

The Genesis of American Investigative Dermatology from its Roots in Europe

Karl Holubar, M.D., and Klaus Wolff, M.D.

QUIVI SI VIVE E GODE DEL TESORO
CHE S'ACQUISTÒ PIANGENDO NELLO ESSILIO...

Dantè Alighieri (1265–1321)
Commedia, Par. XXIII: 133

(There they live and enjoy the treasure, in exile won in tears,...)

During a century of development of investigative dermatology (1880s–1980s), the center of gravity in the field has moved west, from Europe to North America.

The foundation of the American Dermatological Association, the discipline's oldest national society, has foreshadowed this development. The foundation of the Society for Investigative Dermatology (and also of the American Academy of Dermatology), have marked the height of this shift.

The foundation of the European Society for Dermatological Research and its participation in the Journal of Investigative Dermatology, as a junior partner, concludes this process, and at the same time, illustrates the change that has taken place.

The following article attempts to outline some of the pathways along which this shift has occurred, as seen from a central European perspective. *J Invest Dermatol 92:145–215, 1989*

The elaboration of this short treatise was limited by both time and space. It cannot be considered an indepth evaluation of the subject. In order to outline the growth of investigative dermatology over the last hundred years, the spotlight of historical perspective will be focused on various personalities or events, typical or essential for this development, as far as information was available to the authors.

PROLOGUE

(Fin-de-Siècle on either side of the Atlantic)

“The development of the New World version of dermatology paralleled the European experience” [1]. The development of American dermatology in the early years was sporadic and unorganized. But even when there was a little delay in certain developments, due to the “transatlantic passage” of the news, as the above authors write, this delay was sometimes very short, and there were exceptions. This held for dermatology as it held for medicine in general.

The College of Physicians of Philadelphia, founded in 1787, preceded the famous Colleges in Vienna and Budapest, for instance, by a full fifty years. When the Broome Street Infirmary for Diseases of the Skin was opened by Henry Daggett Bulkely in New York, on June 22, 1836, few European centers had institutions for diseases of the skin only [2,3]. The foundation of the New York Dermatological Society and of the American Dermatological Association preceded the foundation of all other such bodies in Europe [2–4]. Another factor has changed since the early years of the nation. At the time of the foundation of the Philadelphia College many of the founding fathers had obtained their degrees abroad: John Redman in Leyden, Benjamin Rush and John Morgan in Edinburgh, Adam Kuhn in Uppsala, John Jones in Rheims, and so on. A century later,

a series of proud schools of medicine existed, producing a stream of graduates, eager to learn. For this purpose they still had to go abroad. In the grand tour London, Paris, Vienna, and later Berlin and other centers were visited for study.

Nevertheless, the foundation of first, an urban (New York Dermatological Society; May 18, 1869), then a nationwide society (American Dermatological Association; June 7, and September 6, 1876) [2,3], may be perceived as drumbeats from across the Atlantic, foreshadowing the excellence of the North American dermatology of the future.

In Europe, the Société Française was the first to be founded (1885), followed by the Società Italiana in 1886 and the Deutsche Dermatologische Gesellschaft in 1888. The oldest dermatologic periodical ever, to our knowledge, was the *Annales des maladies de la peau et de la syphilis* (1844–1851/52; 4 vols); the oldest journal, which kept appearing and withstood the attrition of time, is the *Giornale Italiano di Dermatologia* (originally *delle malattie veneree e della pelle*; 1866). Next followed the *Annales de Dermatologie et de Syphiligraphie* in Paris, and the *Archiv für Dermatologie und Syphilis* in Prague and Vienna, both 1869. The British Journal followed in 1888. There were several Anglo-Saxon journals on either side of the Atlantic between the 1860s and 1880s; the “Old Archives,” for instance. None of these, however, survived. The first international congresses took place in Paris 1889, in Vienna 1892, in London in 1896, in Paris again in 1900, and in Berlin 1904. The first in the New World was held in New York City in 1907.

No doubt, during the formative years of American dermatology in the latter half of the 19th century and the early years of this century, hardly any dermatologist went over to North America for purposes of training or a career. This should in no way diminish the merits of dermatology's early pioneers in the United States: Henry Daggett Bulkely (1804–1873) in New York, Noah Worcester (1812–1847) in Cincinnati, James Clark White (1833–1916) in Boston, and Louis Adolphus Duhring (1845–1913) in Philadelphia to name just a few. J. C. White was the first to come to Vienna to hear Hebra and also the first to hold a chair in the discipline in North America, in 1871 [1].

Sifting through the pages of the Centennial volume of the ADA [4] in its early years, three men who did go to America for good, before the end of the century, have been singled out for brief commentary. The first two

Department of Dermatology I, and Institute for the History of Medicine, University of Vienna Medical School, Vienna, Austria

Address of authors: Department of Dermatology I, Alserstrasse 4, A-1090 Vienna, Austria.

Dedicated to Professor Eleasar J. Feuerman, Tel Aviv, President of the Dermatological Association, who was born in Vienna—on occasion of his 70th birthday.

left after already starting their medical careers. Presumably, thwarted expectations for such a career and disappointment in their professional field must have been the cause. The third, who left before he even graduated, may have had the same reasons for leaving that many Jews in Central and Eastern Europe had at the time.

Carl Heitzmann (1836-1896) Carl Heitzmann was born in Vinkovce, Slavonia (then Austria), son of a veterinarian. He studied in Budapest and Vienna, and graduated in 1859. His main interests were pathology and dermatology. Because he was a gifted painter, as was his brother Julius (1847-1922), he succeeded the painter physician Anton Elfinger (1822-1864), after the latter's untimely death, and painted the aquarells for Hebra's monumental atlas of diseases of the skin (in print from 1856 on). Many of his astonishingly accurate and beautiful paintings have never been published and still sit in the vaults of the Josephinum (the Vienna Institute for the History of Medicine). When Carl Rokitansky (1804-1878) went into retirement in 1874, Heitzmann was expected to be nominated as his successor. Disappointed that this was not the case, he left for New York with his family. In the New World he practiced dermatology and ran a pathology laboratory. In 1895, before the Vienna College of Physicians, he proudly mentioned that 50 publications and more than 1000 students had come from his laboratory. He was a founding member of the A.D.A. and was present at the foundation meeting. He died in Rome in 1896, where he had gone for recuperation. He was survived by his equally talented brother, Julius. The Heitzmanns and their oeuvre are comparable to the Fabers of Philadelphia, who lived at almost the same time.

Sigmund Lustgarten (1857-1911) Sigmund Lustgarten was born and raised in Vienna, son of Julius (Joel) Lustgarten, a merchant from Jassy (then still Turkey) [4,5]. The Jewish birth records mention two brothers, Alexander and Simon, and one sister, Emilie. Later, U.S. records mention only two brothers, Oscar and Fritz. Sigmund graduated in 1881 and became an assistant to Moriz Kaposi, then already head of the Hebra Department in Vienna. On November 21, 1884 he presented his finding of the Syphilis-bacillus to the Vienna College of Physicians [5]. One discovery of many that were disproved later. Sometime after the mid-1880s he must have left for New York where he opened a practice that he ran until his death. In his case, antisemitism was probably not cause for emigration. Too many Jews were in the Vienna Faculty at the time, and dermatology was almost their exclusive province [Isidor Neumann, Kaposi, Lang, Zeissl, Ehrmann, Auspitz, Pick, later Prague]. In New York, Lustgarten became President of the New York Dermatological Society in 1897, and was active at the Mount Sinai and Montehore establishments, and the Hebrew Orphan Home. He died in 1911.

In his will, to be enacted after the demise of his wife, he left a considerable amount of money to his brothers. The provision was that, in case his brother Oscar should die without legitimate children, one fourth each of the sum left should go to Mount Sinai Hospital and to the Medical Faculty of Vienna University. Beatrice Lustgarten died in 1940; Oscar Lustgarten had died in France in 1934. He had a daughter, recognized but not legitimized, so the money went to Mount Sinai and Vienna. In 1955/56 the first scholarships were given to medical students, irrespective of nationality, denomination, or race, according to the will of Lustgarten. Low parental income and excellent grades were prerequisites. One of the authors (K.H.) was lucky enough to be among the first awardees through the years 1956-1959. The original sum to be paid, in guilders of 1910, was 1200 per annum (a royal sum for a poor student). By the mid-fifties, it became 3500 Schilling per year (still of considerable help). Some of the fine volumes on K.H.'s shelves uphold the memory of this early Austro-American dermatologist.

Louis Chargin (1879-1969) Born in Minsk, Russia, Louis Chargin must have left his native country early in life, because in 1902 he had already graduated from the Maryland Medical School, then went to Berlin and London for postgraduate studies [4,6]. In America he became a member of the ADA, SID (Emeritus), a Clinical Professor at the Mount Sinai School

of Medicine, an Associate Professor at Skin and Cancer Hospital, and a syphilologist of international renown. In his obituary, Henry Silver describes him "as a man devoted entirely to his specialty but not always easy to come along with" [6].

The Hadassah Department of Dermatology at Hebrew University in Jerusalem covers its day-to-day expenses largely from the "Louis-Chargin-Fund," and it is mainly through this that one of us (K.H.) came to know of the existence of this generous man. These lines shall serve as a small epitaph for Louis Chargin. (Some references give 1881 as his year of birth [4].)

THE COLLAPSE OF THE OLD ORDER: THE FIRST WAVE

On the eve of WWI Europe had reached the zenith of its power, politically, economically and scientifically. The overwhelming majority of discoveries (also) in the field of medicine had been made in Europe. In dermatology, to cite but a few, the gonococcus had been discovered in 1879 (Neisser), the streptobacillus of ulcer molle in 1889 (Ducrey); Metchnikoff and Roux had first transmitted the causative agent of syphilis into primates in 1903, and Schaudinn and Hoffmann had described this agent to be *treponema pallidum* in 1905. The following year saw the discovery of a serologic test for this disease, by Wassermann, Neisser, and Bruck. In 1910 Hata, a Japanese, working under the direction of Paul Ehrlich, had found the first therapeutically active substance against syphilis (Ehrlich #606 = Salvarsan). (November 22, 1988, was the 50th anniversary of Hata's death. His original name was Yamane; he had been adopted by the physician in his native village in the west of Japan [7].) Many new disease entities had been described in dermatology, e.g., by Kaposi, Darier, Brocq, Hutchinson, Mibelli, and many others. The phenomena of Köbner, Auspitz, and Nikolski became known to facilitate clinical diagnosis. Joseph Jadassohn described the patch test and von Pirquet coined the term "allergy." Karl Landsteiner found out about the basic blood groups of man (1900; Nobel Prize of 1930); Wagner-Jauregg and Kyrle started to treat late syphilis by inoculation of malaria plasmodia (Nobel Prize of 1927 for Wagner-Jauregg alone, because Kyrle was already dead by then).

During WWI, salvarsan was transported to the U.S.A. even by submarine and, finally, was synthesized anew both in the U.S.A. (by Jay Schamberg) and in Japan (by Hata himself) [3,7].

Crissey and Parish [1], in commenting on the situation of American dermatology at the turn of the century, say that the New World was behind Europe, particularly in two regards: the establishment of postgraduate training programs, and in basic research facilities. This latter point would soon change dramatically in favor of the New World. The ensuing self-destructive carnage of WWI deprived Central Europe of manpower, facilities, and funds to continue at any comparable scale. Crissey and Parish refer to Vienna as the "most celebrated situs dermatologicus on the planet" [1] (at the turn of the century). Let us look at 1919, after the unthinkable had happened; all too many did not return from the war, famine and inflation were rampant, and in Vienna there was not even coal for the furnaces. Let us also look at two men to exemplify the situation and to elucidate their conclusions.

Karl Landsteiner (1868-1943) Landsteiner was no dermatologist, but he was in close contact with the field, especially with syphilology [8]. Well over a dozen papers of his deal with the subject of syphilis, the immunologic situation in this disease (with Finger, head of the second department in Vienna), and the adaption of the darkfield microscope for the detection of *treponema pallidum* (with Mucha). Son of the journalist Dr. Leopold Landsteiner he had been born into a well-to-do Jewish family. He graduated from Vienna University in 1891, became "docent" (equivalent to associate professor) in 1903, and worked in various university and non-university institutes in Vienna (see treatise by Speiser and Smekal [8]). He was surely a basic scientist and also an investigator in our field at the time. By 1917 the living conditions, not to speak of research funds, had deteriorated so far that he bought a goat to provide his newborn son with milk. After the war he was sent into permanent retirement, with a pension that did not allow him to sustain his family.

And one night, foragers for firewood even took the fence that surrounded his small house in the village close to Vienna where he lived with his family. His situation must have been almost unbearable, as it was for so many. In late 1919 he left for the Catholic Hospital in The Hague, The Netherlands, where a position in pathology was open. Four years later, he left for the United States, convinced that it was the only place to go.

Maximilian Obermayer (1896–1982) Born into a family of the Styrian gentry, in Leoben, Austria, he first started as a career officer, according to family tradition, and served with distinction in WWI. Thereafter he enrolled in the Graz Medical School from which he graduated in 1924. He received his dermatologic education with J. H. Rille in Leipzig and Sir E. Graham Little at St. Mary's in London. His family had served the Old Monarchy for generations and its destruction made Obermayer become disenchanted with the circumstances in Europe at the time. In 1929 he accepted an invitation to go to the University of Chicago. In 1934 he passed the Board Examination and in 1935 he became a U.S. citizen. In 1940 the first edition of his textbook appeared (together with William S. Becker), which was also translated into Spanish. His main interests were dermatopathology, leprosy, atopy, artifacts, and psychosomatic disorders. After his move to Los Angeles in 1941 he published a volume on psychosomatic disorders (also to be translated into Spanish). At the University of Southern California he became professor and chairman (1945–1961), and in 1957 he served as president of the SID. He was also president of the L.A. Dermatologic and the Pacific Dermatologic Associations.

To one of us (K. W.) he was a continuous source of professional inspiration and stimulation during the early years of training in the discipline.

He was a widely traveled man who still cared for his native city. He sent 1,000 dollars there annually for support of poor children, and he donated his parental house and estate for the enlargement of a public park. One is tempted to think that, even in his death, he demonstrated loyalty to the Casa de Austria: he died on September 21st, 1982, the day Charles V had died, in 1558, the first man in whose empire the sun did not set. His ashes were buried in the family tomb in Leoben.

THE NAZI THREAT: THE SECOND WAVE

The takeover in Germany by the National Socialists in 1933, the enactment of the Nuremberg Laws in 1935, the annexation of Austria and Czechoslovakia in 1938 and 1939, and the ensuing World War II, eventually resulted in the annihilation of most of the Jewish population in the region, in the death of millions of other victims, countless physicians among them, and in the physical destruction of large parts of Europe. Events for which we bear the blame.

Many of those who escaped made it to North America; among them, many distinguished dermatologists. The following, alphabetical list of those who came to America has no claim to completeness. It just lists names of people known to the authors personally, or linked to them by alma mater, postgraduate training, membership in Austrian or German Societies of Dermatology, place of birth, or through availability of special files.

Rudolf Baer	Walter Lever
Ernst Beutner	Felix Pinkus (1868–1947)
Helen Ollendorf-Curth	Herrmann Pinkus (1905–1985)
Stephan Epstein (1900–1973)	Stephan Rothman (1894–1963)
Ruth Freinkel	Felix Sagher (1908–1982)
Franz Herrmann (1898–1977)	Erich Urbach (1893–1946)
Alfred Hollander (1899–1986)	Friedrich Urbach

There are countless others: Hans Biberstein (Breslau), Franz Blumenthal (Berlin), Stefan Brünauer (Vienna), Fritz Callomon (Dessau), Wilhelm Curth (Berlin), Wilhelm Frei (Breslau), Eugen Galewsky (Dresden), Max Jessner (Breslau), Ernst Nathan (Nuremberg), Moriz Oppenheim (Vienna), Erich Uhlmann (Freiburg), and others. The reader is referred to the article by Hollander, 1983 [9]. The above names have been cross-checked with the Deutsche Dermatologen Kalender of 1929 [10]. (Only those who went to North America have been listed.)

In memoriam of those who perished in captivity we mention Abraham Buschke (1868–1943), Karl Herxheimer (1861–1944), Leopold Freund (1868–1943), and Wilhelm von Hebra (1885–1944).

Ernst Beutner has been included in this compilation because, by now, he is also a professor of dermatology, and because the discoveries made in his laboratory have had so much impact on the concept of autoimmunity and autoimmune dermatoses, and also because he has educated a whole generation of students.

Felix Sagher left for what was then Palestine before the beginning of the war. Because of his birthplace (Innsbruck, Austria), his education in Kreibich's department at Charles University in Prague, his becoming a member of the SID out of Rochester, and the fact that one of us (K.H.) was successor in his chair in Jerusalem, and, thereby, could fully appreciate Sagher's position in international dermatology and his impact on the field, he is included in the present listing.

Abraham Buschke (1868–1943) Head of the Skin Department at the Rudolf Vichow Hospital in Berlin for almost thirty years, Abraham Buschke was one of the great figures of pre-war dermatology in that city [11]. The festschrift on his 60th birthday in 1928 mentioned more than 300 titles. His name is immortalized as an eponym of "scleredema," the Buschke-Löwenstein tumor, the Buschke-Ollendorf Syndrome, and others. Many details are known from a c.v. drawn up by his wife [11] in the Theresienstadt concentration camp where he died in 1943.

Karl Herxheimer (1861–1944) A native of Wiesbaden, Karl Herxheimer eventually became professor and chairman at the Goethe University in Frankfurt/Main, being the predecessor of Oscar Gans [12]. To all students of dermatology, and of syphilis in particular, his name became well known by the reaction in the therapy of syphilis named after him and Jarisch, (Adolf Jarisch, (1850–1902), and also as an eponym of Acrodermatitis atrophicans. He also died in captivity in Theresienstadt, in 1944.

Leopold Freund (1868–1943) Freund was the first to use x-rays for therapy [13,14]. He was a native of Miskowitz in Bohemia and had studied, graduated, and worked in Vienna. In 1896 he treated a little girl who had an extensive hairy nevus on her back with the newly discovered x-ray. The pertinent report was made on January 15, 1897 before the Vienna College of Physicians. (The patient was demonstrated for many years to come for this reason.) Arrested after the Anschluss in 1938, Freund escaped to Belgium only to be caught again after the occupation of that country during WWII. In 1943 he died in Brussels of intestinal carcinoma.

Wilhelm von Hebra (1885–1944) Hebra was not a dermatologist or even a medical doctor. He was a writer. There are two reasons for including his name. One, his family history: he was the son of a well-known dermatologist (Hans von Hebra, 1847–1902), the grandson of a famous dermatologist (Ferdinand von Hebra, 1816–1880), and the nephew of another famous dermatologist (Moriz Kaposi, 1837–1902). The other reason is his fate. According to his political views, he was a monarchist. Upon the Anschluss in March 1938, he started distributing leaflets calling for a reestablishment, in Austria, of the monarchy under Hapsburg. Thereby he aroused the attention of the Gestapo and before the outset of the war he was imprisoned. On November 10–11, 1943 he was tried

before the Volksgerichtshof in Berlin under the notorious Kreisler and sentenced to death. Being a non-Jew did not protect him from persecution and execution. Wilhelm von Hebra actually spent some more months in prison in 1944, of which several shattering letters provide proof. His actual execution took place on October 27, 1944. Presumably because of the assassination attempt on Hitler, after the summer of 1944, prisoners like Hebra could only be visited by male relatives (fathers, sons, or husbands), only when they came directly from the front or went there, and only once. Such relatives did not exist for Hebra, who was a bachelor.

Special mention shall be given to Oscar Gans (1888–1983). His epochal work on histopathology of the skin first appeared in print in 1924. In 1926 he came to the Mayo Clinic to give a series of lectures in this field. This, repeatedly, has been considered a pivotal point in the history of American investigative dermatology. Gans later became chairman at Frankfurt/Main University. In 1934 he had to leave Germany and went to India. In 1949 he was re-instituted into his chair, and in 1959 he went into retirement.

Rudolf Baer, a native of Strasbourg, France, then Strassburg, Germany (1910), received his State Board Certificate from the University of Frankfurt/Main in 1933 and his M.D. from the University of Basel in 1934. Thereafter he went to New York, where he became associated with Marion B. Sulzberger and has remained there since. It is not possible to mention even briefly all the honors bestowed on Rudi Baer or list his achievements at this point. More than three hundred articles and some 25 books or book chapters have been authored by him, contact dermatitis, epidermal biology, and Langerhans cells being his main topics. For two full decades he was George Miller MacKee Professor of Dermatology at NYU and Head of Skin and Cancer Hospital in New York, among many other affiliations. He received the Rothman Medal, the Gold Medal of the American Academy of Dermatology, the Marchionini Gold Medal, and the Hellerström Medal. He was editor of the Year Book of Dermatology for a decade, president of the SID, the American Academy of Dermatology, and the American Dermatological Association; chairman of the American Medical Association and president of the International Committee of Dermatology. His honorary memberships are too numerous to be detailed, and he is still going strong.

Ruth Kimmelstiel-Freinkel, born in Hamburg 1926, to parents, who both received their dermatology training by Paul Gerson Unna. (Paul Kimmelstiel and Clifford Wilson, in 1936, described diabetic glomerulosclerosis, later to become the K.-W. syndrome.) Ruth received her M.D. in 1952 at Duke University and did her residency training at Harvard's Massachusetts General Hospital. Board certified in 1961, she eventually became associate professor of dermatology at Northwestern Medical School in Chicago in 1966, full professor in 1972, and professor of cell biology and anatomy in 1986. Most notably, she served as editor of the JID from 1977 to 1982, and as the SID's president in 1983. Not surprisingly, her work focuses on lipid metabolism, endocrinology, biochemistry, physiology of skin.

Walter Lever, born in Erfurt, East-Germany of today, in 1909, (as one of a pair of twin boys), was son of a dermatologist, (Alexander Lever), whom young Walter, according to his own words, planned to succeed in his profession. Walter graduated from Leipzig University in 1934, went to the United States to work at the Massachusetts General Hospital in 1936, and finished his residency there in 1938 (he was board certified in 1941). He worked for years in the field of general pathology and later concentrated on dermatopathology. In 1949, the first edition of his textbook in this field appeared in print, and he also published a series of classical papers on pemphigus in the 1940s. In 1965 another classic, *Pemphigus and pemphigoid*, was presented to the students of dermatopathology. In the meantime (1959) Lever had become head of dermatology at Tufts Medical School and affiliated hospitals. The textbook on dermatopathology, which is now looking forward to its

seventh edition, has become a "bible" for all dermatopathologists to be. Lever has authored close to 200 papers, and is a member of many national and international societies. He has been president of the SID, of the in American Society of Dermatopathology, and he has an honorary M.D. from the Free University of Berlin. Having retired from his academic positions, but not from work, he now lives in Tübingen, Germany.

Hermann Pinkus (1905–1985) was born in Berlin, son of Felix Pinkus, university professor and dermatologist of reknown. Again, according to the son's words, his father had been his first teacher in dermatology. Felix Pinkus had written chapter one, volume one of the original edition of *Jadassohn's Handbook of Dermatology* (1927 and after), a 350-odd page classic on anatomy of the skin. Hermann received his M.D. from Berlin University in 1930, made his residency at Jadassohn's Department in Breslau (Wroclaw, Poland, of today) in 1930–1933, and then moved to America in 1934, where he went to Monroe and Detroit, Michigan, to live. Eventually, after having been acting chairman for some years, he became professor and chairman at Wayne State University, Detroit, a post he filled until his retirement. Pinkus has authored some 170 publications, many book chapters, and his textbook *A Guide to Dermatohistopathology* (with Amir H. Mehregan). Among the many honors awarded to Pinkus are his presidency of the SID (1958) and vice-presidency of the Academy (1970), the Rothman Medal 1974, and an honorary doctoral degree (L.L.D., 1974) from the University of Glasgow. Hermann Pinkus died on May 18, 1985. We owe our knowledge of acrotrichium, the acrosyringium, premalignant fibroepithelioma, eccrine poroma, and much about the biology and proliferation kinetics of the epidermis to him.

Hermann Pinkus and Walter Lever, two dermatopathologists, two different approaches, two entirely different personalities, two gentlemen, could only be fully appreciated when one had the privilege to know both of them.

Erich and Friedrich Urbach were father and son and were both academicians. Erich, the father, was European, while Friedrich, the son, was American. Dermatology was their field. Erich was a native of Prague, graduated in Vienna right after WW I (in which he had served with distinction). He made his residency at the Vienna General and in Jadassohn's Department in Breslau. He became (associate) professor in the Second Department of Dermatology in Vienna, in 1929. In the same year he described, with C. Wiethe, the "lipoid proteinosis" (hyalinosis cutis et mucosae), later to bear both authors' names as an eponym. He came to the United States in 1938 and joined the University of Pennsylvania; he died in 1946. Over 200 papers, several books, and a monograph on "Allergy" are his legacy to the discipline, dealing mainly with carbohydrate and lipid metabolism, allergy, and photosensitivity. He was a master teacher, a great investigator, and from "the Hebra center of the dermatologic universe," as John Stokes movingly described him in an obituary (*Archives of Dermatology*, 55:545–547, 1947).

Friedrich was born in Vienna 1922. He received his medical degree from Thomas Jefferson University in 1946, was trained at the University of Pennsylvania and, finally, became medical director of Skin and Cancer Hospital in Philadelphia and professor and chairman at Temple University. Again, a great number of honors have been bestowed upon Friedrich, including awards, honorary memberships in international and national scientific societies, etc., of which an honorary M.D. from the University of Göttingen shall be specially mentioned. Some 180 papers, and four books constitute his oeuvre so far. The fields in which he excelled are photobiology, carcinogenesis in skin, and prevention of skin cancer.

While it was lipid and carbohydrate metabolism with the Kim-melstiel and dermatohistopathology with the Pinkuses and Levers, it was photobiology with the Urbachs. All four are fine models of parental-filial stimulation of interests; the parents European, the children American academicians. This is the best proof to document the European influence on the development of American investigative dermatology.

THE FOUNDATION OF THE SOCIETY FOR INVESTIGATIVE DERMATOLOGY (SID) AND OF THE AMERICAN ACADEMY OF DERMATOLOGY (AAD) IN 1937/1938

The Society for Investigative Dermatology (SID) and the American Academy of Dermatology (AAD) were both founded in 1937 and had their first meetings in 1938. The former was a research society, while the latter was a society for the promotion of postgraduate education. The first meeting of the SID was held in New York on April 30, 1938; the first meeting of the AAD was held in St. Louis on November 14–15, 1938. It well proves the readiness of the North American dermatologic community for such endeavors, because both societies thrived within a few years. (The history of the AAD cannot be outlined in this article any further.)

(Sulzberger writes in his autobiography (page 151) that, the Academy held its first scientific session already on January 15, 1938 [16].)

Before the founding of the SID a preparatory meeting was held on February 7, 1937, in Dr. John Stokes' office in Philadelphia (according to Sulzberger) [16]. This is corroborated by Herman Beerman (p 184), and by Lamar Callaway's report (page 123), in the Beerman-Lazarus volume [3], speaking of that same meeting, "one Sunday morning, in the spring of 1937," in Dr. Stokes' office [3]. The preparatory meeting for the foundation of the Academy was held on June 11, 1937. The founding took place on September 10, 1937, in Chicago, at the University Club, by an *ad hoc* committee. All this is according to the Sulzberger biography (pages 150–151) [16].

On occasion of the fifteenth anniversary of the foundation of the SID, Arthur Curtis wrote in the society's journal (JID) [15], "Before the actual founding of the Society for Investigative Dermatology and its Journal, for several successive years a small group met and informally discussed the possibilities of such a venture. Advice and ideas were sought from men of every strata of dermatology. From these diverse discussions the following facts were interpreted as favorable to the foundation: the number and quality of dermatologists and syphilologists had increased enormously in the nation during the past fifty years. In the past 20 years there had been an even greater increase in the amount of basic scientific work being done. It was reasonable to presume that both these factors were destined to continue at an even accelerated pace." Main proponents of the idea to found a new (research) society were those who just had returned from overseas, e.g., Marion Sulzberger, William Becker, and Samuel Peck. Others, such as Gardner Hopkins, Joseph Klauder, John Stokes, George Miller MacKee, Hamilton Montgomery, and Sigmund Pollitzer, lent their support. The Certificate of Incorporation of the SID, dated April 24, 1937, lists under 1) "The name of the proposed society is THE SOCIETY FOR INVESTIGATIVE DERMATOLOGY", under 2) "The purpose... To conduct, promote, encourage and assist investigation and research in the sciences of medicine and surgery, and more particularly of dermatology and syphilology and all allied subjects,..." Sulzberger, Hopkins, MacKee, Stokes, and Pollitzer signed [15]. The organizing meeting of the new society was held on June 10, 1937 at the Hotel Dennis, in Atlantic City (JID, vol 1, page 1). At the inaugural session in New York on April 30, 1938, the society had 428 members; seven new members were admitted. George Miller MacKee stated in his presidential address at this occasion: "One of the main objectives is to coordinate and correlate all the investigative work done anywhere in the world by anyone, if it has any relation to the skin. We are embracing medicine more closely every year; and medicine is embracing us more closely each year. *Unless we have a society and journal in which we can correlate experimental dermatologic work... and hold it in the dermatologic field, there is the possibility that dermatology will cease to be a comprehensive major specialty.*"

An excerpt of the Executive and Scientific sessions in 1939 (JID 2:152), discussing the fact that little work of interest to the practicing dermatologist has been published in the society's journal, reads "This is precisely one of the principal goals of our Society and Journal; namely, to bring to the attention of medical science the fact that research and

investigation of cutaneous phenomena are of interest to all medicine; and that many major additions to both general and specialized medical knowledge will continue to come from observations and investigations of dermatologic conditions and dermatologic reactions."

The JID was a bi-monthly in the beginning; in 1949 it became a monthly. In the same year, the annual meeting was extended to a two-day event.

The SID and its journal were unique in that, at the time, they were the only society and only journal to devote themselves exclusively to investigative work of all sorts related to a single medical specialty.

The annual meetings were disrupted by WWII between 1942 and 1944, and the JID between March 1943 and February 1945. According to Curtis, on May 8, 1945, the scientific sessions were resumed [15]. According to the JID, however, the sixth annual meeting took place on June 13, 1944, in Chicago.

With the flourishing of the SID and basic science in dermatology, the following advantages the United States had over Europe, came full into play: 1) a country with semi-continental dimensions; ocean-to-ocean; 2) about 200 million people as a reservoir of talents; 3) one law, one language, coast-to-coast; and 4) freedom; everything, including science, subjected only to the forces of the "market."

Sulzberger also writes in his autobiography (page 151) [16], "while the founding committees of the two new societies were composed of different dermatologists, each group knew of the work and plans of the other." He also states that he was fortunate to be able to participate in the inaugural steps of both societies, and, despite being one of the founders of the SID, he was asked to serve on the first Board of Directors of the Academy of Dermatology.

He concludes this chapter, (chapter 12, page 154) [16] by saying "The whole world of dermatology and its allied specialties knows now that the visions of the founders of both societies have been realized. The SID and the JID have made most valuable contributions to the advancement of investigative and scientific dermatology."

Without any doubt, the North American dermatologic community would have made the same decisions had the wave of immigrants on the eve of WWII not occurred. Such giants as Sulzberger, Beerman, Becker, Obermayer, O'Leary, Stokes, *et al*, many of them trained in Europe, would have made sure of that, but from the retrospective of history, another point may be made. The prime target of persecution in Europe was the Jews. Consequently, the refugees were largely Jewish. Beyond that, most of the immigrants shared common characteristics, in the authors' view: 1) they were highly trained and came from all echelons of academia; 2) they had proper command of the English language; and 3) they were not licensed to practice medicine in the United States and had no specialty board certificates. No wonder they turned to investigative work. With this wave of immigrants, more and more highly trained people of academic status had emigrated than at any given period before, and all their intellect and brain power was suddenly available. They constituted sort of an igniting spark for endeavors such as the SID and warranted its success. As a proof, already in Vol. 1 of the JID, there were several papers (co)authored by immigrants such as R.L. Baer, Stephan Epstein, W. Frei; and M.E. Obermayer.

Persecution of Jews was carried out in Germany, Austria, and other Axis countries; accordingly, the majority of immigrants on the eve of WWII, who became active in the development of American investigative dermatology, had a German or Austrian background.

WORLD WAR II AND ITS AFTERMATH: THE THIRD WAVE

The situation in Europe after WWII differed in several respects as compared to the situation after WWI. The latter had ended by exhaustion along the front and the threat of revolution in the hinterland, and by armistice. In 1945, there was an unconditional a surrender right away, and allied forces occupied virtually all Axis territory. Further, millions of people had been forcefully removed and uprooted during the war (forced labor), and many more millions underwent the same fate in the spring of

1945 and after (expulsion of Germans and sympathizers). Because of the moving of the fronts back and forth, at least twice, and due to aerial bombardments, much of what could be destroyed between the channel Coast and the Volga, actually was destroyed. Many, if not most of these displaced millions (officially called Displaced Persons or DP's), did not have even one citizenship. They very often could not or would not, return to where they came from. Finally, even when the dictatorship in Germany was crushed, the illusion of democratic freedom in Eastern Europe was shortlived. In consequence of all this, many people became disenchanting, intimidated, or endangered, Emigration was one logical solution.

Vis-à-vis the continuous build-up on the American side, the situation regarding research facilities in Europe, especially Central and Eastern Europe, was far worse than a decade before. The Budapest World Congress of Dermatology in 1935 had for the last time united the leaders in the field. Those who did survive couldn't dream of competing with America by any means. Not infrequently, it was impossible even to come by the American literature. The forces of attraction, by the flourishing United States, onto potential emigrees, grew day by day.

Felix and Halina Milgrom By now, both Felix and Halina Milgrom are in retirement. Halina, after a career in dermatology, Felix as a distinguished professor of immunology, decorated by his contemporaries by four honorary M.D. degrees (Vienna, Heidelberg, Lund, and Bergen) and more. Successor to the famous Ernest Witebsky (1901-1969) (himself a pre-war immigrant), in the Buffalo chair of microbiology (immunology) and head of the Center of Immunology at SUNY, it was under the tenure of both that the concept of autoimmunity was born and immunopathology of the skin was elaborated by Ernst Beutner (himself born in Berlin). Felix Milgrom was born in Rohatyn, Poland (Austrian Poland in the time of the Dual Monarchy, Russia of today). He survived the war in the Warsaw underground, then worked with Ludwik Hirszfeld in Breslau/Wroclaw and became head of department in Zabrze-Roknica (1954-1957). In 1957 the Milgroms left, first for Paris, and shortly after for the United States. With great respect for their contribution to the now abundant field of immunopathology (also, and especially, of the skin) the dermatologic world should gratefully acknowledge the pioneer work of Witebsky, Milgrom, and Beutner. Halina worked at Rosewell Park Memorial Institute at Buffalo, with Friedrich Helm and others, under the directorship of Edmund Klein.

Friedrich Helm, now professor and chairman at SUNY at Buffalo, deserves mention. Both his parents were M.D.'s. His father, a Viennese, joined his chief and moved to the Bohemia of then (in times of the Austrian Monarchy). When it broke up, citizens had to choose a citizenship. Most logically, not only ethnical but practical parameters were applied. In the Helm case, his parents opted for Czechoslovakia, because they had their positions there. In 1938, parts of this state, with an ethnically German majority, were handed over to Germany under the pressure of Hitler. Inhabitants became German citizens. In 1945, in turn, it was hardly possible to become a Czech citizen. On the other hand, Helm did not automatically qualify for citizenship of the Austrian Republic. (Sometimes in such situations, people had no citizenship.) Quite naturally, Helm turned back to Vienna and, finally, became Austrian. Helm graduated from Graz University and started at our department to make his residency. By 1960, he had become so disenchanting by the rigidity of the academic structures and possibilities of postgraduate education that he went over to the United States for a sabbatical; he never came back. (K.H. took his position the day after he left, December 1, 1960.) Soon he came to Buffalo with Edmund Klein from Boston. There he stayed and, eventually, became professor and chairman at SUNY, Buffalo, and affiliated hospitals. Of his investigative work, together with Halina Milgrom (and E. Klein), we should remember the early studies on 5-FU, topically applied to skin cancer.

We speak here of human dermatology, but it should not be forgotten that one of the pioneers of animal dermatology, František (Frank) Král

(1894-1980), who fled Czechoslovakia in 1948, came to the United States (Philadelphia). He was a pupil of Hugo Schindelka (1853-1913), M.D., D.V.M. (himself a pupil of Hebra), profesasor at the Vienna Veterinary Medical School, where he graduated in 1914 (diploma) and 1916 (D.V.M.). Krai had been Rector magnificus at trie Brunn/Brno, Veterinary Medical School in Czechoslovakia, before WWII [17]. The bloom of veterinary dermatology of today is based on his achievements after 1948.

Once more, immediately after the end of WWII and within the following years, America had been the haven for a wave of immigrants, leaving Europe and their native places for a better and brighter future, bringing along all their talents and their entrepreneurial spirit.

EPILOGUE

("America The Beautiful")

The SID of the Era of Stephan Rothman (1894-1963) This article shall not discuss the development of the SID itself; it is restricted rather to the demonstration of some of its roots in Europe. Also, the life and oeuvre of its early master, Stephan Rothman, cannot be elaborated fully here. Nevertheless, a few points shall be made.

Stephan Rothman, sometimes spelled Rothmann, was born in Budapest on September 10, 1894 and his birth recorded in the (neologic) synagogogue in Pest. His father came from Western Hungary (Slovakia, CSSR of today). His father was head of the dental policlinic and stomatologist at Budapest University [19]. At the outbreak of WWI Stephan Rothman was in Medical School, and in the summer of 1915 he volunteered for service in the Imperial-Royal Army. In 1917 (January 20) he was temporarily freed to finish his medical studies, and he was called up again on June 6, 1917 (to graduate only three days later on June 9, 1917). His military file reveals that he served in the Infantry Regiment No. 32 (Empress and Queen Maria Theresia, the traditional Budapest regiment) (Fig 1). In a handwritten application to the Ministry of War in Vienna (dated October 1, 1918) he asked for transfer from the Eastern Theater. He emphasizes his entry as a volunteer ("habe mich... freiwillig ins Feld gemeldet") and points to his 31-month service in the field (except six months for studies), and further asks to be transferred to a university town, to continue his studies of specialization in medico-

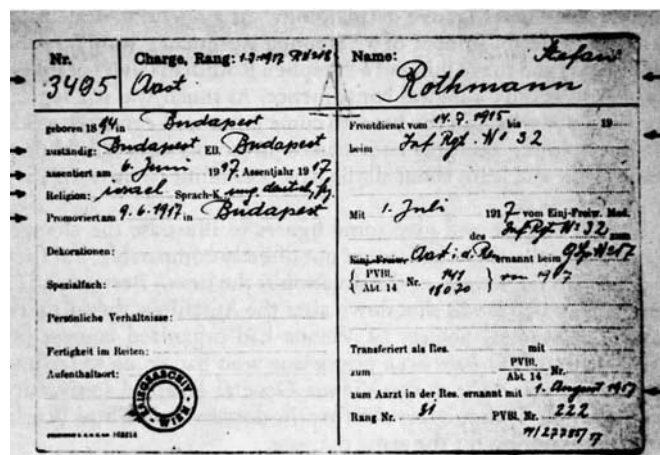


Figure 1. Rothman's military file of WWI (reproduced with permission of Kriegssarchiv Wien: War Archives, Vienna, Austria) left side: arrows point to 1) running number, rank (Aast Arzt-assistent, medical assistant); 2) place of birth (Budapest), military registration (same); 3) called up again after leave for study (June 6, 1917); 4) denomination (israel.) and languages (ung. deutsch, frz.: hungarian, german, french); 5) date of graduation (June 9, 1917) right side: 1) name (Stefan Rothmann); 2) military unit (Inf. Rgt. No. 32, Infantry Regiment No. 32); 3) date of promotion (August 1, 1917; Aarzt, Assistentarzt, assistant doctor).

chemical laboratory medicine, as he put it, “meine Studien in meinem Spezialfach, ärztlich-chemische Laboratoriumsarbeiten” [23]. War or no war, his inquisitive mind was eager to proceed with “chemical” investigations. (His request went unresolved; the war had come to an end.) Back in his native city of Budapest, he first started working in the Institute of Physiology [19], but eventually joined Professor Lajos (Ludwig) Torok (1863–1945) in dermatology. Torok was a pupil of both, Moriz Kaposi (1837–1902) and Paul Gerson Unna (1850–1929). Spier [21] therefore called Rothman a dermatologic grandson of Kaposi’s and Unna’s, a great-grandson of Hebra’s. In 1920, Rothman went to Giessen, Germany, to work with Albert Jesionek (1870–1935) who became his beloved teacher. During the following years he was based in Giessen but also visited all the important centers of dermatology in Europe. In 1928 he returned to Budapest to head a dermatovenerologic outpatient clinic of the Hungarian Government’s Institute of Social Medicine [20]. When the Ninth International Congress of Dermatology took place in Budapest in 1935, Rothman was general secretary. This was the acme of his career in Europe. In 1938, “sensing the gathering political storm” [20], he left for the United States to join S.W. Becker at the University of Chicago. There he remained. In 1941 he was put in charge of the department of dermatology; in 1943 he became associate professor; and in 1945, professor and chairman [19]. In 1954 he published *Physiology and Biochemistry of the Skin*, a book which, “assured his eminence as the father of modern investigative dermatology” [20]. Lorincz [22], listing his major contributions to dermatology, refers to 1) his detection of the action of acetyl-choline on the pilomotor and sweat gland system of the skin; 2) the “inhibition release theory” of postinflammatory melanosis; 3) the finding of the sun protective action of para-amino-benzoic acid; 4) the detection of an iron-containing pigment in red hair; and 5) his studies on the patho-physiology and composition of surface lipids of the skin.

In 1958, the year of the Rothman festschrift, the SID was close to twenty years old. The society’s journal, the JID, had grown into a two-volume journal per year with about 110 articles in 1958 (vols 30 and 31), compared to less than one third of that in volume 1 in 1939.

Allan Lorincz, in the foreword of this festschrift [18], calls Rothman “the widely acknowledged grand master of investigative dermatology,” delineates his career, his scientific achievements, and includes Rothman’s bibliography. In 1963 Rothman died. In the obituary, Lorincz calls him “the unchallenged master of investigative dermatology” and “a colorful and remarkable man whose keenly sharp mind was continually delighted and nourished by the phenomenal scientific renaissance taking place during his lifetime” [20]. He had been president of the SID (1949), recipient of the Semmelweis Medal of the Hungarian Medical Society, honorary member of many international dermatologic societies, and had served in many more functions, honorary and administrative. He had created “investigative dermatology” as a scientific dimension *per se*. The establishment of a “Stephen Rothman Award” by the SID (1967) and the naming of a “Stephen Rothman Club” of investigators, was only a logical consequence. As much was it a logical consequence when, in the years to come (after mid-century), a tide of eager, young postgraduates started streaming into the United States to see and learn about all the new possibilities in investigative work with skin.

Let us compare and give some figures to illustrate the change. (Unfortunately, these figures are not directly comparable, but they may give an impression of the situation at the time.) Between 1879 and 1939, when it was shut down after the Anschluss, the so-called American Medical Society of Vienna had organized courses for more than 32,800 American physicians who had come to see and learn what was done at the Vienna General Hospital (university departments). Today, it serves rather the doctors from Third World countries, coming for the same purpose.

When one of us (K.W.) set out in late 1965 for his postgraduate training at Mayo, this was an absolute “first.” To our knowledge, no one from this department (the Hebra) ever went for more than a visit to the

United States. In the twenty-odd years since, more than a dozen graduates have spent more than twenty man-years on the other side of the Atlantic, at Mayo, Harvard, Yale, Buffalo, the NIH, in San Francisco, and elsewhere, for training in the basic sciences as related to dermatology. These studies had a tremendous impact on Austrian dermatology, which has changed completely over the past quarter of a century. At the time of writing, three investigators from this department alone are spending their time in the U.S.A. for such studies. “Skin, Organ of Discovery” was the title of a presentation, M.B. Sulzberger delivered upon returning from his studies in Europe in the early thirties (to brief his colleagues on what was new and exciting in the Old World) [16]. Today those returning from America might well do the same. (All this, notwithstanding the fact that by today the Hebra department once more serves as a point of scientific attraction to investigators from the U.S.A., Japan, Korea, and Europe.)

Because of the 50 years of excellence in investigative dermatology, the leading role of North American dermatology is undisputed, however well any individual European department, be it in the U.K., Scandinavia, or Central Europe, may score in a direct comparison with one from across the Atlantic. English is the language of medicine and dermatology, and the JID has become one of the leading journals of dermatology and world medicine. The SID meetings have turned into one of the major events in the dermatologic calendar of any year.

Stimulated by the American experience, the Europeans founded the European Society for Dermatological Research (ESDR) in 1971, and the Japanese founded the Japanese SID (JSID) in 1976. At present, the JID also serves as the ESDR’s official journal.

There must be more to America than just plenty; in manpower, talent, and resources. *Freedom!* Who could better be cited than one of the (medical and political) founding fathers, Benjamin Rush (1745–1813), in his speech before the Philadelphia College of Physicians, February 6, 1787:

“And when I consider the influence of liberty and republican forms of government upon science and the vigor which the American mind has acquired by the events of the late revolution, I am led to hope that a great portion of the honor and happiness of discovering... may be reserved for the physicians of America.” *Indeed, it was, and is.*

CONCLUSION AND CONGRATULATORY ADDRESS

After a century, investigative dermatology can proudly demonstrate its capacity and its potential for the future. We, the authors of this article, can speak only for ourselves, but also hope to express the sentiments of many of our colleagues and friends in the Old World. May this semicentennial of the SID in 1988 serve as a token for the dermatologic world of how much can be achieved by dedicated researchers in the short time of 50 years in just one country. Let us go back to the citation of G.M. MacKee, in his first presidential address before the newly established SID in 1939 (see above). Today we may say, fortunately, “dermatology did not cease to be a comprehensive major specialty.”

We wish the SID, as a society, and its members as men and women and scientists, to thrive and prosper in the second half the their first century, for the benefit of our beloved discipline and for the ultimate benefit of man.

AD MULTOS ANNOS!

We thank Rainer Egger, Ph.D., and Kriegsarchiv Wien, Vienna, Austria; Arthur Kline, M.D. and the American Medical Society of Vienna, Vienna, Austria; Agnes Lössl and Universitätsarchiv Wien, Vienna, Austria; Lorenz Mikoletzky, Ph.D. and Allgemeines Verwaltungsarchiv Wien, Vienna, Austria; Günter Olensky D.V.M and Archiv der Veterinärmedizinischen, Universität Wien, Vienna Austria; Professor István Rácz, Budapest, Hungary; Eva Roman, Budapest, Hungary; Professor J. Graham Smith Jr., Augusta, GA, U.S.A.; Professor Otto Überreiter, Vienna, Austria; Professor Hans Urbanski, Vienna, Austria; Max Wolf, M.D., New York, NY, U.S.A.; Professor Jiri Záhajský, Brno, CSSR; Rektorat der Universität Wien, Vienna, Austria; Israelitische Kultusgemeinde Wien, Vienna Austria; Izraelita Hitközség, Budapest, Hungary; and Archiv des Österreichischen Widerstandes Wien, Vienna, Austria. We should also like to express our thanks to all other persons unnamed, who have permitted us to use their c.v.’s or information from their family records (archives).

REFERENCES

1. Crissey JT, Parish LC: The dermatology and syphilology of the nineteenth century. Praeger, New York, 1981
2. Fox GH: Anniversary address. New York Dermatological Society. Arch Dermatol 1:80-89, 1920
3. Beerman H, Lazarus GS: The tradition of excellence. Beerman & Lazarus Inc., Philadelphia, 1986
4. Szymanski F: Centennial history of the American Dermatological Association 1876-1976, A.D.A., 1976
5. Lustgarten S: In: Anzeiger der k.k. Gesellschaft der Aerzte in Wien, No. 7, 1884, p 41-42; and Lustgarten S; Die Syphilisbacillen. In: Medizinische Jahrbucher. k.k. Gesellschaft der Aerzte, 1885, p 89-109
6. Silver H (Obituary) Louis Chargin, MD 1879-1969. Arch Dermatol 100:259, 1969
7. The Collected Papers of Sahachiro Hata. Kitasato Institute and Kitasato University, Tokyo, 1981
8. Speiser P, Smekal FG: Karl Landsteiner Hollinek. Vienna, 1975
9. Hollander A: The tribulations of Jewish dermatologists under the Nazi regime. Am J Dermatopathol 5:19-26, 1983
10. Deutscher Dermatologenkalender. Riecke E (ed.). Leopold Voss, Leipzig, 1929
11. Numberger F: Abraham Buschke (1868-1943). In: Klaschka F, Rauhut K (eds.). 100 Jahre Dermatologie in Berlin. Grosse, Berlin, 1982, p 89-94
12. Grans O: Zum 100. Geburtstag von Karl Herxheimer Hautarzt 12:241-242, 1961
13. Spillman R: Leopold Freund (1868-1943). Am J Roentgenol 60:683-684, 1948
14. Weiss K: In memoriam Leopold Freund. Wien klin Wschr 59:189-190, 1947
15. Curtis A: The chronicle of the Society for Investigative Dermatology. J Invest Dermatol 23:225-231, 1954
16. Sulzberger MB: From there to here. Edited by and with additional material, by Roberta Z Sulzberger, VH Witten. Inst for Dermatologie Communication and Education, 1986
17. Holubar K: Pemphigus. A disease of man and animal. (3rd Frank Krai Lecture). Int J Dermatol 27:516-520, 1988
18. Lorincz AL: Dr. Stephan Rothman (foreword of the Rothman festschrift). J Invest Dermatol 31:1-3, 1958
19. Marchionini A: Stephan Rothman zum 65. Geburtstag Hautarzt 10:430-431, 1959
20. Lorincz AL: Obituary. Stephan Rothman, M.D. 1894-1963. Arch Dermatol 89:167-169, 1964
21. Spier G: In memoriam Stephan Rothman (1894-1963). Hautarzt 15:145-146, 1964
22. Lorincz AL: In memoriam Stephan Rothman. Hautarzt 20:429-430, 1969
23. Knegsarchiv Wien (War Archives Vienna), 1918, 14. Abt. 68-2/1-274
24. Rush B: A discourse delivered before the College of Physicians of Philadelphia, February 6, 1787, on the objects of their institution. Transact Coll Phys Philadelphia. T Dobson, Philadelphia, 1973, vol I, part 1, pp XIX-XXI