken photographs of clinical operations, both cavity preparations and restorations, in order to permit more objective evaluation of the performance of the examinees. These photographic records enable us to illustrate errors committed during state board examinations. The most common of these errors are:

1. Inadequate extension of proximal and gingival outline form (Figure 1).
2. Obtuse cavosurface angles of proximal walls resulting in inadequate bulk of filling material for edge strength at the margins (Figure 2).
3. Removal of too much supporting dentin in the proximal box, thus weakening the walls (Figure 3).
4. Overextension of the cavity, thus weakening the tooth (Figure 4).
5. Inadequate gingival extension of Class V cavities leaving the gingival margin of the restoration unprotected (Figure 5).
6. Trauma to the tissue from careless operating (Figure 6).
7. Restricting the access to a Class V cavity by bending the buccal rather than the lingual jaw of the clamp (Figure 7). Bending the lingual jaw permits proper retraction of tissue without unduly limiting access.

FIGURE 1. Proximal box underextended buccally and lingually.

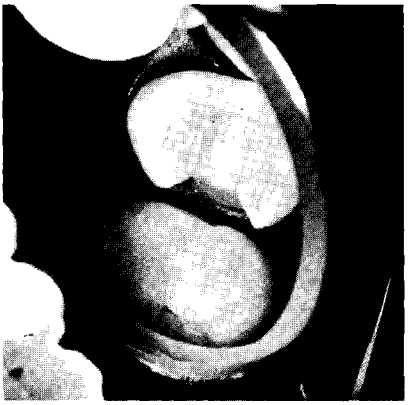


FIGURE 2. Obtuse cavosurface margins on buccal and lingual walls of proximal box. There is no provision for bulk of filling material at the margins.

FIGURE 3. Walls of proximal box weakened by removal of too much dentin.

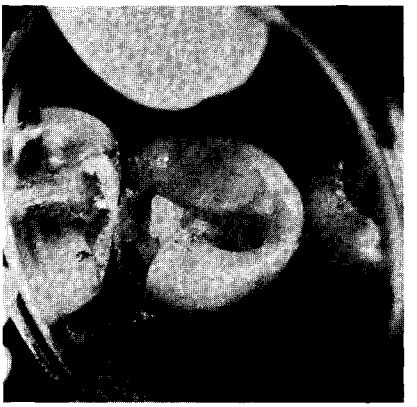
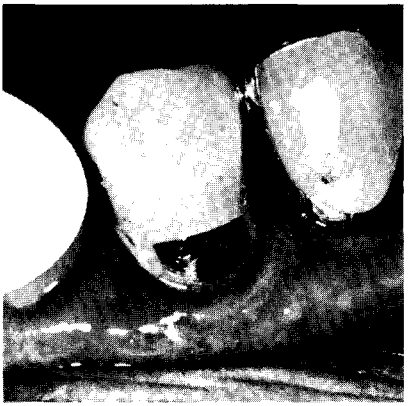


FIGURE 4. Overextended cavity resulting in a weakened tooth.



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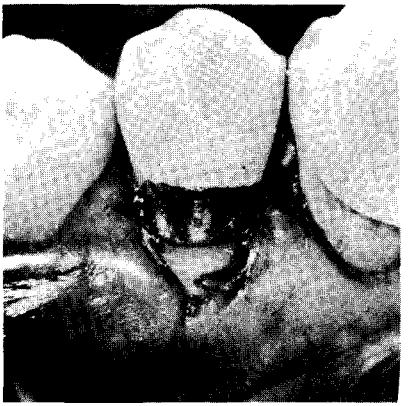

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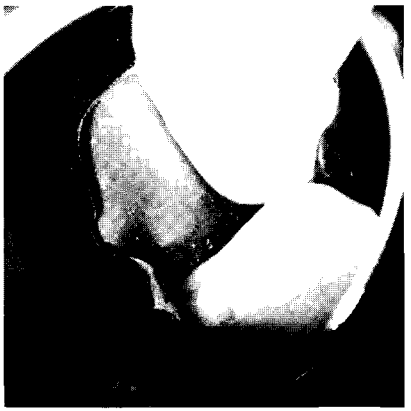

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FIGURE 5. Inadequate gingival extension leaving the gingival margin unprotected.

FIGURE 6. Traumatized gingiva from careless operating.

FIGURE 7. Restricted access as a result of bending the labial jaw of the clamp.

A de-emphasis on clinical training is unjustified if we are waiting for prevention to relieve us of the load of restorative dentistry. Charles Allen stated 300 years ago that decay of teeth was caused by a slimy sticky substance. G.V. Black, 75 years ago, coined the name "dental plaque". It still exists and we see it on teeth every day.

Now we come to the most important element of all, in my opinion — student selection. As all of you may know, the traditional chalk carving test, as a selection mechanism, was discontinued a few years ago. Fifteen thousand applicants per year required seven judges to separate and grade thirty thousand pieces of chalk. This became a substantial chore. A question was also raised as to the correlation of this test with performance in dental school because through practice one could become proficient at carving. Therefore, the Dental Admissions Testing Program was initiated to assist in choosing students who had a high degree of intellectual and perceptual motor ability. This test consists of a written examination in biology, a two-dimensional perceptual

motor ability test, and a three-dimensional perceptual motor ability test. The latter two are pencil and paper exercises in selecting similar angles, lines of the same length, counting cubes, and so forth. The jury is still out on the validity of this procedure.

One of our schools is working on a test consisting of carving a figure in a block of wax, for example, inlaying a diamond shaped structure of specific dimensions. There has been 100% correlation between the results of this test and the performance of two entering classes. Every student who did well on the test performed well in school. Some did poorly on the test and did well in school. But none did well on the test and poorly in school. There was found to be no correlation between clay modeling or contouring of orthodontic wire and performance in freshman techniques. Experimentation of this type must continue in order to determine who is best fitted to enter our profession. Too much emphasis is being placed today on grade-point average. One of our schools has recently gone to grade-point average as the only selection process and I submit that this is a gross error in judgment. Our schools must be provided with the best material possible in order to produce the best possible product — the well-trained clinical dentist.

I do not have any easy solutions for these problems, but I do think it is time for all of us to offer our local schools of dentistry our financial support which they so urgently need. I think we have available individuals of the type needed to fill the gap between that fine department head and last year's graduates on the teaching staff. It is time for us to give back to our schools payment for the education they gave to us.

ANNOUNCEMENTS

Epilogue to Eternity

Dedicated to the memory of
Dr. Merryl D. "Steve" Schulke

Deep down inside our hearts
We know, somewhere out there,
Those laughing eyes and witty smile
Are still for us to share.
On waters of peaceful seas
Across skies of floating clouds
There's no room for shadows
Nor the black of deathly shrouds.
For he lives, yet not alive
Within the comfort of God's grace.
It is there for all to behold
In heaven's tranquil space.
A quiet calm will overtake
All who loved, gently release
A soothing touch caresses
As Steve whispers, "I am at peace.
No more tears or heartaches
My friends—mourn not for me
For I walk with you each day
Along the paths of my Eternity."

—Shirley D. Cleveland

In Memory of Dr. Merryl D. "Steve" Schulke

How do you pay tribute to someone who still lives so vividly in the hearts and minds of so many? Boundless energy and never-ending good humor were his trademarks. Dentistry and airplanes were his life. Steve died on the bright, sunny afternoon of Sunday, February 16, 1975, doing the thing he loved the most and the one thing that gave life itself meaning for him—flying.

Although life, as we know it, is over for Steve, he will live on in the memories of those he touched, through his contributions and activities in dentistry and the many adventures he so ardently lived and loved. Steve's lust for conquering new challenges and seeking high adventure in the most unlikely places was like a contagious disease to all who knew him. Without realizing it, you were riding with him in his P51 over open seas, or you could imagine yourself experiencing an unusual thrill while flying along with his Warbirds; then, before you knew it, you were caught up in the magnetism of sharing his latest venture—building an experimental airplane. Steve didn't believe in living for tomorrow . . . he lived each day, and he lived every second of that day, pulling forth the maximum of what it had to offer.

Steve carried this adventurous enthusiasm into his dentistry as well. There wasn't a problem that couldn't be overcome, "if we", as he would so aptly say, "put our minds to it." A rare combination of energy and enthusiasm was thrown into the many activities in dental societies and his personal practice. A task was never too big or too small for him to devote his timeless energies to, because somewhere along the line he could find a "challenge" to confront and overcome. Dedication was not something that he gave to one particular ambition at a time. As long as there was a challenge in something, he was dedicated to it. He left living proof of this dedication in his many patients. He never accepted an "impossible situation", and if you were his patient, you didn't either . . . because he wouldn't let you.

Those who needed him professionally, those who loved him personally, and those who just knew him, all shared the excitement of being caught up in the vibrant, sincere

approach with which he met and challenged each new day and each new situation. Whenever he gave something, whether to his profession or his personal life, he gave a part of himself, and this unexhaustible source within him never seemed to run out. This was Steve's legacy to all who knew and loved him.

Who is to say that Steve's last and greatest challenge was not the beginning of many more adventures he loved so well? I am sure if he could talk to us right now, he would say, "Don't waste your time mourning me, I've met my greatest challenge of all . . . meeting God and sharing his adventures."

RESPECTFULLY SUBMITTED BY
HUNTER A. BRINKER, D.D.S.

Norman Carlson Honored

Dr. Norman Carlson, a member of long standing of this Academy, was honored this year by the University of Nebraska. The award was presented him for his contributions to education and to dentistry. Norm has been a member of the faculty at the University of Nebraska for many years, a leader in his profession, and a genuine and revered friend of many throughout this country. This Academy offers its congratulations for this well-deserved honor.

Restorative Dentist Appointed Dean At University of Puerto Rico

Carlos L. Suárez-Vásquez, D.M.D., M.S.D., has been appointed Dean of the School of Dentistry at the University of Puerto Rico (UPR). The appointment was announced by the Chancellor of the UPR Medical Sciences Campus, Jorge J. Fernández, D.M.D., Ph.D.

Dr. Suárez, 34, a graduate of the school he now heads, has held the rank of Associate Professor in the Restorative Sciences Division since 1971, and served as Acting Director of the Division. He first joined the faculty in 1964. Immediately prior to assuming the deanship, he was on leave to the Department of Health of the government of Puerto Rico as director of its dental auxiliary training program.

In 1967, Dr Suárez received the M.S.D. degree in operative dentistry at Indiana University. His formal studies also include graduate work at the UPR College of Education.

In research, Dr. Suárez's efforts have included studies of the histopathologic response of dental pulp to restorative resins.

His memberships include the Xi Psi Phi dental fraternity and the Omicron Kappa Upsilon dental honorary society (from both of which he re-

ceived awards, along with the Faculty Prize, on graduation from dental school). He is also a member of the American Academy of Operative Dentistry, and was a recipient of a fellowship from the American Fund for Dental Education.

He has served as both treasurer and vice-president of the Puerto Rico Dental Association.

Student Recipients of 1975 AAGFO Academy Awards

Bruce A. Albert
University of Pittsburgh

John C. Alexander
University of California at Los Angeles

Manuel C. Bedoya
New Jersey College of Medicine & Dentistry

Jacob T. Boyer
University of Louisville

Joseph P. Breloff
State University of New York at Buffalo

Victor D. Cook
Loma Linda University

Steven Cottrell
Columbia University

Wayne Crabtree
University of Southern California

Charles A. Crosby
Meharry Medical College

Walter J. Drexl
Tufts University

Earl T. Elstner, Jr.
University of Pittsburgh

Guy H. Feaker
University of Texas

Brett Fidler
University of Washington

Jeffrey Fister
University of Pennsylvania

Larry Gilman
University of California at San Francisco

Craig A. Glaesner
University of Illinois

James A. Henderson
Medical University of South Carolina

Dan B. Henry
University of Maryland

Clarence E. Holden
University of Minnesota

Charles M. Houghton
West Virginia University

James T. Jones
Howard University

Robert S. Kolodzej
Fairleigh Dickinson University

Hal E. Mickelsen
Loyola University

Robert L. Nelson
University of Missouri-Kansas City

Monte James Neugebauer
University of the Pacific

Mark A. Olson
Marquette University

Jeffrey L. Rhoades
Indiana University

Daniel Robicheaux
Baylor College of Dentistry

Douglas C. Rundle
Tufts University

Paul E. Saarinen
Washington University, St. Louis

Steven J. Smith
Georgetown University

Albert Sotnikow
University of Saskatchewan

Daniel G. Timms
Temple University

NEW — ELECTRO - MALLET

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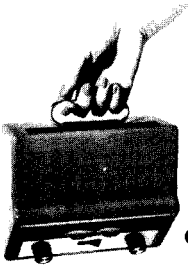

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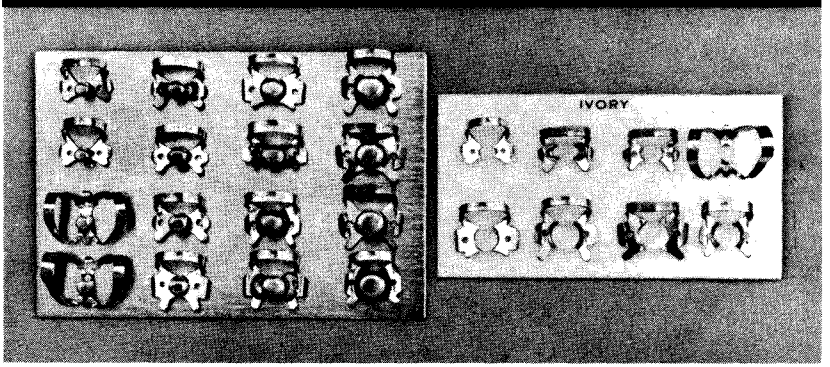

The clamp assortment on the left will cost you less than the assortment on the right — in the long run. And you'll practice better dentistry if you have the larger assortment. More clamps mean you can better fit every tooth. So you can do a better job. And there is less risk of springing the bow on a tooth too large for the clamp. You won't have to replace clamps as often. In fact, if you have the complete Ivory assortment, you may never have to replace a clamp.

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TO HELP YOU BE THE BEST DENTIST YOU CAN BE

"Enjoy Dentistry"
A RUBBER DAM SEMINAR
presented nationwide for
DENTAL AUXILIARIES

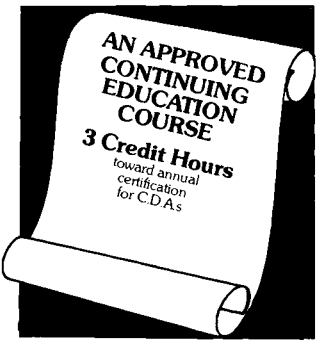
A continuing education program that will develop a more efficient utilization of your assistants

conducted by
Janet Siwinski, C.D.A., R.D.H., B.S.

Miss Siwinski is the Director of Auxiliary Education for The Hygienic Dental Mfg. Co. She has had practical experience as a dental auxiliary and is a graduate of The University of Pittsburgh. Most recently Miss Siwinski was a faculty member with the Dental Assisting — Oral Hygiene Department of that university.

THE COURSE. A lecture featuring film and slide visuals plus a period of practical application for each participant. Subjects covered include:

- *Advantages and Reasons for The Rubber Dam
- *Materials and Instruments
- *Selecting the Proper Clamp
- *Patient Communication and Preparation
- *Preparation and Application of The Rubber Dam
- *Removal of The Rubber Dam
- *Individualized Modifications of the Technique
- *Problems and Solutions



DENTISTS WELCOME. Learn how it's possible to increase your productivity by 20%...or even more...when your assistant is instructed in rubber dam application. Participate in the discussion and application period with your experienced observations and suggestions on technique and materials.

LOCATIONS & DATES

October
Alameda (Oakland), CA.
El Cajon, CA.
Huntington Beach, CA.
Los Angeles, CA.
San Francisco, CA.
San Pablo, CA.
Mentor, Ohio

November
Chicago Heights, ILL.
Mattoon, ILL.
Oglesby, ILL.
River Grove, ILL.
West Liberty, W. VA.
Cleveland, WIS.

The Hygienic Dental Mfg. Co.
1245 Home Avenue • Akron • Ohio 44310

☐ I Plan to attend your RUBBER DAM SEMINAR when it is held in the _____ (city) area during _____ (month).

☐ I would like to attend this seminar. Please schedule one near my home.

_____ (name)

_____ (address)

_____ (city, state, zip)

*Tentative at press time. Mail this coupon and you will be advised, personally, of the exact time and location in your area.