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COMPONENT SOCIETY DIRECTORY
CONTENTS

Editorials .......................................................... 4
Open Letter to the Board of Dentistry ............................... 6
Report of the 125th ADA Meeting in Atlanta ..................... 8
Calendar of Events ................................................. 11
Multiple Primary Carcinomas of the Mouth:
Matters of Life and Death .......................................... 12
Information and Recommendation for Using the
Periodontal Microbiology Service .................................. 22
What the Supreme Court Gives, the General
Assembly Takes Away ............................................. 26
Component News ................................................... 28
MCV News .......................................................... 33
Tyler Haynes Commons ............................................. 34
Career Selection vs Satisfaction: An Analysis
of New Dental Graduates ......................................... 35
Space Medicine ..................................................... 36
President's Address—VDA Annual Meeting ......................... 42

COVER

The Historic Capitol at Richmond, Virginia
(1785-88)
EDITORIALS

A LASTING FONDNESS

When Carlton Gregory called me in December of 1970 offering me the editorship of the Virginia Dental Journal I was reluctant to accept as would be typical of any neophyte. But I told him I would fill in for a year and then see what happened. Well, as it turned out, that year dragged out to a total of fourteen.

I did not realize at the time that I was launched into a second career; it was a new encounter which turned into a labor of love for I enjoyed the experience with all the zest and energy I poured into it.

If my tenure has been successful, and I think it has, I must say that I had excellent help in the form of expert guidance, professional know-how, and encouragement from three lovely ladies, Pat Watkins, Betty Lou Witten, and Carol Lynne Rigsby. The four of us made a good workable team that assured a creditable publication with each approaching deadline.

One of the most profound joys in this work is the management of words which are indeed awesome in aspect since they are the tools of civilization. They form an interwoven meshwork or matrix that tends to unite us and express all of our good ideas be they concrete or abstract. They set us off on adventures that exceed by far the boundaries of imagination seen in any novel or a fairy tale. This voyage is described so aptly by one of America's Nobel laureates and distinguished particle physicists, Murray Gell-Mann: "It is the most persistent and greatest adventure in human history, this search to understand the universe, how it works and where it comes from. It is difficult to imagine that a handful of residents of a small planet circling an insignificant star in a small galaxy have as their aim a complete understanding of the entire universe, a small speck of creation truly believing it is capable of comprehending the whole world."

The fundamental objective of good journalism is to promote comprehension and good understanding, whether it be the entire universe or a single living cell we call an odontoblast. This is necessary before further treatment of the subject can be conducted.

And now with the appointment of our new and capable editor, Mike Munn, I leave you in excellent hands.

George W. Burke

Jan
SCARED—BUT READY

It was just a very few short years ago, five to be exact, that I was asked to develop a newsletter for the Richmond Dental Society. Since my practice was only one year old, I had plenty of time to work on the newsletter. I would sit at my kitchen table and piece together articles and glue them to pages so the printer could photograph the pages and print the newsletter. Never in my wildest dreams, as I sat there and cut and glued, did I believe I would become editor of the Virginia Dental Journal. I feel a bit scared, a lot inadequate, and very humble as I sit now at that very same table in my kitchen and write this first “editorial”.

I feel scared because I get scared anytime I take on a new task that forces me to grow, to improve, to accept more responsibility. I’m afraid I’ll expose my ignorance to such an esteemed and well educated readership. The inadequate feeling I have probably comes from the fact that I am trained and educated in the Art and Science of Dentistry and not as an editor or writer. As you can already see, I write as I feel, not with the sophistication of a journalism graduate. Please bear with me as I grow into my new challenge.

As for my humble feeling, anyone of you would be humbled if you followed in the footsteps of Dr. George Burke. I know of no one who is more intelligent and talented. With the quality of his research, George has been a pioneer in caries research. Men like Dr. Burke give our profession scientific dignity with the information he has generated over the years. George is not selfish with the knowledge he has gained as he has probably taught the vast majority of the dentists practicing in this state. As a teacher, he always stood out as exceptional. Somehow he could mix Greek mythology with a discussion on demineralization of enamel and make the marriage work. Oh, what an educated man! My greatest pleasure has been working with George in this transition. His views are more youthful and fresh than his years would lead you to believe. We should all have the good fortune to sit and listen to George because the “person” in each of us would benefit as well as the “dentist” in each of us.

So I accept my new challenge with some hesitancy but with a greater feeling of excitement. I welcome the challenge to build on the fine reputation of the past and to make the Virginia Dental Journal the model for all other journals. I want this to be a journal that reflects the expertise and knowledge of the private practitioner as well as that of the faculty at our fine School of Dentistry. I will ask for your input and I will welcome your constructive criticism. With your help we will continue to produce a journal that we can all be proud of and one that will get even better as your new editor develops.

Michael O. McMunn, D.D.S.
AN OPEN LETTER TO THE BOARD OF DENTISTRY

Dear Board,

It was with great surprise and frustration that I read in the front page of the Richmond Times Dispatch that you are considering surprise visits to dentists in the state. I'm still not sure why you want to do this or what useful information a short visit could yield, but I assume that it is being done under the guise of protecting the public. Before embarking on such a scheme, please be sure you are protecting the public from the right "people".

The dentists of Virginia practice the highest quality of dentistry we are capable of and the public has been served well by us. We protect the public not out of fear of surprise visits but because it is the only way we know to practice. We have gained tremendous stature with the public as evidenced by recent Gallop Polls because of our concern and love for our patients. Sneaking into our offices like a parent sneaking into a child's room to see if he is hiding anything is not necessary. We have and will continue to serve our patients with the finest dentistry available in the world.

If you really want to protect the public, do not go after the time-tested and proven providers. Instead direct your attention to the faceless and unaccountable government agencies and corporations who also want to sneak into our practices. Please do not sit by as the Federal Trade Commission says that the Virginia regulation that guarantees an individual right to freedom of choice of provider is not good. They claim that it thwarts the development of close panels which use "less expensive and more quality-conscious providers". What is their basis for such a prejudiced statement? If you believe the public has right to choose the dentist of their choice, then protect them and fight for them. If you don't believe the blanket statement that "less expensive" providers are "more quality conscious", then make them prove the basis of such a premise. Make them prove that this system will provide our public with more quality care.

We have had a regulation on the books since 1938 stating a person cannot practice under a trade name. The premise for such a regulation is simple enough: An individual is accountable and easily identifiable to the public. In other words, if something goes wrong for a patient, the buck stops with the doctor. This protection has served the public of Virginia for 47 years. If you believe in the integrity of this regulation, then fight for it. If we have been incorrect in our assumption that this regulation protects the public, then let it be proven legally. To turn your back on the public and to divert your attention from the true challenge would be a mistake. At this very moment, the F.T.C. is challenging the state of Oregon, a state which permits practicing under a trade name. Oregon has a regulation that requires trade name advertisers to list in their ads the dentist that practices at a certain location. The F.T.C. says that even this is unfair. They feel that it is too expensive for a chain firm to list all of the dentistry.
tists in each ad, thus reducing the cost-effectiveness of healthcare chains. I doubt seriously that a major cost factor in advertising is listing doctor names at a location, but I do believe that the public will be adversely affected by the lack of accountability.

I could go on with the F.T.C.'s newest stance that dental advertisers should be permitted to make quality claims. Where this will head I do not know but it only serves to make it clear that if there is a threat to the public, it is not from the dentists in this state. We are the same people who live in the communities we serve, who go to the same churches and schools with our patients, and who have for decades provided the type of healthcare that we can all be proud of.

If these outside forces which are not in the business of delivering dental care have a better way, then make them prove it, just as we have had to do over the years. Don't be misdirected in your efforts to protect the public. The dentists of the state protect the public everyday we practice. We have proven to the public that we are responsible, and there is no doubt we will continue to practice in a responsible manner. There is no proof that closed panels, trade name practices, or "quality claim" advertising are more cost effective and provide a higher quality of dentistry. These are the areas you should be evaluating with a "fine toothed comb".

It makes no sense to do surprise office visits on the known entity of the healthcare equation. If you want to develop a responsible peer review system or a quality review mechanism, then do so in a responsible fashion. In fact, the ADA Journal of May, 1982, has an excellent symposium on the topic. But if you want to protect the public in this time of change and turmoil, then look to where the change is coming from. Then stand firm and strong for the tenets that have been the foundation of quality dentistry for years in Virginia.

Michael O. McMunn, D.D.S.
Over 18,000 dentists and guests registered for the 125th Annual Session of the American Dental Association meeting in Atlanta October 21-26. The ADA House of Delegates adopted the budget of 35 million dollars to which the House of Delegates added programs costing an additional $343,984. There is no dues increase in 1985, but a resolution was introduced to consider a dues raise for 1986.

The most important matter, and one which required a lengthy Reference Committee, was the ADA Marketing Program. As you know, we presented the T.V. spots and discussed this program in every Component Society in Virginia. Questionnaires filled out at these component meetings indicated that our members were in favor of the program and the $125 dues increase necessary to fund it. The Virginia Delegation voted the wishes of our members, as did most of the delegates in the Fifth Trustee District. The vote on the Marketing Program was 215 YES, 202 NO, and 1 ABSTAINING. This was 51.4% in Favor of the Program or approving the dues increase of $125; and 48.3% Against the dues increase. Because this was a vote on a dues increase and not approval of the program, it required a two-thirds vote for approval, so it failed. Why did it fail? We knew that at the August Board of Trustees Meeting that the Board voted 9 to 8 in favor, which was an evenly divided Board which represents all of the states. Many of the past presidents felt compelled to be very vocal against the program. The large delegations from New York, Pennsylvania, and Texas voted against it. California and the Fifth District were the largest delegations voting for it. The other states were divided, even within districts—so it failed. The big reason given for opposing the program was the fear of large losses in membership because of the cost, but there were just as many who felt that if we didn’t offer the marketing program that we would not attract the new graduate from dental school and would lose younger members. The House of Delegates did approve $385,000 to complete the contract with James Whitemore and enable the ADA to make available to constituent societies the materials for placing the T.V. spots by the states if they choose. The cost of the materials to each state would be determined by the number of states using them. A minimum of $20,000 was estimated. Then the states would have to pay for T.V. time and other expenses. The ADA is to advise each state of the cost of the marketing materials, and we will discuss this possibility in Virginia when the cost figures are available. It will be more expensive for each state to do this than it would have been on a national level.

In other action, the House referred to the 1985 House of Delegates proposal for Bylaws change that would make Texas the 15th Trustee District.
In addition, a study of all Trustee Districts will be made. It is very possible that Virginia and other states in the Fifth Trustee District could be restructured. There was a recommendation to make the Treasurer of the ADA an elected official, but this was defeated and he will continue to be appointed by the Board of Trustees. Consideration will be given to having the President-Elect assume the duties of the Treasurer. The House voted that the Executive Director of the American Dental Association is not required to be a dentist. This subject has been before the House on many other occasions and was always defeated. Other actions of the House of Delegates include:

- Adoption of the universal tooth numbering system (one thru thirty-two, beginning with maxillary right to left then dropping to lower left, ending on lower right) and the use of the word Primary teeth in place of deciduous teeth with the same numbering system, A thru T.
- Promotion of Direct Reimbursement Concept to educate prospective purchasers of dental payment programs.
- Promote use of the term “contract dentist” in lieu of “preferred provider” and “contract dentist organization” (CDO) in lieu of “preferred provider organization” (PPO) in all ADA communications and request the same terminology be used by HIAA and all other third and fourth parties.
- Establishment of an Annual Workshop on Chemical and Drug Dependency.
- Establishment of ethical guidelines for dental advertising.

I would like to commend the Virginia Delegation for their hard work and dedication in representing Virginia well at the 125th ADA House of Delegates. We were in full attendance at all Caucuses, Reference Committee Hearings, and House of Delegates Sessions. Bennett Malbon served as a member of a Reference Committee; Wallace Huff and Earle Strickland were reporting chairmen at the Fifth District Caucus and our Virginia Caucus heard informative reports on each issue. We attended the MCV Alumni Social Hour which Wilson Ames was in charge of and some of us got to the Women’s Dentist Association Social Hour at the invitation of Dr. Carole Pratt. Virginia has many friends in other states throughout the country and on the ADA Staff. In addition to our own meetings, Pat Watkins attended the meeting of the American Association of Dental Editors; an ADA Legislative Workshop; and a meeting of Constituent Society Officers. If you think these meetings are just fun and games, you talk to any member of our Delegation and you will find that he is fully informed on what goes on in the ADA House of Delegates. Many of you will recall visiting with Dr. and Mrs. Abraham Kobren at our State Meeting in Roanoke. Dr. Kobren was elected President-Elect of the American Dental Association. Candidate for President-Elect in 1985 will be Dr. Joe Devine from Wyoming. He is unopposed for this office. Three candidates for
Speaker of the House have announced their intentions to seek that office. Many of you know Dr. James Harrell from Elkin, North Carolina, formerly President of the Academy of General Dentistry. He is a candidate for the office of Second Vice-President of the ADA next year and at this time is unopposed. Dr. John L. Bomba of Havertown, Pennsylvania was installed as President of the ADA for 1984-85. It is a personal privilege to serve as Chairman of the Virginia Delegation to the ADA.

The American College of Dentists awarded Fellowship to Doctors Francis M. Foster, Stephen L. Bissell, R. Lewis Armistead, Francis F. Carr, Jr., and Raymond T. Bond at their October meeting in Atlanta, Georgia.
Mrs. Stephen L. Bissell was elected District 2 Trustee of the 17,000 member Auxiliary to the American Dental Association during its annual session in Atlanta, Georgia, October 20-24, 1984. She will serve on the 1984-85 AADA Board of Directors.

Mrs. Bissell is a past president of her local and state auxiliaries and served as a Virginia Delegate for four years at the annual session of the Auxiliary to the American Dental Association.

As Trustee, it will be her duty to serve as liaison between the Auxiliary and the states of her District.

Mrs. Bissell’s husband, Dr. Stephen L. Bissell, practices oral and maxillofacial surgery at 524 S. Sycamore Street, Petersburg, Virginia. They reside at 421 Nottingham Drive, Colonial Heights, Virginia.

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**CALENDAR OF EVENTS**

(Mark your calendar now for these future meetings)

**VIRGINIA DENTAL ASSOCIATION COMMITTEE MEETINGS**

May 31-June 2, 1985, Cavalier Oceanfront Hotel, Virginia Beach

**VIRGINIA DENTAL ASSOCIATION 116th ANNUAL MEETING**

September 19-22, 1985, Richmond Marriott, Richmond

**VDA LEADERSHIP CONFERENCE**

October 18-20, 1985, Williamsburg Hilton, Williamsburg

**AMERICAN DENTAL ASSOCIATION 126th ANNUAL MEETING**

November 2-7, 1985, San Francisco, California
Multiple primary carcinomas of the mouth are not uncommon findings. When they occur, treatment may be complex and a patient’s prognosis must be guarded. Discovering one malignancy is only an invitation to seek others. The general dentist as the guardian of the oral cavity is dealing with matters of life and death.

Two cases are presented here. The first case involves a lower lip with multiple malignant and premalignant changes; the second case reports a patient with multiple intraoral primary squamous cell carcinomas. In the first case, the disease was detected at an early stage and was located in an anatomic site associated with a favorable prognosis. By contrast, in the second case, the anatomic site and the more advanced disease process combined for an unfavorable prognosis.

The general dentist must be knowledgeable about the biological course and the treatment modalities of this disease. A program of practical dental care can best be instituted when the dentist knows the patient’s prognosis.

BACKGROUND

One of the first documented cases of multiple primary cancers was reported by Billroth (1). Warren and Gates (2) in a series of 1,269 patients reported 40 cases of multiple primary malignant tumors. Moertel (3) in a study of 1,909 patients found multiple primary lesions in 9 percent of his patients with oral carcinoma. In Wunder’s (4) study of 543 male patients with oral carcinoma, 11 percent had more than one primary site. Moertel et al. (5) found 6.3 percent of 75 cases to have multiple carcinomas of the lip. Pisanty (6) reported a 46 year-old male with primary carcinomas involving both the upper and lower lip. Meyer and Shklar (7) found 36 patients from a series of 758 malignancies to have multiple oral carcinomas. Slaughter (8), in a literature study of 1,868 cases of multiple malignant tumors of the oral cavity found eleven cases involving the lip. Quart (9) states that most of the reported multiple primary cancers of the mouth involved mainly two sites.
however, this unusual case report involved three independent intra-oral sites.

**CASE REPORT I**

A 72-year-old white male, with a known history of diabetes mellitus, presented with four discernable lesions of the vermilion surface and skin of the lower lip. The first lesion (Figure 1, A) was near the commissure, and measured 1.5 cm x 1.5 cm; this lesion was ulcerated, involved some skin, and was palpable mass. The second and third lesions (Figure 1, B and C) were immediately to the left of the midline, and measured 6 mm in circumference. The fourth lesion (Figure 1, D) was just to the right of the midline, and measured 3 mm in circumference.

The patient was first seen on July 15, 1983. He admitted to many years of heavy pipe and cigarette smoking. The four lesions of the lower lip stained positive with Toluidine Blue. The neck was negative on clinical examination.

The patient was operated on July 21, 1983, under intravenous and local anesthesia. A wedge, or shield resection (Figure 2) was performed on the left lower lip in an effort to remove the largest lesion (Figure 1, A), which was adjacent to the left commissure. This lesion was a well-differentiated squamous cell carcinoma (Figure 3). The pathology report revealed some residual carcinoma-in-situ on the medial margin and dysplastic epithelium on the inferior margin. The patient was worked up to rule out metastatic disease. Laboratory studies revealed that he had Paget’s Disease.

A second operation was performed on August 30, 1983 to remove the residual pathology and to excise the three distinct remaining lesions. The second operation was a modified vermilionectomy, but was also designed to include a few millimeters of lower lip skin (Figure 4). The pathology report on this operation revealed another primary carcinoma of the right lower lip (Figure 1, D), a non-specific ulcer immediately to the left of the mid-line (Figure 1, C), and a dysplastic lesion with solar keratosis (Figure 1, B). The entire mucous membrane of the vermilion lower lip exhibited hyperkeratosis, parabasilar hyperplasia, increased mitotic activity and increased nuclear cytoplasmic ratio (Figures 5 and 6). The specimen from this operation revealed that all surgical margins were free and clear of any dysplasia or carcinoma.

The patient did well post-operatively with minimal morbidity (Figure 7). He will be followed closely for possible recurrences of his lip, oral, pharyngeal and esophageal regions due to his propensity for primary cancers in these regions. Periodic blood counts and chest x-rays will be performed. As of the time of this report, the patient is completely free of the disease.

**CASE REPORT II**

A 68-year-old caucasian female was referred to our office with multiple lesions involving the floor of the
mouth and tongue on November 30, 1982 by her family dentist. She presented with a history of a recent cerebral vascular accident and bilateral carotid endarterectomies. She was a known hypertensive and was on antihypertensive medication. She admitted to smoking one package of cigarettes a day and reported minimal alcohol consumption.

Four independent significant lesions were identified at the following sites: oral tongue, right anterior ventral surface (Figure 8, A); oral tongue, right lateral border (middle third) (Figure 8, B); oral tongue, frenum (Figure 8, C); and, the left anterior floor of the mouth (Figure 8, D). The largest of these was the lesion found in the left anterior floor of the mouth adjacent to the mandibular ridge. This lesion measured 4.5 cm x 2.5 cm.

On December 2, 1982, all the sites were biopsied under local anesthesia. The lesions found on the frenum of the tongue (Figure 8, C) and on the right anterior ventral surface of the tongue (Figure 8, A) were diagnosed as superficial squamous cell carcinoma (Figure 9). The largest and most invasive lesion was that located on the left anterior floor of the mouth (Figure 8, A). This lesion was diagnosed as invasive moderately well-differentiated squamous cell carcinoma (Figure 10). The right lateral border of the tongue (Figure 8, B) was diagnosed as severe epithelial dysplasia.

A physical examination of the remainder of the oral cavity, oropharynx, hypopharynx, posterior tongue and larynx were all within normal limits. The patient was edentulous.

There was no palpable cervical or supraclavicular lymphadenopathy. Radiographic studies of the skull, chest and mandible were normal. Multiple tests were performed to rule out metastatic disease.

Due to the presence of multifocal squamous cell carcinoma and the patient's medical history, she was referred to radiation oncology on December 15, 1982. The radiation oncologist agreed that radiation was the best treatment modality under the circumstances. From January 3, 1983 to March 17, 1983, the patient received a total dose of 6,840 rads to the oral tongue, floor of the mouth and adjacent submandibular and submental node areas. The intraoral lesions completely resolved. The patient was seen by radiation oncology on June 14, 1983, with a lesion on the right ventral surface of the tongue characteristic of a recurrent carcinoma. Under local anesthesia, a resection of the lesion was performed. The histological examination revealed a moderately well-differentiated squamous cell carcinoma. Unfortunately, the deep surgical margins, and the superior and inferior margins, transected tumor cells.

The patient was admitted to the hospital on July 11, 1983. Following the usual workup to rule out metastatic disease, the patient was operated on July 13, 1983 under general endotracheal anesthesia. A right hemiglossectomy of the oral tongue was performed (Figure 11). The mucosa of the right floor of the mouth was also found to be involved by the ma
lignancy. Consequently, the mucosa and submucosa were resected in such a manner that the residual left oral tongue was sutured to the right buccal mucosa. Histological examination revealed this lesion to be a moderately-differentiated squamous cell carcinoma. Surgical pathology revealed all margins to be clear.

On September 2, 1983, three new neoplastic lesions on the left lateral border, the ventral surface and on the dorsum of the oral tongue were observed. On September 12, 1983, the lesions on the left tongue were enlarging and indurated, fixed lymph nodes were noted in the right submandibular region—highly suggestive of metastatic disease. The patient was referred to a general surgeon who specializes in surgical oncology.

The surgical oncologist explained to the patient that unless extremely radical surgery was performed, she had no chance for survival. He also explained that even with radical surgery, her prognosis was poor. The patient elected to have surgery. On October 13, 1983, a combined resection and a complete oral glossectomy, right mandibulectomy, right radical neck dissection with pectoralis major myocutaneous flap repair were performed. A tracheostomy was also performed. The patient tolerated this surgery but could not swallow postoperatively necessitating a gastrostomy. Later, the patient developed additional malignant disease on the residual tongue which metastasized to the neck. She died of a suspected cerebral vascular accident on June 6, 1984.

CONCLUSION

Two histologically similar lesions are reported. The lip lesions responded favorably to surgery whereas the intraoral lesions were completely refractive to all treatment modalities. Certainly the anatomic location of these lesions influenced the pathogenesis of these cancers. Due to lymphatic drainage and probably other factors not yet known (i.e., immune processes), squamous cell carcinomas of the floor of the mouth and tongue metastasize more readily and behave in a more "malignant fashion" than lesions of the lip possessing similar histologic changes. Consequently, multiple primary carcinomas of the tongue and floor of the mouth present a poor prognosis. Patients with this anatomic involvement should be evaluated by a tumor board since there is considerable decision making necessary regarding the treatment modalities to be used.

The general dentist will be called upon to maintain maximum oral health during radiation therapy. He or she should consult with the radiation oncologist during and following the course of radiation. It is incumbent upon the general dentist to be knowledgeable of a patient's long-term prognosis in order to be pragmatic in the management of dental needs.

The general dentist should always carefully scrutinize the oral tissues in order to detect any early changes which might suggest or represent significant neoplastic disease. Finding a single neoplastic lesion should only be an indication to seek other oral and
maxillofacial neoplasia. The dentist can play a preventive role by discouraging patients from excessive exposure to the sun and also alcohol and tobacco abuse—all known to be contributing factors to malignant disease.

Addendum:

The authors wish to acknowledge the assistance provided by Dr. Eva Mikail, Department of Laboratory Medicine, Alexandria Hospital, Alexandria, Virginia, for her efforts and services as a consultant.

References


**FIGURE LEGENDS**

Figure 1. Patient's lower lip revealing:

A. Invasive squamous cell carcinoma (well-differentiated)
B. Solar keratosis with dysplastic changes
C. Nonspecific ulcer
D. Squamous cell carcinoma
Figure 2. Shield resection of the left lower lip near the commissure.

Figure 3. Histology of the shield resection, left lower lip near the commissure. (10 X)

Figure 4. Modified vermilionectomy.
Figures 5 and 6. Histology of the lower lip, vermilion surface (16 X and 40 X, respectively).
Figure 7. One month postoperatively.

Figure 8. Patient's tongue and floor of the mouth revealing multiple primary carcinomas.
Figure 9. Superficial squamous cell carcinoma of the frenum and right anterior ventral surfaces of the tongue (X 100).

Figure 10. Area of invasive moderately well-differentiated squamous cell carcinoma of the left anterior floor of the mouth (X 100).
Figure 11. Right hemiglossectomy of the oral tongue immediately postoperatively.
Information and Recommendation for Using the
Periodontal Microbiology Service
August 1984*

*Sent by Steven D. Budnick, DDS, in response to our columnist, Dr. Francis Filipowicz, author of “Clinical Controversies”. Dr. Budnick’s comment follows:

“I read with interest the article by Dr. Francis Filipowicz in the clinical controversy section of the June edition of the Virginia Dental Journal. We have developed over the past two years in conjunction with the Periodontal Research Center at Emory, a commercial microbiological laboratory specifically designed for the culture and sensitivity testing of periodontal microorganisms. As identification of all organisms in a plaque sample is prohibitive, we have chosen to identify the most common specific infectious organisms that have been described in the literature. Sensitivity testing is done on the total plaque sample, which reflects the antibiotic which best inhibits all of the anaerobic organisms. In the clinical management of most cases the total plaque inhibition test is sufficient.

“As stated by Dr. Filipowicz, this treatment is most effective in conjunction with plaque removal from the roots of the teeth. Specific antibiotic regimens are still being developed, but in most cases concurrent antibiotic coverage, and scaling and root planing over a one week period, appears most effective.”

Dr. Budnick is currently Associate Professor, Department of Oral Pathology, Emory University School of Dentistry, 146 Clifton Road, N.E., Atlanta, Georgia 30322. He is a graduate of MCV-VCU School of Dentistry, 1972.

What tests are done and why?

1. Identification of specific pathogens: Normal routine hospital bacteriology protocols will not detect periodontal pathogens. For this reason, periodontal research centers around the country have developed cultural techniques which are selective for specific organisms thought to be important in the pathogenesis of periodontal disease. These special culturing techniques are now available through this service for the identification of some, but not all, organisms. The bacteria we have chosen to identify are the most common specific infectious organisms that have been described in the literature. It should be remembered that the costs for identifying all of the microorganisms in a plaque sample are in excess of $1200 for supplies alone. This is therefore not a practical approach except under research conditions. The organisms which we can currently identify are shown below. As research progresses, new tests will be added to our current protocol.

Eikenella corrodens
Actinobacillus actinomycetemcomitans
Bacterioides species including melaninogenicus, intermedius and ginvivalis
Wollinella recta
Haemophilus species including segnus, aphrophilus, and paraphrophilus
It has been our experience that most, but not all, severe breakdown periodontal patients have elevated levels of one or more of these organisms. As a general guideline, one can consider the identification test positive, if the pathogenic bacteria is present at a level of 10% or more.

2. Antimicrobial sensitivity of total plaque: The judicious use of antibiotics as a valuable therapeutic adjuvant to classical treatment techniques is well established in the literature. The recommendations for patient selection are outlined below, but it is important to understand what this test represents. The sensitivity test is performed on the total plaque sample, as described by Walker, et al (1983). This test is not done on the isolated specific pathogens, but rather reflects the antibiotic which best inhibits all of the anaerobic organisms in the plaque sample. Walker has demonstrated that his technique is generally good for predicting which antibiotic to use for the best clinical result, but it is clearly not foolproof. An important exception, as an example, is when Actinobacillus actinomycetemcomitans is detected. Tetracycline is the drug of choice for these infections, irrespective of what the total plaque antibiotic sensitivity is. The sensitivity of each organism is not done routinely for practical reasons. This test would usually be redundant information and would not be cost-effective if performed routinely. In addition, the laboratory turn-around for culture and sensitivity of each organism is identified as described below. For the clinical management of most cases the total plaque inhibition test is sufficient.

On whom should the tests be performed?

We recommend that these tests not be used routinely on all periodontal patients. There is clear evidence, however, that this information can be extremely useful for designing and monitoring treatment for selected patients. Specifically, we recommend that the greatest benefit can be gained when the tests are performed on the following categories:

1. Refractory patients—These are patients that have been treated using traditional periodontal therapy and, despite our best efforts, continue to have periodontal destruction.

2. Young patients—Patients who are suspected to have juvenile periodontitis or rapidly progressive periodontitis.

3. Rapidly advancing periodontitis—These patients have severe periodontitis with aggressive destruction. Usually, the severity of the disease is far greater than would be expected based upon the amount of local factors present.

4. Conservative treatment (non-surgical) patients—Although the literature regarding the use of antibiotics on this population is equivocal and not definitive, it appears to have clear benefit for certain patients. Unfortunately, case selection criteria have not been delineated at this time.
5. Recurrent abcesses—Patients with recurrent periodontal abcesses can be better managed if the pathogen is identified. Treatment can then be tailored to eliminate the organism and prevent or reduce abcess recurrence.

6. Medically compromised patients—This group would include patients who are not immunocompetent or cannot be managed by conventional therapeutic modalities.

*When should samples be taken, and what do you do with the information?*

To effectively use this information to design adjunctive antibiotic therapy, samples should be taken before any treatment, either mechanical or antimicrobial. This provides the best sample to identify the specific pathogen. If the patient has been treated with antibiotics or scaling and root planing, the flora will generally require three months to fully rebound to a stable level. Taking a plaque sample at times of bacterial suppression may lead to a negative culture, and the pathogen may not be identified. Sampling is ideally performed at a periodontal site that is undergoing active destruction.

Once the organism is identified, treatment can be provided with the objective of pathogen elimination. After treatment, the efficacy of therapy can be determined by repeating the microbial analysis to see if the pathogen has been eliminated. It is customary to perform a second culture after treatment, and both microbial tests are fully covered by both medical and dental insurance carriers.

If antibiotics are used with conventional therapy and there is no clinical improvement, it is likely that the pathogen is not sensitive to the same antibiotic that best inhibits the total plaque. In that instance an antibiotic sensitivity on the isolated pathogen can be performed by the service, if desired. Other chemotherapeutic agents, such as local application of povidone iodine etc. may also be useful.

It is our experience that patients who are totally refractory to all therapeutic attempts generally have an underlying immunological defect. The most common are defects in polymorphonuclear leukocyte function. If you suspect that your patient has this problem, we can perform certain leukocyte function tests within the research center.

**DIRECTIONS**

**PLAQUE SAMPLING FOR PERIODONTAL PATHOGEN ANALYSIS**

Please use the following steps to take an anaerobic plaque sample for analysis:

1. Select a periodontal pocket that is representative of the patient’s periodontal disease. A good site to choose is one that is very deep, bleeds on prob.
ing, appears red, has pus, or has severe bone loss. More than one site can be sampled and put into the same tube, if necessary.

(2) **Isolate the pocket to be sampled.** Use cotton rolls to isolate the quadrant and dry the teeth with an air syringe. Use gauze to gently wipe off all visible supragingival plaque. Remember, the organisms we want to analyze are in the pocket below the gumline.

(3) **Collect the plaque sample** by placing a sterile paper point into the periodontal pocket. **Use sterile cotton pliers to handle paper points.** Do not touch paper point with fingers or to patient’s cheek or tongue. Use sterile pliers to place paper point into pocket as far as it will go. Leave paper point in place 0.5-2 minutes until it appears dampened with crevicular fluid. Remove paper point from pocket using sterile cotton pliers, avoiding contamination by tissue or saliva contact.

(4) **Place paper point in culture tube:** The culture tube is anaerobic but may be opened for short periods of time. After sample is removed from mouth, quickly open tube and drop paper point directly into liquid. Quickly replace top. Be sure paper point is immersed into liquid. Secure top of tube with tape.

(5) **Label tube with patient’s name and complete forms as indicated.**
In 1983, the Virginia Supreme Court, in the case of Shilling vs. Bedford County Memorial Hospital, Inc., held that a husband was not legally obligated to provide (i.e. pay for) “necessaries”, (food, lodging, medical and dental care, etc.) furnished his wife by a third party, because of the fact that the Common Law Doctrine had imposed a duty upon the husband to revise the necessaries, but not a reciprocal duty on the wife to provide necessaries for the husband. The Supreme Court of Virginia held that the Constitution of Virginia, Article I, Section 11, made unconstitutional gender based laws, be they statutory laws or common law (unwritten law developed over the ages).

The General Assembly, during it’s 1984 session, changed the law and the new law took effect on July 31, 1984. Virginia Code Section 55-37 reads as follows:

“Except as otherwise provided in this section, a spouse shall not be responsible for the other spouse’s contract or tort liability to a third person, whether such liability arose before or after the marriage. The Doctrine of Necessaries, as it existed at common law, shall apply equally to both spouses, except where they are permanently living separate and apart. No lien arising out of a judgment under this section shall attach to the judgment debtors’ principal residence held by them as tenant by the entireties.”

What the statute in effect says now is that a husband is liable for necessaries, i.e. food, clothing, lodging, medical care, (physicians, dentists, psychiatrists, etc.) furnished to the wife, and the wife has the same liability for necessaries furnished to the husband. This is another move in the direction of equal rights. That is, with equal rights goes equal obligations and responsibilities, and whereas women were not in the past liable for necessaries furnished to their husbands the law says they are now so liable.

As happens many times, when the law is tinkered with, it may take while for some of the wrinkles to be ironed out of the new statute.

One problem which we see facing us is that even though both the husband and the wife will be liable for necessaries furnished to the other, if you should get a judgment against one for necessaries furnished to the other the law says that the lien of a judgment shall not attach to the judgment debtors’ principal residence, which in effect means that if you furnish care to the wife and she does not pay, and
you sue the husband and obtain a judgment against him, you cannot go against their house if they fail to pay you.

Since the residence of individuals generally is the most important asset owned by various individuals, it is most important for you to be able to, in the event of having to sue for monies due you, to go after the real property jointly owned by the parties. Again, the march towards equal rights for all individuals has provided some interesting results and we see that today, women are more and more being required to assume some of the obligations which only men in the past have.

It is now clearly the policy of the Commonwealth of Virginia that in a marital relationship, both the husband and wife shall be responsible for necessaries furnished the other while they are still living together.

VIRGINIA DENTAL ASSISTANTS ASSOCIATION

The Past Presidents’ Council of the Virginia Dental Assistants Association has established a Speakers Bureau throughout the State.

When a speaker is needed regarding dental assistant activity, education, etc., please contact Evelyn W. Kane, Chairman, 11 N. Washington Street, Winchester, Virginia 22601, telephone 703/662-6454.
T.D.A.'s Leadership in State activities was much in evidence at the Leadership Conference in Williamsburg this past November. Three of our members were prominent on the program—immediate Past State President Manny Michaels, Board of Dentistry Secretary Sonny LeFcoe and State Legislative Committee Chairman Charlie Smith.

Our Fall Meeting on November 15, 1984 drew a huge crowd due to the reputation of the speaker Dr. Daniel Laskin, head of the Oral Surgery Department at MCV. His excellent talk kept the crowd interested all day.

Congratulations to Jack Kanter and Ben Traylor on their induction into the International College of Dentists at the ADA Meeting in Atlanta.

Hugo Owens is one of three recently elected Director-At-Large the Hampton Rhodes Chamber Commerce.

Charlie Fletcher was elected Chairman of the Board of Directors of Virginia Beach Federal Savings Loan Association. Anybody need a loan?

LAST REMINDER FOR THE ANNUAL SOUTHEASTERN VIRGINIA DENTAL SYMPOSIUM THE WILLIAMSBURG CONFERENCE CENTER ON FEBRUARY 28 AND MARCH 1 & 2, 1985. Directors Burton Press and Bruce Larr will present a program you will want to miss. Check your mail for further information.
We had our annual legislation meeting December 4th, at the Fort Monroe Officer's Club in Hampton, Virginia. We were proud to have the following legislators present at our dinner: Representative Mrs. Shirley F. Cooper of Yorktown. Delegates: Alan A. Diamondstein, W. Henry Maxwell and Ted Morrison, all of Newport News. Also, Wally Stieffen and Richard M. Bagley who are Delegates of Hampton. Lastly, Senator Robert C. Scott of Newport News.

The Peninsula Dental Society is grateful to all of our Delegates and Senators in the Virginia General Assembly. We respectfully appreciate their willingness to listen to the position of Dentists on health issues.

Mrs. Pat Watkins our Executive Director of V. D. A. was present, and thanked our representation for their fine work.

Our V. D. A. President, Dr. Harry Hodges and his wife Ellen, came to our gathering. Dr. Hodges recognized two past Presidents from Component 2; Dr. Elmer Fisher and Dr. William Trayham.

We had an enjoyable evening of dining and dancing. Many thanks to our Component President, Dr. Buster Woodruff for all his hard work that made the evening informative and pleasant.

I'm hoping that your New Year is pleasant, prosperous, and healthy.
The New Year is upon us and if there is one thing for sure, it will bring a change. The Richmond Dental Society is preparing its membership for that change through some excellent programs. In February we are having an all-day program with Dr. Paul Jacobi entitled "Current Concepts in Practice Management". Our monthly meeting in February will bring Mr. Hal Christensen from our ADA Washington, D.C. Office to give us a "Report from Washington". Since computers are becoming more popular, we are having one of our Norfolk colleagues, Dr. Al Konikoff, come to Richmond in March to discuss "Computers and the Dental Office—One Man's Experience".

The Richmond Dental Society would encourage everyone to support the MCV/VCU School of Dentistry Homecoming April 20, 1985. It is being held at the new and beautiful Marriott Hotel in Richmond.

We wish you all a belated Happy New Year.
Some one hundred dentists and related personnel attended the fall meeting which happened on November 9th at the Lynchburg Hilton. Dr. Mike O'Keefe presided over the one day course that featured Dr. W. Charles Blair, Private Practitioner/Tax Accountant from Kings Mountain, N.C., who discussed all phases of taxes. An interesting and educational lecture enjoyed by all.

The business sessions proceeded as usual. That is to say: reports, discussions, etc., with $1,000.00 going to the MCV Endowment Fund. New members introduced to the Society: Dr. Sherry Coker of Lynchburg, Dr. Tony Ramsey of Bassett, Dr. Don Yeatts of South Boston, and Dr. Michael Lewis of Danville.

Probably the most important announcement made concerned the spring meeting. This year it will be a joint venture with Component VI, and will be at the new Roanoke Marriott on May 10th. Dr. J. Seibert, chairman of the Department of Periodontology at the University of Pennsylvania will be the clinician. This course has all the ingredients to make it one of the best ever. Anyone missing this should be investigated. And that's it.
Our component has had a very active and informative time since we last reported. First, Dr. Manny Marks spoke in October on “Adult Orthodontics as it Relates to Restorative Dentistry and Periodontics.” The well-attended program covered, among other things, the effects of orthodontics on periodontics and adult tooth movement in the adult patient. The team approach was stressed as being the key element in the treatment of the adult orthodontic-periodontic patient.

Secondly, in November, we had Dr. Harold Loe, the Director of the National Institute of Dental Research, who spoke on the “Effect of Dental Research on Private Practice.” This meeting was heavily attended and featured an overview of where the future of the various modalities of dentistry are headed. Dr. Loe is not “doom and gloomer” when it comes to the future of dentistry and in fact, is very optimistic when looking at the future of the traditional practice. He feels that the advances (including an anti-caries vaccine due out soon!) can only help but increase patient awareness and acceptability of dentistry.

The Northern Virginia Dental Society seems to be growing by leaps and bounds. It seems that we are becoming a “big business” on our own. Gone are the days when everyone knew everyone.
I asked Doctor Chris Wadsworth, Director of Extramural Programs at MCV, to give our readers a description of the extramural programs available to our students. The following is his response to that request:

In order to give dental students a broader range of experiences treating "special patients," the MCV School of Dentistry conducts an extramural program during the senior year. Students choose from a variety of sites, the majority of which are in Virginia, but range from Miami, Florida to Anchorage, Alaska. Students choose from veterans administration hospitals, public health clinics, and hospital dental clinic programs such as Roanoke Memorial Hospital and the University of Virginia Hospital in Charlottesville. Some students choose to work with migrant farm workers and their families on the Eastern Shore of Virginia.

The students are required to complete at least two weeks, but many choose to do more. The program begins when the students are officially seniors, i.e., in June at the end of the junior year. Many students utilize the summer to spend six or more weeks in the program. Four students spend six weeks at Mt. Sinai Hospital in Cleveland, being treated essentially as general practice residents. For the past two summers, a student has worked on Eskimos in Alaska. The student last summer completed two months and then accepted the invitation to stay for a third.

The real objective of the program, besides giving the students extra clinical practice, is to provide the opportunity to treat a type of patient not likely to be seen in the school clinics. Physically, mentally, and emotionally compromised patients, as well as those with severe dental disease are treated in the various programs.

Another program, unrelated to the extramural rotation course, allows students to work as dental hygienists in private dental offices for the months of June and July between the junior and senior years. This program is co-sponsored by the Virginia Dental Association, the Board of Dentistry, and the School of Dentistry. Students receive the valuable experience of seeing the operation of a private office firsthand. Watch for the announcement in your component newsletter. This activity is only legal if application is made through the School of Dentistry and granted by the Board of Dentistry, and is only for the summer.
Ceremonies to dedicate the naming of the University Commons Building, the student center at the University of Richmond, were held on Dec. 13 at 3:30 p.m. The building was named in honor of UR Trustee Emeritus W. Tyler Haynes.

In October, the Board of Trustees had approved the changing of the name of the building to the Tyler Haynes Commons in honor of the 1922 Richmond College alumnus. Dr. Haynes has been a UR Trustee since 1963, becoming a Trustee Emeritus in 1972. The University awarded him its distinguished service award and an honorary doctor of science degree in 1972.

Dr. Haynes is a 1926 graduate of the Medical College of Virginia School of Dentistry. He served on the faculty there for 41 years until his retirement in 1968. From 1943 until 1968 he was professor and head of the Department of Orthodontics at MCV. Upon his retirement he was named emeritus clinical professor of orthodontics. He was a trustee and past president of the Southern Society of Orthodontics (1961-63).

Dr. E. Bruce Heilman pointed out the “generous gifts of time, energy and resources” that Dr. Haynes and his wife, Alice, had made to the University over the years. Dr. Heilman said naming the building after Dr. Haynes was most appropriate as he has been known as a “close friend to legions of UR students.” The former chairman of the Trustee Student fairs Committee, Dr. Haynes known during his service on that committee as a strong advocate of student causes.

Dr. Haynes also has been active over the years in his social fraternity, Phi Gamma Delta. He hosts an annual gathering of student and alumni members of UR chapter Rho Chi at his home. He has also served as regional adviser to Virginia and North Carolina chapters and has been active nationally as well.

Dr. William H. Leftwich, UR president of student affairs and a fraternity brother of Dr. Haynes, said he had asked Dr. Haynes to serve on numerous committees dealing with student issues. “His genuine liking and regard for youth is incredible,” Leftwich said. Naming the Commons after him is “just absolutely right.” he said.

At the ceremony, Dr. Haynes’ niece, Noel Haynes Daniel, unveiled the plaque near the Dry Dock area of the Commons Building. Some 500 people were expected to attend the ceremonies and reception afterward.

Built at a cost of nearly $5 million, the Commons Building, dedicated in 1977, spans University Lake. It houses the student activities center, lounge dining facilities, student organizations and staff offices, the book store, Jenkins Trustees Suite and President Dining Room and a large multipurpose room.
Did you ever wonder what the brand new dental graduate does? And how well does he like his selection? Almost 1200 dentists, all members of the class of 1983, responded to a recent Dental Products Report survey asking them to tell what career paths they had selected upon graduation and whether they were satisfied with their choice six months later. The survey was conducted by the publisher, Thomas D. Hoyt, DDS and printed in their May 1984 issue. A resounding 88.9% of these recent graduates report that they are currently satisfied, and when their responses are correlated to the career choice, the results look like this:

<table>
<thead>
<tr>
<th>Career Selection</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Became part-owner of established practice</td>
<td>100.0%</td>
</tr>
<tr>
<td>Returned to dental school for residency/specialty training</td>
<td>98.4%</td>
</tr>
<tr>
<td>Entered military service</td>
<td>97.7%</td>
</tr>
<tr>
<td>Purchased existing solo practice</td>
<td>97.5%</td>
</tr>
<tr>
<td>Returned to dental school combined with hospital residency</td>
<td>96.4%</td>
</tr>
<tr>
<td>Started own solo practice</td>
<td>96.0%</td>
</tr>
<tr>
<td>Became part-owner of a new practice</td>
<td>96.0%</td>
</tr>
<tr>
<td>Entered public health service</td>
<td>94.1%</td>
</tr>
<tr>
<td>Became full-time associate in 1-2 doctor practice</td>
<td>89.7%</td>
</tr>
<tr>
<td>Entered hospital residency</td>
<td>88.7%</td>
</tr>
<tr>
<td>Work for 2 or more practices</td>
<td>85.8%</td>
</tr>
<tr>
<td>Became part-time associate in 1-2 doctor practice</td>
<td>81.7%</td>
</tr>
<tr>
<td>Became full-time employee at retail center</td>
<td>74.1%</td>
</tr>
<tr>
<td>Became full-time associate in group practice of 3 or more doctors</td>
<td>73.6%</td>
</tr>
<tr>
<td>Other</td>
<td>68.0%</td>
</tr>
<tr>
<td>Have not gone into practice as yet</td>
<td>00.0%</td>
</tr>
</tbody>
</table>

Since the large sample represents a significant number of recent graduates we can be assured that the survey results are reasonably reliable. The profession, always interested in the attitudes of its members, is pleased to note this high degree of satisfaction in career selection among new graduates.
How does the human body adapt to conditions of weightlessness, and are the changes reversible?

Television and newspapers give glimpses of astronauts in outer space enjoying the acrobatics made possible by weightlessness, or looking at unusual vistas from the spacecraft windows. But adaptation to life in space is not as easy or as simple as it might seem—both the almost complete lack of gravity, which is called microgravity, and the unexpected visual perspectives have their disadvantages. This paper discusses what NASA has learned about the physical changes that occur in the average astronaut, both when he is in space and after he has returned to the earth.

Weightlessness first occurs when the spacecraft stops accelerating and begins to orbit the earth. In addition to the obvious results, weightlessness means that an astronaut becomes approximately 3% taller because his spinal disks are no longer compressed by gravity and the lower spine is straighter (Thornton et al. 1977). A more important medical change is that the neural output of the otolith organ near the ear is affected.

The otolith normally measures both acute acceleration—such as that produced when an individual moves forward, backward, up, down, or laterally—and the constant acceleration of gravity, in both cases independently of other internal stimuli and vision. In weightlessness, the otolith no longer constantly stimulated gravity and therefore estimates the direction and force of acute acceleration without combining it with the force of gravity. As it adapts to microgravity, the otolith sends uncharacteristic signals to the brain that do not agree with the astronaut’s conscious interpretation of what is happening. This unusual neural input may lead to space adaptation syndrome, commonly known as space sickness. About 75% of American astronauts have had some symptoms of this syndrome. Surprisingly, the astronauts who are unaffected may be relatively more susceptible on earth than their colleagues to experiments designed to produce similar symptoms and to motion sickness (Homich 1983).

Space adaptation syndrome starts with an awareness that things are not right. Bending forward or backward...
produces sensations akin to dizziness. The sensations are unpleasant, but the skin stays dry and warm; it does not become cold and clammy as in seasickness or laboratory-induced motion sickness. The astronaut suffering from space sickness finds that he lacks initiative and drive. Paying attention to small details is increasingly difficult. Loud noises seem noxious. Looking out the window and seeing the earth in an unexpected orientation may cause instant nausea. The astronaut feels sleepy, and sleep seems a logical way to get rid of the symptoms. Individuals not as well trained to work together as NASA crew members are would obviously become irritable.

For the unfortunate 25% of the astronauts who develop a full-blown case of space sickness, the next step is vomiting, which occurs suddenly and often without warning. At first the vomitus can be swallowed as it comes up, but later it cannot be stopped, indicating that its volume gradually increases until it is gotten rid of. Most astronauts claim that after vomiting they feel better, at least momentarily. Typically the vomitus contains no bile; it is clear, white, and acidic rather than alkaline. This suggests that the pylorus—the outlet of the stomach—may actually be closed or in spasm. Physician astronauts report that the gastrointestinal tract is quiet and does not produce the sounds of contraction characteristically heard. A brave individual will try to eat in spite of space sickness, but a few minutes afterward he will simply regurgitate the food he has consumed.

NASA has tried several treatments for space adaptation syndrome: the most successful so far has been a mixture of scopolamine and amphetamine, but this is not a total cure since it does not prevent the feeling of tiredness and vomiting may still occur. Metoclopramide, a dopamine antagonist, may help prevent vomiting, but it does not treat the sensations produced when an afflicted astronaut moves his head, or the basic feeling of sleepiness and unease. Fortunately, for reasons that are not yet understood, space sickness gradually ceases during the second or third day of a flight. By the third day the only unpleasant symptom remaining is a lightheaded or dizzy feeling when the astronaut bends his neck.

However, the abnormality produced in the otolith persists after the astronaut returns to earth. His ability to perceive that he is being moved laterally when his eyes are closed is lower than normal immediately after landing, and he no longer senses rotation when it is combined with lateral movement. This indicates that the otolith is still not perceiving or interpreting the force of gravity correctly. It takes the crew members one to two days to readapt completely to gravity, and even as long as four days after a flight their otoliths may respond unusually: an astronaut standing in front of a mirror may feel that he is not standing straight; after he moves his body to try to align himself in relation to the vertical, he will look in the mirror and see that he is now tilted.

Like the otolith, the astronaut's cardiovascular system must adapt to unusual conditions in weightlessness. The
skin's elasticity pushes about two liters of extracellular fluid that gravity normally retains in the lower extremities into the central circulatory system, the abdomen, and the head. This transfer of fluid occurs very soon after the spacecraft begins to orbit the earth. Ordinarily if this amount of fluid arrived in the chest it would be excreted rapidly by the kidneys, but the astronaut's lack of appetite and thirst as he adapts to the new environment counteracts any immediate, noticeable increase in his production of urine although the fluid is excreted gradually. Failure to make up for the fluid deficit causes a loss of 2-3 kg in body weight. Since this is a fluid loss rather than a tissue loss, most of the weight is rapidly gained back when the astronaut returns to earth.

Other medical problems of space flight take longer to appear. Most missions are now too short for allergic respiratory symptoms and skin and gastrointestinal infections to develop during the flight, since the astronauts are partially quarantined for up to a week before each flight, but for very long missions this safeguard may not be enough. Investigations in Antarctica indicate that even after a month or more of isolation, a human population can suddenly develop respiratory illnesses, presumably transmitted by viruses that are sporadically released by asymptomatic and unsuspecting carriers (Muchmore et al. 1981). The atmosphere of a spacecraft becomes increasingly contaminated with various debris, mold, and bacteria shed by the astronauts and by the craft itself, and in long flights precautionary treatments may be necessary.

Exposure to higher levels of radiation than on earth is a constant feature of even short space flights. In long missions, astronauts will be exposed more radiation than present occupational safety requirements in the United States permit. NASA rules currently allow a greater quartet exposure for astronauts than for radiation workers on the assumption that astronauts make only a few trips during their lives (Nachtway and Richmond 1983). Once the station is built, the acceptable amount exposure will be decreased since repeated missions will become the rule. Because the daily radiation flux is affected by the orbital altitude and inclination, a careful choice of orbit together with shielding can be used to keep this hazard within acceptable limits. Unlike on earth, radiation in space involves exposure to particles of high atomic weight. The quality factor, a measure of the particles' relative biological effect, is not yet known.

Another difficult health problem for astronauts spending long periods in microgravity is the atrophying of bones and muscles, particularly related to posture. An astronaut loses nitrogen and calcium from the bones that hold him upright and the muscles that keep those bones in place. After the first ten days of a mission, his urine has increased by 100-150 mg over the usual 160 mg, although he usually consumes less calcium in orbit than on earth (Leach and Rambow...
This rate of urinary excretion is quite high, but to date no American astronaut has had a kidney stone during or following a space flight.

Fecal calcium excretion actually decreases in the early part of a mission because the average astronauts eats less while suffering from space sickness, but it increases rapidly after a few days. The body may interpret the rising rate of urinary excretion and the accompanying slight increase of calcium in the blood as an indication that it should absorb less calcium.

One of the ways to keep bones and muscles from atrophying, of course, is to exercise. The problem is that in space an astronaut cannot exert the pressure of his full body weight on his feet unless he wears elastic cords round his shoulders and hips to press him down on a treadmill or exercise device; the pressure on the shoulders can be so great that it hurts, and in any case the astronaut is unable to move with agility. As a result, exercise microgravity can be performed only with so little pressure on the legs and feet that four to six hours of it would be required each day to prevent bone atrophy. This is obviously not practical.

The average loss of calcium from the bones is about 0.5% per month, and in certain bones it is 5%. An adult human is able to regain only about two-thirds of the calcium lost through illness. For each 90 days spent in space, then, an astronaut can expect a permanent loss of 0.5% of his total body skeleton, and about 5% in certain critical areas (Schneider and McDonald 1984).

Muscle atrophy is less likely to be permanent, although it occurs continuously throughout the flight, but the muscles do not return to normal until long after the mission. After a month in space, an astronaut's legs have lost about 20% of their strength; by the same point in a mission his arms have lost only about 10%, because he uses them to move about in space as if he were swimming. Anabolic steroids might help prevent this atrophy, and in long missions these drugs may be combined with regular exercise and perhaps a special diet.

During a flight, an astronaut loses 10-20% of the volume of his circulating blood, with a reduction in both plasma volume and red-cell mass. This is roughly equivalent to two donations of blood to the blood bank. Associated with the decrease in circulating red blood cells is a decline in the number of reticulocytes, the young blood cells just released from the bone marrow. This suggests that the kidneys' production of erythropoietin—a hormonal substance that stimulates the formation of red blood cells—also decreases. Further, red blood cells may disintegrate more rapidly than usual during the first few days of a flight, or they may be removed from the circulation early. The number of cells does not return to normal until seven or more days after the mission ends (Johnson 1983).

In space, the diastolic volume of the left ventricle of the heart first increases and then decreases, while the systolic volume stays about the same. Cardiac output is maintained at the usual levels, which means that the
basal and stressed heart rate increase to compensate for the lower diastolic volume. In response to exercise, a normal heart increases its ejection fraction—the percentage of the cardiac diastolic blood volume that is expelled when the heart contracts—whenever it increases its rate, but an astronaut's heart does not react in this way until a week or more after a flight. The heart muscle evidently stiffens in microgravity. However, by the time an astronaut has his next annual physical examination, three to twelve months after a mission, his heart seems to have returned to normal.

When an astronaut first returns to earth and experiences the effects of gravity again, he feels light-headed and may faint. To make the transition from weightlessness less difficult, crew members take eight salt tablets in about a liter of water just before re-entering the earth's atmosphere. This saline solution increases the volume of plasma and decreases the cardiovascular stress of standing in gravity. As a result, the astronauts' heart rate and arterial blood pressure are closer to the values recorded before the flight.

The long-term effects of multiple short space flights and the short- and long-term consequences of lengthy periods of time spent away from the earth are still little understood. Although NASA's missions may now seem relatively uneventful, astronauts remain pioneers, providing medical investigators with the information humans will need someday to live safely in space or on another planet with different gravity. Further research the effects of microgravity may produce information that will help treat disease on earth.

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FEBRUARY 1985
PRESIDENT'S ADDRESS

Emanuel W. Michaels, D.D.S.

Mr. Speaker, Members of the House of Delegates, our visiting dignitaries, and my family and friends, there is an old Chinese proverb that says, "May you live in interesting times". I feel that this Confucian adage has been a hallmark of my year as your President. Not the best of times, nor the worst of times, but definitely interesting times. This has been a most momentous year in my life. The honor of serving as President and directing the activities of this great Association, is truly overwhelming. For you, the members, are the greatest, the caring, the compassionate and the competent people of this earth. You serve your patients, and your communities and you make the world a better place to live in.

We are an organization of dentists because we recognize the fact that we need to have things done that we cannot do for ourselves. Each of us with our own efforts and our own voice can only move some of the pebbles on the beach, together, we can move mountains—and for the future of dentistry, and the dental health of America, there are mountains to be moved.

A primary goal this year, and one which must be continued, is membership recruitment. Through the efforts of our Central Office and Component Societies, we identified nonmembers and sought them out. To date, we have obtained 104 new members—90 percent of the dentists practicing in Virginia are members of VDA. We need the other ten percent. The activities of this Association, local, state and national, benefit every dentist and dental student, whether in private practice, the military, or in education. The problem is the age old one of taking for granted the things that have, and not asking from where they come. We must make a concerted drive for membership in dental school where these teachers, as role models. We must also stress for student membership, encouraging those who enter MCV School of Dentistry to join the American Student Dental Association. This year, I sent a letter to all MCV Dental Students encouraging and inviting their membership. Upon graduation and practice life, they will find the benefits more than pay for the small amount of dues. It is important that we support and encourage the student organization to the highest degree that we can. The future depends on this. The young people have before them the practice life of 35 to 40 years. They have the most to gain from organized dentistry—they have the most to lose from the loss of organized dentistry—we must see that they know this.

To encourage dental student participation in organized dentistry, I recommend that members of the American Student Dental Association from MCV School of Dentistry be placed on certain Standing Committees of VDA as a nonvoting member at a future date.
discretion of the President. This will enable them to report on committee activities to the student dental association.

A great deal of our time and approximately $10,000 in legal expense has been spent countering legislation introduced by the Virginia Dental Hygienists’ Association this year. We understand that Virginia is one of four states targeted by the American Dental Hygienists’ Association with funding for their legislative efforts to change the Dental Laws and Rules and Regulations. Last Fall, we participated in an all-day Hearing by the Virginia Board of Dentistry to meet challenges that seek to alter the delivery of dental care in Virginia. In January, the Virginia Dental Hygienists’ Association introduced two Bills in the Virginia General Assembly, one calling for a study of expanding the practice of dental hygienists and the other for full voting privileges for the dental hygienist member of the Board on matters pertaining to dentists. In July, we had a Hearing with the Health Regulatory Commission at which time the Virginia Dental Hygienists’ Association brought in out-of-state speakers to defend their position of practice under general supervision. I have no doubt that we will have to re hear this material again before the Board of Dentistry this Fall. In August, every licensed dentist in Virginia received a letter from the President of the Virginia Dental Hygienists’ Association advising “that the Virginia Dental Hygienists’ Association is actively seeking changes in both the Statutes and the Rules and Regulations governing the practice of Dentistry and Dental Hygiene to provide for general supervision of dental hygienists”. Their agenda for their meeting here in Roanoke lists an all-day meeting on the topic “Political Strategy for the Dental Hygienist”. We contend that under the current laws and Rules and Regulations, that five and one-half million Virginians are well served and that the current laws and regulations do not need to be changed. It is ironic that dentistry encouraged the formation of dental hygiene and Component One put up money for the School of Dental Hygiene at Old Dominion University. Our State Association contributed $7,750 in dental hygienist scholarships in 1983-84. We may have to divert these funds to legal fees if this legislative activity continues. To again clearly establish the policy of the Virginia Dental Association, and to afford our membership an opportunity to express their wishes in this matter, I make the following recommendation: That the Virginia Dental Association reaffirm its position regarding Rules and Regulations regarding the practice of dental hygiene which was adopted by the VDA House of Delegates, unanimously in 1981, and reaffirmed, unanimously in 1983, as follows: “It is in the best interest of all patients that the practice of dental hygiene be under the direct supervision of a licensed dentist, in accordance with Regulation 2, Paragraph A, Page 6 of the Rules and Regulations Governing the Practice of Dentistry and Dental Hygiene”. Despite our frustrations, I do feel that we need to face the fact
that career opportunities for dental hygienists are limited, and that they suffer from the same overproduction as dentists do. These are bright, articulate and attractive people. I encourage you to consider the dental hygienist in your office and accord her the recognition and rewards due her skills and service. I hope that in the future we can turn our common energies toward solving some of the other problems that face dentistry and on which we can find common ground.

In addition to legislation introduced in the 1984 Session of the General Assembly by the Virginia Dental Hygienists' Association, the Antifluoridationists introduced one bill—can you imagine that after 40 years, we are still fighting the fluoridation battle. Other legislation was introduced to place citizen members on the Board of Dentistry and a bill that would revise the statute of limitations upward. All of these were defeated. This year, the legislature will revise Chapter 38.1, the insurance laws which includes prepaid dental plans; and Title 54 which contains the dental laws of the Commonwealth. This is a matter of great importance to us and we are going to keep on top of it. We are so fortunate to have the service of Mrs. Pat Watkins, our Executive Director as our Legislative Consultant; to see her work is like watching poetry in motion, and to work with her is a lesson in government. The respect with which she is held by everyone in the General Assembly and in the other organizations that we meet there, can only be described as awesome. You must appreciate her sincere dedication to the Virginia Dental Association and her knowledge and astuteness in monitoring legislative and legal affairs as they relate to dentistry. I have this year formed a legislative task force to expedite liaison with our legislators. Legislation is a matter of the greatest importance in the present governmental climate for regulatory reform. It is one of the greatest benefits of your dues money that you have someone to keep on top of all of the myriad and myriad legislative efforts that are made by others that effect us, to support such legislation as we feel will benefit the dental health Virginians. If anyone asks you why they get for their dues, you can tell them without equivocation that one item is worth every penny of it. I also heartily endorse ADPA/ VADPAC and encourage everyone to contribute to this worthy cause. This is where the future of dentistry will be determined and we can ill afford to play ostrich, bury our heads in the sand and hope it will go away. Alternate delivery systems for dental care have presented themselves as a new force that challenges the traditional private practice fee-for-service system that has been so good for so long for the dental health of Virginians and America. The reasons behind the growth of these systems are varied and complex, and include: (1) An abundant supply of dentists advertise; (2) The Supreme Court decision opening the way for professionals to advertise; (3) An economy rocked by inflation; (4) Increases in dental productivity; and (5) Government
tions supporting alternative delivery systems. Congress seems ready to react in 1985 with sweeping changes for today's health care payment and delivery mechanisms. The goal is cost containment. Dentistry is included in their target even though we have been the "good guys" by holding dental fees below the inflation level. It is important for us to have a basic understanding of these alternate systems and how they can affect us as an individual and how they can impact dentistry as a whole. PPO's, HMO's, Closed Panels, Franchised Dentistry, IPA's, Direct Reimbursement, Retail Dentistry—the list increases with the morning mail. We must take an active role in determining what happens in Virginia. Our laws currently protect the public by requiring that a dentist use his own true name, and insure that the dental health of patients is best protected when dental practices and other private facilities for the delivery of dental care are owned and controlled by members of the dental profession. These laws must be preserved to discourage some of the entrepreneurial entries into dental care in Virginia. We must be mindful that change does not necessarily equate with progress. Dentistry over the past 100 years has progressed to a point where quality has been improved, a code of ethics has been established and in general, pride in the profession has been created. Surveys indicate that patients value the dental health care they receive and value the dentist-patient relationship surrounding that care. Yet, we must not close our eyes blindly to change and be unprepared for the realities of the future. Dentists must be willing to modify their practice styles to enable themselves to be more effective competitors with these alternate delivery modes. In the future, dentists will become better business persons utilizing acceptable marketing techniques. I suggest to you that cost containment is the watchword of the 80's and that you, on an individual basis, consider what the American Medical Association has done when it asked its members to hold down fee increases this year.

The strength of any organization comes from the volunteers who devote their time and talents by serving on committees. This is certainly true of our Association committees. We have added several new committees to keep abreast of needs and services to our membership. The former Radiation Safety Committee will be expanded to become the Dental Environmental Health and Safety Committee. This committee will study some of the potential hazards in the dental office that affect the health of the dental team and report to the membership on suggested measures for making our practices safe and our lives healthier. Some of these hazards include infectious diseases such as hepatitis and AIDS, such toxic materials as mercury and composite dust, and such physical dangers as exposure to radiation. This committee will consist of Component Representatives and two members-at-large who have expertise in this area and work in the fields of study from the Dental or Medical Schools or the State Health Department. This is presently an ad hoc committee, and I
urge you to approve the proposed
Bylaws amendment making it a Stand-
ing Committee.

Two new committees effectively
serving the needs of our membership
are the Dentist's Health and Effectiv-
ness Committee and Special Fluorida-
tion Information Committee. Dr. Earle
Strickland wisely recommended these
relevant committees last year.

We point with a great deal of pride
to our Statewide Continuing Educa-
tion Program, under the direction of
our Dental Education and Continuing
Education Committee. This program
is unique throughout the country, and
we have had many inquiries from
other states about this program. At-
tendance has dropped and question-
naires revealed that the main reason
is the large number of continuing
education programs given in Virginia
and neighboring states on a variety of
topics, at almost anytime of the year.
This program is funded through your
State dues and has been implemented
by the Continuing Education Depart-
ment of MCV School of Dentistry.
Following study and discussion, the
Dental Education and Continuing
Education Committee has recom-
ended that the number of these pro-
grams be reduced from 16 to 8 per
year, one in each Component Society,
and that the budget be revised to pro-
vide top quality programs with all
services provided. We hope that all
of our members will take advantage
of these 8 programs per year at no ad-
ditional cost. Programs will be planned
to avoid duplication of subject and
speaker. Additional funds will be bud-
geted for promotion of the program.

This program has used the office
Continuing Education at MCV School
of Dentistry for coordination and ar-
rangements. This expresses the syn-
biotic relationship between the VDA
and our School. I would not
i to see us completely sever this
It is a tie of the heart as much as an-
thing else.

At my request, the Committee
Dental Care Delivery for the Elder-
ly and Indigent conducted a workshop
utilizing the information and expertise
of Dr. Joe Doherty, Director of
Dental Division of the State Health
Department. The purpose of this
workshop was to determine where
there were unmet needs in Virginia
and how we could help provide access
to dental care for these people. This
workshop was very productive, and
we can see future results that will in-
crease access for some people, generate
new patient visits, and enhance
picture of the VDA as a caring
Association. I look forward to con-
tinuation of this program as vitally
to dentistry. I think that it
be an exciting and compassionate
nt for this Association.

Dr. George W. Burke, Jr., our Jo-
nal Editor for these past 13 years,
retiring. We commend him for his
vice to our Association and to dental
journalism. Dr. Burke will be pre-
ented a token of our esteem on this
day, since he could not be present
this day. I recommend that the House
Delegates create a Virginia Dental
Association award that can be pre-
sented to an individual who provides
unique service to this Association
such occasion as determined by
executive Council, that the nominee selected by the Executive Council and the award be presented at the Annual Meeting of the Virginia Dental Association.

This is the year of decision for the proposed ADA marketing program. We must face the 80's and marketing not a dirty word when it is done in an ethical, legal tasteful manner. We have gone to all eight Components with this program, shown the ADA television spots to everyone that we could, and mailed information and questionnaire to each member of the ADA. The film is also available for viewing at this meeting. No Component voted less than two to one in favor of the marketing program with an average of four to one for this program and its attendant dues increase among people who saw the program and attended the meetings. There is no question that it will be an expensive dues increase. It is small comfort that we pay much less dues than physicians, optometrists and podiatrists, whose dues can go up to a thousand dollars a year. These prime time TV commercials provide valuable information, emphasizing the vital role of dentists in helping people avoid disease. In test markets, its impact motivated people to seek dental care. It is our best effort to reach the 50% of the population who do not now seek regular dental care. Several states, California, Minnesota and New Jersey, have statewide marketing programs. They see results and feel that it is worth the price. They also advise that they have not lost members because of this sizable dues increase, and we ask your help. Talk to those who would give up their membership in the Component, State and ADA for the additional $125.00. They must see that if we don't do something to reach the 50% nonusers of dental services, that it will eventually impact upon them and their practices. Even if they don't need or want more patients now, the pressure of new practitioners coming into the marketplace will affect all dental practices in the future. The spurring of demand for dental services is an integral part of the salvation of the private practice system in the future, no matter how we personally feel about it. I urge your favorable consideration of this marketing program and especially your help with anyone who would drop membership because of this. As an adjunct to this program, the ADA will produce and sell complimentary materials. These materials may be used by individuals or dental societies as a tie-in to the ADA program. The Virginia Delegation to the ADA will ask that by copyright or other legal procedures, that the marketing materials be restricted to the use of ADA members and only to nonmembers who pay their full share of the cost of the entire program. I would like to see our Dental Health and Public Information Committee obtain these materials and devise a plan to complement the TV presentation and maximize its benefit in Virginia.

Dr. Jim Revere has been Acting Dean at the Dental School at the Medical College of Virginia for over a year now. We have been proud of the way in which he stepped in and
directed the operations of the School. He has been available at all times whenever we have called on him for help and advice on VDA matters, and as a member of our Executive Council, he has been of great value to us. It was my privilege to accept his invitation to address the graduating class at its honors convocation this past year. These bright young people will be a credit to the profession and with their education, they will be an asset to the dental health of this Commonwealth. I welcome them to the profession and to our Association. I also want to recognize the growing number of women who are entering the profession of dentistry. Twenty to twenty-five percent of the classes in dental schools in America, and MCV is no exception, are now female. The face of dentistry is changing, and for the better. Perhaps our female colleagues will provide a prospective that we lacked in the past. Everything serves to move us into our future, which will be a bright one as we fulfill our obligation to pass on to the future an enhanced and improved body of knowledge and a better quality of life for our patients and our country.

It was my pleasure this year to visit all of our Components except one, and I look forward to visiting Southwest Virginia Dental Society next year. Your hospitality was gracious and warm. I was impressed by the active and working committees that I saw doing the business of dentistry. I was saddened to observe that as our Components have grown larger, they have lost some of the camaraderie they used to have. Attendance at Component meetings is not as large as it should be and social contact with our colleagues is less than it used to be. Perhaps some of our problems come from the impersonal relationships of the 60’s and 70’s. We do not seem to know each other—the partners who practices down the street and smoother among friends; dentistry is more fun in an atmosphere of friendly contact. We need to reach out and touch someone; our friends and neighbors who are our colleagues. Let’s put on a friendship drive as we do a membership drive. In spite of what the FTC says, we are colleagues not competitors. We are friends, associates, not strangers. Our future lies in our togetherness. I cannot but repeat here at the close, the words that I began with in September 1983: On July 4, of 1776 as he put his name to the Declaration of Independence, Benjamin Franklin said, “Either we all hang together or surely, we shall all hang separately.” Let’s reactivate our social activities: Component meetings. We can begin at this meeting; join your friends at the Membership Luncheon honoring our best friend of all, Dr. Henry Lyons. Bring your spouse and show the hospitality of the Social Hour Exhibitors; the Presidential Bang and Entertainment.

We are almost 2,500 members strong and growing. While the Association has lost members these past few years, we have continued to grow. It has always bothered me that we have many talented people in our Association.
I recommend to the House Delegates that you create a new office, that of Vice-President. This office will not automatically succeed to higher office, but will provide opportunity for experience and performing. This will provide an additional member of the Executive Committee and the Executive Council. It will entail very little expense and will revitalize our official structure. We operate under the same structure of elected officers as we did many years ago when we had only a fraction of our present membership. I urge your consideration of this new office to become effective upon election at the 1985 Meeting.

As I reflect upon this wonderful year, in its closing days, I have so many people to thank for making it possible. First, the members of my own Tidewater Dental Association, and our Executive Secretary, Mrs. Dorothy Ferris, who encouraged me and supported me. Each and every state committee chairman and committee member—these are the people who make the Association go. My Executive Committee, composed of our officers, are a close knit family of close friends, and have been super in their support and their efforts in behalf of my administration. The Executive Councilors, who take care of the business of the Association between these Annual Meetings, are truly your dedicated Component Representatives. Dr. Bennett Malbon, always available; Mr. Jack Ackerly, our Legal Counsel—so many others, unsung heroes, who were there when I called. Thank you all from the bottom of my heart.

My special thanks to our hard working Annual Meeting Committee, Dr. Jim Johnson and his wife, Bernice, and the entire committee who are responsible for the success of an interesting and productive meeting for you. The dedication of this committee and this Component, the Piedmont Dental Society, are a mirror of our entire Association. We are a family—we take turns—we do our job. May it always be so. As you enjoy this State Meeting, I encourage your support of our social activities, our scientific sessions and please visit our exhibitors; they help to make it possible. Our Membership Luncheon is a tribute to Dr. Harry Lyons, and I know you will all share this memorable occasion with us. Dr. Lyons has meant so much to so many; it is most fitting that we dedicate this luncheon to him and establish, in his honor, an emergency student loan fund at MCV School of Dentistry to be called the Harry Lyons Emergency Student Loan Fund.

Next—this lady here on the podium with us, this gentle lady, who has an iron will when needed. Pat Watkins, what would this Association be without her, I cannot say enough to you about her and her capable staff of Mrs. Betty Lou Witten and Miss Carol Lynne Rigsby, who do the work of our Association in our Central Office in Richmond.

Last, but by no means least, I recognize my family who gave me their support this year and allowed me to serve in this office you entrusted to
me. My dear wife, Ada, whom our National Association honors with her name on all ADA materials, stationery and even the ADA Journal. My son, Larry; and my daughters, Hillary and Gayle; I blow you a kiss. They are my treasures; all of them.

As my year as President draws to a close, I leave you a legacy of love. Love for your family; your fellow­man; your profession, with its strengths and challenges; and your country, with its freedoms and hope. Love is a friendship that has caught fire. It is quiet understanding, mutual confidence, sharing and forgiving. It is a loyalty through good and bad, it settles for less than perfection, it makes allowances for human weaknesses. Love is content with the present, it hopes for the future and doesn’t brood over the past. It’s a day-in and day-out chronicle of frustrations, problems, compromises, small disappointments, big victories, working toward common goals. Love in your life can make up for a great many things. If you don’t have it, matter what else there is, it’s enough.

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