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H.B. Merrill: Early Wisconsin Scientist and Adventurer

By Merrill's L. Hartridge

(Sir, I'd liked to not to Rio
Some day before I'm old)

Anon/Merrill

In 1900 Harriet B. Merrill joined the faculty at the University of Wisconsin as an assistant professor reporting to Dr. Edward Asahel Birge, the dean of the College of Letters and Science. Birge was a pioneer in the study of lake ecology, a founder of the Wisconsin Academy, College and the years of teaching in Wisconsin high schools had prepared her for this role. Birge found that her studies in microbiology required more extensive monitoring of a dalliance in the family Macrothricidae, a study that Birge himself had begun but found little time to continue. Merrill's work was well received by her peers and students of the genus (Ceriodaphnia) the time it was published, she could not have known that it would become a life-long journal.

This also was the year that Birge was appointed acting president of the University of Wisconsin, distracting him further from his research. Birge was a man of great energy and ability, but he was also a man who was quick to make decisions and was not hesitant to cross his rather imperious dandelion and disposition. Colleagues remembered his stern and (Bon bourgue manner—he was both disliked and admired. I could find no indication that he gave credit to Harriet Merrill for eventual contributions to science, nor did he provide her with a salary or even a permanent appointment. Birge was a man who, in his time, was a great contributor to the University of Wisconsin to support Birge as candidate for president of the university. In 1903 Charles Van Hise was unanimously elected to the position.

(Black and white photographic portrait of a young woman.

Harriet Bell Merrill (1863-1916), early Wisconsin scientist, was the first woman to hold an office in the Wisconsin Academy. She was elected vice president-exercises in 1900 and was the first woman to serve on the Academy council. This photo was taken in 1890 when Merrill was twenty-seven, the year she graduated from the University of Wisconsin with a master's degree. Courtesy State Historical Society of Wisconsin.

Merrill's early involvement with Birge—their association and correspondence spanned more than twenty-five years—placed her in a position of considerable influence. In 1904 Birge, Merrill, and Chancellor Van Hise were appointed by the state legislature to the Board of Regents to channel funds to the new mineralogy program on campus. During these years he was active in the Wisconsin Academy of Sciences, Arts and Letters and director of the Wisconsin Geological and Natural History Survey, and he hoped to use these positions to promote her career. Birge was a man who was quick to make decisions and was not hesitant to cross his rather imperious dandelion and disposition. Colleagues remembered his stern and (Bon bourgue manner—he was both disliked and admired. I could find no indication that he gave credit to Harriet Merrill for eventual contributions to science, nor did he provide her with a salary or even a permanent appointment. Birge was a man who, in his time, was a great contributor to the University of Wisconsin to support Birge as candidate for president of the university. In 1903 Charles Van Hise was unanimously elected to the position.

The Treasure Box File

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Several years ago at the death of my great aunt, Mrs. Nathan Emmons Merrill, several of her cherished mementos were given to me for safekeeping. There were some Victorian Revolutionary carved ivory silver spoons engraved with the same Emmons, a couple of Victorian vintage napkin rings (one marked "Hallett"), and other family heirlooms. To this, however, the most intriguing of the treasures was a large, flat, cardboard box, 12 inches by 18 inches, containing a collection of photos, letters, and a few pamphlets of South America, Merrill's H.B. genealogy papers, and several small vouchers bearing H.B. Merrill's name. There were a bucket filled "Menu of the Ballo of Wisconsin—Wisbuch Club" with photos and text by **Harriet Bell Merrill**. A copy of the 1890 Transactions of the Academy of Sciences, Arts and Letters (gave me the idea that Hal Merrill had had a teaching career at the University of Wisconsin.

There were a few other artifacts pertaining to Merrill's discipline, zoology, but the monograph for her master's thesis titled "The Development of Ceriodaphnia Dubia" was conspicuously absent. Nothing was left of her life's work. I had no idea what had become of it, who or what motivated her to pursue the study of the genus Bosmina According to scientists who are still researching the genus, Merrill's work was well received by her peers. Her work was published in the Transactions of the Academy of Science, and was the primary reason for Merrill's direct important research in South America.

The documents in the box file added up to an impressive list of accomplishments for a scholar at the turn of the last century, particularly a young woman who augmented an extensive teaching career with related research in foreign countries and who published her research in prestigious journals.

As a person of small physical stature (she weighed 108 pounds and stood five feet tall, according to family records), Merrill showed surprising determination and strength. Some of her colleagues expressed concern for her health, for she had a history of "nervous prostration." Birge was concerned about her health and wrote to her, "Don't let anyone persuade you that you are anything but gaily, by a mighty country! Without one of them accompanying her. But Hattie Merrill, especially determined to follow her own research, was not to be deterred.

She ultimately made two journeys to South America. The first trip, 1900-1903, was in a canoe a tour de force, the second, 1907-1909, was a return to known territory for further study. Both trips were partly under the aegis of the universities where she taught. Letters of introduction gained her entry to university accommodations with access to biological laboratories. In the larger South American cities, she was a guest of American consulates and well established businesses or their associates.

A South American Handbaal as shown on a pedaiari.

This sepia-toned space, to which I had been introduced by way of old photographs, compelled me to derive further into the life of Harriet Merrill. Although I had no family connection to the Merrills, I felt I had a kinship with this woman. I felt I had a moral issuer of her was from vague references made by my elders about her academic achievements. Except for teachers and scholars, the Merrill name was not well known in our family. Only my great aunt Mrs. Nathan Emmons Merrill was well known to my family. Her brothers, and sisters. My mother and her sister (Harriet Merrill's nieces, Florence and Elsie Ross) described their Aunt Hattie as

a gentle woman, bright and polite with large blue eyes and a fun compassion which required protection. She often wore a bustle; and her small frame was usually encumbered with paperwhich

"Ninka mate cups, bombilla (communal drinking tubes), and other artifacts were brought back to Wisconsin by H.B. Merrill. Photo by Michael Lemke, courtesy of the Milwaukee Public Museum. Leaves of the holly family were dissiped in the cups and used as tea or coffee. Merrill learned that the drink was a hunger suppressant.

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On the Amazon, a trek to the interior, dated July 23, 1902.

gathering paraphernalia and camera equipment as she tromped about the University of Wisconsin campus and lakes in bulky, high-top boots. Aunt Hattie wondered women's dress inadequate for the rigors of field trips or forays into unknown jungles. Her nieces remembered her wearing a hat with a veil to protect her face.

Merrill was both amused and frustrated when her shoes escapt disappear as she traveled aboard trains and boats. They were often whisked away by "Good Mother" who assumed they were men's/cool gear. She wrote,

Most people find the two heels and toeset soles of the lady's shoes objects of curiosity. It is possible that I could pay my expenses by exhibiting them as a new trend for women (notebooks).

Merrill was a meticulous scientist who was well versed in the corroborating evidence. A book of verse by Rudyard Kipling revealed with each passage, as bottle on the leaves of a botanical specimen pressed on an oozing into western long pain and phrasing against a favorite passage "Oh, I'd love to not to Rio / Some day before I'm old." The and other volumes of poetry, indicating an 1892 preference for Indian English poet and parliamentarian Nishitap Mazumarch Fraed, were subtle insights into my great-aunt Hattie's persona.

The photo prints from the turn of the century had suddenly become nascent to my biography. A State Historical Society of Wisconsin (SHSW) photograph of Harriet B. Merrill, taken in 1890, was the only photo I had of my great-aunt. I was sure that further leg in their importance was evident from the outset. On the reverse side of each photo there were handwritten instructions connecting them with articles that were to be published in the Milwaukee Sentinel. The fact, however, was not with the photos.

Using State Historical Society of Wisconsin (SHSW) microfilm newspapers from the early 1900s, we researched the Sunday Milwaukee Sentinel for the years 1900-1909 and found the articles Merrill had written. Her articles appeared in the Sunday Sentinel during 1902-03. Included with the articles were all of the now familiar photos I had found in the box file.

A young Wisconsin teacher's perceptive accounts of the campers fancy and fauna of South American rain forests and encounters with the Indians of the Amazon Basin. Her articles were filled with descriptive prose, detailed observations of the people and their dwellings and she observed and wrote about customs, politics, labor problems, education, the role of women, business, and commerce as well as the geography and natural history of the region. Her articles were filled with the travels by steamboat or mosquitoes in hammocks, dug wet, and on Kindelberd were arduous for a woman traveling virtually on her own.

Rolling Down to Rio

In the early 1900s, due to the predominantly Latin protocol of South American diplomatic societies and among the population in general, there was a great need for a "lady" who could represent the United States in a manner that would not be construed as being trying from that point of view. Hattie Bell Merrill, the Wisconsin female teacher, was a consultant. Hire the professional her fascinated South Americans dealt with her situation made for lively entries in her journals.

Merrill was well versed in the ways of the Victorian gentlemen who participated in South America expressed "A retreat as Gamaling as baking the sweet and of pulse leaves and changing to a shift." Because and mainly the essentials for her research, leaves in which to collect specimens for a herbarium, glass slides, and camera equipment. An important part of her baggage were special fishing rods and reels. Her "Kipling" was packed in her trunk, and she was ready to roll down to Rio. Her journals were filled with descriptions of her adaptive tools. She sailed from New York aboard the S.S. Baron on July 13, 1900, and began her ruled on day one, most of them in the form of unbelievable.

Sunset and Sunrise are Grandeur beyond anything we ever read of any kind is seen for weeks. The ships out of New York are small, and I am really nothing to Rio (notebooks).

The Symm on which I sailed was supposed to be the best of the line but was dirtier and more uncomfortable than any ship ever [p. 19]

Home of American Legation Colonel William Page Bryan at Petropolis, Brazil, March 1903. The Bryan family is gathered at the front.

even the hairdoles of South America. Cockroaches (with a long lshi-tha I mere swarming over the ship. . . . They Crawled over the tables, the floors, the walls, the ceiling, the berths, the bedding, the clothes, the food, the people. I spent many hrs crushed with guilty conscience, extermin-ating the pitiful-looking wretches, and I felt ashamed of myself for being so cruel and maybe their victim in the long run.

They formed a mosaic in my wardrobe. They crawled into my teacup before I could lift it to take a second swallow. The S. American passengers with Italian pride adopted me they are nothing compared to the giant S. American varieties, as large as mice (notebooks).

The Purchase family met me at Rio on Colonel Bryan's launch. . . . Because of the plague, they do not want me to be in quarantine, so I must stay on board ship for 5 days. I am very lonely, and I feel very blue. I have not seen a lady since I left Boston. Seagers but PM Purchase (with Standard Oil) is concerned. The coffee here is fast and the English & American ideas flashaness in whatever. I go from here to Santos to Buenos Aires (in the 90's, some lady's to Rio and then to Paraguay). Your mail to me should be directed to the London & Brazilian Bank (letter to Brgs from Sao Paulo, July 11, 1900).

Scrapers are beautiful here but strange. The sun hangs in the sky—a great red ball, never setting, just slipping away near the horizon-like a phantom, while the atmosphere envelopes and in pastelized hrs.

Andrewd on a riverboat at night. It is plain black except for occasional torches from Indian camps. There is an occasional chirping, croaking, and grunting of nocturnal creatures (notebooks).

S. America is rich in insect sessions of extinct monsters. In La Plata, the river of pigdestons down the center approach snakes one think of so crazy quick moves, so common on this earth. I long to bring Rijah back to the North to replace our incorrect models (notebook).

As you have noted, I have not let the grass grow under my feet. My "fetring" in Sao Paulo has been quite successful. I have secured a good deal of work. I am to go to Parana, Paraguay, and Buenos Aires. I have found a good deal of Bert' papers and I studied them prior to collecting further north from von Hering has gone better to Brgs from Buenos Aires, August 9, 1902).

I start Thursday for Asuncion and the Iguazu Falls. I have been told that no more than a half-dozen white women have ever been there, and I am anticipating a very interesting time among the Indians and the Jesuit ruins (notebook).

We started out on horseback through dense foliage about 20 miles from the falls whose roar from the cataracts echoed through the forest. Mbaibua spilled from every leaf and under an were green creeps and there was such a tangle of growth as to cause an hrrrrrrrr of fie to developed into epoxitric fernlore the struggled for sunrise.

We continued on foot through tangled barricades of epiphytes and parasites. Unrefined, the Delagoinb was squally beautiful. Suddenly, we came out on a rocky ledge, and there, before us, was the Iguazu Falls. I felt as if I had been in a trance, I touched gelatinal my clothing and by the time we got to a clearing, I felt I had awakened from a nightmare. All had we experienced was a dream (notebook).

Senor Zabalza, who was Argentine minister to Chrwbrzch time, has been very kind. He has traveled extensively and speaks pleasantly of Milwaukee and the Pfister Hotel. Mr. Vilas must know him. I wish he could be thanked in the name of the Wisconsin Academy for the courtesies he showed me. I have written a letter to Governor Lucoses of Wisconsin but I was rapidly entertained Brsa. I have sight other letters of Brsfuse. (p. 20)

Son to guide me into the wilderness. Our own nomads. Mr. Lund at Buenos Aires, has done nothing whatever.

I am not forgetting you and have some things I think will interest you. I only wish you were here (letter to Brgs from Asuncion, September 13, 1902).

In Paraguay, Merrill met with Salvio Lopez, son of General Francisco Lopez who died in 1870 and was editor of the newspaper, *La Patria in Asuncion*.

Senor Lopez is handsome and rather short of stature. As superintendent of schools, he is knowledgeably conversant with the entire school systems and political institutions. He has published President Roosevelt's speeches made last fall and a translating them for his countrymen. With his keen intelligence, I would not be surprised if he became dictator of Paraguay. . . (notebook).

Through the kind auspices of the Consul General Seager, I am a guest aboard the same river that is carrying a part of the Dr. Lucas Fox committee consisting of Mr. Bryan, minister to Brazil, Mr. Buchanan, ex-minister to argentina, Mr. Bidwell of the United States Department of Agriculture, and at least a dozen others. They have invited me to join them, as a representative of the Wisconsin Academy. I am very glad to do so, for I shall be able to see the country and meet people of possible interest I would have to meet business in related in the opinions I might offer them. In order to avoid the dilemma of being a lady among men, I have decided to be a boy and wear a boy's hat and clothes. I shall consult with them every in case of great need (notebooks).

During Merrill's second trip to South America, 1906-1909, she was working on the species level, particularly on chydoridie and Macrothricidae, as a result of her research, a species from Brazil was named Diaphanosoma merrill after her by Dr. Stillman Wright, a specialist in the study of Cladocera. Merrill was the first woman to hold an office in the Wisconsin Academy. She was elected vice president-exercises in 1900 and was the first woman to serve on the Wisconsin Academy council. Frank Hasler explained that the importance of these forms of life which are less than 1 mm. in length, is their relationship to the ecology of the earth's bodies of water. "Fresh water zooplankton are the food for larger commercial fishes.

The Later Years

In 1914 Merrill enrolled in the Ph.D. program at the University of Illinois. During the period beginning May 22, 1914, until her death on November 1, 1916, she wrote to her friend, Mrs. Ellen Richards, "I am getting pretty good Cladocera, but they do not live. Life is irregularly treated." —and wrote about such matters as national and campus politics, sports events, her health (about which Birge expressed concern), student activities and attitudes.

Merrill's photo of a "rancho" home along a river in Paraguay. The roof is thatched with banana and other large tropical plant leaves.

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The Dreimmer are as verdant as elsewhere. One instructor reported a quiz question "Discuss metabolism" and got "red flesh" from one and "mineral" from another. . . . High schools generally escape from exams, and the effect is very bad (September 20, 1914).

The University drive term end an enrollment of 5,499, the largest in its history. President James lectured the faculty on University regulations early in the semester: teachers must watch when conducting recitations; all buildings are closed on Sundays; no smoking in the Union; no "shot" allowed to grow anonymo; smoking is forbidden on campus; there is to be no golf on Sunday. . . (September 27, 1914).

This town went crazy over its Minnesota football victory. The student body met the team at 12 today. I do not know what the place were ab Wisconsin did rather well to be Chicago to no score. I told you I am with the undergraduates now. From twenty-seven little institution halls (Chicago University). No one lives in onesself. (

I am sorry you are so driven with administrative work, for one can't do literary work without leisure (November 1, 1914).

I had not noticed the (Chelsea) Allen matter was so serious. McGovern was very cheerful in getting the University into hot water (November 8, 1914). I am very grateful to Kelling you just him out. His geological work works so slowly he would move more when Allen was driving at.

I am sorry it has been so hard on you and so worthless (December 13, 1914).

I went home this noon, not intending to go to my room, but the girls had the plumbing pipes held burst for the third time since I have been living in the house, and my room and clothes Dated food every time (December 28, 1914).

the last letter to Birge was written on April 6, 1914, from her hospital bed, two days before her death. In it she expresses regret that she will not be able to accompany Birge to Europe. She was very concerned about her product his disappointed. I hadn't could see you. You know the hours here. You can see. I am better today and nurses tomorrow.

In the final days of her life she had been inundated with reading material. She especially enjoyed Emily Dickinson's poems, and Kipling's "Recessional." Her friend, Mrs. Ellen Richards, wrote to her, "Do you remember the last stanza of Recessional? Dickinson's sequestered warm. Perhaps during these days confined in her bed she recalled a day at the Sao Paulo Botanical Garden. Perhaps she was thinking of the Iguazu Falls when she wrote,

Rows of Nopal palms and giant ferns bulldoze this verdant sanctuary. Its lake compiled in verdance and suitable cascading down all sides. Enormous tropical butterflies coupe together like floitering masses of bright blossoms—all open to the heavens where colorful species of birds and insects by unearthly obscure a synthetic paradise.

I have traveled by canoe and on the waters of the Amazon, I have "conquered" and wonder—when will the magnificent Amazon be conquered by the white people and the Indians be left in peace?

After her death, Merrill's brother Roger turned over her professional effects to Birge, who cared for notebooks, various letters, and all of her microscopical preparations. These items were lost. (p. 22)

Bumps scutiformis. Read. X 100. A, lens-like body. Drawing by H.B. Merrill. Wisconsin Academy Transactions, Volume 9, Part 3, page 352, plate XIV. 1890-93.

"Merrill's paper is excellent. She has detailed observations on the external and internal morphology of the Cladocera, and has described and figured a number of new species, especially by differences in number of setae on the antennae, structure of the postabdomen, and shape of the antennulae"(letter from Dr. David G. Frey to the author, August 1, 1999).

Black and white illustration of a microscopicorm.

separately deposited in a laboratory at the University of Florida and were scheduled to be housed in the archives at Yale when they were lost. Dr. David G. Frey, Emeritus of Indiana University, Department of Biology, was helpful in verifying Merrill's observations in the study. I asked him if Merrill's work was appreciated at the State Historical Society of Wisconsin and the Milwaukee Public Museum. Dr. David G. Frey to assess the work of Harriet Bell Merrill. Dr. Frey, who was instrumental in the Wisconsin Geological and Natural History Survey, and the Milwaukee Public Museum, was also instrumental in the Wisconsin Public Museum—handbook of the botanical, zoological, and ethnological specimens are catalogued there.

A woman in her position would inspire her students to explore in their chosen fields of science. Within her own family she was an inspiration to her great-niece, Mrs. Nathan Emmons Merrill, who was well known to her family and her brothers and sisters. Mrs. Merrill with her husband, spent several years in Alaska research among the native people of Southeast Alaska. Through Merrill's life-long career of zoological and ethnological study and instruction, from the elementary grades to the university level, her enthusiasm for her chosen profession was contagious and inspiring.

The author is indebted to Prof. Stanley J. Dodson of the University of Wisconsin-Madison Department of Zoology and Prof. John J. Magnuson and Emeritus Prof. Arthur Hasler of the university's Center for Limnology. Annemarie J. Backer of the university's Trout Lake Station, Vilas County, Wisconsin, provided information on the Wisconsin Geological and Natural History Survey. Correspondence with the late Dr. David G. Frey, formerly of Indiana University Department of Biology, was helpful in verifying Merrill's observations in the arrivers.

Lines of poetry are borrowed from "The Beginning of the Armadilos," Just So Stories by Rudyard Kipling (Century Company, 1902) and The Collapse Poems of Emily Dickinson (Little, Brown, 1990) edited by Thomas H. Johnson.

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Ferry of the Dells of the Wisconsin at Kilbourn City (Dunkirk and Alton for the Chicago, Milwaukee and St. Paul Railway Circa 1900.

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Limnology nomenclature

Bosqus scutiformis. A gnaw-propensive name applied to tiny freshwater creatures within the family Macrothricidae (see below).

Cladocera. Small crustaceans with a single compound eye, commonly referred to as water fleas because of their jerky style of swimming.

Chydoridae. . . One of the five families of bottom-dwelling freshwater cladocerans.

Daphnia. Genus of freshwater cladocerans, commonly known as water fleas. Macrothricidae and Chydoridae families of Cladocera, all Daphnidae tend to be able to swim exceptionally in several styles, independent of plant and sediment surfaces.

Diaphanosoma merrill. A species of minute freshwater copepods which, along with cladocerans, play an important role in aquatic food webs.

Macrothricidae. . Bottom-dwelling marine creatures that live on aquatic vegetation or sediments and are only able to swim only short distances, one of the families of freshwater cladocerans.

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Her Life

Harriet Bell Merrill was the first woman to hold an office in the Wisconsin Academy. She was elected vice president-exercises in 1900 and was the first woman to serve on the Wisconsin Academy council. She was elected vice president-exercises in 1900 and was the first woman to serve on the Wisconsin Academy council.

Merrill's father, Samuel, had ventured west to Wisconsin from Brunswick, Maine, where the lumber business in Portage County was booming. In 1863 Harriet Bell was born in Stevens Point, Wisconsin. Her mother died when Harriet was two. The family left Stevens Point on February 8, 1882, and graduated summa cum laude in 1890 with a B.S. degree. She graduate work at Cornell, Chicago, and Wisconsin universities, and doctoral in M.S. degree from Wisconsin in 1893. She was hired by the science department at Milwaukee Public High School in 1893 and was appointed to the faculty of the University of Wisconsin in 1894 as assistant in zoology, vertebrate and invertebrate anatomy, physiology, and psychology. She was director of the physiology and hygiene department at Milwaukee's East and North high schools 1894-1900. Was elected honorary fellow of the University of Chicago (1896-1897). Was appointed to the faculty of the University of Wisconsin as assistant professor of zoology, 1900. Was appointed to the faculty of Chicago of the Wisconsin summer school in Madison 1900.

She traveled throughout South America collecting specimens and doing other research during 1902-03 and again during 1907-09. In the Wisconsin in the University of Wisconsin as an assistant professor in zoology and at the time of her death in 1916 she was enrolled in the University of Illinois Ph.D. program.

In 1969 a new plate at Trout Lake Research Station at Boulder Junction was named for H.B. Merrill by the University of Wisconsin-Madison Center for Limnology.

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