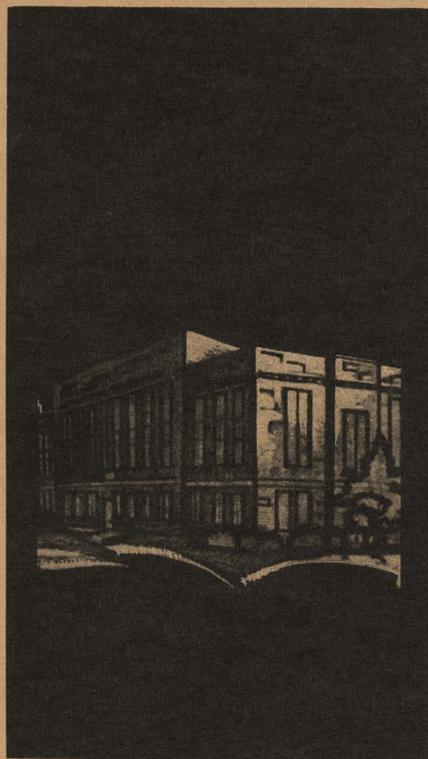


Alumni Bulletin

INDIANA UNIVERSITY



SCHOOL OF DENTISTRY

SPRING ISSUE / 1965

Indianapolis, Indiana

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ALUMNI BULLETIN

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A free and non-profit bulletin issued by Indiana University School of Dentistry, Indianapolis Indiana, for the purpose of keeping its alumni informed of the activities and progress of the School.

Cavity Preparation and the Tooth Pulp

Grant Van Huysen* and E. H. Hassan†

In operative dentistry sound and carious dentin must be removed because of the necessity of providing for retention of a filling as well as removal of caries. It is important, particularly where the caries has already come close to the pulp, that this tissue be protected or preserved from the trauma of cavity preparation and those filling materials that are potentially irritating. No operator wants the cutting instruments or the filling material itself to cause pulp injury.^{1, 2} No one, of course, knows what percentage of pulps in filled teeth are injured by cavity preparation or the filling material placed in the prepared cavity. Davila³ stated that, "Crown prosthesis or cavity preparation as performed in the commonly accepted clinical practice, with low and high speed instruments, do not cause pathological reaction in the dental pulp, unless a pulp exposure is produced."

It is to the credit of the dental profession that most of the many teeth that are filled survive with clinically healthy pulps. What happens then when the occasional pulp of a filled tooth does die? Each year at least two out of ninety members of the first year class of dental students show one or more off-color teeth with non-vital pulps. These non-vital pulps are found associated with a proximal surface filling most often but not always in maxillary incisors but occasionally in posterior teeth. Is the cause of this pulp injury associated with some anatomical anomaly of the tooth,⁴ factors introduced in the cutting operation, that is thermal or mechanical; or are certain filling materials irritating enough to cause

pulp injury by penetrating the deep cavity floor through the cut dentinal tubules?

Many attempts have been made to evaluate the relation between pulp injury and various factors in cavity preparation such as different cutting technics,⁵ cavity depth,⁶ filling material characteristics and pulp response.⁷ So far these estimations have produced a variety of opinion with respect to the cause of what used to be called "closed pulpitis"⁸ and seem to point out the fact that there is more than one cause of pulp injury. This seems reasonable because connective tissues such as those found in the pulp are known to respond to mechanical, thermal, bacterial and chemical irritants. Any one of these factors can be found either in dental caries itself, the mechanics of cavity preparation or the chemical composition of certain materials used to restore the tooth. On the other hand, since there seems to be more than one cause of pulp injury associated with dental caries and restorative procedures, one cannot help but wonder if it would not be possible that one or more of these causative factors operate through a single common agency. In the light of Davila's conclusion made above it is possible, for instance, that clinically undetected microscopic pulp exposures may be the factor responsible for injurious contact of bacteria or irritating filling materials with the pulp.

It was shown by Myers,⁹ James,¹⁰ and also by Orban¹¹ that while the pulp itself is very vascular, the blood vessels approach but seldom enter the odontoblastic cell layer. This means that the pulp margin or odontoblastic layer is relatively avascular. This validates the fact that one can have a pulp exposure that does not bleed and consequently cannot be seen by the operating dentist. Nevertheless, a pulp exposure too small to see

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† Graduate student, Department of Oral Anatomy.

with the unaided eye could admit bacteria; or semi-solid fillings may be forced through under packing pressure (Figure 1). The possibilities at a microscopic level have been overlooked by the dental clinician in his search for the cause of pulp injury associated with operative procedures.

Marzouk¹² decided to test this idea by using an operating microscope to prepare cavities in dog's teeth. He found that microscopic pulp exposures do occur in the floor of deep cavity preparations. He also confirmed the opinion that pulp exposures seen under the operating microscope could not be detected with the unaided eyes. Marzouk further demonstrated that if these pulp exposures in deep cavities were protected with calcium hydroxide, there was no pulp injury. Mohammed¹³ had already shown that a carginol base placed over an exposed pulp was sometimes but not always followed by injury of this organ. Zander¹⁴ showed that this was true of zinc oxide-eugenol. Thanik¹⁵ showed that zinc phosphate cement was sometimes but not always followed by pulp injury, when this material was used as a base or filling in a deep cavity. More recently Hassan¹⁶ demonstrated that when a zinc oxide and eugenol filling is carefully placed in a cavity with a microscopic pulp exposure, it is sometimes but not always followed by a pulp reaction. On the other hand a pulp reaction never occurred when a

calcium hydroxide base was interposed between the deep cavity and the zinc oxide and eugenol or cement filling. This is also true in instances where other irritating filling materials were used.

Since eugenol is classified as a rubefacient drug, it can be assumed from the above-mentioned studies that the free eugenol of a zinc oxide-eugenol filling sometimes does and sometimes does not become forced through the pulp exposure into contact with the pulp tissue during the placement of the filling (Figure 2). The research of Hassan¹⁶ like that of Mohammed,¹³ Thanik,¹⁵ and many others showed that the floors or pulpal walls of all deep cavities should be routinely protected with a calcium hydroxide before a filling either permanent or temporary is placed.

It is, of course, impossible to know how close a cavity floor is to the pulp. One must therefore temporize. Any cavity in the dentin itself greater than 1 mm. in depth should be considered a deep cavity with a possible microscopic pulp exposure even though it cannot be seen by the operator.

The fact of the matter is that "indirect pulp capping" or "gross removal of caries" has proved so successful that at least as far as the safety of the tooth pulp is concerned, it should be used more often. Dorfman, et al,¹⁸ has shown that bacteria do not penetrate dentin unless it is completely decalcified. So pulp infection can

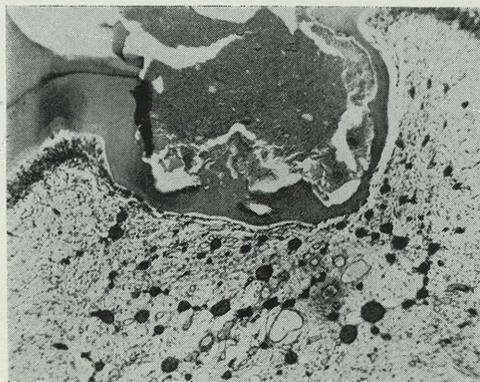


Figure 1

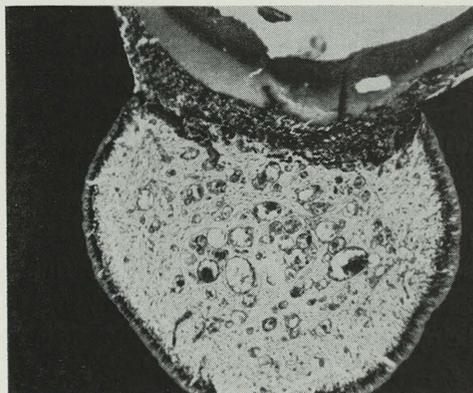


Figure 2

only occur if the organ becomes actually exposed. Besic¹⁹ has also shown that bacteria remaining under a filling eventually die without causing recurrence of dental caries. In a tooth that is symptom free all deep caries that is more than 1 mm. from the dentino-enamel junction should not be removed. Similar words of caution should be issued with respect to crown and bridge prosthesis. In their enthusiasm to provide good retention and esthetics, particularly in the field of porcelain jacket and veneer crowns where bulk is needed, dentists are often producing non-hemorrhagic pulp exposures. Just as in the treatment of deep cavities when preparations for these crowns necessitate the removal of more than 1 mm. of dentin, the pulpal walls should be routinely protected with calcium hydroxide before zinc phosphate is used for cementation. During the seating of a cemented crown it is more than likely enough irritating cement could be forced through an unseen microscopic opening to cause pulp injury.

The wall of a deep cavity nearest the pulp should never be used to prepare for resistance nor retention form of the cavity.

The cutting of holes for the placement of retentive pins should also be done with care. A pinhole just like retention and resistance form in a cavity preparation should never involve the pulpal wall. All pinhole preparations should be routinely treated with calcium hydroxide before the pins are cemented.

Dentists have been dissatisfied with the use of a calcium hydroxide powder or slurry as a capping material because it is difficult to manage. Stiffening vehicles have been added to the calcium hydroxide to make it easier to place in the cavity. These additives are usually more irritating and immiscible with tissue fluids than the powder or slurry. In any event, the operator should remember that stiffening a pulp capping material so that it can be more easily manipulated, also

makes the material easier to push through the pulp exposure into the pulp tissue. While calcium hydroxide is not a pulp irritant, stiffening materials sometimes are and any capping material is more effective if it merely covers or bridges an exposed pulp surface.

The dentist should remember enough of his dental histology to realize that under the microscope the odontoblastic cell layer is practically avascular. This means that microscopic non-hemorrhagic pulp exposures invisible to the eye of the dentist can and do occur as a result of deep cavity or extensive crown preparation, particularly in this day and age of high speed instrumentation. These unseen microscopic pulp exposures could and do admit bacteria and irritating materials forced even under normal packing pressures. Calcium hydroxide is the best pulp capping material available at the present time. However, if one must cut deeply into dentin, tooth pulps adjacent to these deeply cut surfaces should be routinely protected with calcium hydroxide before any base or filling material or both are applied.

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(Continued on page 37)

A Survey of the Use of Rotary Cutting Instruments By Indiana University Graduates*

Curtis N. Clark, Graduate Assistant, Crown and Bridge

This study was designed to gather first hand information from practicing alumni of Indiana University School of Dentistry regarding their high speed equipment and other rotary cutting instruments. A seven page questionnaire was mailed to all graduates from 1935 through 1961. The questions were concerned with the type of equipment owned and routinely used, its serviceability and methods of use. There were 1361 questionnaires mailed out and over 500 returned. Of these, 411 were directly related to the study.

The survey was primarily divided into four parts; therefore, the parts will be discussed separately.

1. Conventional speed equipment (10,000 rpm. and under)

The handpieces most frequently purchased or used upon first starting practice were the S.S. White and Midwest straight handpieces, with DenSCO and Clevedent following in that order. The S.S. White remained trouble free for a longer period of time and had a longer service life than any other of the handpieces. The Midwest rated second based on frequency of repairs and general life-span, with DenSCO and Clevedent tying for third place.

The contra-angle handpiece presented a much different picture with regard to wear due to the complex gear angle used in the earlier type handpieces. More Midwest contra-angle handpieces were used by Indiana graduates than any other brand. DenSCO and S.S. White were the next ranking contra-angles. The DenSCO

rated highest as to the number of years before first repair was necessary or discarding.

Most of the operators still own and routinely use conventional speed handpieces for prophylaxis and laboratory work, but their use in cavity preparation is almost entirely reserved for finish of the cavity walls, post holes and retention placement.

Although most operators admitted that greater concentricity of the rotating bur is seen with the taper shank type handpiece, 69 per cent of the men reporting in this study preferred the latch-type because of the ease with which the bur could be changed. There were 24 per cent who preferred the taper shank and 7 per cent the Emperor. Those who chose the Emperor did so because of the smoothness of operation.

The brands of steel burs most frequently used for conventional speed cutting with both straight and contra-angle handpieces were Ransom and Randolph first and S.S. White second. Approximately 68 per cent of the men reported using carbide burs for conventional speed cutting and a preference for S.S. White carbides to Ransom and Randolph three to one. The per cent of cutting done with carbide burs at conventional speed was for the most part less than 10 per cent with both straight and contra-angle handpieces.

Only one-half of those reporting used diamond points with conventional speed cutting. Again, these men found diamond points at this speed were used less than 10 per cent of the time, and the use of significance here was in finishing the preparation of the cavity walls with diamonds.

* Summary of prize winning essay, senior class, 1964.

Satisfaction with cost, maintenance and general application of conventional speed equipment was expressed by the majority in the survey, with maintenance of contra-angle handpieces presenting the greatest problem.

2. **Standard High Speed** (mechanical type other than Page Chayes, 10,000 to 50,000 plus r.p.m.)

In order to achieve standard high speeds, many dentists made slight modifications or adaptations to an existing conventional speed unit without the early investment in a new higher speed unit. There were, generally speaking, four methods of increasing handpiece speed: (1) purchase of a new dental engine, (2) installation of a high speed transmission or over-size pulley on an old engine, (3) use of a smaller drive pulley on the handpiece, and (4) altering the resistance in the engine.

Thirty-two per cent of those reporting in this study used standard high speed equipment for cutting and reducing procedures; of these, 74 per cent used factory built-in increased armature speed. Approximately 41 per cent of those with standard high speed had changed the resistor adaptation at one time or another. Engine pulley ratios were increased by the majority, but only about half of these changes were accompanied by a change to a smaller pulley on the straight handpiece. Approximately 20 per cent of the men reported using multiplying gears in the contra angle as a means of increased speed. Of these, the Midwest proved to be the most frequent choice.

The major part of the work done at standard high speed was done with the contra-angle handpiece. The type and size burs used seemed to fit the classical picture for cavity preparations, with carbides occupying a very slight margin of preference over steel burs in both straight and contra-angle handpieces.

Diamond points were used twice as frequently in the contra-angle handpiece as steel or carbide burs and were also used more often in the straight handpiece than either type bur. The shapes and forms of diamond points in ranked order were taper cylinder, wheel, cylinder, sulci disc, inverted cone, safeside disc and flame. Diamond points were used by 77 per cent of the dentists in finishing the cavity preparation. Gross reduction with diamond points was done by 59 per cent of the men and a much smaller per cent used diamonds for opening and extending. All in all, diamonds occupied the greatest percentage of preparation instrumentation at this speed, but the overall work done at standard high speed was less than twenty per cent.

3. **Water Turbine** (45,000 to 55,000 r.p.m.)

Of the 411 questionnaires analyzed for this report, only 24 men reported use of the water turbine in their office. Eighteen men found the use of carbide burs effective and efficient. The greatest use of carbides was for extending the cavity preparation while opening and gross reduction found somewhat less carbide use. Carbides were little used for finishing at this speed. Bur sizes #557 and #558 were preferred by most of the men for opening, extending and finishing, while #701 was used most for gross reduction.

The inverted cone and cylinder diamonds were most frequently used for opening and extending the cavity preparation, while the cylinder and taper cylinder were used to finish the preparation. The wheel and cylinder diamonds were used for gross reduction to the greatest extent. Only one-half of the water turbines were used as much as 90 per cent of the time, and diamonds were found to be the most efficient means of cutting.

4. **Ultra High Speed** (air turbines, Page Chayes, Kerr Super Speed, 100,000 plus r.p.m.)

In the relatively short period of time ultra-high speeds have been available, the number of dentists taking advantage of the improved rotational speeds is represented by the fact that 88 per cent of those reporting in this study own and routinely use ultra-high speed. Over 58 per cent of the air turbines were Ritter. Other air turbines sold to Indiana University graduates included S. S. White 23 per cent, Midwest 22 per cent, Page Chayes 13 per cent, and Densco 11 per cent.

Special air compression equipment for air turbines was purchased in the majority of the cases (70 per cent), with Pelton Crane leading all others. Pelton Crane was followed by McKesson, Squire Cogswell, and Bell and Gossett in that order. Air pressure at the equipment site was reported to be 30-40 p.s.i. in the majority of the cases. Only one-third of the air turbines were built into the dental unit at the factory; the remainder were adapted to the existing unit. Many men saw fit to purchase extra turbine handpieces. Over 43 per cent reported extra air turbine handpieces; of these 23 per cent owned one extra handpiece while 14 per cent reported two or more. Only a very small per cent reported owning a straight handpiece air turbine, while as many as 20 per cent of the ultra-high speed owners had purchased a miniature head contra-angle. The Midwest miniature head was the most frequent choice.

The Indiana dental graduates found the carbide burs to be the rotary tool of choice, with the #557 bur finding the almost universal first choice for opening, extending, gross reduction and finishing. The #701 bur was second choice for all the operations except opening of the cavity with #35 inverted cone. Most of

the ultra-high speed owners found they did over 90 per cent of the cavity preparation instrumentation with the air turbine. A little less than one-third of the men found diamond points effective at this speed for opening and extending cavity walls. Most of the operators did very little of this type work with diamonds at this speed.

Approximately 28 per cent of the operators reported finish of the cavity walls with diamonds or special finishing burs with ultra-high speed. Only one-third of the men found eccentric tools, "bur whip", and rough and "scalloped" surfaces from ultra-high speed cutting to be a problem. The means by which the problem was overcome in order of frequency of answers was: (1) finish at low speed, (2) replace the chuck, (3) hand instrumentation, (4) change of bur brand, (5) sandpaper discs, and (6) stones. Approximately 81 per cent routinely finished and placed retention in ultra-high speed preparation with lower speed instrumentation.

It is of interest to note that 97 per cent of the men in this study made full and three-quarter crown preparations with the air turbine or ultra-high speed instrumentation. Over 64 per cent of the men did above 90 per cent of these preparations with air turbine or ultra-high speed and another 27 per cent did over 70 per cent of the preparations with the high speed.

A comparison was made of all cutting and reduction done with the various types of equipment as shown in Table I. It may be noted that the greatest preference is for ultra-high speed cutting for the highest per cent of work done on all preparations. Conventional speed cutting appears to round out the percentage for less frequent use, a fact which was borne out earlier by the information that the majority of the operators finish and place retention in their preparations with slow speed.

A distribution of the percentage of use of different speeds according to the various types of lesions is shown in Table II. Here we see that ultra-high speed ranks highest in every class of preparation, but has the greatest use in Class I and Class II preparations. Conventional and standard high speeds find their greatest use in Class III and Class IV preparations.

The volunteered comments regarding features of like or dislike about air turbines or ultra-high speed reduction and instrumentation of tooth substance are as follows:

Favorable	
Speed	278
Patient comfort	153
Ease of handling	121
Lack of vibration	101
Less tiring	78
Efficiency	76
Unfavorable comments	
Noise	194
Visibility problems	104
Water spray	102
Too hard to control	51
No tactile sense	37
Frequent repairs	31
Odor	27
Patient discomfort	26

TABLE I
Distribution of the number of men and the percentage of all cutting and reduction of tooth substance done at various speeds

% all cutting	Number of Men			
	Conventional	Std. High	Water Turb.	Ultra High
0-9	117	51	0	1
10-19	97	38	1	1
20-29	60	22	0	3
30-39	9	4	2	3
40-49	12	3	1	3
50-59	4	1	2	11
60-69	1	0	1	19
70-79	1	3	2	55
80-89	1	0	3	61
90-99	3	2	3	191

TABLE II
Distribution of the number of men and the percentage of cutting done according to class of preparation at various speeds

% of cutting	Number of Men														
	Conventional Speed					Standard High Speed					Ultra High Speed				
	I	II	III	IV	V	I	II	III	IV	V	I	II	III	IV	V
0-9	76	83	32	32	34	14	20	8	8	6	0	2	23	17	14
10-19	67	76	25	23	31	20	22	14	9	7	2	0	31	30	14
20-29	31	43	28	32	51	8	12	13	15	12	2	3	25	28	22
30-39	3	4	7	6	7	0	1	3	3	3	0	0	9	10	6
40-49	3	5	6	11	9	1	3	4	3	3	1	0	12	11	5
50-59	4	4	53	49	58	2	3	12	13	16	9	10	54	54	63
60-69	0	1	11	7	3	0	1	2	2	3	4	11	7	14	7
70-79	0	2	14	29	19	0	0	2	2	0	21	27	23	25	30
80-89	2	0	24	17	9	1	0	6	4	5	29	48	25	24	32
90-99	5	4	79	72	45	2	2	12	12	9	283	253	88	87	122

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Some Advances in Dental Research

David F. Mitchell*

The following is an abstract of a lecture presented in Spanish by Dr. Mitchell in December, 1963 in Ecuador. He served as a Fulbright Lecturer to the dentists of Quito and Guayakil, Ecuador, and to the dental students of Central University in Quito. Dr. and Mrs. Mitchell were there for about seven weeks, during which time he presented about thirty lectures and served as a consultant at the dental school and hospitals. They report that the country itself and the hospitality of the people were delightful.

The greatest advance in dental research, as in all other fields, has occurred during the past 15 years. There has been an increase in the number of people working in dental research, in the number of laboratories devoted to dental research, in the variety and amount of equipment used for research purposes, and in the ideas for original investigation.

New technics have been developed to augment the practice of our various specialties. These are being reported everyday in the many dental journals of the world. Thus the oral surgeons have new and better ways to correct jaw relationships; the periodontists and endodontists have new and better and less troublesome ways to provide therapy and preserve teeth.

New instruments have been developed which treat patients more effectively and with less discomfort. An example would be the ultra-high speeds used for hand-pieces. Cavities can be prepared more quickly, with less discomfort and perhaps even with less damage to the dental pulp. New methods of making radiographs of patients with more detail in less time

and with less radiation hazard have been developed. Research on basic pathological processes has progressed. The obvious example is the success met with the prevention of dental caries by the use of the fluoride ion. The drinking water of many cities of the world is now fluoridated and the youngsters who drink this water develop less than one-half the amount of dental decay than previously. Fluorides in topical applications, toothpastes, and prophylaxis pastes furnish further protection. Many different forms of fluoride, such as sodium fluoride, stannous fluoride, sodium-monofluor-phosphate and sodium silico-fluoride, have been shown to be effective. Most recently it has been reported that children who applied a 6 per cent solution of sodium-monofluoral phosphate to their teeth benefited by a 51 per cent reduction in caries after 21 months. The remarkable part of this is the fact that these were in a fluoridated area where they were also drinking one part per million of fluoride. Yet this additional reduction occurred in the experimental group as compared to control group children from the same region.

The International Association for Dental Research had its 41st General Meeting last March in Pittsburgh, Pennsylvania. More than 400 ten minute papers were presented in the course of three days and nights. Each paper represented the original research. As in all efforts of human beings, some of the studies were good, some fair and some poor. Nevertheless, a great deal of investigation is going on and favorable results are bound to happen even if by accident! As you will recall, the discoveries of insulin and penicillin were two famous examples of valuable findings occurring by accident (serendipity).

* Professor and Chairman, Department of Oral Diagnosis/Oral Medicine.

The many different papers presented at the research meetings were presented in groups. Some of the headings for the groups of papers were microbiology, anatomy and histology, calcification, nutrition, saliva and salivary glands, growth and development, periodontia, dental caries, pharmacology and endocrinology, radiation biology, surgery, electron microscopy and microradiography, clinical studies, and dental materials. Thus, there is a broad range of activity which cannot be covered here due to space limitation.

There is increasing emphasis upon biological evaluation of dental materials. The implant technique is especially popular. Incisions are made through the skin on the back of the rat and the dental material is deposited in small pellet form beneath the skin. The incision is closed and the gross and microscopic tissue reaction to the material is examined after various intervals of time. In this way the irritational quality of literally hundreds of dental materials can be studied. Fillings, cements, oral surgery postoperative dressings, postgingivectomy dressings, pulp capping agents, cavity lining agents, and many others have been studied. Some rats, sacrificed after 14 days, showed ulcerated reactions to red copper cement. This is a very irritating material, and many materials do not result in swelling or ulceration at all after this time interval. A mild zinc-oxide and eugenol pellet embedded in the connective tissue of a rat showed a very minimal inflammatory reaction surrounding the pellet.

In this way tissue reaction can be compared in a short time in large numbers of animals and the irritational qualities of many different materials can be judged. This serves as a simple screening measure for judging new materials which come on the market so frequently these days.

A new nickel-gallium alloy has been developed and it might be a satisfactory substitute for silver amalgam from a purely physical properties standpoint. This alloy and several other similar dental

materials were implanted in rats for many months. After seven months a fibrosarcoma developed around the pellet of the nickel-gallium alloy but it did not occur around the other implanted filling materials. Does this mean this material should not be used in human beings? No one knows. It does mean that further investigation is necessary before this material should be widely adopted.

Another sidelight of the implant operation has been the finding of the development of little cysts called inclusion cysts or implantation cysts. It was found that by cutting a little of the epithelium from the edge of an incision in the rat, tucking the epithelium under the skin and sewing up the incision, after a few days the epithelium which was implanted in the connective tissue curled upon itself and formed cysts.

Serial sections made of these have shown that this is not a tube but is truly a round ball. In the center is desquamating epithelium and other materials which haven't been identified as yet. Now that it is known how to grow a cyst this is a tool with which to study them. They will be implanted in bone and it is hoped they will grow in bone and produce fluid contents. Knowing about the time it takes for such things to occur will help in reaching a diagnosis and prognosis. A variety of sources of epithelium can be used, such as respiratory type epithelium as might be found in a globulomaxillary cyst, or the epithelium of dental origin from a follicle of a developing tooth.

Some research has been accomplished on the incisor of a monkey. Rhesus monkeys are usually used; however, there is a variety of monkeys available for study. The *Macaque speciosa* is a "tranquil" monkey, much easier to handle than the rhesus, and it was found to be valuable for studying orthodontic tooth movement. Periodic adjustments of applied forces and cephalometrics were accomplished more simply.

The dentition of a Syrian hamster is somewhat similar to that of the rat but more similar to man than the rat. If fed sugar, dental caries develops. If fed another type of diet, periodontal disease can be produced. By brushing the teeth, both of these diseases can be prevented. Fluorides painted on the teeth or a diet of penicillin or other antibiotics also prevent these diseases. A soft white plaque accumulates around the necks of the teeth and a periodontal "pocket" forms. This is not just like periodontal disease in the human being but the same tissues and structures are involved.

Hamsters were fed excessive amounts of vitamin D and the alveolar bone was remodeled, resorbed and drastically changed. Hypervitaminosis D did not make the hamster have more periodontal pockets or tissue recession from the tooth but it certainly had a strong influence on the periodontal bone. It also influenced the cementum.

Thus in this way many systemic factors in the hamster have been studied, such as hypothyroidism, magnesium deficiency, other endocrine imbalances and vitamin deficiencies.

Addendum

The following theses of graduate students are listed to illustrate some of the more recent research accomplished in the departments of oral diagnosis/oral medicine. All but one of the following men are presently teaching and conducting research at other institutions. The exception, Dr. Rubach, is serving with the Air Force.

Dr. William C. Rubach—"Interrelationships of Pulpal Pathoses and Periodontal Disease"—1963.

Dr. Bill R. Baker—"The Pathogenesis of Autogenous Skin Implantation Cysts"—1963.

Dr. Benjamin F. Lawson—"Pharmacologic Treatment of Painful Pulpitis—A Preliminary Investigation"—1963.

Dr. Robert H. Johnson—"The Effects of Tetracyclines on Teeth and Bones"—1964.

Dr. Theodore H. Simpson—"The Effect of Sulfated Wheat Derivatives on Wound Healing"—1964.

Dr. Thomas B. Fast—"The Experimental Production of Macroscopic Cysts by Autogenous Epithelial Implants"—1964.

American Dentists for Foreign Service

Several vacancies exist for dentists who are interested in giving their services in conjunction with medical facilities or hospitals associated with philanthropic or missionary activities. At present one opening is in Algiers and one is in Malaysia. Service in these areas is approximately three months. For particulars contact Dr. Herman Ivanhoe, Secretary, American Dentists for Foreign Service, 619 Church Avenue, Brooklyn, N. Y. 11218.

EMERGENCY REQUEST

Mrs. James R. Hueston, wife of Doctor James R. Hueston, Class of 1956, is suffering from a blood disorder in Colorado General Hospital, Denver, Colorado. It has been called to our attention that she requires 30 pints of blood each month. The classmates of Doctor Hueston might wish to contribute blood to her. Donations from out of town may be given at any hospital connected with the American Association of Blood Banks.

Dean Hine A.D.A. President-Elect

During the 105th Annual Session of the American Dental Association held recently in San Francisco, California, Dr. Maynard K. Hine, Dean of the Indiana University School of Dentistry was unanimously elected President-Elect. Dean Hine will be installed as the 102nd President during the 1965 Meeting in Las Vegas.

The honor to the State of Indiana, Indiana University and the dental school is magnified by the fact that Dean Hine will be the first American Dental Association President from Indiana.

The delegation from the Indiana State Dental Association who endorsed and sponsored Dean Hine were, in the words



Dean Hine, President-Elect, American Dental Association.

of one of their members, gratified by the spontaneous and overwhelming reception of their candidate. His national and international prominence made his election one of concordance.

During the nearly twenty years that Dean Hine has directed the activities of the dental school, there have been graduate, postgraduate, and dental hygiene programs instituted; dental research has expanded greatly; and the undergraduate student body has tripled. Using any standard, Indiana University has one of the leading dental schools in the country. This distinction may be attributed directly to the man who will, next November, become the leader of the more than 101,000 organized dentists belonging to the American Dental Association.

Dean Hine has served, in the past, as president of the Indianapolis District Dental Society, Indiana State Dental Association, American Association of Dental Schools, International Association of Dental Research, American Association of Endodontists and the American Association of Dental Educators. He is currently the President of the American Academy of Periodontology and has been Editor of the Journal of Periodontology since 1950. He was also the former Trustee of the 7th District of the American Dental Association.

Besides his many interests within the sphere of dentistry, Dean Hine also finds time to maintain an active interest in philately, Hoosier historian and is an avid collector of Indian relics. He is an enthusiastic member of the Indiana Historical Society, the Indiana Archeological Society, Omicron Kappa Upsilon Honorary Dental Society, Sigma Xi Fraternity and Delta Sigma Delta Dental Fraternity.

He has co-authored five books and is a frequent contributor to scientific journals.

Upon his return from San Francisco, his staff provided an appropriate red carpet and presented him with a bouquet of roses and a considerably oversized gavel.

Notes From the Department of Fixed and Removable Partial Prosthodontics

John F. Johnston*

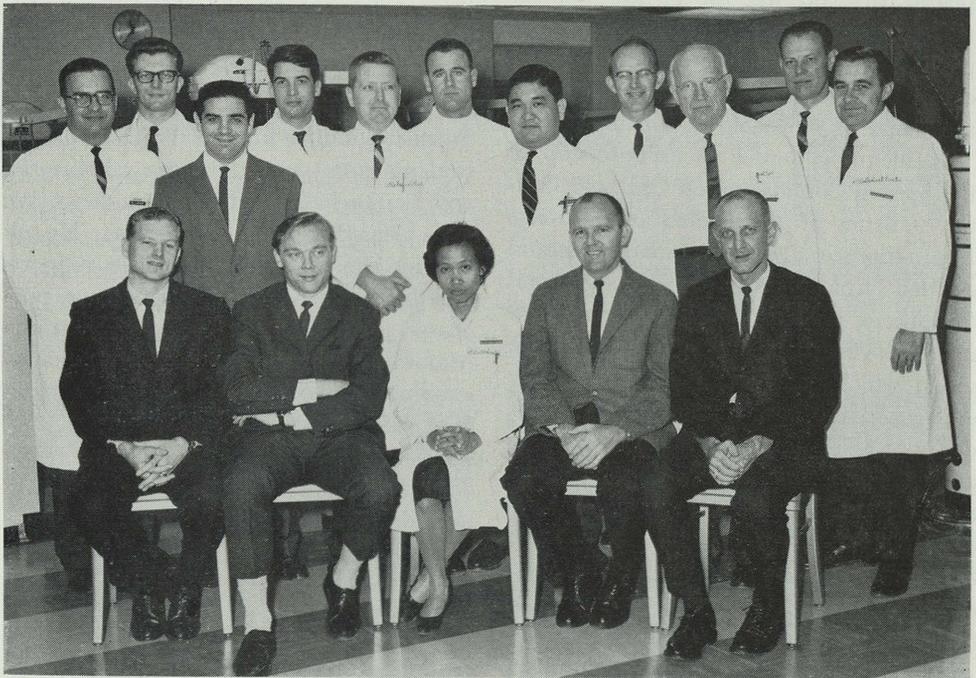
The new clinical and laboratory facilities for graduate students have helped very much. Now that a telephone for incoming calls has been installed, much leg work has been eliminated. George Simpson, during the second semester, will initiate the first year group into the intricacies of gnathology—Stuart brand, and Joe Ficaro will be back to give his special precision attachment course.

There was a meeting February 21 at the Lake Shore Club of Chicago, of the

* Chairman and Professor of Crown and Bridge and Partial Denture.

IUSD Advanced Prosthodontics Society. Membership is made up of graduate and resident postgraduate alumni of the department. This year Don FitzRoy, of Howard University, is president; Hector Davila Alonso, of San Juan, Puerto Rico, president-elect; Walter Teteruck, University of Kentucky, vice-president; John Johnston, Indiana University, secretary; and Ray Maesaka, Indiana University, collector of tabs. There is no treasury. Dr. Ralph Phillips was the speaker at this meeting.

(Continued on page 38)



GRADUATE STUDENTS; GRADUATE FACULTY:

Left to Right, Top Row: John A. Lund; Gerard Moreau, Paris, France; Ronald Jones, Montreal, Canada; George Mumford, Roland W. Dykema.

Left to Right, Middle Row: William Lockwood, San Juan, Puerto Rico; Scott Polizotto; Robert L. Bogan; Ray K. Maesaka; John F. Johnston; George Simpson.

Left to Right, Seated: Ronald Blackman, Air Force, Georgetown University; Yves Duckert, Geneva, Switzerland; Arob Watanavicharn, Bangkok, Thailand; James Greeley, University of Pennsylvania; and Dean C. Johnson, University of Maryland.

Dean Hine reports that...

Each year the University releases a bibliography of publications by the Indiana University faculty and each year the list gets longer. The 1963-64 bibliography consists of a mimeographed list which is one and a quarter inches in height and indicated that 22 authors from twelve departments in the Dental School published a total of 59 articles. In addition to articles published, several faculty members have contributed chapters to textbooks and written or revised textbooks of their own. We recognize, of course, that publications are only one bit of evidence that the faculty is busy; efficiency in teaching must always be placed first on the list of the requirements for a good teacher. Nevertheless, publications are tangible evidence of academic achievement, so we are pleased at the scope of our faculty's writing.

Incidentally, under the sponsorship of the Special Commission on Oral and Dental Statistics of the Federation Dentaire Internationale, I edited a small brochure entitled "Epidemiology of Selected Dental Conditions 1950 to 1963." This is a listing of 1500 articles from all parts of the world which deal with the epidemiology of dental caries, periodontal disease, malocclusion, cleft lip and cleft palate. This project was supported by a grant from the Procter & Gamble Company to Indiana University Foundation. Copies have been distributed to dental scientists in 24 countries as well as all known dental libraries.

The first capping ceremony for the dental hygiene class in the Indiana-Purdue Fort Wayne Extension Center campus was held on January 31. Approximately 200 attended to participate in the ceremony which precedes the introduction of the dental hygiene students to clinical work on patients.

The annual capping of the Indianapolis Medical Center dental hygiene students was held on February 7 in the Union Building before a capacity crowd plus ten. This ceremony follows the general pattern of the capping of nurses. Those who have not attended this impressive program would find it interesting if they could arrange to do so.

The two dental hygiene programs offered by Indiana University School of Dentistry are under the same general control, although Dr. Ralph Schimmele of Fort Wayne is charged with the responsibility of arranging details of the Fort Wayne program. Everyone is pleased at the auspicious beginning this program has had in Fort Wayne. To make it possible to offer this program, a 10-chair dental clinic was installed in the new Indiana-Purdue Building in Fort Wayne and the students are assigned to the laboratories and lecture halls used by all students. We were pleased to note that the Isaac Knapp District Dental Society has been supporting this project and members have purchased over two dozen chairs from the Alumni Association with the understanding that the proceeds be used to equip a demonstration room which can be used for postgraduate education for practicing dentists. A committee of the Isaac Knapp Dental Society is planning to schedule a series of postgraduate courses for dentists in this area next year.

The Committee on Dental Teaching continues to be working actively to improve dental teaching techniques used by our school. A closed circuit television unit has been installed in the freshman and sophomore technic laboratory so that instructors can demonstrate details of tech-

(Continued on page 38)

Alumni Association News

H. William Gilmore, President

Many things have been accomplished since the conference held in Bloomington last fall. Dr. Wally Bryan had quite a successful year as president and many projects are now being completed that were planned during his term of office. The real measure of last year's activity was recognized when the dental alumni association received the "Constituent Achievement Award" for the fourth time. This is the highest award that can be given to a constituent society and it is sponsored by the Indiana University Alumni Office.

The campaign for the special dental school fund has remained quite active. An attractive chair can be purchased in memory of an alumna and the remainder of the contribution is placed in the equipment fund. At this time 52 chairs have been purchased and placed in the dental library. Plans are being made in Allen County to purchase enough project chairs to equip the dental facilities in the Fort Wayne extension center.

The varsity club drive to support the "Athletic Scholarship Fund" in the Indiana University Foundation has been

successful. Due to the efforts of Dr. Miles Barton, Chairman, over \$5,000 was donated to the fund by dental graduates. Dr. Barton is to be congratulated for completing his fourth successful drive. Our efforts in this project are deeply appreciated by the coaches and athletic department.

The annual luncheon and alumni events at the Chicago Dental Meeting were well attended. Many participated in the activities including the faculty members that were involved in the meeting of the Chicago Dental Society.

Plan now to attend the annual conference in Bloomington next fall. The dates are September 23-25, 1965, and the weekend will be highlighted by the Northwestern football game. The program has been planned for both the women and men and an excellent scientific session is being organized by Dr. David McClure. Class reunions and the Stadium Luncheon will also add to the flavor of the program. Special greetings will be given to us by our new football coach. Activities this spring will include a dinner for the senior students and their wives.



Speakers' table at banquet during the fall meeting. (Left to right) Mr. Frank Jones, Dr. and Mrs. Gilmore and Mrs. and Dr. Bryan.



Dr. Bryan, Dr. Boone, Dr. Johnston and Dr. Starkey chat after lunch.

Library

Mrs. Mabel Walker, Librarian

Many gifts are received in the library each year and all are greatly appreciated. The majority of these gifts consists of books and journals, some old, some new. The Medical Library Association Exchange, of which our library is a member, offers an excellent opportunity to exchange our duplicate material for needed items offered by other libraries. Too, new libraries in the process of being organized often can use large lots of those which we may not need. When children or wives of deceased dentists donate books which had belonged to that individual, we occasionally find items which we place in our rare book collection. Often books of a cultural nature or fiction are received. Since our library maintains a browsing collection of more than 500 volumes, these gifts fit into this group. However, if we have sufficient material of this type given us, it in turn is offered to the library of the Central State Hospital where it is always most gratefully accepted.

Gifts of book and journals were received this year from twenty-five sources, thirteen of which were members of the faculty. The largest gift was made by Dr. J. E. House from the library of his late father, Dr. M. M. House. This donation consisted of 301 volumes of books and 548 unbound issues of journals. Among the latter were some complete volumes which were of much value to the library. Also given by Dr. House was an electric stereoscope for viewing "The Stereoscopic Dissection of the Head and Neck" by Matthew M. Cryer. This is particularly appreciated as our present set is old but very much in use.

A gift from Dr. Charles L. Howell included nineteen notebooks dated 1903

which belonged to his father when he was a dental student.

The late Dr. Wayne K. Stoler, Valparaiso, Indiana, contributed some old journals and fifteen photographs of pioneer dentists. This was an interesting addition to our picture collection.

Dr. Donal H. Draper presented us with 233 volumes of books, chiefly on public speaking, business methods and others of a browsing collection nature.

Although the library justifiably maintains a sizable duplicate collection of books, journals and/or items which may or may not be needed in the library, it is limited by space and the collection became too large. This year, on approval of Dean M. K. Hine, two book and journal "giveaways" were held. Within twenty-four hours after the first program (May 14, 1964) the majority of the 136 books and 307 unbound issues of journals had been picked up. Of the five books which remained at the end of ten days, one was listed with the Medical Library Association Exchange along with seven issues of journals, and the remainder were discarded. The second "giveaway" was held October 16, 1964, when 187 books and 708 unbound issues of journals were offered. The majority of these also were picked up within twenty-four hours and the remaining five issues were discarded after about ten days since they had previously been listed with the Medical Library Association Exchange.

The most unusual and much needed gifts to be received by the library this past year have been presented by the alumni of the Indiana University School of Dentistry. These gifts are the twenty-five beautiful memorial reading table chairs. These are sturdily built captain-

style chairs in native American Elm. They are designed with partially padded backs in a lovely rose-red naugahyde and are extremely comfortable. Each chair bears a brass plate below the padded back inscribed with the name of the donor and the person in whose memory it has been given. An air of elegance and complete change of appearance is gained in this replacement in the main reading room. The comfort offered by these chairs is greatly appreciated by the patrons and the difference which they make in the decor of the library is enjoyed by the staff, each member of which wishes to take this means of expressing gratitude to the alumni who made the gifts possible.

Abstracts of nine M.S.D. theses written in the Graduate School of the Indiana University School of Dentistry follow:

FORCE MAGNITUDE AND CENTER OF ROTATION, HISTOLOGIC STUDY IN RHESUS MONKEY

Alaa Eldin Atta
1964

It is believed that a single force, regardless of its magnitude, tips a tooth around the same center of rotation. This is a histologic investigation of this concept; and an attempt to correlate clinical findings with early and late microscopic changes in the periodontium after light and heavy force application.

Five Rhesus monkeys, 3-4 years of age, were used. In one, continuous forces of 40 and 600 gm. were to move a maxillary first bicuspid distally through an edentulous space, with the first molar serving as anchor for 47 days. Both teeth tipped equally toward each other. In four monkeys, light, continuous forces, 10 and 57 gm., and heavy forces, 100 and 250 gm., were used to move the two central incisors lingually over periods of 19, 62 and 66 days. The light force had to be maintained for a period of 4-6 weeks before changing the activation. The 10 gm. force did not move incisors after 19

or 62 days. The 57 gm. force moved the tooth faster than the heavy forces.

Hyalinization of the periodontal membrane was recorded during the lag period, but not later. At later stages, the heavy forces caused more root resorption than the lighter one. The moment/force ratio determines the center of rotation, not the single value of each. Single forces tipped teeth at the same center of rotation, regardless of their magnitude.

THE EFFECT OF UNTIMELY LOSS OF DECIDUOUS MOLARS ON THE DEVELOPMENT AND ERUPTION OF THE PREMOLARS

Donald Frederick Bowers
1964

The effect of untimely loss of deciduous molars on the eruption and development of succedaneous premolars was serially studied in eight children in the mixed dentition stage from 45 degree cephalometric films made at three and six month intervals. Each child had one mandibular deciduous molar removed for reasons other than periapical infection and a lingual arch space maintainer provided. The premolar beneath the extracted molar served as the study tooth; its antimere, as the control tooth.

Eruptive movement was measured as the distance between the cusp-tip of a premolar on a superpositioned initial tracing and the corresponding cusp-tip on successive films. Antero-posterior movement of premolars was evaluated on a composite tracing along grid lines oriented to a common base line. Tooth formation was assessed by the increase in root length on successive films.

Variation was found in the amounts of eruptive movement and root growth during a three month interval, for all premolars within the sample, within an individual and for a single tooth. In no case did a control tooth erupt more than a study tooth in a given interval. The initial effect of deciduous molar loss on eruptive movement in this study appeared to be accelerative. Tooth development

was not found to be effected. While moderate correlation was found between eruptive movement and root growth for all premolars, one process did not appear to be solely dependent on the other. A posterior component of eruptive movement was occasionally demonstrated but was not related to the extraction. The clinical value of this study is limited due to its small sample and short duration. Longer and more comprehensive studies of this problem are recommended.

A CONTROLLED DOUBLE-BLIND STUDY OF A CORTICOSTEROID AS A CONSTITUENT IN PERIODONTAL PACKS

Louis Joseph Saad
1964

The purpose of this study was to evaluate a topical corticosteroid, when applied to gingivectomy wounds.

In periodontics, post-operative pain, edema and excessive granulation tissue formation are problems which confront both the patient and operator. Therefore, any method of treatment which might alleviate these problems would be of great value.

Utilizing the double-blind technic, the objective and the subjective symptoms of pain, edema, granulation tissue formation and wound healing were evaluated.

Forty-four separate surgical procedures were performed. Twenty-two were treated with Cordran^R ointment and periodontal pack and twenty-two were treated with control ointment and periodontal pack.

Analysis of the results showed that there was no significant difference in the post-operative sequelae following the use of control or experimental dressing.

The difficulties encountered in this study were those generally inherent in any clinical investigation, of this type. Therefore, the investigator feels that if further investigations were contemplated, utilizing this drug, it could best be done by using laboratory animals.

A COMPARATIVE STUDY OF THE PHYSICAL PROPERTIES OF ROOT CANAL SEALERS

Thomas L. Higginbotham
1964

Five root canal sealers currently being used in the filling of the root canal were tested to evaluate the physical properties of setting time, film thickness, comparative radiopacities, and sealing ability. The tests of sealing ability were carried out on extracted human teeth.

All test methods were standardized to eliminate as many variables as possible. The materials tested were Kerr Antiseptic Pulp Canal Sealer, both with and without the addition of zinc acetate, Kerr Tubli-Seal, Proco-Sol, Diaket, and Kloroperka N-O.

All materials have adequate working times, and Proco-Sol and Kloroperka N-O have extremely long setting times. The film thickness of the materials is felt to be adequate, and they are all capable of being seen on the radiograph.

The sealing ability of the materials was tested in both coronal preparations and in the root canal. The root canal method appears to be a quick and simple method for comparison. This study revealed minor differences in the efficiency of the sealers, however, these differences are possibly of little significance when transferred to the clinical situation.

It should be emphasized that this investigation is preliminary in nature and large numbers of restorations for each material will have to be evaluated before any valid conclusions are possible.

FLUORESCENT MICROSCOPY OF TETRACYCLINE LOCALIZATION IN NORMAL AND MALIGNANT CELLS

Southern Palmer Hooker
1964

A fluorescent microscopic study was made on the metabolic behavior of tissue culture cells with tetracycline. A possible explanation for the retention of this drug by malignant cells in vivo is offered.

Origin of the cells was both human and laboratory animals, representing cells obtained from malignant tumors, spontaneous and induced, as well as from normal tissue. These cells were grown in a culture medium containing pure tetracycline hydrochloride. Localization was seen to be within the nucleus and nucleolus, particularly during increased metabolic activity. Malignant cells from the culture system were transplanted into BALB mice. The tumor-bearing animals were given daily injections of tetracycline prior to sacrifice. Fluorescence was observed only in the tumors which were necrotic and specifically within the tumor cells surrounding the necrotic areas.

Fluorescent histologic stains of tumor tissue revealed an increase of deoxyribonucleic acid and ribonucleic acid within the same areas that demonstrated tetracycline retention.

It was concluded that there may be a body defense mechanism against the synthesis of abnormal ribonucleic acid. This action may cause increased metabolic activity with an uptake of tetracycline by the tumor cells.

RAT CONNECTIVE TISSUE REACTION TO THE LOCAL APPLICATION AND SYSTEMIC ADMINISTRATION OF DILANTIN SODIUM

Marshall S. Manne
1964

Periodontal packs with and without Dilantin incorporated into them were implanted in the form of pellets into the subcutaneous tissue of rats and allowed to remain for periods of 2, 17 and 32 days. At the proper intervals the animals were sacrificed and microscopic sections made from the areas of the implant. Comparative studies were also made with Dilantin alone, calcium hydroxide and Dilantin, and copper cement added to the periodontal packs.

In another group of animals, which had pellets of periodontal packing im-

planted into them, one group received Dilantin systemically while another received no Dilantin. The animals were sacrificed at intervals of 6, 9, 16, 22 and 31 days, at which time the pellets were excised along with surrounding tissue and examined microscopically. At these intervals white blood cell counts and differentials were completed prior to sacrificing the animals.

It was the purpose of this investigation to evaluate the local application of Dilantin. This was done by examining the inflammatory response of the connective tissue surrounding the implant. Secondly, we sought to evaluate the effect of systemic administration of Dilantin on the connective tissue surrounding the implant and the effect on white blood cells.

The local application of Dilantin at the dosage utilized resulted in a severe inflammatory reaction with necrosis of the tissue and abscess formation. The systemic administration of Dilantin seems to facilitate the formation of the fibrous capsule around the implant. No apparent changes were noted in the white blood cell counts or differential counts.

THE EFFECT OF ZINC OXIDE AND EUGENOL ON MICROORGANISMS IN THE DENTAL PULP

James Pope McKnight
1964

This study was conducted to demonstrate, *in vivo*, the bactericidal effect of zinc oxide-eugenol on a specific organism inoculated into the dental pulp of dogs.

An aseptic technique was used throughout the study. The maxillary cuspid and second molar teeth were used as treatment teeth and the mandibular cuspid and second molar teeth were used as control teeth. An opening, approximately six mm. wide and one mm. deep, was cut in the buccal surfaces of the control and treatment teeth. Bacteriologic cul-

tures of the cavity floor were made at this point. The cavity floor was cultured at this point. In the center of the cavity an opening approximately three mm. wide was cut and of a depth that appeared to be close to the pulp. In this second hole, entrance was made into the pulp. The pulp was cultured using a sterile paper point. The pulps were then inoculated with *Serratia marcescens*. A small gold disc was placed over the exposure site, followed by a layer of Eastman 910 cement and a layer of silver amalgam. At 72 hours, the cavities and pulps were recultured. The pulps of the treatment teeth were covered with a layer of zinc oxide (without an accelerator) and eugenol and the cavity was filled with a zinc oxide (containing an accelerator) and eugenol. The cavities of the control teeth were closed as described above. The cavities and pulps of the treatment and control teeth were recultured at 144 hours and 216 hours and as described at the 72-hour interval. At 144 hours, 11 (30.5%) of 36 pulp cultures in the treatment group were positive and 25 (69.4%) were negative. In the control group, 20 (55.5% of 36 pulp cultures were positive and 16 (44.4%) were negative. At 216 hours, 10 (27.7%) of 36 pulp cultures in the treatment group were positive and 26 (72.2%) were negative. In the control group, 16 (44.4%) of 36 pulp cultures were positive and 20 (55.5%) were negative. The value for Chi-square at 144 hours was 4.60 with one degree of freedom, consequently 0.025 p. 0.046. The value for Chi-square at 216 hours was 2.16 with one degree of freedom, consequently 0.083 p. 0.157.

A STUDY OF THE FIT OF PORCELAIN INLAYS USING DIFFERENT TECHNIQUES

Sumiya Hobo
1964

A comparative investigation of the fit of porcelain inlays was made. Techniques

used for construction of porcelain inlays were: refractory investment technic, Platinum matrix technic, Cast gold matrix technic, and Electroformed matrix technic. The refractory investments studied in this investigation were Whip-Mix porcelain inlay investment, Loma Linda porcelain inlay investment, and Myken porcelain inlay investment. Gold inlays were also constructed for the purpose of comparative study.

Class five porcelain inlays were constructed on individual silver plated dies. After completion, the inlays were fastened in the die with epoxy resin. The inlays and dies were then embedded in the epoxy resin. These were sectioned in several planes and the spaces between inlays and dies were measured at various positions using a comparator microscope. Photomicrographs of the sections obtained in this study are included.

The study showed that none of the porcelain inlays adapted to the cavity walls as well as the gold inlay. The Cast gold matrix technic in combination with Thermalite 1650 porcelain produced the best results. The results of the cast gold matrix and Thermalite 1650 porcelain combination were more satisfactory than that produced by the cast gold matrix combined with 1800 degrees F. Ceramco-porcelain. The use of low fusing porcelain produced the better result. None of the refractory porcelain inlay investment studied gave superior results. Whip-Mix and Loma Linda porcelain inlay investment failed because of the over expansion, while Myken porcelain inlay investment failed because of the contraction. The two former investments have more possibility of improvement than the latter one. The inlays produced by the platinum matrix technic not only failed to seat but were also deformed. An electroformed gold matrix was not suitable for use in construction of porcelain inlays.

Dental Hygiene

A. Rebekah Fisk

Again it is time to sort the Christmas cards, get out the alumni file and put the bits and pieces of news together for this article.

1952

It has been said that dental hygienists do not practice long enough to justify their education. This is a false conclusion based on the frequent turnover of dental hygienists when they first graduate from school. After thirteen years, three of our seven first graduates are still working. Gloria (Horn) Huxoll is Assistant to the Director of Dental Hygiene at the new school in the Indiana-Purdue Regional Campus at Fort Wayne. Pauline Revere is in private practice and Nina Phillips is associated in practice with her husband in Brazil, Indiana. Barbara (Blowers) Mann, Charlotte (Havens) Verbar, and Jane (Hiatt) Johnson are grounded temporarily by the care of small children. We haven't heard from Mary (Oakes) Dreher for a long time but it is probable that she is also working. While it is true that many dental hygienists do cease to practice after they have been out of school two or three years, a surprising number either remain in continuous active practice or return to practice as soon as their children are in school.

1953

Geraldine (Davis) Frazier sent us her new address 443 Dauphine Lane, Virginia Beach, Virginia. She writes that their three years in Bermuda were an unforgettable experience but that it is good to be home. They have bought a home and hope to be able to live in it for sometime. Betty (Gilchrist) Keck says they still live in Carmel—three boys and no

girls. Marilou (Shideler) Halle brought a prospective student in one day. She is interested in completing degree requirements. Nannette (Noirot) Hatton is now living at 64 Brookwood Ave., Hamilton, Ohio. Joan (Malacina) Hayden and family are still in England. The latest news from Joan (Nichols) Hearn is that she now has twins, a girl, Sharon, and a boy, Stephen, born Sunday, February 7th. Madalena Stanley accompanied her parents on a trip to behind the Iron Curtain last summer. She says that Rumania is a magnificent and interesting country and the people are very friendly. The big cities are modern and enjoy a certain amount of tourist movement. Ruth (Cleveland) Wirtz is living at 2420 North Catherwood and is working part time. She came in recently to borrow a flip chart to use for some classroom education.

1954

In October we had a P.D.Q. from Jerry Bailey for signed application form for the National Dental Hygiene Board which she took and passed with the help of Dean Hine's book. Jerry is working two days a week and is active in both local and state dental hygienists' associations. Recently she attended a post-graduate seminar on instrumentation given by Dr. Marjorie Houston of Chicago and was most enthusiastic. Can you imagine using air conditioning at Christmastime in order to have a fire in the fireplace. "You just can't get the Hoosier out of — — — — —." The Christmas (Marty Bleeke) children are sitting higher on the fireplace each year. Ted and Lenore Clarke have a new address; 1830 Metzert Road, Apt. 3-4, Adelphi, Maryland. Ted is attending a ten month course in

advanced dental science at the Walter Reed General Hospital and is burning a lot of midnight oil. (This makes me nostalgic because I worked there for awhile and really enjoyed it.) They sold their home in San Antonio, Texas, and hope that their next assignment will be on the West Coast. Their son has grown since we saw him and Lenore says he is an "all boy pill." The Boone (Pat Hoge) children are also growing. It has been so long since we have seen the parents we can't tell who the children look like. Adrienne (McKinney) Esberg also took the National Dental Hygiene Board. She is still working part time. After several years of silence it was good to hear from Marcella (Mitchell) Keefe again. They have been living in California for two years at 456 Segonia Ave., San Gabriel (near Pasadena). Mr. Keefe is District Manager of Southern California for Sunbeam. Their family is Kitty 6½, John 5½, Susan 4 and all adore their little brother Thomas Robert born September 28, 1964, who apparently does not like to have his picture taken. Joan Klein requested a transcript of credits as she is interested in returning to school. Joan (Robinson) Loughbridge had a baby girl in September.

1955

I believe that some effort is being made by Carla (Porter) Totten and Carolyn Reighley to revive this class. There are so many in this group that haven't been heard from for years and years. By way of the grapevine we hear that Mary Elizabeth (Logston) Reno is associated in practice with Dr. B. R. Williams in Winchester, Indiana, and that Pamela (Seabold) Reith has again temporarily retired from practice. We received a lovely picture of the Rolando (Mary Ann Penn) children, Chuck, Mary Ann and the twins Terry and Timmy. Carolyn (Tucker) Reighley is practicing two days a week and substituting for the school

hygienists when they need her. The Reighley's spent their vacation in Mesa Verde and Durango and I can second their enthusiasm for that part of the country. Painting, refinishing furniture, the lawn, an advanced sewing course and an elderly Beagle keep Carolyn out of trouble. Carla Totten has had some additional burdens—the classes are larger and Ann Ackerman is on a leave of absence for one year. Ann is attending graduate school at the University of Michigan. Mary (Sheets) Zerkle is associated in practice with her father part time and has also done booster stannous fluoride treatments for the school. Her new address is 218 South Orchard Street, Kendallville, Indiana. Hope you all come back for your tenth.

1956

Janet (Clinton) Fryar is busy, busy with her family. We saw her last spring when she was helping her sister plan her wedding. Dede (Ent) Abbett is being more active in the meetings of our local group. It is good to see her about. Virginia Gibson has finally been able to give some time to the practice of her profession. She is associated with Dr. Mel Ritter in Indianapolis. Judith (Patterson) Hodge donned the uniform again and helped her husband in the office when he was without a hygienist. Betty Jo (Kelham) Knafel says that she has been trying to retire for eight and a half years. She is probably Indiana's busiest substitute hygienist. She has a stack of W-2 Forms so thick that she says the Internal Revenue will think that she can't keep a job. Phyllis (Wolf) Rhodes is enjoying her work and Herb is doing well in school. Lou Ann (Ewigleban) Wolfe and family are now living at 108 Second Avenue, Jonesboro, Indiana.

1957

We have little news from this class except for some changes of address which

we picked up from the State Board list. Mrs. Carl Estes (Peg Fixel) and family are living in a beautiful sixty year old house at 325 East Swayzee Street, Marion, Indiana. About a year ago I called Shirley Emmet to find out whether she would be interested in working. As she still has small children at home, she decided against it. The Remleys' have two boys and two girls. Reed and Anne are blondes, Kent and Mary Jane are brunettes. Kent is the image of his Dad. Nancy has been commuting to Indianapolis to take courses for degree requirements. Marilyn (Hall) Smith now lives at 227 Daffon Drive, Indianapolis 46227. Her husband completed his graduate degree last summer. Marilyn will be taking a leave of absence this summer for the usual reason.

1958

Martha (Coplen) Crawford wrote that their days are busy. Christopher arrived August 31, 1964, and Jay was 5 that month and is now in kindergarten. Carol (Fitch) Guthrie passed the National Board but wants to practice in Virginia so will have to take the Virginia State Board too. She is working as a dental assistant until she receives a license. Her new address is 113 Pine Springs Road, Falls Church, Virginia. Donna (Doss) Hales is living at #C-231 Everman Apartments, Indiana University, Bloomington. Her husband is in graduate school. Sue (Kraybill) Kaiser wrote that they are still in Williamsville and no new little ones to report. Mark is 4 and Stacy is 2. Grace (McCarty) Langley wrote that she has completely retired but she thoroughly enjoyed the five and a half years she worked. Angie is ten months old, stands alone and has three teeth. Her husband is with Radio Corporation of America. We all appreciate the nice compliment she paid the school. Their new address is 502 Clover Terrace, Bloomington, Indiana. Pat (Nienaber) Obergfell has a

daughter Amy Ann born in February, 1964. "Mom and Dad were making guesses whether I'd wear pants or dresses." It was pants again for the Plantz family (Betty Hoehn) David William was born September 24, 1964. It was also pants for the third time at the Speddings (Ann Buche). Ann says their "Three Musketees" will probably be the terrors of the neighborhood. They enjoy living in Lexington, Kentucky.

1959

Sandra (Klein) Alman is living at 221 Washington Street, Allentown, Pa. She now has a son Robin and a daughter Sharon. Myrtle (Starr) Austin took the Illinois Board and thought about working but decided to stay home and enjoy her daughter Phyllis Ann, born April 21, 1964. Mr. Austin is associated with General Electric in Mattoon. The Blackburns, Joe, Nancy (Porter), their three year old son, Joey, and their two year old twins, Joni and Jenny, had a three weeks Christmas vacation in Panama visiting Joe's parents. They had a wonderful time—in particular they enjoyed the warm weather. The Leyda's, Jean (Bushong) and Dave, D. '60, have a new house at 1028 W. Superior Street, Kokomo, Indiana. It is on a wooded lot and very comfortable. They also have a new daughter, Jill Elaine, born September 8. Little Doug thinks she is just fine. The other Leyda's, Carol (Temme) and Bill, D. '60, have their second daughter. Karen Lucus is taking some courses at the Indianapolis Regional Campus to fulfill degree requirements. Kay (Camp) Meyers, is living at #580 Everman Apartments, Indiana University, Bloomington. Her husband is completing degree requirements and Kay is associated in practice with Dr. Arthur R. Shedd. Edna Railey is working on a graduate degree at the University of North Carolina and finds the program very interesting. She thinks the South is very

different from Indiana but likes it. Carol (Arnold) Roberts and Dr. Roberts came in one day enroute from Fort Bliss, Texas, to Elkhart. They have a lovely baby girl. Josephine (Snowaert) Timmons attended the last meeting of the Central Indiana Dental Hygienists' Association. She is associated in practice with Dr. Bollman in Frankfort.

1960

Judith Arnott is now associated in practice with Dr. John Carmody of Indianapolis. Wilhelmina (Res) Gelston is living at 704 West 31st Street, Apt. #1, Cheyenne, Wyoming. Captain and Mrs. Kirchoff (Joann Kritikos) are stationed in Hawaii. Their address is U.S.A. Tripler General Hospital, APO 438, Box 157. Their daughter, Connie Lynn, was born November 7, 1963. They will be home this year. Jane (Polson) Maddock and family are still in Michigan. They have a son, Rob, born in September, 1964. After Dr. Maddock completes his residency this year, they will spend two years with Uncle Sam. Marilyn (Lorenz) Peterson and family are still living in Illinois. She is practicing part time. Betsy (Campbell) White and Dr. White have a second son, James Andrew, born June 15, 1964. In April we heard that Sally (Alcock) and Ed Pffaflin were touring Northern Europe until Ed had to report for duty on the Enterprise the "showboat" of the U.S. Navy fleet. Sally followed the boat from port to port along the Mediterranean coast. She called us when she was back in Indiana and said that she had a wonderful time but she appreciated good, clean, safe, beautiful America now more than ever. On September 26, Joyce Schenck was married to Ronald W. Schultz. They live at 1049 Rogers Drive, Plainfield.

1961

The news from this class is really on the lean side. Shari (Robinson) Abrams

has returned to California. We hear via the grapevine that the Gross' (Charlotte Levan) are out of the service and practicing in New York. Phyllis (Ordway) Freeman now lives at 4350 Westbourne Drive, Indianapolis. Dr. and Mrs. (Carol Mager) James Hurst are the parents of Stephen Douglas born June 14, 1964. On their Christmas card Carol wrote that Jim was putting in a second operatory and that she would be working again after the first of the year. Pat (Koss) Robinson and family were home in May but we missed seeing them. Mary (Odom) Yager and family are living in Michigan.

1962

As classes go this one has been pretty good about keeping in touch. Karen (McCoskey) Beard is now living at 5420 Wesconnet, Jacksonville, Florida. Lorna Bonnet is back in Indianapolis and will complete degree requirements in June. Hila Draper was married on June 6 to Lt. Jon A. Walker, D. '64. Their address until August 1967 is Navy #3923 Box 44, FPO, San Francisco, Cal. Actually they are in Tokyo. At first they rented a little Japanese house in a fishing community. The modern conveniences included a hot plate, a portable kerosene heater and cold water but the beautiful view of the ocean on one side and Mt. Fuji on the other made it all worthwhile. We hope they were assigned to government housing before winter. At Hila's wedding I saw Lois (Stevens) Pless and Dr. Pless. They were going into the service and were to be stationed at Edgewood Arsenal, Maryland. June (Murphy) Earnest and family are now living at 1202 "L" Street, LaPorte, Indiana, where Mr. Earnest is in business. Audrey Gotsch is in Springfield, Illinois but in September they expect to be residing in the vicinity of Ann Arbor, Michigan, where Mr. Gotsch will have a vicary and Audrey will attend graduate school. Judith (Spivey) Kight stopped in one day. Her husband has

one more year in medical school. Wanda (Stevens) Lew and Dr. Lew now have a daughter, Lisa Ellen, born October 1, 1964. She resembles her brother except that she has dark hair. Karen (Masbaum) Yoder and Dr. Yoder, D. '63, have a son, David Paul, born October 19, 1964. Maybe he will change his attitude in the next twenty years but the day he visited us he was disenchanted with the dental school and everyone in it. On the front page of a recent bulletin from the Maryland Dental Hygienists' Association we note that the Vice-President is Susan (Wills) Polydoroff and the Secretary is Jeanne Myers. Susan's address is 2708 Weller Road, Silver Spring, Maryland and Jeanne's, 6710 Leyte Drive, Apt. C-2, Oxon Hill, Maryland. Ramona Schoonover was working in Boulder, Colorado, for awhile but is back in Indianapolis now. Clarellen Simon's new address is 1208 Iola, Aurora, Colorado 80010. Barbara (Cohen) Solomon and Dr. Solomon have a daughter. Their address is 19255 Sheawassie, Detroit, Michigan. Carol (Tuftland) Risk and Dr. Risk are living in Lafayette. Both are practicing in the Risk Clinic. Carol (West) Swinton and Dr. Swinton are living at 1927 Hazelwood, Apt. D, Ft. Wayne, Indiana. Kay (Robertson) Weston and family are living at 2240 Muskoday Pass, Ft. Wayne, Indiana. In August, Barbara Ann Whitford was married to H. David Hilliard in Bloomington. Marybeth (Lamble) Woehler and family are living at 6 Zion Court, Indianapolis.

1963

Thanks to a copy of the newsletter from this class we have heaps of information. Nancy Bitter is working for the State Board of Health in Colorado. She is enthusiastic about her work but will return to Indianapolis soon—not homesickness—beausickness, I think. Carol

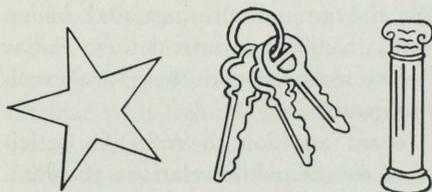
Heine is working for the Hawaii State Board of Health. Dr. Swenson saw her in the fall and said she knows all the songs and I suppose the dances too. Pamela Pershing was married to Joe Beecherer on September 5, 1964. Her husband is an electrical engineer with Westinghouse. They expect to move to Pennsylvania soon. Shermie Shafer and Paula Weaver are back in school completing degree requirements. Shermie is associated in practice with Dr. Wm. Borman and Paula is with Dr. Thomas Beavers. Kay Conaway is associated in private practice with Dr. Robert Mann and is also working for the State Board of Health. Pat Apple became Mrs. S. W. Furmanek on June 13, 1964. Her husband was graduated from Loyola University School of Dentistry and is in the service. They live at 2709 Meadowlark Dr., San Diego, Calif. Pat Mylinski has her own apartment on Lake Michigan and is still working for Dr. Vermuellen. DeRetta Stine is associated with Dr. Gardner in LaPorte and Dr. DeGrazia in Valparaiso. She lives at 105½ Harrison, LaPorte. Diane Baker stopped by the office a few days ago with Lisa Jane who is very leery of the people around the dental school. We saw Marty Bradley at the Capping Ceremony at Fort Wayne. She is very happy in her working situation and expects to be married in August to Frank Mariconia. They hope that her husband will have a teaching assignment in Fort Wayne as they want to continue to live there. Martha (Squires) Orr was associated in practice with Dr. Bleeke in Fort Wayne. There are many good opportunities for dental hygienists in Fort Wayne. Connie Hamilton is a clinical supervisor at the dental school. Garry has been accepted for graduate work in orthodontia next year. Judy Lambert is going to be married soon. Ann Mann has a new address: 118 Kenyon Street, Elkhart—a house of their

own, I believe. Her husband is teaching and coaching football. Carolyn (Skidmore) Gabbard has a daughter, Julie Ann. Sonya (Ellis) Parmer and Sharon (Rooksby) Gentle are both living in Edinburg, Indiana. Their husbands are with Amos Plastics Corporation. Sharon Grist is associated with Dr. Philip Bly in Indianapolis and lives at 9009 East 30th Place, Indianapolis. Carmine McDonald is active in the local dental hygiene group and interested in increasing membership. We are looking for replacements for Carol Bond and Sandra Taylor for the usual reason. Replacements are hard to find between classes, they should time things better. Sarah Helmbock is still working with her Dad in Evansville. Marty Friehe and Pat (Younce) Wade come to our local meetings regularly. Marty had an interesting trip to California last summer with her mother. Jean Gorenc was married in February to Donald Miley and their address is 6127 Beachview Drive, Apt. 146, Indianapolis. She is now associated in practice with Dr. Pollack. Ellen (Jones) Morrell is associated in practice with Dr. Gerald Epstein in Indianapolis. Kay Raag is back in town and associated in practice part time with Dr. Donal Draper. Just in time for this issue we received a note from Sheri Stropko. Their address is 6423 Walker Drive, Lincoln A.F.B., Lincoln, Nebraska. John is enjoying his work and she is working three days a week. She says they are a bit homesick and hope to come back for the May Meeting. Karen (Kneisley) Osborne and John presented Jennifer with a brother, David, in the fall. Nancy Niemann was married to Lt. William Current, D. '63, on June 20, 1964. They live at 1177 East Lloyd, Apt. 302, Pensacola, Florida. I think everyone in this class has been accounted for except the one who was responsible for compiling the newsletter. Lou Cinda (Finch) Utley

is still living in Tell City, where she is associated in practice with two dentists. Her husband is coaching and teaching in the high school. I wish that someone in each class would assume the responsibility of collecting information and forwarding it to me by January 1st.

1964

The news of this class is mostly in the wedding department. Joan Campbell was married to Rein Leetmae in December 1964. Joan is completing degree requirements. Anne Cooper was married to Joseph Fox, D. '64, in June. The Coopers are living at Woodmere Courts, Apt. 1C, Petersburg, Va. On their Christmas card Anne wrote that they were enjoying the "deep South" and trying to do a lot of sightseeing. We saw Sara Draves recently and she seems to be quite happy in Fort Wayne. Virginia Cox is taking a few courses each semester toward completion of the degree. She runs into unpredicted complications once in awhile like Christopher breaking out with chicken pox. Diane Clinton was married to Gerald C. Laxen in June, 1964. They live at 634 East 60th Street, Indianapolis. Karen Michener has been working part time and going to school in Indianapolis. Karen and Sandra Henderson live at 5976 Radnor Road. Sandra is completing degree requirements. Kathryn Goldman was married to Keith Higgins on September 5th and lives at 1253 So. Jackson Street, Frankfort, Indiana. Sally Howard spent three months in Europe after graduation. She is associated in practice in Indianapolis with Dr. Norman Kline. Kathy Heath is also planning a wedding for May 2nd. Her address is 2842 N. Talbot Street, Indianapolis. Marylou Monfort, Gay Gossard and Vivian Walton are completing degree requirements and practicing part time.



Paul Starkey

The A.S.D.C. Story

During the annual meeting in San Francisco this last fall, it was my good fortune to be elected Vice-President of the American Society of Dentistry for Children. I say "good fortune" because the work in this Society is very gratifying and all efforts put forth seem justifiable. Since our good editor has told me that I have his blessings to write what I please in this column, I decided to take this opportunity to tell you about the American Society of Dentistry for Children or A.S.D.C. as we affectionately refer to the organization.

A.S.D.C. had its beginning back in 1927 when Dr. Sam Harris, who had just completed his internship at Forsyth Dental Infirmary for Children, Boston, felt that an organization to promote more and better dentistry for children would be desirable. With the aid of the Detroit Study Club and some of its more enthusiastic members, Dr. Harris was able to constitute the American Society of Dentistry for Children. The group included all dentists who were interested in children's dentistry and named Dr. Walter McBride as its first president. Walter is retired and enjoying life in Florida now, but Sam Harris is still practicing Pedodontics in Detroit.

In less than four decades this group has grown to include nearly 8,000 members and has an operating budget in the \$100,000 bracket. Let me tell you something of the activities of this organization.

It has an official publication, the *Journal of Dentistry for Children*, which is printed quarterly and is one of the finest

of our profession. If one were to read each issue from cover to cover, he would keep pretty well abreast of advancements in children's dentistry—and remember, the membership of A.S.D.C. is made up largely of general practitioners.

A.S.D.C. is accorded representation at the White House conferences on health, has encouraged the inclusion of lectures and clinics on dentistry for children at state and national meetings, and has promoted the inclusion of clinical work in dentistry for children in the curricula of dental schools. It has also had an in-



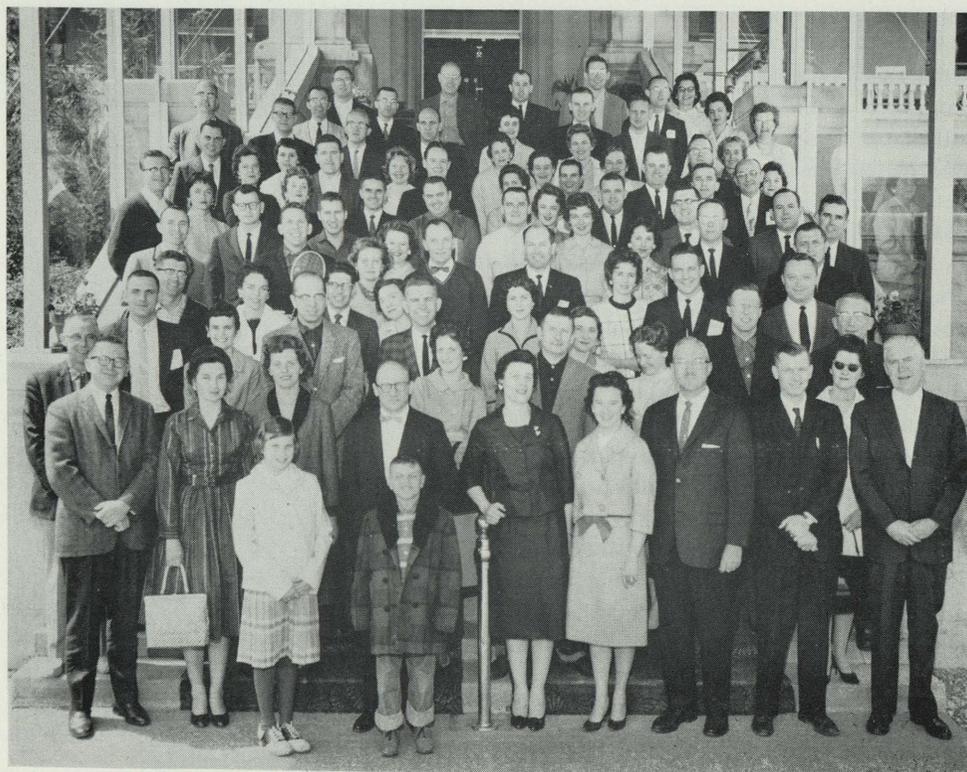
Dr. Dave McClure
Anderson, Indiana
President, Indiana Society of Dentistry
for Children

fluence on state dental board examinations, encouraging the inclusion of examinations on children's dentistry. For many years A.S.D.C. sponsored and supported the American Board of Pedodontics, but recently the responsibility was transferred to the American Academy of Pedodontics, a specialty group. This was done to comply with the Council on Dental Education's request that the Board be sponsored by a specialty organization.

Each year the A.S.D.C. holds an annual meeting on Saturday and Sunday just prior to the A.D.A. meeting and in the same city. Lectures, table clinics and panel discussions exclusively devoted to children's dentistry make up the program, and of course there are fine social events planned to complement the scientific program. The American Academy of Pedodontics, the specialty organization, frequently meets just prior to the A.S.D.C.

during the annual meetings and invites A.S.D.C. members to attend their Friday afternoon sessions—and these are excellent programs.

A recent addition to A.S.D.C. activities is a strong public relations program. The A.S.D.C. retains the Julian Jackson Agency of Chicago as their public relations firm, and we are quite proud of this program. One-minute films promoting child dental health have appeared on many of the TV stations throughout the country as a result of our efforts. Over half of the radio stations of the nation this year agreed to use our 15-minute program featuring artists Leslie Gore, Brook Benton, Sarah Vaughn, and the Chad Mitchell Trio. There is a dental health message between each artist's presentation and Leslie Gore gives a delightful testimony for dentistry. This radio program is directed to the teenager and is of excellent



Participants and families who attended the French Lick Seminar, April, 1961.

quality. Space will not permit a listing of all of the services of this agency to our Society, but were you thoroughly familiar with them I am sure you would be quite impressed.

Another activity of the Society in recent years has been the promotion of the development of study clubs on a local basis. The national organization is well prepared to provide detailed help to any individual desiring to organize a local A.S.D.C. Study Club. These groups generally meet for a social hour and dinner four times a year. The dinner is followed by a scientific program most generally provided by the membership of the club. Some clubs make assignments from the *Journal of Dentistry for Children* to be reported to the group. Doctor Ray Klein, who recently received his graduate training in Pedodontics at Indiana University, and who now practices in Lafayette, is currently organizing such a club in his area. If you are interested and live in the Lafayette area, give him a call.

The A.S.D.C. has a unit in nearly every state. The state unit, and here in Indiana it is known as the Indiana Society of Dentistry for Children, is the lowest echelon in polity. The president of the Indiana Unit is Dr. Dave McClure of Anderson. The Indiana Society of Dentistry for Children is a very active group and holds an annual 2-day seminar at French Lick in the spring. A well-known guest clinician provides the program. The first year it was held was in 1959, and Dr. Irwin Beechen of California was our clinician. Many of you will be saddened to hear of his death which occurred on January 5, 1965. Since 1959, Doctors Mel Noonan, Robert Moyers, Maury Massler, Roy Lindahl, and Charlie Fain have been the clinicians. It is a delightful couple of days in the spring, and the seminars grow in popularity each year. This year the clinician will be Dr. Clinton Emmer-son from Loma Linda, California. Why not mark your calendar now and plan to

attend at French Lick. The dates are April 25-27, 1965. The Indiana Society of Dentistry for Children also sponsors a one-day seminar each year which is provided by the Faculty of the Pedodontic Department of the Indiana University School of Dentistry. This year the title of the seminar was "Space Maintenance," and the meeting was held at the new Indiana University School of Dentistry facilities in Fort Wayne on March 31. Of course you are always welcome.

A student membership is available in A.S.D.C., and this year the Indiana state unit and the Faculty of the Pedodontic Department of the Indiana University School of Dentistry paid for the entire senior class membership. This entitles them to receive the *Journal of Dentistry for Children* and acquaints them with our organization.

On behalf of the American Society of Dentistry for Children and the Indiana Society of Dentistry for Children, I extend to you an invitation to membership in our organization. The dues are \$13.00 per year, \$10.00 of which goes to the national organization, and \$3.00 to the state. Just drop me a line and tell me you are interested, and we will get you started on an enjoyable experience participating in the activities of A.S.D.C.



Table Clinic—French Lick Seminar at the Indiana Society of Dentistry For Children—Bob Doench, Clinician. Standing, left to right: Doctors Dick Howard, Jim Moran and Betty Graves

Alumni Notes

Mrs. Cleona Harvey

Greetings again. Here it is 1965, another semester has ended and another freshman class has been indoctrinated into the intricacies of basic technics; they have tasted success in some efforts and bitter defeat, even as you! And even as you, they have doggedly worked their way through the difficult freshman schedule. Now, at the beginning of their second semester of that year, they have the same feelings of fear and trepidation that you had, so wherever you are, remember all the struggling dental students, give them your support, your best wishes and your prayers!

Our program here in the Recorder's office has been a carbon copy of many other years—worrying over all the students, having their welfare at heart, giving encouragement where needed, a little sermon where it's needed.

Believe me, we have had some real "weather" for the past few weeks, with much, much snow, and sub-zero temperatures very often in the past two weeks. It has been a real effort to get out in the mornings, but then toothaches don't take a vacation, and you'd be surprised how very faithful students, faculty and assisting staff have been during these trying, cold days!

I just can't end this column without telling you how pleased and elated we in the Dean's Office were when Dean Hine was elected President-Elect of the American Dental Association, and we know that you, as well as we, are gratified.

Now I know that you are all waiting for news of your classmates, so let's begin with news of the:

Class of 1904

We received a most interesting letter and news clipping from Dr. O. T. La-

Grange, Corner Main and Jefferson Sts., Franklin, Indiana, and wish to quote some of it for your interest:

"I just received the Fall Issue of the Bulletin—I am too late with this article but perhaps you can use it later.

"Last May Dr. Robert Gillis of St. Petersburg, Florida, and I met in Indianapolis for the 60th anniversary of the 1904 Class. We were all that attended. We spent the time exercising our memories.

"In the newspaper article, they forgot to mention that I was a charter member of the Psi Omega Fraternity (Chapter). I think it was in 1903."

His newspaper clipping reports,

"After 60 years in the active practice of dentistry, 49 of them in Franklin, Dr. Otis T. LaGrange is now enjoying retirement at his home, 140 Herriott Street in Franklin.

"After graduating from Indiana Dental College in Indianapolis in 1904, Dr. LaGrange, with his young wife, the former Miss Edith Clemmer, went to Iola, Kansas where he engaged in the practice of his profession for 10 years. After leaving Iola, Dr. and Mrs. LaGrange tried living in Arcadia, Florida for a year but did not like it, and in 1915 were glad to return to the old home town where he opened his office and continued his practice here until September 1 of this year (1964).

"Dr. LaGrange lists his main hobbies as the study of geology and fishing.

"A member of the First United Presbyterian Church in Franklin, Dr. LaGrange has served as an elder for 46 years. For many years both Dr. and Mrs. LaGrange were members of the church choir . . . Mrs. LaGrange died on March 8 of this year, after 60 years of happy married life.

"Dr. LaGrange recalls the many changes he has seen during his lifetime and especially the changes in the practice of his profession which have occurred during the past ten years."

A most interesting article, Dr. LaGrange, and we wish for you many years of enjoyable retirement.

Class of 1910

We are sorry to report that Dr. Raymond King died in Los Angeles, California February 8, 1963.

Class of 1913

Dr. Paul N. Montero, 8810 Third A. Avenue, Miramar, Havana, Cuba, sent Christmas greetings.

Class of 1916

We received a note from Dr. Manuel Vergel de Dios, #418 Sn. Nicolas Street, Binondo, Manila, Philippines, regarding his change of address and nonreceipt of his Alumni Bulletin. He inquired about his classmates and said he is now 75 years old and does not practice any more.

(Recorder's note: We wish that if you know of any alumni who are not receiving their copies of this Alumni Bulletin you would please have them write us; the difficulty may be exactly the same as Dr. Dios' and we do want you all to receive your copies.)

Class of 1917

Dr. and Mrs. Carl Frech, Gary National Bank Bldg., Gary, Indiana, sent Christmas greetings.

Class of 1926

Dr. H. K. Maesaka, 509 Olive, Wahiawa, Oahu, Hawaii, sent Christmas greetings and reported he had been in Japan on business.

Class of 1927

We received a note from Dr. A. W. Hammelman, North Cale Street, Poseyville, Indiana, reporting nonreceipt of the Alumni Bulletin, and we hastened to correct this! They reported on the activities of their son, Dr. James A. Hammelman, Class of '64, and we shall give you this information under that class.

Class of 1929

Christmas greetings came from Dr. and Mrs. James Sakurai, 2715 Tantalus Drive, Honolulu, Hawaii.

Class of 1935

Dr. Donal H. Draper sent a change of address; his new office is at 1020 East 86th Street, Indianapolis, Indiana.

We received Christmas greetings from Dr. and Mrs. Max J. Bean, 224 Elm Avenue, Hackensack, New Jersey, with a note that they hope to be in Indiana for their class reunion in May.

Class of 1946

It was pleasant to receive a Christmas greeting from our ex-assistant dean, Dr. Charles L. Howell, 3223 North Broad Street, Philadelphia, Pennsylvania. As most of you know, Dr. Howell is now Dean of Temple University School of Dentistry, and as always, we wish him the greatest of success.

Class of 1947

Dr. Marvin A. Tuckman, 18 Garwood Road, Fair Lawn, New Jersey, sent Christmas greetings.

Class of 1949

Dr. and Mrs. Ernst Rosenthal, 1266 Oliver Ave., Indianapolis, Indiana, sent seasons greetings.

Class of 1952

Dr. Johnston received a most interesting letter from Dr. Hal Glasser, USS Newport News, CA 148, c/o FPO, New York, New York, and we quote part of it for you:

"Things have been very hectic since July when I was detached from Naval Weapons Station. Here is a quick resume of events. About the time I received definite word that I would go aboard Newport News as Senior Dental Officer, Alma and I contrived to create another offspring, which turned out to be our 5th son, a very fine boy we named Gregory Nelson . . . Time is running along at such a rapid clip. I wish it was possible to slow down the pace of life somewhat.

"I do hope we can come back soon. Very definitely in 1967 . . .

"Trusting this finds all well."

Class of 1954

We received Christmas greetings from Dr. and Mrs. Robert Johns and family (Mark, David, Bobby and Amy Lynn, who was born August 19, 1964), 1445 Norma Road, Columbus, Ohio.

Class of 1955

Received seasons greetings from Drs. Ursula and Werner Bleifuss, 18786 San Quentin, Lathrop Village, Michigan.

Also greetings from Dr. and Mrs. Stuart Everard, 1045 Inglewood Court, Falls Church, Va., and they sent regards to all their friends at the Dental School.

Class of 1956

Dr. Young Ok Lee sent greetings from Seoul University, Seoul, Korea.

Late last summer we received a note from Dr. John E. Williams, Jr., 9207 Ewing Street, Bethesda 34, Maryland, but it came too late to get in last fall's Bulletin. So now we shall pass on his last summer's news! Sorry it is late, Dr. Williams!

"As for personal history, I am a Lcdr. in the regular Navy and am about to start in the Navy's 10 month course in general dentistry at the Naval Hospital, Bethesda, Maryland. Just returned from shipboard duty on the West Coast, spent one year of the last two at Pearl Harbor, Honolulu. Will be difficult to wade through snow again after having been away for four years!"

Class of 1957

We received Christmas greetings from Dr. and Mrs. Pedro G. Colon and son, Naguabo, Puerto Rico.

Class of 1958

Dr. G. B. Shankwalker, Government Dental College, Bombay, India, sent Christmas greetings.

Dr. Alegria C. Zita, 1357 Felina, Paro, Manila, Philippines, sent Christmas greetings.

Class of 1959

Dr. Hala Zawawi Henderson sent Christmas greetings, with a note included:

"This is to wish you and all our friends at I.U.S.D. a very Merry Christmas and a real Happy 1965. Both Walter and I enjoyed our visit to I.U. this summer and look forward to seeing you again in 1966. We had a pleasant vacation and visited London, Amsterdam, Munich, Frankfurt and Cairoon on our way back to Kuwait. There was much to do when I did get back to work since we have over 80,000 school children this year and only eleven dental clinics to look after them. I am still insisting on water fluoridation and I hope to accomplish it next year."

We received an announcement of the opening of the office of Dr. William S. Mull at 2630 S. Michigan Street, South Bend, Indiana, and then also received Christmas greetings from him.

Class of 1960

Dr. Johnston received a "newsy" letter from Dr. Michael Conway, Captain, 121st Med. Det. (Dent. Svc.) APO 98749, Seattle, Washington, and is allowing us to share it with you:

"I am still in Alaska shivering through a rather cold winter. December's high in Anchorage was -2. Rather tough on automobiles and kids but there is much to do here in the way of winter sports, so we manage to keep busy.

"We had another boy, Daniel Eric, in May of '62. Our family also was increased when Bonnie's mother came to live with us. We have a happy unit and are all looking forward to our return to warmer climes in September of this year.

"I have had a fine tour in Alaska. The hunting season last year was profitable—bagged a nice moose and caribou but the prize trophy was a Dall sheep with better than full curl horns. Duck hunting was excellent also. I'll miss this place but the family is ready to go so I am considerably out-voted.

"I plan to stay in the Army for another tour and apply for a residency in crown and bridge prosthesis. The training is obtainable in civilian institutions as well as several of the large Army medical facilities. The residency renders one board eligible—sincerely hope I can obtain one

"Please greet the faculty and staff for me."

Dr. Peter Reibel sent an announcement of the opening of his office at 4604 East 10th Street, Indianapolis.

Class of 1961

Received a note from Dr. John E. Regan, 650 Cherry Street, Huntington, Indiana, in which he reported he had been in service for two years.

Received a very clever Christmas greeting from Dr. and Mrs. Ronald Schoeps

and family, 457 James Street, Spencer, Indiana.

Class of 1962

We had a note from Dr. Nelson Wolfe, 15 Huron Place, Staten Island, New York.

Dr. Michael Gross sent us an announcement of the opening of his office at Armonk Medical Center, Route 22, Armonk, New York.

Dr. John P. Hom, 4892-24 Place S., Seattle, Washington, sent us a newspaper clipping describing the wedding ceremony for Dr. Hom and his lovely bride, Miss Valerie Chinn.

Dr. C. Wentz, 47th Med. Det. (Dental) APO 731, Seattle, Washington, sent Christmas greetings.

Class of 1963

Dr. David C. Lind, 55 North Franklin Street, Bloomfield, Indiana, wrote us last September that he was married last April 25 to Miss Jane Marie Thompson of Winchester, Indiana. Congratulations, Dr. Lind!

We received a lovely Christmas greeting from Dr. Cynthia Shellburne, 18 E. East 4th Street, Boca Raton, Florida.

Class of 1964

Dr. James A. Hammelman's mother sent us his home address, 4520 South 43rd Street, Lincoln, Nebraska, with the following note:

"Our son, Dr. James A. Hammelman, a 1964 graduate, entered the Air Force as Captain in July and is stationed at Lincoln, Nebraska. He states that he enjoys his work and he is getting a lot of experience in the dental clinic."

We received a Christmas greeting from Dr. and Mrs. Jorge H. Miyares, P. O. Box 1150, Gainesville, Florida.

Now that you have enjoyed hearing of your classmates, how about writing us some news yourself?!

Class Notes and News

FRESHMAN CLASS

The Freshman class, or Class of 1968 began their studies on September 17th with 94 members on the class roll. From Indiana 87, from Illinois 2, from Hawaii 1, and our only coed is from Hong Kong.

The Class was organized during the first week of the semester with the election of the following officers:

President—Jeffrey Allen
Vice-president—Victor Schreifer
Secretary—Geraldine Chan
Treasurer—Gordon Cruickshank
Student Council—Robert Angerman
Jr. A.D.A. Representative—Paul Butler

The course of study is heavy, broad, most interesting, and requires considerable study and effort on our part to keep up with the assignments. We are pleased to report that at the end of the semester only two students have dropped out of the Class.

At the writing of this report first semester final examinations are scheduled for next week and as a consequence the Class is busy studying and completing assignment projects.

To date the Class has demonstrated a very high moral and esprit de corps and has indulged in a reasonable amount of extra curricular activities. The Class Party held at the Slovenian National Home just before the Christmas holidays, was very well attended and was a resounding success as enhanced by the loud music and frantic dancing.

With our organization, moral, and determination we are all looking forward to a successful and profitable year.

SOPHOMORE CLASS

The Sophomore class and the first year hygienists gave a Christmas party for the underprivileged children at the Christamore House in Indianapolis. The party was held the week prior to Christmas vacation and about 175 neighborhood children attended. Jim Durward played Santa Claus and gave gifts to the children. The gifts were oral hygiene kits, which were donated by the Preventive Dentistry Department.

The Sophomore class studied the idea of changing the style of smocks worn in the clinic, and the possibility of wearing white shoes and pants during their clinic years. However, the class decided that neither of the changes were

feasible and to continue wearing the present style smocks.

SENIOR CLASS

The Senior year found us with some new classmates. We are happy to have in our group Ricardo Alazamora, Roger Carroll, and Charalambos "Harry" Blazoudakis, and hope they enjoy being with our class.

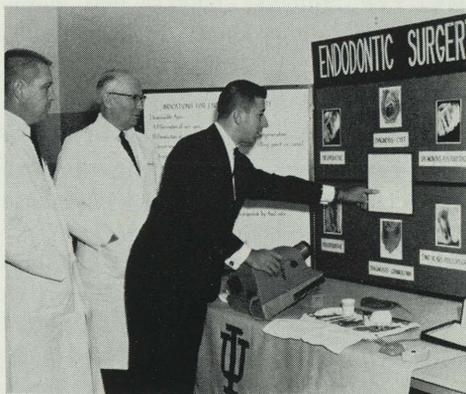
The year has progressed with the usual senior activities: Arbutus pictures essays, and the Lilly hour and banquet. In December we were guests of the Upjohn Company in Kalamazoo, Michigan. Several members of the class and their guests made the trip, and a "good time was had by all."

In October our president and secretary were guests of the Alumni Association in Bloomington at their fall meeting. We were pleased to see what an enthusiastic group we are about to join.

We have been fortunate to be able to attend several worthwhile and stimulating symposia this semester. They included topics on oral cancer, biological effects of cavity preparation, and practice management.

Meanwhile, back at the dental school, there is the usual frantic search for class five foils and biopsy patients. National board time comes again in April, and after that we are looking forward to state boards, razz banquet and commencement.

Sybil Sanders



Mr. Steven Cohen, Senior Dental Student, demonstrating his winning entry in the Student Table Clinic Program to Dr. Hine and Dr. Bogan. Mr. Cohen represented Indiana University at the American Dental Association meeting in San Francisco with his Table Clinic, "Endodontic Surgery."

CAVITY PREPARATION

(Continued from page 6)

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11. Sicher, H.: *Orban's oral histology and embryology*. St. Louis, C. V. Mosby Co., 1962, p. 153-154.
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15. Thanik, K.D., Boyd, D.A. and Van Huysen, G.: Cavity base materials and the exposed pulp marginal blood vessels. *J.Pros.Den.* 12:165, 1962.
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18. Muntz, J. A., Dorfman, A. and Stephan, R. M.: In vitro studies on sterilization of carious dentin. *J.A.D.A.* 30:1893, 1943.
19. Besic, F.: The fate of bacteria sealed in dental cavities. *J.D.Res.* 22:349, 1943.

Class of 1915 Reunion

The Class of 1915 of the Indiana Dental College will celebrate its 50th anniversary at a luncheon at the Claypool Hotel on Monday, May 18, 1965.

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SURVEY

(Continued from page 10)

Summary

From the foregoing, it may be concluded that ultra-high speed rotary instrumentation has gained wide acceptance and is the major means by which cavity preparations are done today.

The author acknowledges the guidance of Dr. Drexell A. Boyd who assisted in the design of the questionnaire and the accumulation of the data.

PROSTHODONTICS

(Continued from page 15)

IUSD is giving a special refresher course June 28-30 for this group. The second-day's program, Tuesday, June 29, will be a seminar open to the profession. Guest speaker is Dr. Robert Willey, of Los Angeles. Everyone interested in restorative dentistry should hear Dr. Willey discuss "Esthetics in Anterior Bridge Construction" and "Bridge Failures."

DEAN HINE

(Continued from page 16)

tics to the entire class at one time via the large television monitors scattered through the technic laboratory. The committee is also planning a 4-day workshop on dental teaching for members of the faculty on September 12, 13, 14 and 15.

We hope all alumni will plan to support the various programs and attend the Alumni Home Coming Meeting in Bloomington September 23, 24 and 25, 1965. Also, Memorial chairs are still for sale; write President "Bill" Gilmore for details.

The faculty continues to receive recognition; Dr. Ralph E. McDonald has been selected to serve a four-year term as a member of the Advisory Committee on Dental Student Training of the National Advisory Dental Research Council, and Dean Hine was made Dental Advisor to the Department of Defense.

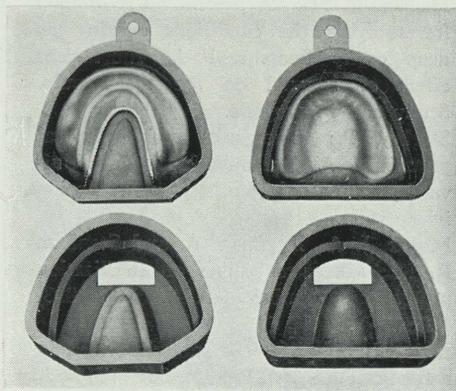
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