



Office of  
NIH History

## History Highlights Winter 2006

Office of Intramural Research  
The National Institutes of Health  
Department of Health & Human Services

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This Gaertner instrument was recently donated to the Stetten Museum by Dr. Allen Minton, NIDDK. Can you help us identify the instrument? Is it a cathetometer?

# Soviet Instruments

By Michele Lyons, Curator

Two recent donations to the Stetten Museum help document relations between U.S. and Communist bloc scientists during the height of the Cold War: on the one hand, scientists tried to reach over the wall between the East and the West, while on the other, the wall effectively delayed the adoption of a new technique.

Eight different Soviet-made surgical stapler sets, donated by Richard Terrill, NCI, illustrate the first situation. The sets were a gift to Dr. Alfred Ketcham (a colleague of Terrill's, then chief of the Surgery Branch, NCI) in the early 1970s, from Dr. Nikolai N. Trapeznikov, Director for Science, Institute of Experimental and Clinical Oncology, Moscow. Both men participated in the U.S./U.S.S.R. Joint Subcommittee on Oncology, visiting each other's countries and learning what each country had to offer in the field of cancer research. Trapeznikov gave the sets to Ketcham with pride, because the Russians were rapidly developing the surgical stapler. Ketcham unfortunately found that the staplers did not fit investigators' needs at NCI, so most of the kits came to the Museum in pristine condition. Ketcham became Clinical Director of NCI in 1971, and in 1974 left for the University of Miami School of Medicine.

Modern surgical staplers are based on the design of Hungarian Aladár Petz (1888-1956) who invented the gastric stapler in 1920. Staplers for specific purposes were

further developed by the Soviets, including those for pulmonary surgery, stomach and intestinal surgery, and coronary artery surgery (examples of these sets were part of the donation). The Soviets pioneered the use of the surgical stapler in coronary artery surgery. In the 1960s, Professor Vasilii E. Kolesov (1904-1992) was one of the first two men to perform successful coronary artery bypass surgery on a human (Robert H. Goetz is the other). Kolesov, the son of collectivized farmers, studied at the Leningrad Medical Institute and survived



Takatsy Microtiter, the beginning of microdiluters.

the siege of Leningrad (now known as St. Petersburg) by the Nazis (1941-1944) although he lost his brother, niece, and nephew to starvation. He later found that

people who were entering puberty at the time of the siege had a high incidence of heart disease as adults. He began his experimental coronary bypass surgery in the 1950s after hearing about Vladimir P. Demikhov's (1916-1998) successful operation on dogs. By the 1960s, Kolesov was operating on humans and finding that the main danger of the surgery was of patients going into cardiac arrest during the suturing process. In 1967, Kolesov began using the surgical stapler model ASTs, which could join vessels up to 20 mm in diameter quickly, so that suturing would last only two-to-five minutes. Finding numerous problems with the stapler design, he worked with the Krasnogvardeets factory to remodel the stapler into the ASTs-4 model which could join vessels up to 1.3 mm.

The Krasnogvardeets (Red Guardian) factory was not a Communist invention; it was commissioned by Peter I in 1721 to make surgical instruments for the army. The tradition of master craftsmen passing along their skills to succeeding generations continued until the 1930s, when the factory began making medical instruments and included components such as electronics. After losing many workers during the Nazi siege of Leningrad, the factory was slow to modernize, but eventually added cardiology, anesthesiology, endoscopic, ophthalmologic, and optical instruments to its inventory. During the 1960s, when these staplers were made, the factory was introducing basic modern manufacturing concepts such as standardization of parts and mechanization of processes. Today, the company still makes

medical instruments, most of them surgical staplers or artificial pulmonary ventilation equipment.

The Takatsy microtiter technique took years to make its way over the wall. After Communist Hungary left WHO, scientists there found they had few of the basic supplies of serology and virology, including pipettes and test tubes. To circumvent this problem, Gyula Takatsy (1914-1980) developed a technique using loops of wire on the ends of knitting needles. The



Krasnogvardeets' UO-40 Organ Suturing Instrument

capillary action of the loops drew up a constant volume of liquid, filling the loop. The loops were calibrated by weighing them when they were dry and full of water. A technician could hold several of these loops at a time, speeding up a slow process. Takatsy also designed the droppers and

Plexiglas plates with wells drilled into them to complete the technique. This method saved time, money, labor, reagent, and space for the laboratory. And it gave reproducible results. Later, Takatsy added metal cups instead of loops because they were more durable.

The Hungarian government did not patent the invention and Takatsy's publications went unnoticed by the West because of the language difficulties. It wasn't until Dr. John L. Sever, NINDS, became intrigued in 1960 and found Takatsy's 1955 article that the method became widely used in the West. Sever had just joined NIH and wanted to do large-scale serology for his viral antibody research. Cornwall syringes could deliver set volumes of liquid repeatedly, but they were very slow to use. After Sever finally found Takatsy's article, he almost hit a brick wall. "Initially, because it was the Cold War, it was impossible to obtain information about the equipment and appropriate use of the system," he remembers ("Major Technological Advances Affecting Clinical and Diagnostic Immunology," John L. Sever, *Clinical and Diagnostic Laboratory Immunology*, Vol. 4, No. 1, January 1997, pages 1-3). He managed to secure his Takatsy device through Metrimplex, a dealer in Budapest. The set that has been donated to the Stetten Museum has the Factory for Laboratory Equipment, Budapest, Hungary, maker's plate, although it is possible that it could have been hand-made by Takatsy, who regularly made the sets until demand picked up.

Sever, the NIH instrument branch, and Frank Cooke (Cooke Engineering,

Alexandria, VA) took Takatsy's design and modified it to fit Sever's need to use culture samples. They developed a new loop and droppers and an injection-molded 96-well plate. This is the design that Cooke took commercial. Meanwhile, Sever used the method in his work on the rubella vaccine. He further miniaturized the process in later years, making the instruments more useful to virologists and more efficient. Sever became chief of the Infectious Diseases Branch of NINDS and is currently Chair of Pediatrics at Children's National Medical Center in Washington DC. He is an authority on perinatal infections and is working on complications in children with AIDS receiving retroviral therapy.

The surgical staplers that Dr. Trapeznikov was so eager to give to the West and Takatsy's microdiluter set which had been so hard to uncover, both brought new technologies to the West. As usual, the West modified them, but the staplers and microdiluter are signal instruments which the NIH Stetten Museum is lucky to have.

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# Lyme Disease Discoverer's Papers

By Jodi Allison-Bunnell, Contract Archivist

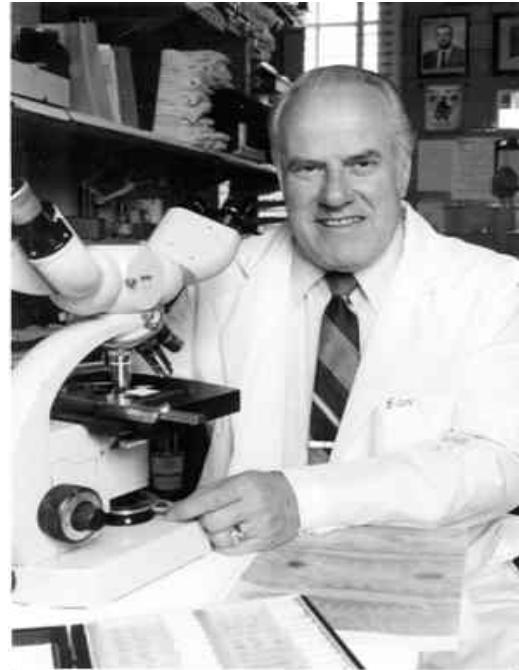
The research materials and other documents of Dr. Willy Burgdorfer, a Rocky Mountain Laboratories (NIAID) scientist known for his discovery of the tick-borne agent that causes Lyme disease, have joined the research collections of the Office of NIH History.

Burgdorfer, who worked at the RML from 1952 to 1986, discovered the Lyme agent in 1982. During the first international symposium on Lyme disease held at Yale University in 1983, the majority of those attending decided to name that agent *Borrelia burgdorferi* in his honor. Burgdorfer is also well known for his research on other tick-borne diseases, including Rocky Mountain spotted fever, relapsing fever, and California encephalitis. He is now Scientist Emeritus at the RML.

The collection documents his work at Rocky Mountain Laboratories as a scientist and administrator, his extensive contact and collaboration with other scientists worldwide, attendance at conferences, teaching and lecturing, and awards received. Laboratory notebooks, correspondence with other scientists, extensive photographic documentation of microscopic laboratory subjects, and one film document his scientific career and discoveries. Materials from teaching, lectures, and conferences show his active and worldwide efforts to promote collaboration, communicate progress on research, and increase communication with the general public on tick-borne diseases. His service as an administrator at RML is documented in annual reports and meetings with the Board of Scientific Counselors; the collection also includes clippings and photographs relating to employees of the Laboratory and the Laboratory's history. There are extensive materials about his work with the Lyme Disease Foundation.

The papers are open for research and may be used by those interested in the process of scientific discovery, in tick-borne diseases in the United States, and in the history of Rocky Mountain Laboratories and the Public Health Service, among other topics.

For more information on this collection, or information on how to donate your papers to the Office of NIH History, please contact Brooke Fox, Archivist, at 301-451-4344 or [foxbro@mail.nih.gov](mailto:foxbro@mail.nih.gov).



Dr. Willy Burgdorfer

# Oral History Program

Leo B. Slater has begun work on expanding and standardizing the History Office oral history program. The collection has grown over the years from a few informal taped conversations to hundreds of more formally researched and professionally transcribed interviews. The tapes and transcripts are housed in the Office of NIH History, while a few of the interviews have been posted to our website (click on “oral histories” under Historical Resources).

Some interviews are with single individuals such as Nobel Laureates. In other instances, researchers conducted a whole series of interviews as part of larger scale historical research on wider themes.

Whatever the scope of the interview, the oral history collection is a vital part of the historical resources that the History Office makes available every day.

After several decades of oral history interviewing, it is now time to standardize the collection to make it more useful for researchers. This will primarily take the form of an updated and detailed editorial style guide. Crafting policies on how best to expand and maintain the program will be part of this process.

The demographics of NIH make the need to preserve institutional memory particularly strong. The tremendous growth of NIH in

the last half century means that the number of important scientists and administrators who contributed to NIH’s achievements in recent decades is larger than ever before. Today the need for more interviews is acute. As each generation of NIH scientists retires and moves on, a piece of NIH history is lost. The oral history program is a way to preserve and make known the agency’s history and preserve its heritage of scientific and clinical breakthroughs. The published record—readily found in

journals—is only one part of NIH’s heritage. The lived experience of scientists and decision makers is far deeper and more complex. Oral histories with individuals or groups can preserve the legacy of scientific evolution, research policy making, and the broader impacts of society, disease, the environment, and politics on the direction and content of biomedical research.



Dr. Paul Parkman, after an oral history interview in 2005.

Dr. Slater hopes to widen the circle of NIH staff who are aware of the oral history program and encourage the Institutes and Centers to make oral histories a more regular part of their retirement and anniversary celebrations. Tracking new and current projects, capturing the state of science at any given moment, recording the intellectual growth of mid-career professionals are all possible roles for oral history. The oral history program is just one part of the many important efforts being made to appreciate and preserve our shared history.

# A History of the BRHIG

By Buhm Soon Park, Associate Historian

The seminar series in the history of biomedicine at the NIH, known as the BRHIG (Biomedical Research History Interest Group) was founded in the late 1990s to improve the visibility of the Office of NIH History within the NIH community and among historians of science and medicine. Dr. Victoria A. Harden, former NIH Historian, recalls: “I had wanted to set up a seminar on the history of biomedical research from the day Dr. Stetten [DeWitt Stetten, Jr., NIH Deputy Director for Science in the 1970s] created the Office in 1986.” Organizing the seminar series, however, became possible only in the late 1990s, at a time when the Office of the Director strongly encouraged and helped organize trans-institutional seminar groups, called “special interest groups” or SIGs.

Science seminars have a long history at the NIH. Dr. Milton Rosenau, Director of the Hygienic Laboratory (1899-1909), forerunner of the NIH, started the first agency-wide journal club to keep the staff informed of current literature and encourage the exchange of views among the researchers. In later years, as the staff continued to grow, researchers met at smaller and more focused luncheon seminars within individual laboratories or branches.

Dr. Harold Varmus, NIH Director (1993-1999), gave the informal meetings strong institutional support. The main thrust was to promote communication and collaboration



Meldrum delivered the first BHRIG lecture in 1999.

among NIH scientists beyond institute boundaries. By 1997, seven major inter-institute interest groups (cell biology, molecular biology and biochemistry, genetics, structural biology, immunology, neurobiology, and clinical research) and sixty-five smaller specialized interest groups had been established. Dr. Michael Gottesman, Deputy Director of Intramural Research, who took charge of this initiative, gave an upbeat status report at that time: “Over the past four years, the burgeoning diversity and vitality of NIH’s specialized scientific interest groups have greatly enhanced the research climate here.” He then said: “More and more, our interest groups are an important and impressive scientific face NIH shows the world, as they respond to queries from outsiders and provide points of contact for scientific collaborators.” At the center of the network connecting all interest groups was Dr. Celia Hooper, OD, known as the “Czarina of Interest Groups.”

Seeing the enthusiasm for SIGs, Harden encouraged the Stetten postdoctoral fellow, Dr. Marcia Meldrum, to work with Hooper and create a new interest group in the history of biomedicine. Naming the SIG took some creativity. At first, they could not think of anything better than the SIGH (Special Interest Group for History), “which sounded awful,” Meldrum recalls. Eventually they came up with the BRHIG (Biomedical Research History Interest Group), pronounced ‘brig.’”

The organizational meeting for the BRHIG was

held on April 15, 1999. The group “made a conscious decision,” Harden recalls, “to include scientists and administrators along with historians, hoping to draw our audience from multiple populations and to stimulate discussion between the ‘two cultures.’” Meldrum delivered a lecture at the first BRHIG seminar in May of 1999.

For the next six years, Harden contacted potential speakers and scheduled their seminars, while the Stetten fellows assisted in the clerical work. With no funds to pay for travel expenses, the office took advantage of scholars who passed through the Washington, D.C. area and were willing to participate gratis. The speakers included local scholars and NIH scientists with an interest in the history of their work.

Among the one hundred interest groups currently operating at the NIH, the BRHIG is unique in terms of its emphasis upon collaboration between historians and scientists. It has more than 200 members with diverse backgrounds—historians, scientists, archivists, librarians, journalists, educators, and public relation specialists. What does this collaboration mean? Where does it lead? What is the benefit of a dialogue between the sciences and the humanities? Like any interdisciplinary

collaboration among scientists, the historian-scientist interactions can lead to new understandings. The collaboration can reveal lessons to be learned from the past, new perspectives on current policy issues, and provide arguments to defend or change ongoing programs.

More important, the historical analysis of science, scientists, and their institutional surroundings will provide a deeper sense of what it means to be a biomedical researcher at the NIH.

This year I am delighted to administer the BRHIG seminar. Looking back on its short but full history, I am impressed with what the BRHIG seminars have offered. Looking ahead, I feel that there is still much to be done at this boundary of the historical profession—where history meets with science and medicine outside academia.

*“The BRHIG is open to everyone interested in the history of biomedical research at NIH or elsewhere. In addition to the presentation and discussion of work-in-progress, the group will serve as a forum for discussion of issues of common interest, such as the identification and development of source materials; the uses and pitfalls of oral histories in research; and collaborations between historians and the biomedical community.”*

(Mission statement)

I am now assisting Dr. Alan Schechter, Acting Director, Office of NIH History, in finding suitable speakers for next year. If you want to see the BRHIG schedule and/or join the group, please visit our website, <http://www.nih.gov/sigs/brhig>. And if you want to present a paper or suggest a speaker, please send your email to me ([parkb@mail.nih.gov](mailto:parkb@mail.nih.gov)) or Schechter ([alans@mail.nih.gov](mailto:alans@mail.nih.gov)).

## Announcements:

- ◆ **Search begins for new director.** The Office of NIH History has posted a job listing for the new NIH Historian and Office Director. For more information go to <http://www.usajobs.gov/> and search for vacancy #OD-07-146557-DE. The job closes on January 26, 2007, and is expected to be filled next spring.
- ◆ **NIH history course translated into Spanish.** Victoria A. Harden, former Director of the Office of NIH History, put together a Supercourse which has now been translated for a Spanish-speaking audience. You can see the list of NIH/Supercourse offerings here: <http://www.pitt.edu/~super1/NIH/nih.htm>.
- ◆ **Office of NIH History grows.** This winter two of our staff members will become federal employees. Congratulations to Brooke Fox (archivist) and Sarah Leavitt (associate historian) who will help bring the office more visibility through their civil service positions. Leo Slater, a former Stetten Fellow, joined the Office as an associate historian this fall.
- ◆ **Book on malaria research to be published.** Leo Slater received a contract from Rutgers University Press to publish his book: *Malaria & War: Biomedical Research in the Twentieth Century*, a history of infectious disease research in the first half of the twentieth century. The book looks at research choices and materials illustrating the shifting boundaries of what constituted an adequate research model of disease. The book is structured around a detailed historical analysis of the background, development, organization, and legacy of the US antimalarial program during World War II.
- ◆ **Major awards for former director.** Victoria Harden has won the 2006 Herbert Feis Award given by the American Historical Association. The award recognizes “distinguished contributions to public history during the previous ten years.” She will receive the award at the association’s annual meeting in January. Harden was also the recipient recently of the NIH Alumni Award, given by the NIH Alumni Association in recognition of her years of service to the NIH and her dedication to preserving its history.

*New Drug Discovery and Development*, a book by our volunteer Daniel Lednicer, has just been released by John Wiley Publishers. The book takes a case history approach to drug synthesis and discovery of some of the most popular drugs on the market today, including penicillin, Minoxidil, Viagra®, and “the pill.” Organized by drug category, the guide introduces readers to the interplay of research and serendipity that is responsible for many commonly prescribed drugs today. Moreover, the author demonstrates how the discovery and development of a new drug or drug category creates a domino effect, leading to the development of newer therapeutics as pharmaceutical companies compete to satisfy market demands.

