IN MEMORIAM

PAUL GIBBONS, D.D.S.

Doctor Paul Gibbons was a native of Merced, California, and attended the College of the Pacific, the University of Nevada, and the School of Dentistry at the University of Michigan, receiving the combined degrees of Bachelor of Science and Doctor of Dental Surgery. In 1949, he was granted the degree of Master of Science from the University of Michigan. He served in the Army of the United States from 1942 to 1944. His teaching career began in 1948 when he was appointed a Teaching Fellow. In 1949–50 Dr. Gibbons was an assistant professor at the Medical College of Virginia. He then joined the faculty of the School of Dentistry at St. Louis University where he carried the rank of assistant professor, and became head of the Department of Prosthetic Dentistry. In 1952, he returned to the University of Michigan as an assistant professor and rose to the rank of professor in 1960.

Doctor Gibbons was particularly interested in the treatment of dental problems in cleft palate patients. He was a member of the American Cleft Palate Association and had served on two of its committees. His major research interest was in the many problems incident to patients with cleft palate, the resilient liners for dentures, and a survey of the dental needs of indigent patients. His minor research interest was in seeking out exotic eating places where he could entertain his many friends.

Doctor Gibbons was a member of the Michigan State Dental Society, and he served as Vice-President and President of the Washtenaw Dental Society. He represented the Michigan State Dental Association as an advisor to the Ferris Institute for the formation of a course for dental assistants and he was chairman of the Association's Committee on Education Specialties from 1958–62. His service to the Dental School included memberships on the Records Committee, Research Committee, Executive Committee, and Planning Committee on the Workshop on Dental Manpower Needs, and he was chairman of the Teaching Committee. He was a Consultant to the Veterans Administration Hospital in Ann Arbor. He was a member of the American Denture Society, the American Cleft Palate Association, the American Prosthodontic Society and an Associate Fellow of the Academy of Denture Prosthesis. He was also a member of the Omicron Kappa Upsilon Honorary Dental Society, Sigma Alpha Epsilon and Delta Sigma Delta.

As professor in the Department of Full Denture Prosthesis, Dr. Gibbons enjoyed the confidence of his colleagues on the faculty at the

University. He received the Merit Award, which is given by the Senior Class each year to the teacher whom they have found to be the most stimulating and the most productive in his field. He also found time for hobbies and was an accomplished skier.

Dr. Gibbons is survived by his wife, the former Alice Jean Rosenquist, and their children, Kathy Jean and Paul Kent.

We regret the loss of Dr. Paul Gibbons, who was a good example of abundant living.

Prepared by ROBERT L. HARDING, M.D.

ALBERT G. BETTMAN, M.D.
1883-1964

Doctor Albert G. Bettman passed away on August 17, 1964, at the age of 81. He was born in Eugene, Oregon, on March 28, 1883. At the age of 19 years he was a registered pharmacist. He then entered the University of Oregon Medical School and was granted his degree in 1907. Dr. Bettman served an internship and residency at the North Pacific Sanatorium (Dr. Robert Coffey) from 1907–10. He was appointed a Demonstrator in Histology at the University of Oregon Medical Department in 1909. Dr. Bettman held a professorship in botany and Materia Medica at the Y.M.C.A. College of Pharmacy from 1910–17, with exception of the year 1916.

Doctor Bettman organized the Alumni Association of the Medical School of the University of Oregon in 1913 and served as its president in 1918. He was one of the organizers of the Medical Society Telephone Service in 1926. He maintained an interest in research for many years and originated Oxyquinoline Sulphate Scarlet Red Ointment and Gauze in 1923, which found common usage in plastic surgery. He introduced the Tannic Acid Silver Nitrate Treatment of Burns in 1933, which temporarily had wide acceptance. He was also instrumental in developing the first Blood Bank in Portland via Royal Rosarians in 1942. He also organized the Oregon Medical School Library. The Medical Research Foundation, established in 1948, lists him as one of the incorporators. His interest in things new was not limited to medicine. He patented the first Sanitary (spoonless) Sugar Dispenser on January 13, 1914.

Doctor Bettman had served as Clinical Associate in Plastic Surgery at the University of Oregon Medical School, an appointment he held since 1923. He was the plastic surgeon at the Shriner's Hospital for Crippled Children from the year 1924. He had been associated with the staff of Good Samaritan Hospital, where he served as past president, St. Vincent's Hospital, Physicians and Surgeons Hospital, Multnomah Hospital, and Doernbecher Hospital.

Doctor Bettman was an active member of many professional societies.

He was a member of the American Medical Association, the American College of Surgeons, and the Multnomah County Medical Society, of which he served as treasurer from 1932–36. He was also a member of the Oregon State Medical Society, American Society of Plastic and Reconstructive Surgery, Portland Academy of Medicine, Pacific Northwest Society of Plastic and Reconstructive Surgery and served as its president in 1953. He was also a member of the American Cleft Palate Association, Veteran Druggists, and Honorary Member of the Oregon State Dental Association. He was a diplomat of the American Board of Plastic Surgery (Founder's Group).

He was the author of a book on short stories entitled *How it Happened* published in 1931. He was also the author of 26 papers on plastic surgery and allied subjects. He received special honorary citations from the Alumni Association of the University of Oregon Medical School, the Northwest Society of Plastic Surgeons, the Multnomah County Medical Society, and the Portland Academy of Medicine.

We deeply regret the loss of Dr. Albert G. Bettman.

Prepared by ROBERT L. HARDING, M.D.

BOOK REVIEWS

VAN RIPER, CHARLES, *Speech Correction: Principles and Methods* (4th ed.). New York: Prentice-Hall, Inc., 1963. Pp. 528. $7.95.

This book represents a rather significant revision of the previous editions: 1939, 1947, and 1954. Dr. Van Riper is no doubt one of the foremost clinicians in speech pathology, and he is best known for his interest in the so-called 'functional' defects of speech, such as, articulatory problems, stuttering, and delayed speech. He has devoted more than three-fourths of this book to a consideration of these general areas. The remainder of the text covers the topics of cleft palate, aphasia, speech development, and a chapter on the emotional concomitants of defective speech.

In the preface to this edition, Van Riper writes,

> In preparing for the present revision, the author took a long look at that first (edition) and its successors to attempt to discover the secret of their persistence on the bookshelves of his colleagues and their students.... If he found anything to explain the text's survival it was that the pages always seemed to smell of the therapy vineyard in which the author has labored hard and long. These were not texts in scientific speech pathology.... They were tools designed for the hands of those who wanted to help the person who could not talk normally.
>
> In this revision, the author has not so much revised as rewritten the text. He hopes that his constant experimenting with new approaches in actual therapy with all types of speech disorders has enabled this new book not only to reflect current practices but also to pioneer new ones. Most of all, he hopes that it too will be put to work in the vineyard.

This preface certainly expresses the flavor in which the author has written his text. It is oriented to the clinical approach of the speech handicapped person more than to the theory and scholarly discourse of speech pathology. The book is intended, and is quite applicable, for an introductory course in speech correction. As such, he rightfully stresses the types of speech problems most likely to be encountered by the undergraduate student.

Van Riper uses a writing style that has a great deal of emotional appeal to the beginning student. This is important to the instructor of a course at this level where one of the aims is that of recruiting new students into the field. The author writes in an informal and personal manner, almost as though the reader were having a comfortable chat with the author. He intersperses a number of little humorous anecdotes or subtle parenthetical tidbits. He relies on short case history material to help illustrate certain concepts covered in the chapter. Again, this style seems advantageous for the level at which the text is aimed.

Texts which are the most common competitors to Van Riper's text may be more informative but are probably less directed to specific clinical methodologies. The instructor who uses this text for an introductory course will no doubt want to supplement it with considerable lecture material and readings from other sources in order to give more substance to the course content. The author has included a feature in this edition whereby at the end of each chapter he lists a number of assignments or projects which the students can use to make the material from the chapter more meaningful. The difficulty with this approach, however, is that presumably most introductory speech therapy courses have such a large number of students enrolled that requiring student projects in any systematic manner may be impractical. Nevertheless, Van Riper has employed a procedure of specified student participation that ought to be emulated by other authors.

The book is written with a rather strong underpinning of the feedback concept to principles of communication. In other words, the relevance of auditory, tactual, and kinesthetic feedback are fundamental to Van Riper's thinking in respect to defective speech. However, at no place in the text does he give an explanation of the overall scheme of feedback. He does not describe the basic theory of servosystems. The reviewer understands that Van Riper has prepared mimeographed material which presents a good, simple description of feedback theory which he gives to his students in the introductory course, perhaps as a supplement. Such material would have been highly appropriate in the text.

There is a very heavy emphasis placed on the emotional or psychologic premises which the person with a problem of speech may exhibit. Furthermore, much of Van Riper's clinical approach reflects a type of psychotherapeutic rationale. Without a doubt, the practicing speech therapist recognizes the operation of certain emotional fractions of abnormal speech, and these aberrant behavioral manifestations must be handled. Some clinicians, however, might argue about the frequency of occurrence and the relative importance that Van Riper attributes to such problems. He seems to imply that practically every person with defective speech will present evidence of rejection, penalty, hostility, anxiety, frustration, etc. Such characteristics may seldom be observed in the speakers with a mild problem or in the very young child.

The chapter on cleft palate has been changed somewhat from the third edition. Whereas in the previous volume only 14 pages were devoted to this topic, in the present edition, 27 pages are. There are several good illustrations of cleft lip and palate, of prosthetic appliances, etc. His bibliography on cleft palate contains 35 entries, 30 of which are newly added from the third edition. Most of the chapter is concerned with speech therapy techniques for the cleft child. Only a brief account is given to the etiology, classification, incidence, and physical management of the cleft. Since there is really a paucity of good literature on speech

therapy approaches to cleft palate, this chapter, in conjunction with the one on voice defects, should be carefully studied by the speech clinician who works with the cleft palate patient.

The author uses several terms which seem questionable to the reviewer: baby talk, lalling, oral inaccuracy, and harelip. When an instructor is trying to instill a more professional vocabularly among his students, it is mildly disconcerting to see Van Riper employing these somewhat ill-chosen words.

The third edition of the text employed the use of the International Phonetic Alphabet, but this edition does not presuppose familiarity with it. This appears to be a valuable change since many students at this level may not have been exposed to phonetic symbols. It was awkward for the reviewer, in using the previous edition for instructional purposes, to have to explain some phonetic concepts to those students who had not had a course in phonetics. One criticism is that there is little information in the text about the anatomy and physiology of the vocal mechanism. He does give some explanation in one of the appendices, but this material probably should have been included as a part of the main body of the text. A glossary has been added to the fourth edition although, again, the appropriateness of some of the entries may be questioned, such as abracadabra, commentary, lambdacism, nasal lisp, etc.

The organization of the chapters on delayed speech, voice disorders, articulation disorders, and stuttering is good. There is a chapter on the nature and cause of each disorder followed by a chapter on treatment procedures. The style is appealing and is no doubt less confusing to the beginning student than had the author tried to cover both areas in one chapter. He has been able to describe specific therapy techniques without falling into the trap of making the suggestions sound cook-bookish. He shows what approaches may be used as guide-lines to handling different clients, but he still leaves the clinician with the necessity to be creative and original. There are very few pictures, drawings, and illustrations throughout the book. In many places, a well-chosen picture could be of extreme help. Those which he includes are seldom referred to in the text.

The author has omitted from the fourth edition the chapters on foreign dialect and the hard of hearing which appear in earlier editions. To this reviewer, it is unfortunate that he dropped the former, but probably wise that he eliminated the latter. He added a very short chapter on aphasia. This chapter is so brief that it leaves the reader in mid-air, only tempting his appetite for more.

Most certainly, Van Riper has written a text that will have wide usage in introductory courses in speech correction. It represents a fairly eclectric approach to the problems of speech, and it is written in a style which will hold the interest of the student. It reflects the author's extensive clinical background. *Speech Correction: Principles and Methods* is

highly recommended to all professional people in the field and to those individuals who 'simply want to learn something' about speech therapy. It should appear in the library of every clinician.

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REED, SHELDON C., *Counseling in Medical Genetics.* (2nd ed.) Philadelphia: W. B. Saunders Co., 1963. Pp. 278. $5.50.

Both the original (1955) and the present editions of this book are addressed primarily to physicians, who are the ones most frequently confronted with requests for information about human genetics. Dr. Reed's expressed intention is to provide the counselor with information about basic genetic laws, the mechanisms apparently involved in certain anomalies, and risk rates based on current data. This material, plus examples of the author's response to specific questions from patients, would then provide a basis for the physician to answer questions about heredity with more than offhand optimism or pessimism.

Human genetics is recognized as an exceedingly complex and often frustrating field. Dr. Reed has tried to simplify the more formidable technical aspects of the area by summarizing in a personal, chatty style the research studies which he cites and the manner of inheritance indicated by those studies.

Generally speaking, Dr. Reed's experience has been that those persons who seek counseling from the Dight Institute or some similar service are quite convinced that they have small chance of producing normal children, especially after a first-born has an anomaly. In most instances, the reverse is more apt to be the case, as he demonstrates with risk figures. It is not to be implied that Dr. Reed blithely dismisses a client's concern. On the contrary, he insists that both the counselor and the client must assess the actual risk realistically and arrive at an opinion based on the available information. This reviewer would speculate that a considerable degree of pessimism on the part of the individual client is required before counseling is requested from a genetics institute and that counselors in other situations may not have the same psychological advantage. In this connection, a counselor should find Dr. Reed's chapter on counseling philosophy very useful for setting a realistic perspective about human genetics.

This book is addressed to a need felt by most professional people who are called upon to counsel parents or prospective ones. It is not as easily read as the preface and chapter titles suggest. Because the author has chosen not to burden the reader with an extensive discussion of genetics for each anomaly, the reader may need to refer to Reed's more general discussion of genetic mechanisms, if only to keep the terms straight. If the counselor intends to use this book as his main source, he will need to

practice arriving at the current risk rates for a given situation. Although a somewhat breezy style can bring freshness and clarity to material usually treated in more pedantic fashion, some of the writing, grammatically speaking, shows that a light style requires more careful editing than was obvious in this manuscript for clearest presentation of the material.

Of specific interest to readers of this journal is the chapter entitled Harelip and Cleft Palate. This reviewer, in passing, would like to be on record as an objector to the term 'harelip' because it is not precise and especially because it is an emotionally loaded word. The risk rates that Dr. Reed reports are consistent with current research findings. He makes the point that some are likely to be phenocopies, without hereditary factors, but that we are not yet able to identify them. Dr. Reed notes that most families coming to the Dight Institute for information about recurrence of clefts have no history of clefts. It would appear that the inference should not be that most of the families producing children with clefts have no history of clefts, but rather that the families applying to such counseling services have not been able to find any reasons for the anomaly. The families with a history of one or more clefts may ask professional advice about risk rates for more children, but are usually convinced that heredity is the reason and are less apt to request genetic consultation services.

Overall, Dr. Reed is to be commended for his attempt to meet an obvious need with both documented research and realistic concern for the patient.

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FISHBEIN, MORRIS (Ed.), Birth Defects. Philadelphia, Pennsylvania: J. B. Lippincott Co., 1963. Pp. 318. $5.00.

This book is a comprehensive overview of immensely complex subject-matter, written by 30 scientists of distinction for scientifically untrained readers. The text covers the innumerable factors involved in the formation, growth, and development of a human being and is presented in terms and language that should be clear to all intelligent laymen.

The first five chapters introduce the reader to the nature and frequency of congenial malformations, to the historical attitudes of various cultures toward birth defects, to the impact of the problem within the family and in society, and to a concise summary of causes, prevention, and treatment. When one bears in mind that many texts and articles have been written on each of these topics, it is obvious that only the surface can be skimmed in the allotted 46 pages. However, the salient points are well presented.

Dr. Edith Potter discusses pre-natal mortality, pointing out that 'loss of life from defective development is far greater before birth than it is after birth.' The information in this chapter is not well known to the average lay reader and deserves more space and emphasis to clarify for the public the notion of developmental defects.

Chapters 7 through 14 present the current knowledge of the structure of the cell, the differentiation that leads to the development of body structures, the genetic influences that determine individual differences, and the chromosomal aberrations that can occur. Although this subject matter is highly technical, the writers, each a leader in his field, have managed to present their topics with remarkable clarity and condensation.

In his discussion of the dramatic effects of irradiation on hereditary material, Dr. Russell states that irradiation of women in the child-bearing age should be restricted to the two weeks after the beginning of a menstrual period, a recommendation endorsed by many physicians who treat handicapped children.

The effects of viruses and inborn errors of metabolism are described in some detail. The chapter on cellular chemical reactions and biochemical genetics contains a fine list of references for those who wish to pursue these topics.

Separate chapters are devoted to the most significant defects noted at the time of birth: erythroblastosis, cleft lip, cleft palate, congenital dislocation of the hip, club foot, hydrocephalus, spina bifida, cardiac defects, and cystic fibrosis. There is also a chapter on mental retardation. Each of these conditions is discussed briefly for parents and other readers so that they may learn the nature of the condition and what can be done to prevent or treat it.

One chapter touches on the attitudes and behaviors of the child with a handicap but the touch is too light to be helpful and no references are included. The final chapter on genetic counselling points out that the questions that cannot be answered now are infinitely more numerous than those to which a definite reply is possible. Yet, knowledge in these new fields of science is growing daily.

The book's chief weakness is in the superficiality of the sections which deal with the effects of birth defects on the child and his family, and with the responsibility of the community. The paucity of reference material for suggested reading in these areas is regrettable. However, the editor may have felt that parents need to have answers for more scientifically based questions. Certainly this little volume contains a great deal of technical subject matter in a form that is easy to read and to digest.

This book should be in the basic library of all who deal with children who have congenital malformations, especially for the discussions of biochemical and cytological genetics. It is an informative text for the

families of children with birth defects and a useful handbook for the professional worker in this field.

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GIBSON, THOMAS (Ed.), *Modern Trends in Plastic Surgery*. Washington, D. C.: Butterworth Inc., 1964. Pp. 322. $14.75.

Mr. Gibson obviously set high goals in compiling this textbook of plastic surgery, and in some respects, his goals are somewhat different from many such texts. He concentrated upon a few subjects only, gathered young but well-known authors, insisted upon brevity, and truly presented 'modern' trends. The resultant book is a masterpiece.

Fifty pages of the text are concerned with cleft lip-cleft palate problems.

Peter Randall's thoughtful presentation of cleft lip repair is an excellent discussion of the current status of triangular flap and rotation-advancement flap philosophies in treating unilateral cleft lips. The reviewer is a little disappointed, however, that the even more difficult problem of the bilateral cleft lip was not covered in the same authoritative manner.

The contribution by Fenton Braithwaite is generally well written and thoughtfully compiled, yet he makes some extremely controversial statements. He dismisses the pharyngeal flap as being nonphysiologic, yet indicates that a Gillies' tube pedicle is a useful procedure. Most of this section is excellent, however, especially the narrative and pictorial description of the surgical anatomy of the palate and pharynx. Mr. Braithwaite's discussion of the thoughts of Whillis and Podvinec (and his own) make this portion a 'must read' item.

To Professor Rehrmann falls the difficult task of discussing bone grafting in cleft palate repair. He summarizes the viewpoints of the many proponents and clearly differentiates the nuances of each. Whether or not the reader uses early orthopaedics and bone grafting, he will enjoy this section. The nonbeliever must reckon with Rehrmann's closing paragraph, in which he states:

> .... bone grafting is indispensable in the rehabilitation of these patients. We no longer discuss its necessity but rather which cases may be excluded, which way would be most convenient, and how the graft may be most favorably integrated into the complex of surgical and orthopaedic measures....

The plastic surgeon will wish to own this book for these sections alone; the remainder of the text is of similar high quality. Dentists and speech pathologists will find these fifty pages rewarding reading.

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BERSON, MORTON I., *Atlas of Plastic Surgery* (2nd ed.). New York, N. Y.: Grune and Stratton, Inc., 1963. Pp. 336. $23.00.

The format of this Atlas is essentially the same as that of the first edition. Several additions have been made, however, to this version. The author states in the preface that both the text and illustrations are designed to provide an understandable guide in plastic surgery pared down to the working essentials needed by the practicing surgeon. He also states that the book is limited to those procedures with which he has had personal experience.

The first chapter, entitled 'Wounds', contains material about a number of subjects, including suturing of wounds, Z-plasties, skin grafts, pedicle flaps, and a very few problems in surgery of the hand. The illustrations are clear, but those relating to Z-plasties are inadequate for conveying to the surgeon a full understanding of this principle. In the section on surgery of the hand most of the methods illustrated are, in the reviewer's opinion, seldom used (for example, burying the hand in an abdominal pocket to provide coverage). There are a few illustrations that might lead the inexperienced surgeon into difficulty.

In dealing with the subject of capillary hemangiomas of the face, the author illustrates only extensive resections and reconstruction by means of a free skin graft. This is not the accepted procedure in all practices and is not a suitable technique for the inexperienced surgeon.

In the repair of syndactylism, the line drawings suggest that flaps can be salvaged from the web to resurface the sides of adjacent fingers and this is seldom, if ever, practical or even true. Another more widely used method is illustrated, that of using a pedicle flap in the depth of the cleft and lining the sides of the fingers with a free skin graft, but the procedure for inserting darts along the edge of the graft is omitted.

The next chapter, entitled 'The Skull', indicates that the author uses autogenous cartilage almost exclusively to restore facial contour. The use of bone is merely mentioned and other materials are not included. A recent fracture of the malar bone is illustrated utilizing an outmoded head cap in the management of the fracture. A horizontal rami-section of the ascending ramus of the mandible is suggested as a means of treating mandibular prognathism. This is not the most suitable site for an osteotomy and is a method that has been abandoned by most students of this subject. In treating fractures of the zygoma, the author uses a head cap and external traction, a method now discarded.

The third chapter is entitled 'The Nose'. There are numerous illustrations covering the standard rhinoplasty but many of these are not easy to follow. The only method illustrated to lengthen a columella is the Gensoul method of advancing tissue from the lip. A composite graft from the helix to the ala is illustrated but the graft is taken from an undesirable area on the helix.

Chapter Four deals with the ears. Some of the methods suggested for

ear reconstruction are again outmoded and may tend to confuse students. The next section deals with the eyelids and the eye. This section is too sketchy for the student and would be of little help to the inexperienced surgeon.

The last three chapters deal with the lips and cheeks, mammaplasties and lipectomies, and cleft lip and cleft palate. The only method illustrated for the repair of a cleft lip is the Mirault-Blair procedure. Although this has been a popular method in the past, its use today has largely been replaced by newer methods. The Dorrance push-back and Wardill's retropositioning operation are the only methods included for repair of cleft palate.

The reviewer does not feel that he can recommend this book for general usage. Although this is a recent publication, many of the methods illustrated are outmoded and are not in general use. The text and illustrations are too inconclusive to be any more than confusing to the resident in surgery and the occasional plastic surgeon and would be of very little help to the experienced plastic surgeon.

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MAINLAND, DONALD, *Elementary Medical Statistics.* (2nd ed.) Philadelphia: W. B. Saunders Company, Pp. 318. $9.00.

The contents of this book represents an updating and reorganization of material presented in the original edition which was published in 1952. The first ten chapters are arranged in the form of questions that should be asked in the process of designing one's own research projects and in evaluating the results reported by others. These questions serve as a basis for discussion of general principles involved in medical research. The topics covered in this first portion of the book include questions related to a) the purposes and general methods of investigation, b) populations and sampling, c) collecting, recording, and examining data, and d) interpretation of research results.

The last six chapters of the book are devoted to a discussion of basic statistical tests and their application to the evaluation of results of medical research. Primary emphasis is placed on nonparametric statistical procedures; tables for interpretation of the tests are given in an appendix. Although the specific techniques discussed are those that a 'small-scale' investigator would require, some consideration is given to such topics as multivariate analysis and attempts at 'machine diagnoses'.

This book differs considerably from the usual 'statistics' text. This difference is due primarily to certain basic philosophies of the author and to the methods of exposition which are utilized. Probably the most important philosophy, which is apparent throughout all discussions, is that

there is an important distinction to be made between the application of statistical tests and 'statistical thinking'. As a result of this distinction, emphasis is placed on approaching research design and evaluation through the processes of inductive inference, a process in which arithmetic statistical tests serve only as tools. Readers, especially beginning students, will find this approach to statistics much more understandable than one based on mathematics and should obtain a better understanding of the basic nature of statistics and a better perspective of its role and usefulness in research.

The second major asset of this book, due in part to the basic philosophy just discussed, is that research principles and considerations are presented in a meaningful, practical manner and are well illustrated by numerous examples. For example, the principle of randomization is discussed as a general concept and then applied to various types of medical research situations. This general format also is used in discussing specific statistical tests and their use. Probably the best teaching aid utilized in presenting this material is the description and practical illustration of consequences which can result if these basic research principles are violated.

This book is one to be recommended to all individuals interested in research, not only in medical areas but in other scientific disciplines as well, since the basic principles discussed have general relevance and application. It also should be emphasized that the value of this book is not limited to beginning students; there is much to recommend it to individuals who presumably are above the elementary level in statistical knowledge.

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ABSTRACTS

Neser, William B., and Sudderth, Grace B., Genetics and casework. *Social Case Work, 46,* 922–925, 1965.

The authors discuss the lag in introducing new knowledge of genetics in training programs for social workers and physicians, although both are faced with increasing numbers of inquiries and questions about genetic influences. Various kinds of agencies and family situations are indicated in which social workers handle problems in which genetically focused questions or anxieties are involved. The unique contribution of social workers to individualize the meaning of genetic information for both parents and patients themselves is described. Another area needing further thought about interdisciplinary sharing of information and cooperative counseling is thus pointed out. (Schroeder)

Lapa, F. S., and Spina, V., Cleft lips and palate on the prosthetic point of view. *Rev. Lat. Amer. Cir. Plastic, 4,* 259–264, 1964.

The authors initially refer to three papers previously published where they presented the problems of cleft lip and palate seen from other aspects. In 1961

and 1962 they described the treatment they use when the patients are seen early, that is, days or months after birth. In those two papers they mentioned the ideal age for operation and the sequence of the various operative stages in the more severe cases, and ending with orthopedic and orthodontic treatment and phonetic re-education. In 1963 they refer to those cases that seek treatment of the fissures in adulthood. In this paper the cases were studied only from a prosthetic point of view, including cases already operated on by less qualified surgeons. When surgical treatment is well oriented and the follow-up of the case is done with good orthodontic assistance, the function of the prosthesis is greatly facilitated and hardly differs from the common dental prosthesis used in odonthological treatment. However, the cases chosen for this paper were those in which the prosthesis needed special and specific techniques for each case. Finally, they present three cases that were resolved. The first, using a palatine obturator; the second, using a prosthesis to re-establish the profile; and the third using a prosthesis, besides re-establishing the profile to close the palatine veil. (Spina)

Porterfield, H. W., and Trabue, J. C., Submucous cleft palate. *Plastic reconstr. Surg., 35,* 45–50, 1965.

Eighteen of 505 cleft palate cases treated by the authors had submucus clefts. These patients were referred late because of general unawareness of the condition as a cause for hypernasal speech. A pushback procedure was done in 13 cases with improvement in nasality but with persisting articulatory problems perhaps related to the relatively late age of palate repair. (Cosman)

Taylor, P. F., Winkelmann, R. K., Gibilisco, J. A., and Reeve, C. M., Nerve endings in the anterior part of the human hard palate. *J. dent. Res., 43,* 447–454, 1964.

In order to obtain further information regarding oral sensation, the authors investigated the microscopic anatomy of sensory receptors of the anterior part of the hard palate. Tissue was obtained from 40 patients undergoing oral surgery, in the age range of 12 to 100 years. The entire incisive papilla and one left primary palatal ruga were excised, and neural elements were studied from sections by both the silver nitrate and cholinesterase method. The number of nerve endings was observed to decrease slightly with age. Except for the 48–59-year-old patients, there were more nerve endings in the incisive papillae than in the rugae. Free nerve endings, hederiform nerve endings, and intraepithelial extensions were found to enter the epithelium. Organized nerve endings ('mucocutaneous end organs') were observed in the papillary portion of the lamina propria. (Noll)

Stenstrom, S. J., and Thilander, B. L., Cleft lip nasal deformity in the absence of cleft lip. *Plastic reconstr. Surg., 35,* 160–166, 1965.

Two cases are presented in which a nasal deformity like that associated with a cleft lip was present in the absence of an apparent lip cleft. There were, however, in both cases, minimal deformities of the lip, involving muscle mass, philtrum integrity, or continuity of white line. While detailed studies of the alveolus were not obtained in one case, in the other no dental defect other than minor deformity of the lateral incisor was noted. The authors consider the implications of these findings and conclude that these cases may best be interpreted as forms of cleft lip rather than defects of the nose per se. (Cosman)

Sloan, R. F., Brummett, S. W., Westover, J. L., Ricketts, R. M., and Ashley, F. L., Recent cinefluoro-

graphic advances in palatopharyngeal roentgenography. *Amer. J. Roentgenol., 90,* 977–985, 1964.

More than 800 published reports can now be found in the scientific literature which describes various uses of roentgen ray cinematography. Cinefluorography, complemented by spot roentgenographic techniques and cephalometric films, is a practical and important means of pharyngeal assessment because it provides three basic data: a) motion of the oral and pharyngeal structures; b) variations in their roentgenographic density; c) a chronology of the changes occurring during a functional cycle. This paper presents a) a brief description of the more recent advances in cinefluorographic filming techniques for studying the physiology of the cranial and pharyngeal areas, including palatal incompetencies and postlaryngectomized patients, and 2) the basic cinefluorographic diagnostic techniques used in the study of the pharyngeal regions. Instrumentation has been discussed previously by the authors. Charts illustrating the common vowels and representing the kinesiological positions for the oral and pharyngeal musculature during articulation of consonantal sounds are presented. These charts are complemented by cinefluorographic and phonation patterns in normal and abnormal patients. (Sloan)

Sloan, R., Ricketts, R., Bench, R., Hahn, E., Westover, J., and Brummett, S., The application of cephalometrics to cinefluorography. *Angle Orthod., 34,* 132–141, 1964.

There is a need for a reliable system for quantitative analysis which would provide statistical comparisons for anatomical relationships in the oral and pharyngeal areas. This paper presents some fundamental requirements for the application of roentgenographic cephalometry to cinefluorography in the study of patients with orthodontic and/or speech problems. Also included is a review of publications concerning radiographic analysis of craniopharyngeal relationships. (Luban)

Skoog, T., The management of the bilateral cleft of the primary palate (lip and alveolus), Part II, Bone grafting. *Plastic reconstr. Surg., 35,* 140–147, 1965.

The rationale for bone graft in the bilateral cleft case is presented. Sixty-seven patients with bilateral clefts treated in the last seven years form the basis of this portion of the author's report. Forty-four grafts were performed. The importance of soft tissue cover for the graft is emphasized. Operation was carried out, in general, about three months after lip repair. When, despite maxillary orthopedic treatment, medial collapse of the lateral segments behind the premaxilla occurs, bone grafting is often delayed to age three to four years, at which time prior orthodontic treatment is employed. Rib bone is used and photographs of the technique are presented. Details of the results obtained and the complications encountered are not given. (Cosman)

Skoog, T., The management of the bilateral cleft of the primary palate (lip and alveolus), Part I. *Plastic reconstr. Surg., 35,* 34–44, 1965.

Principles of timing and tissue preservation as they relate to the bilateral cleft deformity are discussed. A method of lip repair and simultaneous columella elongation is diagramed. A portion of the prolabium is turned into the columella and the lip closed with an upper and a lower triangular flap. Results in 69 patients have been satisfactory to the author, who has used the technique since 1957. (Cosman)

Scatliff, J. H., and Scibetta, M. P., Pharyngeal cinefluorography in clini-

cal practice. *Amer. J. Roentgenol., 90,* 823–834, 1963.

The purpose of this paper is to emphasize the value of cinefluorographic technique as a highly accurate, yet simple, routine in the evaluation of extrinsic pharyngeal lesions. A five-inch Philips Intensifier with a 35 mm Arriflex camera and Kodak Cineflure film was utilized. Extrinsic lesions, parathyroid adenoma and osteophyte dysphagia, and intrinsic defects, Plummer-Vinson webs and carcinoma of the hypopharynx, were described and discussed. Radiation exposure was estimated for 100 feet of 35 mm cinefluorographic film to be 9–10 X at skin level. (Sloan)

Pinsky L., and DeGeorge, A. M., Cleft palate in the mouse: A teratogenic index of glucocorticoid potency. *Science, 147,* 402–403, 1965.

A dose of 2.5 mg. of cortisone acetate in suspension given intramuscularly to inbred A/Jax mice on days 11, 12, 13, and 14 of gestation will produce cleft palate without cleft lip in 100% of the offspring. The purpose of the study was, first, to observe the relative teratogenic activity of certain glucocorticoid drugs with cleft palate as an indicator, and second, to compare teratogenicity with other known laboratory parameters of glucocorticoid effect. Clinically equivalent doses of water soluble preparations of hydrocortisone, prednisolone, and dexamethasone have progressively increasing teratogenic activity as judged by their ability to induce cleft palate in the offspring of pregnant mice treated with these drugs during the middle period of gestation. Dexamethasone is at least 300 times more teratogenic than hydrocortisone. It is proposed that the pharmacologic characterization of all glucocorticoids should include induction of cleft palate in the mouse as a simple assay of teratogenic activity. It is hoped that additional studies will yield clues to the mechanism whereby glucocorticoids interfere with the normal closure of the palate. (Harding)

O'Hara, A. E., Roentgen evaluation of patients with cleft palate. *Radiology Clinic N. Amer., 1,* 1–11, 1963.

An important factor in the management of patients with poor speech due to cleft palate defects, as well as certain cases of postadenoidectomy, poliomyelitis, and cerebral palsy, has resulted from the correlation of various roentgen techniques. The effectiveness of soft palate motion and pharyngeal closure can be accurately evaluated by a combined fluoroscopic study and simple lateral roentgenogram of the neck made while the patient utters certain test sounds. In turn, the accuracy of this type of study can be compared with cinefluorographic studies. These techniques can also be used for plotting the particular course of therapy for each patient, as well as establishing the progress of each patient both in his post-operative course and in his speech therapy. (Sloan)

Green, R. I., The radiological appearances of the soft palate with reference to the treatment of cleft palate. *J. Faculty Radiologists, 10,* 27–39, 1959.

A brief historical review of the use of radiographs to assess the palatal function is presented and complemented by numerous illustrations and photographs. The nasopharyngeal sphincter mechanism, radiological technique, and the pre- and post-operative appearance of the soft palate are described. (Sloan)

McKusick, V. A., Egeland, J. A., Eldridge, R., and Krusen, D. E., Dwarfism in the Amish, I. The Ellis-van Creveld syndrome. *Bull. Johns Hopkins Hosp. 115,* 306–336, 1964.

Although the Ellis-van Creveld syndrome is rare, 52 cases distributed in 30

sibships have been identified among the Amish of Lancaster County, Pennsylvania, a frequency of two per 1,000 living persons and five or more per 1,000 births. Prior to this report, a few more than 40 cases of EvC have been reported. The features of this syndrome are short-limbed, disproportionate dwarfism, polydactyly and dysplasia of fingernails. The shortening of the extremities is most striking distally, in contrast to classical achondroplasia, which shows more shortening in the proximal part of the limbs. Other defects noted among these individuals were partial mid-line cleft of the lip, early eruption of teeth and deficiency of teeth, mild epispadias, cardiac malformation, although this feature has been exaggerated in the literature. All 58 cases reported could be traced back to a Samuel King and his wife who migrated to the area in 1744. The prevalence of the EvC gene among the Lancaster County Amish is probably due to inbreeding and the introduction of the gene into the group by Samuel King, the founder of the sect. This form of dwarfism is not common among Amish groups in other sections of the country. (Harding)

Lucas, Mary, Kemp, N. H., Ellis, J. R., and Marshall, Ruth, A small autosomal ring chromosome in a female infant with congenital malformations. *Annals human Genet., 27,* 189–195, 1963.

The ring chromosome reported in this paper was found in a one-year-old female who was mentally subnormal, with normal muscle tone, small head circumference, small mandible, and cleft palate without cleft lip. Chromosomes were examined from peripheral blood cells and from fibroblast tissue cultures of skin biopsies. The predominant cell line had 46 chromosomes with one small autosome, identified as number 18, represented by a small aberrant, highly contracted chromosome. In prophase, a ring structure was typically observed. In metaphase, the aberrant chromosome had a highly variable appearance, probably the result of observing a contracted ring at different angles. As the cultures aged, the proportion of cells with ring karyotypes increased, suggesting that cell lines with the ring chromosome was less well adapted to survival in culture than those with normal karyotypes. Chromosome studies of mother, father, and siblings showed normal karyotypes. (Noll)

Landauer, W., and Clark, Ellen M., On the role of riboflavin in the teratogenic activity of boric acid. *J. exp. Zoology, 156,* 307–312, 1964.

Injections into the yolk sac of White Leghorn fowl were made simultaneously with boric acid and riboflavin-5-phosphate sodium (RPS). The experimental procedure was modified from an earlier study in which the presence of supplements of riboflavin lowered the incidence of malformations induced by boric acid in chicken embryos. All injections were performed at 96 hours of incubation, and the dosages of boric acid used were 0.05 ml 5% or 0.1 ml 3% with 3 mg/ml or 10 mg/ml RPS. The malformations noted were cleft palate, short lower beak, first and/or fourth toes shorter than others, and miscellaneous defects. RPS dissolved in boric acid is relatively ineffective in reducing incidence of the malformations if used immediately after preparation. However, the influence is greater if an RPS solution is prepared approximately a week before injection, assuming that slow, complex formation had occurred. In contrast to this effect of riboflavin-boron complexes, the authors noted that solutions of riboflavin-nicotinamide solutions, used as supplement to the administration of boric acid, lose value with aging. (Noll)

Kiehn, C. L., DesPrez, J. D., Tucker, A., and Malone, M., Experiences

with muscle transplants to incomplete soft palates. *Plastic reconstr. Surg., 35,* 123–130, 1965.

Use of portions of the temporalis or masseter muscles to activate a fascia lata sling passed through the soft palate at the level of the levators is described. Seventeen patients of the 19 reported had the temporalis employed. Subjective evaluation of speech suggested improvement in 15 patients and negligible change in four. The best results were obtained in patients with palatal paralysis and in those with cleft palate speech without cleft palate. Objective studies of transposed muscle activity, as well as of palatal motion, are said not to be a complete and are not presented. (Cosman)

Isaacson, R., and Murphy, T., Some effects of rapid maxillary expansion in cleft lip and palate patients. *Angle Orthod., 34,* 143–155, 1964.

In younger patients, basal and alveolar bone expansion does occur. The response is not necessarily symmetrical, and the exact direction of movement is unpredictable. In the one older patient (22 years), no lateral maxillary expansion occurred, although a cross-bite was corrected through extrusion and tipping of buccal teeth. The resistance of the facial skeleton appears to be an important factor in the response to expansion procedures. There were only slight changes in the configuration of the nasal cavities. (Luban)

Hagerty, R., Andrews, R., Hill, M., Mendelson, B., Karesh, S., Lifschiz, J., and Swindler, D., Prevention of dental arch collapse in cleft palate. *Angle Orthod., 34,* 53–57, 1964.

This is a progress report of the effectiveness of a palatal bar in preventing dental arch collapse. This bar is inserted into the palatal segments as support at the time of lip surgery and is left in place for about four months. Dental study models were made of these cases at approximately 18 months of age at the time of palate surgery. The preliminary results indicate that this procedure is effective in reducing dental arch collapse. (Luban)

Hagerty, R., Andrews, E., Hill, M., Calcote, C., Karesh, S., Lifschiz, J., and Swindler, D., Dental arch collapse in cleft palate. *Angle Orthod., 34,* 25–35, 1964.

These investigators used a standardized photographic technique and a rolling disc planimeter to measure palatal asymmetry. No dental arch collapse was observed in submucous, Type I, or Type II post-operative cleft palate patients. Dental arch collapse was seen in all Type IV post-operative patients, and in almost all Type III post-operative patients on the cleft side. The unilateral complete cleft cases where both lip and palate surgery had been performed exhibited less dental arch collapse than those cases with only lip surgery. However, the bilateral complete cleft lip and palate cases who had lip repair only, demonstrated more normal arch alignment than those cases with both lip and palatal surgery. (Luban)

G. daSilva, M. D., A new method of reconstructing the columella with a naso-labial flap. *Plastic reconstr. Surg., 34,* 63–65, 1964.

The author reconstructs a columella by raising a naso-labial flap based superiorly. The flap is then passed through a button-hole incision on the side of the nose between the upper and lower lateral cartilages and sutured into the base of the columella. After an appropriate delay, the upper end of the flap is cut, passed through the wound and fixed into the tip of the nose, thus creating a new columella attached to the caudal portion of the septum. In cases where the septum is absent or deficient, the naso-labial flap is lined

with a skin graft prior to transfer to the site of the columella. (Harding)

Cohlan, S. Q., Teratogenic agents and congenital malformations. *J. Pediatrics, 63,* 650–659, 1963.

The author presents a comprehensive review of the following three major categories of teratogenic agents: a) drugs (thalidomide, endocrine preparations, cytotoxic and antimetabolic agents, and tolbutamide), b) maternal infection (rubella, toxoplasmosis, salivary gland virus disease, Asian influenza, and immunologic mechanisms), and c) irradiation. From the available published reports he considers each of the congenital malformations, including cleft palate, that has been associated with any of the teratogenic agents mentioned above. The author also discusses the relationship between clinical data and current principles of environmentally induced developmental abnormalities. There are 58 bibliographic entries. (Noll)

Cardwell, E. P., Reconstruction of the soft palate: Use in major cancer of the back of the mouth. *Arch. Otolaryng., 77,* 257–258, 1963.

The author briefly describes removal of gross carcinoma of the back of the mouth. The procedure described is reported to assure minimum morbidity. Skin and mucosal flaps function in conjunction with remaining palate structures to provide rehabilitation of soft palate function without prosthesis. (Lutz)

Brauer, R. O., Observations and measurements of nonoperative setback of premaxilla in double cleft patients. *Plastic reconstr. Surg., 35,* 148–159, 1965.

The question of the proper relationship of the premaxilla and the lateral palatal segments in the bilateral cleft patient is a perplexing one. A case in which soft tissue union persisted between cleft segments and premaxilla seemed to represent an ideal initial result. A side-to-side molding effect of the lateral segments on the developing premaxilla was suggested by this case in addition to the accepted effect of the premaxilla on the development of the alveolar arch. Measurements on study models of four other patients were presented to evaluate changes occurring in the premaxilla and lateral segments as nonoperative forces were used to set back the premaxilla. Apparent recession was accomplished by backward shift and/or absorption in the vomer posterior to the prevomerine suture. Forward shift of the lateral segments also appeared to occur. Of interest was the observation that no important length changes occurred in the bone anterior to the prevomerine suture. While the problem of measuring distances between points which themselves are changing in appearance is clear, this kind of report should be significant in helping to turn professional interest from pronouncements of theory to observations of facts. (Cosman)

Sloan, R. F., Ricketts, R. M., Brummett, S. W., Mulick, J., Bench, R. R., Ashley, F. L., and Hahn, E., Cephalometric-cinefluorographic diagnostic criteria utilized in craniofacial problems. *South. Calif. State dent. Assoc. J., 31,* 355–362, 1963.

A myriad of cranio-facial problems are presented in our pediatric and adolescent populations. Cephalometric-cinefluorographic procedures are outlined and the diagnostic criteria utilized in cranio-facial problems are related both to anatomical and functional aspects of the specific problem. Charts and illustrations demonstrate the basic roentgenographic landmarks, the procedural steps taken during cephalometric-cinefluorographic analysis

(in the normal and the pharyngeal flap patients), and the four cardinal features in the cleft palate palatal incompetency syndrome. Instrumentation has been previously described by the authors. (Sloan)

Teratology—a look at its progress and problems. *J. Amer. med. Assoc.*, *191*, 27–31, 1965.

This is an article summarizing the week-long Workshop in Teratology at the University of California, Berkeley, in January. The workshop was sponsored by the Teratology Society, and the National Academy of Sciences-National Research Council. Some teratologists have advanced the proposition that any agent, if administered at the right time, in the right dose, to the right species, can cause disturbances in embryonic development. This proposition cannot be proved or disproved, but implies that the potential for developmental abnormality is much greater than the observed incidence. The influences which can result in congenital malformations may be divided into four categories: a) environmental, b) genetic, c) multifactoral, that is, combinations of environmental and genetic factors, and d) a category to include those cases that cannot be traced to any environmental or genetic factor, but seem to be the result simply of the statistical probability that some embryos will fail to develop properly. It was generally held that the mammalian fetus was well protected by the maternal organism. In recent years, numerous environmental agents have been found to produce a teratogenic effect in experimental animals, although the mode of action of most of them remains obscure. There are three phases of susceptibility to teratogens. a) The first phase, from time of fertilization to an imprecisely determined point in differentiation, the embryo is largely refractory to teratogens. b) The second phase is the stage of high susceptibility and corresponds to the early stage of organ development. c) There then follows a period of increasing resistance to teratogenesis when the embryo approaches the fetal stage. Lecturers at the workshop were quick to point out that teratogenic experiments in laboratory animals can only suggest similar effects in the human embryo and should not be taken as proof that the agent is teratogenic in man. (Harding)

REGISTRY OF CURRENT RESEARCH PROGRAMS

The Registry will be maintained in subsequent issues of the *Journal.* Currently, the major source of information is the Bio-Sciences Information Exchange; however, other sources are invited to contribute. Descriptions of research programs to be listed with the Registry should be sent to the Editor.

Items are: Name of project; supporting agency; name of principal investigator with degrees; academic rank, institution, and address; and summary of project.

Blood vessels of the oral region (NIH). *William P. Maher,* D.D.S., Department of Anatomy, School of Dentistry, Marquette University, Milwaukee, Wisconsin.

Summary: The object of this investigation is a comparative study of the micro- and macro-blood vascular networks within the tissues of the oral region of mammals. It is proposed that the blood vascular system be injected with dyes such as India ink and/or red cinnabar, thus marking the arteries red and the capillaries and veins black. These will or have been cleared by a modification of the Spalteholtz method, microdissected, and scrutinized with appropriate ranges of stereomagnification. Detailed anatomic descriptions of the arterial and venal pathways and the capillaries, their relationship to one another, to the nervous tissue, and to other types of connective tissue will be reported in appropriate journals. Numerous colored stereomicrophotographs, as well as black and white photographs, have and will be taken for the purpose of publication, exhibit, and lecture purposes. Specifically, the tissues of the oral region considered as subject for analysis are: the palatal mucoperiosteum in normal palates and cleft palates, bone, gingiva, tongue, lips, oral mucosa, and the dentoperiodontal tissues. Attention will be given to the lymphatic system in the palatal area. The networks of blood vessels in the oral region are compared with networks in other parts of the body.

Studies in human genetics (The Rockefeller Foundation). *Ei Matsunaga,* M.D., D.Sc., Department of Human Genetics, National Institute of Genetics, Misima, Japan.

Summary: A major project of our department is concerned with comparative studies on the genetic composition of Japanese populations; the following researches are proposed: a) An extensive field work was carried out in 1962 to collect data on ABO blood groups and fertility, covering ca 2,500 families. The data are being analyzed by appropriate statistical methods to test for selection in the blood groups, acting at prezygotic and postzygotic stages (Hiraizumi and Matsunaga). b) Studies on chromosome aberrations in patients with congenital abnormalities are currently carried on, in collaboration with several university hospitals in Tokyo (Tonomura). c) Studies on the incidences of the glucose-6-phosphate dehydrogenase deficiency and the haptoglobin phenotypes among Japanese populations are in progress (Shinoda). d) Biochemical analysis of human normal cerumen is going on, in collaboration with Dr. K. Ohno, Professor of Biochemistry at the Sapporo Medical College, in order to

find out any significant difference in chemical composition between the two genetically controlled types, wet and dry cerumen (Matsunaga). e) Follow-up studies of patients with retinoblastoma will be continued, in order to see what fraction of sporadic cases is actually due to fresh mutations (Matsunaga). f) Mathematical theories relating to the genetic loan will be studied (Kimura).

Combined investigation of maternal protein, vitamin B_6, B_{12}, and folic acid metabolism, and their aetiologic relationship to congenital abnormality development in animals and humans (Department of National Health and Welfare of Canada). *George B. Maughan,* M.D. Department of Obstetrics and Gynecology, Royal Victoria Hospital, McGill University School of Medicine, Montreal, Quebec, Canada.

Summary: none provided.

Congenital malformations and riboflavin deficiency (NIH). *Zelma B. Miller,* Ph.D., Department of Maternal and Child Health, Harvard University School of Public Health, Boston 15, Massachusetts.

Summary: The primary aim of this investigation is to explore in differentiating rat embryonic and fetal tissue the biochemical and enzymatic changes which result from chronic and acute riboflavin deficiency and which are ultimately responsible for congenital malformations. Studies which have been concluded suggest that the teratogenicity of a riboflavin-deficient diet containing the riboflavin antagonist, galactoflavin, is attributable to a critically low level of flavin adenine dinucleotide in embryos during the differentiation period. The explanation for this critically low level is being sought. Studies are in progress on the distribution of riboflavin compounds and of an enzyme capable of hydrolyzing flavin adenine dinucleotide in the rat placenta, at various stages of gestation. The influence of acute riboflavin deficiency on several important metabolic processes, involved in both protein and desoxyribosenucleic acid synthesis, is being investigated. Because of the striking effect of riboflavin deficiency on skeletal development during embryonic life, the influence of riboflavin deficiency on certain aspects of skeletal development, in particular, the synthesis of chondroitin sulfate, is being studied *in vitro*.

A study of dental morphology: an investigation of anatomical factors in orthodontic problems (NIH). *Loren F. Mills,* D.D.S., Epidemiology and Biometry Branch, National Institute of Dental Research, National Institutes of Health, Bethesda, Maryland.

Summary: Direct examinations for various dental anatomical characteristics were carried out on a population of young adult males. Various components of the data were studied to develop criteria useful in population surveys of the prevalence and severity of occlusal anomalies.

The palate, typical and atypical development (NIH). *Shirley M. Motzkin,* Ph.D., New York University, Washington Square, New York 3, New York.

Summary: The research project proposed aims to analyze the mechanism of palate formation by examining the normal growth and embryological development in rats and mice. This study is being correlated with both spontaneous mutant cleft palate animals and those experimentally induced by hormonal and chemical treatments. To achieve the above goals, a careful histological study of the differentiating germ layers and their cells

will be performed to correlate the specific structural components with the process of palate formation. Histochemical and cytochemical analyses of nucleic acids and acid mucopolysaccharides will be explored in the palate. The above data shall be utilized to evaluate normal and cleft palate formation.

A cytological and cytochemical study of osteoclasts (NIH). *Hugh I. Myers*, Ph.D., Biology Department, Parsons College, Fairfield, Iowa.

Summary: The histochemical appearance of osteoclasts in the mandibular condyle in normal and under altered conditions is being investigated.

Congenital defects in rats deficient in vitamin B12 (Public Health Service). *Paul M. Newberne*, Ph.D., Department of Nutrition, Food Science and Technology, Massachusetts Institute of Technology, Cambridge 39, Massachusetts.

Summary: none provided.

Oral aspects of the results of consanguineous marriage in Hiroshima and Nagasaki, Japan (NIH). *Jerry D. Niswander*, D.D.S., Human Genetics Section, National Institute of Dental Research, National Institutes of Health, Bethesda, Maryland.

Summary: Japanese children from a large sample of consanguineous matings and control nonrelated parents are being compared for a number of physical, psychometric, anthropometric, and dental parameters to assess the effects of inbreeding on normal and abnormal traits. The dental portion of the project has completed analysis of data pertaining to periodontal disease, malocclusion, dental caries, and tooth anomalies. A consanguinity effect toward more malocclusion in inbred children was found, but inbreeding effect was equivocal or undetectable in the other characteristics.

Congenital disorders of the ureterovesical valve (American Medical Research Foundation). *Albert J. Paquin, Jr.*, M.D., Department of Urology, University of Virginia School of Medicine, Charlottesville, Virginia.

Summary: The project proposes to examine the structure and function of the normal and congenitally disordered ureterovesical junctions to a) establish the gross and microscopic characteristics and variations of the normal and abnormal junctions and b) evaluate the role of congenitally disordered junctions, that is, those permitting vesico-ureteral regurgitation and those producing vesico-ureteral obstruction, in the initiation and progress of pyelonephritis, hydronephrosis, and renal failure. The specific hypotheses to be tested are a) that the clinical demonstration of ureteral reflux is a *sign* of a diseased urinary tract, b) that the ureterovesical junction is principally a passive (that is, not dependent on a nerve supply) valve with a role in the urinary system similar to the role of cardiac valves in the cardiovascular system, stenotic valves, or valves permitting regurgitation in both systems exact severe penalties from the patient, c) that an obstruction distal to an ureterovesical valve which permits reflux is worse than reflux alone, and d) that obstruction and infection alone or in combination with reflux have the most serious consequences of all. The 'autopsy' phase is a study of the dimensions of the normal trigone, ureterovesical junction, and bladder base in persons dying without evidence of urological disease. This will give us control data for understanding the process or processes causing the ureterovesical valve to function improperly in living patients. These data do not now exist. We wish not only these mensuration data but also step-sections with special

stains to study a few examples of average and extreme variations of normal. The second part of these studies will be a study of factors which hasten the deleterious effects of reflux. These will be done by deliberately infecting the urinary tracts of rabbits (with and without reflux) with species specific organisms alone and in conjunction with man-made bladder neck or urethral obstructions. These data will be correlated with our clinical data as well.

Investigation of the causes, prevention, and treatment of related problems dealing with cleft palate and cleft lip deformities (The John A. Hartford Foundation). *Lyndon A. Peer*, M. D., St. Barnabas Hospital Rehabilitation Center, Newark, New Jersey.

Summary: Current studies on 498 women who previously delivered children with cleft lip-palate suggests that a reduction may be expected in the incidence of deformity in infants through the administration of vitamins. The stress vitamin formula supplemented with B^6 and folic acid are used. The work is still in progress and an attempt is being made to collect sufficient samples for a statistical evaluation. Recent work using adenosine triphosphate in mice in high dosages in conjunction with cortisone was found to increase the incidence of cleft palate and other deformities markedly. However, low concentrations of ATP, in conjunction with cortisone, appeared to reduce the frequency and severity of these anomalies. The finding is currently undergoing extensive study. Preliminary enzyme studies reveal that the fetal liver transaminase activity is higher in fetuses with deformities induced by cortisone than in those without deformities. Further studies are under way to determine the influence of adenosine triphosphate on liver transaminase. In addition, the program includes an investigation into the effect of adenosine triphosphate on the liver transaminase systems previously subjected to cortisone.

Motion picture analysis of palatopharyngeal movement (NIH). *Samuel Pruzansky*, D.D.S., Cleft Palate Center, University of Illinois School of Dentistry, Chicago 12, Illinois.

Summary: The purpose of this investigation is to develop equipment that will permit motion picture analysis of velopharyngeal movements in infants and young children with clefts of the palate. It is well known that a wide spectrum of variation exists in the size, shape, position, and movement of the soft palate, tonsils, adenoids, facial pillars, and other pharyngeal muscles. It has also been suspected that such variations might be important determinants in the ultimate success of therapeutic efforts. For this reason, we have undertaken to describe the variations present, develop methods for quantifying the differences observed, and relate these findings to results following surgery on the cleft palate. In addition, we shall correlate our x-ray films of palatal motion with the peroral motion picture analysis. Since radiographic studies of velopharyngeal physiology are now in progress in many centers, it is anticipated that our motion picture studies will facilitate the interpretation of the x-ray shadow.

Application of contact microradiography in dental research (NIH). *Mervyn B. Quigley*, D.M.D., University of Kentucky Medical Center, Lexington, Kentucky.

Summary: Using contact microradiography, it is proposed to study: a) Developing teeth of rodents and monkeys, and comparing the results with those found in light and electron microscopy. b) Thin, undecalcified sections of early carious lesions in human enamel. Arti-

ficial 'white spots' will be produced in vitro, and similarly studied. c) The effect of filling materials on sound human dentin. d) Anorganic bone will be embedded in the mandibles of dogs and then removed at intervals and examined in light microscopy, microradiography, and electron microscopy.

Longitudinal growth studies on anomalies of the head (NIH). *Samuel Pruzansky*, D.D.S., Cleft Palate Center, University of Illinois School of Dentistry, Chicago 12, Illinois.

Summary: The purpose of this investigation is to describe and catalogue the abnormal patterns of cranio-facial-dental growth in a variety of congenital malformations available in the continuing longitudinal growth study in progress at the Research and Educational Hospitals of the University of Illinois. This growth study was initiated in 1949 and now includes data on more than 1,000 children. X-ray cephalometry, plaster casts of the jaws, voice recordings, and photographs constitute the major source material for study in addition to psychological, familial, and genetic studies. It was determined that certain congenital malformations will show spontaneous improvement in time, others will remain the same, while some will grow worse. Predictability of such patterns is of practical value in parent counseling and treatment planning. The demonstrated variability in the patterns of post-natal development also raise basic questions regarding the mechanisms of malformations in utero and provide a more complete description of the phenotype.

Experimental abruptio placenta: chronic experiments (NIH). *Robert E. L. Nesbitt, Jr.*, M.D., Department of Obstetrics and Gynecology, State University of New York, Upstate Medical Center, Syracuse, New York.

Summary: Utilizing nonpregnant mongrel dogs, a Jacobson Cuff will be applied to the inferior vena cava below the level of the renal veins after baseline arterial pressure and inferior vena caval pressures have been obtained. The animals will be bred after an adequate period of stabilization has occurred. During each trimester of the pregnancy periodic injections of the bulb will be carried out to gradually constrict the cuff about the inferior vena cava and to raise the pressure within that vessel below the level of the cuff. Thus, a chronic experiment is set up which gradually impairs the flow of blood from the utero-placental site. At or near term the uterus will be removed intact and the utero-placental attachments will be studied grossly, histologically, and histochemically utilizing enzyme stains, as well as fluorescent dyes. All tissues will be examined in this manner, including the fetal organs, particularly the brain. It is hoped that the subtle injuries of the placenta, uterus, and fetal tissues can be created and studied and that the pathophysiology of abruptio placenta and impaired utero-placental blood flow can be elucidated. (Project completed)

Pilot investigation of tele-radiographic techniques in speech and dentistry (NIH). *Betty Jane McWilliams*, Ph.D., Cleft Palate Research Center, Salk Hall, University of Pittsburgh, Pittsburgh, Pennsylvania.

Summary: This study involves the development of methods for the utilization of tele-radiographic equipment in the study of problems related to speech and dentistry. Specifically, it will move in the coming year to evaluate palato-pharyngeal dynamics as they relate to nasality in normals and in cleft palate patients. Data will be collected on scaled readings of televex tapes, measurements derived from tracings of films, ratings of nasality, consonant articulation profiles, and specto-

graphic analyses. This research plan was developed during the first year of the study during which we perfected filming techniques and looked at dozens of tapes in order to determine which ought to be evaluated in a research population. (Project completed)

A study of the head and face of the American Negro child (NIH). *Leonard A. Altemus*, Department of Orthodontics, Howard University, 2441 Sixth Street, N. W., Washington, D. C.

Summary: The study of the frequency of the incidence of birth defects among North American Negro children began during the past year will be completed and prepared for publication. Especial interest will be shown to the birth defects of the head and face. Comparisons will be made of the findings of this study and similar studies of other racial groups. The mass survey of approximately 3,000 North American Negro children, which was planned for this year, will be begun during the next period. This survey will be similar to a previous survey conducted in 1956. The chronologic and dental ages of the children will be recorded as well as the incidence of malocclusion according to the classification of Angle. Four groups with different types of malocclusion will be selected, 50 boys and 50 girls. These selected groups will be further studied to determine the relationships between the teeth and supporting bones and comparisons will be made between the children with normal and malocclusion teeth. Comparisons will be made of the cephalofacial relationships of the hard and soft tissue of this group and other North American racial groups.

Basic studies bearing on periodontal disease (NIH). *Helmut A. Zander*, D.D.S., Department of Periodontology, Eastman Dental Dispensary, 800 Main Street, East, Rochester, New York.

Summary: Work on the physiology of tooth contact will be continued utilizing radio transmitters. The area to be studied is tooth contact during lateral excursions of the mandible. Data will be obtained on frequency and duration of such contacts when masticating foods. This data will be correlated with EMG records for the muscles of mastication. Mitotic cycles of the epithelial attachment and crevicular epithelium will be studied in monkeys by labeling cells through injection of tritiated thymidine. A study on rats will concern itself with the mitotic potential of the epithelial root sheath. This will be both a vertical and horizontal study so that in addition to mitotic potential we will obtain information on migration and differentiation of the various cellular elements involved in tooth formation, eruption, and development of the supporting structures.

Factors in child development and cerebral palsy (NIH). *J. Yerushalmy*, Ph.D., Kaiser Foundation Research Institute, 1924 Broadway, Oakland, California.

Summary: The major purpose of the study is to investigate the relationship of medical, genetic, biologic, and environmental factors in the parents, including events during pregnancy, labor, and delivery, to normal and abnormal development of offspring and to occurrence of neurological abnormalities. Expected by-products are relationships of these factors to pregnancy wastage in the form of abortions, fetal deaths, infant and childhood mortality estimate of incidence of abnormality by type, and more reliable estimates of abortion by month of pregnancy. In addition detailed growth curves from birth to six years of age will be derived on a longitudinal basis, and estimates of the incidence of illness and injuries in infancy and childhood will be provided. Members of the Kaiser Founda-

tion Health plan, a prepaid medical care program in Oakland, are being followed through pregnancy and childbirth. Their offspring will be followed until they enter school. Cooperative agencies are: the Division of Biostatistics of the University of California; the Kaiser Foundation Research Institute; and the Permanente Medical Group.

Radiological aspects of mandibular hypoplasia and mandibulofacial dysostosis (James Picker Foundation, NRC-Committee on Radiology). *Martin H. Wittenborg*, M.D., The Children's Medical Center, Harvard Medical School, Boston, Massachusetts.

Summary: This project is a radiologic study of the development, course, and possible underlying mechanisms involved in mandibulofacial dysostosis, including the Pierre-Robin, Treacher-Collins, and Franceschetti syndromes. The investigation is directed at three basic problems. First, an attempt is being made to establish the ossification pattern of the mandible and facial bones in fetuses and evaluate whether these deformities support the stage specific arrest theory of the congenital malformations. Secondly, an attempt is made to correlate the clinical information available on the patients with craniofacial dysostosis to determine whether some of the principles developed by experimental animal embryology can be carried further into the field of human congenital malformations. Thirdly, radiologic criteria are to be established for the face and jaw by which it is hoped a clinical evaluation can be made to judge the type and severity of the mandibulofacial dysostosis and possibly act as a sound basis for prognosis or treatment. The material used for this study consists of fetuses yielded by spontaneous or therapeutic abortions from a maternity hospital and a group of patients with mandibulofacial dysostosis followed clinically and radiologically.

Tri-racial isolates in eastern United States (NIH). *Carl J. Witkop, Jr.*, D.D.S., Human Genetics Section, National Institute of Dental Research, National Institutes of Health, Bethesda, Maryland.

Summary: Survey of 26 tri-racial isolates residing in eastern United States by letter, records search, and field examinations show a marked increase of hereditary disease in these populations. Several rare diseases have been studied in detail in the Haliwa isolate of North Carolina. These include Sjögren-Larsson syndrome, hereditary benign intraepithelial dyskeratosis, and cleft lip and palate. Disorders of speech and oral functions were noted in 26 patients with Sjögren-Larsson syndrome, which has an associated variable amino-aciduria. Linkage and amino acid excretion studies are being conducted.

Chromosomes and congenital malformations (NIH). *Josef Warkany*, M.D., Children's Hospital Research Foundation, Elland Avenue, Cincinnati, Ohio.

Summary: This project includes: a) chromosome analyses in children with congenital malformations, sex anomalies, mental retardation, and leukemia, and b) studies of chromosome anomalies in rat embryos exposed to various teratogenic agents.

Autogenous transplantation of the costochondral growth center to replace the mandibular condyle (NIH). *William H. Ware*, D.D.S., Department of Oral Medicine and Oral Surgery, University of California School of Dentistry, San Francisco, California.

Summary: The joint area of the mandi-

ble is the chief site for growth of the lower jaw. If this area is damaged early in an individual's growth period, growth and development of the jaws and contiguous tissues ceases or is greatly reduced. The cause of this damage may be infectious, developmental, or traumatic, as results from a blow or fracture. Satisfactory treatment can only be obtained if the growth potential of this part is taken into consideration. If it were possible to remove the damaged growth center and replace it with an anatomically similar growth center, esthetic growth and development of the face may continue. The purpose of this study is: a) to investigate the costochondral growth centers that could be used in transplantation to the mandibular joint, b) to investigate metatarsal bone as possible donor site for transplantation, c) to transplant these centers in growing animals, observing the response to adulthood at which time histological examination of the regions will be conducted, and d) to determine the feasibility of clinical application of such a procedure. Female Macaca Rhesus monkeys six to eight months old are to be used as experimental animals. By burying metallic pins on either side of the growth centers, growth comparisons are made at six-month intervals by means of cephalometric and chest films. Final comparison will be made at the animals' maturity by sacrificing and making direct measurements.

Studies on the effect of antimetabolites on the rat fetus (The Population Council). *John Thiersch*, M.D., Department of Pharmacology, School of Medicine, University of Washington, Seattle, Washington.

Summary: none provided.

Studies of congenital anomalies (Association for the Aid of Crippled Children). *Chester A. Swinyard*, Ph.D., M.D., Department of Physical Medicine and Rehabilitation, New York University, Bellevue Medical Center, New York, New York.

Summary: This investigation proposes to extend the studies of clubfoot to a hereditary type of clubfoot, not associated with arthrogryposis, to complete the anatomical study of fetuses with clubfoot, to study the nature of the hereditary anomaly of the skin known as epidermolysis bullosa, to expand the preliminary electromyographic studies of harelip and cleft palate, and to relate the level and extent of the lesion in spina bifida with myelomonocyte to the problems of muscle weakness and urinary incontinence. We also plan to study certain aspects of dysfunction of the autonomic nervous system in these patients. These problems in the human will be supplemented by experimental production of the anomaly in animals. Another aspect of the investigation is to study the pregnancy history of 150 children with congenital amputations of the extremities in an effort to find a common factor which might relate to amputation of the fetal extremity, and to complete the anatomical studies of hereditary defects in the fowl specimens provided by Dr. Walter Landauer of the University of Connecticut.

Orofacial muscle function in normal subjects and those with congenital or acquired anomalies (NIH). *J. Daniel Subtelny*, D.D.S., Department of Orthodontics, Eastman Dental Dispensary, 800 Main Street, East, Rochester, New York.

Summary: During the present grant year, a continuing study of orofacial activity in normal occlusion and severe Class II malocclusion subjects has been made. This study has utilized the technique involving standardized contour line cinematography. The modiolus and mentalis muscle areas were studied in detail.

Using a similar technique, but without the contour lines, we have investigated the asymmetry of the lips as seen in children with repaired unilateral clefts of the lip. Normative data were also collected in this study. The lip movements in cleft and noncleft subjects during bilabial plosive articulation was studied, using physiometric cinematography. The final investigation undertaken during the present grant year was an assessment of the accuracy of positive translucencies as an aid to cephalometric investigation.

Normal and cleft palate speech—pharyngeal flap procedure (NIH). *J. Daniel Subtelny*, D.D.S., Department of Orthodontics, 800 Main Street, East, Rochester, New York.

Summary: This work involves a multidimensional study of normal and cleft palate speech. The project is designed so that physiological factors, cineradiographically defined, can be studied relative to their effect upon the transmission of air and sound energy within the vocal tract. The ultimate purpose is to accumulate pre- and post-operative data pertinent to successful clinical management of the cleft palate patient with palato-pharyngeal incompetence, and to evaluate the efficacy of the pharyngeal flap operative procedure. The work represents cooperative efforts of orthodontist, speech specialists, plastic surgeons, engineers, and many technicians.

Evaluation of diagnostic procedures in cleft palate (NIH). *Hughlett L. Morris*, Ph.D., Department of Otolaryngology and Maxillofacial Surgery, University of Iowa, Iowa City, Iowa.

Summary: The subjects for the study will consist of 200 children under 15 years of age at the time they are first seen who have an unrepaired cleft palate or who have a condition of velopharyngeal closure which is clearly inadequate for the production of speech. A variety of physical management procedures will be employed consistent with current practice. Systematic and exhaustive pre- and post-management evaluations will be made in an attempt to identify the diagnostic signs which have significant predictive value in selecting the management procedure to be used under a given set of conditions to provide for the best speech result.

A study of the physiology of the speech mechanism (Vocational Rehabilitation Administration). *D. C. Sprestersbach*, Ph.D., Department of Otolaryngology and Maxillofacial Surgery, University of Iowa, Iowa City, Iowa.

Summary: The purpose of this project is to study the physiology of the speech mechanism of normal speakers and speakers with selected types of speech disorders primarily through the use of cinefluorographic films. The findings will be summarized in five 20-minute instructional films. The films will portray the mechanisms of velopharyngeal closure of normal speakers, the characteristic positions of the speech articulators of normal speakers producing the various consonant and vowel sounds in the English language, and the characteristic articulatory mechanisms of speakers with surgically and prosthetically managed cleft palates, cerebral palsy, and 'functional' misarticulations.

The temporomandibular joint and surrounding tissues (NIH). *Benjamin Spector*, M.D., Department of Bioanatomy, Tufts University School of Medicine, 136 Harrison Avenue, Boston, Massachusetts.

Summary: The principal objective of this investigation is to gain a more complete understanding of the nerve supply of the temporomandibular joint and

the surrounding tissues. Developmental changes are being studied by histologic examination of serial paraffin and frozen sections through the mandibular joints of mice and rats sacrificed at ages ranging from 15 days insemination age to late adult. The different types of nerve endings, and the distribution and arrangement of these structures, are revealed by methylene blue intravital, immersion, and local injection techniques, as well as modifications of the silver staining techniques of Bodian and Bielschowski. For frozen sections we shall make extensive use of the method of Winkelmann in which potassium carbonate is substituted for the hydroquinone-sulfite mixture as a developer. This method, preceded by enzyme hydrolysis of collagenous elements, has given the greatest consistency and clarity in demonstrating the nerve supply of different tissues in the same section.

Cleft palate: an interdisciplinary program (NIH). *Sidney I. Silverman,* D.D.S., New York University College of Dentistry, 421 First Avenue, New York, New York.

Summary: A research program is proposed for a broad spectrum study of the etiology, the functional activity, and the therapeutic management of the congenital cleft lip and cleft palate syndrome. The program will investigate the tissue alterations and tissue behavior in health, disease, and repair throughout the whole life cycle, that is, the prenatal, infant, childhood, adolescent, adult, and aging periods of life. The program is based upon the coordination of the three major areas of research: the basic biologic, behavioral, and clinical sciences. The research will be conducted by animal and laboratory experimentation and by clinical investigation. It will employ the more recent techniques in cineradiography and electronic devices for observing the kinesiology and the neurophysiology of the orofacial-pharyngeal structures. The studies will relate growth and development of these tissues and their responses to therapeutic procedures in relation to the function of mastication, deglutition, respiration, speech, head posture, face form, and the special senses. In addition, the psychologic and sociologic conditions of life of these patients will be correlated.

A study of chromosomal defects, their relation to abnormalities, and the development of early diagnosis and treatment of hereditary diseases (The John A. Hartford Foundation). *Alfred I. Sherman,* M.D., Department of Obstetrics and Gynecology, Barnes Hospital, Washington University, St. Louis, Missouri.

Summary: Barnes Hospital, Washington University Medical Center is fortunate to possess a large outpatient and inpatient population derived locally and out-of-state. Within the complex, all age groups are provided medical care, from newborns at St. Louis Maternity Hospital through geriatric patients at Jewish Hospital. These patients are available, without reservation, for inclusion in the proposed study. The source of study material is human blood and, more specifically, its white blood cells are grown in tissue culture for several days and then prepared for study. The cord blood of many normal newborns will be the chief source of material with which we shall be concerned. These will serve to train and acquire skill in methodology. Abnormal chromosome patterns detected in the process will be brought to the attention of the pediatrician concerned in order that he may plan further diagnostic procedures or alter his proposed care for the infant. All abnormal newborns will be subjected to chromosome analysis, and correlations, if any, will be established between the anomalies and chromosome picture. All individuals beyond the newborn age

period, who have physical or metabolic disorders of congenital origin, will have a chromosome analysis performed. Correlations between the disorder and chromosome pattern will be attempted in order to establish a basis for classification. Individuals with unexplained sterility will be screened to rule out chromosome anomalies. Exploration of application of electron microscopy to problem of chromosome analysis will be carried out. Light microscopy is customarily used for routine analysis; however, electron microscopy may provide greater discrimination and information not now available. Selected technicians from the Barnes Hospital laboratory divisions and from interested regional hospitals will be trained in methodology and interpretation.

Genetic and maternal influences affecting regional growth in the rabbit (American Cancer Society). *Paul B. Sawin,* Sc.D., The Jackson Laboratory, Bar Harbor, Maine.

Summary: This investigation seeks an understanding of the natural laws governing growth processes in the rabbit and their interactions which result on the one hand in normal growth and differentiation, health, viability, and reproduction, and on the other, in abnormal reproductive processes, susceptibility to constitutional diseases, or early senescence. Experimentally, efforts are being directed toward identification of specific gene-induced localized effects upon body regions, tissues, organs, or glands from those acting on the body generally and from those of an environmental nature. The immediate objectives for 1963–64 are: a) continued inbreeding in all lines and improvement of semen storage techniques to facilitate growth studies; b) study of the primary and secondary gradients of race X, in comparison to race III, and of reciprocal F_1 hybrids and backcrosses of these races studied by cross-sectional data obtained during fetal stages and longitudinal data post-natally; c) study of the retardations induced by the specific dwarfing genes *Da, Dw,* and *ac* as modified by backcross transfer to the genetic background of races III and X and of the *Da* and *ac* when combined in the double homozygotes (*acacDaDa*).

Neuropathological study of congenital x-ray anomalies (NIH). *Robert Rugh,* Ph.D., Department of Radiology, College of Physicians and Surgeons, Columbia University, New York 27, New York.

Summary: Rat embryos have been x-irradiated at various stages of development, but more particularly at 9.5 days to 100 r, and are being studied for neuropathological effects. These studies include the usual histopathological procedures, in addition to which a thorough analysis of the effects is being made at the level of electron microscopy. Most x-irradiated embryos are stunted, being smaller than the comparable controls, but within any given litter where exposure was uniform, there have been varying responses. The CNS in general reflects the stunting effect, and some of the rats are anophthalmic, to varying degrees. Many of the brains show a tendency to asymmetry. The single outstanding anomaly is the malformation of the third ventricle involving its size, shape, and position. Its dorsal portion is enlarged, roofed over by a single layer of ependymal cells, and protruding dorsally between small cerebral hemispheres. A detailed report is in preparation for publication.

Cleft palate: evaluation of post-operative velopharyngeal incompetence (NIH). *Peter Randall,* M.D., Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, Pennsylvania.

Summary: The aim of this study is to assess present methods of diagnosing velo-

pharyngeal incompetence to determine which studies are really needed in the routine evaluation of velopharyngeal incompetence in cleft palate patients. In addition, an attempt will be made to perfect methods of diagnosing velopharyngeal incompetence at a very early age. Direct visual examination, speech evaluation, lateral soft palate x-rays, cinefluorographic examination, sound spectrographic examination, and dynamic pressure studies will be used on all post-operative cleft palate patients at yearly intervals, starting one year post-operatively. Data will be used to try to determine how early velopharyngeal incompetence can be diagnosed and what diagnostic methods can best be relied upon.

LETTER TO THE EDITOR

Dear Sir:

We would like to comment on the following paragraph which appeared in the study reported in this *Journal* by McWilliams and Bradley (*1*).

> Observation of open and closed blowing leads the authors to question the procedure of obtaining breath pressure ratios by having the patient blow first with nostrils open and then with nostrils closed. These might well be in error unless it is recognized that the nasal loss is actually greater than the ratio would suggest and that the differential, in order to be accurately measured, would have to include the air trapped in the cul de sac created by the occluded nostrils. This 'lost air' may be the explanation for greater perceived nasality than the ratios seem to indicate.

The 'lost air' which the authors suggest is making breath pressure ratios suspect, probably does not affect those breath pressure ratios obtained for subjects with air-tight velopharyngeal closure or subjects with any degree of velopharyngeal opening. For the former subjects, the nostrils-occluded measure would reflect the intraoral breath pressure during a maximum expiratory effort. For the latter subjects, the nostrils-occluded effort would result in a pressure magnitude which is equal within both the oral and nasal cavities. This is so, since the gas in the nasal cavity can be assumed to have negligible compressibility (*2*). Therefore, there would be no 'loss' of air from the oral cavity, since the pressure in the oral and nasal cavities would be equal. While it might be argued that a small volume of air is in the nasal cul de sac, it cannot be argued that this volume results in a greater nasal loss on manometric pressure assessments.

It necessarily follows that the 'lost air' interpretation cannot be used to account for greater perceived nasality as the authors have indicated.

May we emphasize, in closing, that our considerations in no way negate the findings of this noteworthy investigation.

Thomas Hixon, M.A.
Ronald Netsell, B.A.
Speech Research Laboratory
University Hospital School
Iowa City, Iowa 52241

REFERENCES

1. McWilliams, B. J., and Bradley, D. P., Ratings of velopharyngeal closure during blowing and speech. *Cleft Palate J.*, *2*, 46–55, 1965.
2. Rouse, H., and Howe, J. W., *Basic Mechanisms of Fluids*. New York: John Wiley and Sons, Inc., 1953.

ANNOUNCEMENTS

Time and Place for Future ACPA Meetings

1966—April 14, 15, and 16....Mexico City at the Maria Isabel (convention headquarters) and at the Del Prado
1967—April 13, 14, and 15.....Chicago at the Palmer House
1968—April 25, 26, and 27.....Miami, Florida
1969—April 17, 18, and 19.....Houston, Texas

The Dental Department of the Hospital for Sick Children, Toronto, Canada, invites applications for a Clinical Studies Fellowship in Orthodontics at the Maxillo-Facial Clinic. This is a one-year appointment for research studies in clinical orthodontic treatment for severe craniofacial deformities. Address applications to: Chief of Dentistry, The Hospital for Sick Children, 555 University Avenue, Toronto, Ontario.

The International Association of Logopedics and Phoniatrics announces the Thirteenth Congress in Vienna, August 23–29, 1965. The major topics to be considered in the scientific program are retarded language development, stuttering therapy, and spastic dysphonia. Make inquiries to Sekretariat: 4, Alserstrasse, Vienna IX.

Dr. Herbert Conway has announced that a Cleft Palate Workshop and Registry will be established at The New York Hospital-Cornell Medical Center through a generous grant from The Heckscher Foundation for Children. All of the personnel of the cleft palate clinic will be employed in the activities of the Workshop but the major burden of responsibility will rest with a research-statistician and a research fellow who will analyze and compile complete data on every case of cleft palate which has been cared for in the past 30 years. This information will be recorded on data processing information cards so that by the use of a computer extensive and elaborate cross-information can be made available on a few minutes' notice. This work is being carried out in association with the Birth Defects Center of the Pediatric Department of The New York Hospital-Cornell Medical Center, the activities of which are

supported by The Greater New York Chapter of The National Foundation.

Dr. Benjamin Spock, noted author and pediatrician, narrates a new film entitled 'For Children, Because We Care', just released by the Public Health Service, Division of Dental Public Health and Resources in Washington, D. C. The film, a thirteen-minute color production, discusses the effectiveness and safety of fluoridation in the prevention of dental caries (tooth decay) among children. It is available to community groups interested in fluoridation facts. Prints may be obtained free of charge for television or group showings through local and state health departments.

Regarding 1966 in Mexico City....

a) April 14, 15, and 16 at the Maria Isabel (headquarters) and at the Del Prado.

b) Planning for the meeting continues under the leadership of Dr. Elise Hahn and Mr. Robert Sloan. Inquiries regarding the program or local arrangements should be sent to Dr. Hahn or Mr. Sloan, respectively.

c) Since Mexico City is considered foreign travel by the National Institutes of Health, Dr. McWilliams has made inquiry to NIDR regarding whether a 'blanket clearance' might be made for attendance by research grant personnel. She has been advised that blanket clearance is not considered an appropriate action and that principal investigators should request this foreign travel in their application for fiscal year 1966 funds or, presumably, at any time (if application for 1966 funds has been made).

Graduate Fellowships in Cleft Palate Therapy and Rehabilitation, supported by the United States Public Health Service, are available to qualified applicants. All applicants must be U. S. citizens. Clinical training is offered at the Lancaster Cleft Palate Clinic, Lancaster, Pennsylvania. Graduate work in a basic science in connection with the clinical training is encouraged. The annual stipend is $5,000 with annual increments and dependency allowances and is tax free. Address all inquiries to: Chairman, Committee on Traineeships and Fellowships, University of Pennsylvania, School of Dentistry, 4001 Spruce Street, Philadelphia 4, Pennsylvania.

The Lancaster Cleft Palate Clinic is presenting a post-graduate course entitled, 'Habilitation/Rehabilitation of Oral-Facial-Communicative Disorders', October 25–29, 1965. Graduate trainingship awards from the U. S. Public Health Service, Department of Health, Education, and Welfare, National Institutes of Dental Research, are available to qualified individuals in the fields of medicine, dentistry, speech, and audiology. The award pays registration fees, transportation, and per diem for the five days at the Lancaster Clinic. Lectures and case studies are presented by clinic staff and noted guests concerning diagnosis, treatment, and research. Address all inquiries to R. T. Millard, Program Director, Lancaster Cleft Palate Clinic, 24 N. Lime Street, Lancaster, Pennsylvania.

Audiology and Speech Pathology of Syracuse University announces that Dr. Muriel Morley will present two six-week courses (cleft palate, and organic disorders of speech), June 28 to August 6, 1965. Dr. Morley is Lecturer in Speech, University of Newcastle-upon-Tyne and author of *Cleft Palate and Speech.*

The 15th Annual Instrument Symposium and Research Equipment Exhibit will be held October 4 through 7, 1965, at the National Institutes of Health, Bethesda, Maryland. Primary topics on the scientific program include a comprehensive medical data profile system, retrieval of scientific information, fiber optics, trace contaminants in closed atmospheres, oceanographic research and instrumentation, special infrared sampling techniques program, germ-free animal research, and single cell research. Chairman for the instrument symposium is Colonel Tomas C. Jefferis, Office of The Surgeon General, DA, Washington, D. C. 20315; chairman of the research equipment exhibit is Mr. Louis Heiss, American Instrument Co., Inc., 8030 Georgia Avenue, Silver Spring, Maryland.

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AMERICAN CLEFT PALATE ASSOCIATION

Information for Applying for Membership

The Association was organized in 1940 with the following objectives:

1. To encourage scientific research in the causes of cleft lip and palate.
2. To promote the science and art of rehabilitation of persons with cleft palate and associated deformities.
3. To encourage cooperation among, and stimulation of, those specialists interested in the rehabilitation of cleft palate persons.
4. To stimulate public interest in, and support of, the rehabilitation of cleft palate persons.

The Association publishes the *Cleft Palate Journal* quarterly. The Association's Annual Meeting includes sessions devoted to the presentation of papers in medicine, dentistry, speech, and related areas concerning the problems in individuals with cleft lips and palates.

To be qualified as a member of the Association, the applicant must be in good standing in the professional organization representing his major or clinical orientation. He must be accredited in his professional field, and he must have displayed an interest in the rehabilitation of cleft palate persons. The above statement has been interpreted to mean that those applicants trained in Speech Pathology and Audiology must hold at least basic certification from the American Speech and Hearing Association at the time of the application.

The person shown as sponsor on the application must be a member of the Association and must write a letter attesting to the fact that the applicant is eligible for membership.

Send applications or requests for further information to:

KENNETH R. BZOCH, PH.D.
American Cleft Palate Association
Department of Communicative Disorders
University of Florida
Gainesville, Florida 32601