

MOMENTUM

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News & Viewpoints
for Eastman Dental Center
Alumni & Friends

EDC

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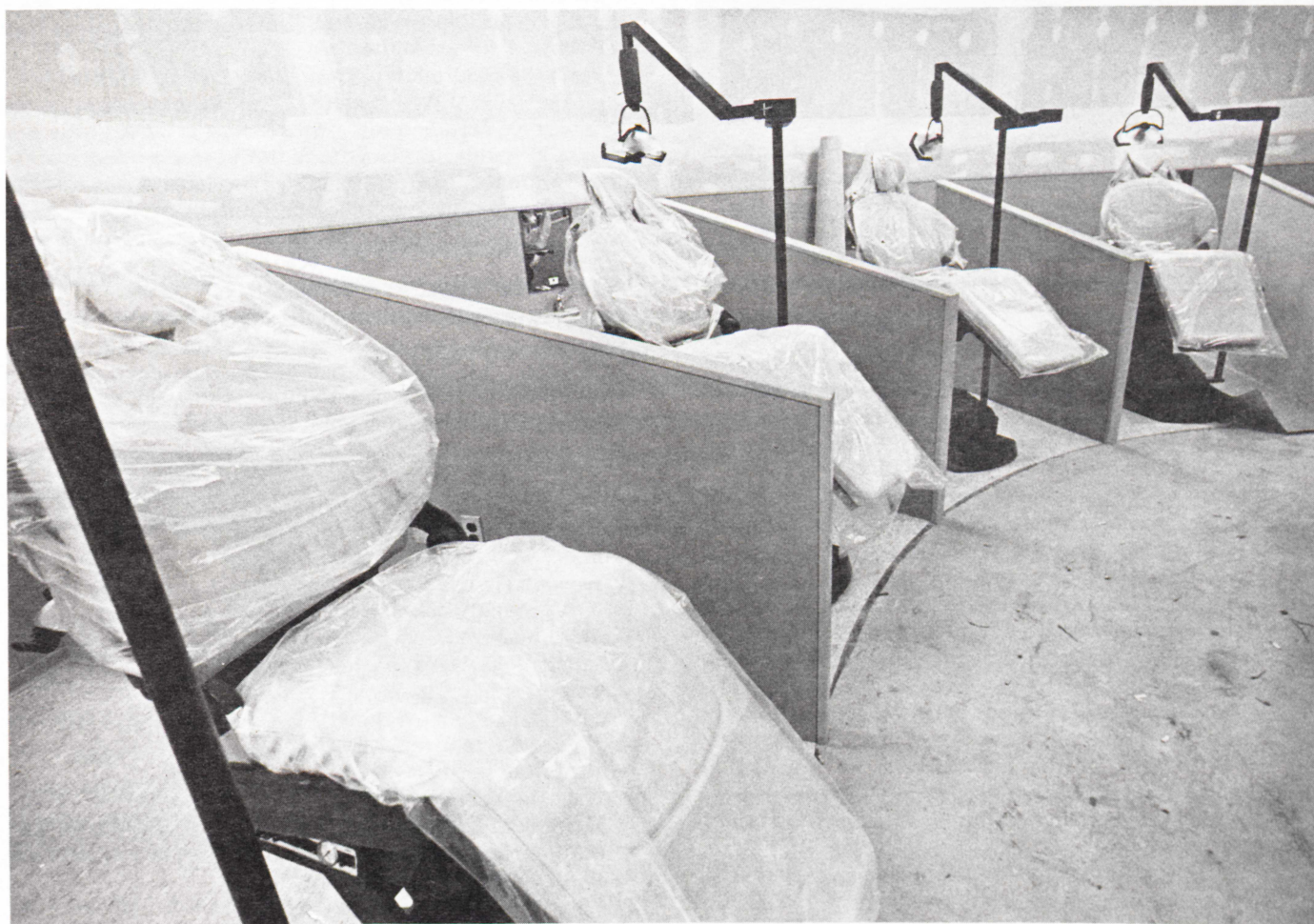
From The Director's Chair

The New Building

Twenty-eight months after ground was broken for our new building, we are finally ready to move! On April 26, the Library will start the exodus to 625 Elmwood Avenue. The clinical departments will begin to move at 5 p.m. on

Friday, April 28, and that move will continue throughout the weekend. Appointments have been scheduled in all clinical departments starting 9 a.m., Monday, May 1. Research departments will move into the tower floors the following two weeks or so.

We will soon announce our dedication date. We hope that all alumni and friends of the Dental Center will be able to attend the dedication and various scheduled reunions so that they may tour the new building and get to know it.

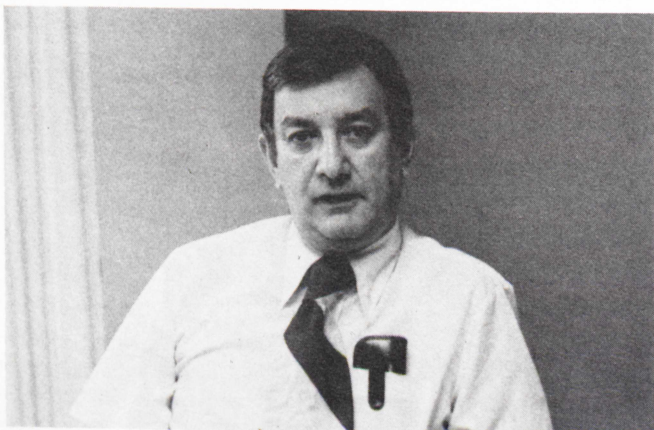


WRAPPED AND WAITING. A segment of the General Dentistry rotunda. Photo courtesy of Chris T. Quillen

The Editor's Corner

The Monroe Developmental Center (MDC) is a shelter for people with physical and mental handicaps. Through a contract with the New York State Department of Mental Health, the Eastman Dental Center Department of Pedodontics runs a modern, three-chair dental clinic at Monroe Developmental Center.

Dr. Jorge Davila, Dental Coordinator at MDC and Senior Clinical and Research Associate in the Department of Pedodontics at the Eastman Dental Center, is a soft-spoken and gracious man.



After earning his D.D.S. from the School of Dentistry in Cochabamba, Bolivia, in 1953, he practiced, taught and did research in his native country for fourteen years. Through his work with fluorides, he met the research director of a North American chemical company who suggested he write to Dr. Basil G. Bibby, then EDC's Director.

Dr. Davila came to Rochester in 1968 as an intern, received his Pedo Certificate in 1970 and his Master's in 1972. He admits that when he first came here, he was "oriented towards surgery," but then decided pedo was his field because of his "most pleasant experience with children at the Dental Center."

In talking with a visitor one afternoon, he mentioned how the concept of treating people with handicaps is changing. Traditionally, the handicapped were kept in "big institutions, jails of a kind, and they lived and died there. What the Developmental Center is doing is training the patient who can go out into society to work; to live in a small apartment, perhaps; to use public transportation; to manage money."

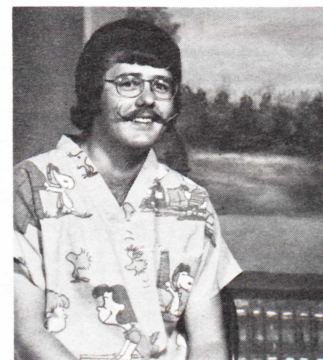
Dr. Odd B. Sveen, Chairman of the Department of Pedodontics, certainly supports the practice of normalizing the treatment of the handicapped in the dental situation. All first and second year Pedo students, as part of their program, spend rotations learning to treat handicapped patients.

Dr. Davila's sensitivity in working with people who are handicapped may have been strengthened when he came to this country and had to talk, read, write and think in English. He thinks the experience led him to develop the ability to see life from a different angle.

Dr. Davila says: "On a difficult patient we use sedation to allow us to get close to the patient and help him. The patient is aggressive because he thinks he is defending himself. We do not patronize our patients. At the end of several appointments, many patients no longer require sedation. We have designed a special chart where we note behavior and interests. The Down's Syndrome patient, for instance, is very gentle and music oriented. We relax him with music. We know that the autistic child has a very short attention span. A most difficult group."

He spoke of an aggressive, retarded young man, L, who was able to hold a job, but who drank "for a multitude of reasons—stress, lack of satisfaction, unhappiness." One of L's main problems was his teeth. He was ashamed of them. "It would have been a basic mistake," said Dr. Davila, "to start working on his molars when he was anxious about his anterior teeth. We repaired those teeth which improved his appearance, and he became one of our best patients. Now he smiles."

Dr. David Richardson, a second-year Pedodontic student who plans to complete the Master's program in Dental Research, is a 1972 graduate of the University of Toronto. A full handlebar mustache gracefully swirls over his upper lip, ending at each side of his mouth in a perfectly waxed O. Before joining the EDC specialty program he worked in a children's dental care program in Prince Edward Island, Canada.

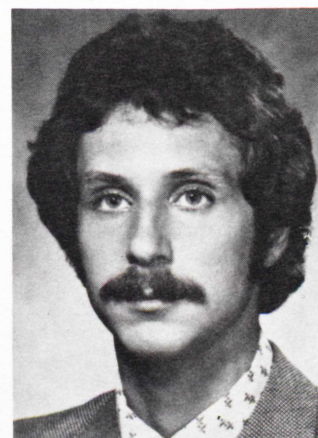


He says: "As pedodontists, we are going to be exposed to more and more people who are physically and mentally handicapped as they are now more involved in the community because of a de-emphasis on institutionalized living. By law buildings must be designed to be more accessible to physically disabled persons confined to wheelchairs, for example. We have to be prepared to handle the increased demand. The behavior of the mentally retarded patient in the dental office is not much different from that of the anxious child. It was easy to carry over what I had learned as behavior management of children to the Developmental Center to make my rotation there relaxing and enjoyable. It taught me to go slow, to take time."

Dr. Louis Cooper will receive his Pedo Certificate in June. He is a New Yorker, who returns to the City every chance he gets.

A graduate of the New York University College of Dentistry, he says of his handicapped patients: "I try to give them a good experience, to treat and educate them. In some cases, sedation is inevitable. But to begin, I try to treat them like any other patient. I begin without sedation

and see how far I can get. If I don't succeed, I can go on to another method. It is beneficial to people who are handicapped to treat them on a conscious level. It's more humane. And it's their right."



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MOMENTUM

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Recent Thesis

Dr. Curzon, Chairman of the Department of Caries Research, was granted his B.D.S. from the University of London, and his L.D.S. from the Royal College of Surgeons of England in 1964. He received an EDC Certificate in Pedo and a U.R. Master's in 1968. The University of London awarded him a Ph.D. in 1977.



A man of many interests, he makes military miniatures, collects recordings of opera, has an enviable garden ("If you can't eat it, I don't grow it!") and has been involved in scouting for over thirty years in England, Canada and the United States.

He has worked as a clinician, a researcher and as a public health dentist on Baffin Island in the Canadian Arctic Archipelago. His wife, Jennifer, is also a dentist and researcher. They have three sons.

Trace Element Composition of Human Enamel and Dental Caries

by Martin E.J. Curzon

In the most comprehensive and extensive study to date on the inorganic composition of human enamel, seven trace elements, F, Sr, Mn, Fe, Cu, Se and Cd were identified as significantly related to dental caries. Conclusions were based upon a two-stage study which carefully controlled all variables of sample collection and analysis.

In the first stage, 144 whole buccal enamel samples were used. These samples were derived from maxillary permanent premolars of life-long residents aged 10-20 years, from known geographic areas of the U.S.A. After an evaluation of all possible analytical techniques, spark source mass spectrometry was used to analyse for the 30 trace elements: Li, Be, B, F, Al, S, K, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Se, Br, Rb, Sr, Zr, Nb, Mo, Ag, Cd, Sn, Sb, Ba, Pb, and I. Results indicated that the trace elements looked for regularly occurred in enamel at detection limits as low as 0.01 ppm ($\mu\text{g/g}$).

Chemical analysis of 291 enamel samples in the second stage of the research used the same analytical techniques for the same 30 trace elements as in the first stage. Enamel samples were derived from life-long residents of known caries history from high and low caries areas of the U.S.A. Results showed strong negative associations for the elements P and Sr with caries. Weaker positive associations were found for Cu, Mn, and Ba.

All data from all chemical analyses used in both first and second stages of the research were evaluated for caries associations, and all trace element interactions

using computer analysis. Association of individual trace elements concentrations and individual caries scores showed F, Sr, Fe, and Se to have a negative relationship. A curvilinear association of Sr concentration in enamel to caries was found. Positive associations were found for Mn, Cu, and Cd. Weaker negative associations were found for B, K, and Ni, and positive associations for Zn, Rb, V, and Pb. Multiple element interactions with caries were found for F-Al, F-Al-Sr, Cd-Cu, Cd-Mn, and Cd-Se.

We have shown that 31 trace elements regularly occur in human dental enamel. The amounts of seven trace elements in enamel showed a statistically significant association with dental caries. Of these seven elements, the strongest association and evidence was for fluorine and strontium.

High concentrations of fluorine and strontium in whole enamel were related to low caries. This finding was consistent throughout our study. The acquisition of the strontium appeared to be through consumption of vegetables high in strontium content in some geographic areas, and through drinking water in others.

Detrimental positive associations were found for the elements copper, manganese and cadmium, and dental caries. This influence of cadmium on caries was a very complex one confounded by interactions with several other elements such as copper, manganese and selenium.

Two other elements, iron and selenium, were found to have negative associations with dental caries. However, the association was not as marked as that for fluorine and strontium. Evaluation of our results together with previous studies by other authors indicated that neither iron nor selenium affected caries through their incorporation in enamel. Rather it was felt effect on caries via bacteria, plaque or saliva might be the mechanism whereby iron and selenium affect caries.

At weaker levels of significance the trace elements, vanadium, zinc and rubidium showed detrimental associations with caries, while boron, potassium and nickel appeared to be beneficial. Of further interest was an indication that barium was associated geographically with high caries prevalence.

Geographic variations were found for a number of trace elements. When enamel samples were compared by state of origin considerable variation was found for the trace elements boron, fluorine, aluminum, nickel, copper, selenium, bromine, rubidium, strontium, molybdenum, silver, cadmium, tin, barium and lead.

For future research on the role of trace elements in enamel, the prime list of elements for study can now be restricted to fluorine, strontium, copper, cadmium and manganese. As a secondary consideration, interest may be with Group IIa elements of the periodic table, calcium, magnesium, strontium and barium. Other elements which might be of interest, but which from our work would be of lesser importance, would be boron, potassium, vanadium, nickel, zinc and rubidium. The detrimental affect of aluminum in negating the beneficial effect of fluorine on caries by incorporation in whole enamel merits further investigation.

Reunion News

Ortho

The eighth biennial reunion of the Eastman Orthodontic Alumni Association was held in Scottsdale, Arizona, February 10-15. Dr. J. Daniel Subtelny, Chairman of Ortho, who was a guest speaker, says, "The meeting went very well and there was a surprisingly good turnout. The group was enthusiastic, the papers excellent. The alumni were extremely interested in hearing about the new building!" Dr. Harold Perry, Chairman of the Department of Orthodontics at Northwestern, was the featured speaker. The meeting was dedicated to the memory of the late Dr. Frank Sapere, '74.

Pedo

The Department of Pedodontics will hold its alumni reunion on Friday, Saturday and Sunday, April 28, 29 and 30. Special guest speakers will be Dr. Arthur Orgel, UR Professor of Psychiatry, Pediatrics and Psychology; Mr. Marvin Cutler, a specialist in dental office design and



HAPPY HOUR. From left to right: Mrs. Ross Mason; Dr. Dan Subtelny; Dr. Ross Mason, newly elected president of the Ortho Alumni Association; Dr. Dick Baker; Mrs. Baker; and Mrs. Russell Glauser. The photo was taken by Dr. Robert Rosenblum.

human engineering; Dr. Michael Till, Professor and Chairman of Pediatric Dentistry at the University of Minnesota; and Dr. Basil G. Bibby, Senior Research Associate and second director of the Eastman Dental Center.

Awards

Dr. Basil G. Bibby returned to Rochester after a month in Australia and New Zealand to find he has been selected by his peers as the 1978 recipient of the IADR's Dental Caries Research Award.

The award, established in 1977 to honor dental scientists who have made outstanding contributions in the field, was presented to Dr. Bibby at the Association's annual meeting in Washington, D.C., in mid-March.

While abroad, Dr. Bibby vacationed for three weeks in New Zealand. He talked to the Dental Study Club in Auckland. New Zealanders with ties to EDC whom Dr. Bibby saw include Drs. Donald J. Beck, Terence W. Cutress, Thomas G. Ludwig, Euan I.F. Pearce and Grace W. Suckling.

Dr. Bibby's last week abroad was spent in Australia, where he lectured at the University of Brisbane Dental School. Dr. Robin Powell, recently appointed chairman of the Department of Social and Preventive Dentistry of the University of Queensland in Brisbane, organized a reunion of all former EDC people in honor of Dr. Bibby. Attending that gathering were Drs. John P. Brown, Peter Coates, George Davies, B.R.D. Gillings, Kevin J.R. Gillings and Richard W. Kellaway.

This is the second major honor awarded Dr. Bibby by the IADR. In 1975, he was recipient of the Association's Science Award, in recognition of outstanding basic research in oral therapeutics.

Capital Campaign

The Capital Campaign has raised more than \$2,300,000 and is now at sixty-six percent of goal. Special thanks must go to those alumni who have so far contributed \$39,025. In addition to generous gifts from alumni, the Campaign has received donations from their grateful patients as well.

We are aware that all alumni are besieged by requests for funds from their colleges and dental schools. We hope those of you who have not yet given will respond to our request for funds for the Capital Campaign. A pledge card is included for your convenience.

Alumni News

Dr. Van E. Christou, Ortho '50, writes he is "pleased to learn of progress with new building (and that he) will look forward to renewing old acquaintances at the official opening."

Dr. Ernest Newbrun, M.S. '57, Professor of Oral Biology at the University of California School of Dentistry in San Francisco, and editor of "Fluorides and Dental Caries," now in its second edition, has sent a copy of his book to the new Basil G. Bibby Library. He mentions that "other Rochesterians who contributed to the text are Drs. Harold Hodge and Howard Myers." Dr. Newbrun has just completed another text, "Cariology," soon to be published by Williams and Wilkins. As soon as the book is off the press, he promises to send a copy to our new library.

Dr. Euan I.F. Pearce, M.S. '65, writes a marvelously informative letter from Wellington. It will bring many people up to date on old friends now in New Zealand. He says: "Dr. Tom G. Ludwig, M.S. '54, Caries Res. '67, is currently Vice-Principal of the Dominion School for Dental Nurses in Wellington. This school is responsible for the 2-yr training of our dental auxiliaries. Tom moved to this position after directing the Medical Research Council's Dental Unit for some ten years, during which time he developed the Unit (formed originally by Dr. Fred Losee in the late '50's) into a vigorous and healthy research group. Present director of this Unit is Dr. Terry W. Cutress, M.S. '63, Caries Res. '71. Terry maintains an active interest in the F.D.I. and is currently Vice-Chairman of its Commission for Dental Research. Membership of a W.H.O. special group investigating periodontal disease recently took him to Moscow. Other members of the

Research Unit include Dr. Grace Suckling, nee Brown, GenDen '54, and Dr. Euan Pearce, M.S. '65. Grace's research interests lie in the field of developmental enamel defects and she has developed to a high degree the use of sheep as a model animal for studying this problem. Euan recently returned from a year's study leave in the Department of Oral Physiology, Newcastle upon Tyne, and is currently chairman of the NZ section, IADR. Dr. Bernard Healy, Caries Res. '62, is a chemist with the Department of Scientific and Industrial Research. His current interests include soil ecology and soil chemistry and the latter has taken him to Raratonga on several occasions recently to advise the local Government on development projects. In Dunedin, on New Zealand's South Island, Donald J. Beck, M.S. '59, is Professor and Chairman of the Department of Preventive and Social Dentistry in the University of Otago. He was a coordinator of the recent W.H.O. Collaborative Study, a task which took him to West Germany, Australia and Norway. Since then Donald has been involved in an extensive survey of the oral health status of adult New Zealanders. Further south, in Invercargill, G. Mike Orbell, Ortho, M.S. '71, is in specialist practice of orthodontics."

Dr. Kirsten Jessen, Pedo '66, has been "since 1972, head of the dental program for all children under the age of 16 in the Juelsminde County, Denmark."

Dr. Stanley Silber, GenDen '74, is now "a part-time clinical associate (instructor) in the Department of Restorative Dentistry at the University of Pennsylvania School of Dental Medicine."

Dr. Ron Ramsey, Ortho '76, writes from Barbados that he and his wife, Marlana, have had their "first child, a boy, born 27th Nov. 1977, wt. 7 lb., 1/2oz., named Rafael Antonio."



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