Efforts of Many Bring Christmas Spirit to NIH

NIH Christmas Season programs, both sacred and secular, will be increasingly centered this pre-Christmas week in the 14-story Clinical Center.

NIH employees, although participating in their own observances, will join with representatives of many Washington area groups in bringing the spirit of Christmas to Clinical Center patients obliged to spend the holiday season away from home and family.

Many Are Children

Many of these are children, for whom Christmas presents and special entertainments have been planned.

Patients' Christmas programs, arranged by the CC Patient Activities Section, will begin this (Wednesday) evening with the annual Christmas party for patients and their guests in the 14th floor assembly hall.

Dr. Clifton K. Himmelsbach, CC Associate Director, will present greetings from the staff. Music will be provided by the U. S. Air Force "Strolling Strings," Chaplain William R. Andrew will deliver the greetings from the staff. Music will be provided by the U. S. Air Force "Strolling Strings," Chaplain William R. Andrew will deliver the

Pacific Office of OIR Will Open January 1

The Pacific Office of the NIH Office of International Research is scheduled to begin operation in Tokyo January 1, following the arrival of its Chief, Dr. Heinz Specht, and the Administrative Officer, M. James Peters. Dr. Alfred A. Lazarus, Scientific Representative of the Pacific Office in New Delhi, is also scheduled to arrive at his new post shortly.

Dr. Specht is scheduled to depart with his family on December 23 and is due in Tokyo December 27. Mr. Peters will depart with his family on December 27, arriving in Tokyo December 30.

Near American Embassy

Located in the KBK Building, the Pacific Office will be among other government buildings near the American Embassy in Tokyo.

The building is leased by the State Department.

Correspondence for the Pacific Office should be addressed to The American Embassy, APO 94, San Francisco, Calif., or care of the Office of International Research here at NIH.

Correspondence for Dr. Lazarus in New Delhi should be addressed to The American Embassy, APO 950, Box ND, San Francisco, Calif.

The January activation of the Pacific Office rounds out OIR's

Kennedy Foundation Presents Awards; Dr. Tjio Honored; Symposium at NIH

A National Institutes of Health Visiting Scientist was one of six winners of the first International Prize Awards of the Joseph P. Kennedy, Jr. Foundation, presented by President John F. Kennedy December 6 at a celebrity-studded banquet at the Statler Hilton Hotel in Washington.

The awards ceremony was the climax of a day of scientific recognition of the achievements of medical research in the field of mental retardation.

Shores Award

Dr. J. H. Tjio of the Laboratory of Experimental Pathology, National Institute of Arthritis and Metabolic Diseases, who was honored for his discovery of the exact number of chromosomes in man, shared an award of $25,000 with Drs. Murray L. Barr, Head of the Department of Microscopic Anatomy, University of Toronto; and Jerome Lejeune, Director of the Department of Genetics, University of Paris.

Earlier in the day, the award winners participated with NIH and other distinguished scientists in a symposium at the NIH Clinical Center. "Research Approaches to the Problem of Mental Retardation," held in cooperation with the Kennedy Foundation.

Medical Students Attend

In addition to scientists from NIH, PHS, and other Government and private research institutions, guests included 120 medical students from 38 Eastern colleges who were selected to attend because of their outstanding scholastic records.

The symposium guests were greeted by Dr. James A. Shannon.

7,000 Attend the Research Exhibit and Symposium

An analysis of attendance at the 12th Annual Research Equipment and Instrument Symposium, held here October 8-12, reveals that nearly 7,000 persons visited NIH for the dual event, including 64 from foreign countries.

The report was prepared and distributed by the Supply Management Branch, OD.

The Symposium and Instrumentation sessions were held in the Clinical Center auditorium. The Research Equipment Exhibit was displayed in Building 22. It included exhibits by 68 of the leading manufacturers of instruments for laboratory and clinical research.

Altogether 4,516 persons visited the exhibit, 2,109 attended the symposium, and 227 attended the instrumentation sessions.

The SMB breakdown of attendance at the exhibit was as follows: Representatives of hospitals, 320; colleges and universities, 630; foreign institutions, 56; NIH, 1,166; other Government agencies, 1,261; publications, 10; and miscellaneous, 1,678.

Yule, New Year Issues Combined

This issue of the Record combines the pre-Christmas and New Year's issues, as in prior years. Date of the next issue will be January 15.

To each of our readers, a Merry Christmas and a Happy New Year!
DHEW Announces New WB Grade Pay Scales

New regular and laundry wage board pay scales have been announced by DHEW, effective January 9, for NIH employees in the Washington area. The following rates for the Regular Wage Schedule are shown in the following table:

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ignated Monday, December 24, as a holiday.

Employees who have Monday and/or Tuesday as scheduled days off will not lose the benefit of an extra holiday, as alternate holidays preceding and/or following their days off will be designated in accordance with regulations and HEW Personnel policies.

Individuals who are directed to work on days scheduled as alternate holidays will be paid at the holiday rate.

You may call your I/D Personnel Officer for further information. Supervisors should refer to Chapter IV, Guide 4 of the Personnel Guide for Supervisors to answer specific questions on holiday leave.

Special Job Opportunities

Medical Officer, (General Internal Medicine), GS-12 or 13, Clinical Center.

Secretary (Steno), GS-6 for position in New Delhi, India. Guardian GS-5, and above.

The NIH Board of Examiners is now accepting applications for this position from non-veterans.

Secretary (Steno), GS-5, for position in Tokyo, Japan.

There are a number of Clerk-Typist and Clerk- Ste- 

tographer openings with the new Division of Research Fa-
cilities and Resources, located in the North Bethesda Office Center, 11420 Rockville Pike. Further information is available from the Recruitment and Placement Section, Bldg. 1, Rm. 7. Phone, 496-6056.

Cashless Causes Xmas Fire Deaths; Precautions Listed

In the three days beginning at 6 a.m. Christmas Eve there were 77 fires during the holiday weekend, and 66 persons died in fires during a 3-day period last New Year's according to the National Board of Fire Underwriters. The 6-day total exceeded that of the previous year by 27.

For a Christmas season free from the tragedy of homes fires this year, NIH Fire Marshal Ken- 

eth W. Gettings offers these 10 precautions:

1. The lights on Christmas trees should be flameproof. Use only decorations made of glass, metal or fire-resistant material.
2. Electric trains should be set up away from the tree, never candles. Be sure to check lighting sets before decorating the tree-never candles.
3. Christmas tree decorations should be flameproof. Use only decorations made of glass, metal or fire-resistant material.
4. Electric trains should be set up away from the tree, never candles. Be sure to check lighting sets before decorating the tree-never candles.
5. The tree should be in charge of clinical research facilities and resources, located in the North Bethesda Office Center, 11420 Rockville Pike. Further information is available from the Recruitment and Placement Section, Bldg. 1, Rm. 7. Phone, 496-6056.

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1. Place the tree in the coolest part of the room. It should be as far as possible from radiators, heaters, and the fireplace.
2. Make sure that the tree is attached firmly to the floor to prevent toppling.
3. When you place the tree up, place it in the coolest part of the room. It should be as far as possible from radiators, heaters, and the fireplace.
4. Use a tree stand which has a water container in which the trunk can rest. Most trees “drink” water fairly fast, so fill the water container daily.
5. Use only electric lights to decorate the tree, never candles. Be sure to check lighting sets before decorating the tree, never candles.
6. Electric trains should be set up away from the tree, never candles. Be sure to check lighting sets before decorating the tree-never candles.
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Dr. Joseph Rall Named Intramural Research Director of NIAMD

Dr. Joseph E. Rall, Chief of the Clinical Endocrinology Branch of the National Institute of Arthritis and Metabolic Diseases since 1955, has been appointed NIAMD Direc- tor of Intramural Research. He succeeds Dr. DeWitt Stetten, Jr., who now heads the new Rutgers University Medical School.

In his new post Dr. Rall will direct the Institute’s ex- tensive program of fundamental research in the basic biomedical sciences and clinical investigations in arthritis, diabetes, gastrointestinal and endocrine disorders, obesity, disorders of the blood, bones, and liver, and other metabolic and in- herited diseases.

Dr. Rall came to NIH in 1956 to be in charge of clinical research dealing with diabetes and diseases of the thyroid, pituitary, and other endocrine glands.

Previously he served for several years in various capacities at the Memorial Sloan-Kettering Institute for Cancer Research and the James Ewing Hospital, both in New York City.

Research Is Recognized

A prominent endocrinologist, Dr. Rall has won wide recognition for his scientific accomplishments, including the Van Meter Prize Award in 1950 and the Flemming Award in 1958 for his contributions to the understanding of thyroid disorders and the treatment of thyroid disease.

He is a member of the National Research Council, the American Society for Clinical Investigation, the American Thyroid Association, the American Physiological Society, the Endocrine Society and the Association of American Physicians.

Born in Naperville, Ill., Dr. Rall received his A.B. and North Central College, his M.S. and M.D. degrees at Northwestern University Medical School, and his Ph. D. at the University of Minnesota. He served in the U.S. Army Medical Corps from 1944-1948.

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Christmas Holiday

Many NIH employees will enjoy the benefit of a two-day holiday for Christmas since the President des-
Renovated Print Plant Offers Efficient, Time-Saving Service

By George J. Mannina

In its enlarged and newly remodeled quarters in Building 31, the Printing and Reproduction Section, OSB-OD, is now equipped and staffed to meet all but the most specialized printing needs of NIH—and at a considerable saving of time and money.

NIH employees interested in seeing the new equipment in operation are invited to an open house tomorrow evening (Thursday) in the basement of Building 31. From 3 p.m. they will be conducted, in groups, on tours of the Printing Plant area. Refreshments will be served.

The expanded Section, Mr. Caponiti said, will be able to handle all NIH printing requirements except those which, by their nature must still be procured from the Government Printing Office or commercial sources. These include letterpress and other specialty printing, informational material requiring sales copies and depository library distribution, and long-run work which would exceed the economical maximum of the new equipment.

Capacity Stepped Up

The new presses and other new equipment will permit the Section to make as many as 56,000 production units of any single requirement (a production unit is one 8 x 10½ page).

To operate the new equipment and meet the increasing demands for its services—already up 55 percent—the Printing and Reproduction Section staff has increased from 29 to 55—almost all of whom are directly involved in production.

By virtue of its new facilities, P and R is now able to provide, rapidly and efficiently, a much greater variety of printing and reproduction services.

Production Speeded

Among these is a photo-copying service, using a Copyflo continuous printer. Its time-saving capabilities are indicated by the fact that it can print or run off in a comparatively short time two or three copies of a 5-page document.

Other equipment includes facilities for making metal printing plates for work requiring quality not attainable with paper masters, and equipment for the reproduction of half-tones (photographs), new offset printing pressures, including one capable of printing four pages at a time; a coater that permits saddle-stitch work; a folding machine, and other miscellaneous equipment.

To accommodate the new facilities considerably more space was essential. In its old location, P and R occupied 2,100 square feet of space. Its present plant utilizes 6,950 square feet, almost all of which is used in actual production, with practically no room for storage.

(See PRINT PLANT, Page 8)

Dr. Irving Wright Named To NIH Advisory Council

Dr. Irving S. Wright, Professor of Clinical Medicine at Cornell University Medical College, New York City, has been appointed to a vacancy on the National Advisory Heart Council.

The appointment is Dr. Wright's second to the Heart Council. He previously served from 1954 to 1958.
Research at NIH Contributes To Knowledge of Retardation

Following are brief summaries of papers presented at the Scientific Meeting on Mental Retardation held here December 6 with the cooperation of the Joseph P. Kennedy, Jr. Foundation. The paper presented by Dr. J. H. Tjio, Kennedy Foundation award-winner, appears on Pages 5 and 6 of this issue.

The Role of Lipids in the Central Nervous System, by Dr. Roscoe O. Brady, Head of the Section on Lipid Chemistry, NINDB.

Dr. Brady outlined the role of some of the complex lipids in the central nervous system. Of particular interest in current research are the glycolipids which are important units of nerve cell structure and are involved in a number of diseases of the nervous system — such as some of the demyelinating diseases.

Dr. Brady told of studies on the immunochemical properties of one group of glycolipids, the gangliosides, in which the investigators were able to produce specific antibodies against gangliosides. These studies, he indicated, add evidence to the theory that multiple sclerosis may be an auto-immune disease in which the afflicted are sensitive to their own gangliosides.

Congenital Galactosemia, by Dr. Stanton Segal of the Clinical Endocrinology Branch, NIAMD.

Dr. Segal spoke on his recent study of the formation of cutaneous — one of the signs of human congenital galactosemia — in offspring of rats fed a high galactose diet. His finding of a high degree of cutaneous formation supports previous suggestions of placental transfer of galactose, and also suggests the importance of a galactose-free diet for the pregnant woman carrying a proband galactosemic fetus.

Dr. Segal also reported on recent studies of several patients who had the characteristic syndrome of congenital galactosemia as infants but who were capable of oxidizing radioactively-labeled galactose to carbon dioxide in vivo in a near-normal fashion.

Studies on the Mechanism of the Enzymatic Conversion of Phenylalanine to Tyrosine, by Dr. Seymour Kaufman, Chief of the Section on Cellular Regulatory Mechanisms, NIMH.

Dr. Kaufman discussed a hydroxylation reaction, the enzymatic oxidation of the aromatic amino acid phenylalanine to tyrosine, which fails to take place in the liver of phenylketonuria victims.

NIMH studies have confirmed previous reports that an enzyme is missing in the liver of PKU victims; further research into the role played by enzymes in this hydroxylation reaction (See RETARDATION, Page 7).

Sargent Shriver, Director of the Peace Corps and Executive Director of the Kennedy Foundation, stands beside the First Lady at the head table. He gave the welcoming address.

Arriving for the Kennedy Foundation award U. S. Ambassador to the United Nations; the President Lyndon B. Johnson.—Dinner Photos

Sargent Shriver, Director of the Peace Corps and Executive Director of the Kennedy Foundation, stands beside the First Lady at the head table. He gave the welcoming address.

Arriving for the Kennedy Foundation award U. S. Ambassador to the United Nations; the President Lyndon B. Johnson.—Dinner Photos

Attentive listeners at the symposium in the United Nations, was invited to be master of ceremonies at the banquet.

The welcome address was delivered by Sargent Shriver, Director of the Peace Corps and Executive Director of the Kennedy Foundation. Mrs. Shriver, the President’s sister, is Executive Vice President of the Foundation.

In addition to monetary gifts presented by the President, each award winner received a special trophy — a 16-inch Gothic form executed in Steuben glass and mounted on an inscribed sterling silver base. The crystal form is engraved with a figure of the Seraph Region.

Stevenson Presides

Since four of the winners were foreign scientists, Adlai E. Stevenson, United States Ambassador to the United Nations, was invited to be master of ceremonies at the banquet.

Among Those Present

In conversation at the head table (l. to r.): Dr. Richard L. Masland, Director of NIH; Dr. Luther L. Terry, PHS Surgeon General; and Dr. Seymour Ketty, Chief of the Laboratory of Clinical Science, NIMH.—Symposium photos by Bob P.
Human Cytogenetics Research Expanded by Tjio Discovery

Following is the paper, "Congenital Disorders and Chromosomes," presented by Dr. J. H. Tjio, NIAMD, at the Scientific Meeting on Mental Retardation held here December 6 in cooperation with the Joseph P. Kennedy, Jr. Foundation.

The development of improved techniques in tissue culture, and in cytological investigation generally, resulted in the discovery in 1956 that the diploid human chromosome number was 46—and not 48, as had long been accepted. The field of human cytogenetics has since greatly expanded. Continued improvement in methodology has led to confirmation of the precise chromosome number, and reasonably accurate analysis of the human chromosome complement has now been accomplished.

A number of tissues, including skin, muscle, bone marrow, and peripheral leukocytes, can be used for studying the chromosomes of human cells. Accumulation of cells in metaphase is brought about by colchicine, and the cells are then swollen by hypotonic treatment to allow for chromosome spreading. Through photomicrography, the chromosomes may then be faithfully reproduced.

**Found in Pairs**

Twenty-two of the 23 pairs of human chromosomes are called autosomes, and can be distinguished from one another by their relative length, and by the position of their constriction, or centromere. By convention, they are arranged in approximately descending order of size, ranging from the larger chromosomes at the lower numbered position, to the smaller chromosomes at positions 21 and 22. Some of these chromosomes can be identified individually, as numbers 1, 2, and 3—also 16; while others can only be assigned to groups, as the 4-5 and 19-20 groups.

The 23rd pair of chromosomes are the sex chromosomes which are either alike, and termed XX in the female; or unlike, and termed XY in the male. The X chromosome is a medium-sized metacentric chromosome resembling members of the 6-12 group from which it is not easily distinguished by ordinary cytogenetic methods. However, recent autoradiographic studies have succeeded in demonstrating differential labeling of one of the X chromosomes in normal females and has enabled its more precise recognition. The Y chromosome is a smallacrocentric that can be distinguished from pairs 21 and 22.

**Other Syndromes Studied**

Other studies of this nature with which Dr. Tjio has been concerned include work on the chromosomal complement of patients with Marfan's syndrome, Kliefelter's syndrome and Turner's syndrome, which are usually accompanied by some evidence of mental retardation.

In collaboration with National Cancer Institute staff members, Dr. Tjio has also participated in studies on the chromosomal complement of patients with neoplastic diseases such as leukemia.

Since patients with Down's syndrome suffer from leukemia more often than the general population, studies have been undertaken to determine whether a common genetic denominator exists between chromosomal abnormality and susceptibility to leukemia.

(See HUMAN CYTOGENETICS, Page 6)
and 22 by its size and appearance.

The normal diploid number of chromosomes is maintained in succeeding generations of somatic cells by the process of mitosis, while during maturation of the gametes the chromosome number is reduced by half of the process of meiosis. Fertilization restores the diploid number in the zygote, by the union of male and female haploid gametes.

33 Aberrations Recognized

In addition to defining the normal chromosome complement in man, cytogenetic research workers have elucidated a host of abnormal chromosomal conditions. Since the first report on Down's syndrome, or mongolism, appeared in 1959, at least 33 distinct varieties of chromosomal aberrations have been recognized, which involve only autosomes, only sex chromosomes, or both in combination.

At the present time, the activities of our laboratory are focused on the study of the chromosomal constitution of patients with developmental and congenital defects, in collaboration with investigators of the several Institutes of the National Institutes of Health and private clinicians. Also, with the National Cancer Institute, we are studying the chromosomes of malignant cells of patients with leukemia and related diseases.

Let us consider more specifically a few of the developmental defects which have been found to be related to chromosomal anomalies.

Down's Syndrome Discussed

Down's syndrome, with its characteristic facial appearance, associated cardiac defects, and severe mental retardation, involves an abnormality of the autosomes. Three, instead of two, chromosomes 21 are present. This may be called simple trisomy 21.

It is generally accepted that the extra chromosome present in cases of Down's syndrome has arisen as a result of an error, known as nondisjunction, or nonseparation, of chromosomes. It may occur during gametogenesis and is characterized by the failure of the members of a pair of homologous chromosomes to separate during anaphase. It is possible for nondisjunction to occur at the first or second meiotic division, during gamete formation, or at both, and it could occur in either or both parents.

Data on maternal age of patients with Down's syndrome suggest that nondisjunction may be more common in females and that there may be factors operating in the aging ovary which lead to nondisjunction. As shown by Collman and associates in 1969, the incidence of the syndrome in the population at large of Victoria, Australia, is one in 699. But for mothers over 45 years of age, the incidence is one in 46.

Another form of Down's syndrome occurs which seems to be familial in type. These cases have only 45 chromosomes, the normal number in the human somatic cell. An extra chromosome 21 is seen, instead of the normal number, in the human somatic cell. This form may carry the abnormal translocated chromosome and have 45 chromosomes including the translocated chromosome. While they are phenotypically normal, there is an unusual tendency for these parents to produce offspring with Down's syndrome.

Precise Determination Important

Thus it is of considerable importance in a given case of Down's syndrome to determine the precise chromosomal abnormality, as the trisomic type is not familial, whereas the translocation type may be inherited.

In considering the abnormalities of the sex chromosomes in man we must first note that in normal females a large proportion of the nuclei from any tissue contain a small dark body called the nuclear chromatin body which lies applied against the nuclear membrane and stains specifically like DNA. These cells are said to be chromatin positive. Male nuclei do not usually contain the nuclear chromatin and are therefore chromatin negative. Yet nuclei of cells from males with Klinefelter's syndrome are found to be chromatin positive while females with Turner's syndrome are chromatin negative. This was therefore a discrepancy between the sex and somatic appearance. What of the sex chromosome constitution of these patients?

X Chromosomes Significant

Klinefelter's syndrome is characterized by atrophy of the testes, often accompanied by mental retardation, and sometimes by gynecomastia. In these individuals, in addition to the usual X and Y chromosomes an additional X chromosome was found. In fact, males with Klinefelter's syndrome were found to be chromatin positive while females with Turner's syndrome are chromatin negative. There was therefore a discrepancy between the sex and somatic appearance.

What of the sex chromosome constitution of these patients?

X Chromosome Analysis

An error similar to nondisjunction during gametogenesis occurs at a mitotic division at any stage subsequent to fertilization. If the products of such an error in division are viable and are included in the embryo, this may lead to the production of a mosaic individual whose body is composed of two or more karyotypes, each with a different number of chromosomes.

If the error occurs at the first division of a normal zygote, a 45/47 chromosomal mosaic will be formed; but the same error at a subsequent division would lead to the production of an individual with a quadruple-X constitution. The degree of admixture of cells with different chromosome numbers will depend on the stage of development at which the error occurs, and it is conceivable that one cell line could be localized in a particular tissue or organ.

Influences Clinical Condition

The composition of the zygote, the nature of the error, and the stage at which the error occurs will also undoubtedly influence the clinical condition of the patient.

It must be stressed at this point that changes in chromosome number and morphology are by no means the only genetic factors involved in the production of congenital malformations.

Most human congenital disease is the result of an error in meiosis, or, in molecular terms, of the alteration of the normal base pair sequence of DNA. Because genes as such are beyond the resolving power of cytogenetics, this study cannot be studied through chromosomal visualization. In chromosome analysis, we are dealing with groups of genes, and the clinical syndromes resulting from chromosomal alterations are doubtless caused by the effects of many genes functioning under abnormal conditions.

Since 1959, many syndromes have been described which were found to be associated with significant chromosomal abnormalities. We have mentioned only a few of these. But the description of abnormal chromosomal complements and their association with clinical pictures is only the beginning, for this classification and description in no way tells us how the disease state was produced. How, for example, do we go from trisomy 21 to the complex signs and symptoms of Down's syndrome? It is clear that this is a new field of inquiry in developmental biology, and is one in which biochemical concepts and techniques will no doubt play a leading role.

Potentialities Unknown

The cytogenetic study of man has a few limitations. The state of Drosophila genetics entered 40 years ago. The specific potentialities inherent in man as material for cytologic investigations are not yet known. Some of the most obvious potentialities, the Drosophila geneticists were at an advantage; their organism had only four pairs of chromosomes, and a very rapid generation time. But man has his compensations. The possibility of explanting cells from the human soma into tissue culture and manipulating these cells ad lib is one such advantage. Others will doubtless be found. In any case, several lines of research now started are pursued.
plained holding a child in his arms. Raphael, whose name means “God Heals,” is the patron angel of science and love. It was Raphael who stirred the waters of the Biblical Pool of Bethesda.

According to legend, the pool was visited by the sick, the blind, and the maimed, and the first person to bathe in the pool after the waters were stirred was cured of his malady. The two pools in the front of the Clinical Center appropriately bear the same name.

Presentation of each award by the President was preceded by a film vignette showing the scientific achievements of the winner.

Cited for Achievements

Dr. Barr, one of the scientists who shared an award with Dr. Tjio, was cited for his discovery of the sex chromatin. The other scientist, Dr. Lejeune, was honored for his discovery of chromosomal abnormality in mongolism.

In addition to their personal awards, Drs. Barr and Lejeune each received $25,000 to support their research programs. Dr. Tjio did not receive a similar grant because his work is supported by NIH.

Other winners were Dr. Samuel A. Kirk, Director of the Institute for Research on Exceptional Children, University of Illinois, who received $25,000 for “his vision, inspiration, dedication, and outstanding services in mental retardation.”

Another $25,000 winner was Dr. Ivar Asbjorn Folling, retired Chief of the University Hospital Clinic, Oslo, Norway, who opened “a new era in the study of mental retardation.”

A report on the study, “Rat Virus and Periodontal Diseases,” by Drs. Barr and Kilham appears in a recent issue of “Oral Surgery, Oral Medicine, and Oral Pathology.”

Striking Abnormalities In Tooth Development Produced by Rat Virus

Abnormal tooth structure similar to those seen in human Mongoloid patients have been produced in hamsters by Dr. Paul N. Barr of the Clinical Investigations Branch, National Institute of Dental Research, and Dr. Lawrence Kilham of the Dartmouth University Medical School.

Following inoculation of Kilham rat virus (originally isolated by Dr. Kilham from spontaneous rat tumors) during the first week of life, Syrian hamsters developed periodontal lesions and other dental abnormalities.

The study by these investigators demonstrated that in addition to severe alveolar bone loss and periodontal tissue destruction in hamsters infected with the Kilham rat virus, there occurred a striking abnormality of tooth development. This was characterized principally by small crowns and roots (microdontia) and frequent supernumerary formations.

Further Study Justified

While the principal finding of an earlier study by Dr. Kilham was the demonstration of a relationship between the virus and a syndrome of abnormalities in hamsters that resembled Mongolism in man, the suggestive clinical evidence reported by an NIDR grantee last year that periodontal disease is prevalent in the Mongolid child justified this further experimental investigation.

These more recent findings emphasize the importance of further clinical studies to clarify the etiologic relationship of Mongolism in man to oral-dental abnormalities.

A report on the study, “Rat Virus and Periodontal Diseases,” by Drs. Barr and Kilham appears in a recent issue of “Oral Surgery, Oral Medicine, and Oral Pathology.”

The tooth at left is a second molar from a hamster inoculated with Kilham rat virus, showing normal crown development but distorted roots. Tooth beside it is a normal second molar from a control animal.
County Christmas Tree Pickup Set for Jan. 5

The Montgomery County Fire Marshal has announced a post-Christmas, County-wide round-up of discarded Christmas trees, to be undertaken Thursday with the cooperation of Boy Scouts in every community.

On Saturday morning, January 5, the Scouts will pick up any Christmas trees placed at the street side of residential properties, according to the announcement. The trees will be transported to a rural area near Rockville and burned in a mammoth bonfire that evening at 7 o'clock.

Home owners of the do-it-yourself school may take their old trees to the nearest Fire Station for disposal, prior to 2 p.m. of the same day.

Why are firemen and Scouts providing this service? Because cut Christmas trees increasingly become fire hazards in the home, that's why. And the Fire Marshal says he hopes you won't forget it.

PRINT PLANT

(Continued from Page 3)

A major plant modification, essential to the efficient operation of the new equipment, required the installation of a special air-conditioning system for humidity control. This was necessary to avoid operational difficulties, since paper will not "feed" properly when the humidity is either too high or low.

Originally established in 1951 in the Division of Research Grants, the plant's primary responsibility was the reproduction of copies of the various grant and fellowship applications for the Division, and other work as time permitted.

This rarely occurred, however, as the work for DRG consumed most of the time and virtually all of the potential of the limited plant facilities.

Extra Work 'Farmed Out'

As a result, work for Institutes and other Divisions had to be "farmed out" to the Departmental Printing Plant downtown, to the Printing Industry at the USPHS Hospital in Lexington, Ky., and the Government Printing Office—a costly procedure that seldom met the urgent needs of NIH research programs on a timely basis.

The expanded printing facilities now in operation not only will enable the Printing and Reproduction Section to handle all work formerly produced in the old plant, but also that formerly procured through the Departmental plant and the Lexington Hospital Printing Section.

Mr. Caponiti estimates the new equipment will have a long run pay for itself many times over.

His office, Mr. Caponiti said, will distribute shortly a policy and procedures memorandum prescribing procedures to be followed in connection with printing services. This will provide for the use of two requisitions. One, PHS-3952, will be for use in ordering reproduction of all material required for the grant review processes. The other, PHS-3000, will be used for all other printing and related services.

One final phase of the new operation, he added, should be accomplished in from five to six months. This is the installation of equipment, for which space is available, to provide a mechanical addressing and mailing service, now obtained from the Departmental plant.

Upon its installation, all NIH mailing keys will be transferred from the Departmental plant to NIH—again at a substantial saving in time, effort, and money.

Pictures of the plant's remodeled quarters and new equipment will appear in a subsequent issue.

Cost of Haircuts Goes Up—5c

The increased cost of living has invaded the Clinical Center's barber shop—but not severely. Effective January 2, the price of haircuts will be stepped up from $1.25 to $1.30. Prices on all other services in the shop will not be changed.

Dental Institute Names Lillian A. Gluckman as Information Officer

Lillian A. Gluckman has been appointed Information Officer of the National Institute of Dental Research, Dr. Francis A. Arnold, Jr., Institute Director, announced recently.

Mrs. Gluckman joined NIH last May and was assigned initially to the Information Office of the Division of General Medical Sciences.

From 1957 until the spring of 1962, she was Director of the Medical News Bureau of the University of Miami School of Medicine, Coral Gables, Fla.

In this connection, Mrs. Gluckman was also for three years the writer and associate producer of a medical television series over the Miami station of the National Broadcasting Company.

More than 60 research scientists and medical school faculty members participated in these programs, discussing topics ranging from prematurity to gerontology.

Edits Surgery Journal

Prior to her work in Miami, Mrs. Gluckman was managing editor of the American Journal of Surgery and copy editor and research associate with Thomas Nelson and Sons, New York medical publishers.

From 1949 to 1957 she directed the national hospital service and publication program for the Women's Division of the National Jewish Welfare Board in New York. She organized more than 10,000 women volunteers in 200 communities, offered a full-service program of service for members of the Armed Forces and for hospitalized patients.

A native of New York City, Mrs. Gluckman received a B.A. degree at Barnard College, Columbia University, and had two years of postgraduate study at the Sorbonne and the Ecole des Sciences Politiques in Paris.

In the early days of the United States, customs duties and the sale of public lands were the mainstays of Federal internal revenue.