

Biography of Clara Southmayd Ludlow¹
1852 - 1924

The following account of Clara Ludlow's life and times has been pieced together from many fragments, gathered from diffuse sources. In spite of her patently visible public life, her private affairs remain obscure for the most part and for a long period in her early life there is almost no information whatsoever.

Clara Southmayd Ludlow was born in 1852, two years after her family had moved to Easton, Pennsylvania from New Jersey. Her father, Jacob Rapelyea Ludlow, was a prominent Easton physician who had served as a medical officer in the Civil War. One brother, Henry Hunt Ludlow was a West Point colonel, prominent in military history; Clara's visit to him in 1901 in the Philippines was the starting point of her interest in mosquitoes. Another brother, David Hunt Ludlow, was a mathematics professor at the University of Tennessee, later a lawyer and finally a physician who joined his father in medical practice in Easton in 1886. His most interesting career is summarized in the "Encyclopedia of American Biography." Jacob Ludlow practiced medicine in Knoxville, Tennessee for a short period after the war, but by 1870 was back in Easton practicing medicine until his death in 1904. He was very interested in the health of horses and wrote a little book, "Science in The Stables, or How a Horse Can Be Kept in Perfect Health," which was printed in 1894.

We know almost nothing of the first 45 years of Clara Ludlow's existence. The "New England Conservatory Review," a quarterly magazine with an alumni section, provides the first clue to her early life. She enrolled at the prestigious New England Conservatory of Music in 1877 at age 25 and graduated in 1879, with specialization in piano and singing. Sometime between 1879 and 1890 she was the first president of the alumni association, a post she held for six years. The 1895 entry in the alumni news states that she had been in poor health for many years. She evidently was editor of the "Alumni Annual" of the Conservatory from 1885-89. A 1911 letter to the editor of the alumni annual states that she had given up her music "many years ago" when "after severe family strain and great sorrow, I broke down. For many years ... I wandered to and fro on the face of the earth ... making a home for my army brother." Piecing this all together, we know nothing of her life or early education up until age 25. She must have possessed considerable musical talent to have been accepted by the New England Conservatory and evidently continued her music, probably as a music teacher, until 1889.

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Another clue was found several years ago. In the National Archives, there is a cryptic letter dated May 18, 1889 from a Miss Helen Hinckley at the Childrens' Aid Society of Pennsylvania to Clara concerning admission of Clara's cousin to the Orthopedic Hospital (Philadelphia) for treatment of "nervous disease." The Hinckley family had endowed a "free bed" at the hospital and treatment was recommended by Dr. S. Weir Mitchell, who was one of the most prominent physicians of the period.

The hiatus due to poor health must have occupied a period of about ten years. Very little more is known of her life until 1897 when she enrolled at the then all-male Mississippi Agricultural and Mechanical College. At age 45 she must have been the most unusual freshman ever to enroll at Mississippi A. and M. College records indicate her home town as Easton, Pennsylvania and her field of interest as "teaching." By 1898 she was working with Professor George W. Herrick who at that time was interested in mosquitoes; she was "one of the few students" permitted in the laboratory during a yellow fever epidemic in 1898. In 1900 she received the degree of Bachelor of Science in agriculture and in 1901 the degree of Master of Science in botany ("not in zoology or any other branch" as she once wrote to the alumni association). She evidently maintained ties with Mississippi A. and M. until her death. One letter written in 1919 nostalgically recalls her student days, and another in 1921 soundly castigates the secretary of the alumni association for inaccurately listing her position at the Army Medical Museum and especially for not addressing her by her academic title of "Dr."!

After graduation in 1901, she visited her brother, Capt. H. H. Ludlow, an artillery officer in Manila, Philippine Islands. In some manner she had influence with the Army personnel in Manila, and by her own admission became interested in mosquitoes there, largely through the influence of Dr. William Jephtha Calvert of the Plague Laboratory, Manila. She began what was to be an anatomical and morphological study, but before she could do the anatomy, she changed to taxonomy "as a personal investigation relative and preparatory to quite different work" (i.e., morphology). The rationale for the switch from morphology to taxonomy is given in her 1911 paper, pages 125-6.

1901 must have been quite a year for Clara. In March she had already started on mosquito taxonomy (with little prior technical or academic preparation), and by April she had suggested to the Army Brass that classification be an end in itself and skip the morphology (request not approved); she continued her personal studies and by June 1901 Col. B. F. Pope had been persuaded by a strong female to the extent that he issued an order to all post surgeons to cooperate. Circulars were printed, collecting kits assembled and sent out, and by mid-August specimens began to come in. In September this arrangement evidently wore a little thin, because mosquito collecting was transferred to the civilian government of the Philippines, and evidently she did not get the cooperation which she wanted, a complaint voiced in her letter of December 1901 to General Sternberg, the Surgeon General.

In October 1901 she returned to San Francisco because of her brother's illness. Evidently she kept after General Sternberg (who later was to be chairman of her Ph.D. committee at George Washington University) and he ordered (24 December 1901) all Army posts to cooperate with her and to send specimens to her. The years 1902-03 were spent at the Presidio and Ft. McDowell, Angel Island, California. This was quite a busy period of sending kits, receiving mosquitoes and badgering the military authorities. Copies of her correspondence indicate that she wished a transfer to Washington, a room in the nurses' quarters and salary (\$60/month). Evidently up until this time, her entire operation had been an unofficial, voluntary one, without pay or official status. By February 1904 she was back in Easton, Pa., receiving specimens and sending out kits, presumably to U. S. posts. In April she received assignment to the Army Medical Museum, Washington, D.C. and in July 1904 there is correspondence with Gorgas in the Canal Zone. There is no record as to assignment to quarters, but from 1906 on she lists her address as a private apartment house in Washington. In 1905, she was evidently seeking federal employment as Professor Herrick recommended her to the Biological Service. During the years 1905-11 Clara was evidently doing double duty as lecturer in medical entomology at the Army Medical Museum and graduate student and staff member at George Washington University. University records indicate that she was enrolled in the graduate program from 1905 until 1908, her Ph.D. was granted in February 1908 at age 55. Undaunted, she took a one-year try, 1909-10, at medical school.

Her intimate connection with General Sternberg continued. He, retired as Surgeon General and now professor of bacteriology at G.W.U., was chairman of her doctoral committee, which also included Charles Wardell Stiles, the noted parasitologist. Sternberg, while Surgeon General, is the one who had appointed the famous Yellow Fever Commission (Reed, Lazear et al.). He also wrote the preface to her thesis (1908). From 1908 until 1910 she was a demonstrator in histology and embryology at G.W.U., and in the 1909-10 and 1910-11 issues of the G.W.U. Bulletin she is listed as instructor in histology and embryology. She resigned from the faculty in April 1911, reason unknown.

During her days at G.W.U. she published 20 of her 53 papers, all on mosquitoes. From 1911 until her death in 1924, she maintained her strong connections with the Army. In 1921, she stated her position as "Entomologist In Charge Entomological Department, Army Medical Museum, 7th and B Streets, Washington, D.C." We do not know if this was only a one person department. She continued to receive and identify specimens sent in by Army surgeons, a task which was evidently one of her principal duties at the Army Medical Museum. Slowed down a little by poor health (of which she complains in 1919 in a letter to the Alumni Association of Mississippi A. and M.), she published only four papers from 1920 through 1924. She died of cancer in 1924. Her eulogy at All Souls Unitarian Church was given by Major General James F. Coupal, personal physician to president Coolidge and her supervisor at the Museum. Her lifelong association with the Army continued to the end. As a final unlikely event in the life of this woman for whom the unlikely was commonplace, she is buried in Arlington National Cemetery.

There are many curious gaps, unanswered questions and problems in the life of this remarkable, talented and forceful entomological pioneer. The most obvious problem is what happened to the first 45 years of her life? She was enrolled at the prestigious New England Conservatory of Music, but there is no academic evidence which supports her attendance. She must have graduated, since she was, indeed, editor of the Alumni Bulletin for four years and must have been a talented musician to have attended this famous professional school. The only other scrap of data is a 12-line poem published in "Poet Lore" in 1896. Since information on her personal life is so fragmented, her poem "November" is reprinted below.

November

The sky is all one tender grey,
 The slender fingers of the maple-trees,
 Tipped with the budding promise of the Spring,
 Wave and toss in the ever fresh'ning breeze.

Close at my feet the dry brown leaves,
 Chasing in wantonness across the grass,
 Rustle and whisper in swift eager tones
 Each to the other as they rushing pass.

They seem a throng of hurrying souls
 So busy with themselves, and in such haste,
 They never see the cool grey sky above
 Nor note the promised growth across it traced.

Clara Southmayd Ludlow.

The Easton city directories for 1855-1920 do not list Clara S. Ludlow, so presumably she was not living at home. Forty-five years is a long period for which to leave few traces. She surfaced again in 1897 when she enrolled in Mississippi Agricultural and Mechanical college. How did a woman from Easton, Pennsylvania with a background in music and poetry ever get to the Deep South to enroll in an all-male school with an emphasis on agriculture and engineering? Certainly a 45-year-old female must have been unusual, indeed, on an all-male "Aggie" campus. Circumstantial evidence here points to Professor George W. Herrick, who at that time was a member of the staff and interested in mosquitoes, but no firm connections are known.

Her graduation in 1900 at age 48 with the degree of Bachelor of Science must have been an unusual event for Mississippi A. and M. One surprise followed another. According to the university a graduate program was not offered until 1932; Ludlow's Master's degree in 1901 must have certainly been a noteworthy exception to normal practices. Her enrollment records at Mississippi A. and M. list Easton as her home, yet 11 years later at George Washington University she lists Tennessee as her home state!

She was evidently aggressively jealous of her education and degrees, especially so in an era when feminine militancy was just beginning. She insisted on being called by her title of "Dr." rather than "Miss." In a letter to the alumni association of Mississippi A. and M. she wrote "I am a *Ph.D.* in *Preventive Medicine* and am known and addressed by my academic title," She signs the letter "Dr. C. S. Ludlow (*Ph.D.*)".

One of the few first-hand reminiscences of Clara Ludlow comes from an emeritus professor at George Washington University who was her contemporary in 1910 and who later was secretary of the alumni association. In his words: "I do, indeed, remember the old biddy." He sent alumni communications to her, addressed to "Miss Clara Ludlow"; these were always returned with the "Miss" corrected to "Dr." and the notation "Use brain title, not sex title." He comments that he persisted in sending letters to her addressed as "Miss" because he enjoyed the cryptic and caustic comments that he would receive in return.

During World War I she was active in the war relief work carried on by women's organizations. She worked for the Army Relief Society, the Women's Army and Navy League, the Army Emergency Committee, the Belgian Relief Women's Alliance and similar organizations. She was as impatient with assumption of her status in feminist activities as she was insistent upon use of her academic title. She caustically berated those who assumed that she was "merely" a nurse or Red Cross worker, categories which were "acceptable" for women.

Some of the finest insights into her personality and agile pen are to be found in her taxonomic exchanges in the literature with Harrison G. Dyar, the famous taxonomist at the National Museum. Dyar himself was arrogant, opinionated and a superb egoist; his magnificent vocabulary was often put to use against anyone who dared to disagree with his scientific opinions. However, in later years Dyar mellowed as they collaborated on three papers.

On one occasion she had described *Anopheles perplexens* from Pennsylvania. She wrote that the mosquito strongly resembled one of the *sinensis* group and that she had contacted the collector to be certain of the locality before describing the new species. Dyar took issue with her description in no uncertain terms, insisted that *perplexens* was not a North American mosquito and that Ludlow had somehow mixed up the labels of the boxes in which the specimen were kept. Ludlow's reply is typical. "a) the senior author (Dyar) is responsible for what appears under his name, whether he wrote it or not. b) It would probably have simplified matters if it had occurred to me to state definitely that, while the specimens are shipped to me in boxes, the collection has never been kept in them. This would have enabled Dr. Dyar to differentiate between these two conditions, for, as he has never seen my collection, he could necessarily know nothing about them; moreover, my method of keeping my collection, even if it were "unfortunate" as Dr. Dyar persistently insinuates, is strictly a personal matter, and lies quite outside Dr. Dyar's province. c) Finally, Dr. Dyar's comment as to the disposition of my types shows a lack of acquaintance with the literature bearing on this point," I should add here that in this case Dyar was completely wrong and Ludlow correct about *perplexens*.

Clara Southmayd Ludlow was a spirit far in advance of her time. The feminist leaders of today would have welcomed her presence. Her scientific zeal inspired years of dedication and hard work, many of them with no pay whatsoever. Most of her expenses were borne by her, personally. Even after the coveted Ph.D. her stipends were always minuscule, even more so because of her sex. Her contributions should be considered in terms of the times, the newness of the field and the prejudice which existed at the time against women in all scientific fields.

Publications of Clara S. Ludlow (as sole author)

- 1902a. Two Philippine mosquitoes. J. N. Y. Entomol. Soc. 10:127-131.
- 1902b. Note on *Culex annulatus*. J. N. Y. Entomol. Soc. 10:131.
- 1902c. Description of a new *Anopheles*. J. Am. Med. Assoc. 39:426-427.
- 1903a. Classification, geographical distribution, and seasonal flight of the mosquitoes of the Philippine Islands. J. Assoc. Milit. Surgeons 12:84-107.
- 1903b. Some Philippine mosquitoes. J. N. Y. Entomol. Soc. 11:137-144.
- 1904a. Concerning some Philippine mosquitoes. Can. Entomol. 36:69-72.
- 1904b. Mosquito notes. Can. Entomol. 36:233-236.
- 1904c. Mosquito notes. - No. 2. Can. Entomol. 36:279-301.
- 1905a. Mosquito notes. - No. 3. Can. Entomol. 37:94-102, 129-135.
- 1905b. A new North American *Taeniorhynchus*. Can. Entomol. 37:231-232.
- 1905c. Mosquito notes. - No. 4. Can. Entomol. 37:385-388.
- 1906a. A new North American mosquito. Geo. Wash. Univ. Bull. 5:83-84.
- 1906b. Mosquito notes. - No. 4 (continued). Can. Entomol. 38:132-134.
- 1906c. A synonym. Can. Entomol. 38:185.
- 1906d. *Anopheles crucians*, Wiedemann. Can. Entomol. 38:296.
- 1906e. An Alaskan mosquito. Can. Entomol. 38:326-328.
- 1906f. Mosquito notes. - No. 5. Can. Entomol. 38:367-368.

- 1906g. The distribution of mosquitoes in the United States. As shown by collections made at Army posts, 1904-1905. Med. Record, January 20, 1906, 11 pp. (This is apparently a reprint and does not have the original pagination).
1907. Mosquito notes. - No. 5, (continued). Can Entomol. 39:129-131, 266-268, 413-414.
- 1908a. Mosquito notes. - No. 6. Can. Entomol. 40:32-34, 50-52, 331-332.
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- 1909b. New Philippine mosquitoes. Can. Entomol. 41:97.
- 1909c. Mosquito observations. Can Entomol. 41:233-235.
- 1909d. *Anopheles perplexens*. Can Entomol. 41:293.
1910. Mosquito observations. - (continued). Can. Entomol. 42:193-196.
- 1911a. A new Alaskan mosquito. Can. Entomol. 43:178-179.
- 1911b. The Philippine mosquitoes. Psyche 18:125-133.
1912. Simple methods of differentiating disease-bearing insects. Southern Med. J. 5:488-497. (also printed in Milit. Surgeon 31:72-83).
1913. A simple method of differentiating disease-bearing insects. Boston Med. Surg. J. 168:432-433.
- 1914a. Philippine mosquitoes. Psyche 21:30-32.
- 1914b. *Myzomyia (Anopheles) ludlowii* Theobald. Psyche 21:32-33.
- 1914c. A new anopheline. Psyche 21:129-130.
- 1914d. A new aedine. Psyche 21:159-160.
- 1914e. Disease-bearing mosquitoes of North and Central America, the West Indies, and the Philippine Islands. Bull. no. 4, War Department, Office of the Surgeon General, Gov. Printing Office, Washington, D.C., 97 pp.
- 1915a. A question of synonymy. Psyche 22:137-140.

- 1915b. Correspondence. "A question of synonymy." Milit. Surgeon 37:181.
- 1915c. The synonymy of *Aedes christophersi*, Theo., and *A. indefinita*, Ludl. Bull. Entomol. Res. 6:155-157.
- 1916a. Mosquitoes and man. Science N. S. 43:784-785.
- 1916b. Mosquitoes and man again. Science N. S. 44:788-790.
1917. *Cyclolepteron* Theobald (Diptera: Culicidae). Psyche 24:53.
- 1918a. *Trichoprosopon* Theobald (Diptera: Culicidae). Psyche 25:66-68.
- 1918b. A note on *Limatus durhami* Theobald. Psyche 25:127-128.
- 1919a. New mosquitoes from Panama. Psyche 26:166-169.
- 1919b. One phase of the mosquito work connected with Army camps in 1918. Milit. Surgeon (Sept. 1919):1-6. (reprint, not original pagination).
- 1919 (1920). New siberian Culicidae (Diptera). Insec. Inscit. Menst. 7:151-161.
1920. Siberian *Anopheles*. Psyche 27:74-78.
1921. A new Philippine mosquito (Diptera, Culicidae). Milit. Surgeon 49:690-691.
1922. Special entomological mounts. Am. J. Trop. Med. 2:551-553.
1924. An inexpensive form of mosquito control. Milit. Surgeon 54:619-620. (also in Public Health Rep., March 9, 1923, 38(10), pagination not known).

Papers by Dyar and Ludlow

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