

# ALUMNI BULLETIN

Indiana University School of Dentistry

VOL. V

JANUARY, 1943

No. 2

## Growth and Development of Curriculum Planned at Meeting

### Faculty Elects Planning Committee To Evaluate Suggested Improvements.

At its last regular meeting the faculty of the School of Dentistry elected a committee the duty of which is to evaluate the present teaching program and make recommendations designed to promote the further growth and development of our school.

This committee has had two meetings at which various methods of attacking the above problem were considered. A questionnaire has been mailed to each member of the faculty with the object of obtaining their suggestions as to methods of procedure and modifications for improvement.

### Faculty Questionnaires Contain Suggestions.

Most of these questionnaires have been returned, and many constructive and helpful suggestions have been offered. These reports indicate, without doubt, the positive determination of the faculty to make our dental school among the best in the country.

It is our feeling that, although we are daily confronted with restrictions resulting from the war effort, there must be no laxity in our educational standards; rather they must steadily improve looking toward the day when this war shall have ended; and we will have a flying start in the direction of the above mentioned goal.

### Committee Personnel Announced.

It is the evident desire of the faculty and the committee representing it that we follow certain measures and comparisons in making our evaluations and recommendations. The following items have been suggested: (a) our own conception of what is required in the ideal program; (b) a comparison of our plant and program with those certain other recognized dental schools; and (c) re-

(Continued on page 2)

## Endocrine Therapy In Dentistry

(Manuscript submitted by Dr. Isaac Schour, Department of Histology, University of Illinois College of Dentistry)

The role of the endocrines in the production of dental disease is not as yet definitely established. For the most part, statements in the literature which relate endocrine dysfunctions as etiologic agents in dental diseases are not supported by substantial clinical or experimental evidence.

Investigation of a number of patients in this institution suffering from known endocrine dysfunctions reveals certain dental symptoms which can be associated with the endocrine dysfunction. These are: (a) retarded eruption of the teeth, (b) disturbed growth of the bony jaws, and (c) periodontal disturbances. Since disturbances in tooth formation or calc-

(Continued on page 3)

## Faculty Seminar Meeting

On Thursday, November 17th, 1942, the dental school faculty held its second seminar meeting, the first of such meetings for the winter of 1942-43.

The faculty members gathered in the seminar room of the dental school building for lunch and informal discussion from 12 to 12:30 o'clock. At 12:30 a paper was presented by Dr. Van Huysen, describing the results of a study of the sugar content of saliva. This study showed that ordinarily, that is, at least one hour following the taking of food or drink into the oral cavity, slight amounts of sugar are present in the saliva. Paraffin stimulated saliva contained a sugar level of from 0 to 18 milligrams per 100 cubic centimeters. The average salivary sugar level of 204 samples taken from 9 individuals proved to be 8 milligrams per 100 cubic centimeters. Similar scientific meetings are being planned by the faculty for the future.

## Dr. Harry J. Healey Receives Navy Commission

Dr. Harry Healey, a full time member of the dental faculty since 1931, will soon leave the university to join the armed forces.

Dr. Healey graduated from this school in 1931 and was appointed dental intern for the year 1931-32. He was made clinical instructor in 1932 which appointment he held until 1937 when he was promoted to Assistant Professor of Operative Dentistry and Assistant Superintendent of the Clinic.

We are indeed sorry to lose Dr. Healey, but we feel fortunate to have such a person as Dr. Healey to represent Indiana University School of Dentistry.

Since coming to Indiana, I have found Dr. Healey exceptionally cooperative. He has responded gladly to any request for extra curricular activities as well as regular duties and has at all times exerted a helpful attitude with the student body and faculty.

Dr. Healey has been commissioned as Lieutenant in the United States Navy Reserve and has been ordered to active duty.—William H. Crawford, Dean.

## Fifty-five Freshman Dental Students Enter I. U.

The first day of classes for the freshman dental students found fifty-five carefully selected students eager to begin their preparation for the practice of dentistry. This is the largest class beginning their study of dentistry that Indiana has entered for many years. Of these fifty-five, forty are residents of Indiana, and eight are from bordering states.

Three of the freshmen, Mr. J. P. Arvin, Mr. Frank R. Longcamp, and Mr. J. G. White, are sons of alumni of Indiana University School of Dentistry.

Each member of the freshman class has already received his commission in the Army or Navy or has made application for such commission.

## Second Class of 1942 Graduates

### Class Five Months Ahead of Normal Graduation

Under the accelerated program begun a year ago by the entire university, the school of dentistry, along with other departments of the university, has graduated another class. Commencement exercises were held on December 20th, 1942, in the new auditorium on the Bloomington campus. Twenty-four seniors received the degree Doctor of Dental Surgery. This is the second class in dentistry graduating from Indiana University in 1942. They began their senior schedule in May.

The Indiana State Board of Dental Examiners conducted its examination during the last week prior to graduation, and all students who took the examination passed. The school is proud of this record and feels that this class has made an exceptionally fine record.

### President Bryan Speaks to Class at Honor Program

Awards were presented at an Honor Day program at which President Emeritus William Lowe Bryan was the principal speaker. These exercises were held in Hurty Hall in the State Board of Health on the morning of December 11th with the student body, faculty, and assisting staff in attendance. In his talk President Bryan emphasized the importance of a knowledge of the fundamental sciences in professional education because it offers the only solid foundation upon which a professional man can continue to be successful in a changing world.

Dr. Robert W. Langohr and Dr. Floyd W. Weatherford were elected to the honorary dental fraternity, Omicron Kappa Upsilon. Both of these graduates are remaining at the school as interns. Scholastic awards were also given to Dr. J. William Lytle and Dr. Harold D. Furst. Dr. Lytle received a year's subscription to the "American Journal of Orthodon-

(Continued on page 3)



## ALUMNI BULLETIN

School of Dentistry  
Indiana University  
Indianapolis, Indiana

A free and non-profit bulletin is issued quarterly by Indiana University School of Dentistry for the purpose of keeping its Alumni informed of the activities and progress of the school.

Editor-in-Chief

HARRY J. HEALEY

Research Editor

VIRGIL D. CHEYNE

Entered as second-class matter December 31, 1941, at the post office at Indianapolis, Indiana, under the Act of August 24, 1912. Published four times a year, by The Indiana University School of Dentistry, Indianapolis, Indiana, in the months of January, April, July, and October.

Vol. V January, 1943 No. 2

## The Dental School Library

The following new books have been added to the Library since September 25, 1942:

Accepted Dental Remedies, 8th edition, 1942.

American Dental Association: Lectures on military dentistry. 1941.

American Dental Association: Study of dental needs of adults in the United States. 1940.

Anderson: Synopsis of pathology. 1942

Asgis: Orientation in American dentistry. 2nd ed., 1942

Bernier: Manual for differential diagnosis of oral lesions. 1942

Black: From pioneer to scientist. 1940

Campbell: Dentist's own problem. 1939

Clapp: Dentist faces his future. 1939

Clendenning: Methods of treatment. 7th ed., 1941

Courville: Untoward effects of nitrous oxide anesthesia. 1939

Cowdry (ed.): Problems of ageing. 2nd ed., 1942

Davis: America organizes medicine. 1941

Davis: Clinical operative dentistry. 1939

DeVigne: Time of my life. 1942

Dewey & Anderson: Practical orthodontics. 6th ed., 1942

Eliason: First aid in emergencies. 1942

Fishbein: Medical writing. 1938

Forbes: Paul Revere and the world he lived in. 1942

Frost: Practice dentistry and make a profit. 1939

Goldman: Peridontia. 1942

Hoskins & Bevelander: Outline of histology. 1942

Huffman: Manual for medical record librarians. 1941

Karsner: Human pathology. 6th ed., 1942

Levy: Textbook for dental assistants. 1942

Lott & Gray: Law in medical and dental practice. 1942

Lundy: Clinical anesthesia. 1942

McCulloch: Disinfection and sterilization. 1936

## Toxic Reactions of the Sulfonamide Drugs

### Administration With Caution in Some Cases

In an effort to broaden the scope of sulfonamide activity, with a lessened incidence of toxicity, a large number of sulfonamide compounds have been prepared and investigated. Of these, only six have achieved recognition in this country: Sulfanilamide, sulfadiazine, sulfapyridine, sulfathiazole, neoprontosil and sulfaguanidine. It should be mentioned that a history of toxic reaction to one of these drugs should indicate caution in subsequent administration of any of the sulfonamide derivatives. Toxic reactions occurring in the course of sulfonamide therapy have been frequently reported in the literature. Such side effects will not be reviewed.

### Symptoms Referable to the Nervous System

Dizziness—may be severe enough to simulate alcoholic intoxication. Dizziness is more frequently encountered in ambulatory patients, in patients receiving intensive therapy, and in alcoholic addicts. The use of alcohol accentuates this reaction.

Headache has been associated as a warning signal of more severe types of reaction—drug fever, anemia, dermatitis, and others. In itself, the headache is of little significance. A sense of depression and of melancholia has been noted. Mental acuity and physical response may be dulled.

Loss of appetite (nausea, and vomiting are of frequent occurrence, particularly with sulfapyridine, less so with sulfathiazole. Due to the excretion of these drugs into the stomach from the blood, and to the probable presence of a central component in the reaction, these symptoms may not be avoided by the use of parenteral administration or by the use of enteric coated tablets.

Instances of neuritis, resulting in muscle tenderness, visual impairment or loss of motor function have been rare with the compounds considered here. Such reactions have been reported during the use of di-sulfanilamide com-

pounds of the Uliron type, and with sulfamethylthiazole.

Cyanosis due to the formation of sulfhemoglobin was reported by the early workers. This was considered due to the simultaneous use of sulfanilamide and sulfate vathartics, and is responsible for the warning against the use of such cathartics in sulfonamide therapy.

The cause of the cyanosis has not been completely explained. In some instances it appears to be due to methemoglobin, while in other cases significant amounts of methemoglobin have not been demonstrable.

Long and Bliss feel that cyanosis *per se* is not an alarming symptom, and are inclined to disregard it in the absence of other symptoms.

### Acidosis

In sulfanilamide therapy, this condition results due to the loss of sodium through the urine. It may be avoided by the simultaneous administration of sodium bicarbonate or lactate. Such loss of sodium does not apparently occur with sulfapyridine, sulfathiazole, or sulfadiazine.

### Drug Fever

This condition may be differentiated from the fever incident to infection in that it occurs generally after 5 to 9 days of therapy, at a time during which the fever of infection should have abated. Long and Bliss have noted it in 9 per cent of their adult patients, and in 3 per cent of children treated.

Drug fever is predominantly of importance in that it is a danger signal of the development of more serious toxicity such as liver, damage, anemia, or agranulocytosis.

### Dermatities

Various types of skin rashes have been common with sulfanilamide and sulfathiazole—less common with sulfapyridine. Such rashes have been more common in patients exposed to the sun, and the reaction is considered to be, in part at least, a photo-sensitization. Porphyrins, appearing in the urine in such cases of photo-sensitization, may be reduced by the administration of nicotinic acid. A reddening of conjunctiva and sclera has been noted following sulfathiazole therapy.

### Liver Damage

Several instances of fatal termination to sulfonamide therapy have been reported following a picture of jaundice or acute yellow atrophy. High-carbohydrate, low-fat diets have been recommended. **Acute Leukopenia with Granulocytopenia**

Evidences of a destructive effect upon the granulocytes have not been numerous from the standpoint

of statistical percentages, but several deaths have so resulted, and reports of moderate to severe cases of granulocytopenia are not uncommon in the literature. The condition is of most frequent occurrence after 14 days or more of therapy. Available evidence indicates that conditions of granulocytopenia resulting from other causes is not accentuated by the sulfonamides.

Leukocyte counts dropping to 5000 or less per cmm. during therapy should, in the opinion of Long and Bliss, indicate a prompt cessation of therapy, forcing of fluids, and diets rich in vitamins, particularly vitamin C.

### Reactions Involving the Erythrocytes

Mild, hemolytic anemias, characterized by a slow progressive drop in hemoglobin and in red cell count, have been reported in numerous instances. If the hemoglobin thus drops to 60 per cent or below, withdrawal of the drug is advised. This is usually followed by a rapid regeneration of erythrocytes. Transfusions may be indicated if drug therapy is still necessary at this time.

Acute hemolytic anemias, characterized by a sudden onset, with rapid drop in hemoglobin and red cells, jaundice, and liver disturbance have been reported; this type of toxic reaction has occurred most commonly during the first to fifth days of therapy. There is evidence that Negro patients may be particularly subject to the development of hemolytic anemia.

Acute hemolytic anemia is a serious toxic reaction. Transfusions of blood have been of value, and the drug should be withheld if compatible with the state of the infection. Patients with a history of acute hemolytic anemia seem particularly subject to the development of the same condition upon subsequent therapy.

There is no good evidence to indicate that sulfonamide drugs exert any deleterious effect upon the male sperm, the female ova, or the progress of pregnancy.

## Growth and

(Continued from page 1)

quirements embodied in the program of the Council on Dental Education.

Dean Crawford, the faculty, and this committee are united in the desire and determination to propose a program which will more than fulfill the foregoing ideals. The personnel of the Planning Committee is as follows: Dean Crawford, Drs. J. L. Wilson, D. A. Boyd, T. D. Speidel, and F. C. Hughes, Chairman.



## Vitamin D, and Calcium And Phosphorus Compounds in Dental Therapy

(Manuscript submitted by Dr. Isaac Schour, Department of Histology, University of Illinois College of Dentistry.)

In the young growing child vitamin D and calcium compounds are essential factors for the good calcification of the growing bones and teeth. These should be obtained by dietary means rather than through medications. Calcium compounds obtained from foods seem to be better assimilated and retained. Foods also supply other necessary nutritional elements not found in purified vitamin products.

In the non-growing adult, although not needed to the same extent as before, vitamin D, as well as calcium and phosphorus compounds, are still an essential part of the diet, since they play a part in the calcification of the bones and the maintenance of the integrity of other tissues. However, such compounds do not play any role in the enamel and dentin once these tissues are fully formed and calcified. The vitamins and calcium compounds can have no direct influence upon the avascular and acellular enamel and dentin in the erupted tooth.

There is no established experimental or clinical evidence that vitamins or calcium compounds have any direct relation to the production or the prevention of caries. There is, on the other hand, evidence, both experimental and clinical, to the contrary. When caries does occur, it may be caused by dietary factors other than the lack of vitamin or calcium compounds. The physical character of the food and the carbohydrate content of the diet play an important part in the production of caries—as does the lack of cleanliness, quality and quantity of the saliva, bacteria, etc.

Recent scientific clinical investigations do not show that caries can be produced or arrested by vitamins or calcium compounds. Therefore, special vitamin or calcium compound therapy is not indicated in the prevention of caries.

While nutritional factors can be related to the growth and maintenance of the alveolar bone and the gingivae in both children and adults, any nutritional deficiency severe enough to disturb these structures is serious enough to warrant the attention of the physician, lest other and more vital structures be affected.

## Pathologic Wearing of Incisal Edges

(Manuscript Submitted by Dr. Grant Van Huysen, Professor of Oral Diagnosis).

All too frequently the incisal edges of our patient's teeth instead of presenting an even harmonious regularity present a picture much like that of the accompanying illustration. Here one sees in the mouth of a 49 year old male ragged, broken and uneven biting edges along with distema formation and other evidence of alveolar absorption around the lower central incisors. Improper abrasion, therefore, has not only produced a result detrimental to the appearance of the individual but has also been responsible for the loss of bony tissue support of some of the teeth.

It is only on rare occasions that one finds in the mouths of patients who are approaching middle age, thirty-two teeth with uniformly abraded occlusal surfaces. reduction of incisal overbite and an occlusal plane which permits the lower jaw to move freely without cusp interference. In fact, one must study the masticatory apparatus of primitive man either historic or contemporary to find the type of *physiologic abrasion* which is normal for the age of the individual. A denture functioning under good physiologic conditions should show by the time the fourth decade of life is reached an anterior edge to edge bite with incisal edges that are smooth and regular.

The type of pathologic abrasion presented by the illustration, although not extreme, is the one seen frequently in civilized man. The teeth shown in the picture still have high cusps upon the posterior teeth with a slight anterior overbite. Had true physiologic abrasion of the teeth taken place, there would have been a

strong anterior edge to edge bite with straight regular enamel margins and freedom from cusp interference.

The persistence of the shearing arrangement of the anterior teeth into the fifth decade usually results, as it has in this case, in a loss of palatal enamel plate of the upper and labial enamel plate of the lower incisors. Some of the underlying supporting softer dentin is also usually lost at this same time. The labial enamel plates of the upper and the lingual plates of the lower anteriors being the last parts to become worn remain as high ridges preventing free movement of the incisors upon each other. These thin edges of unsupported enamel in addition to offering interference to normal occlusion usually fracture irregularly producing, as the picture illustrates so well, a disagreeable appearance. These ridges, because of their interference to free movement of the teeth one with another, have changed the direction of stress upon the supporting tooth tissues with the result that over a period of time bone has been lost around the lower central incisors and some tooth movement and diastema formation has taken place.

This type of disfigurement of tooth form, loss of supporting tissues, and tooth movement can best be handled by preventive measures. It should be the policy of every practitioner at the time the teeth are cleaned and scaled to examine the incisal edges and remove with a sandpaper disc any unsupported labial or lingual enamel plates.

The unsupported enamel has no strength. It fractures readily and interferes with occlusal movement of the teeth during mastication. Much of the bone absorption about lower anterior teeth may be prevented by attention to this other-

wise minor defect. The incisal edges of upper and lower teeth should have this constant attention. Thus harmonious form and function may be maintained.

## Endocrine Therapy

(Continued from page 1)

cification can occur during early tooth development (infancy and early childhood) it is theoretically possible that cases of early (congenital) endocrine dysfunction should show such disturbances. Actually, however, disturbances in tooth formation or calcification are rare even in congenital cretinism. Abnormal eruption of the teeth and growth of the jaws can and do occur only in the child. However, both types of disturbance can be associated more frequently with non-endocrine than endocrine cases.

On the other hand, whenever abnormal tooth formation or calcification, periodontal disease, disturbed eruption of the teeth or growth of the jaws, or caries is investigated in the dental clinic, endocrine dysfunction can rarely if ever be proved. There are many factors, both local and systemic, other than endocrine dysfunction that are more usually associated with dental disease.

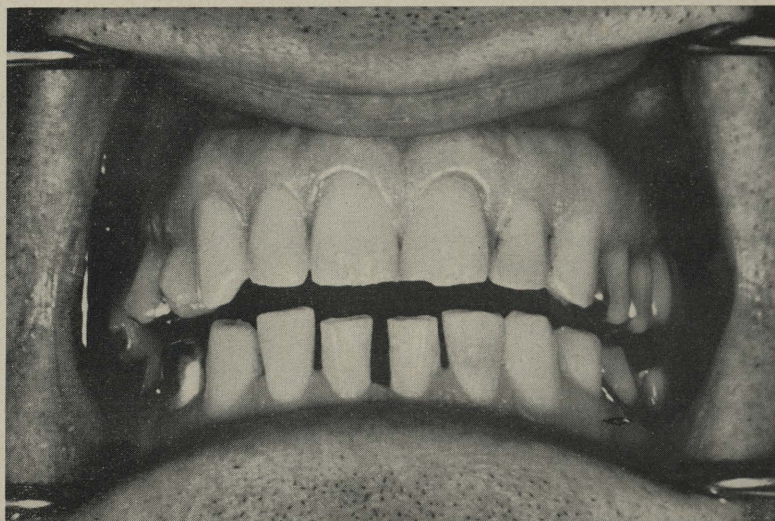
When the relationship between endocrine dysfunction and periodontal disease can be established, as in uncontrolled diabetes, untreated hypo- or hyperthyroidism, or hypo- or hyperpituitarism, such relationship does not occur in more than 65% of the cases studied, or no more than in any non-endocrine group. The procedure in such cases is the treatment of the disease as well as the specific treatment of the dental condition. It would be foolish to cure a periodontal disturbance (if this were possible) in an active diabetic or cretin without also treating the endocrine dysfunction.

However, on the basis of our present knowledge, there is no indication for the prescription of endocrine therapy by the dentist; the physician should treat the endocrine dysfunction and the dentist the dental disorder.

## Second Class

(Continued from page 1)

tics and Oral Surgery" presented each year to the outstanding senior in the departments of oral surgery and orthodontia. Dr. Furst received the Certificate of Merit presented by the American Society of Dentistry for Children for his outstanding ability as a student in the department of children's dentistry.





# Diseases of the Salivary Glands

*Note:* The above consideration of the salivary glands is an excerpt from a chapter on glands of the oral cavity written by Virgil D. Cheyne, which will appear in a new textbook on dental histology edited by Balint Orban.

Although the gross and histologic features of the salivary glands are well known, it might be permissible to outline some of them briefly. Grossly, they may be divided roughly into the major glands (parotid, submaxillary, and sublingual; Figure 1) and the smaller or scattered elements (labial, buccal, glossopalatine, palatine and glands of the tongue). Microscopically, the cells are arranged in acini and produce either an albuminous or mucous secretion. These may be grouped in single glands as one type, but more commonly the cells are found in mixed proportions. All glands possess branching excretory ducts. These are arranged much as the trunk and branches of a tree. The smallest branches pick up the secretory product of the cells located at their outer ends and carry it to progressively larger ducts.

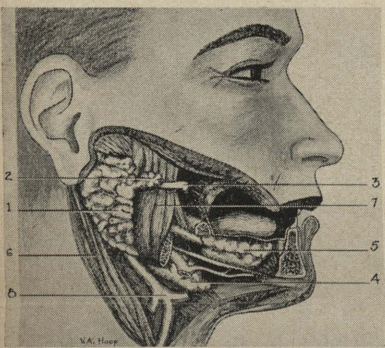


Figure 1.—Dissection to show salivary glands. 1, parotid salivary gland; 2, accessory parotid; 3, parotid duct; 4, submaxillary salivary gland; 5, sublingual salivary gland; 6, sterno-cleido-mastoideus muscle; 7, masseter muscle; 8, posterior facial vein.

All of the salivary glands are subject to disease similar to other soft tissue structures in the body. Fortunately, however, such disturbances are relatively infrequent. When they do occur the result may be either an increase in the flow of saliva (sialism) or a decrease (xerostomia). Secretion is increased in mental and nervous affections, occasionally in acute fevers, and during attacks of generalized stomatitis. Injections of certain drugs, particularly

mercury and iodine compounds are especially likely to produce an abundance of saliva. Other than the discomfort, an abundance of saliva results in no known harm. Disturbances that cause a reduction, however, brings about the loss of the protective action which this fluid exerts upon the teeth and oral tissues. Through its loss the lubricating, cleansing and neutralizing power of the oral cavity is destroyed. Moreover, a normal flow of saliva is a guard against infection, particularly of the ascending type which is likely to occur in the salivary ducts and glandular tissue.

Inflammatory processes are frequently the cause of a disturbance in the flow of saliva. Inflammation of the parotid gland is common; in the submaxillary, sublingual and smaller glands, less common. Acute, chronic, and specific are the types encountered. Pyogenic organisms are the chief offenders in acute infections, making their entry most frequently in debilitated individuals suffering from infectious fevers or general postoperative complications. The infection may be confined to the ducts (sialodochitis) or, less frequently, spread to the parenchyma of the gland (sialadenitis). Inflammation of the gland substance itself is usually severe. When it progresses to suppuration, surgery is the accepted method of treatment.

Glass-blowers and players of wind instruments are especially subject to infection of the salivary ducts. The heightened intraoral pressure tends to dilate the ducts and counteract the normal outflow of saliva. Bacteria carried with food debris into an area of stagnated saliva are provided with an ideal environment for their growth and multiplication. Such areas may expand to the size of a nut or an egg and when excised they are found to contain a mixture of air, saliva and pus.

Infection of the ducts of the salivary glands may cause a clump of dead cells or bacterial debris to be thrown into a constricted area in a duct with the formation of a salivary thrombus or plug which causes further expansion and blockage of flow. If allowed to remain the thrombus acts as a nidus which attracts calcium salts, leading to the formation of a salivary calculus or stone.

Chronic inflammation may follow acute infection, but the agent chiefly responsible is a salivary calculus. These occur most often in the submaxillary gland system (90 per cent), where they vary in size from minute particles to deposits several centimeters in di-

ameter. If they are retained their obstructive influence invites acute inflammatory exacerbations affecting primarily the parenchymatous tissues; or if saliva is retained under pressure for any length of time atrophy and fibrosis of the gland will be the final result. Salivary duct calculi are easily demonstrated by palpation or roentgenological methods (Figure 2) and are removed by gently expressing from the duct or incision. When calculi involve the gland substance proper, total extirpation of the gland may be advisable.



Figure 2.—Calculi in submaxillary duct.

Infectious parotitis (mumps) is the most common example of specific inflammation of the salivary glands. This disease shows tender swelling of the parotid region, usually bilateral, with mild fever, but no leucocytosis. Tuberculosis, syphilis, and actinomycosis affect the salivary glands infrequently. The etiological agents may be hematogenous born or carried to the gland substance as a result of an ascending infection from the saliva.

Mikulicz's disease is a type of infectious granuloma, rare in occurrence, which affects the salivary and lacrimal glands, occasionally the lips and eyelids. It makes its appearance as a symmetrical, indolent enlargement which may last several years. A dry mouth is one of the accompanying symptoms. The histology is that of lymphocytic infiltration of the interstitial connective tissue and, if persistent, ultimate destruction of the parenchymatous elements. The blood picture remains normal. Therefore, it must be differentiated from Mikulicz's syndrome which is associated with such general processes as leukemia, Hodgkins disease, and syphilis.

A variety of infrequently occur-

ring tumors have been described in connection with the salivary glands. Mixed tumors, carcinoma, sarcoma and several benign varieties are found, of which about 75 per cent occur in the parotid. Of this number, about 95 per cent are of the mixed variety.

Although the mixed tumor is usually considered benign, of 297 cases studied by McFarland, 23 per cent recurred after operation and 13 ultimately proved fatal. Perhaps the high percentage of recurrence is due to the fact that the capsule of the parotid is tightly adherent to the parenchymatous tissue, thus making complete removal of the tumor difficult.

Congenital malformations of the salivary glands may vary from atresia of the ducts to complete aplasia of the gland. Such disturbances are more common in the floor of the mouth in connection with the alveolingual complex, but they are not unknown in the parotid area. Atresia is less common than aplasia, but when present causes disfiguring cysts or tumor-like growths to appear. The large sublingual gland is most frequently affected, giving rise to the so-called ranula, in the floor of the mouth. The glands of Blandin-Nuhn, located in the anterior part of the tongue, are susceptible to cystic involvement as a result of closure of their ducts. These are designated as mucous cysts or mucoceles. Mucoceles are quite commonly found in connection with the smaller glands of the oral cavity, where they probably result from a mild infection of the ducts with consequent closure. They are, however, of inconsequential concern and usually disappear after rupture and discharge of their contents.

Aberrant glands are encountered occasionally, arising in connection with the development of the glands. The alveolingual complex area is the most common location where they have arisen as accessory glands which have become detached. These glands remain functional, but because they lack an excretory duct, the secretion accumulates within their structure and causes distention with resultant cyst formation.

Temporary swelling sometimes results in the salivary glands by the obstruction of a duct by operative procedures. Use of the rubber dam or prolonged pressure by cotton rolls are common etiological agents. Such swellings occur at the time the work is in progress and disappear soon after the obstruction is removed and the saliva has had an opportunity to discharge.