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Before discussing some of the biological problems to which chemical histology has proved applicable, it may be wise to spend a moment to define the term. There are two principal kinds of procedures for studying the chemical nature of the component parts of organs, tissues and cells. Microanalytical procedures have been devised which can be applied to very small bits of tissue, some cases even to single cells, or to fractions of homogenates. The results obtained with these microchemical procedures lack the morphological precision ordinarily obtained by microscopic methods, since the degree of precision is limited by the technical methods available for isolating the material to be analyzed. On the other hand, there is a group of methods applicable to tissue sections, in which chemically definable procedures lead to an insoluble, colored or opaque end-product. Sections prepared by these methods may be examined by the microscope, with the result that a degree of morphological precision can be obtained far greater than that possible with the microanalytical procedures. With these methods, the primary emphasis is placed upon morphology and secondarily upon the chemical rationale. These methods collectively comprise the armentarium of chemical histology and chemical cytology.

A large number of specific procedures are now available. They are applicable to all three of the great biochemical classes of compounds, the lipids, carbohydrates and proteins. Their selectivity varies greatly; some are chemically quite specific while others reveal only group reactions or group characteristics. Thus, some of the enzyme reactions such as that for alkaline phosphatase utilize the specific activity of the enzyme itself, whereas other procedures, such as sudanophilia, characterize only the solubility of the substance in question and do not permit the identification of a specific compound. Moreover, these methods yield...
only qualitative information. Their justification lies in the fact that it is as important to know where a substance exists as it is to know how much of it is present.

**LIPIDS**

The sudan dyes are soluble in organic solvents. They lack polar groups and consequently are insoluble in water and do not combine with acid or basic groups. Sudan III and Scarlet R are familiar examples of this series of dyes. In recent years, sudan black has been developed and has proved useful, since its great coloring power permits visualization of very small or faintly staining objects. Fig. 1 represents the mammary gland of a rat stained with sudan black. The lipid secretion droplets stain black, and in addition, the mitochondria assume a grayish tone. The intensity with which the mitochondria stain varies with the functional state of the gland, as can be seen by comparing Fig. 1 and Fig. 2 which are from two stages of secretation. The mitochondrial fraction of liver cells, isolated from homogenates by differential centrifugation, contains a considerable amount of phospho-

lipids. The sudanophilia of these structures is therefore in good accord with their chemical composition. Moreover, the variability of their staining suggests that the phospholipid content is not a fixed and invariable component, and it provides information not available from the analytical procedures (Dempsey, Bunting and Wislocki, 1947).

Certain lipids, notably the steroids, are characterized by several physical and chemical reactions. Among these are the property of birefringence when viewed in polarized light, a greenish autofluorescence, and the occurrence of a positive Lieberman-Burchard reaction. Figs. 3 and 4 illustrate the localization of birefringence in the theca interna of the rat's ovarian follicle. In Fig. 5, the Lieberman-Burchard reaction of the theca interna is pictured, and Fig. 6 exhibits the autofluorescence of the same region. The upper portion of Fig. 7 is the spectrum of the thecal fluorescence, which is greenish in color. The lower portion of the figure is the bluish spectrum obtained after extraction in acetone. These reactions indicate that substances having reactions characteris-

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Fig. 1. Sudanophilic material in an alveolus from the mammary gland of a rat killed on the fourth day of lactation. The tissue was fixed in formaldehyde, a frozen section was prepared and stained with sudan black B. The lipid secretion droplets stained an intense black, whereas the rod-shaped mitochondria assumed a variable grayish tone.

Fig. 2. A section of the rat's mammary gland, prepared and stained identically with that shown in Fig. 1, but from a different stage of secretion. The lipid droplets are smaller and the mitochondria stain less intensely. This fact suggests that the lipid content of mitochondria varies with their functional state.

Figs. 3 and 4. Growing follicle from an ovary of the rat. Fig. 3, for orientation, is an unstained frozen section photographed with ordinary light and Fig. 4 is the same follicle photographed with polarized light. Birefringent material is localized in the cells of the theca interna. This birefringent substance is quickly soluble in acetone.

Fig. 5. Lieberman-Burchard reaction in the graafian follicle of the rat's ovary. This reaction is obtained from polycyclic unsaturated compounds such as the sterols. The reaction is negative after extraction of the sections in acetone. The positive reaction is restricted to the cells of the theca interna.
Fig. 6. Autofluorescence of the ovarian follicle of the rat. An unstained frozen section was mounted in glycerine and photographed with the fluorescent microscope. The theca interna fluoresced a greenish white color, whereas the fluorescence of the granulosa was blue.

Fig. 7. Spectra of the autofluorescence of the theca interna. The upper spectrum is from the theca interna illustrated in Fig. 6. After this photograph was made, the section was extracted with acetone, following which the spectrum shown in the lower portion of the figure was obtained. The initial fluorescence was greenish white; after extraction it was fainter and bluish in color. The spectra show that a greenish fluorescent substance was removed by the extraction.
tic of sterols are found in the theca interna but not in other portions of the follicle (Dempsey, and Bassett, 1943; McKay and Robinson, 1947). Moreover, other organs known to secrete steroid hormones, namely the testis, corpus luteum, adrenal cortex and placenta, give similar reactions in localized regions. In addition, experiments performed by Greep and Deane (1949) indicate that these reactions are increased or decreased in intensity by experimental procedures known to stimulate or depress the secretion of the adrenal cortex. These facts all indicate that the physiological activity of the steroid secreting glands may be assessed by means of histochemical procedures.

In a study of striated muscle, application of sudan black revealed small, randomly located black droplets which were easily removed by fat solvents. In addition, the isotropic segments were stained gray (Figs. 8 and 9), and this sudanophilia was not affected by extraction of the section in acetone prior to staining. The gray color coupled with insolubility in ordinary fat solvents suggested that the isotropic discs might contain phospholipids. This possibility prompted the application of the Smith-Dietrich procedure for phospholipids, and a positive result was obtained (Fig. 10).

The birefringence exhibited in the anisotropic segment of striated muscle has been ascribed to the presence of submicroscopic fibrils composed of bundles of long-chain, parallel protein filaments. According to this theory, the lack of anisotropy in the I segments ordinarily is explained by assuming its protein to be oriented in random fashion, rather than in parallel fascicles. However, an alternative possibility exists. If muscle is composed of longitudinally oriented elements which confer birefringence upon the fiber, this birefringence could be cancelled if another asymmetric substance were attached with an orientation at right angles to the longitudinal axis. Thus, if longitudinal filaments ran throughout the fiber, and if phospholipids oriented at right angles to the proteins occurred in the regions of the isotropic bands, the complex would show the optical behavior ordinarily seen in striated muscle, since the positive birefringence caused by the proteins would be cancelled periodically by the negative birefringence of the phospholipids. Moreover, removal of the phospholipids should reveal birefringence in the isotropic segments. For this reason, we extracted the phospholipids in hot alcohol. Figs. 11 and 12 depict the result of this experiment. The isotropic segments have become much fainter or have been destroyed altogether with the result that a uniform birefringence extends throughout the entire fiber (Dempsey, Wislocki and Singer, 1946).

Sudan black, when applied to cells of the circulating or developing blood, revealed several interesting facts. The granules of neutrophils and eosinophils stained strongly. Basophils could not be identified with certainty in circulating blood or marrow. However, the basophilic mast cells of connective tissue exhibited a variable sudanophilia of their granules (Fig. 13). Megakaryocytes of bone marrow contained char-
Figs. 8 and 9. Sudanophilic materials in rat striated muscle. Tissues fixed in formaldehyde were cut by frozen section and stained in sudan black B. These sections were drawn with an ordinary microscope (Fig. 8) and with a polarizing microscope (Fig. 9). Discrete lipoidal droplets, randomly located, are visible. These droplets were easily extracted with acetone. In addition, the isotropic segments of the muscle fiber assumed a grayish stain which was unaffected by ordinary fat solvents.

Fig. 10. Smith-Dietrich reaction for phospholipins in striated muscle. The positive reaction was localized in dark bands which proved to be the isotropic segments.

Fig. 11. Birefringence of rat striated muscle. This drawing illustrates the isotropic (dark) segments alternating with the anisotropic (light) segments.

Fig. 12. Birefringence of rat striated muscle after prolonged extraction in hot alcohol to remove phospholipins. The isotropic segments have become strongly birefringent. This observation suggests that phospholipins, periodically located in the I segments and oriented at right angles to the long axis of the fiber, cancel the double refraction of the muscle proteins and account for the cross-striated appearance of muscle.

Fig. 13. Various cells from the bone marrow of a rhesus monkey, from a frozen section fixed in formaldehyde and stained with sudan black B. The large granules of eosinophiles, and the smaller granules of neutrophiles stain an intense black. The large cell above is a megakaryocyte. The small lipoidal dots in its cytoplasm are similar to the minute droplets observed in the circulating blood platelets. In the insert at the upper left is drawn a mast cell from the connective tissues of a human uterine cervix. Occasional granules, usually near the nucleus, are intensely stained.
acteristic tiny fat droplets. Similar droplets were also encountered in blood platelets, a fact in consonance with the theory that platelets represent small pinched-off bits of cytoplasm from megakaryocytes (Wislocki and Dempsey, 1946; Rheingold and Wislocki, 1948).

**Carbohydrates**

Carbohydrates exist as polymerized polysaccharides and as glycoprotein complexes. The sugar portion of these molecules can be demonstrated by reactions involving oxidation or hydrolysis to expose a free aldehyde group. The aldehyde can subsequently be identified by Schiff's or by a silver reaction which produce a colored or opaque end-product. In the Feulgen reaction, the desoxypentose sugar is hydrolyzed with warm hydrochloric acid and subsequently employed to recolorize Schiff's reagent. This reaction is specific for nuclear material and is ordinarily used to demonstrate the desoxypentose nucleoproteins which are found only in the nuclei of mammalian cells. A somewhat similar procedure employing oxidation in periodic acid, followed by Schiff's reagent, has found wide application for demonstrating intracellular glycogen and the glycoproteins in structures such as reticulum fibers, thyroid and pituitary colloid, mucus, cartilage matrix, etc. Fig. 14 demonstrates glycogen in the developing neutrophils of bone marrow. In these cells, the content of glycogen increases with age and is greater in the cells of circulating blood than in the younger cells of the marrow (Wislocki, Rheingold and Dempsey, 1949). Fig. 15 illustrates the periodic acid-Schiff reaction of thyroid colloid. The component responsible for this reaction can be dissociated, experimentally, from the thyroid hormone since animals on an experimental regime involving antithyroid drugs and hypophysectomy produce intensely reactive colloid but are unable to form or to store thyroid hormone (Dempsey and Singer, 1946).

Certain glycoproteins, notably those of mucus, cartilage and mast cell granules, are strongly acid compounds by virtue of their conjugation with sulfuric acid in a half-ester linkage. Such substances are strongly basophilic, and in addition, exhibit the property of staining metachromatically with certain basic thiazin dyes. This metachromatic reaction (staining a color different from that of the dye solution) can be used as a means of locating the acid mucopolysaccharides (Wislocki, Bunting and Dempsey, 1947; Dempsey, Bunting, Singer and Wislocki, 1947).

**Proteins**

a. *Staining reactions*. The main constituents of protoplasm are proteins of various sorts, some simple and some conjugated with other substances such as carbohydrates, lipids, or inorganic compounds. The protein molecule itself consists of amino acid residues, joined together by peptide linkages. Proteins are dipolar, or amphoteric, substances. That is, they can ionize either as acids or as bases. The nature of their dissociation depends upon the acidity of the solution. Acid dissociation results from such radicals as the carboxyl, hydroxyl, sulfuric, phosphoric or other acid groups, while basic ionization comes
Fig. 14. Section of bone marrow of a rhesus monkey fixed in a mixture of alcohol, formaldehyde and acetic acid and stained by the Bauer-Feulgen method for glycogen. Punctuate glycogen is present in the cytoplasm of neutrophilic myelocytes and in the rim of cytoplasm belonging to the fat cell. None is present in the other categories of marrow cells, including the megakaryocytes.

Fig. 15. Thyroid of a rat, illustrating the reaction of the colloid with the periodic acid-Schiff reagents for polysaccharides.

Fig. 16. Apparatus for measuring photometrically the intensity of staining in tissue elements. A magnified image is projected upon the focussing screen. A selected area of the image is projected into the search unit of the photometer.

Figs. 17, 18 and 19. Skin and hair from the velvet covering the growing antler of the Virginia deer. The tissue was fixed in Zenker’s fluid and stained, under highly controlled conditions, at pH 5.7. In Fig. 17, the basophilia of the nuclei, the stratum germinativum, the root sheath of the developing hair and the stratum granulosum of the epidermis can be seen. Hydrolysis in HCl abolished the cytoplasmic and nuclear basophilia attributable to portions of hair and skin (Fig. 18). After oxidation in periodic acid all of the tissue showed a great increase in basophilia (Fig. 19).
from the presence of amino, imidazole or guanidine groups. There is a certain acidity at which ionization of the basic and acid groups is equal, and consequently the protein has a minimum charge. This point is called the isoelectric point and is expressed as pH. At pH’s above the isoelectric point the protein ionizes predominantly as an acid and below, predominantly as a base. Therefore, above the isoelectric point proteins will react with cations such as basic dyes and below with anions such as acid dyes. Increasing alkalinity above the isoelectric point of the protein causes more dye to be bound, since the net negative charge is increased as the pH is raised. Basic staining is extinguished just below the isoelectric point, at an acidity just great enough to prevent the dissociation of the acid groups of the protein. The reverse is true for acid staining. The intensity of staining at each pH can be measured photometrically (Fig. 16) and, when plotted against pH, curves of the acid and basic stainability of the substance are obtained (Dempsey, Bunting, Singer and Wislocki, 1947). Fig. 20 represents such curves, or “signatures” of the basophilic and acidophilic substances of muscle fibers and for comparison, the basophilia of the Nissl substance of neurons (Dempsey, Wislocki and Singer, 1946). Such signatures, when obtained from tissues fixed and stained under highly standardized conditions, serve to differentiate tissue proteins one from another and to permit classifying them in terms of their basic or acid groups. In general, the proteins containing sulfuric groups exhibit the greatest basophilia, the phosphoric group is next and finally the organic acid radicals produce the least basophilia. In practical experience, the acid mucopolysaccharides and the nucleoproteins constitute the two most common classes of highly basophilic compounds, and their signatures are characteristically different enough to permit their ready recognition (Dempsey, Bunting, Singer and Wislocki, 1947).

When these methods were applied to skin, a surprising fact emerged. There is a highly basophilic compound in the inner root sheath of the growing hair and in the stratum granulosum of the epidermis which is different from either of the acid proteins mentioned above (Dempsey, Singer and Wislocki, 1950). Fig. 17 illustrates a section through the skin of the deer, and shows the intense basophilia of the cornifying zones of hair and skin. Fig. 18 represents a similar section, stained identically with methylene blue but after hydrolysis in a solution of hydrochloric acid strong enough to split off the acid groups from both nucleic acids and mucopolysaccharides. The basophilia of the nuclei was therefore abolished, but the intense staining of the cornifying zones of hair and skin was not affected. Further experiments demonstrated that these basophilic structures were unaffected by ribonuclease, and therefore did not behave like the pentosenucleoproteins of the cytoplasm. Likewise, the structures stain orthochromatically with toluidine blue and therefore are unlike the metachromatic acid mucopolysaccharides. Upon oxidation in solutions of periodic acid or permanganate, not only was this
Fig. 20. The binding capacity of muscle for methylene blue and Orange G. The curve for methylene blue is compared with a similar one constructed for Nissl substance, a characteristic nucleoprotein. The tissues were fixed in Zenker's fluid and stained over a range of pH, under highly controlled conditions. The readings were made with the microphotometer shown in Fig. 16.

Fig. 21. Curves relating binding capacity of methylene blue to pH for hair and skin. Curve 1 describes the dye uptake in sections fixed in Zenker's fluid. Curve 2 describes staining in similar sections subjected to acid hydrolysis before staining. Curve 3 represents staining after oxidation in periodic acid. The readings were made with the photometer illustrated in Fig. 16. Acid hydrolysis is without effect upon the hair shaft and cornifying zone (illustrated in Figs. 17, 18 and 19) but destroys the basophilia of the stratum granulosum which is attributable to nucleoprotein. Oxidation greatly enhances the basophilia of all three regions of Figs. 18 and 19.
basophilia enhanced but also other structures became strongly basophilic (Fig. 19). It appears, therefore, that oxidation, either induced spontaneously by exposure to atmospheric oxygen as in growing skin and hair, or produced by immersion of the tissue in oxidising agents, causes the production of highly acid substances, which are unlike either of the commonly occurring basophilic materials. Fig. 21 represents the signatures obtained from these experiments, and illustrates the strongly acid nature of the substance since suppression of basic dye uptake did not occur above pH 3.

The effect of ribonuclease, an enzyme which specifically depolymerizes pentose nucleic acids, has already been mentioned. When sections are digested in solutions of ribonuclease, the cytoplasmic basophilia of cells is destroyed. Figs. 22 and 23 illustrate the effect of ribonuclease upon the pituitary gland of the rat. The pituitary normally contains basophilic cells illustrated as the darkly staining cells in Fig. 22. After digestion in the enzyme, (Fig. 23) this cytoplasmic basophilia is no longer demonstratable (Dempsey and Wislocki, 1945).

b. Enzyme activities. Many proteins serve as catalysts for chemical reactions and are called enzymes. Several histochemical methods have been devised for preserving enzymes so that they retain activity toward their substrates after the tissues have been fixed and sectioned. In most of these reactions, a product of the reaction is precipitated in the tissue and then visualized by a color reaction so that the location of enzyme activity may be determined. Among the enzymes for which histochemical methods exist are alkaline and acid phosphatase, esterase, sulfatase, and various oxidase systems. Alkaline phosphatase, which will be described here as representative of the enzyme methods, is an enzyme capable of dephosphorylating organic phosphates. The liberated phosphoric radical is precipitated in alkaline solu-

Figs. 22 and 23. Basophilic cells of the anterior lobe of the pituitary of the rat (Fig. 22). Fig. 23 is from the adjacent sections, identically stained with eosin-methylene blue, but after digestion in a solution of crystalline ribonuclease. The cytoplasmic basophilia is destroyed but that of the nuclei is not affected.

Fig. 23 and 25. Alkaline phosphatase reaction (fructose diphosphate was the substrate) in the thyroid gland from a normal rat (fig. 24) and one hypophysectomized 34 days previously (Fig. 25). The intense reaction of the capillary endothelium is abolished by the operation.

Fig. 26. Alkaline phosphatase reaction in the pancreas of a rat hypophysectomized 34 days previously. Notable concentrations of the enzyme can be seen in the endothelium of small vessels in the exocrine portions of the gland, and in the cytoplasm of the peripherally located, alpha cells of the islet of Langerhans. The nuclei of both the alpha and centrally located beta cells contain phosphatase. The pancreas of the normal rat shows reactions entirely comparable to those of the hypophysectomized animal.

Fig. 27. Birefringence in the adrenal cortex from an individual suffering from Cushing’s disease. There is a marked increase in the lipid-soluble, birefringent material in the zona fasciculata.

Fig. 28. Birefringence in the adrenal cortex from a patient with pan-hypopituitarism. The capsule of the gland is greatly thickened. The birefringent lipid of the zona glomerulosa is almost normal, but that of the zona fasciculata is greatly reduced or absent.
tion as the calcium salt which is then stained and visualized.

Alkaline phosphatase is found in many locations in the mammalian organism. It is an especially noteworthy component of absorptive surfaces, such as the absorptive cells of the intestine, the proximal convoluted tubules of the kidney and the syncytiun of the placenta (Dempsey and Deane, 1946; Dempsey and Wislocki, 1947). It is also notably present in the endothelial cells of capillaries, particularly in active regions such as growing or regenerating skin. Fig. 24 illustrates the phosphatase reaction of the rat’s thyroid, where the enzyme is particularly concentrated in the capillary linings. After hypophysectomy, when the gland becomes inactive, the enzyme disappears from the endothelial cells (Fig. 25), only to return upon reactivation of the gland by the administration of thyrotropic hormone. Similar changes in phosphatase occur in the adrenal cortex and testis after hypophysectomy and replacement therapy. Likewise, the phosphatase in the sex accessory structures disappears after gonadectomy and reappears upon injection of the appropriate sex hormone (Dempsey, Greep and Deane, 1949). There is also a cyclical variation in the phosphatase of the uterus during the menstrual cycles of primates (Atkinson and Engle, 1947). Similar changes can be produced in the ovariectomized monkey by appropriately timed injections of estrogen and progesterone. However, the phosphatase of some structures is unaffected by removal of the pituitary or gonads. The enzyme of the kidney and intestine is hardly altered by these operations. Fig. 26 illustrates the phosphatase of the pancreas in a hypophysectomized rat. The appearance is indistinguishable from that of the normal animal (Dempsey, Greep and Deane, 1949).

CORRELATIONS WITH PATHOLOGY

Although it is not the purpose of this paper to review the applications of chemical cytology to pathology, it may not be amiss to mention a few instances in which histochemical methods have contributed to an understanding of pathological processes. In the placenta, glycogen is frequently encountered, particularly in the poorly vascularized portions of the organ. Hydatidiform moles exhibit an increased deposition of glycogen. This fact, coupled with the knowledge that the trophoblastic tissue grows in a somewhat disorganized fashion, suggests that the normal relationship of the trophoblast to its blood supply has been disturbed. In placentas from pre-eclamptic patients, an increase in both alkaline and acid phosphatase reactions has been noted. These enzymes are present in low concentrations in normal young placentas and increase in activity with gestation age. Thus, the increased activity in pre-eclampsia suggests a prematurely aged placenta (Wislocki and Dempsey, 1946).

Arzac (1950) has recently described the occurrence of glycogen in the seminiferous tubules of the testis, and has observed a marked increase during tubular atrophy. Similarly, Nelson and Heller (1948) have described marked changes in testicular lipids which accompany hypogonadism.

The lipids of the adrenal cortex vary
greatly with the pathological status of the individual. Biopsies of the adrenal gland from patients with Cushing's disease exhibit a greatly increased amount of birefringent lipids, whereas similar preparations from patients with panhypopituitarism have almost no lipid in the zona fasciculata although that of the glomerulosa may appear almost normal (Figs. 27 and 28).

**SUMMARY**

For the investigator interested in chemical morphology, there is now available a group of methods applicable to the study of lipids, carbohydrates and certain proteins. The chemical specificity and the morphological precision of these methods are not perfect. Nevertheless, the procedures may be defined in chemical terms, and characterization, if not identification, of the reactive products may be accomplished. These methods have proved most useful in studying the changes induced by altered physiological activity and by pathological processes.

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Wislocki, George B., and Edward W. Dempsey.

Wislocki, George B., Jack J. Rheingold and Edward W. Dempsey.
Dr. Joseph E. Smadel '31, chief of the Department of Virus and Rickettsial Diseases, Army Medical Department Research and Graduate School in Washington, D. C., was guest speaker for members of the Washington University Medical Society who met on Wednesday, November 1, 1950. Two other research papers were presented by staff members of the Medical School.

Abstracts of the three papers given during the meeting follow:

**Antibiotics in the Treatment of Rickettsial Diseases and of Typhoid Fever**

by Joseph E. Smadel, M.D. '31

from the

*Department of Virus and Rickettsial Diseases*

*Army Medical Department Research and Graduate School*

*Washington, D. C.*

The new antibiotics chloramphenicol (Chloromycetin), aureomycin and terramycin are specific therapeutic agents for the rickettsial diseases of man; treated patients generally become afebrile in one to three days. The most extensive work in this field has been done with chloramphenicol in the treatment of scrub typhus. These studies were carried on in Malaya in collaboration with British workers by three U. S. Army Medical Research Units sent there for this purpose. Observations made by a number of groups of workers on patients suffering from epidemic typhus, murine typhus, spotted fever, Q fever, or rickettsialpox indicate that each of these diseases is favorably influenced by one or more of the new antibiotics.

Chloramphenicol, aureomycin and terramycin produce their beneficial effects for the most part by their rickettsiostatic action. Permanent recovery of the patient depends on the development of immunity.

Chemoprophylaxis of scrub typhus with chloramphenicol is feasible.

Chloramphenicol is the first, and as yet the only, specific therapeutic agent for the treatment of typhoid fever. The response in this disease is somewhat slower than in the rickettsial infections since three to four days are generally required before the patient’s temperature becomes normal. Treatment must be continued for almost two weeks in patients with typhoid fever if relapses are to be avoided. Chloramphenicol is of no value in eliminating the typhoid carrier state.
Effect of Cortisone in Streptococcal Pneumonia in the Rat
by Robert J. Glaser, M.D., John W. Berry, M.D.,
Lenore H. Loeb, A.B., and W. Barry Wood, Jr., M.D.
Department of Internal Medicine

Approximately one year ago Finland reported a case of Type 8 pneumococcal pneumonia treated successfully with ACTH. During the period in which bacteremia was noted, the patient was afebrile, ambulatory, and without significant complaints, and recovery ensued. Because of our interest in bacterial infection and of the availability of a suitable experimental model, we began a study of the effect of Cortisone in several bacterial infections, and particularly in experimental streptococcal pneumonia in the rat.

Streptococcal pneumonia was induced by intrabronchial inoculation using techniques previously described. Beginning 5 days prior to inoculation and continuing thereafter, the rats were given 10 mg of Cortisone subcutaneously twice daily. In the first experiment the mortality rates in Cortisone-treated rats and in untreated controls were studied. It was found that animals receiving Cortisone died more rapidly than did the untreated controls.

In subsequent experiments animals were sacrificed at 6 hour intervals, and their lungs were removed and prepared for histologic study. The results in these experiments indicated that animals receiving Cortisone exhibited a much greater edema response than did untreated controls. More bacteria were seen in the lungs of Cortisone-treated animals, and tissue destruction was greater in Cortisone-treated animals.

Attempts to elucidate the nature of effect of Cortisone in experimental infection are now underway. To date it has been found that although Cortisone produces a leukopenia, it does so at the expense of the lymphocytes, and the absolute number of polymorphonuclear leukocytes remains unchanged. Although the migration of leukocytes into the alveoli may be slowed in Cortisone-treated animals, once the leukocytes are there, phagocytosis proceeds at a comparable rate to that seen in controls.

The Effect of Influenza Virus on Bronchial Cilia of the Mouse
by Carl G. Harford, M.D.

From the Department of Internal Medicine and the Oscar Johnson Institute for Medical Research

In order to throw light on mechanisms of resistance to respiratory infection, the problem is being studied under controlled conditions in mice with well known infectious agents such as influenza virus and Type I pneumococci. In earlier experiments, it was found that infection of the mouse lung with influenza virus lowers resistance to secondary pneumococcal pneumonia as it does in human beings and evidence was obtained indicating that a major factor
in this lowered resistance is the presence of edema fluid in the viral lesion which serves as a culture medium for the growth pneumococci. In the present investigation, attention has been concentrated on cilia of the bronchial epithelium because ciliary action appears to be an important mechanism of native resistance to bacterial infection and because influenza virus causes necrosis of bronchial epithelial cells.

For study of cilia, their active movement has been observed by direct microscopic examination of bronchi in slices of fresh lung. Also, cilia have been rendered visible in paraffin sections by special staining techniques.

It has been found unexpectedly that cilia persist at all stages of severe infection induced by many lethal doses of virus. In addition, histologic evidence has been obtained which suggests that the persistence of cilia is due to a selective involvement by the virus of only the non-ciliated epithelial cells.

These experiments indicate that interference with the ciliary mechanism is not a significant cause of the lowered resistance to pneumococcal pneumonia induced by influenza viral infection. Also, persistence of cilia under these extreme conditions of influenza viral infection of the mouse suggests that the milder respiratory viral infections of human beings probably do not result in significant impairment of the ciliary mechanism.

Danforth Chapel Dedicated Off Main Lobby of Barnes

The new Danforth Chapel, presented by William H. Danforth for the Danforth Foundation, was dedicated on the morning of November 20, with Methodist Bishop Ivan Lee Holt presiding. Located off the main lobby of Barnes Hospital, it will be much more accessible to patients and visitors than the former chapel on the third floor, which is to be converted into a convalescent ward.

Mr. Danforth, chairman of the board of the Ralston Purina Co., presented the key of the chapel to Mr. Albert M. Keller, chairman of the Barnes Board of Trustees. Mr. Danforth asked that the chapel "be available for use by all creeds for services of worship and quiet communion with God."

After presentation of the key, which was witnessed by about 75 persons, Mr. Keller opened the doors to the chapel, where more than 50 persons crowded in to hear Bishop Holt conduct the dedication ceremonies. The Rev. George A. Bowles, chaplain for the hospital, assisted Bishop Holt.

The altar was designed around a copy of the painting, "Christ in Gethsemane." The copy was painted by William Howard French of Ferguson from the original in Riverside Baptist Church, New York. Pews will seat 44 persons and there is space for four wheel chairs. Furnishings and woodwork are of oak and a small electric organ has been installed. The doorway and two art glass windows are framed in Levanto marble to blend with trimming in the lobby of the hospital.

The official address of the Medical School is now 660 S. Kingshighway. Please let us know when your address is changed.
REPORT OF THE DORMITORY FUND CAMPAIGN

We haven’t yet reached the goal of $100,000 from the alumni—but we are gaining on it.

We now have total contributions and pledges amounting to $56,622.10 from 643 alumni. This is a substantial increase from last October’s report of $52,322.10 from 483 alumni. The average contribution now stands at $90.00. Many contributions of from $5.00 to $25.00 from recent graduates have helped swell the total.

Mr. Spencer T. Olin volunteered a contribution of $5,000. Mrs. Grace Akin has given $1,000 and Mr. William Akin, $500. These gifts have been unsolicited and illustrate the interest that friends of the Medical School have in the project.

A special contribution of $50,000 has been given by Miss Mary G. Reber, to be used for a non-medical library in the new Student Dormitory Center. This fine gift by Miss Reber will make possible a very important feature of the Student Center, and her gift will undoubtedly stimulate the entire project.

Other potential contributors can be approached when the alumni have reached their $100,000 goal.

Please observe the picture of Vanderbilt Hall, the fine dormitory at Harvard Medical School, which is printed on the next page. Plans are being drawn up which will combine the best features of Vanderbilt Hall and of Bard Hall at Columbia University College of Physicians and Surgeons, and which will include additional features that represent important advances in the planning of student dormitory centers.

There are still almost 2,300 alumni to be heard from, and I am sure that they will not let us down.

Please send your check in now so that your name may be added to the roster of contributors listed below.

Samuel B. Grant
Chairman

Medical Student Dormitory Fund Contributors from Each Class

1950—Living Graduates, 85
Joseph D. O’Keefe, Nashville, Tenn.

1949—Living Graduates, 96
Eugene W. Pearce, Washington, D. C.
Russell D. Sheldon, Kansas City, Mo.

1948—Living Graduates, 89
Virgil R. Bleisch, Boston, Mass.
Walter A. Fernau, Jr., Cincinnati O.
David A. Guterman, Elgin, Ill.
Hugh R. Harting, St. Louis
Richard F. Huck, Jr., St. Louis
Juro L. Shintani, Perry Point, Md.

1947—Living Graduates, 98
Charles G. Clay, Rantoul, Ill.
Marvin Cornblath, St. Louis
William C. Dunckel, Charlottesville, Va.

Helen Hofsommer Glaser, St. Louis
Burnet W. Peden, St. Louis
Virginia H. Peden, St. Louis

1946—Living Graduates, 86
Gladden V. Elliott, Richmond Heights, Mo.
James O. Owen, Jr., Skiatook, Okla.
Theodore J. H. Smith, Temple, Tex.
Frank Vellios, St. Louis
Leonard J. Wiedershine, Aurora, Colo.

1945—Living Graduates, 105
Jay O. Gibson, French Camp, Calif.
Samuel B. Guze, Newington, Conn.
John T. Johnstone, Jr., St. Louis
Donald E. Kilker, St. Louis
Louis O. Lambiotte, Salt Lake City, U.
Ceylon S. Lewis, Jr., Salt Lake City
Roscoe Maxwell, Punta Gorda, Fla.
George W. Prothro, Clovis, N. Mex.
Eugene E. Taylor, Mocksville, N. C.
John W. Ubben, Staunton, Ill.
Gary B. Wood, St. Louis

1944—Living Graduates, 95
Guy D. Callaway, Jr., Seattle, Wash.
Albert B. Eisenstein, St. Louis
J. K. Frost, Centralia, Ill.
Robert D. Lange, Kirkwood, Mo.
Clayton H. Manry, Syracuse, N. Y.
Francis E. Pennington, St. Louis
H. H. Perman, Forest City, Ia.
John J. Rupp, Tucson, Ariz.
David E. Smith, St. Louis
Roy A. Walther, Jr., Overland, Mo.

1943—(March)—Living Graduates, 105
DeWayne C. Anderson, Stanhope, Ia.
Grace E. Bergner, St. Louis
Raymond M. Charnas, St. Louis
David Feldman, St. Louis
Harlan L. Firminger, Bethesda, Md.
Melvin L. Goldman, St. Louis
H. Clagett Harding, Portland, Ore.
F. C. Lawrence, Bartlesville, Okla.
Ira W. Liebner, Brooklyn, N. Y.
Eichi Masunaga, T. H.
<table>
<thead>
<tr>
<th>Year</th>
<th>Living Graduates</th>
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Ewald W. Busse, Denver, Colo.  
Frances M. Love, Richland, Wash.  
C. Barber Mueller, St. Louis  
William G. Reese, Perry Point, Md.  
Herman Rice, Temple, Tex.  
Frank O. Shobe, St. Louis  
George L. Watkins, Farmington, Mo. |
| 1941 | Robert J. Cook, St. Louis  
Jane Matthews Day, Montgomery, Ala.  
Charles E. Fildes, Poplar Bluff, Mo.  
B. W. Finkel, St. Louis  
Peter O. Fleming, Topeka, Kan.  
Anne T. Goetsch, Berkeley, Calif.  
Samuel W. Gollub, St. Louis  
Leon Kahn, Beverly Hills, Calif.  
Geo. Bruce Lemmon, Springfield, Mo.  
Harold E. McCann, E. St. Louis  
V. A. Mueller, Wichita, Kan.  
C. A. Nielsen, Seattle, Wash.  
Joseph W. Noah, St. Louis  
Carol H. Rehm, Los Angeles, Calif.  
Allan M. Rossen, Los Angeles, Calif.  
William L. Topp, Seattle, Wash.  
Mitchell Yanow, Clayton, Mo. |
| 1940 | Robert R. Anschuetz, Alton, Ill.  
Donald S. Bottom, Alton, Ill.  
Seymour Brown, St. Louis  
Russell J. Crider, St. Charles, Mo.  
Roland R. Cross, Hines, Ill.  
A. T. Esslinger, St. Louis  
L. R. Fernandez, Laupahoehoe, T. H.  
James M. Foerster, Wausau, Wis.  
Otto H. Grunow, St. Louis  
R. N. Hirst, Ogden, Utah  
Robert H. Johnson, Tulsa, Okla.  
Robert E. Koch, St. Louis  
James Mann, Boston, Mass.  
Gordon F. Moore, Alton, Ill.  
Charles G. Obermeyer, St. Louis  
Willard D. Rowland, Portland, Ore. |
| 1939 | Alfred K. Baur, St. Louis  
Irving L. Berger, Cleveland, Ohio  
Vilray P. Blair, Jr., St. Louis  
Leo J. Blum, Jr., Warner Robins, Ga.  
Joseph Borenstine, Kansas City, Mo.  
Sidney S. Boyers, W. New York, N. J.  
Mark J. Brockbank, Petaluma, Calif.  
Heinz E. Cron, San Francisco, Calif.  
William B. Hildebrand, Menasha, Wis.  
Leonard H. Jacobson, Miami Beach, Fla.  
Benjamin Milder, St. Louis  
Edward H. Reinhard, St. Louis  
Minton D. Ritter, Margate City, N. J.  
R. J. Roscow, Evansville, Ind.  
Gerald A. Slusser, Silver City, N. Mex.  
O. W. Towers, St. Charles, Mo. |
| 1938 | Harry A. Baers, North Hollywood, Calif.  
G. W. Blankenship, Anderson, Mo.  
Robert D. Brookes, St. Louis  
Margaret A. Carter, St. Louis  
Adolph H. Conrad, Jr., St. Louis  
Marion J. Dakin, Los Angeles, Calif.  
Lawrence M. Kotner, St. Louis  
Harry Mantz, Alton, Ill.  
Robert G. Moles, Hanford, Calif.  
Anthony Piraino, Oberlin, Ohio  
Joseph H. Pollock, Los Angeles, Calif.  
Philip Rosenblatt, New York, N. Y.  
Samuel Schultz, Clayton, Mo.  
Roy W. Thomas, Redding, Calif. |
| 1937 | Samuel Brady, Gary, Ind.  
Paul A. Brenner, Owensville, Mo.  
G. L. Calvy, Cleveland, Ohio  
R. G. Carter, Austin, Tex.  
Martin A. Compton, Richmond, Va.  
John R. Connell, Denver, Colo.  
Samuel M. Day, Jacksonville, Fla.  
J. M. Dougall, Houston, Tex.  
J. A. Fiorito, New Haven, Conn.  
William H. Gray, Yakima, Wash.  
Carroll W. Huffman, Los Angeles, Calif.  
Arthur A. Kaplan, Utica, N. Y.  
Robert C. Kingsland, St. Louis |
<table>
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<tr>
<th>Year</th>
<th>Living Graduates</th>
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<tbody>
<tr>
<td>1936</td>
<td>102</td>
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<td>1935</td>
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<td>1934</td>
<td>88</td>
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<tr>
<td>1933</td>
<td>89</td>
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</tbody>
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**1936—Living Graduates, 102**

- James H. Bryan, St. Louis
- F. R. Crouch, Farmington, Mo.
- Norman W. Drey, St. Louis
- Stephen Ellis, Coffeyville, Kan.
- Curtis H. Epps, Springfield, Mo.
- John L. Horner, St. Louis
- W. H. Jacobson, Canton, Ohio
- Nathan R. Kahn, Brooklyn, N. Y.
- George M. Klingner, Springfield, Mo.
- Vernon Lundmark, Seattle, Wash.
- Frank McDowell, St. Louis
- James D. Morrison, Billings, Mont.
- R. A. Nussbaum, St. Louis
- Samuel Schneider, St. Louis
- William L. Sellers, Jr., Mobile, Ala.
- E. H. Trowbridge, Jr., Kansas City, Mo.
- Michael S. Wepprich, Washington, Mo.
- Warren B. West, Ogden, Utah
- Robert A. Wise, Houston, Tex.

**1935—Living Graduates, 88**

- K. M. Amlin, Honolulu, T. H.
- I. J. Flance, St. Louis
- Heinz Haffner, St. Louis
- Alfred W. Harris, Dallas, Tex.
- A. Herman Hutto, St. Louis
- Norman M. Johnson, Clarinda, Iowa
- Jacob Katzoff, Brooklyn, N. Y.
- Bruce Kenamore, St. Louis
- Kenneth V. Larsen, St. Louis
- Ellen S. Loeffel, St. Louis
- Edward Massie, St. Louis
- Sidney Messer, Venice, Calif.
- Laurence G. Pray, Fargo, N. D.
- David Rothman, St. Louis
- Bernard Schwartzman, St. Louis
- Ben H. Senturia, St. Louis
- A. J. Steiner, St. Louis
- David O. Weiner, Brooklyn, N. Y.
- Irvin Weisman, Granite City, Ill.

**1934—Living Graduates, 88**

- Helen M. Aff, St. Louis
- Edmund B. Alvis, St. Louis
- James M. Baker, Columbia, Mo.
- Garvey Bowers, Kokomo, Ind.
- Eugene M. Brickner, St. Louis
- Everett S. Caldemeyer, Washington, D. C.
- T. C. Campbell, New Orleans, La.
- David Friedman, Granite City, Ill.
- Ben I. Frissell, Phoenix, Ariz.
- Paul O. Hagemann, St. Louis
- Stanley Hampton, St. Louis
- Dorothy J. Jones, St. Louis
- Ralph R. Jones, Boise, Idaho
- Morris D. Marcus, St. Louis
- M. Norman Orgel, St. Louis
- H. D. Rosenbaum, St. Louis
- John A. Saxton, St. Louis
- Edna Schrick, Oakland, Calif.
- James G. Telfer, Chicago, Ill.

**1933—Living Graduates, 89**

- Henry C. Allen, St. Louis
- James W. Bagby, St. Louis
- Russell J. Blattner, Houston, Tex.
- Cecil M. Charles, St. Louis
- Lee W. Dean, Jr., St. Louis
- Truman G. Drake, St. Louis
- Wallace D. English, Cardwell, Mo.
- Charles H. Flynn, Clarinda, Ia.
- George E. Grim, Kirkville, Mo.
- Carl G. Harford, St. Louis
- John R. Haslem, Terre Haute, Ind.
- W. W. Herman, Cleveland, Ohio
- Joseph C. Jaudon, St. Louis
- F. Craig Johnson, Denver, Colo.
- A. A. Loverde, Chicago, Ill.
- R. R. Merrell, Pocatello, Idaho
- Alvin R. Miller, Seattle, Wash.
- Louis A. Motchan, Beverly Hills, Calif.
Charles Oderr, New Orleans, La.
Lyman K. Richardson, New Orleans, La.
J. F. Roufa, St. Louis
Richard Y. Sakimoto, Honolulu, T. H.
Robert S. Smith, Boise, Idaho
Robert T. Terry, Nashville, Tenn.
R. M. Van Mtre, Oklahoma City, Okla.
Lawrence M. Wilson, Olympia, Wash.
J. J. Wimp, Kirksville, Mo.
Frank G. Zingale, St. Louis
George E. Zukovich, San Diego, Calif.

1932—Living Graduates, 85
Harry Agress, St. Louis
Sim F. Beam, St. Louis
Brian B. Blades, Washington, D. C.
Louis T. Byars, St. Louis
B. S. Clark, Spearfish, S. D.
William Ehrlich, Newark, N. J.
Leo Gottlieb, St. Louis
Kikoshi Inouye, Honolulu, T. H.
D. H. Kaump, Detroit, Mich.
Paul H. Lefkowitz, Spring Valley, N. Y.
William H. Meinberg, St. Louis
Carl V. Moore, St. Louis
Paul B. Nutter, Spokane, Wash.
Sydney S. Pearl, Elizabeth, N. J.
C. O'Neil Rich, Salt Lake City, Utah
Wendell G. Scott, St. Louis
Don J. Silsby, Springfield, Mo.
Barrett L. Taussig, St. Louis
Dwight H. Towbridge, Fresno, Calif.
Sam R. Wallis, Kauai, T. H.
Helman C. Wasserman, St. Louis
John C. Wilson, San Jose, Calif.
Irving Wyle, Brooklyn, N. Y.

1931—Living Graduates, 73
Delevan Calkins, St. Louis
E. W. Cannady, E. St. Louis, Ill.
Joseph Cieri, Piedmont, Calif.
D. B. Elrod, Cape Girardeau, Mo.
A. W. Hankwitz, Milwaukee, Wis.
W. E. Keiter, Kinston, N. C.
Morris Krutchkoff, San Francisco, Calif.
Mary Louise Newman, Jacksonville, Ill.
Max Magnes, Paterson, N. J.
H. R. McCarroll, St. Louis
Robert F. Monroe, Louisville, Ky.

1930—Living Graduates, 76
Harold S. Bowman, Wichita, Kan.
M. A. Brennecke, Waimea, Kauai, T. H.
J. Paul Burgess, Hyrum, Utah
M. A. Diehr, St. Louis
Donald E. Eggleston, Macon, Mo.
Virgil O. Fish, St. Louis
Herbert H. Gass, India
Joseph J. Gitt, St. Louis
Stanley Harrison, St. Louis
Alfred H. Hathcock, Fayetteville, Ark.
Walter M. Howard, Joplin, Mo.
James D. Horton, Springfield, Mo.
I. D. Newmark, Chester, Ill.

1929—Living Graduates, 71
Carl S. Bickel, Wheeling, W. Va.
Leslie C. Drews, Clayton, Mo.
A. W. Freshman, Denver, Colo.
Guerdan Hardy, St. Louis
Louis Kovitz, Kansas City, Mo.
Sidney Pakula, Kansas City, Mo.
Frank B. Queen, Portland, Ore.
A. P. Rowlette, Moberly, Mo.
Jay Marvin Salzman, Springfield, Ill.
A. Ford Wolf, Temple, Tex.

1928—Living Graduates, 69
A. N. Arneson, St. Louis
William Brewer, Hays, Kans.
Edward Burns, Toledo, Ohio
Justin J. Cordonnier, St. Louis
Ronald F. Elkins, Springfield, Mo.
John S. Harter, Louisville, Ky.
H. R. Hildreth, St. Louis
Laurence L. Howard, Great Falls, Mont.
J. Ted Jean, St. Louis
R. D. Keper, Honolulu, T. H.
Guy N. Magnes, St. Louis
L. A. Malone, Terre Haute, Ind.
Earl L. Mills, Wichita, Kan.
John F. Patton, St. Louis
A. Victor Reese, St. Louis
Paul R. Rollins, Seattle, Wash.
Verne Ross, Stockton, Calif.
W. A. Ruch, Memphis, Tenn.
O. G. Schniedewind, New Athens, Ill.
B. Wright Shelton, Miami, Okla.
David M. Skillling, St. Louis
<table>
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<th>Year</th>
<th>Living Graduates</th>
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| 1927 | Everett C. Drash, Charlottesville, Va.  
A. C. Fortney, Fargo, N. D.  
Paul H. Guttman, Sacramento, Calif.  
Alfred G. Henrich, Los Angeles, Calif.  
Irene A. Koeneke, Halstead, Kans.  
C. H. Leslie, Kirkwood, Mo.  
W. R. Merrell, Brigham City, Utah  
Alfred J. Metscher, Enid, Okla.  
Kazuo Miyamoto, Honolulu, T. H.  
Eugene O. Parsons, Kansas City, Mo.  
Willard C. Schwartz, Manhattan, Kan.  
Abigail E. Smith, Lexington, Mass.  
Frances H. Stewart, St. Louis  
Richard T. Taylor, Los Angeles, Calif.  
Louis L. Tureen, St. Louis  
Franklin Walton, St. Louis  
W. B. Wilcoxen, Bowling Green, Mo.  
George S. Wilson, Enid, Okla. |
| 1926 | Reno A. Ahlvin, Kankakee, Ill.  
Herbert Anderson, Los Angeles, Calif.  
Willard Bartlett, Jr., St. Louis  
James L. Benepe, St. Paul, Minn.  
H. M. Chandler, Waipahu, T. H.  
Eric A. Cunningham, Louisiana, Mo.  
Max Deutch, St. Louis  
Andy Hall, Jr., St. Louis  
William M. James, St. Louis  
William B. Kountz, St. Louis  
John G. Manning, McMinnville, Ore.  
G. Wendell Olson, Fullerton, Calif.  
Walter R. Peterson, Trenton, N. J.  
Bernard Rand, New York City  
Henry A. Romberg, Oshkosh, Wis.  
J. C. Schmidtke, Elgin, Ill.  
E. H. Theis, Granite City, Ill. |
| 1925 | George P. Bailey, Lakewood, Colo.  
Robert J. Crossen, St. Louis  
H. M. Denny, Union, Mo.  
James J. Donohue, E. St. Louis, Ill.  
B. Y. Glassberg, St. Louis  
A. E. Hiebert, Wichita, Kan.  
Richard K. Kimmel, St. Louis  
James I. Knott, San Diego, Calif.  
S. D. Soule, St. Louis  
Jerome S. Levy, Little Rock, Ark.  
Joseph Magidson, St. Louis  
Carl H. Matthey, Davenport, Iowa  
Sam J. Roberts, Miami, Fla.  
Melvin A. Roblee, St. Louis  
Roland A. Slater, Peoria, Ill.  
Winton T. Stacy, Fort Sill, Okla.  
R. O. Stickler, Kirksville, Mo.  
Gershom J. Thompson, Rochester, Minn.  
Hugo O. Wagner, Great Lakes, Ill. |
| 1924 | Alfred O. Adams, Spokane, Wash.  
Roy F. Baskett, Texarkana, Tex.  
J. William Beckmann, New York, N. Y.  
Harry J. Davis, Topeka, Kans.  
Charles Drabkin, Los Angeles, Calif.  
Perry E. Duncan, Springfield, Ill.  
George H. Garrison, Oklahoma City, Okla.  
H. V. Gibson, Great Falls, Mont.  
William B. Gnagi, Monroe, Wis.  
Scott Johnson, New York City  
Louis H. Jorstad, St. Louis  
Elizabeth E. Koppenaal, Elmhurst, Ill.  
A. E. Meinert, Winona, Minn.  
E. B. Pfefferkorn, Oshkosh, Wis.  
Reuben M. Smith, St. Louis  
O. Earl Whitsell, St. Joseph, Mo. |
| 1923 | Oliver Abel, Jr., St. Louis  
William G. Becke, St. Louis  
William L. Bradford, Rochester, N. Y.  
James Barrett Brown, St. Louis  
Ben M. Bull, Ironton, Mo.  
I. Z. Davidoff, Milwaukee, Wis.  
Walter J. Decker, Westfield, Pa.  
George V. Feist, Kansas City, Mo.  
Ben D. Senturia, Chicago, Ill.  
Charles Teel, Bellingham, Wash.  
J. Wm. Thompson, St. Louis  
Clair O. Vingom, Madison, Wis. |
Calvin Clay, St. Charles, Mo.  
James B. Costen, St. Louis  
Aphrodite J. Hofsommer, Webster Groves, Mo. |
Armin C. Hofsommer, Webster Groves, Mo.
Kirby A. Martin, New York, N. Y.
F. E. Sultzman, Hannibal, Mo.
1921—Living Graduates, 42
Lester J. Evans, Jackson Heights, N. Y.
J. C. McKitterick, Burlington, Iowa
Harvey S. Rusk, Pueblo, Colo.
Oscar C. Zink, St. Louis
1920—Living Graduates, 39
Robert L. Andiae, Louisiana, Mo.
Clifton H. Briggs, Pasadena, Calif.
Alfred Goldman, St. Louis
Samuel B. Grant, St. Louis
Guy H. Hopkins, Pueblo, Colo.
William A. Hudson, Detroit, Mich.
W. N. Jenkins, Port Gibson, Miss.
Frederick E. Jostes, St. Louis
P. H. Kennedy, Hubbard, Ohio
Herman M. Meyer, St. Louis
L. J. Owen, Lincoln, Neb.
M. G. Peterman, Milwaukee, Wis.
Royal W. Rudolph, Tucson, Ariz.
H. W. Wellmerling, Bloomington, Ill.
Harvey Lester White, St. Louis
1919—Living Graduates, 45
Duff S. Allen, St. Louis
S. P. Funkhouser, Lake County, Calif.
Howard H. Heuston, Boulder, Colo.
Fred J. Hodges, Ann Arbor, Mich.
Carl O. Kohlbury, Duluth, Minn.
Marriott T. Morrison, Mt. Horeb, Wis.
E. H. Munro, Grand Junction, Colo.
Raymond L. Murdoch, Oklahoma City, Okla.
Howard A. Plank, New York, N. Y.
A. B. Raffl, Syracuse, N. Y.
R. P. Roantree, Elko, Nev.
A. L. Walter, Sedalia, Mo.
1918—Living Graduates, 26
Glover H. Copfer, St. Louis
Wilbur G. Gillett, Wichita, Kan.
Elmer N. Liljedahl, Hollywood, Calif.
Arthur G. Mahle, Chicago, Ill.
J. F. Pessel, Trenton, N. J.
O. Sundwall, Murray, Utah
James A. Tesson, Kansas City, Mo.
1917—Living Graduates, 25
Archie A. Skemp, La Crosse, Wis.
J. E. Wattenberg, Cortland, N. Y.
1916—Living Graduates, 13
E. L. Dallwig, Milwaukee, Wis.
Earl C. Sage, Omaha, Neb.
Ray T. Woolsey, Salt Lake City, Utah
1915—Living Graduates, 20
D. K. Rose, St. Louis
J. E. Strode, Honolulu, T. H.
W. T. Wilkening, Fort Scott, Kans.
1914—Living Graduates, 8
O. F. McKittrick, Linglestown, Pa.
John T. McLarney, Brookfield, Mo.
1913—Living Graduates, 20
F. O. Kettelkamp, Colorado Springs, Colo.
1912—Living Graduates, 30
C. F. DeGaris, Oklahoma City, Okla.
Roy G. Empson, Valmeyer, Ill.
Edwin C. Ernst, St. Louis
George S. Gilpin, Cleveland, O.
W. N. O'Bannon, New Madrid, Mo.
Wells C. Reid, Goodrich, Mich.
A. P. Erich Schulz, St. Charles, Mo.
George L. Watkins, Farmington, Mo.
1911—Living Graduates, 20
Thomas M. Davis, St. Louis
Clyde P. Dyer, St. Louis
William H. Pickel, Denver, Colo.
Charles H. Hecker, Palo Alto, Calif.
1910—Living Graduates, 40
Stanley S. Burns, St. Louis
Robert M. Hardaway, Wheatridge, Colo.
John P. Keim, St. Louis
Peter G. Moskop, St. Louis
Claude D. Pickrell, St. Louis
Frederick O. Schwartz, St. Louis
1909—Living Graduates, 29
James W. Barrow, Carbondale, Ill.
Carey B. Elliott, Raton, N. Mex.
W. N. Pugh, Salt Lake City, Utah
Richard S. Weiss, St. Louis
1908—Living Graduates, 29
W. A. Olds, Colville, Wash.
O. J. Raeder, Boston, Mass.
1907—Living Graduates, 28
C. C. Nash, Dallas, Tex.
Grandison D. Royston, Hope, Ark.
Llewellyn Sale, St. Louis
Raymond M. Spivy, St. Louis

1906—Living Graduates, 33
Martin J. Glaser, St. Louis
Arthur Gundlach, St. Louis
T. A. Lawler, Taylorville, Ill.
S. P. Martin, East Prairie, Mo.
S. B. McPheeters, Goldsboro, N. C.
William H. Smith, Colfax, Calif.

1905—Living Graduates, 30
Jerome E. Cook, St. Louis
Walter Fischel, St. Louis
Harry M. Griffith, Pasadena, Calif.
J. M. James, Henning, Ill.
O. W. Knewitz, East St. Louis

1904—Living Graduates, 31
Paul Baldwin, Kennett, Mo.
W. Q. Conway, Kalispell, Mont.
N. M. Freund, St. Louis
Harry L. Jones, Kansas City, Mo.
Roy P. Scholz, St. Louis
J. H. Woodbridge, Pueblo, Colo.

1903—Living Graduates, 20
A. H. Myerdick, Mt. Pleasant, Iowa
Clive D. Scott, Louisiana, Mo.

1902—Living Graduates, 22

1901—Living Graduates, 14
Walter C. G. Kirchner, St. Louis

1900—Living Graduates, 2

1899—Living Graduates, 34
J. C. Caldwell, Wellington, Kans.
C. L. Lawless, Marshall, Mo.
R. O. Raymond, Flagstaff, Ariz.
Selden Spencer, St. Louis

1898—Living Graduates, 27
J. G. W. Fischer, Alma, Mo.
R. B. H. Gradwohl, St. Louis
John Q. Roane, Carlyle, Ill.

1897—Living Graduates, 21
Theodore Greiner, St. Louis
Frederick E. Woodruff, St. Louis

1896—Living Graduates, 21

1895—Living Graduates, 21
H. A. Getz, Monterrey, N. L., Mexico
Sandor Horwitz, Peoria, Ill.
Robert J. Terry, St. Louis

1894—Living Graduates, 13

1893—Living Graduates, 12
Andrew Darling, St. Louis
R. Clarence Stephens, Plymouth, Ind.

1892—Living Graduates, 4

1891—Living Graduates, 15

1890—Living Graduates, 6

1889—Living Graduates, 6

1888—Living Graduates, 2

1887—Living Graduates, 3

1886—Living Graduates, 3

1885—Living Graduates, 2

E. F. Ellis, Fayetteville, Ark.

1884—Living Graduates, 2

1883—Living Graduates, 2

W. A. Fries, St. Louis

1882—Living Graduates, 1

1881—Living Graduates, 3

James A. Dickson, St. Louis
Willis Hall, St. Louis

1880—Living Graduates, 2

OTHER DONORS

Mrs. T. R. Akin, Clayton, Mo.
Harry L. Alexander, M.D., St. Louis
Robert W. Bartlett, M.D., St. Louis
Leon Bromberg, M.D., St. Louis
J. J. Bronfenbrenner, Ph.D., St. Louis
Samuel C. Bukantz, M.D., St. Louis
Martin M. Calodney, M.D., St. Louis
Benjamin H. Charles, M.D., St. Louis
Drs. Carl F. and Gerty T. Cori, St. Louis
Gustave J. Dammin, M.D., St. Louis
Morris Davidson, M.D., St. Louis
Hallowell Davis, M.D., St. Louis
Joseph C. Edwards, M.D., St. Louis
Ben Eiseman, M.D., St. Louis
Robert Elman, M.D., St. Louis
Robert J. Glaser, M.D., St. Louis
Harry N. Glick, M.D., St. Louis
Drs. Everts and Helen Tredway Graham, St. Louis
G. E. Gruenfeld, M.D., St. Louis
Miss Helen D. Harkness, St. Louis
Leopold Hofstatter, M.D., St. Louis
Alex H. Kaplan, M.D., St. Louis
John Esben Kirk, M.D., St. Louis
Paul E. Kubitschek, M.D., St. Louis
K. Cramer Lewis, St. Louis
Grover Liese, M.D., St. Louis
Robert G. Loeffel, St. Louis
Wallace Renard Bequests $600,000 for Neuropsychiatric Hospital

A bequest of about $600,000 was given to Washington University in the will of Wallace Renard, board chairman of the Renard Linoleum and Rug Company of St. Louis, for establishment of a neuropsychiatric hospital.

The will provides that an additional $600,000 must be obtained by the University or state agencies for the hospital. If the University fails to agree within two years to build the hospital, the School will lose the bequest.

Under terms of the will, Mr. Renard gave to the University as part of the Wallace and Lucille K. Renard Endowment the difference between $500,000 and the aggregate of all gifts he had made previously to that endowment. He had given $406,895 previously to the endowment, thus making the latest bequest about $100,000.

A Renard Hospital fund was created by the will, to which Mr. Renard gave common stock in his company valued at $350,000. The $350,000 hospital fund and $250,000 from the Renard Endowment make up the $600,000 for the proposed new hospital, to be known as the Renard Hospital as a memorial to Mr. and Mrs. Renard. She died April 14, 1950, and he died last November 2.

Mrs. Oscar Johnson Pledges Gift of $240,000 to Rehabilitation Center

A pledge to give 6000 shares of International Shoe Company capital stock, valued at about $240,000, toward the rehabilitation center of the Medical School was made by Mrs. Oscar Johnson on December 7.

The proposed $1,100,000 rehabilitation center is to be built in the medical center at the southwest corner of Euclid and Audubon avenues, and is to house the departments of occupational and physical therapy and research laboratories in these fields.

Mrs. Johnson's contribution is made in consideration of gifts by others within the next five years. If supplementary funds have not been raised by January 1, 1956, the money is to be used to support, maintain and develop Oscar Johnson Institute.

Mrs. Johnson presented the pledge to Dr. Arthur H. Compton at her home, 38 Portland Pl. Also present was her son, Mr. James Lee Johnson, who is chairman of the University committee seeking funds for the center.

Plans for the proposed center have been made with the counsel of Dr. Howard Rusk, director of the rehabilitation center at New York University - Bellevue Medical Center.
R. A. MOORE RESIGNS AS PATHOLOGY HEAD; GUSTAVE DAMMIN APPOINTED TO POST

Chancellor Arthur H. Compton announced on November 22 the resignation of Dr. Robert A. Moore as head of the Department of Pathology in the School of Medicine, and the appointment of Dr. Gustave J. Dammin to succeed him. Dr. Moore has found it necessary to relinquish administrative duties in the pathology department to devote more time to his duties as Dean.

Effective December 1, Dr. Dammin is designated within the School as acting head of the department under his present rank of associate professor. On July 1, 1951, he will be promoted to the rank of professor of pathology and appointed head of the department. Dr. Dammin joined the staff of Washington University in September, 1946, as assistant professor of medicine and pathology. He has been director of central laboratories at Barnes Hospital since that time and will retain that title and position. Dr. William J. Harrington has been appointed instructor in medicine and associate director of the laboratories to assist Dr. Dammin.

Dr. Moore made the following statement: “It has become increasingly difficult for me to act both as head of the Department of Pathology and Dean. Hence, in recognition of the importance of the headship of a department, I have resigned that position. However, I expect to continue to devote some time, about two days a week, to teaching in pathology as the Edward Mallinckrodt professor of pathology. Dr. Dammin, as head of the department, will be able to devote full time to development of the department and supervision of the activities.”

Dr. Moore came to Washington U. from Cornell University in 1939 to be head of the pathology department. He was appointed acting dean of the School in 1946, and dean in July, 1947.

Dr. Dammin received his M.D. degree from Cornell University in 1938. He interned at Johns Hopkins Hospital, and served as resident at Peter Bent Brigham Hospital in Boston in 1940. He was instructor in pathology at Columbia University College of Physicians and Surgeons in 1940-41.

From 1941 to 1946, when he joined W. U., Dr. Dammin served with the U. S. Army. He was commanding officer of the Puerto Rican Department Laboratory in 1943 and executive officer and parasitologist for the Dysentery Commission in the India-Burma Theater in 1944, receiving the Legion of Merit for work in the latter capacity. He was director of the laboratory division, office of the Surgeon General of the U. S. Army in 1945-46, and served on an influenza mission to Germany in 1946. Dr. Dammin has remained a consultant to the office of the Surgeon General since 1946.

Dr. Dammin holds membership in several professional and honorary societies, and is president of the St. Louis Pathological Society and the Washington University Medical Society.
Anatomy
A scientific exhibit on “Aging and Arteriosclerosis” by Drs. Albert I. Lansing, Theodore Rosenthal and Morris Alex was awarded honorable mention during the Southern Medical Association meeting in St. Louis, Nov. 13-16.

A research contract between the Medical School and the U.S. Army was the subject of an interview and conference by Dr. Mildred Trotter with the Office of Quartermaster General in Washington, D.C., on Oct. 25. This research project is attempting to determine formulae for estimating the stature of individuals from long bone measurements, and statistics from army records are being used in this connection.

Bacteriology
A bronze medal from the American Society of Clinical Pathologists was awarded to Dr. Philip L. Varney and Dr. Theodore Weichselbaum for their exhibit on the determination of electrolytes by flame photometry, which was shown at the Society meetings in Chicago, Oct. 16-20.

A contract has been negotiated between the Medical School and the Naval Radiological Defense Laboratory in San Francisco for the continuation of research by Dr. I. L. Schechmeister on the relationship of irradiation to immunity, which he was studying when on the staff of the laboratory before joining the Medical School staff in the fall.

Biological Chemistry
Dr. Carl F. Cori attended a symposium on the biological aspects of mental health and disease sponsored by the Milbank Memorial Foundation in New York, Nov. 13-16. He was chairman of one of the sessions. On Nov. 25 and 26, he participated in a meeting of scientific advisors of the Massachusetts General Hospital in Boston.

Cancer Research
Dr. Christopher Carruthers, research associate in cancer, outlined animal investigations being undertaken here before a conference on investigative and clinical aspects of ACTH and cortisone in neoplastic diseases, which was part of the annual meeting of the American Cancer Society in New York on Oct. 23-29. He described experiences with animals using ACTH and/or adrenocortical steroids and outlined investigations from the physiological, metabolic, hematologic, enzymatic, etc., viewpoints.

A grant from the Kettering Foundation for cancer research under the direction of Dr. Edmund V. Cowdry, research professor, has been renewed for 1951 with an increase in the amount of the grant.

Internal Medicine
The United States Public Health Service recently announced a grant of $10,000 to Dr. Virgil Loeb, Jr., and Dr. Edward H. Reinhard for support of their studies on the factors influencing hematopoiesis.

Dr. Henry A. Schroeder, associate professor and chief of the section on hypertension, has been appointed spe-
cial consultant in aviation physiology to the U. S. Navy, and in this capacity attended a meeting of the panel on aviation medicine of the Research and Development Board, Department of Defense in Washington, D. C., Nov. 8 and 9. On Dec. 6, he spoke on newer concepts in the use of diuretic drugs at the interim session of the A.M.A. in Cleveland.

Dr. Drew Luten, associate professor emeritus of clinical medicine, addressed the regional conference of the Illinois Heart Association in Olney, Ill., on Oct. 25. He spoke on the management of congestive heart failure.

Dr. Paul O. Hagemann, ’34, assistant professor, addressed the St. Joseph (Mo.) Clinical Society Oct. 19 on newer concepts in arthritis.

Dr. Bernard Bercu ’44, instructor in medicine, returned the week of Oct. 16 after a month’s work observing the technique of cardiac catheterization under Dr. Lewis Dexter at Boston City Hospital.

Among those attending the Central Society for Clinical Research meetings in Chicago during October were Drs. John R. Smith, Jack Berry, and Hugh Waters. Dr. Smith was elected president of the Central Society Clinical Club which met just prior to the regular meetings.

Neuropsychiatry

Dr. Edwin F. Gildea and Dr. George H. Bishop attended a symposium sponsored by the Milbank Memorial Foundation in New York City, Nov. 13 to 16. Dr. Gildea spoke on ACTH and cortisone in psychoses, and Dr. Bishop, on the relationship of electrophysiology to neuropsychiatry. They discussed results of the symposium in a meeting with staff members of the Medical School on Nov. 29.

Dr. Saul Rosenzweig and Dr. Robert I. Watson have been appointed to the first panel of oral examiners on clinical psychology for the American Board of Examiners in Professional Psychology. They were appointed in early November and attended meetings in Chicago from Nov. 17 to 19 in their new capacities.

Obstetrics-Gynecology

Members of the Academy of General Practitioners of Missouri met at Delta Community Hospital in Sikeston, Mo., on Oct. 19 to hear two department members speak during a postgraduate course. Drs. Charles R. Gulick and Ralph B. Woolf discussed “Diagnosis and Treatment of Placenta Previa, Premature Separation of the Placenta” and “Amenorrhea, Etiology and Treatment,” respectively.

Otolaryngology

The Otosclerosis Study Group which met in Chicago on Oct. 7 elected Dr. Theodore E. Walsh as secretary-treasurer. Dr. Walsh spoke on the causes for failure in fenestration surgery during the meeting. Washington University alumni from postgraduate courses in otolaryngology met at a cocktail party Oct. 10 during meetings of the Academy of Otolaryngology and Ophthalmology in Chicago.

The Department was host to six visitors during October. Guests on the 6th
were Dr. A. Bustamante, professor of otolaryngology at the University of Mexico, and Dr. Pedro Berrvecos, also of Mexico City. Three English visitors on Oct. 16 were Gavin Livingstone of Oxford University; Henry Sharp of the Charing Cross Hospital in London; and Professor F. C. Armerod, professor at the Institute of Laryngology and Otolaryngology at the University of London. On Oct. 20, L. L. Salmon of Guy’s Hospital in London visited in the department.

Pathology
Four staff members of the School passed the pathological anatomy part of the American Board of Pathology examinations held at the Medical School on Oct. 13 and 14. They were Drs. Gustave J. Dammin, associate professor; Frank J. Dixon, assistant professor; David Smith and August C. Armanini, Jr., instructors. Dr. Robert A. Moore was re-elected secretary to the Board.

Pediatrics
Dr. Alexis F. Hartmann ’21, delivered the Brenneman Memorial Lecture at the University of Southern California School of Medicine in Los Angeles on Dec. 14 and 15. He spoke on “A Review of Carbohydrate Metabolism: Clinical Aspects”; and “Hypoglycemia in Infants and Children.” On Nov. 2, Dr. Hartmann spoke at Founder’s Day ceremonies for the Medical College of the State of South Carolina in Charleston on “Problems of Fluid Therapy.”

Drs. William Klingberg and David Goldring attended the regional meeting of the American Heart Association in Olney, Ill., on Oct. 25. Dr. Goldring spoke on rheumatic fever, and Dr. Klingberg, on the significance of cardiac murmurs in children.

Pharmacology
A fire of undetermined origin early on the morning of Sunday, Nov. 5, caused nearly $10,000 damage to the workshop of the Department on the east end of the third floor in the south building. Damage included the loss of $2300 worth of tools, furniture and other contents of the room.

A neighbor living next door to the Medical School reported hearing two explosions and saw flames shooting out the window after the second one. The room involved is a mechanical shop where departmental laboratory equipment is made and repaired.

Major replacement expense involved is for rebrickling and plastering walls and ceilings in the burned-out room and adjoining rooms and hallway. Included in the tools lost were a lathe, drill press, band saw, glass blowing assembly, work bench and other items.

Physiology
Dr. Harvey L. White ’20, attended the Josiah Macy, Jr., Foundation conferences on renal function, which were held in New York on Oct. 19. He presented a paper on “Some Endocrine Influences on Renal Function.”

Dr. Arnold H. Williams and Dr. E. F. Edinger presented a paper on “Acute Effects of Partial Constriction of the Renal Artery upon Renal Hemodynamics,” before the American Physio-
logical Society meeting in Columbus, Ohio, on Sept. 30.

**Preventive Medicine**

Work on research covered by four new grants was started during October in the department. Three of the grants are for work under Dr. Robert E. Shank '39, professor and chairman of the department. The Veterans Administration is supporting a study of hepatic diseases; a Nutrition Foundation grant is for the study of the role of ascorbic acid in conditioning the response of the adrenal cortex; and the Hoffman-La Roche Company is sponsoring investigations on niacin metabolism in tuberculous subjects as compared with normal humans. The fourth grant is for the study of the absorption and utilization of vitamin A by Dr. Albert I. Mendeloff, assistant professor, and also is supported by the Hoffman-La Roche Company.

**Surgery**

Dr. Evarts A. Graham received word in December that he has been made a foreign honorary member of the Royal Academy of Medicine of Belgium.

The Chicago Medical Society heard three papers by Dr. Robert Elman during meetings on October 4. He spoke on preoperative preparations for abdominal surgery, histological changes in the liver, and massive gastro-intestinal hemorrhage.

Dr. J. W. Bassett, assistant in surgery, is working with Dr. Ian Aird of the University of London on a Fulbright Scholarship. He is on leave of absence until about May 30, 1951.

A grant from the Commonwealth Fund for continued support of a study of neuro-endocrine and endocrine interrelations by Dr. Peter Heinbecker and his associates has been renewed for a three-year period beginning November 1, with an increase in the amount allotted for this research.

Dr. Lauren V. Ackerman attended the Therapeutic Trials Committee meeting of the A.M.A. in Washington on Nov. 16 and 17. Subject of the meeting was the study of steroid hormones.

Dr. Franklin E. Walton '27, was elected vice-chairman of the general surgical section of the Southern Medical Association at the annual meeting in St. Louis late in November.

**Dr. Eiseman Heads Postgraduate Studies; Announces New Courses**

Effective October 1, Dr. Ben Eiseman was appointed director of the Division of Postgraduate Studies in the School of Medicine, succeeding Dr. Merl Carson, who is now chief of Los Angeles Children's Hospital and professor of pediatrics at the University of Southern California.

Dr. Eiseman is instructor in surgery, and returned in October from a three-month tour of teaching and operating in Bangkok and the provinces of Siam.

The Postgraduate Division plans to offer two special courses in February and March. A course on "ACTH and Cortisone: Principles and Clinical Applications," will be presented on February 26 and 27; and one on "Electrocardiography: Interpretation and Principles of Standard and Unipole Techniques," on March 29 and 30.
Gerontological Society Holds Annual Meeting at School

Members of the Gerontological Society met at the Medical School for their third annual scientific meeting on November 12 and 13 to hear researchers report on 36 separate projects dealing with studies of old age.

The Gerontological Society is a national organization for research into the problems of aging.

Highlighting the meetings was a symposium on arteriosclerosis, which was conducted by Dr. Robert A. Moore, Dean, on Sunday morning. Members of the audience participated in free discussion following presentation of these papers: “Clinical Aspects,” by Dr. Paul D. White of Boston; “Experimental Renal Hypertension of Dietary Origin,” by Dr. W. Stanley Hartroft of Toronto, Canada; “A Review of Research on Lipfanogens and Antilipfanogen,” by Dr. Henry S. Simms of New York; “Lipid Metabolism,” by Dr. Forrest Kendall of New York; “Aging of the Arterial Wall,” by Dr. Albert I. Lansing; “Microscopic Anatomy of the Arterial Wall,” by Dr. Charles A. Woerner of Louisville, Ky.; and “Metabolism of Arterial Tissue,” by Dr. John Esben Kirk.

Presiding over the sessions on Sunday and Monday were Dr. Robert J. Havighurst of Chicago, Dr. Nathan W. Shock of Baltimore, Md., Dr. Robert A. Moore and Dr. Edmund V. Cowdry of the School of Medicine.

Dr. Moore was installed as president of the Society at a dinner held at Chase Hotel on Sunday evening. Dr. C. J. Van Slyke, retiring president, reported on his year in office. About 125 persons attended the Sunday sessions in the Medical School Auditorium. A conference on aging held Saturday, Nov. 11, preceded the regular sessions of the Society, and informal discussions among the 46 conferees were led by Dr. Albert I. Lansing.

W. U. Graduates in Wisconsin Hold Dinner at State Meeting

During the past year, Dr. W. C. Finn ’29 and Dr. James P. Conway ’30 organized a stag dinner for alumni of Washington University School of Medicine who practice in Wisconsin. They found that there are about 44 graduates in their state, and 18 of them were present at the University Club in Milwaukee on October 2, 1950, for the dinner, which was held during the State Medical Society’s annual convention.

Among those attending the dinner in addition to Drs. Conway and Finn were: Dr. Erwin Schmidt, professor of surgery at the University of Wisconsin; Dr. Joseph Gale, assistant professor of surgery at the University; Dr. M. G. Peterman of Milwaukee, professor of pediatrics at Marquette University; Dr. William Gnagi of Milwaukee; and Dr. Carl Neupert of the State Board of Health. A lot of old times were talked over and all those present enjoyed it so much that it was decided to hold a similar dinner next fall. Dr. Conway has agreed to arrange the details.
PUBLICATIONS OF THE FACULTY
October - December, 1950


Ackerman, L. V. Osteitis fibrosa cystica of the fibula. Cancer seminar (Penrose Cancer Hospital) 1: 20-21, October 1950.

Ackerman, L. V. Papillary adenoma of the colon. Cancer seminar (Penrose Cancer Hospital) 1: 6-7, October 1950.

Ackerman, L. V. Sclerosing adenosis of the breast. Cancer seminar. (Penrose Cancer Hospital) 1: 2-3, October 1950.

Ackerman, L. V. Thymoma. Cancer seminar (Penrose Cancer Hospital) 1: 22-23, October 1950.

Ackerman, L. V. Lipomelanotic reticular hyperplasia (dermatopathia) of lymph node. Cancer seminar. (Penrose Cancer Hospital) 1: 4, October 1950.


Brokaw, R., Briseno-Castrejon, & Finerty, J. C. Quantitative studies of cell types in the rat hypothysis following prolonged periods of unilateral adrenalectomy. Texas repts. on biol. & med. 8: 312-319, Fall 1950.


ALUMNI NEWS

1895

The annual conservation award of the St. Louis Audubon Society was presented to Robert J. Terry, professor emeritus of anatomy, on December 5. A silver cup and citation were given to Dr. Terry by Mr. Carl W. Buchheister of New York, who is vice-president of the National Audubon Society. The ceremony was held at Third Baptist Church.

The citation pointed out that Dr. Terry was one of the founders of the local Audubon Society in 1915, and has participated in conservation work for many years. It said: “He has put into practical effectiveness, on frequent occasions throughout the years, his basic principle that one of the best ways to promote conservation of our natural heritage is to further the understanding and enjoyment of nature.”

Dr. Terry was instrumental in establishing the sanctuary adjoining O’Fallon Park, and helped formulate revisions of state wildlife statutes. He worked with Otto Widmann and Rowena Clark on passage of the International Migratory Bird Treaty.

1902

Dr. Terry celebrated his 80th birthday on January 24.

E. T. Urban lives at 2166 Tower Grove Ave., in St. Louis.

1911

Thomas M. Davis can be reached now at 2422 N. Grand Blvd., in St. Louis.

1912

The address of Charles H. Burdick is 4434 S. Thomas Ave., Minneapolis, Minn.

1915

J. E. Strode is affiliated with The Clinic in Honolulu, Hawaii.

1918

George M. Polk is living in Lee’s Summit, Mo., at Box 3, Route 1.

1924

Col. Stuart G. Smith is now in Bethesda, Md., at 8611 Grant St.

Frank L. Abbey is at the Veterans Hospital in Wadsworth, Kans.

1926

Jake Walker is in Duncan, Okla., where his address is 1211 Hickory St.

Andy Hall, Jr., has offices in the University Club Bldg., St. Louis.
Herbert Anderson II has his office at 1136 W. 6th St., in Los Angeles, Calif.
Charles A. Shutz can be reached at 7002 Arlington Rd., Bethesda, Md.

1927
Robert C. Swisher lives at 6034 Lockton Lane, Mission, Kans.

1928
B. Wright Shelton is practicing in Miami, Okla.
O. G. Schneiderwind is in New Athens, Ill.
Ralph E. Dalton is in San Juan, Puerto Rico, where he can be reached at Box 2526.

1929
James D. Horton has offices in the Professional Bldg., Springfield, Mo.
J. Paul Burgess is in Hyrum, Utah.

1930
The address of Max Magnes is 555—15th Ave., Paterson, N. J.
Morris Krutchkoff lives at 105 Crestlake Dr., San Francisco.

1931
During the meeting of the Radiological Society of North America in Chicago, Dec. 10-15, Wendell G. Scott, associate professor of clinical radiology, gave the 16th annual Carman lecture in honor of Dr. Russell Carman. Dr. Carman was instructor in surgery in charge of actinography in the School of Medicine here from 1910 to 1913 before joining the Mayo Clinic staff. Dr. Scott spoke on “The Developments in Cardiovascular Radiology Pertaining to Angiography.”

1932
Charles H. Flynn is practicing in Clarinda, Ia.

1935
Bruce Kenamore recently moved his office to 457 N. Kingshighway in St. Louis.
Robert J. Budke’s latest address is 126 S. Main, St. Charles, Mo.
David O. Weiner has a recent address at 184 Joralemon St., Brooklyn, N. Y.

1936
Wallace E. Allen is living at 2700 Alvingroom Ct., in Oakland, Calif.

1937
R. G. Carter has an address at 1709 San Antonio St., Austin, Tex.
William J. Quinn has offices in the Bank of America Bldg., at Alturas, Modoc County, Calif.
Henry Huntley is with the West Virginia State Health Department in Charleston.

1938
V. F. Lowell is in Quincy, Ill., at 2054 Vermont Ave.
George A. Peck has offices in the Judge Bldg., Salt Lake City, Utah.
Louis H. Hempelmann is now in Rochester, N. Y., where he can be reached at 412 University Park.

1939
Robert E. Shank of the Medical School staff was appointed on November 30 by Gen. George Marshall to serve on a subcommittee on food and nutrition of the advisory board on health services of the American National Red Cross. Dr. Frederick Stare of Harvard University is chairman of the group.

1940
Joseph S. Summers’ office is in the Central Trust Bldg., Jefferson City, Mo.
Oakley K. Park is living at 11 Burchfield Apts., Tuscaloosa, Ala.
Robert H. Johnson is at 2020 S. Xanthus in Tulsa, Okla.

1941
Charles E. Fildes is at the Veterans Administration Hospital in Poplar Bluff, Mo.
Mitchell Yanow has his office at 35 N. Central, Clayton, Mo.
1942
Richard Preston is at 1402 W. 10th St.,
Santa Ana, Calif.
Hanes H. Brindley is in Memphis,
Tenn., where his address is 1336 Harbert
Ave.
H. Haynes Baird has offices in the
Doctor's Building at 1012 King's Dr.,
Charlotte, N. C.

1943
Stanley S. Kahn sends the following
information: he and Adeline B. Feidel-
son of Washington, D. C., were married
on July 23 and are living at 1912 Oxmoor
Rd., Birmingham, Ala. Dr. Kahn is prac-
ticing internal medicine and his office is
located at 811 S. 20th St., in Birmingham.
Harold Grant is on the staff of Vet-
erans Hospital, McKinney, Tex.
James H. Holt is living in Wichita,
Kans., and his address is 240 N. Broad-
view.
Gerald Guemmer now lives at 804 Com-
munity Dr., La Grange Park, Ill.
John M. Arthur recently moved to 224
W. Lanvale, Baltimore, Md.

1944
Warren H. Kempinsky is in the neu-ology department at Cincinnati (Ohio)
General Hospital.
H. H. Perman is in Forest City, Ia.
John Murphy is with the Dalles Clinic,
The Dalles, Ore.
J. E. Campbell is practicing in Moberly,
Mo.

1945
Barbara Shier is now in Passaic, N. J.,
at 585 Main Ave.
George W. Prothro can be reached at
708 Mitchell, Clovis, N. Mex.

1946
Gladden V. Elliott is living at 1054 E.
Linden, Richmond Heights, Mo.
Claude K. Leeper lives at 1 Raymar
Pl., Ferguson, Mo.

1947
Glenn Gibson lives at 181 Birch, Park
Forest, Ill.
Leon Stutzman and Mrs. Stutzman (the
former Margaret Morgan '47) make up a
husband-wife, military-civilian team at
Station Hospital, Camp Rucker, Ala. He
is a captain and general medical officer,
while she is in the receiving office with
primary duties of treating women and
children dependents of military per-
sonnel. Both were at Baltimore (Md.)
City Hospital when Capt. Stutzman re-
ceived his orders for active military duty.
Rosellen Cohnberg is in Monett, Mo.,
where her address is 215 4th St.
Jack A. Gregory is at Huntington
Memorial Hospital in Pasadena, Calif.

1948
Virgil Bleisch has an address at 221
Longwood Ave., in Boston, Mass.
David Johnson is at Duke University
Hospital, Durham, N. C.
In Memoriam

Presley Carr Lane died December 10, 1950, of infirmities at the age of 92 at his home, 5642 Kingsbury Pl., in St. Louis, after a year’s illness. He had practiced in St. Louis for more than 30 years, specializing in nose and throat diseases. He is survived by Mrs. Lane.

1890
George H. Beavers of Benjamin, Tex., is recently deceased, according to information received in the Alumni Office.

1915
I. L. Foulon, who had offices in the First National Bank Bldg., in E. St. Louis, Ill., passed away April 15, 1950.

1923
George H. Klinkerfuss, who had offices at 340 Bermuda Dr., in Normandy, Mo., passed away suddenly on December 10, 1950, following a cerebral hemorrhage. He had practiced in Normandy for 27 years and was 58 years old. Dr. Klinkerfuss was president of his graduating class, and was president of the Missouri Audubon Society in 1946. He passed away at St. Luke’s Hospital in St. Louis, where he was a staff member. He is survived by Mrs. Klinkerfuss, three daughters and three sons.


1935
John S. Poe of 108 E. 86th St., New York City, passed away May 21, 1950.

1940
Frank L. Davis, Jr., passed away December 16, 1950, of a heart ailment at his home, 330 Elmont Ave., Webster Groves, Mo. Dr. Davis was awarded the Silver Star medal in 1944 after supervising evacuation of casualties from the Normandy beachhead although he suffered from a broken back. Following transfer to England he continued to perform operations while in a plaster cast. He is survived by Mrs. Eleanor Davis, a daughter, Holly, and a son, Frank L. Davis III. His father is Dr. Frank L. Davis, Sr., ’04, of 6123 Westminster Pl., St. Louis.
WASHINGTON UNIVERSITY

Arthur H. Compton, Ph.D., Sc.D., LL.D., Bridge Chancellor
Charles Belknap, B.S., Vice-Chancellor
Leslie J. Buchan, Ph.D., Acting Dean of Faculties
Thomas Edward Blackwell, Ph.B., M.S., J.D.,
Director of Business Administration

The College of Liberal Arts
Thomas S. Hall, Ph.D., Dean

The School of Engineering
Lawrence E. Stout, Ph.D., Ch.E., Dean

The School of Architecture
Joseph D. Murphy, Dean

The School of Business and Public Administration
Leslie J. Buchan, Ph.D., Dean

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Otto W. Brandhorst, D.D.S., Dean

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Louise Knapp, R.N., B.S., A.M., Director

The School of Fine Arts
Kenneth E. Hudson, B.F.A., Dean

University College
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