VITAL NEW AMALGAM RESEARCH

Research scientists at the University of Calgary Medical School in Alberta, Canada have begun publishing the dramatic results of their research on dental amalgam. The research team consisting of Doctors Murray J. Vimy, L.J. Hahn, R. Kloiber, Y. Takahashi and F.L. Lorscheider have been conducting studies at the Departments of Medicine, Radiology and Medical Physiology at the University of Calgary.

Initial results were presented at the 32nd Annual Meeting of the Canadian Federation of Biological Societies on 14-17 June 1989 and the Second Meeting of the International Society for Trace Element Research in Humans on 25 August-1 September 1989.

Dental amalgam fillings, containing radioactive tagged mercury 203, were placed in 12 molar teeth of 5 pregnant sheep on the 112th day of pregnancy. The use of radioactive tagged mercury 203 allows specific identification of the mercury source, preventing possible misidentification with mercury from other potential sources. The fetuses received catheter implants allowing fetal blood to be drawn during the study. Radioactivity measurements were utilized to determine the presence and quantity of mercury from the dental amalgam fillings (in the mothers) in various body tissues of the mothers and fetuses.

As early as 3 days following placement of the amalgam fillings in the mothers, mercury accumulation was evident in maternal blood and fetal blood, amniotic fluid, and maternal urine and feces. By 16 days after amalgam placement maternal mercury levels were highest in kidney, liver, G.I. tract, and thyroid. The mercury levels in the fetuses were highest in the pituitary gland, liver, kidney, and placental cotyledon (a portion of the placenta).

At 33 days after amalgam placement (birthtime) most fetal tissues had higher levels of mercury than did the maternal tissues. Specifically, the fetal levels were higher in the liver, epiphysial bone (the ends of long bones, such as those in arms and legs), bile, bone marrow, blood, and brain.

During lactation, there was 8 times more mercury in the milk of the mothers than in their blood serum. With amalgams in place for 73 days the mercury tissue levels in mothers continued to rise in kidneys, liver, parotid glands, lungs, G.I. tract, adrenal glands, pancreas, pituitary glands, urine, bile, brain, and thyroid glands.

The researchers concluded that mercury vapor released from dental amalgam fillings is readily absorbed in lung, gastrointestinal tract and jaw bone and progressively accumulates in maternal and fetal tissues with exposure duration. Neonatal mercury exposure (after birth) from this dental material occurs via milk. Results indicate that dental amalgam can be a major source of chronic mercury exposure in humans.

BIO-PROBE COMMENT: This dramatic research is a major breakthrough in the amalgam controversy. It has
been well established that the developing fetus is extremely susceptible to the invasion of harmful chemicals, including mercury. The work of Dr. Murray Vimy and his colleagues, along with the continued research of others such as Dr. Magnus Nylander at the Karolinska Institute in Sweden and Dr. David Eggleston in California, is changing the world scientific community’s opinion of dental amalgam. Opponents of the use of dental amalgam can no longer be labeled ‘quacks’ or ‘frauds’. Actually, the shoe is now on the other foot; advocates of the use of dental amalgam, totally devoid of any valid published scientific research to defend their position, must now alter their position or face the prospect of being similarly labelled.

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SPECIAL ARTICLE

WHO IS RESPONSIBLE FOR AMALGAM USE???
Michael F. Ziff, D.D.S. & Sam Ziff

The controversy over the use of mercury-containing dental amalgam fillings continues to unfold. New developments continue to appear in the scientific area, the professional area, the public area, the governmental area, and......the medico-legal area.

Scientifically, beliefs that were once widely espoused and passionately defended are crumbling one by one. It has now been clearly established that dental amalgam, once considered to be an admirably stable mixture, constantly releases its mercury which is than absorbed into the patient’s body where, with time, it slowly accumulates. It has also been established that this mercury, proven to be extremely toxic, probably has no threshold to guarantee against harmful effects. The dental profession now acknowledges that patients are chronically exposed to mercury from dental amalgam fillings, but claims that the exposure is so small that no harm is derived from it. There is absolutely no scientific data to justify such a conclusion. Scientists around the world have now begun investigating the pathological effects of chronic mercury exposure from amalgam fillings.

As more and more patients experience physical benefit from the elimination of chronic mercury exposure from dental amalgam fillings, the public has become increasingly aware of the potential problem. The news media and governmental entities are also showing increased awareness and interest.

Ultimately, the question of responsibility for the use of dental amalgam will be encountered. The average dental practitioner feels that so long as the positions of the leadership of the profession are followed, personal safety and security are ensured. Although this feeling has certainly been justified in the past, it is highly unlikely that it will continue in the future. The actual formal positions of dental associations and governmental agencies on dental amalgam have been well concealed and insulated from the profession. They are certainly not what the average practitioners think they are, public statements by employees of the professional organizations and governmental agencies notwithstanding. Eventually, the vital difference between public statements of poorly informed individuals and the actual formal positions will be exposed. When that occurs, the true responsibility for the use of dental amalgam will be revealed.

On November 4, 1985 a chilling article appeared in the ADA News (Page 6, Collum 4). The article stated "the Swedish Supreme Court held that the individual dentist, not the government, is responsible for the materials used". It seems that a patient had sued the Swedish government and the Swedish dental association for alleged health damage incurred from dental amalgam fillings. The lower court had ruled against her and the Swedish Supreme Court had refused to hear her appeal based on the above stated position. So, in Sweden, the individual practitioner bears all responsibility for any damage from mercury from dental amalgam.

What about the United States? Manufacturers and suppliers are not legally or scientifically valid authorities for medical treatment; they cannot dictate treatment to doctors and therefore cannot be held wholly responsible for treatment. Obviously, dental practitioners cannot transfer their responsibility to dental manufacturers or dental suppliers, although that responsibility could be shared with those entities. That leaves only four possible entities, other than the dental practitioner, to bear the legal responsibility for
the use of dental amalgam: 1) Dental schools; 2) The National Institute for Dental Research; 3) The American Dental Association; and 4) The Food and Drug Administration.

DENTAL SCHOOLS
Dental schools advocate and teach the use of dental amalgam. In 1985, the International Academy of Oral Medicine and Toxicology sent letters to the deans of every dental school in the United States and Canada. The current research on dental amalgam mercury was pointed out and the schools were urged to consider a possible biocompatibility problem with the material. Only four dental schools bothered to reply. They all said more or less the same thing: the American Dental Association has determined that dental amalgam is harmless to patients.

This posture not only does not speak well for institutions of higher learning, it does not establish firm release from responsibility. However, a case might be made for the fact that medical schools do not themselves establish the validity of medical therapy; they teach what has been established through the professionally accepted research and policy protocols (to wit - the various professional associations and their journals). Moreover, it is not certain that these schools bear a legal responsibility for the results of therapy; although they certainly enjoy a strong role in the advisory and testimonial capacity. In any case, we are not aware of any dental school that has been held legally responsible for undesirable results of dental treatment.

THE NATIONAL INSTITUTE OF DENTAL RESEARCH
The National Institute of Dental Research (NIDR) is the dental branch of the National Institutes of Health. In 1984, the NIDR publicly took the position that dental amalgam fillings were harmless to patients, unless an allergy to mercury existed. As its name indicates, the NIDR is a research agency. Legally, it has no policy or enforcement authority, and can therefore not be held legally responsible for the results of any dental therapy. That authority is vested in a different government agency.

The NIDR established its policy position on dental amalgam in conjunction with the American Dental Association. In 1984, a workshop on the biocompatibility of metals used in dentistry was sponsored by the NIDR and hosted by the ADA at the ADA headquarters in Chicago. As might be expected, the NIDR (as well as other government agencies) operate in close coordination with the ADA.

THE AMERICAN DENTAL ASSOCIATION
Actually, most of the dental profession follows the lead of the ADA on dental amalgam. In view of this situation, it would not be illogical to conclude that the ADA actually guarantees the safety of dental amalgam. Considering the public statements issued by employees of the ADA, one would certainly think so. However, this is not the case.

The ADA has established defined procedures for the certification of dental materials. To do so, it works in conjunction with a private organization called The American National Standards Institute (ANSI). Within the ADA, the Council on Dental Materials, Instruments and Equipment (CDMIE) is responsible for investigation of and policies on dental materials. The CDMIE and ANSI have developed a policy document for the evaluation of dental materials. It is entitled "American National Standards/American Dental Association Document No. 41: For Recommended Standard Practices For Biological Evaluation of Dental Materials". (Note the use of the word 'biological'). This document was published in JADA in February of 1972 and approved on 4 January 1982.

This document details specific procedures required for the biological evaluation of each dental material. In it are the specified requirements for dental amalgam, which must satisfy seven biological tests required for acceptance. These tests are: Cytotoxicity, hemolysis, Ames' test, Styles cell transformation, mucous membrane irritation, subcutaneous implantation, and irritation of pulp. The documentation contains no requirements for dental mercury or alloy for dental amalgam as separate entities, presumably since these are not used in patients unless mixed together.

The CDMIE of the ADA, again working with ANSI, then evaluates each dental material and issues
specification documents for each accepted material. Periodic review of current research regarding the biological effects of certified dental materials is required.

In 1986, a member of the International Academy of Oral Medicine and Toxicology wrote to the ADA requesting their review of current biological research justifying the continued certification of dental amalgam. He received the following reply: "There appears to be confusion regarding both the role of the council and the scope of ANSI/ADA Specification No. 1 for Alloy for Dental Amalgam. The specification is not for dental amalgam. It is only for the alloy for dental amalgam. The amalgam does not form until the dentist mixes the alloy with mercury. Therefore, dental amalgam per se cannot be certified. We cannot certify a reaction product made by the dentist." The letter was dated May 22, 1986 and signed by John W. Stanford, Ph.D.; Secretary; Council on Dental Materials, Instruments and Equipment; American Dental Association.

Further investigation uncovered ANSI/ADA Specification No. 6 for Dental Mercury in addition to ANSI/ADA Specification No. 1 for Alloy for Dental Amalgam. Neither document contains any testing for biological compatibility. Requirements are limited to physical characteristics, working qualities, etc. There is no ANSI/ADA document for dental amalgam.

Interestingly, the ADA has now accepted several composite materials for use in posterior teeth. The curious truth is that the ADA certifies a material (composite) that it does not approve of for posterior fillings and does not certify a material (amalgam) that it does approve of for that use. It is also curious that the ADA singles out one material, amalgam, as a 'reaction product' that cannot be certified. Most dental materials certified by the ADA (i.e. - cements, impression materials, composites) are mixed or otherwise prepared by dental personnel and are therefore also reaction products.

One other factor regarding the responsibility of the ADA in the use of dental amalgam must be considered. The ADA is a trade organization. Membership in the ADA, or its components, is not a requirement for the practice of dentistry. Can a trade organization be held legally responsible for the actions of its members, even if it is standard conduct recommended by the organization?

Late in 1984 a group of dentists initiated, through an attorney, a series of communications with the ADA. The initial request was for the ADA to either produce the scientific documentation verifying the safety of dental amalgam in patients or call for a moratorium on the use of dental amalgam until such documentation could be produced. The response came on 19 February 1985 from the Chief Counsel of the legal department of the ADA: "As you must know, The A.D.A. is not a regulatory agency, and therefore cannot declare a moratorium on the use of any product or agent in dentistry. That type of action could only be carried out by the Food and Drug Administration or some other appropriate agency".

It is obvious that the ADA has taken careful steps to protect itself from any legal responsibility for harmful effects from the use of dental amalgam. They claim that responsibility rests with the Food and Drug Administration (since no other government agency has any involvement with certification of use of dental materials).

THE FOOD AND DRUG ADMINISTRATION

In his consumer affairs message to the Congress on 30 October 1969, the President of the United States directed the Secretary of Health, Education, and Welfare to determine the scope and nature of additional legislative controls necessary to protect the public against unreasonable risk of injury or illness from medical devices. The Secretary of HEW established a special committee which issued its report in September 1970. A medical device bill passed the House and Senate in 1975 and was amended and formalized in 1976. These and all future proceedings are recorded in the Federal Register.

The Food and Drug Administration (of HEW) was given the responsibility of investigating and classifying all medical devices into three categories:

Class I: General Controls. [Sufficient information available to assure that the device does not impair human health or present a potential risk of illness or injury.]

Class II: Performance Standards. [General controls alone are insufficient to provide reasonable assurance of safety and effectiveness.]

Class III: Premarket Approval. [Insufficient information to establish a performance standard or which present a potentially unreasonable risk of illness or injury.]
The FDA defined "implant" as "a device that is placed into surgically or naturally formed cavities of the human body." All implants were to be categorized as Class III devices unless sufficient information was available to guarantee against an unreasonable risk of illness or injury.

The FDA established panels for each specialty of medicine. The dental panel was published in the Federal register on 19 May 1975 (Vol. 40, No. 97. Pg. 21848.). It consisted of:

John W. Stanford, Ph.D. (Chairman)
Garrett V. Ridgely, D.D.S.
W. Arthur George, D.D.S.
George E. Myers, D.D.S.
Floyd A. Peyton, D.Sc.
Harold E. Boyer, D.D.S.
Frank L. Baasch, C.D.T.
Claire Davis (Consumer Liaison)
Robert E. Mercer (Industry liaison)

The chairman of the FDA committee is the same John W. Stanford who is the Secretary of the ADA’s Council on Dental Materials, Instruments and Equipment and who formally declared that dental amalgam is a ‘reaction product’ mixed by the dentist and therefore cannot be certified.

On August 12, 1976 the Federal Register (41(157):34099-102. Docket No. 75N-0268.) contained the following statements in the dental device section: "Voluntary or privately recognized performance standards will not be a substitute for the formal promulgation of standards under Section 514 of the Act for any device that is classified in the Performance Standard category." (Page 34100); and the dental panel followed with (Page 34101) "In 1973, EDA (Sic - FDA??) identified as acceptable the seven dental materials standards listed below that were developed by the American Dental Association and promulgated as American National Standards (ANS). The standards were presented to the FDA Classification Panel on Dental Devices which recommended that the FDA accept them as standards: (A) FDA-MDS-033-0007 (ANS MD 156.1.) Standard for Dental Amalgam Alloy. (C) FDA-MDS-033-0009. (ANS MD 156.6.) Standard for Dental Mercury. It is clear that the dental panel violated FDA rules if the materials were not to be placed in the Class I category.

In 1980 the FDA published the "Proposed Rules" for the classification of accepted dental devices in the Federal Register (45(251). December 30, 1980.) Dental amalgam was not included. On page 85984 it is stated that "the agency has identified risks to health, such as lack of biocompatibility of materials used in the devices, that would be controlled by performance standards". It is clear that the FDA intended biological compatibility to be a factor in determining the acceptability of dental devices and that any device with a question of this factor could not be placed in the Class I category.

The proposed acceptance of Amalgam Alloys is found on pages 85979-80 as Docket NO. 78N-2843. The proposed acceptance was for Class II with the ‘Summary of Reasons for Recommendation’ stating "materials used in the device that contact the body should meet a generally accepted and satisfactory level of tissue compatibility. The panel believes that general controls alone would not provide sufficient control over this characteristic. The panel believes that a performance standard would provide reasonable assurance of the safety and effectiveness of the device and that there is sufficient information to establish a performance standard."

‘Risks to Health’ were identified as: (a) Adverse gastric or respiratory response: Ingestion of the powdered alloy or the mixed amalgam may be harmful to the patient’s digestive or respiratory tract. (b) Adverse tissue reaction: If the materials in the device are not biocompatible, the patient may have an adverse tissue reaction.

In spite of all of this, the ‘Summary of Data on which the Recommendation (for acceptance) is Based’ stated: "The Panel based its recommendation on the Panel members’ personal knowledge of, and clinical experience with, the device in the practice of dentistry." No data; no research cited or considered.

The proposed acceptance of Dental Mercury is found on pages 86933-34 as Docket NO. 78N-2894. The
proposed acceptance was for Class II with the "Summary of Reasons for Recommendation" stating "Dental mercury is a toxic substance and must be handled properly to control the hazards it presents. The Panel believes that general controls alone would not provide sufficient control over this characteristic."

'Risks to Health' were identified as: (a) Mercury poisoning: If the device is not handled properly, the user may suffer mercury poisoning from inhalation of mercury vapors. (b) Adverse tissue reaction: If the material in the device is not biocompatible, the patient may have an adverse tissue reaction.

The "Summary of Data on which the Recommendation is Based" states: "The Panel based its recommendation on the Panel members' personal knowledge of, and clinical experience with, the device in the practice of dentistry, and on an article published in the Journal of the American Dental Association "An Environmental Study of Mercury Contamination in Dental Offices." [JADA. Vol. 89. Nov. 1974.]

That's it! One reference.

These proposed regulations sat dormant for almost seven years. No final action was taken until 1987. Until then, the FDA had no formal classification or acceptance of dental devices.

The 'Final Rule' of the acceptance and classification of Dental Devices was published in the Federal Register on Wednesday, 12 August 1987 as 21 CFR Part 872, Docket No. 78N-2830, pages 30082-30106. Once again, mixed dental amalgam is not included. Under the 'List of Dental Devices' is found: Section 872.3050: Amalgam Alloy = Class II. Section 872.3700: Dental Mercury = Class I.

Dental mercury had been changed to Class I with the following explanation: "FDA acknowledges that the device presents a risk to those few patients who experience allergic reactions to this material, as evidenced by rare reports of such reactions [three case report journal references are cited], and to individuals such as dentists who regularly handle dental mercury. Upon further consideration, FDA now believes that labeling for the device bearing adequate directions for use and warnings under the misbranding provisions (21 U.S.C. 352) of the General Controls of the Act would warn dentists about the rare risk of allergic reactions among patients and the risk of toxicity to dental health professionals. Thus, the FDA believes that the General Controls of Class I alone are sufficient to provide reasonable assurance of the safety and effectiveness of the device and that it is unnecessary to establish performance Standards for the device."

The conduct of the Dental Device Panel of the FDA may some day be subject to scrutiny. It is obvious that several rules of the FDA had been ignored or deliberately circumvented. In any case, one fact is clear; the FDA does not certify MIXED DENTAL AMALGAM! Neither does the American Dental Association. Both groups, for whatever motivation, address only the alloy and mercury separately in their formal documents. As stated by Dr. John Stanford of the ADA, "The amalgam does not form until the dentist mixes the alloy with mercury. Therefore, dental amalgam per se cannot be certified. We cannot certify a reaction product made by the dentist."

Once the amalgam alloy is mixed with mercury, responsibility for its activities rests in only one place - the individual practicing dentist. Even dental manufacturers and suppliers deal only with the components; they do not provide mixed dental amalgam (a reaction product). Interestingly, two government agencies and the American Dental Association have taken stands on mixed dental amalgam.

MIXED DENTAL AMALGAM HAS BEEN DECLARED A TOXIC HAZARD!

The Council on Dental Materials, Instruments and Equipment (CDMIE) of the American Dental Association has prepared and issued formal recommendations for the handling of mixed dental amalgam. These were published in the ADA Journal in October of 1984 (Vol. 109:617-9). These recommendations state:

1. All amalgam scraps should be salvaged and stored in a tightly closed container. The scrap should be covered by sulfide solution such as x-ray or photographic fixer solution.
2. A no touch technique of handling amalgam should be used. Direct contact or handling of mercury, amalgam, or other mercury-containing materials should be avoided.
3. Skin that is exposed to mercury should be cleaned.
4. Pre-capsulated alloy should be used.
5. Water spray and high-volume evacuation should be used when removing old or finished new dental restorations. Evacuation systems should be passed through filters, strainers, or traps.

6. A face mask should be used to avoid breathing amalgam dust.

7. The office should be monitored for mercury vapor once a year or as needed if contamination is suspected.

8. Periodic urinalysis for mercury on all dental personnel should be done.

If mixed dental amalgam were harmless, there would be no need for these stringent recommendations.

The U.S. Occupational Safety and Health Administration (OSHA) has classified mixed dental amalgam as a toxic hazard. Excess mixed dental amalgam must be disposed of in accordance with its Material Safety Data Sheet (MSDS). This was announced in the ADA News on 1 August 1988 [19(15):1.]

The U.S. Environmental Protection Agency (USEPA) considers mixed dental amalgam to be a toxic waste disposal hazard. Under existing environmental laws, anyone who arranges for the disposal of hazardous materials can be assessed the cost of any cleanup required. [ADA News. 20(2):1, 6. 16 January 1989.] Fifty eight dentists in the northeast have already been assessed a combined $69,812 for 10% of the cleanup costs of a disposal site contaminated by scrap dental amalgam.

No agency or organization certifies mixed dental amalgam. The ADA, OSHA, and the USEPA have all declared mixed dental amalgam to be a toxic hazard. Manufacturers and suppliers do not provide mixed dental amalgam. Only dental personnel mix amalgam alloy with mercury to produce the "reaction product" that is mixed dental amalgam. Where does that leave the responsibility?

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REVIEWS/ABSTRACTS

Ngim CH, Devathason G.
Epidemiologic study on the association between body burden mercury level and idiopathic Parkinson's Disease.
A case-control study was conducted among the multiethnic population of Singapore to test the hypothesis that a high level of body burden of mercury is associated with an increased risk of Parkinson's Disease (PD). Selected factors investigated that could contribute to the body burden of mercury included dietary fish intake, ethnic over-the-counter medications, occupational exposures and possession of dental amalgam fillings. Results were adjusted for potential confounding factors, including dietary fish intake, medications, smoking, and alcohol consumption. Subjects were 54 cases of idiopathic PD who were matched for age, sex, and ethnicity with 95 hospital-based controls.

There was a CLEAR DOSE-RESPONSE ASSOCIATION BETWEEN PARKINSON'S DISEASE AND BLOOD MERCURY LEVELS. Similar associations were revealed using scalp hair and urinary mercury levels; however, only the comparisons between the highest and lowest tertiles were statistically different from unity. After adjustment, scalp hair mercury was shown to be a poor predictor of PD risk.

BIO-PROBE COMMENT: Previously published investigation by Harada et al. (1972) and Ohlson and Hogstedt (1981) have shown a relation between Parkinson’s Disease and exposure to mercury. This recent study strengthens the earlier findings and will hopefully stimulate further investigation.

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Gelbier S, Ingram J.
Possible fetotoxic effects of mercury vapor: A case report.
A thirty-year-old dental surgeon who worked until the 35th week of pregnancy in a surgery in which mercury vapor concentrations in excess of the threshold limit value (TLV) had been detected, gave birth at 42 weeks to a small-for-dates baby with severe brain damage. The possibility that this baby's development might have been harmed by mercury is discussed and the literature relevant to teratogenicity of mercury reviewed. Attention is drawn to the need for further research into the effects on health and pregnancy outcome of mercury vapor in dental surgeries.
Christensen M, Mogensen SC, Rungby J.
Toxicity and ultrastructural localization of mercuric chloride in cultured murine macrophages.
The effects of mercuric chloride on cell survival, phagocytosis, and cell migration were examined in cultured mouse peritoneal macrophages, and the accumulation of mercuric chloride in the cells was visualized by autoradiography and evaluated by light and electron microscopy. [Macrophages are white blood cells that ingest microorganisms or other cells and foreign particles. They are usually immobile in the walls of blood vessels or in loose connective tissues, but when stimulated by inflammation become actively mobile.]

Macrophages exposed to mercury concentrations from 1.25-10 microM of mercuric chloride showed a concentration- and time-dependent increase in mercuric chloride accumulation. Cells exposed to 20 and 40 microM of mercury showed an inverse relationship between mercury concentration and the accumulation of mercury. Mercury concentrations above these levels caused cell necrosis [death]. Electron microscopy revealed that mercury was located primarily within lysosomes but also in the nucleus and cytoplasm.

Mercury increased the death rate of macrophages in a concentration-dependent manner when cells were treated with mercury concentrations not causing cell necrosis. It was also found that mercury clearly impaired macrophage random migration and possibly the capability for phagocytosis.

**BIO-PROBE COMMENT:** Further clear evidence that mercury, even in very small concentrations, damages the body’s ability to combat foreign invaders, part of the function of the immune system


Summary:
Average mercury concentration in cerebrospinal fluid in healthy controls was 0.4 ug/l (range 0.1-1.2) and in multiple sclerosis cases it was 3.0 (1.5-5.4). In some cases treatment with antioxidation therapy (selenium, vitamins) and/or removal of amalgam cured/improved patients with MS. It is thus possible that mercury poisoning may constitute part of the etiology.

**FORUM**

The 12th Annual Dental Seminar in Homeopathy will be held October 20-22, 1989 at the Oak Brook Hills Hotel and Conference Center, 3500 Midwest Rd., Oak Brook, IL 60552-7010 Seminar Faculty will be Harris M. Kimbrough, Jr., D.D.S., Craig A. Zunka, D.D.S., David L. Stephenson, D.D.S., Robert R. Canida, D.D.S. and Dennis G. Charnesky, D.D.S. For more information write to National Dental Seminar, P.O. Box 123, Marengo, IL 60152.

**NATIONAL PUBLIC RADIO**

A radio documentary will be released on National Radio that will focus on the amalgam controversy and will be available to all public radio stations via satellite beginning October 24, 1989. The program is part of a series entitle Pollution Solution from The Other Americas Radio, Santa Barbara, CA and was produced by Donna Carter. Call your local public radio station for broadcast times. Audio cassettes will be available from The Other Americas Radio for $9.00 each including postage. The Other Americas; P.O. Box 85; Santa Barbara, CA 93102. 805-569-5381. (Call your local newspapers and ask them to put in a public service announcement about this documentary detailing the amalgam controversy.)

A Jerome 411 Mercury Vapor Analyzer is available through Dr. Marc Flack. Please give him a call at (801)-268-4941, if you are interested or know of someone who would be interested.