January 1989

Part III: Clinical Departments and Divisions --- Chapter 17: Division of Endocrinology and Metabolic Diseases (pages 369-379)

Let us know how access to this document benefits you
Follow this and additional works at: http://jdc.jefferson.edu/wagner2

Recommended Citation
http://jdc.jefferson.edu/wagner2/17

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's Center for Teaching and Learning (CTL). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in Thomas Jefferson University - tradition and heritage, edited by Frederick B. Wagner, Jr., MD, 1989 by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: JeffersonDigitalCommons@jefferson.edu.
“We may, of course, strike a balance between what a living organism takes in as nourishment and what it gives out in excretions. . . . That could be like trying to tell what happens inside a house by watching what goes in by the door and what comes out by the chimney.”

—Claude Bernard (1813–1878)
early observations of therapeutic trials and the beginning of a long era of the use of cell extracts in an attempt at rejuvenation.

A Famous Last de Medici at Jefferson

Modern endocrinology had its birth in Europe, especially in France, where the “Father of American Endocrinology” trained under Brown-Sequard. Charles Eucharist de Medici Sajous (Figure 17-1) was born at sea and received his early education in France. He was a descendant of the Florentine de Medicis and the royal house of France. His father died when he was two years old, and his mother remarried; Charles adopted the name of his stepfather, Sajous. During his teens the family lived in Mexico and California. He matriculated at the Medical School of the University of California, transferred to Jefferson, and received the medical degree in 1878. His initial interest was in laryngology; he was appointed Clinical Lecturer at Jefferson (1883–1889) and in 1898 published Lectures on the Diseases of the Nose and Throat: Delivered During the Spring Session of Jefferson Medical College, a work dedicated to Samuel D. Gross, M.D.

In 1892 Sajous abandoned his practice and teaching positions for the study of internal secretions with Brown-Sequard in France. Following his return to Philadelphia in 1897, Sajous became Professor of Laryngology and Dean of the Faculty of the Medico-Chirurgical College. From 1910 to 1922 he was Professor of Applied Therapeutics at Temple University Medical College and, from 1921 until his death in 1929, Professor of Applied Therapeutics at the Graduate School of the University of Pennsylvania. When his physician son, Louis Theodore, also an endocrinologist, died three months before the father, it was the termination of the 900-year-old name of the Medici of Florentine history.

Dr. Sajous published the first American textbook of endocrinology in 1903, The Internal Secretions and the Principles of Medicine (in two volumes of 1,873 pages). He held office and membership in many medical and other activities, including the American Medical Editors’ Association (President, 1903), American Association for the Study of Internal Secretions (President, 1917), and American Therapeutic Society (President, 1919). He also authored the Annual of the Universal Medical Sciences (1888–1896), and the Sajous Analytic Cyclopaedia of Practical Medicine (60 volumes).

Dr. Sajous had a running battle with the physiologists and those who used the physiologic approach to the study of internal secretions. He believed that animal experimentation led to therapeutic incompetence. His major contributions were broad concepts and appreciation of the importance of internal secretions in health and disease. His specific observations were of lesser importance.

Spanning the decades at the turn of the century, Dr. Francis X. Dercum (Figure 17-2) (Clinical Professor of Nervous and Mental Diseases at

Fig. 17-1. Charles Eucharist de Medici Sajous, M.D., early investigator of internal secretions.
Jefferson from 1883 to 1900 and Chairman of the Department from 1900 to 1925) had dual interests in neuropsychiatry and endocrinology. He was the author of the *Biology of Internal Secretion* (1924) and wrote many articles in the field of endocrinology. In 1892 he described adiposa dolorosa (Dercum's disease), which is probably not of endocrine or metabolic origin. Dr. Milton K. Meyers (neuropsychiatrist at Jefferson, 1939-1954) published in 1915 the first American edition and English translation from the German of Wilhelm Falta's textbook, *The Ductless Glandular Diseases* (673 pages). Samuel A. Loewenberg (Figure 17-3), Clinical Professor of Medicine at Jefferson, published *Clinical Endocrinology*—the first edition in 1937 and the second in 1941.

The relationship of the endocrine glands to disease states was noted by the clinicians of the nineteenth century: the adrenal by Addison (insufficiency), and the thyroid by Graves (thyrotoxicosis) and Basedow (myxedema). An understanding of the mechanisms responsible for these diseases awaited developments in biochemistry through which the hormones could be identified, purified, measured in body fluids, and satisfactory products made for pharmacologic and therapeutic experimentation. This era began in the twentieth century and matured from 1950.

David W. Kramer, M.D.

Following the report in 1889 by von Mering and Minkowski that diabetes mellitus followed pancreatectomy, a search for the hypoglycemic hormone of the pancreas began. In a talk before Jefferson's Alpha Omega Alpha Society around 1952, Dr. Charles H. Best (codiscoverer of

**Fig. 17-2.** Francis X. Dercum, M.D., studied the biology of internal secretions.

**Fig. 17-3.** Samuel A. Loewenberg, M.D., author of *Clinical Endocrinology.*
insulin with Dr. Frederick G. Banting in 1922) acknowledged that Dr. David W. Kramer (Figure 17-4) (Jefferson, 1912) had demonstrated the effectiveness of a pancreatic extract in humans. The marked toxicity of the product precluded its use, and the study was terminated. In 1922, just before the announcement of the discovery of insulin, Kramer published a paper on Clinical Observations on the Pathogenesis of Diabetes Mellitus. His interest and work was thus of preliminary aid to Banting and Best in their isolation of a clinically useful product (insulin). Kramer maintained a lifelong interest in the treatment of diabetes, which, because of its vascular effects, motivated his study of peripheral vascular diseases. In this field he became a national authority, with publication of Manual of Peripheral Vascular Disorders in 1940 and Peripheral Vascular Diseases in 1948. The Bertha and David Kramer Professorship of Medicine was created in 1974 and first held by Dr. Joseph Glennon as Director of the Division of Endocrine and Metabolic Diseases in 1977.

Garfield G. Duncan, M.D., and Insulin

Shortly after the availability of insulin, a young Canadian physician, Dr. Garfield G. Duncan (Figure 17-5), joined the faculty in 1927, bringing with him skills in the treatment of diabetes mellitus acquired during the early years of the availability of insulin for human use. During his 30 years on the faculty Dr. Duncan made many important observations, not only about diabetes mellitus but also other endocrine and metabolic disorders. His many publications were important in establishing the nature, and especially the
treatment, of the "whole" patient. Duncan's textbook, *Diseases of Metabolism* (1942 and 1947), was the standard text used by students and practitioners. He was more than a diabetologist. As a well-rounded clinician, his lectures, conferences, and rounds at Pennsylvania Hospital, where he was Chief of Medicine, were informative, well-prepared, and delivered with a nasal twang. Students were frightened by him; he gave the impression that he lacked a sense of humor. They knew he would not tolerate incompetence or improper bedside manner. Nevertheless, students appreciated him and learned from watching and being supervised by a dedicated teacher and clinician. Duncan elected to join the faculty of the University of Pennsylvania when it affiliated with Pennsylvania Hospital in 1957. He died in 1983 at the age of 81. Dr. Theodore G. Duncan (Jefferson, 1955) succeeded his father as Chief of Diabetes at Pennsylvania Hospital and was one of a few select physicians picked to evaluate the clinical usefulness of human insulin.

Abraham Cantarow, M.D.

After graduation from Jefferson in 1924, Abraham Cantarow (Figure 17-6) joined its faculty in clinical chemistry. It was said that he selected Jefferson as his medical school because most of the textbooks were written by Jefferson faculty (Hawk and Bergeim's *Chemistry*, Brubaker's *Physiology*, DaCosta's *Surgery*, McCrae's editions of *Oster's Principles and Practice of Medicine*, and Schaeffer's *Morris' Anatomy*). For the rest of his academic career he devoted his life to his alma mater as a teacher, researcher, and active member of the Alumni Association, of which he was President in 1964. His interest in clinical chemistry directed him to the field of endocrinology and metabolism in particular. Dr. Cantarow was a complete clinician and an excellent bedside teacher who used pathophysiology as the basis for explaining disease mechanisms. His early appreciation of metabolic alterations in carcinogenesis steered him into cancer research. Despite the duties imposed when he accepted the Chairmanship of the Department of Biochemistry, he continued his research career while delivering an excellent course in basic science. Following his Emeritus retirement in 1966, Cantarow joined the staff of the National Cancer Institute, National Institutes of Health.

- Early Advances

The fourth decade of the twentieth century saw the blossoming of endocrinology. By 1940 techniques were developed that permitted investigation of the function and malfunction of the endocrine system. Bioassay for estrogens, androgens, and gonadotropins, chemical assays for 17-ketosteroids and pregnandiol, and staining methods for studying vaginal cytology were available for use in a clinical setting. About this time two men, Drs. Abraham E. Rakoff (Figure 17-7), and Karl E. Paschkis (Figure 17-8), joined the faculty and with Dr. Cantarow were to play a major role in the field of endocrinology, not only at Jefferson but nationwide.

**FIG. 17-6.** Abraham Cantarow, M.D.; Professor of Biochemistry, researcher in metabolism and endocrinology.
Drs. Karl and Margaret Paschkis, the latter a pediatrician, were born and educated in Vienna. They were very vocal activists in opposition to the takeover of Austria by Nazi Germany—they escaped with nothing. Following a short period in England, the Paschkises came to the United States and settled in Philadelphia. After a year at the Fels Institute, Temple University, Dr. Karl Paschkis joined the Department of Physiology and, a little later, the Department of Medicine. He was active in each Department for the rest of his life.

Dr. Paschkis was a trained internist with an interest in endocrinology and thereby a fortuitous interactor for Dr. Abraham Rakoff (Jefferson, 1937) who, following internship at Frankford Hospital, joined the Department of Obstetrics. While an undergraduate at the University of Pennsylvania, Dr. Rakoff did research in cytology and staining techniques. He had a major interest in this area for the rest of his career, refining and developing new techniques for use in gynecologic endocrinology. Like Cantarow, Rakoff was devoted to Jefferson and served as President of the Alumni Association in 1969—they both received the Alumni Achievement Award.

In 1940, Cantarow, Paschkis, and Rakoff joined to form an endocrine outpatient facility, an endocrine laboratory, and an informal research group. By 1943 they became a recognized interdepartmental group that, by action of the Board of Trustees in 1948, was formalized as the Division of Endocrine and Cancer Research. Representatives of the Departments of Surgery, Anatomy, Pathology, Physiology, Urology, Psychiatry, and Ophthalmology were members of the Division and were consulted in the planning.
and implementation of basic and clinical research. They cooperated also in the monthly research conferences. In 1948 John J. Schneider, M.D., Ph.D., and in 1951, Joseph J. Rupp (Jefferson, 1942; Figure 17-9), after a four-year period of residency and fellowship training at Jefferson, were given appointments in the Department of Medicine and joined the Division on a full-time basis.

Dr. Schneider, a graduate of the University of Chicago School of Medicine, completed his postgraduate education in the field of steroid chemistry at the Graduate School of the Mayo Clinic. At Jefferson he continued his study of steroid metabolism for the next 30 years. He had only three research associates, and no more than one at a time. Patricia Horstmann, B.A., and Constance Decourcy, Ph.D., each stayed for a few years. Dr. Marvin L. Lewbart (Jefferson, 1957), after internship at Lankenau Hospital, completed his graduate work at the Graduate School of the Mayo Clinic and returned to Jefferson as Dr. Schneider’s associate, an association that lasted until the latter’s retirement in 1975. This was a most productive combination. The two not only collaborated but each carried out individual projects. It was a unique laboratory in which admission was limited and often by invitation only. There were neither technicians nor housekeeping personnel. Dr. Schneider cleaned the glassware, scrubbed the floors, and painted the laboratory. His day began about 5 A.M. and continued until 9 or 10 P.M., with an interruption for breakfast with Drs. Robert Mandile and Harry Smith, for coffee with Rupp, and for lunch and dinner in the hospital cafeteria. The only distraction in the laboratory was classical music.

Dr. Schneider was an avid reader of history, especially military and political, an interest that continued into his retirement.

**Advanced Basic Research**

Dr. Schneider enjoyed a worldwide reputation in the field of steroid chemistry. His expertise in evaluating the effects of various tissue enzymes on the steroid nucleus led to the development of methods for the isolation and identification of steroid metabolites including some not previously described. He was consulted by some for help in identification of a new compound and by others who needed a new compound to continue their endeavors. The individual and joint research of Schneider and Lewbart resulted in publication of more than 50 papers.

The activities of the members of the Division of Endocrine and Cancer Research encompassed both the fields of general and reproductive endocrinology and carcinogenesis. Dr. Paschkis was interested in all aspects of endocrinology, but to a lesser extent in reproductive endocrinology. Most of his papers were concerned with clinical and basic science aspects of the pituitary, thyroid, and adrenal glands. Dr. Rakoff, on the other hand, while well-versed in all areas, was mainly concerned with gynecologic endocrinology. He

---

**Fig. 17-9.** Joseph J. Rupp, M.D., Director of the Division of Endocrine and Cancer Research, 1961.
was joined by Dr. Alvin F. Goldfarb who made contributions not only in patient care and teaching but also in clinical research. Dr. Rakoff and his associates developed procedures for increasing the sensitivity of the pregnancy test, for the bioassay of pituitary and chorionic gonadotropins, and for assessment of the pituitary–ovarian–adrenal function in infertility and hirsutism. Dr. Rakoff's clinical reputation was worldwide and his patients came from afar, especially infertile couples and hirsute women. Dr. Rupp, who became Chief of the Diabetes Section, studied various aspects of thyroid function in both humans and lower animals. His was the first report of "T-3 Toxocosis."

The joint studies of Paschkis and Cantarow in the field of cancer research resulted in several important observations on the influence of tumor growth on the endocrine system, of the effects of hormones on tumor growth, and the intermediary metabolism of tumors. There were two pathologists associated with them, initially Dr. Joseph Stasney and later Dr. James W. Goddard. The studies of humoral factors in carcinogenesis and pyrimidine metabolism in malignant and normal growth indicated that malignant tissue utilized significantly greater amounts of uracil than did normal tissue. This observation was important to the development of the antimetabolite, 5-fluorouracil. More than 250 papers were published by members of the Division.

Endocrine and metabolic research at Jefferson was not limited to the active members of the Division. Dr. Savino A. D’Angelo (Department of Anatomy) made significant contributions to an understanding of hypothalamic–pituitary thyroidal function in pregnancy and other conditions. Dr. Franz X. Hausberger (Department of Anatomy) studied fat metabolism in normal and diabetic states. Drs. Irwin Jack Pincus (Jefferson, 1937; Department of Physiology) and W. Paul Havens, Jr., (Department of Medicine) reported on the influence of impaired liver function on hormonal function. Dr. Domenic A. DeBias (Department of Physiology) was actively engaged in endocrine research during his time at Jefferson. Dr. William H. Pearlman (Department of Biochemistry) made major contributions in the field of sex steroid metabolism.

**Education and Patient Care**

Clinical and basic research were important, but not the dominant role of most members of the Division in the overall functions of the medical school. Drs. Paschkis and Rakoff, by example and fiat, insisted that patient care and the education of undergraduate and graduate students have first priority. These clinical activities were important because they permitted a hands-on approach to inpatient and outpatient care. Each clinic session was followed by a conference where the unusual problems were discussed. Students and residents were given the opportunity to present and discuss problems of their individual interest.

Members of the Division participated in undergraduate, graduate, and continuing medical education. Dr. Paschkis gave the lectures in physiology. Dr. Rakoff was responsible for gynecologic endocrinology, and Dr. Rupp participated in teaching of the second year. Before the introduction of the new curriculum in the mid-1960s, undergraduate education in endocrinology was reinforced over the four-year period. The facilities of the Division were available to students; they came with their interests and volunteered to be summer research associates. Students enjoyed their exposure to endocrinology, and the faculty mutually delighted in the students, whom they considered to be the school’s most important asset. Members of the Division were honored by the students. Three (Cantarow, Rakoff, and Rupp) had class portraits painted. Those three, as well as Dr. Paschkis, had yearbooks dedicated to them, and some were selected for the Lindback Award for outstanding teaching.

Graduate education of residents and fellows began shortly after the Division was established in 1940 and expanded after World War II. The Division was awarded a National Institutes of Health training grant. In addition to Americans, trainees came from Canada, Mexico, South American, Europe, and the Near and Far East. Most remained for one year and some for two or more. The Residents and Clinical Fellows were responsible for patient care. They also prepared clinical and teaching conferences under the supervision of the faculty, including Sidney M. Wolfe (Jefferson, 1947), Jack Zagerman, Rachmel Cherner (Jefferson, 1955), and Sheldon Gilgore.
Dr. Gilgore, who studied carbohydrate metabolism, reported the definitive study on the hypoglycemic effects of aspirin. He subsequently became President of Pfizer Pharmaceuticals, an Alumni member of Jefferson's Board of Trustees, and Chairman of the Board at Clark University.

Among the other trainees were Dr. Angelo DiGeorge, who became Chief of Endocrinology at St. Christopher's Hospital for Children; Dr. William A. Abelove (Jefferson, 1951), who accepted a position in the diabetic section at the University of Miami; and Dr. Agustin M. DeAndino (Jefferson, 1944), who returned to Puerto Rico where he practiced endocrinology until his untimely death. Dr. Doris Bartuska returned to the Medical College of Pennsylvania in the fields of both endocrinology and medical education. Dr. Ruth Ann Fitzpatrick became Chief of Endocrinology at the Crozer-Chester Hospital. Dr. John Aloi accepted a position at Stony Brook Medical School (SUNY) and became Professor of Medicine and Chief of Endocrinology. Dr. Joseph T. Curti (Jefferson, 1963), following his training, entered the pharmaceutical industry and became Vice-President of Roerig Company. Dr. Francis H. Sterling (Jefferson, 1960) returned to the Veterans Hospital and the University of Pennsylvania. He received many awards as an outstanding teacher. Other Jefferson graduates who were Fellows in endocrinology included Drs. Stephen L. DeFelice (1961) and Murray B. Grosky (1961). Later members of the Division were Drs. Joseph S. Fisher (Jefferson, 1970) and Edward B. Ruby (Jefferson, 1971).

Further Graduate Teaching

Dr. Ralph A. Carabasi, Jr. (Jefferson, 1946) completed his training in endocrinology and oncology at Tulane and was appointed in the Department of Medicine in 1950. He aided in the student and resident training programs and was especially active in the Diabetic Clinic.

Dr. Stanley N. Cohen, a graduate of the Medical College of Virginia (1952), served as Chief Pathologist and Head of the Clinical Laboratories at Fort Gordon, Georgia (1954–1956). He took a medical residency at the Veterans Administration Hospital in Richmond, Virginia (1956–1958) and became a National Institutes of Health Fellow in endocrine and metabolic diseases at the University of Pennsylvania (1958–1959). After joining the Jefferson faculty in the Department of Medicine in 1959, Cohen’s special interest and training in diabetes mellitus led to his holding all the major positions in the local affiliate of the American Diabetes Association (President, 1978–1980; Chairman of the Board, 1980–1981; and President of the Professional Section, 1981–1983). He was a cofounder at Jefferson of the Sexual Function Center, as the outgrowth of a National Institutes of Health grant for the research into the problem of impotence in diabetes mellitus (1977–1980). This multidisciplinary center for the diagnosis and treatment of impotence in males became one of the largest of its type in the world. In 1985 he cofounded, with Dr. Steven R. Peikin, the Jefferson Nutrition Program.

Graduate training was not limited to those who could spend a year or more in the program. Residents at Jefferson and also the affiliated hospitals, especially the Naval Hospital, often elected to experience three to six months at Jefferson. The program was not limited to those concerned only with clinical training. Three candidates for the Ph.D. degree in physiology fulfilled part of the course requirements in the Division. Dr. Domenic DiBias, after receiving his degree, joined the faculty in the Physiology Department. He later accepted an appointment at the Philadelphia College of Osteopathic Medicine as Professor and Head of the Departments of Physiology and Pharmacology and became Assistant Dean. Dr. Frederick D. DeMartinis joined the staff of the Medical College of Pennsylvania and became Professor of Physiology at the School of Veterinary Medicine of the University of Pennsylvania.

In addition to conferences held on campus, Dr. Paschkis had “beer-and-pretzel” meetings at his home, attended by faculty, trainees, and students. Here the discussions began with endocrinology but usually more time was spent discussing history, politics, and music. A highlight for members of the Division was carol singing at the Paschkis home on the third Sunday of Advent.

Dr. Rakoff had an active training program in gynecologic endocrinology. Dr. Alvin F. Goldfarb, one of his Fellows, joined him in carrying out the
research, education, and clinical activities of residents and trainees in the Department of Obstetrics and Gynecology. He accepted an appointment at Pennsylvania Hospital and became active in their endocrine division.

In 1961 Drs. Rupp, Rakoff, and Goldfarb initiated programs in continuing medical education when they presented a 13-week night course in endocrinology for the practicing physician. This course was given for several years and was replaced by a day course. Members of the Division participated in continuing medical education courses presented by other Departments and Divisions at Jefferson and its affiliated hospitals. These included three yearly Seven Springs Symposia at the Latrobe Hospital area and yearly ongoing Eastern Shore Medical Symposia with the University of Delaware.

**Division Organization**

Following the death of Dr. Paschkis in 1961, Dr. Rupp was appointed Director of the Division, a position he held until he was made Assistant Director of Continuing Medical Education in 1969. He was replaced by Dr. Richard A. Field, internationally known in the special area of diabetic retinopathy. The latter was responsible for bringing Dr. Nicholas Zervas to Jefferson for the transsphenoidal method of pituitary ablation for the treatment of diabetic retinopathy. Dr. Field returned to Boston in 1971. After a hiatus, Dr. Sheldon R. Schlaff became the interim Director from 1974 to 1977.

In 1977 Dr. Joseph A. Glennon (Figure 17-10) was appointed the first Kramer Professor of Medicine and Chief of the Division of Endocrinology and Metabolic Diseases. He received his M.D. degree from the State University of New York (Downstate, 1957); interned at St. Vincent's Hospital in New York (1958); and took his residency in internal medicine at St. Vincent's Hospital (1959) and Hartford Hospital (1961–1963), interrupted by United States Navy duty (1959–1961). He taught in the Department of Medicine at the University of Wisconsin (1965–1971), Tufts University (1971–1973), and as Professor at Texas Tech University School of Medicine, Lubbock, Texas (1973–1977). He became certified by the American Board of Internal Medicine in 1964, was recertified in 1974, and board certified in Endocrinology and Metabolism in 1972.

Before coming to Philadelphia, Dr. Glennon had much clinical experience as attending physician and consultant in civilian and Veteran's Administration Hospitals in Wisconsin, Massachusetts, and Texas. He was active in the pertinent professional societies of his specialty and served in the curriculum planning of several medical schools.

Dr. Glennon's main research interest has been in the fields of diabetes mellitus and obesity. His

FIG. 17-10. Joseph A. Glennon, M.D.; Director of the Division of Endocrine and Metabolic Diseases (1977—). First Kramer Professor of Medicine.
studies involved also the nervous system, the liver, enzyme systems, the lungs (especially sarcoidosis), and the inevitable path of endocrine changes in carcinoma. In conjunction with Drs. Boas Gonen and Steven Nagelberg at Jefferson, research continued in the area of hyperlipoproteinemia and gonadotrophins.

While the Division remains a distinct entity within the Department of Medicine, its history is strongly one of interdepartmental cooperation in all the basic sciences as well as the clinical arena of physical and mental health. There are approximately 5,000,000 diabetics in the United States and possibly an equal number not yet diagnosed. Even the meticulous control of the blood sugar level with insulin does not prevent the vascular, neurological, renal, and ophthalmologic complications in many patients. The full understanding of obesity and its control remains open for further investigation. Continued interaction by new faculty and the added dimension of an Institute of Molecular Medicine provide the path for Jefferson's future distinction in the field of Endocrinology and Metabolism.

References