Volume 18 Number 1

Journal

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March 1951

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JOURNAL

American College of Dentists

Presents the proceedings of the American College of Dentists and such additional papers and comment from responsible sources as may be useful for the promotion of oral health-service and the advancement of the dental profession. The Journal disclaims responsibility, however, for opinions expressed by authors.

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Entered in the Index To Dental Periodic Literature.

American College of Dentists

Objects: The American College of Dentists "was established to promote the ideals of the dental profession; to advance the standards of efficiency of dentistry; to stimulate graduate study and effort by dentists; to confer Fellowship in recognition of meritorious achievement, especially in dental science, art, education and literature; and to improve public understanding and appreciation of oral health-service."—*Constitution, Article I.*

Announcements

Next Meeting, Board of Reagents: Washington, D. C., ————, 1951

Next Convocation: Washington, D. C., ————, 1951

Fellowships and awards in dental research. The American College of Dentists, at its annual meeting in 1937 [*J. Am. Col. Den., 4,* 100; Sept. and 256, Dec., 1937] inaugurated plans to promote research in dentistry. These plans include grants of funds (The William John Gies Fellowships) to applicants, in support of projected investigations; and also the formal recognition, through annual awards (The William John Gies Awards), of distinguished achievement in dental research. A standing committee of the International Association for Dental Research will actively cooperate with the College in the furtherance of these plans. Application for grants in aid of projected researches, and requests for information, may be sent to the Chairman of the Committee on Dental Research of the American College of Dentists, Dr. Albert L. Midgley, 1108 Union Trust Bldg., Providence, R. I. [See "The Gies Dental Research Fellowships and Awards for Achievement in Research," *J. Am. Col. Den., 5,* 115; 1938, Sept.]

JOURNAL
American College of Dentists

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Convocation of the College—Atlantic City, October 28, 1950

EDITORIAL

WHAT IS AN IDEA

Webster defines an idea as follows: "a mental image or picture; a conception of what ought to be; an abstract principle; opinion; belief; plan." This answers the question, 'What is an idea?', very well, but immediately another comes to the fore. Where does it come from?

This may require a real consideration of both questions. The 'conception of what out to be', may for the moment be taken as the most appropriate definition and on that basis, it would seem safe to say that it comes from the mind of one man, substantiated and qualified by conversation and discussion with others, until a definite answer has been reached.

There are many ideas lurking about in the minds of men today two of which ought to be brought to our attention, both having been subjects for consideration in years gone by. One of the penalties paid for continuing life and activities or perhaps for continuous change in life, is that of forgetfulness. This need not be a penalty though it should require to take a look back over the past once in a while just to see where we came from.

One of these ideas to which reference is made is that of Journalism, and all the changes through which we have gone during the past years. A study and report were made by the Commission on Journalism, later the Committee on Journalism of the American College of Dentists, followed by the organization of the American Dental Editors Association and the activities of that body for the past twenty years. All of this has resulted in the formation of a Council on Journalism of the American Dental Association.

Changes in professional researches and therefore, material for publication had much to do with these changes, since there was increased cost of publication, and material of no benefit to the industrial owners of the literature. With the changes in our educational institutions during the 'twenties' and the 'thirties', our total educational objective changed also. We soon found that we had come to think in terms of service to those in need, even before returns to the institution, and further, that the usefulness of the in-

stitution was directly dependent upon those who had to do with its management. Thus there came into full view one of those cycles we hear so much about, when one becomes dependent upon the other. If the 'usefulness of the institution' is dependent upon the individuals who handle it, and they improve upon that usefulness, then the individuals must be benefited also, both intellectually and spiritually. This is exactly what has happened. And yet, are we taking full cognizance of these changes in our practices today? Our literature needs more and yet more support, both in finance and in morale. We can struggle along and probably settle the former requirement if we keep up the latter. But are we keeping up the latter?

One is not a little in doubt as to this, when he sees periodicals of Group C, Type 2b, displaying pictures and data about schools and their administrators. There can be no censure of the editors of those periodicals, in fact they are to be congratulated on being able to secure such material. But why should we or our associates allow ourselves to become a party to their financial gain. We threw that off once, and we should not allow that hold upon us again. Let us attend to our own business of serving those who may come to us for help and of educating others to go out and do likewise.

The other idea lurking about in the minds of some men at least, has to do with the researches promoted by the American Dental Association and carried out in the Bureau of Standards. Recently there has come to the editor's desk an inquiry as to why more attention has not been paid to their findings and reports, or to be more exact an effort is being made by the Chairman of the Council of Dental Research to see if the schools, and that means many of us, as well, cannot find a way by which the results of their efforts may not become more readily useful to us. We should be aware of what has gone on in the past, that we have what we do have today and our appreciation should be shown by our active cooperation and participation in it all.

Q. E. D.

ERRATA

In the September Journal page 70 reference is made to "1000 volumes", this should be "11000 volumes".

The last sentence in the last paragraph should read "In the light of what already has been accomplished however, it does not seem presumptuous to feel".

A CLASSIFICATION OF REMOVABLE PARTIAL DENTURES

R. J. GODFREY, D.D.S., M.Sc.[1] (Dent.), *Toronto*

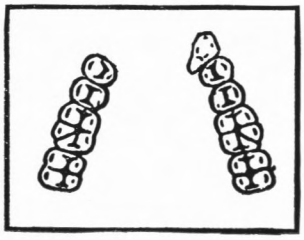
The classification used for the study of removable partial dentures in the Faculty of Dentistry, University of Toronto, is based upon the location and extent of the edentulous spaces where teeth are to be replaced on saddles. The anterior segment of the arch includes the six anterior teeth, i.e. central, lateral, and cuspid teeth. The posterior segments include the bicuspid and molar teeth. The location of the edentulous spaces is taken to mean their position in the arch, that is, whether they are in the anterior or in the posterior segment of the arch. The extent of the edentulous spaces is taken to mean the number of teeth missing in any space and is a determining factor in deciding whether a saddle is tooth-borne or mucosa-borne. In the anterior segment of the arch the maximum condition for a tooth-borne saddle is considered to be four teeth. Additional teeth missing would make the saddle essentially mucosa-borne, whether or not rests are used to distribute the stress of occlusion between teeth and mucosa. In the posterior segment of the arch the maximum condition for a tooth-borne saddle is considered to be three teeth. Additional teeth missing would make the saddle essentially mucosa-borne even though the third molar is present and bears a rest. With this system of classification the location and number of anchor teeth or retainers do not influence or change the class number of the denture, since this is based upon the type of saddle support and the number of teeth missing, rather than the restored condition or the relation of saddles to the anchor teeth in an unrestored condition. It will be noted that there are no subdivisions or modifications of the main classes. This, it is believed, simplifies the classifying of semi-edentulous arches. A study of the diagrams immediately following, which illustrate what are considered to be tooth- or mucosa-borne types of saddles in the anterior and posterior of the mouth, will further explain the classification.

[1] Professor of Prosthodontics, Faculty of Dentistry, University of Toronto.

A

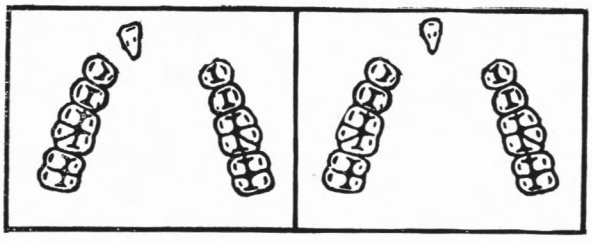
TOOTH BORNE SADDLES IN THE ANTERIOR OF THE MOUTH

1. *Unbroken Five-Tooth Spaces.*



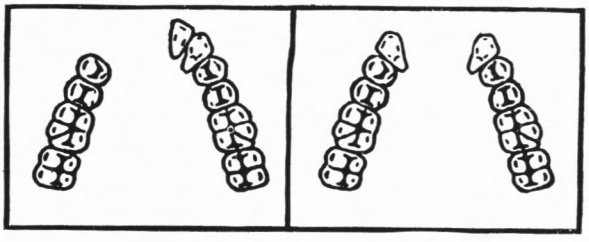
Conditions may be such that a five-tooth saddle may be considered tooth borne. As unbroken five-tooth group occurs only as above, reverse condition excepted.

2. *Broken Five-Tooth Spaces.*



This condition occurs only in two ways. This group is included for classification purposes only. In all probability the single incisor would be extracted and the space would pass over into the tissue borne group.

3. *Unbroken Four-Tooth Spaces.*



Four-tooth spaces are usually considered the maximum for tooth borne support. They occur in two ways, reverse conditions excepted.

The second illustration is most common and is used as the group example. Broken groups of four are not included.

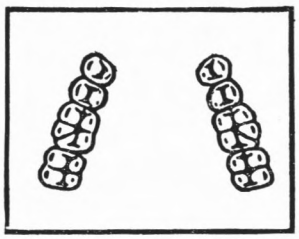
4. *Broken and Unbroken Group of Three, Two and Single Tooth Spaces.*

These groups are not included in this classification as they are usually replaced by fixed appliances.

B

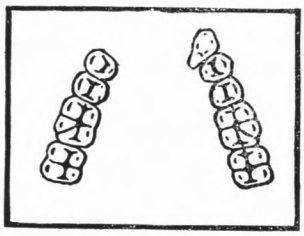
MUCOSA BORNE SADDLES IN THE ANTERIOR OF THE MOUTH

1. *Unbroken Six-Tooth Spaces.*



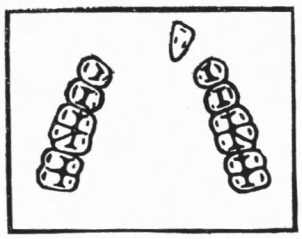
This is the maximum condition and occurs in only one way.

2. *Unbroken Five-Tooth Spaces.*



This is the minimum condition and occurs in only one way, reverse condition not considered.

3. *Broken Five-Tooth Spaces.*

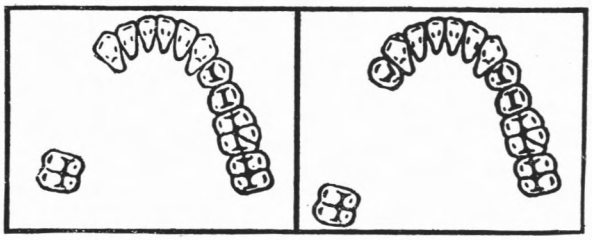


This condition is not considered as a single tooth as shown would probably be extracted and the condition would pass over into the unbroken six-tooth space.

C

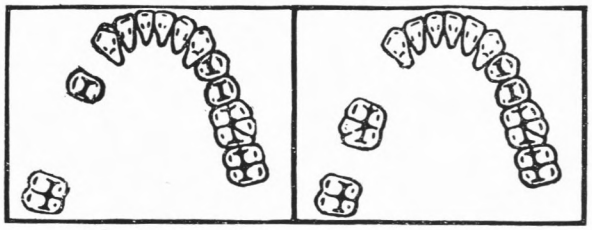
TOOTH BORNE SADDLES IN THE POSTERIOR OF THE MOUTH

1. *Unbroken Three-Tooth Spaces.*



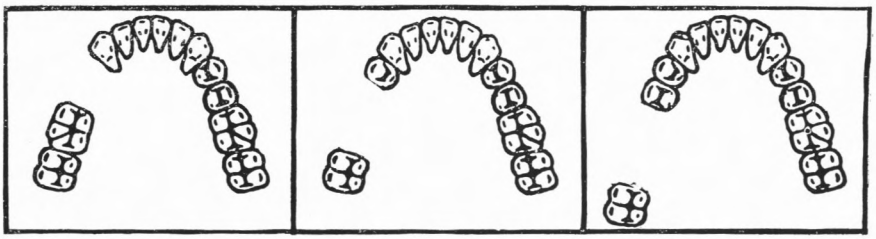
In the posterior of the mouth three-tooth spaces with teeth at both ends are considered the maximum for tooth borne support. The above examples are the only possible unbroken three-tooth combinations.

2. *Broken Three-Tooth Spaces.*



These combinations occur only in two ways and may be treated as two-tooth and single tooth spaces.

3. *Unbroken Two-Tooth Spaces.*



PARTIAL DENTURE CLASSIFICATION CHART

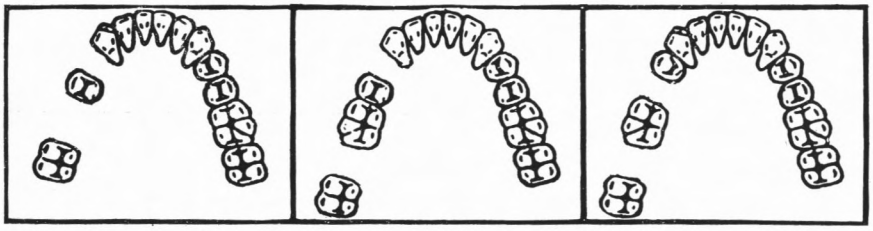
Oral Combination	Class No.	Tooth Borne Saddle	Mucosa Borne Saddle
Left side only	1.	Left side	
	2.		Left side
Anterior only	3.	Anterior	
	4.		Anterior
Left side and Anterior	5.	Left side and Anterior	
	6.		Left side and Anterior
	7.	Left side	Anterior
	8.	Anterior	Left side
Left side and Right side	9.	Both sides	
	10.		Both sides
	11.	Left side	Right side
Left side, Right side and Anterior	12.	Both sides and Anterior	
	13.		Both sides and Anterior
	14.	Left side	Anterior and Right side
	15.	Anterior	Left and Right sides
	16.	Right side and Anterior	Left side
	17.	Left and Right sides	Anterior

Reverse combinations not entered.

Prepared for the Use of Students in this Faculty by the Department of Prosthodontia

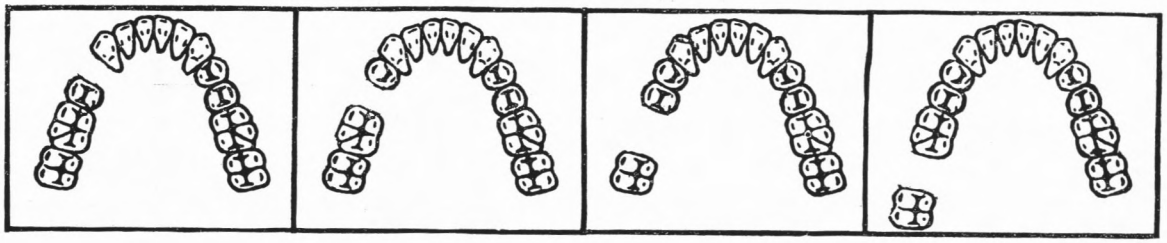
These combinations occur only in three ways.

4. *Broken Two-Tooth Spaces.*



These combinations occur only in three ways and may be treated as single spaces.

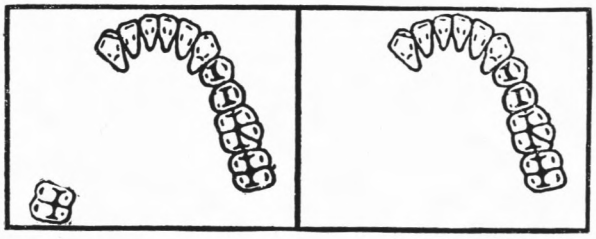
5. *Single Tooth Spaces.*



This condition occurs in four ways.

D

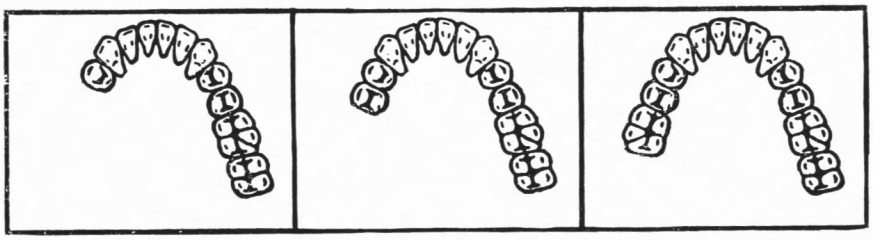
MUCOSA BORNE SADDLES IN THE POSTERIOR OF THE MOUTH



1. *Unbroken Four-Tooth Spaces.*

This condition can occur in only one way and when the third molar is present.

2. *Three-Tooth, Two-Tooth and Single Tooth Spaces.*



The only possible groups that can be classified as mucosa borne where no third molar is present. A replacement would not be considered for the single tooth space.

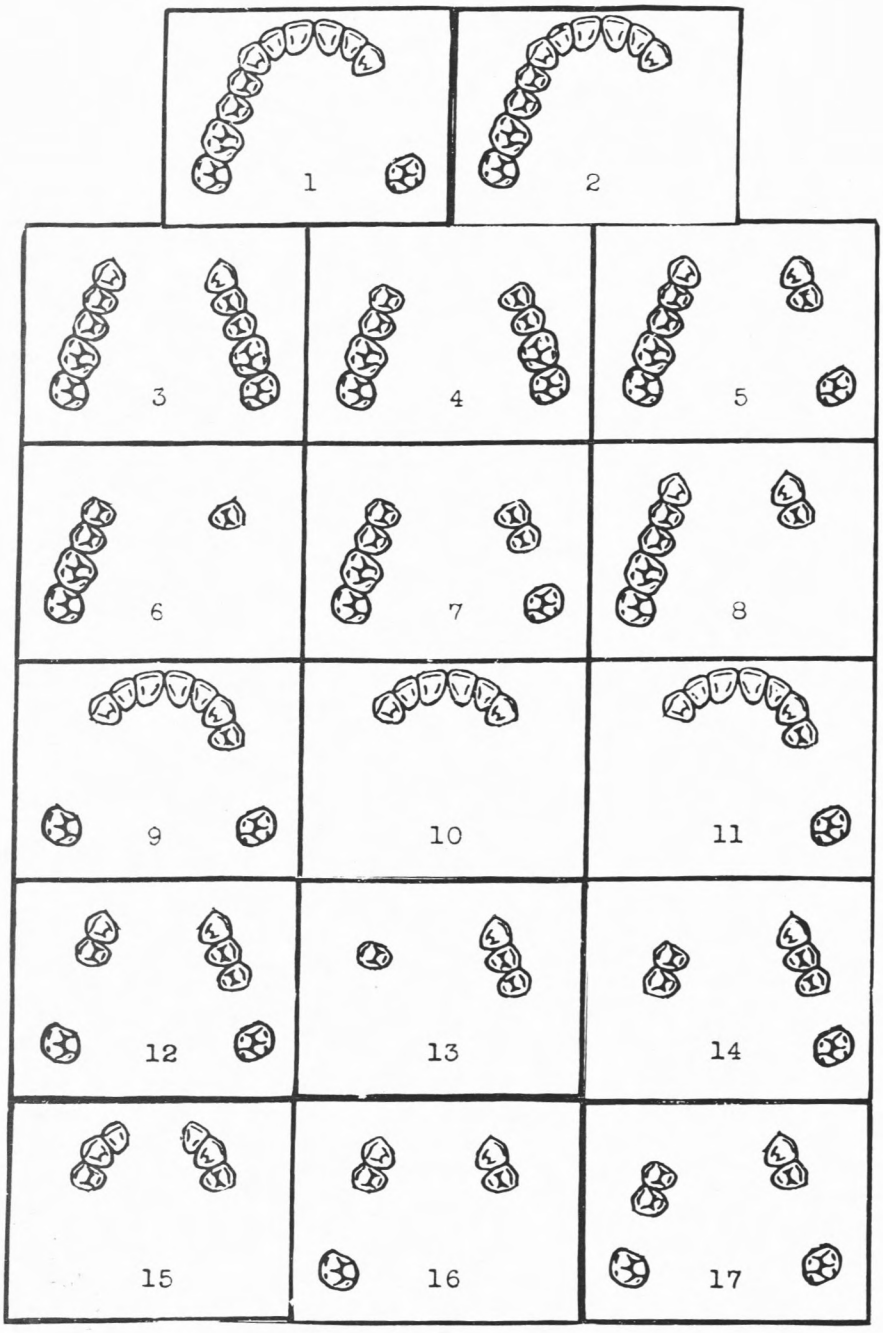
Good judgment is probably the qualification most essential to a dentist and many restorations which have been done skilfully, but without good judgment, or proper planning, have failed. On the other hand, when sound judgment and scientific planning have been used in the design of an appliance, it has a much better chance of success even though the same degree of mechanical skill in execution was not present in its construction.

Many factors enter into the determination of the types of restorations most suitable for a given condition. Careful study and attention to detail, along with a clear conception of fundamental principles acquired by experience, are essential to a wise decision and a successful result.

The author is convinced that a workable system of classification of removable partial dentures is necessary for the comprehension and mastery of this complex subject. He believes that the classification and its application presented in this paper provide an orderly method by which to accomplish this objective.

This method should assist in the utilization of fundamental principles, one of the first and most important steps in the evolution of a proper design for an appliance to replace lost natural teeth. The use of this method should not only help in choosing the correct design for a particular condition but in the recognition of all factors which have a bearing on the success of this type of dental service.

Although the classification need not be put to continuous use in practice, it should be of value to the student in dentistry as a scientific method by which he may gain a more thorough knowledge of the whole subject and readily apply the knowledge thus gained in the solution of the problems which will confront him in his practice.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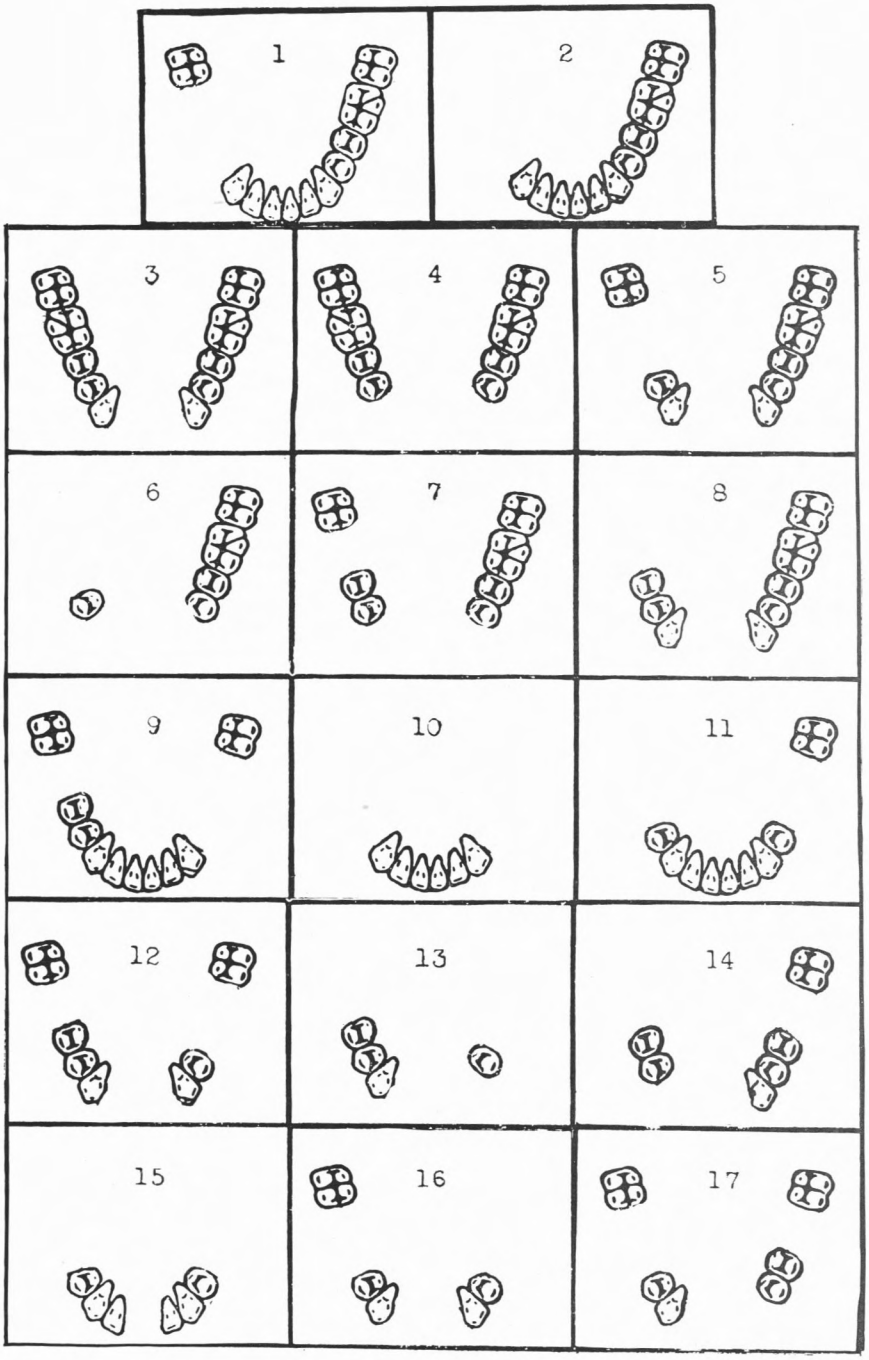
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AMERICAN COLLEGE OF DENTISTS

Minutes of the Board of Regents

Claridge Hotel, Atlantic City, N. J., October 27 and 30, 1950

(*Abbreviated*)

O. W. BRANDHORST, D.D.S., St. Louis, *Secretary*

FIRST SESSION

The first session of the Board of Regents of the American College of Dentists convened at 9:30 a.m. In the absence of President Wright, on account of illness, Vice-President, E. L. Thompson, presided. Twelve Regents were present.

Minutes of meeting of February, 1950 approved.

Report of Secretary on Minutes, was received. This report indicated:

a) That Committee on Dental Student Recruitment was well on the way with its film.

b) That membership emblems were now available to members.

Reports of Officers

Officers and Regents reported on their activities in relation to American College of Dentists matters since the February 1950 meeting.

The Treasurer reported a balance on hand in general fund, Oct. 16, 1950, of $15,280.78 and $24,000 (par value) in Government Bonds. He also reported $124.73 in the H. Edmund Friesell Endowment Fund, plus $3300.00 in government bonds (par value). This was accompanied by the auditor's report for the fiscal year ending June 30, 1950. Report received.

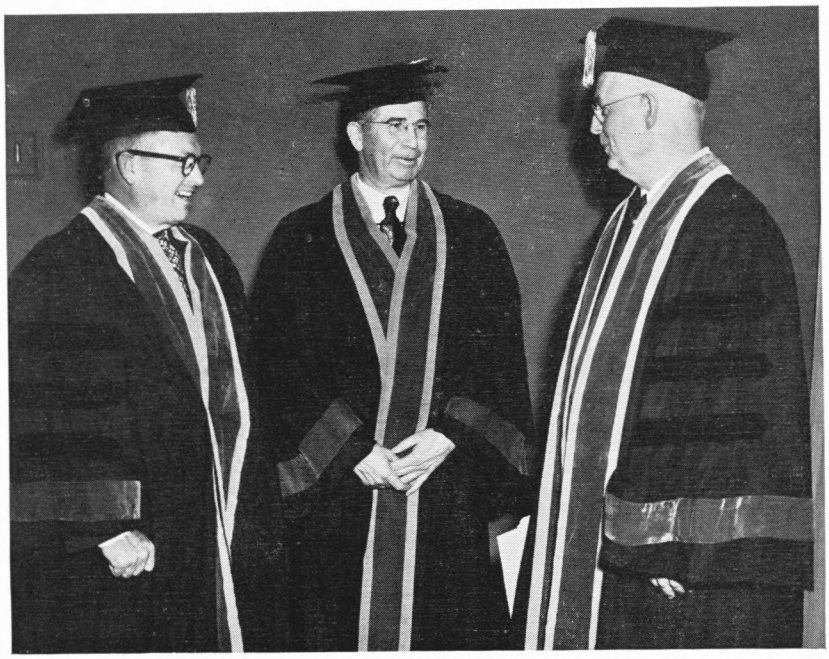
The Secretary reported on the ad-interim activities. The report indicated that 20 Fellows had passed to their reward since the February, 1950 meeting of the Regents.

The report indicated a total membership of 1530, of whom 19 are Honorary members.

Adjournment at 12:00 o'clock.

SECOND SESSION

The second session convened at 1:30 p.m. Eleven Regents being present, Vice-President Thompson presiding.



Left, Vice-President THOMPSON; center, President-elect (now President) LINEBERGER; right, Secretary BRANDHORST.

Reports of Committees:

Certification of Specialists. Report read by Secretary for Chairman Ireland, who was not able to be present. Report received. Recommendations approved.

Education. The Reference Committee, to whom the Committee on Education report was referred, recommended the approval of the establishment of a fellowship of $2500.00 for the training in teaching. Recommendation approved.

Hospital Dental Service. In the absence of Chairman Harry Archer, J. E. Gurley read the report of the committee. Report received.

Prosthetic Dental Service. Chairman Nelson presented report. Report received with commendation, to the committee and ordered published. Reprints to be distributed.

Relations Committee. Chairman Jarvis reported on Committee activities, especially the Speaker's Bureau. Report received.

Journalism. Chairman Gurley reported on the activities of the Committee. Report received.

Socio-Economics. The Secretary read the report of the Committee,

in the absence of the Chairman of the Committee, Raymond E. Myers. Report received and recommendations approved.

Section activities. A review of the activities of the Sections indicated that very satisfactory interest was being manifest in some areas, particularly, the Tri-State area (Tennessee, Arkansas and Mississippi).

New Business:

It was voted to continue the Research Fellowship under the direction of the A.D.A.

It was voted to present a service key to William J. Gies in recognition of his many services to the American College of Dentists.

The Secretary was instructed to prepare a printed manual of the Ceremonial procedures.

THIRD SESSION

The third session of the Atlantic City meeting of the Board of Regents convened at 8:00 o'clock Monday morning, October 30, 1950 in the Claridge Hotel. Henry O. Lineberger, presiding. This was the first meeting of the new Board. 12 Regents were present.

Reports of Committees:

Dr. Philip Jay, Chairman of the Research Committee made his report and recommended:

1. Establishment of a travel fund for research workers to visit other laboratories, when beginning new projects. Amount suggested $1000.00.
2. Establishment of Emergency Research Fund, to meet unexpected problems in research. Amount suggested $1000.00.
3. That a separate committee of Medico-Dental Relations be established.

All recommendations were approved, the Travel Fund to be designated as the William J. Gies Research Travel Fund of the American College of Dentists.

Memorial Book Committee. Dr. John E. Tyler, Chairman of the Memorial Book Committee recommended that the 1948–1949 volume of Dental Index be used as the Memorial Book for the ensuing year.

Budget:

A budget for the fiscal year July 1, 1950 to June 30, 1951, showing a net balance of $1047.34 was adopted.

Editorial Staff

Dr. John E. Gurley was re-elected Editor. Dr. Donald W. Gullett of Toronto, Canada and Dr. B. O. A. Thomas of Seattle, Washington were elected Contributing Editors for a period of 5 years.

Adjournment at 11:00 o'clock.

To a friend's home the road is never long.

Dutch Proverb.

THE DENTIST IN THE AMERICAN TRADITION[1]

JOHN OSMAN, B.A., B.D., M.A.[2]

Ever since Paul Revere, who has a claim to being a dentist, roused the New England countryside with the call to arms that won our freedom from England, the dentist has been a significant factor in the American scene. His heritage is an honorable one. Indeed, no profession has a more fascinating history than dentistry. And the history of no walk of American life has been more intimately bound up in this country's history. The history of dentistry parallels the growth of democracy in this country in a remarkable manner. And, if we are to comprehend the role of the dentist in the American tradition, if we are to stand for the importance of this and kindred professions—it is necessary for the men of dentistry to have an understanding of the history of their profession. They must have this understanding before they can possess the legacy which is theirs. Such a consideration of the idea of dentistry involves, necessarily, an understanding of the era which we call the Renaissance. The history of dentistry is a chapter in the Renaissance.

We find the historical movement of the fourteenth, fifteenth, and sixteenth centuries, which we have named the Renaissance, gradually achieving a scientific approach to man and nature. The artists who have recorded the history of these centuries for us were also scientists. It could be said that the scientists who were concerned with this empirical approach to man and nature were artists. This blending of art and science is the genius of the Renaissance. Portrait painting arose at this time because the artist was interested in man. Landscapes were developed in paintings because the artist was a student of nature. Naturalism in art was a result of the scientific study of anatomy and botany. This direct observation with its recording of man and nature is the source of the scientific outlook which was the most important aspect of the Renaissance. This scientific outlook became the foundation upon which we built our modern world.

[1] Paper presented before the Tri-State Section of the American College of Dentists meeting in Memphis, December 9, 1950.

[2] Assistant to the President and Assistant Professor, History of Art and of Adult Education, Southwestern in Memphis.

In the mind of the Renaissance man all objects of nature were works of art. Leonardo da Vinci looked upon a flower, a rock, and Mona Lisa with the eyes of an artist and a scientist. Vesalius, the father of modern medicine, investigated the mystery of the human body and found it a work of art. Art was, to Leonardo and Vesalius, the method of formulating and transmitting scientific knowledge. Copernicus considered the perfection that he discovered in the movements of the heavenly bodies as clear evidence for the universe as an artistic creation. Modern city planners with all their sociological data are not concerned with giving a city a soul through architectural beauty as was Alberti. Alberti believed that a city of perfect beauty would nurture perfect men and women. His city designs were not only scientific, they were beautiful. In the man of the Renaissance there was a synthesis of art and science.

The influence of this Renaissance concept of the interrelations of art and science persisted on through the eighteenth century. It continued to have a profound effect on the history of medicine after Leonardo and Vesalius. And it was this blending of art and science that gave rise to modern dentistry.

The history of the West since the Renaissance has paralleled the course of scientific development. In the study of civilization, considerable attention is paid to politics, economics, art, and philosophy. It is strange how little thought has been given to the history of science and its influence upon these aspects of civilization. The history of medicine has been written, but almost nothing has been said about it as the dominant force in the making of the modern world. It was the progress in medicine, including dentistry, that provided the favorable conditions in which civilization could progress. Even more significant has been the creation of a particular type of individual in the various branches of medicine who has made an unique contribution to civilization. The Renaissance concept of the medical man as both an artist and a scientist is the force which produced this individual.

While the lawyer, the professor, and the preacher are engaged altogether in the work of the mind and where the artisan and laborer are working with their hands, the medical man, be he physician, surgeon, or dentist, is engaged in the work of both the mind and the hand. The physician, the engineer, the architect, the surgeon, and the dentist must be artists and scientists. Each must be

at home among the ideas of his profession. Each must be thoroughly skilled in the techniques of it. His genius lies in his ability to synthesize ideas and techniques.

The great men in the history of medicine have been both artists and scientists. Too often art has claimed Leonardo da Vinci, but he belongs to science, too. His *Notebooks* are at one and the same time the embodiment of great art and great science. The statue of David by Michelangelo is a perfect study in human anatomy, and in its significance as a document of civilization it is not different from the work by Andrea Vesalius on *The Anatomy of the Human Body*. Both Michelangelo and Vesalius were breaking with the mediaeval way of looking at the nature of man. Pierre Fauchard, the founder of modern dentistry, working in the court of Louis XIV, inherited the Renaissance legacy. As an artist, he worked in the science of ceramics with porcelain, striving to make the men and women of the Court at Versailles more beautiful in their physical appearance so often marred by mediaeval dental practices. In the court of Louis XIV the teeth, like dresses, paintings, furniture, ballet, and the architecture itself, were treated with the artistic imagination and technique demanded by that age of elegance. And in the royal porcelain factory at Sevres Fauchard worked at making teeth, surrounded by porcelain objects of art designed to adorn palaces and mansions. The influence of this beginning of modern dentistry amid the elegance and splendor of the French court and fashionable *salons* was carried to America by dentists who came out of this background. Among the first significant figures in American dentistry was Josiah Foster Flagg, who left distinguished works in painting, designing, and wood-engraving. This artistic skill he, too, transferred to the perfecting of porcelains for teeth. The tradition of the artist and scientist runs through the history of dentistry. It is the Renaissance legacy to American dentistry. This is your legacy. Because it is your legacy it is important for you to know it and to defend it. Your everyday work is influenced by the way in which a fifteenth century artist-scientist looked upon man and nature.

The study of the growth of the American tradition, on the one hand, and the history of dentistry, on the other, reveals singular parallelisms that are more than coincidental. These parallelisms have occurred as a result of the continuing persistence of the Renaissance concept of the medical man as an artist and scientist. The

pages of American political and dental history during the formative era of this nation furnish us with the clear evidence of these striking interrelationships. The activity in both politics and dentistry which emerged during the Revolutionary War era was due to the same forces. Among these forces was a new individualism seeking a self-expression in the freedom of politics and professions. Paul Revere, as a silversmith and goldsmith, made artificial teeth and dental devices. It was the French, however, coming to America to help fight the Revolutionary War, who were to inaugurate the new era in American dentistry. A French surgeon-dentist, James Gardette, arrived here in 1778 and was followed in 1781 by Josef Lemaire. They came out of the courtly tradition of Fauchard and brought his approach to dentistry with them. It was Josef Lemaire who instructed Josiah Flagg in the practice of dentistry while the two men were associated together in the French-American army camps during the closing years of the Revolutionary War. John Greenwood, who made several sets of artificial teeth for George Washington and invented a foot-powered dental engine with which to prepare cavities in the teeth, may have received instruction at Lemaire's hand. Greenwood fought in the Revolutionary War from the age of sixteen and came out of it as a practitioner of dentistry. In 1806 he went to France to study dentistry and returned with new ideas which helped him to become, along with Josiah Foster Flagg, the most important of our early American dentists. American dentistry was born in the army camps of the Revolutionary War. It came into being with the Declaration of Independence, and for the same reasons.

The men who had the courage to fight for their freedom from England had the imagination to understand these ideas brought from France and to improve upon them. It appears that with the stirring of American patriotism in politics there was also an intellectual revolution. This revolution in ideas ushered in a new era in science. One of the sciences was dentistry. After John Greenwood, no man made greater contributions to the new dental science than did Josiah Foster Flagg, the son of the first American dentist. Their work parallels those important years during the first half of the last century which have been called the Heroic Age of America. Among the achievements which helped to make it the Heroic Age are those of Greenwood and Flagg. They were a type of the time.

John Greenwood was the pioneer who made his way by means of the skills gained through practical experience until he went to France for study. Flagg was graduated from Boston Medical College in 1815 and began his career as a physician and surgeon. Not until later did he take up the practice of dentistry, and throughout his life he continued to interest himself in medical research. The skill in painting, designing, and wood-engraving which he possessed was used to illustrate books and articles on medicine and dentistry. Paintings and drawings which he executed in spare moments made him one of the remembered early American artists. He found the time to design a set of extracting forceps to fit the necks of the various forms of human teeth. As an artist and scientist he, with Greenwood, helped to improve the making of translucent porcelain teeth. This discovery of Flagg in porcelain making is fundamental to the present manufacture of artificial teeth. It has importance not only for the history of dentistry but also for the art of porcelain. If ever a dentist personified the ideals of the American College of Dentists, it is Josiah Foster Flagg.

John Greenwood and Josiah Foster Flagg were the type of Americans whom the Frenchman Alexis de Tocqueville saw on his journey to this country in the early part of the last century. De Tocqueville went back to France and created a word to describe the spirit which he found working in the new democracy—*individualism*. Where the early dentists such as Paul Revere, John Greenwood, and Josiah Flagg are associated with the struggle for freedom, the name of Josiah Foster Flagg is set among those of Jackson, Webster, Clay, and Calhoun. He was one of the men entrusted with making secure the freedoms which his father had helped to win. The incisive mind of de Tocqueville saw democracy in America developing in the hands of gifted individuals whose imagination and ability were creating a great republic. Josiah Foster Flagg was one of these individuals. His type of dentist was replacing the old itinerant "jack-of-all-trades" who had been pulling teeth up and down the American countryside.

Largely as the result of the activities of John Greenwood and Josiah Foster Flagg and other men of this calibre, dentistry moved into its great era in American history. In 1893 the *American Journal of Dental Science*, the first and for years the only periodical of its kind, began publication. The American Society of Dental Surgeons

was founded in 1840. Again in 1840 when the early medical schools rebuffed the dentists the Baltimore College of Dental Surgery, which was the first dental college in the world, opened its doors. It was in these same years that Horace Wells and William T. G. Morton began their experiments with anesthesia. In the hands of these men the American phase of the history of dentistry was underway. It is not necessary for our purpose to follow this history any further. We have ample evidence that the dentist was at work helping to shape the American tradition.

Now this heroic era of dentistry parallels the political period during which Webster, Clay, and Calhoun were debating the formative issues of our American democracy. It is the age of Andrew Jackson, and the new democracy was taking shape. Among the forces expressing themselves was dentistry. If it were right and proper for local groups to determine their political destiny, then it was right and proper for professional groups to act in their own interests. At this precise moment dentistry asserted itself as an integral part of medical science. The same spirit which led the small group to fight for democracy inspired them to take their professional destiny in hand. While Calhoun was pleading in the Senate for the rights of minorities, the dentists were determining their rights as a minority among American professions. While Jackson was winning the franchise for the individual American, the dentists were asserting the rights of the individual dentist to practice his profession as a vital part of medical art and science. The new concept of the dignity of man in our American democracy is paralleled by this new concept of the role of the dentist in the American medical tradition. There is a relationship between the spirit of dentistry and the spirit of democracy, both of which found expression at this moment. The freedom and dignity of the individual in politics, in theology, and in the professions go hand in hand.

These data from the Heroic Age of American history must be considered in the light of the Rennaissance concept of the medical man as artist and scientist if we are to see their full significance. The dentist has left his mark on the American tradition as a consequence of this ambivalent nature of his work. It is not an accident that Paul Revere counted among his artistic achievements some proficiency in dentistry. The same independent spirit that made him an artist made him a patriot. We cannot separate economics and

politics. The man with initiative and independence in making his living will be the man who loves the freedoms and opportunities which democracy provides. Our American democracy has seen the most extensive development in dentistry of any nation on earth. Since the days of the Revolutionary War, democracy and dentistry have gone hand in hand. This is no accident. This is no coincidence. The strange parallelism has meaning.

If there is an interrelationship between the history of dentistry and the rise of American democracy, it is important for the nation to know just what the contribution of dentistry to democracy has been and to take the steps to see that this relationship is maintained for the mutual benefits that are involved in it. Perhaps it should be made clear that we could trace the work of the physician, the theologian, the engineer, and the teacher in the making of American history in somewhat the same manner that we are considering the dentist. It is acknowledged that they have participated with him in the creating of our American tradition. The dentist, however, has made his special contribution because of his unique role in society as artist and scientist. The dentist has been and continues to be highly individualistic in his outlook; yet he has been able to recognize that science is not an individual affair but a social activity. Dentistry has never been a lonely affair of the laboratory. The dentist has been faithful to the responsibilities of the searcher after truth. He has always been the first to disseminate his knowledge for the good of mankind. Dentistry holds many priorities for its contributions to human welfare. In the fields of prophylaxis and anesthesia dentistry led the way. Dentists have endeavored to educate the public on the importance of the teeth to health ever since the first issue of the *American Journal of Dental Science* with its famous poem "Dentologia" on the disease and care of the teeth. The dentist has been aware of his responsibility to his fellow man.

Yet the very nature of the work of the dentist has made him independent, self-reliant, and creative and has deeply influenced his psychology. He has emerged out of his American history with a particular personality. Private practice has been the dominant institution of dentistry in this country. This has left its effects. It has made the dentist a self-sufficient individual. He is the embodiment of Emerson's *Essay on Self-Reliance*. He is an American realization of the Renaissance concept of man.

It is significant that the American heritage in dentistry derives directly from a French Renaissance background. It was in France that modern dentistry arose with Pierre Fauchard who published his epoch-making volume, *Le Chirurgieu Dentiste ou traite des dents*, in 1728, and it was out of his school that James Gardette and Josef Lemaire came. There is then a direct line between Pierre Fauchard, the father of modern dentistry, and Josiah Flagg, the father of American dentistry. This French Renaissance tradition which considered the dentist as an artist-scientist left a profound influence. The dentist was not an artisan but an artist. He worked in porcelain and gold, and his heritage could be traced to Cellini and Leonardo. The dentist was not a charlatan but a scientist. As a scientist he turned to experiment and research and made new contributions to the happiness of mankind. Both as an artist and a scientist he insisted on a vigorous independence in mind and spirit. He demanded freedom—freedom in his professional activity and freedom in scientific research. This freedom is a contribution of the dentist to the American tradition. Freedom of the mind is one of the high privileges he has handed down to the American College of Dentists. The American College of Dentists must see that this freedom is maintained, for as long as the American mind is free—America will be free. Freedom must be your legacy to history.

We have seen how the dentist as artist and scientist has had a large part in setting in motion such concepts as individualism and freedom in the American tradition. It is small wonder that the course of the history of dentistry has paralleled the rise of American civilization. But the history of dentistry is not only a reflection of American history, it has been a dynamic force in this history. The free pursuit of truth by the free individual is an inseparable element of our tradition. Indeed, it is the very soul of our tradition. American history is a product of *free men* acting and thinking and experimenting in freedom—the Puritans in New England, Benjamin Franklin with his kite, Webster, Clay, and Calhoun debating, and John Greenwood as well as George Washington, among countless others have made America what it is.

Among these *free men* is the American dentist.

HEALTH SERVICE: WHAT DOES IT IMPLY?[1]

W. PALMER DEARING,[2] M.D., Washington

It is a privilege for me to come before the American College of Dentists to participate in this morning's program. In the past 30 years the College has done much to channel the thinking of the profession toward socially useful ends. In such notable reports as "The Way of Health Insurance" and "Dental Care for Adults," the American College of Dentists early established its interest in social trends as they affect the distribution of health services. Your record is one in which you may take pride and satisfaction.

The character of today's symposium reflects your continued interest in the subject of social change. For a profession to remain viable in a changing society, it must make constant adjustment in its thought and planning. Social change presumes both the opportunity and the responsibility to render greater public service.

As I interpret my assignment, it is to define a concept of health service in a changing society and to touch briefly upon some of its implications for dentistry.

By health service I mean a broad segment of human endeavor consisting of the performance of all the skills, the application of all the sciences related to man's physical, social, and mental well-being. It does not matter in what organizational setting, hospital, health department, school, or research institute these skills are performed, or the knowledge applied. What is important is that health service is the totality of these applicable arts and sciences. This concept may appear too encompassing, but I press it upon you because it is the real challenge of our professions. In the past, we thought of health services as those established and maintained by governmental agencies exclusively for the prevention of communicable diseases. We have come a long way in recognizing that other types of service are essential if the individual is to attain health.

The individual has many needs, all of which must be served, if he is to attain "a state of complete physical, mental, and social well-

[1] Delivered at the Convocation, American College of Dentists, Atlantic City, N. J., October 29, 1950.

[2] Deputy Surgeon General, Public Health Service, Federal Security Agency.

being."[3] No one discipline can minister to this multiplicity of needs, single-handed. To be sure, specialization is not only desirable but necessary, but specialization can defeat itself. The various specialties tend to become preoccupied with their own segments of the total health problem. The technology, methods, and even the language of the various specialized fields are often assumed to be without relation to other areas of knowledge. The legally defined boundaries between them tend to become, in the words of Bolwell, "closed frontiers . . . preventing the free interchange of interest, of information, and of collaborative practice." The result has been a form of professional isolationism and a departure from the concept of the unitary nature of the health problem. For as the various areas of knowledge divide and subdivide, the individual, upon whom our health service focuses, remains a whole person. To meet the needs of this individual effectively, the various disciplines must achieve a synthesis. The many separate parts must be brought into focus upon the individual as a whole person. If our present concept of health service is to be meaningful, there must be a fuller measure of cooperation among the various professions. Each profession must be prepared to call upon the skills and understanding of the others. For example, the fields of neurology, endocrinology, and child psychology have much to contribute to the management of problems in clinical dentistry. The individual practitioner has the clear responsibility of seeing the relationship of his field to the other specialized areas of knowledge.

The services that public health departments can render to hospitals and private practitioners are numerous. Public health nurses, for example, can follow mothers and infants from the obstetrical ward into the home. They can help the patient in the home carry out the doctor's orders. In reverse, patients located by the public health staff in case-finding programs are referred to the individual practitioner or the hospital for diagnosis and treatment. The social worker is a key figure both on the health department staff and in the hospital.

Social service, by the way, is not confined to indigent patients. People in all economic groups need someone who knows where to

[3] Carr, Malcolm Wallace. *Dentistry. An Agency of Health Service.* 219 pp. Commonwealth Fund. New York. 1946. Preface by Prof. Robert Whitney Bolwell.

turn in the community for a wide variety of social services. Housekeeping service for a convalescent mother may be needed; or educational service for a handicapped child; or a less strenuous job for a cardiac patient. The medical and dental professions should be aware of these problems and of the resources available for solving them.

Control of environmental hazards is a basic function of public health agencies. There seems to be no doubt as to the universal essentiality of this type of health service, for as has been pointed out, "The real question . . . is not so much whether the person is well or ill, or even . . . whether rich or poor . . . for the rich use the sewerage system."[4]

Modern environmental hazards affect much larger numbers of people and are of different character than those of fifty years ago. Pollution of the air and water with industrial wastes, for example, is one of the major health problems of our time. Although we do not know all the precise effects of such pollution on individual health, we do know that the results are in the field of systemic disease rather than in the spread of infections.

We have been slow to appreciate the need for study and action to make safe and healthful the environment to which we are exposed more than any other—our homes. The tragic facts on juvenile delinquency and on home accidents are but two of the blots on our record which we know stem in part from poor housing.

Adjustments of the environment through public health practice can affect the incidence of non-communicable diseases. A recent, clear-cut example of this is the effect of fluoridation of community water supplies on the incidence of caries in children.

I am sure that most of you are familiar with the basic research conducted by the U. S. Public Health Service which led to the practical application of this method. The application, of course, could not have been achieved without the collaboration of public health engineers, water specialists, and health department staffs.

Since 1945 the Public Health Service has been carrying on carefully controlled studies in Michigan, in cooperation with the University of Michigan School of Dentistry, and the State and local health departments. We have also extended our studies to develop cheaper methods of fluoridation. In the meantime, about 50 com-

[4] Mustard, Harry S. *Government in Public Health.* Commonwealth Fund, 1945, p. 6.

munities with fluoride-free water supplies have begun to use this mass method of reducing dental caries.

Fluoridation of the public water supply of Grand Rapids, Michigan, began in 1945, with the addition of sodium fluoride at a uniform concentration of one part per million. To establish a base line, dental examinations of the Grand Rapids school children were made in 1944–45 and also in Muskegon, Michigan, with a fluoride-free water supply and in Aurora, Illinois, with a water supply containing natural fluorides at a concentration of 1.2 parts per million.

The 1949 data show[5] striking reductions in dental caries among Grand Rapids school children in the younger age groups: seven years and under. The five-year-olds examined in 1949 had 39 per cent lower caries rates in the deciduous teeth than did children of the same age group in 1945. The reduction is even more striking when we look at the permanent teeth. Children who were seven years old in 1949 and who had resided in Grand Rapids from birth, had 60 per cent lower rates of decayed, missing, or filled permanent teeth than did continuous residents of the same age in 1945, when fluoridation was introduced. Meanwhile, the high caries incidence in Muskegon and the low incidence in Aurora have continued unchanged.

An interesting aspect of modern health services is the general shift from emphasis on diseases to emphasis on persons. It is true that the specialists—the dentists, biochemists, engineers, and administrators—who are involved in the studies on fluoridation are concerned with the technicalities and the disease-process; but their basic interest is the health of children. The same is true in the topical fluoride demonstrations which the U. S. Public Health Service is conducting in cooperation with the Children's Bureau, State and local health agencies and dental societies.

Public and professional interest is likewise concentrated on the health problems of adults. The higher proportion of middle-aged and elderly persons in the population actually is one of the principal factors responsible for the shifting emphasis in health services. The chronic diseases and impairments which chiefly affect these age groups call for different kinds of services than were effective in the control of acute communicable diseases. The public health approach, however, is the same: namely, to mobilize resources in the commu-

[5] Dean, Arnold, Knutson, and Jay. Studies in Mass Control of Dental Caries through Fluoridation of Public Water Supplies. Public Health Reports, 65: 43 (Oct. 27, 1950).

nity so that the required facilities and services will be available. The objectives of such services are to improve the health status of the well individual; to prevent illness and injury; and to restore the sick and disabled to the highest level of health which present skills of medical science and biological limitations permit.

Professional Cooperation

This total goal demands the integration of our services. The integration of which I speak has long been needed in the relations of the dental and medical professions. In its historical development, dentistry has concentrated upon the technical aspects of its service. Too often the techniques of repair and replacement have become ends in themselves. This was perhaps inevitable when in the past we had little knowledge of the biological relations of dentistry. The physician, on the other hand, has been traditionally unconcerned with oral health. He has been content to leave many unexplored areas to the dentist. The result has been the creation of a "no man's land" between dentistry and medicine, which has certainly not been in the public interest.

We are rapidly accumulating knowledge to fill this vacuum. We have advanced beyond the limited view that dental health and disease are local phenomena in cause and effect. We accept the possibility that no oral disorder is entirely free of systemic effects. We have clear evidence that many oral lesions are a reflection of systemic disease, perhaps often influenced with local causes.

What is needed is an approach which relates dental health status to the other health problems of the individual, and vice versa. A successful example of such an approach is the oral hygiene program operated by the Health Division of the Tennessee Valley Authority for the prevention of "phossy jaw" in TVA's large fertilizer plants. Medicine has long been concerned with "phossy jaw," the classic occupational disease of workers in match factories and other industries involving phosphorus. We do not yet know the cause of the disease or precisely how the condition develops. But TVA instituted an intensive industrial health service, with oral hygiene as the backbone of the program. The dentists of the industrial health service see to it that every worker receives periodic inspections and prophylactic treatments, with a view to keeping the mouth clean and

there has not been a single case of "phossy jaw" in more than 12 years of operation. So medicine and dentistry have come together to prevent a systemic disease with oral manifestations.

The hospital as a community service offers another point of contact between the dental and medical professions. It is regrettable that this opportunity has not been siezed to a significant extent in the United States. Of 6,103 general and special hospitals not operated by the Federal Government, less than 30 per cent have dental departments. Yet neither public nor private hospitals can provide total service unless dentistry is included.

Collaboration between medical and dental services, in public health agencies, industrial hygiene programs, and hospitals, will undoubtedly increase as all of us come to understand better interrelations of the biological problems we face. Any fundamental change in professional relationships, however, depends upon the training programs in dentistry and medicine. The undergraduate years are the time to stress the need for collaboration. This emphasis could be facilitated by a closer association between the dental school and the teaching hospital, the dental school and the medical school. We should encourage medical interns and fourth year dental students to sit down together more often in the preparation of a case history. The joint examination and diagnosis could, with a little planning, become an important learning experience for both groups.

The concept of professional cooperation is already gaining wider acceptance. In 1949, six National organizations formed an Inter-Association Committee on Health. In addition to the American Dental Association, it consists of the American Medical, Public Health, Public Welfare, Nurses, and Hospital Associations. This joint committee provides a forum for professional discussion and understanding of common problems. It is of special interest to this group that the first Chairman is a dentist and a member of the American College of Dentists, Dr. Philip E. Adams.

The pooling of various professional skills and points of view is apparent within your own organization. Your standing Committee on Research has included in addition to dentists, a pediatrician, a general educator, a medical school professor of physiology, and an educational administrator.

Preventive Medicine

If we are to translate modern knowledge into health service for our citizens, we must do more than just improve our clinical skills. Individual practitioners will always have ample work to do in reconstructing health and repairing the damage of disease. We must recognize, however, that much of this disability can be eliminated through positive programs of preventive medicine in its broadest sense.

Prevention is not a specific technique, nor is it limited to any specific professional group or agency. Prevention is the responsibility of every individual practitioner. It includes all activities intended to increase health or to prevent a "depreciation of health."

Implicit in this concept of prevention is the idea that apparently healthy people can be made healthier. Modern pediatric practice is today pointing the way in this direction. It has given us convincing demonstration that the health of well babies can be improved through conferences and clinic interviews, stressing nutrition and mental hygiene. The same approach can be utilized with profit among older children and among adults, with the extension of services to include oral hygiene, and rehabilitation.

The present gap in preventive services to the public cannot be filled unless the professional schools do a better job of teaching a preventive "point of view" to the students. The students must be convinced of the need for a closer liaison between the private practitioners and their local health services. The dental student, as well as the medical student, must know just what the health department does in his community and how he can cooperate with it, as well as what help he may request from the department. In addition to the official agencies, he must be aware of his relationship to the voluntary organizations and the many social services bearing upon public health and medical care.

The present training of our health practitioners does not stimulate them sufficiently to look for opportunities in the practice of prevention. The curriculum is oriented toward disease and the primary emphasis is upon the acquisition of therapeutic skills and techniques. The student is given little experience with the common ailments of man. Dr. Charles Hill, Secretary of the British Medical Association sums the problem in epigrammatic style. Medical education, he

says, "trains us in the tragic to go out and treat the trivial." Under the circumstances, dentists, physicians, and allied professionals cannot be expected to show overwhelming appreciation for preventive opportunities.

The teaching of prevention can be strengthened by according it a place in the teaching of every clinical specialty, as well as by setting up special courses and departments. It can also be accomplished by revitalizing our teaching methods. Greater reliance should be placed upon the use of seminars, clinical clerkships in the health and welfare agencies of the community, and other techniques allowing more student participation. For example, dental and medical students should participate in the health programs of industry, the schools, or the welfare department. In this way the student can acquire an appreciation for the social problems of health and a familiarity with the people and organizations working to solve these problems.

Distribution of Health Services

The need to provide opportunities for a wider distribution and consumption of health services is a challenge which faces all the professions. The adequate provision of health services depends upon well-trained personnel—personnel to staff hospitals and clinics, health departments, research laboratories, and teaching institutions, as well as to provide individual services in private practice. Dentistry shares with medicine and other major professional groups a shortage in manpower, at the same time that demands for services are increasing. This increased demand is reflected in the expenditure during 1949 of almost $1 billion for dental care. It is reflected also in increased demands for dental facilities and personnel by industrial and public health programs.

If health services of all types are responsive to these demands and to the needs of our aging population, we shall certainly expect a tremendous expansion of periodontal and prosthetic services, which are the most time-consuming of all dental operations. This in turn has many implications in terms of adequacy of manpower and estimates of future requirements for dentists.

No one can predict exactly what effects the National defense program will have upon dentistry and the other health professions. Each must be in a position of readiness to mobilize its personnel, facilities, and equipment. In dentistry, any attempt to meet the

needs of the military for dental officers will make it increasingly difficult to provide adequate care for the civilian population. There are implications of the defense program which dentistry cannot avoid. The drive to increase industrial productivity demands a full-scale attack on worker absenteeism. Industrial absentee rates for dental disease were relatively high during World War II. Puffer and Sebelius[6] in 1946 reported annual absence rates of 47 per 1,000 public utility employees for diseases of the teeth and gums, with an average of 4 days per absence. To help reduce this drain on maximal production should be an important goal for dentistry.

The shortage of dentists, physicians, nurses, and public health workers is closely related to the high costs of professional education. Many training schools are in serious financial condition. Their power to expand educational plant and facilities in order to accommodate a larger enrollment is limited. Overtaxing the existing schools could easily lead to a deterioration of quality and an inferior educational product. As you well know, Congress has considered several proposals for Federal aid to institutions which train professional health personnel. As we face the implications of national defense, the problems of professional training become even more acute.

Conclusion

In summary, then, the modern concept of health service implies the totality of all the arts and sciences which are related to man's physical, mental, and social well-being. Our several professions are beginning to recognize this inter-relationship, and to work together at various points of contact: the health department, the hospital, the industrial health service, the research center, and the professional school. In the contemporary period, also, public demand is pressing upon the professions for speedier action to solve their health and special problems.

The professions have recognized that many massive economic problems must be solved before society can hope to find health through its health services— however broadly conceived. Food, adequate housing, full employment: these needs have to be met. The professions have a responsibility to help society find ways of

[6] Puffer, Ruth R. and Sebelius, Carl L. Absenteeism in Tennessee Industrial Plants Caused by Diseases of the Teeth and Gums. J. A. D. A. 33: 822–831, 1946.

meeting those needs for they are basic to health. Nor can the professions hold back in doing their part to expand and improve health services, simply because other social problems exist. I do not mean that it is the exclusive responsibility of our professions nor of any one agency or social institution to solve all these problems. In our American society, exclusive professional responsibility would be impossible; and it would be undesirable. Our social problems, including health problems, can be solved best by the combined, dedicated efforts of leaders in the professions and in all other walks of our American way of life.

In a rapidly changing society, when so much that we value is threatened, responsible leadership wherever it can be found must help the community, the State, and the Nation find effective means for providing the health services on which depend the building of a strong and vigorous people.

You can't hold a man down without staying down with him.
—Booker T. Washington
Through Can. Dent. Jnl. 17, 151:1951

THE DENTAL HEALTH SERVICE IN GREAT BRITAIN, A YEAR LATER

RAYMOND E. MYERS, D.D.S., B.S.,[1] Louisville

At the Convocation of the American College of Dentists in San Francisco, California, on October 16, 1949, I gave a report on Dentistry in the National Health Service of Great Britain following the survey which I made during the previous summer under the sponsorship of the College.[2]

Now I am asked to report on "The Dental Health Service in Great Britain, A Year Later." I have made an effort since my return to keep up with developments in that Health Service by means of available publications and personal correspondence, and am therefore, pleased to attempt a current appraisal of the Scheme.

A quotation from a recent reply will serve as an introduction to this paper. My British friend who had read the published report of my survey said: "I sympathize with you in having to deliver a lecture on 'The Dental Health Service in Great Britain—A Year Later.' It is awkward for a man to stand up and say in effect, 'A year ago I was a prophet of woe upon the Dental Health Service in Britain. Now I must remind you of everything I said on that occasion for I have nothing hopeful or good to add to what I said then; a year ago my message was one of woe; now it is woe, woe, woe.' "[3]

This disconsolate view of the present position of dentistry in the Health Service fairly represents the sentiment expressed in most of the letters I have received.

The fourth day of July, 1950, marks the end of the second year of operation of Britain's new scheme of national health. During this period the General Dental Service has been attended with many difficult, if not insoluble, problems. Undoubtedly, that of greatest importance continues to be the breakdown of the School Dental Service for children and the services for expectant and nursing mothers.

Before the introduction of the Scheme, most of the service for

[1] Dean, University of Louisville, School of Dentistry; Chairman, Committee on Socio-Economics, American College of Dentists, Louisville, Kentucky.

[2] Journal, American College of Dentists, 16, 101; 1949 (Dec.).

[3] Personal communication.

children was done by School Dental Officers, as they are called, who are paid straight salaries by the Government for full-time work. All during the past two years these Officers have been resigning in wholesale lots to open their own offices for the more lucrative general practice which has resulted from the increased demand for government-paid dental service. Many of these School Clinics, therefore, have had to be closed. Today, in some areas, there is only one school dentist to 10,000 or 20,000 children. And this position is aggravated still more because dental practitioners in the Scheme receive smaller fees for conservative treatment for children than they do for adults.

While some adjustment has been made in the disparity of income between the public dental officer and the general practitioner, the situation has grown steadily worse, and is still regarded as "the greatest and most tragic failure of the National Health Service."

Although the Act had specifically provided a "priority" dental service for children, the great demand on the part of the adult population for complete dental service is denying the younger generation their proper share of attention. As one dentist lamented,[4] "I shall never understand why I have been compelled to give up saving the children's teeth in order to make dentures for the aged to be buried in."

Before the Labor Government launched its all-embracing National Health Service on July 5, 1948, it was urged by the professional organizations to limit the initial program to the care of young children and expectant and nursing mothers, since it was evident that there were too few dentists and physicians to meet the anticipated demand for the health services.

Why this timely advice was ignored by the Government before the Service began, and why this same Government has spent two years bribing the public while the teeth of the children have deteriorated for lack of dental treatment, can only be explained on the grounds that the National Health Service is a political issue.

It is not because the Minister does not agree with the long-term view of Mr. Iain MacLeod, who, speaking in debate in the House of Commons, said,[5] "If the teeth of expectant and nursing mothers and those of infants and young children be sound, then in a generation

[4] P. D. O. Group Notes. Brit. D. J., Supplement 88: 33, March 17, 1950.

[5] A Way Out (Editorial). Brit. D. J., 88: 190, April 6, 1950.

we will have, dentally, a sound nation." And, it is not because the Minister has not been warned that, to paraphrase Mr. MacLeod's remarks, if the teeth of expectant and nursing mothers and those of infants and young children be neglected, then in a generation they will have an edentulous nation.

No doubt the correct answer is that children have no votes and expectant and nursing mothers have no political influence; and "the present Government, by the wrong people, of the right people, for the wrong people," as one Britisher described it, has no interest in the dental health of the future generation.

Strong protests by representatives of the profession seem only to antagonize those in political authority, and every suggestion offered for remedying the ironical situation is turned down on the grounds of economy. But those members of the profession and the laity who are most concerned about the far-reaching effects of the neglect of children now find some consolation in the knowledge that the increasing attention given to the matter in the Press, reflects a growing anxiety on the part of the general public about the future dental health of the people of Britain.

Recently the Council of the British Dental Association[6] called upon its own members to help remedy the deplorable situation. The members of the Association were asked, as an emergency measure, to set aside one-half day each week solely for the treatment of school children. The willingness of an already overworked dental profession to attempt to correct a situation brought about by the indifferent and cynical attitude of the Government and the Local Authorities, not only indicates the seriousness of the situation, but should do much to raise the prestige of a profession who have been made to appear mercenary and ridiculous in the eyes of the public.

Is it not significant for us to observe that a compulsory system of national health aimed at "making all of the health services available to every man, woman and child in the population" has so utterly failed in delivering its declared "priority" services that the dental profession must once again, out of a sense of compassion, consider ways and means of providing needed dental treatment for the children of Britain?

During the past year the financial burden imposed on the Treasury by the National Health Service Act has been evidenced not only in

[6] The Health Service. Brit. D. J., 88: 194, April 6, 1950.

financial statistics but also in governmental policies and Ministerial regulations. One of the more recent steps taken by the Ministry of Health in an effort to reduce government expenditure, has been the further cut of 10 per cent in the gross earnings of dentists.

It is well to remember that when the Health Service came into being, a scale of fees was set-up for participating dentists, based on the average time required for various dental operations. A 52 per cent discount was allowed for professional expenses. Thus having determined the value of the dentist's time, it was estimated that those with experience, working 33 chairside hours a week or 1500 a year, would earn a net income of about $5,000.

This being in excess of the average earnings of the profession at that time, the majority of the dentists were lured by the scale of fees and lost no time in joining the Scheme. But the dentists didn't limit their work to 33 hours a week for when the masses descended upon the profession demanding their "rights" to receive the "free" treatment which the Government had promised them, some of the dentists even put in 50 to 100 hours, and consequently earned far higher incomes than had been expected.

During the ensuing months the Government was watching the drain on the Treasury. While the expenditure for the dental service was running only about one-tenth of the total cost of all the health services, it was apparent that the financial experts had miscalculated the estimated cost of the whole Scheme by a wide margin. In short, the new venture was costing too much and the dental service was no small item.

Then it came to pass that the early fears of certain representatives of the British Dental Association had been justified when they urged their members not to join the Scheme and warned them that there was no guarantee that the scale would not be cut, for on June 1, 1949, less than a year after the Service began, the Minister arbitrarily reduced the scale of fees for dentists an over-all 20 per cent.

The Minister had exercised his dictatorial powers against the dental profession, and feeling the need of justification in the eyes of the public, released information to the Press about the fabulous earnings of a few dentists who were, unscrupulously, taking advantage of an opportune situation. Thus a press campaign against the dentists of Britain was begun.

As time went on, the Health Services continued to cost too much,

and pressed by the Treasury to economize, the Minister once again turned to the dental profession. Effective on May 1, 1950, he cut their gross earnings a further 10 per cent of the original figure.

Taken by itself, this cut may not appear to be excessive, and when added to the previous one of 20 per cent is, theoretically, a total reduction of only 30 per cent; but in reality the dentist's net income has been reduced by approximately 60 per cent and, in some cases, even more. For example, if a dentist earns $20,000, his net personal income in July, 1948, would have been approximately $10,000 since 52 per cent of the gross income is allowed as practice expenses. With the first cut of 20 per cent in June, 1949, the $20,000 figure would be reduced to $16,000. But the amount of work done by the dentist would remain the same, so there could be no reduction in practice expenses. Hence his personal income would be only about $6,000. With the further cut of 10 per cent, the original $20,000 would now be approximately $14,400, with practice expenses still at $10,000. His personal net income is now around $4,400.

The British dentist who supplied me with the above example concluded, "I believe the Minister has stated that he will not be satisfied until he sees the fees cut by 60 per cent. Since he has only officially cut them by 30 per cent, it looks as though we will have to pay him in the end."

A memorandum of protest sent to the Minister by the London Local Dental Committee included the indictment that articles in the National Press on the high earnings of dentists are grossly misleading and detrimental to the dental profession.

In this country, as well as in Britain, the figures that are usually published represent the gross incomes of a small minority of the dentists in the Scheme, and since no account is taken of overtime work or of the 52 per cent allowance for professional expenses, the figures do not truly represent the actual net remuneration of the profession.

An excellent example can be found in the September, 1950, Ladies Home Journal.[7] In an article on the National Health Service, Rebecca West, a British writer who should—or does—know better, follows the usual pattern in accusing the dentists of making fortunes. She says, "Instead of earning from $3,000 to $10,000 or $15,000 a

[7] West, Rebecca, Ladies Home Journal, 67: 36, September 1950.

year, they found themselves in a Klondike rush that gave them $20,000 to $60,000 a year, and even, in one glorious case, $96,000."

Here again is a "gross" error, and whether intended or not, the reader infers that the National Health Service has turned out to be a gold mine for the dentists of Britain.

In refuting the publicity on the alleged high earnings of dentists, the London Local Dental Committee reveals the fact[8] that for the year ending March 31, 1950, the average gross income of the 1,090 dentists on the London Executive Council list was $9,825.20 or a average net income of $4,715.20.

The "unilateral" decision of the Minister to reduce the remuneration of the entire dental profession is exceedingly unfair in that the majority are being made to suffer because a few of its members, as someone has said, "sold their professional souls for a mess of governmental pottage." And it may also turn out to be a matter of concern for the public, if it results in restricting the availability of dental service, and in further lowering the quality of that service.

Already it is reported that an increasing number of dentists throughout the country are refusing to accept new patients under the National Health Service, but it is doubtful that a great many dentists will be able to transfer a sufficient numer of their patients from Scheme-status to private-status to enable them to practice completely independent of the Scheme. In this case it may follow that the skilled, conscientious dentists being hard pressed to make a living, will have to earn a larger number of government-paid fees, and that the quality of service of these better practitioners, too, may suffer. Moreover it is reported that many "have destroyed to a large extent the good will of their practices by taking on too many patients, so that they have been unable to keep up the standard of attention that they formerly gave to their private patients."

Apart from these arbitrary cuts in the scale of fees, the Ministry has recently contrived another means of reducing the remuneration of the dental profession. This has to do with the time limit for the completion of treatment.

One of the Conditions of Service in the Scheme is that work undertaken for a patient must be completed within six months in cases

[8] The Health Service. Brit. D. J., 89: 25, July 7, 1950.

where dentures are not included, and within twelve months in cases in which extractions and the provision of dentures are included.

In the past this regulation has not been enforced, and dentists in an effort to take care of a great number of patients have taken on far more work than they could complete within the time limits.

In May, the Minister informed the dental profession that after September 30, 1950, this regulation would be strictly enforced. He assured them that all claims submitted for payment up to that date would be met without question regardless of how long the form had been outstanding, but he made it clear that after September 30 if they undertook more work than they could complete on time, payment would be withheld. Consequently the dentists have been working frantically all summer to clear up the arrears of work, some of which was started even as early as 1948.

Reporting on this situation an informant says, "We know quite well that there will be thousands of dentists with, between them, hundreds of thousands of out-of-date forms on October 1, and whether the Ministry is going to repudiate payment for all these forms remains to be seen. The profession is, in fact, caught whatever the dentists do. Once having taken on a patient, they must finish that work; yet if the form is more than six months old and they cannot get the patient completed before September 30, they may not get paid even for that work which they have done. If they refuse to continue with the patient, they break their terms of service, and whether they finish the work or not, they may not get paid for the case. Do you wonder that they are feeling insecure and not looking forward to the future?"

The purpose behind the enforcement of this regulation was made obvious when the Ministry stated that it was recognized that dentists might have to accept fewer new patients in order to complete treatment on time.[9] Of course, dentists know that cases of orthodontic treatment, recurrent gingivitis associated with general disease and extensive and rampant caries cannot be successfully treated to completion in six months.

In appraising the operation of the National Health Service during the past year, a word should be said about its effects on the personal relationship between the dentist and his patient in dental practice. Prior to the Scheme, this relationship was governed, as it is in this

[9] Time Limit for Completion of Treatment. Brit. D. J., 88: 313, June 2, 1950.

country, by the free will of the participating parties; today in Britain, it is dictated in a large measure by regulations emanating from the Ministry of Health.

One condition of practice which is attended with far-reaching consequences for both the profession and the public, is the requirement that dentists must obtain prior approval of the Dental Estimates Board before they may begin any treatment for the patient except the most simple and inexpensive operations. Moreover, the Board must pass every estimate (whether it requires prior approval or not) before payment is made to the dentists for any of the services they perform.

While the functions of the Board may not appear to be especially unreasonable, the more important aspect of the situation has to do with the motives which dictate their policies and decisions regarding dental treatment for the masses. There is much evidence that this government-appointed Board is limiting the nature of conservative treatment by viewing the dentist's recommendations in terms of the cost to the State rather than in the interest of the patient.

For this reason dentists are experiencing no difficulty in getting immediate approval for cases of extractions and dentures. It is a matter of record that even lay clerks in the employee of the Board are authorizing thousands of recommendations for this radical type of treatment every day. On the other hand, when dentists submit estimates for gold inlays, bridgework and the like, it is not unusual for correspondence to be carried on during a period of weeks or months before a decision is finally reached. Since patients are annoyed by the inconvenience of having their dental work delayed while negotiations are going on between the dentist and the Board, it is understandable that many practitioners are tempted to acquiesce and sacrifice proper treatment for expediency.[10]

A dentist, who by virtue of his position is intimately acquainted with the workings of the Dental Estimates Board, says that it is impossible to believe that so many of their decisions could be made "without any regard for professional opinion and, indeed, in many cases, without any regard for the commonly accepted standards of fair and just dealings between one man and another."

In this connection, it has been pointed out that it will cost the Government approximately $38.00 over a period of thirty years for

[10] The Dentist and the Service. The Practitioner, Extra Number, Autumn 1949.

the patient who at 25 years of age has all of his teeth extracted and dentures supplied, with or without justification. On the other hand, if the patient has conservative treatment during that period, it is estimated that it will cost the Government about $6.00 per annum for thirty years or $180.00 as compared with $38.00 for what the British call "blood and vulcanite" dentistry. It is charged, therefore, that considerations of health will become secondary to national economy and that the skill of the conscientious practitioner will decline for there will be no incentive for him to study and practice advanced conservative dentistry. Already skilled orthodontists and other specialists are unable to maintain their private practices and are being forced into full-time or considerable part-time hospital or clinic appointments.

Another source of great anxiety for the dental profession at the present time concerns the application and working of the discipline regulations. Each of the 150 Executive Councils throughout the country has its own Dental Service Committee to try cases in which a dentist is accused of a breach of regulations, and to recommend penalties including a fine or even dismissal from the Service when the dentist is adjudged guilty. It is interesting to note that the Discipline Committees are composed of three dentists and three laymen with a lay Chairman.

Aside from the relatively few instances in which a dentist is tried for professional misconduct, cases of frivolous complaints against members of the profession must also go through the disciplinary machine.

I am told that "however conscientious a dentist may be he never knows when some difficult patient may suddenly lodge a complaint against him. Further, the complaint need not be laid by the patient, but can be made by anyone. Thus, a patient's husband can complain that he does not like the looks of his wife's new dentures even though the wife is perfectly satisfied. In a large number of cases these complaints are made to the Executive Council without the patient ever having returned to the dentist or given him an opportunity to make adjustments. Thus the letter from the Clerk to the Council, enclosing a copy of the patient's complaint, may often be the first that a dentist hears that a patient he completed four or five months ago and as he thought to everyone's satisfaction, is not in fact satisfied. Many dentists in such cases are merely writing to the Executive Council

and offering to return the fees they have already been paid for the case, so that the patient can go somewhere else, rather than waste a lot of time and have the indignity of standing before a committee and arguing with the patient as to whether the patient's face is more or less like a horse than it was previously. We have had a case of a Clerk to an Executive Council (who is of course always a layman) examining the mouth of a patient who alleged ill-fitting dentures and then ringing up the dentist to give his (the Clerk's) opinion as to what the dentist should do. We have had a case where the Dental Service Committee actually held its hearing in the County Assize Court where, on other occasions, the local murderers and felons are tried before His Majesty's Judges."

The correspondent who wrote the above concluded with this statement: "You can indeed say with more confidence than a year ago that the profession is 'cowed and frightened, disillusioned and disappointed, resentful and bitter.' Many of them have lost their self-respect, and are sick and tired of the whole thing. They feel they are trapped and cannot get out of the Service. They have no illusions now about their future or the future of dentistry."

Another contributing factor to the present state of servitude of dentists under the Health Act, is the requirement of filling out forms and keeping special records, a task which it is estimated consumes at least seven hours of the average dentist's time per week. It is reported that the number of publications containing regulations is rapidly increasing and has reached such a stage that the dental schools are considering the advisability of giving graduating students a course on how to keep within the National Health Service.

In considering, for a moment, the alleged deterioration of the quality of dental service in the Scheme, I want to quote verbatim from a letter sent me by a British practitioner who does part-time teaching at one of their dental schools. The letter reads, in part:

> "In our School, 50 per cent of the new patients who register daily are cases with violent toothache who have tried ten or twelve dentists to obtain treatment. The waiting list for dentures is a good eighteen months long, and patients have to wait over one month for extractions of impacted wisdom teeth, buried roots, etc. It is appalling to see the type of work referred to any hospital where there is a dental officer, and especially to teach-

ing hospitals. Any treatment required by the patient which involves a long expenditure of time with a small remuneration is immediately considered by many dentists as too difficult and beyond their capabilities Attempted extractions and broken roots left by the dentist are among the first to be referred, whereas before the Scheme came into being one seldom saw anything but the very difficult cases. You may feel that the answer to this is to send the patient back to the dentist, but in that case only the patient suffers and becomes a shuttlecock batted backwards and forwards until someone reaches a decision. A standard of workmanship is almost non-existent in far too many cases. Patients have come to the hospital with raging pain, unable to get an appointment with their own dentist who had seen them only a week or so previously. On examination, perhaps two teeth had been joined with one amalgam filling. Others had had enough of the decay removed to retain a permanent filling, which literally rocked on the remaining decay. I know personally of dentists who have three surgeries functioning at once, with a fresh patient in every surgery every 15 minutes."

This is a grim picture indeed of some of the present-day practice of dentistry under the National Health Service. It is not to be interpreted however as representing the behavior of the majority of the dentists of Britain. There is no question, and I speak with some personal experience, that many conscientious practitioners have made, and are now making, an honest effort to take care of a large number of patients and at the same time uphold the high standards of dental practice.

It may serve to show however that the introduction of a compulsory, government-sponsored scheme of national health, without the personnel for its accomplishment, can result in the deterioration and misdirection of available dental service.

Much of the blame for the trying conditions besetting the profession and the public is placed squarely on the shoulders of the Minister of Health, Mr. Anuerin Bevan. Mr. Bevan, who is often referred to as "Nye," has become a fitting target for many gibes and jests. I think the attitude of the profession toward the Minister

[11] Proceedings of Annual Dinner of the Association. Brit. D. J., 89: 85, August 4, 1950.

can be illustrated by citing the remarks of a speaker at the recent Annual Dinner of the British Dental Association.[11] He said, "Some of us have had to meet this gentleman so frequently that I understand they have even come to address him by his Christian name, and I have heard it said that the profession in this country is 'Nye' ruined."

Some of my British friends, out of a sense of professional brotherhood, have expressed concern over the proposed legislation for Compulsory Health Insurance in this country. One said, "It is all very alarming for the future of dentistry and I hope America may never have to face it. It is horrible to think that with all America has done for dental education all over the world that they must face being bobbled by such a situation." Another offered some indirect advice in saying, "Apart from the enormous amount of people who have received extractions and dentures free, and, who have probably been relieved of a great deal of sepsis and expense, I would say personally that the experiment, as our Ministerial friends are apt to term their work, is a colossal failure, and the only real good I can see it is doing is to point out to the rest of the world what not to do." And still another suggested, "If you ever begin a national scheme of free treatment, confine it to those who matter most in such a scheme, the children—who have no votes, but will eventually carry the health and destiny of your country."

I have attempted to give you a brief account of the present status of dentistry in the National Health Service. Voices from the Ministry of Health contend that it is too early as yet to view the matter in true perspective and describe the present difficulties as "growing pains" which in time, they say, will be alleviated. But the humanistic observers, of which my correspondents are pre-eminent, view the future with pessimism because the course of events thus far indicate that the motives of the government in promoting the Service are of political origin and are not dictated by a desire to improve the health and welfare of the people, especially that of the future generation.

DENTAL HEALTH SERVICE: ITS OPPORTUNITIES AND RESPONSIBILITIES

Dental Education[1]

HARRY LYONS, D.D.S.[2] Richmond

The role of dental education in the realization of the opportunities and responsibilities of dental health service would appear, at first thought, to be too obvious to warrant elaboration. However, the facets of the problem are so numerous that it would be well to record certain facts and impressions concerning them.

A health service requires, first of all, personnel with specialized training in the field. Dental health service requires dentists and auxiliary dental personnel educated and trained in the science and art of dental care. The education of dentists in this country has now been elevated to that of a university discipline. Auxiliary dental personnel are trained partly in some dental schools or schools of dental hygiene and partly in trade schools and by apprenticeship. Whether the training of auxiliary dental personnel should be a direct responsibility of dental schools or whether trade schools and apprenticeship programs should continue to function are subjects which need to be discussed with great care. These questions, however, are not as pressing as are others more directly related to the training of dentists.

The education of a dentist, for purposes of this dicsussion, may be said to begin upon entrance of the student in the liberal arts college or university where the prospective dental student may attain the academic requirements for admission to a school of dentistry. Certain so-called pre-dental requirements are established. These include a rather heavy proportion of the sciences of biology, physics and chemistry. The logic of these requirements as prerequisites to studies in the sciences found in the dental curriculum is sound enough for general acceptance. A question may be raised, however, as to the emphasis on these requirements over that given to the humanities and social sciences. In these times, dental educators are increasingly more aware that dentists must be more than technicians or even scientists in a health service. The opportunities and responsibilities of citizenship weigh as heavily on dentists as on others. As a matter

[1] Delivered at the Atlantic City Convention, Oct. 1950.

[2] Dean, Medical College of Virginia, School of Dentistry.

of fact, these opportunities and responsibilities should be recognized and accepted in greater weight by dentists as a superior group. Dental health service programs in a democracy call for intelligent leadership, planning and public relations as well as technical knowledge and skills. It is obvious, therefore, that the education of a dentist should prepare him for service in the community as a citizen of leadership ability as well as a health servant of fine skill and knowledge. It should be noted here that dental schools and dental teachers cannot dismiss this phase of a dentist's education by the simple statement that this is solely the responsibility of the academic college or university. Good citizenship must be taught at every turn and the dental teacher cannot evade this responsibility. He must teach it in theory and practice and by his own precept and example.

If dental education is to play its proper role in meeting the challenge of current opportunities and responsibilities in dental health service it must be re-evaluated from several aspects. One of the most glaring weaknesses in dental education is the inadequate preparation of dental teachers for teaching. With very few exceptions dental teachers have had no special training in pedagogy. Dental education is not alone in this problem. It is a weakness that also prevails in many other fields of education. This, however, does not mitigate the circumstance as it applies to dentistry. The Committee on Education of the College has taken cognizance of this problem. After much study, this Committee has presented a proposed program to the Regents for sponsorship by the College of a dental teacher training program. The College has both an opportunity and a challenge to make a significant contribution in this connection A few pertinent paragraphs from the 1948 report[2] of the Committee on Education will point up this problem:

"In the earlier years of formal dental education in this country, teaching in dentistry concerned itself mainly with technics. American dentistry became renowned for its technical excellence. In more recent years, as dentistry has taken its rightful place in the broad field of the health services, the biological sciences have been given increasing emphasis. This is as it should be. The broader scope of dental care and the education of dentists for this broader service increased the complexities of dental education. The need for dental teachers more adequately versed in the biologic sciences as well as

[2] J. Am. Col. Den., 15, 125; 1948 (Sep).

skilled in technics became obvious. Dental educators with these qualifications are not yet numerous enough to meet the current demands for this type of instruction. As a matter of fact, such broadly grounded dental teachers are still distinctly few in number.

"To complicate the problem still more, dentistry's horizon is again being broadened in consonance with the broadening horizons of all the health services. The health service professions are becoming acutely conscious of their social responsibilities in a complex democratic society, a society in which various groups are promoting plans for the wider distribution of health care that differ widely in their principles and philosophy. Dentistry's stake in the future is as great as that of any other health service profession. The social problems that face us are great and ominous. The social significance of dental care, the trends in social welfare generally and the direction which dental education should take in the future are some of the problems which are pressing for solutions. These problems should not be left to solution by chance or abdication. The future complexion and character of the health service professions, dentistry included, depend upon the intelligence, industry and courage with which these social problems are attacked. This calls for an enlightened and an aroused profession, the responsibility for which rests largely upon dental education. The immediate future, therefore, demands dental teachers who are not only well educated in the biologic sciences and skillful in the technics but who are also possessed of broad knowledge in the social sciences and in teaching methods. A goodly number of such dental teachers are necessary if dentistry is to meet the challenge of the day and of the near future with the success that will preserve, for us and for the public, many of the principles of health care which we hold dear and essential to democratic life. We should immediately set ourselves to the task of preparing an adequate number of superiorly educated and trained dental teachers. It is in this sphere that the College has an unique and challenging opportunity, an opportunity to inspire and financially to spark the graduate education and training of such personnel."

Dental education needs to review its curriculum frequently. The rapidly increasing fund of knowledge, newer materials and technics, and the changing social responsibilities of the health services make frequent surveys of the dental curriculum highly advisable.

Not only should the dental curriculum be reviewed frequently

but the teaching methods used in dental education should be re-evaluated often. For instance, the long hours now devoted to technic laboratory exercises may well be questioned in light of more rapid training methods recently utilized in other fields.

The Congress on Dental Education and Licensure sponsored in recent years by the Council on Dental Education of the American Dental Association is a most commendable project. The need for closer collaboration between dental schools and boards of dental examiners in their common objectives is urgent. This should be done not only on the national level but also on the state level where prevailing problems may be peculiar to the various states.

Dental education needs to expand and improve its graduate and post-graduate programs to meet the ever increasing need for more adequately trained personnel in special fields. An important phase of helping the practitioner in his daily tasks may be found in what may be called a program of continuing education for practitioners. In this connection, dental education should feature short refresher courses for practitioners in greater number and wider scope. These would materially help the practitioners to accept and discharge, in better fashion, their opportunities and responsibilities in dental health service.

The effectiveness of a health service program depends to a great degree upon the enlightenment of the population concerning the merits of the program. The public must be acquainted with their needs in the special field of service and with the benefits to be derived from participation in the health service program. As the appreciation of dental care becomes wider among the population the stature of the profession grows higher in their esteem. Dental education shares in this opportunity and responsibility.

These are only some of the needs of dental education if it is to meet its opportunities and responsibilities in dental health service. Others could be discussed at length. They include an evaluation of the dental personnel needed to effectively man the dental health services which our population should have. This subject is, of course, related to the facilities now available for the education and training of the required personnel. The improvement and expansion of physical facilities and the preparation and employment of an adequate teaching force would require more financial support than is now available. The possible sources of such financial support need to be

explored carefully and thoroughly. Great as are the financial needs of dental education, these should not be secured or accepted at a price that would deprive dental education of its liberties to experiment and develop free of hampering regulations and regimentation.

That dental education will meet its opportunities and responsibilities of the present and future there can be no doubt. The history of dental education and the dedication of those currently engaged in dental education give assurances for the future.

Of what value is currency when Liberty and Homeland have been sacrificed on the altar of indifference or complacency? It is not less taxes we want but more taxes on our spiritual appreciation, a re-awakening to the stark realities of the day, a re-dedication of the spirit and practice of democracy. It was the banner of freedom NOT the sign of the dollar that secured for us the blessings of liberty.

—Ralph Rosen, Bull., St. Louis D. Soc.
Through Jnl. Can. Den. Assn. 17, 162:1951

TEETH AND SKIN DISEASES[1]

GEORGE C. ANDREWS, M.D.[2] AND ANTHONY N. DOMONKOS, M.D.,[3] New York

One of the most intriguing and yet most elusive problems of modern medicine has been the focus of infection as an etiological factor in the diseases of the human body. During the first half of this century there were periods when it was the style to attribute obscure and uncertain etiologies to the focus of infection. Consequently, in consideration of the many distinct disease entities in which several etiologies are concerned, the mere fact that a focus of infection may or may not be involved has actually caused a pessimistic attitude towards the search for foci of infection in chronic infectious diseases.

This pessimistic attitude has been aggravated by the inability of today's standards to demonstrate a focus of infection in many instances. From the extreme attitude on the part of many physicians, where a great many of the debilitating chronic illnesses are ascribed to a focus of infection, to the opposite attitude, where an apparent focus of infection is flagrantly disregarded in the particular disease, lies the happy medium in dealing with diseases of the human body.

It is truly an American idea all the way through. First mention of a startling nature was made by Benjamin Rush in 1801, who noted that a patient, suffering from rheumatism of the hip joint for a number of years, coincidentally, had a number of infected teeth. The urgency of severe dental pain caused their extraction. Not only did the mouth symptoms disappear but also the rheumatic pains in a dramatic and permanent manner.

It would be amiss to jump one-hundred years to Frank Billings, the recent great pioneer in the focus of infection. Rather it would be appropriate to recall the rapid strides in medicine in the latter half of the 19th century. Pasteur showed that various diseases were caused by "ferments" in the body which later became micro-organisms as shown by the demonstration of the anthrax bacillus by Koch, the staphylococcus by Rosenbach, the streptococcus by Feh-

[1] This paper was presented at the meeting of the New York Section of the American College of Dentists, October 5, 1950.

[2] Clinical Professor, Dermatology, College of Physicians and Surgeons, Columbia University, New York.

[3] Assistant Dermatologist, College of Physicians and Surgeons, Columbia University.

leisen, and the diphtheria bacillus by Klebs and Loeffler. In 1877 Carl Weigert offered an explanation of the mechanism of generalized miliary tuberculosis. This was a mechanism whereby dissemination of the then so-called "tuberculous poison" occurred. An ulcerated primary tuberculosis focus would break into a vein and then be carried to various parts of the body via the blood stream. In 1882, Koch discovered the bacillus which still carries his name as the causative agent of tuberculosis. In 1898, Frank Billings, newly appointed to the chair of medicine at the Rush Medical College, Chicago, pointed out the fallacy in lobar pneumonia, until then regarded as a local disease caused by the inhalation of micro-organisms. Instead he ascribed this disease to a blood stream infection, otherwise how could this same organism bring about in other cases pneumococcic meningitis, pleuritis or arthritis? In the same vein, how could the demonstration of typhoid bacilli found in the rose colored spots on the skin be explained except by blood dissemination from the ulcerations in the intestine?

Whereas peripheral manifestations of a disease were regarded as systemic intoxications, Billings was able to show that indeed it was not an intoxication in many cases, but the metastic products carried by the blood stream from some superficial locus.

Of course, at that time the "id" conception had not been advanced. This is a mechanism effectively demonstrated in cases of dermatophytosis or ringworm of the feet, whereby a vesicular eruption appears on the hands, especially on the webs of the fingers, and still fungi cannot be demonstrated. As soon as the fungus infection of the feet is under control the vesicular eruption of the hands disappears. This is explained by an allergic manifestation spread to the hand via the blood stream.

In 1912 Frank Billings, in a paper referring particularly to arthritis and nephritis, coined the expression "chronic focal infection." From that time on this has become a common expression in the study of etiological factors.

Billings' beliefs were based upon clinical observations. The experimental proof was corroborated by his colleagues Ludvig Hektoen, Professor of Pathology at Rush Medical College, and E. C. Rosenow, also at Rush Medical College.

A tremendous amount of experimental work was done, and clinical observations were made. However, corroborative evidence by

other independent workers was lacking in many of the claims made by these men.

Despite the inability to have confirmatory proof of some of the claims, the conception of focus of infection has continued to be a very real factor in the cause of disease. Repeatedly the removal of such foci has brought about complete healing of the diseases.

From infancy to old age the teeth have a role in skin diseases. Even the edentulous old man with full upper and lower dentures may have eczema from a retained root fragment about which there is infection, or from pressure necrosis of the gingivo-buccal mucosa from the dentures which may be a result of alveolar infection.

These troubles may be chronologically listed as follows:

1. Infantile eczema, produced or exaggerated by deciduous teeth.
2. Alopecia areata in children, five years of age and up, from teething and impactions.
3. Pustular rosacea, sycosis vulgaris, pustular bacterid, eczema, dental fistula, recurrent furunculosis from abscessed teeth, or cheilitis mostly in middle-aged people.
4. Eczema of the legs, spreading to other parts of the body, from abscessed teeth in elderly people.
5. Miscellaneous dermatoses, such as chronic urticaria, lupus erythematosus, erythema multiforme, erythema nodosum, purpura, pemphigus, etc., in which focal infection may be a factor.

STATISTICS

Charts of 15,225 patients in our private practice were examined. Of these, there were 286 cases of skin diseases, exclusive of alopecia areata, probably due to focal infections of the teeth, tonsils or sinuses. Of these, 78 cases were selected for the basis of a paper. Forty-five cases were cured permanently and completely by the removal of foci of infection. This is 58 per cent that are known to be cured. Many others probably were cured, but want of a definite statement to that effect excluded them. Of the 45 cases known to be cured, there were 22 pustular bacterids, of which 12 were due to infected tonsils, 9 to abscessed teeth, and 1 was caused by a rectal fistula. There were 17 cases of eczema of the legs, all caused by abscessed teeth. There were three cases of pustular rosacea, 2 of which were cured by extraction of teeth and one by tonsillectomy. There were two cases of chronic urticaria, both cured by the removal of teeth.

INFATILE ECZEMA

Although intensive studies have elucidated some problems of this disease, our knowledge is still fragmentary. Each case is a separate problem and too often a baffling one. However, most doctors who have had experience in infantile eczema agree that teething may exaggerate the eczema and that there are cases of eczema that occur in children from eighteen to thirty months of age which only disappear after dentition is over. Holt and McIntosh, in their book, entitled "Diseases of Infancy and Childhood," state, "In cases of eczema the symptoms often undergo a distinct exacerbation with the eruption of each group of teeth."

ROSACEA

Feit, Laszlo and Vero in 1935 first interpreted rosacea as a bacterid from focal infection. A clinical experience started their study. It is worthwhile to give their description. "A woman with a pustular eruption of the face of several year's duration consulted us. The eruption resembled iodide acne." There was no improvement from local treatment, but she returned a few months later completely cured, attributing her cure to the draining of a maxillary empyema caused by an infected tooth. The recovery of this patient was so dramatic that the doctors decided to study the question of focal infection in rosacea. In a series of 50 patients with rosacea, they found definite focal infections in 43 cases, and of these 78 per cent were either completely cured or improved by removal of the foci. We have had several cases of this type, of which the following is an example:

> A man aged 71, consulted us because of pustular rosacea of the nose and cheeks of five years duration. He had been treated previously with sulfonamide ointment, which helped temporarily. His teeth had not been checked in many years. Examination revealed that he only had a few remaining teeth, which looked carious. There was gingivitis. Radiographs of the teeth showed four root abscesses. These remaining teeth were extracted and three weeks later the skin eruption was entirely gone, and it has never recurred.

PUSTULAR BACTERIDS

Pustular bacterids of the hands and feet are chronic recalcitrant vesicular and pustular eruptions, symmetrically located on palms and soles, which during quiescent periods become dry, erythematous,

exfoliative patches. The course is characterized by repeated exacerbations. From day to day, fresh groups of lesions may appear. Gradually the number of new lesions diminishes and the condition temporarily subsides to a quiescent stage, in which the involved areas are diffusely erythematous, dry, shiny, and exfoliative.

The condition has a direct relationship to focal infections. Cures result when the focal infection is identified and removed. In many cases, diseased tonsils, cholecystitis, chronic pyelitis, and other sources of infection were the cause of the trouble.

A leukocytosis is present in many cases. Frequently the counts are 10,000 or over. In two of our cases the count was over 19,000. This does not mean that a leukocytosis is present in all cases at all times. Apparently it develops at the time of an exacerbation. Cultures of material from the lesions are often sterile. Positive cutaneous reactions are obtained to staphylococcus and streptococcus extracts. We are not impressed by the reliability of such tests.

That a large portion of these cases are associated with focal infections and are cured by the removal of these infections, has been demonstrated over and over again. The term, pustular bacterids, first used in 1935 by George C. Andrews, has withstood the test of time and is applied more and more to such eruptions, as the cause is more carefully studied in tonsil cultures and aspirations, full dental radiographs and vitality tests, trial doses of sulfonamides or injections of penicillin, hyposensitization to autogenous vaccines or staphylococcus or streptococcus toxoids, and in oft-repeated white blood cell and differential counts.

CASE REPORT

A man aged 50, consulted us because of an eruption on the soles and heels, then spreading to the palms. He had been treated for dermatophytosis by several dermatologists, but no microscopic examinations had ever been made. The patches were vesicopustular and rather symmetrical. We could not find any fungi. He had several dead teeth and one broken tooth. The white blood count showed 18,000 cells. The differential count was polys 82%, lymphocytes 15%, eosinophiles 15%, monocytes 2%. An injection of 200,000 units of penicillin, intramuscularly, caused improvement overnight. We later received a letter from the patient saying that the eruption had cleared completely a month after the removal of his teeth.

ECZEMA

There is also a distinct entity which we call dental eczema. It occurs on the legs of older people and is due to abscessed teeth. Most of the patients are men. Such cases usually begin as vesicular or crusted pruritic patches on one or both legs just above the ankle, or on the sides of the ankle or foot. The eruption spreads next to the dorsa of the hands or forearms, and then may affect the ear or become widespread. The affected skin is invariably excoriated and erythematous, sometimes exudative, like contact dermatitis, and at other times lichenified and crusted. The leukocyte count may or may not be elevated, ranging from normal to 20,000. This type of eczema due to bacterial sensitization is so common in middle aged and older people, who usually have no history of previous skin trouble or of any allergic condition, that the syndrome is an entity. Over and over again this suspicion is verified by the dentist, and the skin condition is cured by extraction.

A man, aged 72, was first seen at the New York Hospital. He had a widespread erythematous, eczematous eruption, with the legs especially edematous. The history showed that ten years previously 17 abscessed teeth had been removed. The remaining teeth were apparently diseased. His dentist, when questioned, said the patient had several dead and infected teeth for which he had advised extraction. Four months later, the remaining abscessed teeth were extracted. There was immediate improvement in the skin condition, and the skin became entirely normal. He has remained free from eczema ever since, and at the age of 75 designed the famous balcony for the White House in Washington, D. C.

ALOPECIA AREATA

Nineteen centuries ago Celsus described alopecia areata. From that time until the present day this disease has been ascribed to many different causes.

In the latter half of the nineteenth century, as a result of Pasteur's work, the parasitic theory was advanced. Joseph in 1886 believed the cause to be neurotrophic as a result of sectioning of the posterior roots of the second cervical nerve in animals. Yet another theory was that of the endocrinic. Then Jacquet advanced the dystrophic theory in 1900. This theory concerned mainly the teeth. Jacquet maintained the alopecia areata was not an entity but

a symptom of diverse and banal conditions. He attempted to show that dental pathology was possibly the most important factor in causing reflex irritations and in producing alopecia areata.

Jacquet lived before the days of dental radiographs. At that period it was difficult to tell whether a tooth was impacted or infected except by probing or by extracting it. Sometimes a rather crude and vigorous approach was employed in order to prove Jacquet's hypothesis. With the exception of a report in 1942 by Grace, attributing one case of extensive alopecia caused by teeth, the medical literature has been devoid in recent times of further investigations of Jacquet's theory, despite the obvious advantages afforded by modern-day dental x-ray technic.

It is for this reason that we have assembled from private practice 58 cases of alopecia areata in which dental pathology was noted. Satisfactory full-mouth x-rays were obtained in 24 of the 58 cases. Of these 22 (90%) had definite dental pathology. Thirteen of the 22 (53%) had impactions. On visual examination, where x-rays were not obtainable, there were 25 cases (74%) of the 34 with definite pathology of the teeth, 8 of the 25 (32%) had impactions. Impactions, root fragments, abscessed teeth, severe alveolar retraction, and multiple devitalized teeth with caries were considered as pathologic conditions. Simple caries were not considered. This theory of reflex nerve irritation is one of the vague physiologic theories which no one can completely prove or disprove. We can only offer our material and let you judge for yourselves.

CASE REPORT

A girl, aged 17, had a small area of alopecia develop on the occipital area of the scalp. When she was first seen by us in March, 1948, she had a minimal amount of hair on the rest of her body, none on her arms and legs and sparsity in the pubic and axillary areas. Previous treatment had consisted of 100,000 units of vitamin A daily, estrogenic therapy, thyroid extract, intramuscular crude liver extract, and applications of local ultraviolet light and phenol. At the age of eight she had chorea, from which she recovered with no residual defects. She had no other pertinent medical history.

Physical examination showed no abnormalities. Her tonsils were out and the teeth were in an excellent state of repair; however, only one wisdom tooth erupted which was not unusual at her age.

Nevertheless, a full-mouth x-ray was advised. Herewith is the report of a competent dentist: "All teeth are vital and free from apical infection. She does have, however, three unerupted third molars. It seems that it would be very difficult for these teeth to erupt in their proper position, as there is not room enough in the lower jaw for the right lower third molar to come through completely, and the upper two teeth seem to be caught under the bulge of the second molars. The tissues around the crowns of these teeth always contain a low-grade chronic infection, and I believe it would be wise to remove them."

Accordingly the three impacted teeth were extracted. Six weeks later hair was growing and eight weeks later all the patches were being rapidly filled in with new hair.

A man aged 31, had an oval shaped area of alopecia, 3 cm. in its greatest diameter on the lower right buccal area. General examination showed no gross abnormalities. The teeth were in good repair; however, the lower right bicuspids were crossed, with the second bicuspid displaced lingually and anteriorly. X-rays confirmed the findings and showed incomplete filling of the two crossed teeth and decay of the lower right molars. Local treatment was performed for a period of four months without any improvement. Four weeks after the removal of the two teeth in question there was a complete regrowth of hair in the previous bald patch.

Among the skin diseases in which the teeth may be suspected as an etiological factor are the following:

LUPUS ERYTHEMATOSUS

This usually runs a chronic course. The lesions, which are typically located in a symmetrical butterfly shape on the cheeks and bridging the nose, are characterized by a firm elevated red border with a depressed pale center, dilated follicular openings, telangiectasias and yellowish adherent scales.

One of the causes was advanced by Barber of England in 1919, and later by others, in which the streptococci played a prominent role, and in which the removal of foci of infection resulted in improvement and in some cases a cure.

PURPURA SIMPLEX

A mild form of purpura (hemorrhage beneath the skin and mucous membranes) found usually on the legs, and forearms in which foci of infection may or may not be connected.

CHRONIC RECURRENT ERYSIPELAS

This is extremely difficult to handle. A thorough search for focal infections in these cases is mandatory.

SYCOSIS VULGARIS

Frequently known as barber's itch, it is a chronic perifollicular, pustular, staphylococcus infection in which focal infections or mucopurulent discharges from the nostrils, perpetuate this extremely recalcitrant disease.

ERYTHEMA NODOSUM

This eruption consists of bilateral, nodular, tender lesions on the shins. These are usually 1–5 cm. in diameter and usually do not ulcerate. Several causes may be responsible for the disorder. Hypersensitiveness of vascular elements of the skin to streptococci or to tubercle bacilli resulting from repeated low grade general infections or from persistence of foci of infection by these organisms. This is often associated with septic sore throat, endocarditis, pericarditis, tuberculosis, or the ingestion of various drugs such as bromides, iodides and sulfonamides.

ERYTHEMA MULTIFORME

There are many different skin manifestations of this disease. The pathogenesis of this disease is ascribed to sensitization in the small blood vessels of certain individuals to any variety of allergenic or toxic substances. In many cases it is associated with focal infections of the teeth, tonsils, and the paranasal sinuses.

ACRODERMATITIS CONTINUA OF HALLOPEAU

A chronic inflammatory dermatitis usually involving the extremities of the digits either as an infected sore or as a paronychia. Usually the hands and feet and occasionally the mucous membranes, particularly the mouth may be involved. White circular plaques surrounded by inflammatory areolae are found on the tongue and may form a diphtheroid membrane. Although the inflammatory condition in the mouth is superficial, it is painful. In the generalized cases described by Barber there was gross sepsis in the mouth and he calls attention to the importance of focal infections which may lower the resistance of the skin to staphylococci.

STREPTOCOCCUS ACRODERMATITIS

This simulates dermatophytosis of the hands and feet, as described by Mitchell. The streptococcus can be demonstrated in

stained smears of the clear thick serum from the unruptured vesicle. It is often associated with periapical infection of the teeth, chronic tonsillitis or ethmoiditis. Removal of such a focus may be necessary to effect a cure.

INFECTIOUS ECZEMATOID DERMATITIS

This troublesome dermatitis is secondary to a discharging abscess, sinus or ulcer. Very often it is associated with furunculosis, otitis media, bed sore, fistula or discharge from the eyes, nose or vagina. Important considerations in the therapy of this recalcitrant dermatitis are the removal of the foci of infection.

URTICARIA

The etiology of urticaria, or hives, is one of the most difficult to ascertain of all skin diseases. Numerous causes and numerous explanations are rampant for this disease, especially the chronic type. One of the most frequent causes of the chronic and recalcitrant type is the focus of infection.

PATIENT-DENTIST-PHYSICIAN RELATIONSHIP

It can be readily seen by the presentation of these diseases that the dermatologist must be acutely aware of the possibilities of a focus of infection in dealing with these problems. He must institute a number of measures to give immediate relief to the patient. If a focus of infection is to be considered, he must ascertain in a reasonable manner its location. This necessitates a thorough examination not only of the skin, but also of the teeth, tonsils, sinuses, ears, gall bladder and prostate. Still, there is no reliable laboratory test to determine the exact causal relationship of the disease. Moreover, as you have seen in the cases presented, other etiological factors must also be considered. It is then small wonder that enormous difficulties are encountered in the establishment of the etiology of the disease. One must be hesitant to advise a patient to have his infected teeth, or the stubs of remaining tonsils removed without being quite sure that this will bring about the desired result.

Our studies have shown that by far the most common foci of infection are the teeth and tonsils. It is true that the original focus may reside in the teeth, and, after a time, give rise to infection in the gastrointestinal tract, the gall bladder, the prostate or other parts of the body. A not too rare occurrence is the infection of the

prostate following dental infection. A cure of the patient's malady will not result until both foci have been removed.

Assuming that the search for foci in a given case has narrowed down to the teeth and tonsils, how will one proceed? By far, most patients have had their tonsils removed; however, it is not the large boggy tonsils that give trouble but those in which tonsillectomy has been performed and infected stubs or tags remain. One cannot resort to the surgical removal of the tonsils or the remains without a thorough survey of the teeth.

The patient-dentist-physician relationship becomes very important at this time. If a casual inquiry is made to the patient regarding his teeth, invariably the answer is that the teeth have been checked by his or her dentist in the past six months and that nothing was found amiss. The patient may or may not have had a full mouth x-ray. Non-vital teeth are usually x-rayed by the dentist at varying intervals, and even though the teeth may show some evidence of infection, a watching period usually follows. Sometimes we watch too long.

Too often just the questioning of the patient in regard to his teeth would lead to missing just the point. Our procedure is to get the name of the patient's dentist and phone or write him personally, explaining that the teeth may be etiologically connected with the patient's skin disease. A request is then made for a full mouth x-ray. Moreover, we ask for the x-rays to be sent to us for our inspection. We do not pretend to be experts on x-rays of the teeth and we resort at times to having x-rays examined by other dentists. Nevertheless, the request for sending the x-rays to us serves a purpose in that the dentist will strive to make excellent x-ray films and will be inspired to make more than a superficial, casual inspection of the patient's mouth. You would be impressed to see some of the x-rays sent to us, with omission of the apices of the roots, improper angulation, and so forth. Perhaps some dentists feel that reliance upon the focus of infection is now out of style, as even so many physicians feel today. Whatever the personal belief may be regarding that point, it is actually our own inadequacies in finding these foci that foster the current tendency among doctors to belittle the significance of such foci.

At this time it is most important to ask ourselves what will constitute a focus of infection of the teeth. Without definite criteria

for diagnosis of foci, our efforts must invariably lead to a stalemate. The lack of these definite criteria is actually responsible today for the vagueness and the inefficiency in dealing with foci of infection. Rightfully, the dentist hesitates and even may refuse to make extractions of teeth or do bone surgery because of the whims of the patient's physician. Besides the discomfort and expense to the patient, he is further confronted with the problem of making properly fitting and suitable prostheses in the after care of the patient.

Therefore, it becomes imperative that some acceptable standards be adopted to the mutual satisfaction of the patient, dentist and physician. Since the dentist is the guardian of the patient's teeth he must be guided by more definite indications than those at the disposal of the physician.

Although it is common knowledge that the x-ray picture of the tooth and its surrounding structure is not completely reliable in showing pathology, still this has become almost the only means of ruling out infection. We realize that infection will show on the x-ray only after enough calcium has been removed from the affected area. This absorption may be noted on x-rays near the apices of the teeth, in the alveolar structure and by the thickening of the peridental membrane. It denotes infection and thereby establishes the diagnosis.

It is again questionable whether or not removal of this focus is feasible by any other means except extraction of the tooth. Nevertheless, the mere extraction alone does not always assure us that the localized infection in the alveolar process has been eliminated. The residual infection may continue to feed the blood stream microorganisms to which the human body has become sensitized.

Somewhere between the conviction that the slightest nick in the enamel is a potential focus of infection, and on the other hand the refusal to regard infection in and about the teeth as a predecessor to systematized disease, we must find a happy medium, which after all is for the good of the patient through the mutual efforts of his dentist and physician.

I sincerely hope that by the demonstration of these cases presented tonight I have conveyed to you a better understanding of mutual problems facing the dentist and the physician in regard to their patient. Attempts to treat the patient as an entity rather than a specific assignment to "parts" will result in a more satisfactory service to the patient himself.

BOOK ANNOUNCEMENT

The Genuine Works of Hippocrates: This is a translation from the Greek by FRANCIS ADAMS, Surgeon and EMERSON CROSBY KELLY, M.D., who prepared the Introduction. It is a book of 374 pages, well printed, on good stock, and an attractive format. It carries a short index with a few plates in the back, illustrating instruments of antiquity. A few pages are devoted to a description of these plates.

Quoting from a review by the New York State Journal of Medicine, it is presented "as a connected picture of the golden age of Greece." Reference is also made to the practice of medicine at this early date and particularly the relationship of Hippocrates both to medicine and, through medicine, to dentistry. This book is a translation from the Greek and as nearly as is possible of proof, it presents a true picture. It is well known that in this early period, Greece had the best in medical knowledge. Hippocrates is known especially through the "Oath of Hippocrates," although his practice of medicine and surgery was not a little.

The book carries plates showing instruments and appliances devised and used by him.

Published by The Williams & Wilkins Company, Baltimore, Maryland. Price—$3.00.

Leadership in Dentistry—Laboratory Relations: This is a book of 187 pages, including an index and an appendix of 26 pages. It is intended to indicate the role played by this relationship in AMERICAN DENTAL CULTURE. It consists of papers presented at the first Workshop on Trends in Dentistry-Trade-Laboratory Relations, edited by ALFRED J. ASGIS, D.D.S.

This little book will undoubtedly serve a useful purpose in the solution of this knotty problem which has been before the profession for so long a time. Each of us as individuals in society and as groups within the cosmic whole, has a function to perform, a niche to fill. No one can tell the other where he belongs, but as the result of a long 'trial and error' method of experimentation, each will find his place. Thus will it be with the workshop and the publication of their proceedings, the right place for the right person or group will be found. The smart man or men are not they who solve their

problems, for they cannot. But the smart man is he who sees the solution when it manifests itself, having carefully guarded the steps leading up to that manifestation. The book is published by the Joint Dental Trade and Laboratory Relations Committee of the First, Second, and Third District Societies of the State of New York. It may be secured by addressing the editor, 7 E. 42nd St., New York 17. Price quoted on application.

International Dental Journal: This is the title of a new journal published by The International Dental Federation, of which it is the official organ. It will serve a useful purpose in bringing dentists from all over the world into closer educational relationship and for the reason in addition to articles of real merit, it should demand a large subscription list. It is edited by Professor H. H. STONES, M.D., M.D.S., F.D.S.R.C.S., University of Liverpool.

Subscriptions in the United States may be placed with British Publications Inc., 150 E. 35th St., New York, 16. Price—£2 5s.

Dictionary of Education:

This is the title of a dictionary and it is a dictionary. Prepared under the auspices of Phi Delta Kappa, educational fraternity, and edited by CARTER V. GOOD, University of Cincinnati. It is a compilation of educational terms occupying 495 pages and should be of value to dental educators and dental libraries.

Published by McGraw-Hill Book Company, Inc. New York. Price. upon application.

Psychosomatics and Suggestion Therapy in Dentistry:

This is the title of a little book by JACOB STOLZENBERG, D.D.S. It is a composite discussion of the principles of Psychosomatics including Hypnodontics and Suggestion Therapy as adjuncts in dental practice.

Published by the Philosophical Library, New York 16, N. Y. Price—$3.75.

Oral Pathology: This is the third edition of this well known book, by the equally well known author, KURT H. THOMA, D.M.D. This author is well known as Professor of Oral Surgery, Harvard Uni-

versity Dental School, and as the recipient of many honors, honorary degrees and professional connections and associations. It consists of 1592 pages with an index and 1660 illustrations, including 78 in color.

Published by C. V. Mosby Co., St. Louis. Price—$17.50.

Caries Research: This is a bibliography on Caries Research, prepared and issued by The Associate Committee On Dental Research, of the National Research Council of Canada, edited by J. STANLEY BAGNALL, D.D.S., F.D.S.R.C.S., Ottawa.

This is a book of 557 pages, with a bibliography of 2274 references. It is well printed in offset type, well bound and should serve a useful purpose among researchers and any interested in knowing the authorities in the study of the cause of dental caries. It is a worth while reminder of the advances made in dental research during the past quarter of a century or more, although it covers the literature from 1890. It is evidence, per se, of the development of the dental profession, and is a credit to the Canadian Dental Association as well as those immediately involved in its production.

It contains a description of the committe and its objects; a foreword by the Chairman, Dr. Roy G. Ellis, Dean, Faculty of Dentistry, University of Toronto; and introduction, and a table of contents.

It is a job well done.

Published by the National Research Council, Ottawa, Canada. Price—$10.00.

Paradentitis und Paradentose: Leitfaden der Zahnbetterkrankungen. Von Prof. Dr. EWALD HARNDT. 186 Seiten mit 291 Abbildungen. Format 17 x 24.5 cm. Munchen 1950, Carl Hansen Verlag. Kartoniert—17.80 DM. (This is the title of a monograph, paper binding, 186 pages, including an index, and well illustrated. It is published by Carl Verlag. Price—17.80 DM. Ed.)

Genese und Prophylaxe der Karies: Vortrage der wissenschaftlichen Tagung der Deutschen Gessellschaft fur Zahn-, Mund-und Kieferheilkunde vom 28.-31. Juli 1949 in Wiesbaden. Erster Teil. (Zahn-, Mund- und Kieferheilkunde in Vortragen, Heft.4). 150 Seiten mit 117 Abbildungen. Format 17 x 24.5 cm. Munchen 1950, Carl Hansen

Verlag. Preis kartoniert—16.80 DM., fur Abonnenten auf die Schriftenreihe—15.12 DM. (This is the title of another monograph, paper binding, 150 pages, well illustrated, published by Carl Verlag. Ed.)

Index to Dental Literature (*in the English language*): This is the third quarterly issue of the Cumulative numbers. Each quarter the literature is indexed and put out, subsequent issues containing the preceding, until the fourth quarter, a year is ended and an annual volume is announced. This takes the place of and enhances previous labors in preparing cards, a much heavier task and more expensive. The continuing good work of the Library and Indexing Bureau is increasingly appreciated by subscribers.

Published by the American Dental Association, 222 East Superior Street, Chicago 11, Illinois.

Clinical Pathology Diagnosis and Treatment of the Periodontal Tissues: This book is based upon the authors' experiences gained in practice, in classroom teaching, and by extensive research activities in this specialty. It will be most helpful in the study of the problems involved in the treatment of periodontal diseases.

By Edgar D. Coolidge, B.S., M.S., D.D.S., LL.D. (Hon. Loyola)

Professor Emeritus of Therapeutics, Preventive Dentistry and Oral Hygiene, Chicago College of Dental Surgery, School of Dentistry, Loyola University, Chicago, Illinois.

and Maynard K. Hine, M.S., D.D.S.

Professor of Periodontia and Histopathology and Dean, Indiana University School of Dentistry; Formerly Assistant Professor of Dental Pathology and Therapeutics, School of Dentistry, University of Illinois.

It consists of 318 pages, 378 illustrations on 219 figures and 2 plates in color. Published by Lea & Febiger, Washington Square, Philadelphia 6, Pa. Price—$6.00.

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