

# **Dr. Charles Holmes Herty (1867-1938)**

## **Perspectives on his career and life**

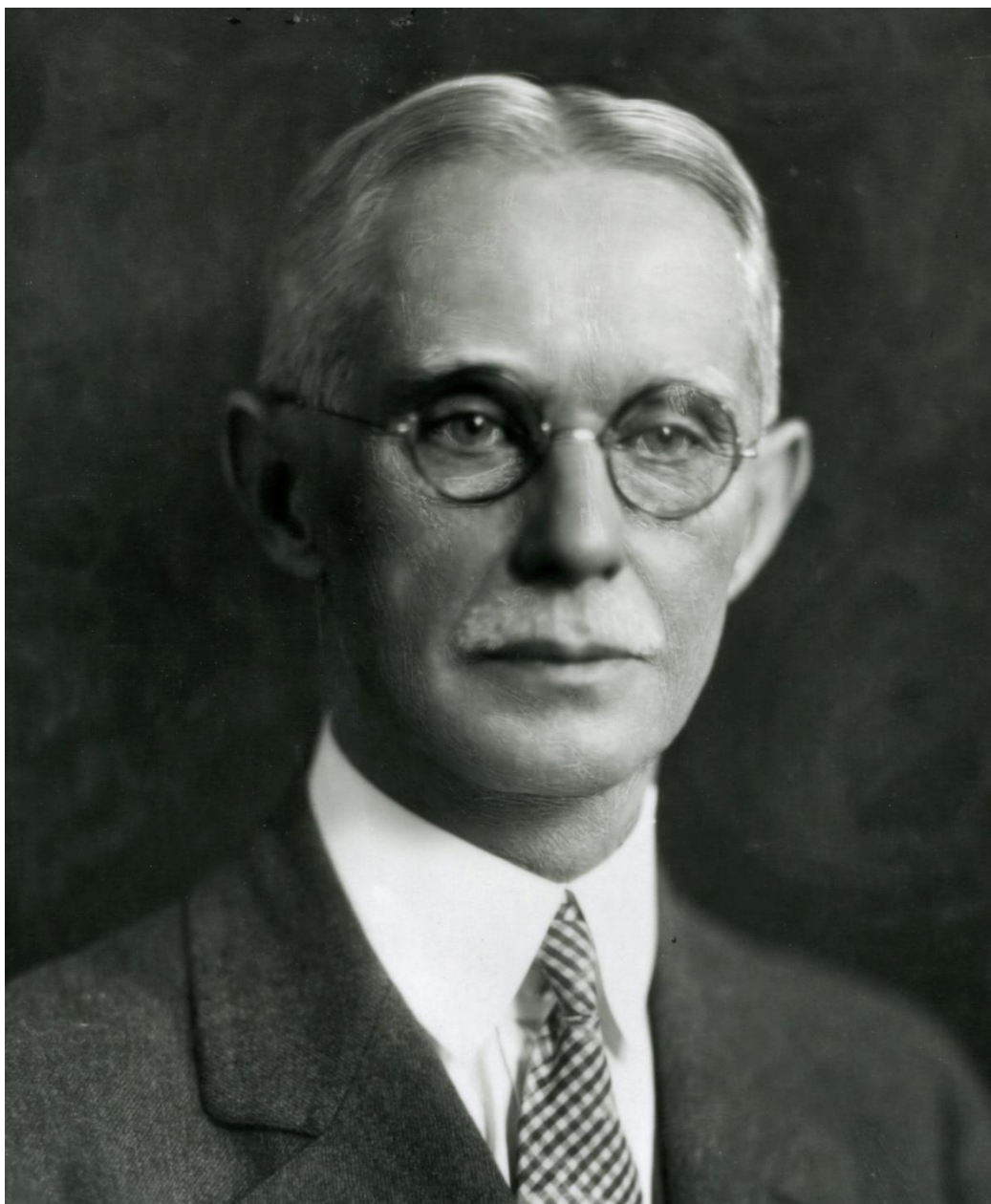
By  
Donald G. Hicks, Ph.D.

### **FOREWORD**

The following series of perspectives on the career and life of chemist Charles Holmes Herty, a Georgia native, has been prepared by Donald G. Hicks. They were compiled after an extensive study of the carefully and thoroughly researched 1995 book *Crusading for Chemistry: The Professional Career of Charles Holmes Herty* by historian and Georgia Institute of Technology professor Germaine M. (Gerry) Reed. Other sources the included Herty Papers in the Special Collections Department of Emory University Woodruff Library, *Georgia Historical Society Quarterly Bulletin* issues, *Chemical & Engineering News*, *Journal of Industrial & Engineering Chemistry*, *The Filter Press* newsletter of the Georgia Section of the American Chemical Society (ACS), *The Hexagon* newsletter of Alpha Chi Sigma, Herty obituary in the *Journal of the American Chemical Society*, and the *New Georgia Encyclopedia*. Also involved were conversations with C. H. Herty's grandson, PhD chemist Charles Holmes Herty III. The online *Wikipedia Encyclopedia* was found to be not as reliable due to omissions and inaccuracies.

The author, Dr. D. G. Hicks, is a 40 year member of the Georgia Section of ACS and has served for several years as its official Archivist-Historian. He served 15 years (1992-2006) as a member of the national governing Council of ACS, and lectured extensively on Dr. Herty both as an ACS Tour Speaker and at several History of Chemistry symposia. He is a retired chemistry professor from Georgia State University.

**Dr. Charles Holmes Herty, circa 1927**  
Courtesy Chemical Heritage Foundation



## Charles Holmes Herty

### Twelve Professional Career Highlights D. G. Hicks – 2009

Since 1933 the Georgia Section of ACS has presented the Herty Medal annually to an outstanding southeastern USA chemist. Listed below are the top 12 highlights of Dr. Herty's career. They explain why Georgia chemists honor and celebrate his legacy with this award.

1. He was an outstanding chemistry professor at the universities of Georgia (1891-1901) and North Carolina (1911-16). Students yearly ranked him among the top 3 professors at UGA, and at UNC he was Chair of the Chemistry Department and Dean of Applied Science (1908-11).
2. In 1903 he saved the USA turpentine and rosin chemical industry (world's largest) by inventing a simple cup-and-gutter system to collect distillable sticky resin from pines without killing the trees. Used for 75 years, this device saved 45,000 naval stores industry jobs.
3. This 1903 invention also saved the southern pine forests. The naval stores industry had killed half of the southern pines by cutting deep holes in the side of the trees to collect resin.
4. As 1915-16 ACS President he had a key role in organizing chemists to solve World War I problems related to German Poison gas attacks and supplies of nitrates, munitions, fertilizer, platinum catalyst, dyes, and pharmaceuticals. Previously outsourced, WW-I cut off supplies.
5. He was the first full time editor of I&EC journal 1917-21. In 1918 he started and served as the first Director (as I&EC editor) of the ACS News Service that eventually published C&EN.
6. After his speech instigating its need, he served as the first President of the Synthetic Organic Chemical Manufacturers Association (SOCMA) 1921-27.
7. From 1915 until he died in 1938, he was arguably the best ever one-man and PR machine popularizing chemistry. Often travelling 2 weeks per month by train, he crossed the country making spell-binding speeches to chemists, politicians, businessmen, and women's clubs.
8. After proposing it in a 1918 I&EC editorial, he chaired for 12 years the ACS committee that got the National Institutes of Health established via the Ransdell bill in 1930. With its 30 billion dollar 2009 budget, this research supporting agency accounts for 19,000 jobs.
9. In 1933 he proved white paper, cellulose, and rayon could be made from fast growing *young* southern pines. This created the huge southern pulp & paper industry with tens of thousands of jobs, and led to rapid industrialization of the southern USA with even more jobs.
10. This 1933 paper-making achievement also slowed the decimation of the northern forests.
11. The tree farming industry, with 4.5 million citizens involved in 2002, was also created in the 1930s as a result of Dr. Herty starting the southern USA pulp & paper industry.
12. In 1918 Charles Herty began crusading to establish the world's largest (USA) chemical industry during 1918-40. For this perhaps greatest of his career achievements, he received a national award in 1932. This USA industry employed 993,000 workers in 1998.

## **Charles Holmes Herty (1867-1938)**

### **An extended chronology of his life and career**

D. G. Hicks, January 2002

Educated, educator, chemist, leader, crusader, patriot, gentleman, visionary, white knight.... are all appropriate words to describe Dr. Charles H. Herty, the man honored each year at the Herty Medal Award Celebration. "The spark of his genius and energy touched Georgia's pines and forests of smokestacks began growing in the South" is the inscription on his bronze 6' x 6' bas-relief bust which stands with busts and statues of other Georgia leaders under the gold dome of the Georgia State Capitol in Atlanta. Some events in the life of this innovative chemist are recounted here.

Dr. Herty was born December 4, 1867, on land which later became part of what is now Georgia College and State University at Milledgeville, which was the capitol of Georgia at that time. His father served in the confederate army, and was the leading pharmacist in the area. Orphaned at the age of eleven, he and his sister Florence were raised by a schoolteacher aunt Florence I. Holmes. Charles Herty eventually studied chemistry at the University of Georgia, earning the Bachelor of Philosophy degree in 1886 with recognition as first honor man in his class. His Ph.D. degree in chemistry was received in 1890 from Johns Hopkins University under the direction of the great Dr. Ira Remsen. The inorganic chemistry thesis dealt with compounds containing "complex" ions of the Werner type, which were known much later to involve coordinate covalent bonding. Always interested in sports, he played baseball and was an avid life long fan of professional baseball. Former students recalled how everyone learned that his crooked finger had been broken playing baseball. Many extracurricular activities included playing flute in a college band, singing in campus glee clubs that were popular at the time, and participating in stage musicals. Although a lifelong teetotaler, he did smoke Cuban cigars and the "Home Run" brand of cigarettes. The latter preference apparently came from his interest in baseball. He was an active lay leader in the Episcopal Church during his life.

Due to a recession, he was underemployed in 1890 as assistant chemist in the Georgia Agricultural Experiment Station in Athens. By 1891 he was hired by the University of Georgia as a chemistry instructor and director of the physical culture program at \$1350 per year. Students rated him among the top three professors. He was also the only professor there who was doing any scientific research. Modern football with the current elongated type ball was introduced by Dr. Herty in 1892 when he became Georgia's first football "coach," as well as the first Deep South football coach! Before long, he and a few other southern university football coaches formed the Southern Intercollegiate Athletic Association to combat the practice of colleges hiring non-students to play football for them. Three children resulted from his marriage in 1895 to a Miss Sophie Schaller of Athens, Georgia. The first son, Dr. Charles H. Herty II, was a Ph.D. physical chemist (MIT) who eventually became vice-president of Bethlehem Steel Corporation and the first metallurgist elected to the National Academy of Sciences. His brother Frank B. Herty was an engineer who worked for Union Gas Company in Brooklyn, New York, and later started the engineering college at the University of South Carolina. Their younger sister Sophie Dorothea Herty Minis attended Vassar College and earned an M.S. degree in botany from Cornell University. She returned to Vassar to teach plant physiology. A grandson, Dr. Charles H. Herty III, is a Ph.D. chemist and still lived in Waco, Texas in 2002.

After no promotion or raise in salary for eight years, he borrowed against his insurance policy to finance a sabbatical leave year (1899-1900) in Europe where he studied applied chemistry with dyestuff chemist Otto Witt in Berlin, and with stereochemist Alfred Werner in Zurich. Three statements he heard in Europe had a major effect later on **both** Herty's career and the entire U.S. chemical enterprise! **One** comment by Otto Witt was that the industrial success of Germany was largely due to government and industry generously funding basic scientific research. More caustically, Witt made a **second** observation that the U.S. naval stores (turpentine) industry would soon not exist because they were killing the southern pine forests with their stupid deep "box cutting" method of collecting the distillable sticky resin! **Third**, Charles Herty heard a lecture about making paper from German conifer trees by an acidic sulfite pulping process. Stung by the words of Witt, and failing to get a raise and promotion on returning from Europe, he left UGA and joined the U.S. Bureau of Forestry as an Expert to study the tree-killing problem of the turpentine industry. He soon patented in 1903 a **simple** cup-and-gutter method to collect pine resin that used shallow cuts and did not kill the tree. This was followed by formation the Herty Turpentine Cup Company to manufacture the apparatus which was used another 75 years. This simple device saved both the southern pine forests and 45,000 jobs in the U.S. turpentine and rosin chemical industry (world's largest) from certain extinction. It also gave him an international reputation as well as a lifetime of at least moderate financial security. Many later contributions were of great benefit to both chemistry and society, *but this was the only one from which he received any personal financial gain!*

From 1905 to 1916 Dr. Herty was Mary Ann Smith Professor of Chemistry and Chair of the Department of Chemistry, and for a time Director of Athletics and Dean of the School of Applied Science (1908-11) at the University of North Carolina at Chapel Hill. His research career there took on an applied chemistry nature as he studied natural products of commercial significance such as types of turpentine, soaps, leather, and cottonseed oil. "Captain Charlie," as nicknamed by students, never lost an opportunity to exhort students to "use your chemistry to do something for your state or country!" In 1907 he became the first Chair of the ACS Division of Physical and Inorganic Chemistry, one of the first 7 ACS Divisions. Charles Herty served as President of the American Chemical Society (ACS) in both 1915 and 1916, a critical period during World I. He played a key role in organizing groups of chemists to solve World War I national defense problems on German poison gas attacks and supplies of nitrates, munitions, fertilizers, platinum catalysts, dyes, and pharmaceuticals. Resigning from UNC, he worked from 1917 to 1921 as the first full-time editor of the third ACS publication.....the *Journal of Industrial and Engineering Chemistry*. After chairing the 1917 ACS committee developing the idea, he served 4 years as first director (as I&EC editor) of the ACS News Service which evolved to begin publishing the weekly *Chemical & Engineering News* in 1923.

ACS Executive Director Charles L. Parsons once wrote, grudgingly, that Herty was a spell-binding speaker. Parsons was right! From 1915 to the end of his life, Charles Herty became known as "the mouthpiece for chemistry" as he frequently traveled across the nation speaking with equal ease before businessmen, politicians, ladies clubs, academics, or technical leaders. Many years were spent traveling an average of two weeks each month *by train*. With near missionary zeal and drive, he preached the gospel of chemistry and forcefully promoted concepts such as (1) government and industry cooperating with academia to increase basic research, (2) the importance of chemistry in the lives of everyone, (3) improved chemical education at all levels, (4) the need to expand U.S. chemical industry and have a chemical industry independent from the world, and (5) improving the economy of the country, especially the South, through applied chemistry and the chemical industry.

C. H. Herty was a fierce patriot who made no apologies for his tireless work, beginning in 1916 and continuing for many years after World War I, to help develop a full scale and "self-contained" USA chemical industry. He lobbied Congress to make laws to protect this industry from the ruthless tactics of European chemical industry cartel giants like I. G. Farben. His crusading persuaded both industry and government leaders that USA chemists were quite capable of producing dyes, drugs, and other organic chemical products equal in quality to those previously supplied by Germany. After a 1921 speech suggesting the need for it, the Synthetic Organic Chemicals Manufacturers Association (SOCMA) was formed with Dr. Herty as its first president from 1921-1927. It still promotes these industries today. As cited when AIC gave him its 1932 gold medal at a New York City gala, Dr. Herty deserved without question more credit than any other chemist for the rapid expansion of the USA chemical industry into organic chemicals production prior to World War II between 1918 and 1940. It became the world's largest chemical industry, and the image of chemists and chemistry was so high that Dupont introduced its famous slogan "Better Things for Better Living through Chemistry!" This industry had 993,000 employees in 1998.

Because of his wife's serious asthma condition, Charles Herty had a lifelong interest in any sort of new pharmaceutical product which might relieve her suffering. One historian suggested this probably had a strong influence on his writing a 1918 editorial proposing the alignment of chemistry with medicine via a "chemo-medical" research institute. In 1919 several newspapers published an interview with him on the subject, and for the next 12 years he chaired an ACS committee to study and promote the concept. Because of his editorial, he met and became friends at this time with Francis Garvan, wealthy head of the Chemical Foundation, who had a special interest in creating this institute because his young daughter had died from an infection with no medicine to cure it. Garvan's Foundation paid for publishing the committee's report on the general subject of *chemistry in service of medicine* in pamphlet form, plus distributing 600,000 copies to ladies clubs and anyone in the country with a connection to medicine. Herty was particularly proud of producing this pamphlet. Unable to generate enough funding for a private institute that he preferred, Dr. Herty eventually worked closely with Senator Joseph E. Ransdell of Louisiana to introduce a 1926 bill creating the National Institutes of Health (NIH). When the bill finally passed, Herty stood with Ransdell in the oval office as President Hoover signed it into law in 1930. NIH supported scientific research in 2002 with a 27 billion dollar budget equivalent to the sales that year of any one of the world's largest chemical companies; Dow, Dupont, and BASF.

From 1928 to 1932, Dr. Herty worked as Vice President of, and then a consultant to the Chemical Foundation, a nonprofit entity formed after World War I to promote chemistry causes in the U.S. with funds derived from seized German assets. Promoting various southern chemical industries was now his main assignment. But Herty had always scrupulously avoided owning stock in any businesses he promoted, and he never received more than a \$25,000 annual salary in his career. After the death of his beloved wife Sophie in 1929, he was increasingly driven to find a way to help the southern USA economy which had been devastated by the one-two punch of the 1920s cotton boll weevil ravages and the 1930s economic Great Depression. Real starvation existed in the piney woods and some rural areas.

It was during this period that Dr. Herty developed the idea of using the cheap and fast growing southern pine tree as a renewable resource for pulp to make newsprint and white paper.....high value commodities that were always in demand. He remembered hearing 30 years earlier how Germans used an acidic sulfite pulping process to make white paper from the

resinous *tannenbaum*, and he knew southern pines grew 4-6 times faster than northern spruce, fir, and aspen. He tried for two years to get at least four existing research facilities, including Georgia Tech and the Forest Products laboratory, to do the research to show that the idea was feasible. When these efforts failed, the Savannah Pulp and Paper Laboratory was formed by Charles Herty himself in 1932 with \$50,000 from the Chemical Foundation, \$20,000 per year from the State of Georgia, \$4000 per year from a Savannah citizen, and free use of an old warehouse owned by Savannah Electric & Power Company. He directed operations of the laboratory until his death in 1938. He predicted, and his chemistry research found that *young* southern pines contained no more sticky resin than spruce and other northern trees used to make paper then. By 1933 he proved that the *acidic sulfite* chemical process could be used to make *newsprint and white paper* from pine trees less than 18-20 years in age ....a feat previously said to be impossible by all experts in the field. In utmost secrecy to prevent industrial sabotage, he got a Canadian mill to make white newsprint from his sulfite process pine pulp. Then, all nine major newspapers in Georgia dropped a bombshell by using this newsprint paper from southern pines to print their editions on November 20, 1933. By 1935, research at the laboratory demonstrated that southern pine pulp could be used to produce both high grade *cellulose* needed to make viscose and then rayon, as well as newsprint and white paper by the *basic Kraft* sulfate process if it was followed by a bleaching step.

Processes for obtaining and using pine pulp have changed over the years, but there is no doubt that the work at Herty's lab in Savannah was the seminal impetus leading to the rapid and extensive expansion of the forest products industry into the southeast. Fifteen large mills were reported built in the southern USA between 1935 and 1940 to make all types of paper plus cellulose and rayon from the pine pulp. One of these mills at Savannah, Georgia created 4400 jobs. He had previously saved the southern pine tree from extinction, and now the decimation of the great northern forests was slowed dramatically. He was either the first, or one of the first, to preach reforestation and managing renewable forest resources. Tree farming became a big new industry with 4.5 million citizens involved in 2002. One of every nine manufacturing jobs in 2002 in six southern states involves planting, caring for, harvesting and producing products from pine trees. Regarded as a miracle-working white knight, chemist Charles Herty died from a heart attack in Savannah on July 27, 1938. Although he worked feverishly with three Texas businessmen (Ted Dealey of Dallas, Ernest Kurth of Lufkin, and Jesse Jones of Houston) for its funding, he did not live to see construction begin on the first southern pine pulp *white paper* mill in 1939 at a town named Herty just outside Lufkin, Texas. Opened in 1940, it became the second largest plant producing 20 % of the pre-World War II USA demand for newsprint paper. The largest such mill was built in Cleveland, Tennessee in 1954. Creating this industry led to the rapid industrialization of the South by the 1950s.

His work created tens of thousands of jobs and had a stunning positive impact on the southern economy. He was lauded by many newspaper articles and editorials, state legislatures, testimonial dinners, and even in two movie newsreels. Seven honorary doctoral degrees were received from major universities. He was a revered figure taught about for years in southern grade schools. Six months before he died, the 1938 Georgia legislature honored him by establishing the Herty Foundation to oversee and continue the work of his nonprofit Savannah laboratory. It is now a modern \$50,000,000 facility called the Herty Foundation Research and Development Center with pine trees on its logo.

The Herty Medal is an award established in 1933 by the Georgia Section of ACS in his honor, and today it remains the most prestigious award given annually to an outstanding southeastern chemist. It is the third oldest unrestricted multi-state regional or national annual award given by ACS or any of its units. Medalists have come from all eleven southeastern states. It has been given primarily for either an outstanding *research* career in academia or industry, or outstanding *leadership* in industry or the chemistry profession, or a long and unique career in *teaching undergraduate chemistry*. Dr. Herty received this award himself in 1934. The American Institute of Chemists gave him their national Gold Medal Award at a New York City gala in 1932. It was stated in *The Chemist* that he was "the one member of the chemical profession who had the greatest influence on the expansion and development of our chemical industries and establishment of the chemical independence of the United States." The previously mentioned bust of Herty was erected in the Georgia State Capitol by the Georgia State Legislature in 1946, and a large relief sculpture of Herty and Garvan was placed in the foyer of the 1<sup>st</sup> paper mill in Lufkin, Texas. Known as the father of the giant southern pulp and paper industry, he was posthumously inducted into the Paper Industry International Hall of Fame in Appleton, Wisconsin in October of 2000. On September 26, 2001 the American Chemical Society designated the site of his original Savannah Pulp & Paper Laboratory as a National Historic Chemical Landmark.

*Crusading for Chemistry* is a 470 page book written in 1995 by Dr. Germaine M. Reed about his life and career, and a 7-page biography was published in the *Journal of the American Chemical Society* in 1939. The U.S. Congress, whose halls were frequented so many times by Dr. Herty, presented a national charter of incorporation to The American Chemical Society just before his death. This charter states in partial summary, "ACS shall promote the advancement of chemistry in all its branches, research in chemical sciences and industry, development of our country's industries, improving the qualifications and usefulness of chemists through high standards of education and ethics, diffusion of chemical knowledge, the education and welfare of the public, and thus add to the material prosperity and happiness of all our people." Charles Herty was acquainted with many governors, state legislators, members of the U.S. congress, and at least three presidents. It seems obvious that he made a huge contribution to the congressional view of the importance of the science of chemistry and the major industry based on it. After he died, his papers were given to the ACS, which later deposited them in the Woodruff Library of Emory University in Atlanta.

Of all American chemists throughout USA history, Dr. Herty was probably one of the two best known to the general public during their lifetimes. "PRO SCIENTIA ET PATRIA—HERTY 1933" is the phrase engraved on the gold medal given by the Georgia Section of ACS each year to an outstanding southeastern chemist. "For science and country" is a loose translation, which is certainly appropriate to honor the spirit of this modest and early 20<sup>th</sup> Century chemist and leader. He had a truly outstanding career in *college teaching, popularizing chemistry, saving forests, saving and creating industries, promoting U.S. scientific research, and crusading for the huge 1918-1940 expansion and establishment of the world's largest (USA) chemical industry*. It is reasonable to suggest that Herty was the most important 20<sup>th</sup> century chemist with respect to development of the *entire* U.S. chemical enterprise. Every member of the American Chemical Society, the world's largest scientific society, should have a feeling of both pride and humility as the Georgia Section of ACS uses this occasion each year to pay tribute to such a great American chemist and southern gentleman.



The perspective above is a compilation by D. G. Hicks of excerpts and information from the sources below:

1. D. G. Hicks, symposium papers at the 1976 and 2001 Southeastern Regional ACS Meetings, the 221<sup>st</sup> National ACS Meeting (2001), and Herty Memorial Symposium at the 2001 Southeastern Regional ACS Meeting.
2. Marion T. Clark, *The Filter Press*, 1977.
3. Maurice M. Bursey, *The Hexagon*, October, 1983, pp. 58-60.
4. Germaine M. Reed, *Crusading For Chemistry: The Professional Career of Charles Holmes Herty*, University of Georgia Press, 330 Research Drive, Athens, GA, 30602-4901, 474 pages, 1995.
5. *Charter, Constitution, and By-Laws of the American Chemical Society: Bulletin 5*, 1996, American Chemical Society, 1155 Sixteenth St. NW, Washington, D.C., 20036.
6. Frank Cameron, "Charles Holmes Herty," *J.A.C.S.* 61, pp. 1619-24 (1939).
7. Florence Wall, *The Chemist*, 9(1932), p.132.
8. *Quarterly Bulletins of Georgia Historical Society*.
9. *Chemical & Engineering News*

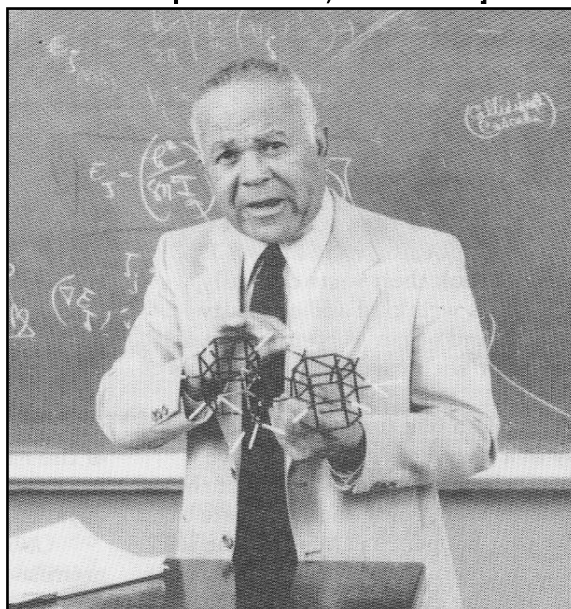
## The Herty Medal - Presented by Peach State Chemists

D. G. Hicks, 1992-2006 Councilor and Georgia Section Archivist-Historian

[Excerpt from Georgia ACS Section's *Filter Press* newsletter special edition, March 2006]



1955 Medal - Dr. Frank J. Soday, Chemstrand Corporation, Alabama. For leadership in developing southern chemical industry.

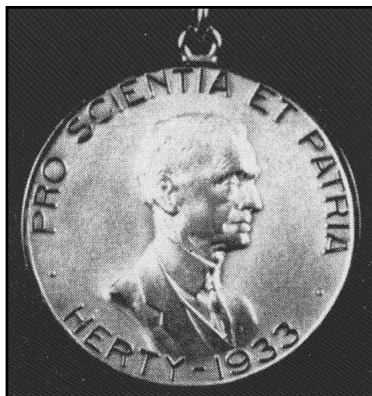


1976 Medal - Dr. Henry C. McBay, Morehouse College and Atlanta University. For a long and very unique undergraduate teaching career.

Preceded only by the Nichols (New York Section) and Gibbs (Chicago Section) awards, the **Herty Medal award is the third oldest unrestricted national or multi-state regional award presented annually within ACS. It is also the first multi-state regional award for chemists.** The Georgia Section is best known for presenting this award to chemists and chemical engineers working in the eleven states of Kentucky, West Virginia, Virginia, North and South Carolina, Tennessee, Georgia, Alabama, Mississippi, Louisiana, and Florida. Medalists have come from all these states. They have received the award for contributions primarily in either academic or industrial research, or leadership in chemical industry, or a long and unique undergraduate teaching career. It was first presented in 1933, and Charles Herty received it in 1934. Because Dr. Herty passionately preached that chemistry could benefit the public and nation, "Pro Scientia et Patria" (for science and country) is inscribed on the medal. Pictures of a few notable medalists are shown below.



1973 Medal – Dr. Stan Tarbel of Vanderbilt U. For research in organic chemistry. Gave shortest shortest speech saying two words, "Thank you."



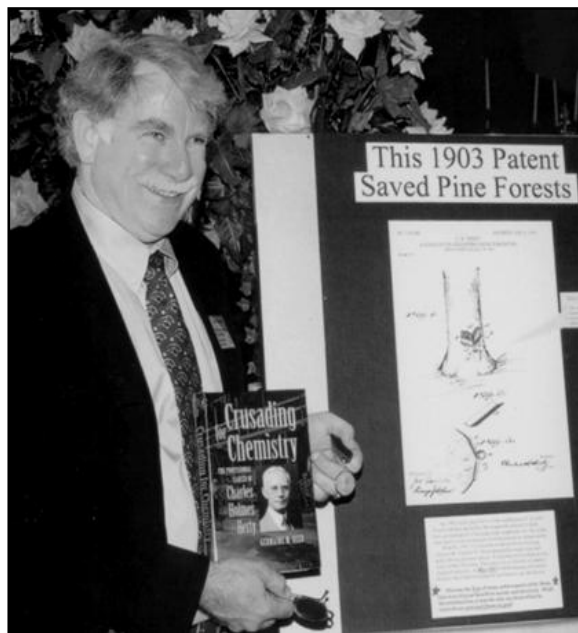
The Herty Medal



1975 medal – Dr. Mary Good, LSU-NO. For spectroscopy research. First woman Herty medalist.



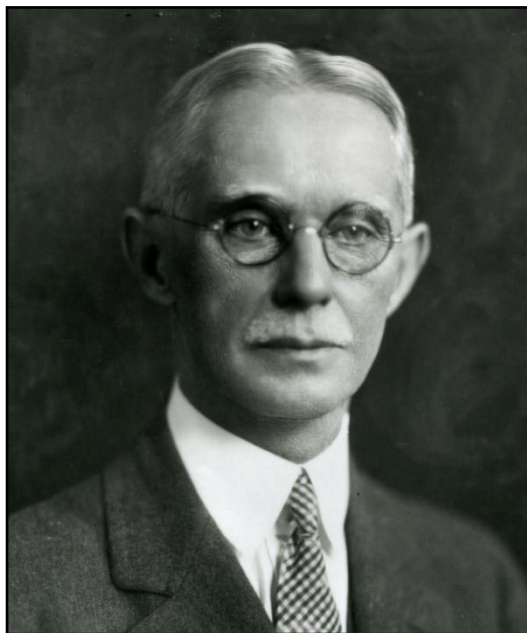
2005 Medalist - Dr. Dennis Liotta. For research, notably on a new HIV drug. Emory U. received \$525 M royalty deal as result. It was largest university royalty deal since the Bayh-Dole Act of 1980's.



2003 medalist - Dr. Alan Marshall, Florida State Univ., For mass spectrometry research. On 100<sup>th</sup> anniversary of (1) Herty saving U.S. turpentine industry and pine forests, and (2) starting the Georgia Section ACS.

## The Peach State Crusader for the American Chemical Industry Jobs

Donald G. Hicks, 1992-2006 Councilor and Georgia Section Archivist-Historian  
[Excerpt from Georgia Section's Filter Press newsletter Special Edition, March 2006]



Dr. Charles H. Herty (1867-1938) fought senseless global economy ideas to achieve the rapid 1918-1940 development of the world's largest (U.S.) chemical industry and jobs for chemists. Like many Georgia good-old-boys, he was an avid outdoorsman. (Images courtesy Chemical Heritage Foundation and Emory University Woodruff Library Special Collections)

Orphaned by age eleven, Charles Holmes Herty was a Milledgeville, Georgia native who grew up to be perhaps the **most important American born 20<sup>th</sup> century U.S. chemist**. You think not? Well, read on, McDuff! His legacy includes creating two major U.S. industries and saving a third, twice saving U.S. forests, conceiving and starting NIH, starting the ACS News Service that soon published C&EN, instigating and being first President of SOCMA, having a critical role in the huge 1918-40 expansion of U.S. chemical industries and jobs for chemists, and being arguably the best ever one-man chemistry PR machine. Thus, the Georgia Section of ACS has honored him each year since 1933 by presenting the gold Herty Medal Award to an outstanding Southeastern U.S. chemist. Genteel and modest, this highly educated and uniquely talented chemist promoted teamwork and was extremely well liked by almost everyone who crossed his path.

**Dr. Herty's career as a chemist could have been the model for the ACS Heroes of Chemistry Award** program begun in 1996 to honor industrial chemists making contributions to Society. He is usually remembered for his retirement age efforts, against literally all odds in the depths of the 1930's Great Depression, to "create" the huge southern USA pulp and paper industry and 1000's of jobs. After first proving that *young* southern pines contained no more sticky resin than northern hardwoods, his lab used existing chemical processes to make high quality white paper and cellulose from pines less than 20 years old. The notoriety he received was certainly well deserved because the industry is based on a fast-growing *renewable* resource and it had a stunning impact on the poor economy of the region. In fact, this industry still accounted for 11 % of all manufacturing jobs in six states in 2002. This feat drew attention to the region's industrial potential, and the South was rapidly industrialized.

However, some of his other contributions were of equal or greater importance! For example, creation of the southern pulp and paper industry also slowed dramatically the decimation of the northern hardwood trees and led to the tree-farming business with over four million people practicing it in 2003. Herty had been preaching conservation and reforestation since 1903 when he saved the southern pine forests from extinction by patenting a *simple* cup-and-gutter device for collecting the sticky resin without killing the trees. Unique multidisciplinary research had produced the patent. This feat gave him an international reputation plus a lifetime of modest financial security, and was *the only contribution to the chemical enterprise from which he received any personal financial gain*. It also saved the world's largest "natural" organic solvent industry (turpentine and naval stores) which had killed half the pines in the Carolinas and Georgia as they collected resin by very deep cuts in the trees.

As 1915-16 ACS President, Charles Herty was a key organizer of chemists in the USA's "crash" program to start chemical industries and solve critical World War I defense problems on nitrates and munitions supplies, German poison gas attacks, fertilizer supplies, and sources of platinum catalysts. From this time until his death 23 years later, **he became arguably the best ever one-man chemistry PR machine**. Two weeks travel per month across the country *by train* was often required to popularize the value of chemists and chemistry to society via passionate *spell-binding speeches* to all types of audiences. In 1918, he started (as chair of the committee developing the concept) and was first Director of the ACS News Service that soon published C&EN magazine. After proposing a similar entity in a 1918 editorial in the ACS journal *Industrial and Engineering Chemistry*, Herty led the 12 year ACS committee effort to establish the National Institutes of Health (NIH) via the Ransdell bill in 1930. Thus, it was he who stood with Louisiana Senator Ransdell in the Oval Office as President Herbert Hoover signed the NIH bill. This research agency's 27 billion dollar 2002 budget was equal to the gross annual sales that year of any one of the world's three largest chemical companies (Dupont-Dow-BASF).

Still, **Dr. Herty's most important contribution** is likely his historically recognized critical role in the explosive 1918-1940 expansion of the U.S. chemical industry to include production of organics, dyes, and pharmaceuticals. Extensive reliance on chemical materials obtained from the *lowest cost or sole producers* elsewhere in the world had caused extreme hardships to the public and U.S. businesses when cut off during World War I. Despite five years of misery, it is *incredible* that many in the U.S. populace wanted to go back later to pre-WWI business dealings! But Herty led the citizenry who thought this was foolhardy! He fought these unwise and oafish "global economy" ideas of that era via editorials, speeches, and frequent personal lobbying in Congress to get legal protection from UNFAIR and vicious activities by European chemical cartels such as I.G. Farben. Very few of today's chemists are likely to know that when he received the 1932 national AIC gold medal award at a New York gala, the committee cited him as being "**the one chemist who had the greatest influence on the expansion and development of our chemical industries and establishment of the chemical independence of the United States.**" This USA industry employed a million workers by the end of the 20<sup>th</sup> Century. Charles Herty of Georgia had put chemistry "on the map" of the public's mind. The U.S. chemical industry became the world's largest and Wall Street's recession proof darling. By 1939 chemistry's image was so high that Dupont unveiled its famous slogan "Better Things for Better Living through Chemistry!"