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HENRY WETHERBEE HENSHAW—NATURALIST
1850-1930.

BY EDWARD WILLIAM NELSON.

Plates XV-XVIII.

HENRY WETHERBEE HENSHAW was one of a little group of about half a dozen enthusiastic young students of birds living in and about Cambridge, Massachusetts, in the late '60's and early '70's of the last century, whose activities became the direct source from which has grown the unparalleled present development in scientific and popular ornithology in America. From that time on through later years his knowledge and rare personal charm enabled him to instil in others some of his own interest in such varied subjects as birds, land shells, diatoms and Indians.

He was an acute and sympathetic observer of nature and her ways and loved all living things and their habits and relations to their surroundings. The exquisite beauty of form and color so lavishly displayed among birds and some other forms of life especially appealed to him. He showed his varied mental activity as the years went on by familiarizing himself with the technical details of such a variety of subjects that it appears evident that much of his work was done for the sheer pleasure of satisfying his desire for knowledge in regard to whatever interested him. He might readily have become an outstanding authority in several branches of science but appeared wholly devoid of ambition in the direction of specialization.



HENRY WITHERBEE HENSHAW.
MARCH 1912, AGED 62.
WHEN CHIEF OF THE BIOLOGICAL SURVEY.

Henshaw had an innate shyness and personal dignity that combined with a ready wit and a whimsical sense of humor gave him a most attractive personality. Though a little reserved at first acquaintance he soon became a most genial companion and made and retained the warm and admiring friendship of all who knew him well.

Henshaw was born at Cambridge, Massachusetts, March 3, 1850, the last of seven children and at an early age showed a marked taste for natural history. Fortunately this was encouraged by his mother who loved the beauties of nature and sympathized with the boy's unusual tastes. The home of the family was near the Charles River marshes where as a boy he wandered freely, playing Indian, roasting clams and becoming intimately acquainted with many of the wild things, especially the birds, in this little primitive world. There at the age of from ten to twelve years he did his first shooting which gave him a closer acquaintance with some of the marsh birds. He was never able to account for his persistent early interest in birds and desire to know their names. In this knowledge he made but little progress at first, for in those days students of birds were rare, and fewer still were those who had any general interest in them.

When he was about fifteen years old Henshaw entered the Cambridge High School, to prepare for Harvard. There he soon became acquainted with a fellow student, William Brewster, who already had begun a scientific collection of birds and eggs and knew much about them. At that time Brewster mounted, or "stuffed" as they termed it, all of his specimens, knowing no other method of saving them, and Henshaw learned the process from him. Very soon after this however the boys became acquainted with C. J. Maynard who was beginning his work as a commercial collector of birds, birds' eggs and other objects of natural history. From him Brewster and Henshaw learned the much more rapid and effective way to save their specimens by making skins somewhat similar to those now generally known in scientific collections. Soon after adopting this method they greatly improved it by the preparation of more beautifully compact, symmetrical and carefully labelled skins. Their results were so pleasing to the eye that their friends promptly followed their lead. One has only to examine the former methods

as indicated by specimens in the older museums to appreciate the value of this contribution to scientific research.

Both were very skillful and it is doubtful if they have ever been excelled in the rapidity with which they could prepare a well made specimen. Dr. C. Hart Merriam tells of an occasion about half a century ago when he witnessed, in the old south tower of the Smithsonian Institution, a contest in preparing bird skins between Robert Ridgway, Elliott Coues, William Brewster and Henshaw. The last two nearly tied in the lead but Henshaw won, having skinned, made up and labelled a good museum specimen of a small bird in less than three minutes.

Henshaw's meeting with Brewster resulted in a close life-long friendship and no doubt had a great influence in the preparation for his career as a naturalist. The two devoted every spare moment to searching all the varied country in the Cambridge region for birds, and their knowledge and collections grew rapidly. During the high school years of this association other kindred spirits joined them, all fascinated by the grace and beauty they found in birds and by the intense mutual pleasure such association always brings to eager young naturalists. Among the special and life-long friendships begun at this time, aside from that with Brewster, were those with Ruthven Deane, Henry Purdie, and others.

As a boy and young man Henshaw's health was always rather delicate and in 1869, a few months preceding the examinations that would have admitted him to Harvard, his physical condition forced him to leave school. In the fall of that year Captain Frank Webber, of the Coast Survey schooner 'Varina,' invited him to be his guest on this boat engaged in surveying the waters along the southern coast of Louisiana. This trip was made and in visiting the delta of the Mississippi and Lakes Borgne and Pontchartrain in the Louisiana marsh region, he began his notable career as one of our ablest field naturalists.

In the spring of 1871 Henshaw returned from Louisiana with his gathering of bird specimens among which was a series of Clapper Rails containing the type of the previously unknown *Rallus saturatus*. His health had improved but the idea of going to Harvard was abandoned and he continued collecting and studying birds with Brewster and other companions about Cambridge.

From about 1868 to 1870 friendly acquaintanceships were made with Isaac Sprague, for whom Audubon named Sprague's Pipit, with E. A. Samuels then gathering information for his book on 'Birds of New England,' with R. E. C. Stearns, the conchologist, and with Bradford Torrey a charming writer on nature subjects. These contacts were stimulating to such an active minded beginner and undoubtedly helped to broaden his viewpoint and to lay a foundation for the versatile interest in different lines of nature study that developed later in life.

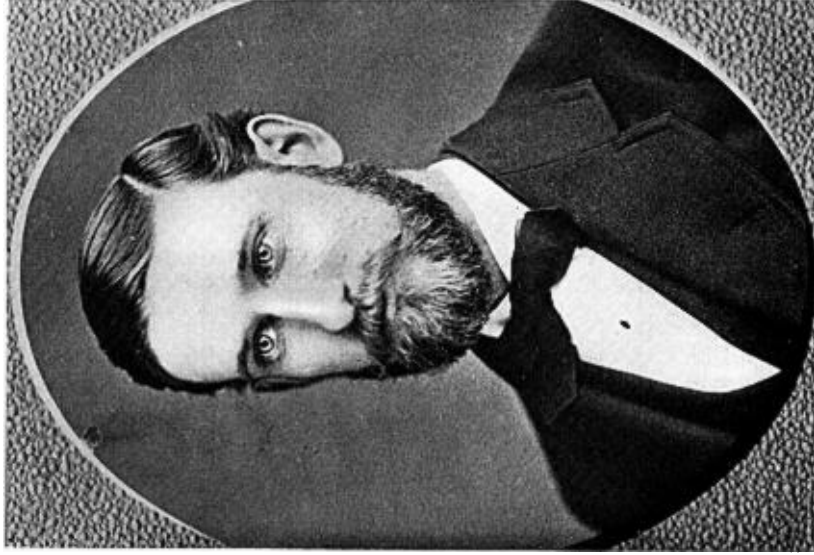
In October 1870, accompanying C. J. Maynard and his bride, Henshaw sailed from Boston for a collecting trip in Florida. Collecting was done first at Cedar Keys, on the west coast, but on January 2, 1871, they arrived at Key West and thence sailed on a "sponger" up through the keys to Miami, where the party located for some time and visited the eastern border of the Everglades.

In a letter to Ruthven Deane from Miami, dated March 20, 1871, he wrote that they were camped in a shanty, one of a small group of little buildings, near the mouth of the river, which then made up the town. He pictured Maynard and his bride sitting on the open porch on opposite sides of a table covered with a white cloth and bearing a lamp when, in the evening, they captured insects attracted by the light. He adds:

"I had in my hand today for the first time a Swallow-tailed Hawk. It is certainly beautiful beyond description. Was shot by a young fellow who lives here and who within a few days has got the idea of collecting a few birds as curiosities. He takes his gun and goes out about 100 yards from the house and knocks over a Swallow-tail. Rough, isn't it, when Maynard or I would have been willing to tramp all day for it? We shall get it however as we've seen numbers of them up the river. Their flight can't be described. Just imagine a bird of that size with all the evolutions of a swallow."

In the Everglades he, with Maynard, was one of the first naturalists to observe in Florida, that tropical wanderer the Snail-eating Hawk or Everglade Kite and for the first time he heard the thrilling scream of a panther. Many interesting southern birds were found during this expedition after which he again returned to Cambridge.

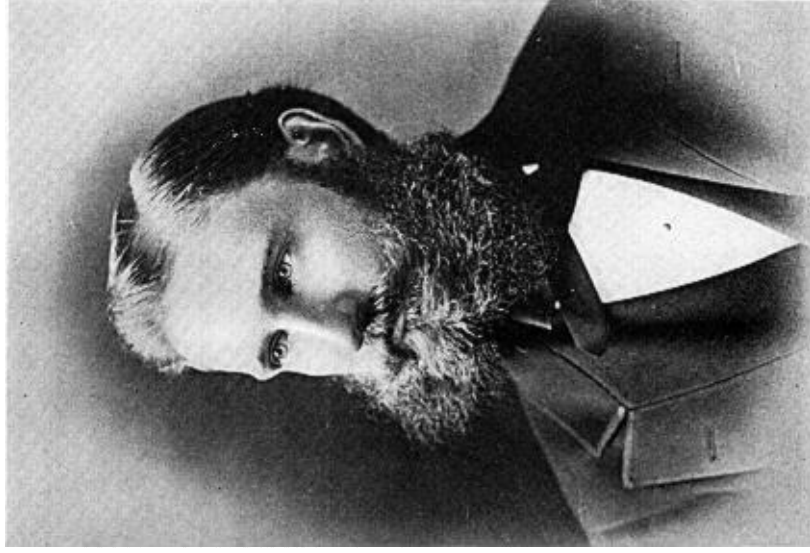
In August, 1870, he collected a specimen of Baird's Sandpiper in Boston Harbor, the first ever taken east of the Mississippi. As neither he nor Brewster were able to identify it they took it to the



1873, AGED 23.

HENRY W. HENSHAW
WHEN ON THE WHEELER SURVEY.

1878, AGED 28.



Museum of Comparative Zoology in Cambridge where J. A. Allen was curator of birds and mammals. He identified the bird and this introduction began a long friendship. Later Dr. Elliott Coues, in Washington, requested to see the specimen and in this way Henshaw became known to Coues, Baird and Ridgway.

A little later he joined with Brewster, Deane and others in organizing at Cambridge the Nuttall Ornithological Club, the first organization of its kind in America.

About this time Henshaw also began a friendly acquaintance with Dr. T. M. Brewer, then an authority on American birds' eggs. Through him at a little later date Henshaw was offered the office of Secretary of the Boston Society of Natural History which was declined as likely to be too confining. Henshaw always believed that Brewer had spoken favorably of him to Professor Baird, and this no doubt resulted in a telegram received from Baird in July, 1872, asking if he would go to Utah as a natural history collector on the Wheeler Expedition. In reply to his inquiry for further information Baird telegraphed: "Report immediately at Salt Lake City; pay transportation and take receipts." So great was Henshaw's desire to study bird life in new fields that on this meager information he set forth and joined the party in camp a mile or so outside the city, which at that time was a large unpaved village with a stream of clear mountain water flowing in ditches down the grass bordered sides of the streets. He and Dr. H. C. Yarrow went south to work near Provo, Utah about the last of July.

By a curious coincidence about this time C. Hart Merriam was on his first western field expedition, working with the Hayden Survey, further northward and I was having my first western experience at a small Mormon village a few miles out of Salt Lake City, collecting birds. So without having any knowledge of one another three young naturalists, later to be close friends and associates for many years, were doing their first western work in the same general region.

Thus began Henshaw's years of connection with Lieutenant G. M. Wheeler's "Geographical Explorations and Surveys West of the 100th Meridian." Wheeler was an officer of the Engineer Corps of the U. S. Army. At that period in various parts of the west Indians were more or less actively hostile toward all white

men, and during his first summer in Utah Henshaw often saw signal smokes by day and fires at night that indicated that the movements of the party were being observed, but though the mental ease and comfort of the members were disturbed no real trouble was experienced. Henshaw's friendly companionability made him a welcome member of the field parties of this survey year after year, especially as his skill with shot gun and fishing tackle enabled him to provide welcome additions of small game and brook trout to the camp fare.

After his appointment as naturalist on Wheeler's Survey in 1872, Henshaw continued with that organization until it was merged with the United States Geological Survey in 1879. A part, at least, of each summer was devoted to field work among the birds in different parts of the West, and the remainder of the year to office work in Washington. Wheeler soon discovered Henshaw's competence and dependability, and although many changes were made in the personnel of the Survey from year to year, and from time to time in different years Henshaw's letters show that conditions in the Survey were such that he was very uncertain of the tenure of his position, he was retained to the close of its existence. He was soon made editor of the Survey publications in addition to the task of preparing his own reports.

In those early days the technique of field collecting, particularly where stops were often made of only a day or two at a time, was undeveloped, and Henshaw's natural ingenuity was exercised so well that the specimens he brought back, after curing them on the backs of pack mules, were in surprisingly good condition. Throughout these field trips the work of the naturalist was always subordinated to the surveying, and many desirable collecting places were passed by unvisited.

After their return to Washington, in the fall of 1872, Henshaw and C. Hart Merriam met and became lifelong friends. Through the years that followed he kept up a desultory correspondence with Deane and Merriam which contains many interesting items on his doings and throws side lights on the times. Fortunately through their courtesy I am able to quote from some of these letters, with explanatory comments where they appear desirable.

Writing from Washington January 27, 1873, he says "Spent last

evening at Prof. Baird's and had a very pleasant time. He holds a sort of reception every Sunday evening when a great many of his scientific friends take the opportunity of calling."

In those years Henshaw made a practice of visiting the Washington market during the hunting season and among the game birds displayed obtained now and then a desirable specimen. On one occasion he bought a fine pair of Bald Eagles for seventy-five cents each. On February 15, 1874, he writes of "market collecting" and says that on some days there were as many as 5000 Robins exposed for sale "to say nothing of Cedar Birds, Shore and Meadow Larks. An occasional Cardinal is to be seen but they take good care usually to wring the neck in such a way as to make the bird useless as a specimen."

A letter dated June 25, 1874, at Santa Fe, New Mexico, says that the expedition was preparing to leave with a six mule team for Fort Wingate, New Mexico, about 160 miles. Beyond the Fort with an escort of six or eight cavalymen, they will enter the Apache Indian country, of Arizona, and will be provided with saddle animals in addition to the team. They were headed for Camp Apache, Arizona, and he expresses the hope that the party may go, as far south as Camp Crittenden, near the Santa Rita Mountains, for "Bendire did not reach so far south, the Indians were too bad. Nor is it wholly unlikely that they may step in and interfere with our plans. Cochise [a noted Apache Chief] is said to have just died and what effect his death will have none can tell."

From Camp Apache on July 15, 1874, he wrote that continuous travel had prevented his accomplishing much but that there he was making a real beginning of the season's work. "The Apaches swarm about our camp which is on the bank of the White River near the Fort. One or more always accompanying me collecting and, as they have the eyes of a hawk, are as good as a retriever. Walking along I often hear a low 'coosh-coosh' and, turning, find one of them pointing at a bird in a tree top that I can hardly see. They seem to think it is the greatest sport in the world." . . . "Apaches may take a liking for my scalp which, by the way, I have had shaved clean to lessen its market value."

Henshaw's party attained his desire and went as far south as Camp Crittenden which proved to be so malarial that several of

the members became ill and their stay was brief. Returning they stopped in a temporary camp at the San Carlos Indian Agency where on October 3, 1874, he writes that they saw confined to the limits of the reservation the "remnant of the San Carlos Indians [Apaches] who escaped from their punishment last year. They are an interesting lot." . . . "The Doctor of the post here says he will furnish me with a couple of Indians to show me where to hunt, and to retrieve my birds when shot."

Henshaw's field work in southern Arizona during the summer and early fall of 1874 was the most notable he ever did as he collected several birds previously unknown within our limits and made many interesting observations. In a letter dated October 25, 1874, from Camp Apache, he wrote in part as follows:

"My dear Merriam: It is only a short time since that a letter came from Locust Grove dated July 12th. I suppose ere this you have departed for the halls of Yale, and are clothed with all the dignity that belongeth to a Freshman. I congratulate you old fellow on the final success of all your hard digging and perhaps envy you a little the enjoyment as well as profit that is likely to come in the next four years. Well, I suppose you want to know what I have been doing for the past four or five months, and what success I have met with. So far as the latter is concerned I believe I may claim a fair measure though I have by no means come up to the standard I had marked out at the beginning. Something of the bad luck we met at the start in Santa Fé has followed us clear through the trip. We got in the southern part of Arizona into a malarial region and as the season was a most unusually sickly one, so sayeth the oldest inhabitant, we have all suffered. Myself with a fever which played the d—l with work keeping me on my back much of the time, and the remainder not much better. I have now 1,000 skins however, and among them some really fine things. Besides the *Cardellina rubra* [= *Cardellina rubrifrons*] which I took early in the season I have four others which I believe new to the fauna, among them a second hummer, quite likely the *Cyanopogon* [= *Calothorax lucifer*] which Father Baird and the rest have always been foretelling would some day turn up within our realm. A woodpecker [*Dryobates arizonae*], fly catcher [= *Myiodynastes luteiventris*] and a warbler [= *Setophaga picta*] complete the list of novelties but by no means the list of varieties. I found myself at Lowell turned loose among *Peucaea carpalis* of Bendire fame and though I found the little beggars exceedingly difficult to capture I felt tolerably well satisfied when I counted up 19. Camp Lowell [near Tucson] by the by, where I was able to spend only four days, I believe to be one of the best points for collecting I ever saw. To birds there is no limit, nor do I believe it is by any means exhausted yet. Its winter fauna even is very rich. On Mt. Graham had

the pleasure of drawing bead on a couple of males of *Eugenes fulgens* as well as a female on a nest. Those two are gorgeous I tell you. Only one did you ask for? All right, take your pick. We got back to this post a few days ago from a little trip in the White Mountains. The season was so late that I expected little, and was not much disappointed when I got nothing but some fine trout fishing. I did however secure a couple of specimens of *Tetrao obscurus*, not in themselves of course rarities but valuable as coming from the most southern locality. I reported them last season and expected to find them still further south, but am now of the opinion that this is the jumping off place for the species. Of game we had a tolerable supply at some points deer being specially abundant. . . .

"I find that our Cambridge man Ingersoll went with Hayden but of his success I know nothing. I also learned what I had strongly hoped had been brought to pass that Aiken was with us. With my thousand and what he does, and he will show a big figure, we shall by no means make a bad show in the bird line. I expect Coues has played the d—l with birds in the N. W. [with Hayden's Survey] though I hear nothing. Aiken and I missed each other by about an hour, as I went out of Colorado Springs on the train on one side of the town he rode in the other leading a pony for me to ride over to the ranch. Too bad, for he had much I wanted to see. . . . I have no address in Arizona. Letters go blind. The Apaches here have been on a *tiswin* debauch for the past week with the result of four killed, several wounded and last night they killed one of the head chiefs. Since February in these drunken rows they have killed not less than 25. Merry cusses, aren't they? We have been detained here now some days awaiting transportation and hope to be away for Tularosa and Santa Fé soon. Practically my work is done. Birds are as scarce as hen's teeth. Shall I see you in W— this winter? Of course, however,—till then adios."

When his birds were more fully identified Henshaw wrote Merriam: "Let me see, haven't I found some new things among my birds which have come in since I wrote home? Certainly I have. *Doricha enicura*, southern Arizona, is the most beautiful of our species never before taken outside of Guatemala. Of *Vireo vicinior* I have six, of *pusillus* eight. Then, too, I find that a strange hawk I saw two specimens of is *Urubitinga anthracina* of Mexico. Another hummer unknown to me and which Ridgway and I differ about I have sent G. N. L. [Lawrence] for determination. Perhaps it is *Calothorax cyanopogon* so says Robert [Ridgway], but I think it is *Circe doubledayi* [*Cyananthus latirostris*]¹ Hab. Southern Arizona."

In regard to these discoveries he wrote from Washington on December 10, 1874, "All the Ornithological Dignitaries were

¹ This specimen proved to be *Calothorax luctifer*.

taken completely by surprise by the showing of tropical birds and it looks as though it might necessitate some change in faunal limits. So, my boy, I suppose I am to say that the season's work has been a fair success. Coues is as cheerful as ever. Brought home 600 skins [of birds] besides many large mammals."

In a letter from Washington, dated January 18, 1875, to Merriam he comments in a jocular way on the uncertainties attending appropriations by Congress for the several Governmental surveying parties then working independently in different parts of the little known West. "Says you 'what's the chance for going out next season?' Says I, 'I'll be hanged if I know.' Just tell me what the Appropriations Committee, before which brother G. M. [Wheeler] and our most Christian friends Hayden, Gardner and Powell [the heads of other Surveys] appear tomorrow morning, will put us down for and then I'll come out strong on the prophet business.'" Later he wrote that the Wheeler Survey had been given \$40,000.

From Washington, February 21, 1875, he wrote Deane "Coues is soon to make a revolution in the names of our birds and as he says is 'going to play h—l with them.' He takes Adam for his authority and thus has been able to grub out any quantity of new names of which the priority has till now been overlooked. How will *M. georgiana* do for the swamp sparrow, *fasciata* for the Song? One thing certain he will get so far back that as he says no one will be able to cut under him, and the names will be established forever and ever. Can't say however that I am so sanguine."

In a letter of April 24, 1875, to Merriam he writes that Mr. P. L. Jouy, of the Smithsonian Institution, had become an enthusiastic bird collector and appeared to be going into the work in earnest. He could already make a good specimen and goes collecting whenever opportunity offers. Mr. Jouy was a young clerk in the Institution whose contacts with Henshaw, Robert Ridgway and others awakened in him a desire to become an ornithologist. He was in delicate health and was unable to advance far. Eventually he broke down and died March 22, 1894, at the age of 38, while trying to recuperate in Tucson, Arizona.

In the letter referred to above he continued "shall surprise you with some of our office news. Dr. Yarrow is going to leave us,

sends in his resignation tonight. Cause not generally known. Probably nothing save that he and Lieutenant G. M. [Wheeler] can't quite agree on the way in which a natural history party should be conducted. He retains my services, so he says, and I go to California for the summer. Received today a Springfield carbine from the armory which I hope to have opportunity of trying on some grizzly in the Sierra Nevada.

"Wish, my dear fellow, that I could be at New Haven and study with you. You are on the right track. Stick to it."

Wheeler's party, as planned, went to California for the summer of 1875. On July 2, Henshaw wrote from a camp on the seashore, about ten miles from Santa Barbara, where he found the birds in much worn plumage. Others of the party were excavating old Indian village sites where remarkable finds were made of implements and other artefacts.

He writes from Moore's Island:

"In a little bed of reeds twenty yards from my tent I find both species of rails *virgintanus* and *crepitans* and spent some time this evening watching them as they came out and fed along the edges. The island here, as this piece of land is called, and a veritable island it is just now, made so by the high tide, is fairly alive with Valley Quail. It is safe to say that there are 250 of the beauties in this little spot, and what rather surprises is the fact that they appear to have finished breeding and to be running in regular large bevvies. * * *

"You'd be amazed to see the number of squirrels, ground squirrels, which are found all through California. Their number is legion and the damage done by them to the crops both of grain and fruit is simply incalculable. One sees them by dozens at every step he takes as they run to and fro from hole to hole. Hawks and owls have an easy time of it."

On August 8, while they were camped at old Fort Tejon, Henshaw wrote that he had been disappointed in his results among California birds up to that time but was looking forward with interest to "the unknown regions away up the Kern River and so on toward Mt. Whitney to afford something in the ornithological line worth recounting."

He refers by contrast to his rich finds of the preceding year in southern Arizona but adds that aside from results in ornithology he was having a good time.

"Have I not seen quite a portion of California, that land of promise to all pilgrims from the East? The south part has by no means proved the

land of continuous vineyards and orange groves I had been led to look for from certain newspaper accounts. On the contrary not a small portion of the regions traversed by our party has been one of the most desolate I ever saw, a desolation none the less dreary to look upon in that it comes not directly from nature but from the agency of man. A very large proportion of the country at large lying outside of such large towns as Los Angeles and Santa Barbara has been and is so completely overstocked with cattle and sheep that had fire swept over the country it could hardly have left it more bare. The hills for miles and miles have been completely denuded of grass and to a great extent of shrubbery too, for hungry stock are by no means gourmands. Not a camp have we made where it served of use to turn our mules loose to graze. Doubtless this, a most unusually dry season, has added to the general effect.

"Rothrock [Joseph T., the botanist] and I have just returned from a ten day's trip into the neighboring mountains and from lowest valley to highest peaks the same nakedness of herbage seen. Not an entrancing picture surely. However, you are not to understand that the country is a vast desert. By no means. On the contrary many of the little valleys and river bottoms are or can be made Edens on a small scale and in these are seen many a thrifty vineyard.

"This last trip of ours was a most enjoyable one. We camped at the cattle ranch of an Irishman—an old Californian and as warm hearted and generous a fellow as one would care to meet. How we did pitch into that splendid butter and milk he was so lavish with, and what with these luxuries and venison of our own killing, Mountain and Valley Quail and grey squirrels, what a table we did set. Deer are plentiful here and four fell to our share. Dr. Rothrock takes rather the lion's share in the deer hunting just now though I do a little with my Springfield carbine. I am however, treasuring expectations of certain fine trout streams up Kern River way and should I prove successful in this line as the Doctor with his gun our rations of bacon will be likely to go begging. Our camp here is a pleasant one with plenty of wood, water and lots of shade afforded by the thick groves of fine oaks that form the characteristic timber of the lower mountain slopes here, as in Arizona. The Valley Quail swarm all through the low country giving place in the mountains, as pine timber is approached, to the mountain species. This latter is a magnificent bird and when one has killed a full grown bird, as he weighs it in his hand it seems as though it could not be a quail, but must be a grouse, so large and heavy is it. Fine eating as they are both [quail] must give way in my opinion to the squirrels of which the mountains are full."

After returning to Washington, on December 6, 1875, a letter written to Deane gives information concerning some of the scientific fraternity of that time.

"The most surprising news to me was the marriage of our mutual friend Robert Ridgway, of which I had never had the slightest inkling. Well,

I hope he has struck a good thing but of the damsel I know nothing save that she is the daughter of a wood-engraver [Nichols]. * * * Dr. Yarrow leaves the Survey January 1st. to connect himself with the Centennial Commission and Dr. Rothrock ends his connection also when his report is finished. This virtually ends the Department [of natural history] so far as Wheeler's Survey is concerned and it would not surprise me to see him 'bust' it up at any moment. Possibly, however, I may remain until the spring, at least. Ere the month is out I shall know all about it. Allen [J. A.] is on here with his wife. * * * He is hard at work rearranging the Mammalia for the [Smithsonian] Institution. Coues is as busy as ever grinding away on books which he manufactures to order. There are no new developments of interest in the bird line. While at Oakland [at his uncle's in Fruitvale] in the fall, I succeeded in putting away some 40 skins and kept the house during my stay in a state of siege, the females hardly daring to show themselves out of doors. Among the birds were three *Chamaea fasciata* which I shot right under the windows. I got several good things from Gruber although his collection of skins turned out but few duplicates of special interest or value. Got a single nice *Sphyrapicus ruber* also *Agelaius tricolor et gubernator*, also *Vireo huttoni*, a miserable skin, however."

F. Gruber was a German taxidermist, in San Francisco, who was well known in the '70's and '80's of the last century. He had a shop for a long time on California Street but was the owner of a large collection of mounted birds which was on exhibition, in his charge, as a part of the amusement features of the historic "Woodwards Gardens" at the edge of the City. Gruber was a small gruff man, rather repellant at first contact but, as I learned by personal experience, under the crust was a most friendly person to any young naturalist interested in birds. He had little scientific knowledge but evidently had the instincts of a bird lover, and was ready to give time and information to one with similar tastes.

In December, 1875, Henshaw was working on the completion of a large quarto report on some of the results of the Wheeler Survey, especially his own report on birds. He wrote that the book had grown from an estimated 400 pages to more than double that number.

At a somewhat later period, Henshaw took the evening course in anatomy under Dr. Elliott Coues at Columbian University, now George Washington University. This study was undertaken with the idea of taking a full course in medicine, perhaps suggested by the course his friend Merriam was then working on. That this idea was

not very deep seated becomes evident in another letter in which he writes, "Have not yet decided whether I shall follow out medicine to the bitter end and then follow 'pills' for a living or not. My connection with Wheeler will, without doubt, terminate this coming field season when I think it is doubtful if he gets an appropriation to continue his work. But in any case I am certain he proposes to drop natural history work." The last is one of many statements in Henshaw's letters showing the uncertainty that for some years filled his mind in regard to Wheeler's plans.

July 1 is the beginning of the fiscal year of the Government and it is always necessary that appropriations shall be made by Congress and become available on or later than July 1 before any field work can be undertaken for that year. On June 4, 1876 Henshaw writes of expecting to know soon concerning the appropriation for the coming season's work. He announces the appearance of the separates of his report on western ornithology and goes on "what think you of the N. O. C. Bulletin? Allen is now editor and Coues, Baird, Robert [Ridgway] and every one else is going to pitch in and write for it and assure its success. Am inclined to believe that the enterprise will swim. To this end everyone interested in Birds must borrow their little one dollar and pony up. (N. B. I haven't got any dollar to lend.)"

On June 24, he wrote Deane that

"The sole topic of interest now in the minds of Explorers is that of appropriations [by Congress]. It looks now very black for our Survey. The other day Wheeler felt sure enough of his position to map out his ground of operation and it was about settled that I was to go to Lake Tahoe, California. In all probability this would prove a fine region for work. When the matter came up before the House, however, he was thrown out entirely. Hayden and Powell being mentioned for pretty good sums. Last night through an amendment Wheeler was put down for \$50,000. This was about 11 o'clock P. M., and I went home thinking it was all right. At 2 A. M. the question was reopened on some point and the vote went against him. So it looks now as though we were 'busted, by thunder.' Possibly there may be something done for us in the Senate. So you see, my boy, that the ups and downs of legislation are many." * * *

"Tomorrow morning I take a turn into Virginia and try for the young of the Worm-eating [warbler]. Expect to find them if the mounted police do not interfere."

"Coues will probably make a trip into Colorado with Hayden this

summer. Aiken writes me from way down in New Mexico. He had had up to that time but little success and something like a hard time. His mules had but two drinks in three days. Was accompanied by only a small boy as assistant. Had joined an emigrant company, the one which started from Boston for Arizona. Fear he will not meet with the haul I anticipated. He may, however, strike it rich down in Arizona if he don't meet with hostile Apaches. Then Allah preserve him. He is a plucky chap. Knowing that country as I do I wish I were with him."

Delays accumulated to prevent his leaving Washington until a letter dated August 13, 1876, announced his preparations to start for Carson City, Nevada, on his way to Lake Tahoe where he did not arrive to begin his season's work until September. On November 1, he writes from Lake Tahoe of his poor results largely owing to the lateness of his arrival. One interesting observation made in the Lake Tahoe area was the migration of the mule deer across the summit of the Sierra to winter on the west slope. In October, he found only a few deer tracks "and these all pointing toward the western slope." After a very unsatisfactory season in the field, Henshaw returned to Washington whence he wrote on December 15, "Aiken writes me that he is back from Arizona with some 600 skins [birds] and as in addition he brought back all his scalp I think he may fairly claim to have made a successful trip of it. No addition to the fauna. Did not get sufficiently far south owing to the many difficulties presented. He is a plucky fellow sure enough, and now that he has whetted his appetite for Arizona we may expect to see or hear of a second trip."

The following spring a letter to Merriam gives some idea of Henshaw's doings during the early part of 1877.

"Washington April 10, 1877.

"My dear Merriam:

"Busy? Why that's no name for it. I can't get time even Sundays to take a walk out into the country. Have taken hold, at the Prof's [Baird] request, of the type collection of eggs and any spare moments I can get to its rearrangement. Now am going over the duplicates picking out such as belong by right in the type set [meaning the reserve set]—not forgetting meantime to select a set for the collection of H. W. H. Shall have the nucleus of a fine collection by the time I am through.

"Read a little medicine every night with Dr. Yarrow, but it is only a little. Did think for a time of occupying myself this summer and next winter with study and so come up for graduation next March but I have given this up and shall try another trip to the West this summer. Think

it better to stay with the Survey while I can for the dollar's and cent's sake, as well too for my health; then when appropriations stop I can settle down to medicine—meanwhile studying more or less. Wish I just could go on and study with you, for the College [in Washington] is not A1. By the by, Coues has taken the Chair of Anatomy. Gave us the first lecture the other evening and first class it was too. Will go somewhat into Comparative Anatomy and to a certain extent into Zoology."

Henshaw's field work of 1877 began at Carson, Nevada, and extended northward into Eastern Oregon. Near Goose Lake he collected the first specimen ever taken of the curious little brush rabbit that was described years later by Merriam from other specimens as a new species *Lepus idahoensis* and later was made the type of the new genus *Brachylagus*. The season of 1878 covered the same general region.

By Act of Congress, March 3, 1879, the several surveys under King, Powell, Wheeler and Hayden that had been competing each year for appropriations and had been doing topographical, geological, paleontological and other natural history work in various parts of the then comparatively little known West, were united in the United States Geological Survey, with Clarence King as director, soon to be succeeded by Major J. W. Powell. With this reorganization all work in natural history except palaeontology was dropped and thus brought to the fore the subject of Henshaw's future. He made known to Professor Baird his desire to become assistant Curator of Birds in the National Museum under Robert Ridgway. Lack of funds for such a purpose prevented this but he was offered and declined the Curatorship in Herpetology in the Museum as he lacked interest in the subject.

In 1880 Major Powell was organizing the Bureau of American Ethnology. For a long time he had been Henshaw's warm friend and now offered him the opportunity to be connected with the new Bureau, the understanding being that if the work proved to be congenial he would continue in it permanently. The offer was accepted and for some years to follow, he did nothing with birds except during his spare time.

Practically Henshaw's first work as an ethnologist was to secure information among the Indians of the Pacific Coast States for use in the Census of 1880. Then Powell desired a classification of the linguistic families of Indians north of Mexico, and Henshaw with

several assistants, was assigned the task of gathering and preparing the material for Major Powell's use. The result of this work was published in 1891 with credit given for Henshaw's part in it. Major Powell was a firm believer in the biologic method of handling the study and classification of the Indians and appreciated the value of Henshaw's training along those lines as applied to ethnology.

For several years Henshaw and I had corresponded but our first meeting was in December, 1876, when he came to see me in Chicago on his way East after a short season in the field. He had become familiar with my youthful work among the birds about Chicago and encouraged me in my desire to get into field work in the Government service. In those days opportunities of this kind were rare but at the end of December I went to Washington to await an opening. This occurred within two months, early in 1877, when, on Henshaw's recommendation, I was sent to Alaska and thus began my connection with the Government service as a naturalist that has continued almost uninterruptedly ever since.

It is a pleasure to record here that during the long period of ill health that followed my return from Alaska, Henshaw proved himself to be in many ways a sympathetic and helpful friend. One notable kindness was the time he expended in the long task of editing the unfinished report on my Alaska work. Another evidence of his kindly spirit was the pleasure and interest he took, whenever opportunity came, to help young beginners in the study of birds.

During our close association in Washington in the winter and early spring of 1877 and again during the same period in 1882, and during the season we passed together in Colorado and New Mexico in the summer of 1883, he was always an enthusiastic genial and delightful companion. His droll sense of humor and his keen wit were both interesting and amusing for they were without sting for a victim unless circumstances called for it. His judgments of human frailties were tolerant and kindly but he had a very definite personal code of honor that led him to look with marked disfavor on those guilty of meanness and dishonesty.

While I was in Washington the fall of 1881 and winter and spring of 1882 Henshaw had a horse and buggy, which had been

presented to him by Major Powell. In pleasant weather, especially after the birds began coming back in spring, we made very frequent trips into the surrounding country. These were often in the dewy freshness of early morning when the birds were most active. At that time wooded areas lay all about close to the outskirts of town. One locality especially favored by birds and ourselves lay only a short distance north from the corner of U and 7th streets, N. W., now a densely built up section of the city.

At this time Henshaw was building up his fine private collection of bird skins and on our drives he commonly took along a shot gun to use on the larger birds with a little cane gun, shooting a 22-caliber shell loaded with very fine shot. This made little noise and was mainly for use very near town in order not to disturb the susceptibilities of any wandering policemen who might be about. Many a choice warbler or other small bird was added to his collection with this little weapon.

I have never forgotten the pleasure of those drives. Henshaw's intimate knowledge of local birds, their notes and ways, was the source of odd comments on them, and on happenings there or in other times and places that were a source of amused interest to me. While we were driving or walking he would suddenly cease talking and sometimes for a period of ten or fifteen minutes his mind would appear to be occupied by some day-dream. These silent intervals were commonly broken when we were driving by his abruptly breaking out at the top of his voice in a line or two of some popular revival hymn; or, if walking he would make some remark on a subject quite foreign to anything we had been discussing before. I have often thought that in those days his little silences might be brought on perhaps by the natural beauty of our surroundings to which he was very responsive.

An indication of the humorous play of Henshaw's mind, when with one of his chosen companions, was an amusing assumption of superior age and worldly knowledge. At such times he would take on a portentous dignity and addressing his companion as "my son" would give in admonitory tones some nonsensical advice. At other times his companion might be told that he should beware of going on with some project until he had sought the advice of his "Uncle Jeems."

The summer of 1883 Henshaw and I were together first at Colorado Springs, Colorado, and later lived in a cabin on the headwaters of the Pecos River, New Mexico. I found him an unfailingly agreeable camp mate and we had a delightful season in some of the most beautiful parts of the Rocky Mountains. He was an excellent field collector with a quick eye for form and color and a much keener ear for bird notes than I possessed, although his ability in this did not equal that of Brewster.

As we both considered ourselves good field collectors of birds we soon developed a friendly rivalry as to which would secure the rarest specimens. This added much to the zest for each day's wanderings in the wildest, and most lovely mountain country one could wish for. We proved to be so equally matched in our skill that the close of the season found us practically even in the birds taken. Whenever for a day or so I chanced to have a species or two not yet captured by Henshaw his ready imagination always enabled him to prove that among the entire fauna of the country they were the least desirable. This was all done with such genial good humor that it was most enjoyable.

He was a tireless trampler of the mountain sides and on one occasion perpetrated a little practical joke on me that I still recall with amusement. Pygmy Owls were not uncommon but kept so well concealed, high up in big yellow pine trees, that for a long time we were unable to get, or even see one. As I was passing a little grassy park one day I heard the mellow call of one of the little fellows apparently low in the branches of a big pine across the opening. Crossing cautiously I slowly circled the tree several times until my neck became painful from the strain of looking upward, while the tantalizing calls came at regular intervals. Finally as I glanced down to be sure of my footing I caught sight of a heel disappearing behind the trunk of the tree. A shout brought forth Henshaw wearing a broad grin of enjoyment in which I joined for I had been completely deceived.

Following the linguistic classification of the Indians, in 1885, Henshaw, aided for a time by the entire staff of the Bureau, was engaged in compiling and preparing material to make a synonymy of the tribes and settlements of Indians north of Mexico. This material was so well elaborated that it formed the basis of the

'Handbook of American Indians North of Mexico.' This fine work in two volumes published from 1907 to 1910 by the Bureau of American Ethnology contains a wonderful mass of information.

During the years spent in ethnological research Henshaw varied the close office grind by occasional trips to the west coast for the purpose of obtaining needed data. While he and the writer spent most of the summer and fall of 1883 in recuperating about Colorado Springs and in New Mexico he devoted himself to collecting birds for his private collection. At Colorado Springs we accidentally discovered an infallible method of collecting eggs of the Mountain Plover, Horned Lark and one or two other species of birds that were nesting on the adjacent grassy plains. At first we spent some time tramping about but although numerous birds were seen no nests were found. One day we decided to take a horse and buggy so as to give us a wider radius. The grass was only a few inches long and we had driven only a short distance when a plover was seen standing in a crouching attitude thirty or forty yards ahead and to one side. Fixing our eyes on it we drove close beside the spot, the bird departing as we drew near. Where the bird had stood were its nest and eggs. This success led us to repeat the performance not only with the plover but with the other birds. It was late in the morning when we began and before noon we had a fine collection. The birds would have been invisible when sitting on the eggs but the intense heat of the sun was so great that they stood free from the ground over their eggs, thus shading them and being a little cooler. We found this method of finding nests worked on several subsequent days.

During the years he was with the Wheeler Survey, at the end of each season Robert Ridgway, Curator of Birds in the National Museum would go over the season's collection and choose the one, two or occasionally more specimens of a kind he considered desirable for the Museum collection. The remainder was classed as duplicate material to be distributed to other institutions or individuals, and Professor Baird, appreciating Henshaw's field work which was adding treasures to the Museum collection, gave him permission to take such specimens as he desired from these duplicates for his own collection. Through these additions to the specimens he had collected through his early years and at odd

times while living in Washington he had one of the finest collections of birds existing at that time.

In those days no one appreciated the value of series representing a species in all plumages from many parts of its range, and at different seasons. A species was a species and a very few individuals representing it filled the requirements. No special value was placed on a specimen because it had been used as the type in describing a new species and if a better specimen came in, the type went into the limbo of duplicates. Many of them were mounted for the exhibition collection or were sent broadcast to various museums with other "duplicates." Ornithologists owe the late Dr. C. W. Richmond, Assistant Curator of Birds, in the National Museum, a debt of gratitude for the time and ingenuity he spent in more recent years in locating and restoring to the type series of that institution many of these invaluable specimens.

In the early '80's of the last century English ornithologists were in a doubtful state of mind in regard to the rapid development of ornithology in this country and in 1885 Dr. Godman purchased Henshaw's collection of birds and eggs for the British Museum. Included with Henshaw's specimens were the private collection of Dr. C. Hart Merriam and the collection of birds I had made in Alaska except the limited number reserved for the National Museum. This entire collection was carefully labelled by Robert Ridgway and Henshaw and for the first time gave the ornithologists over there a definite idea of what the Americans meant by their trinomials.

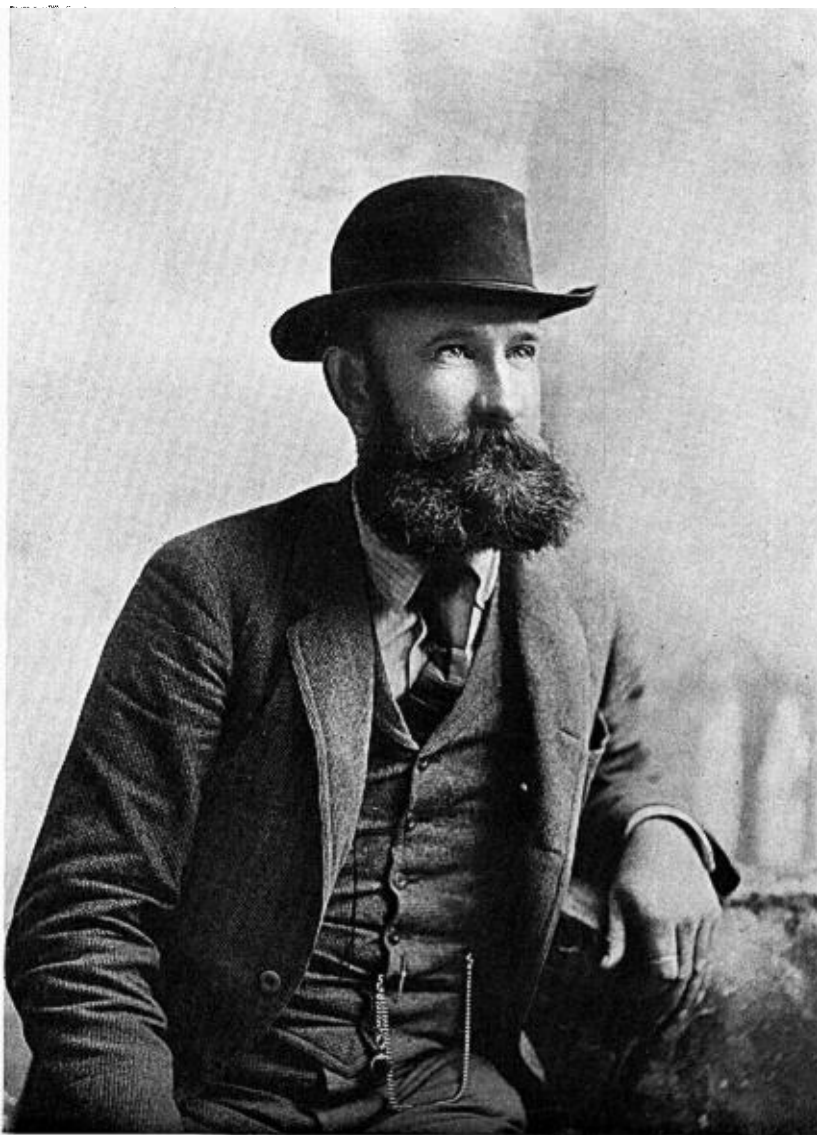
While Henshaw was in the west during the season of 1883, the American Ornithologists' Union was formed and he was made a member of the first committee to prepare a code of nomenclature and a check list of North American Birds. He did much unofficial work on this volume which helped so greatly in building up ornithology in America. Henshaw, at one time or another, became a member of various scientific societies but never took an active part in their proceedings owing to an over-powering distaste for speaking to an audience, or functioning as an officer at meetings. He was made vice-president of the American Ornithologists' Union, first from 1891 to 1894 and again from 1911 to 1918, finally retiring after having repeatedly declined the honor of the presidency of the Union which he so well merited.

Henshaw was fortunate that the first fifteen years of his residence in Washington marked what has been, up to the present time, the most actively constructive period in the organization and upbuilding of scientific, and especially biological, research in the history of the Federal Government. The United States Fish Commission had been established in 1871, the year before he joined the Wheeler Survey, and its activities were just beginning. In 1876 the Centennial Exposition at Philadelphia passed over to the Government such a great and varied collection of exhibits that Congress appropriated \$250,000 for a United States National Museum building to house it, and the natural history collections that for years had been accumulating in the Smithsonian Institution. Thus originated the great institution existing today.

As already noted, in 1879, Congress united the four western surveys into the United States Geological Survey, which like the National Museum, has made a great record for results achieved. The same year the Bureau of American Ethnology was organized under the Smithsonian Institution, and it has accumulated a vast store of knowledge concerning the living and extinct natives of America, much of which has been published. Without this organization most of this valuable information would have been lost.

In 1885 Congress made an appropriation of \$5,000 for investigating the migration of birds. Dr. C. Hart Merriam, through whose efforts the appropriation was made, began the work as a section of the then Division of Entomology in the United States Department of Agriculture. The work originating in this way, under his energetic leadership, soon became so interesting and valuable that it was given an independent status in the Department the following year and its increasing lines of research with its economic and regulatory activities have built up the present Bureau of Biological Survey.

Outside the Governmental auspices several other organizations were created in this period in which Henshaw had a helpful influence. With a group of scientific men in Washington, in 1878, Henshaw took an active part in the organization of the Cosmos Club. This club has grown steadily and, unique in the attainments of its membership in science, art, literature, and the professions, is known throughout the world.



HENRY W. HENSHAW
1894 AGED 43.

By 1888 the increasing responsibilities of the Geological Survey required so much of Major Powell's time that he placed in Henshaw's hands the detailed administration of the Bureau of Ethnology, a work that he carried on for the following four years. During this period he took an active part in the publication of the 'Anthropologist' of which he was the editor for several years.

Major Powell desired to make Henshaw Chief of the Bureau of Ethnology in the late '80's but his sensitiveness to criticism and his reluctance to be placed in authority over the associates who had been working with him caused him to decline this responsibility.

In a letter from Washington dated in October, 1891, Henshaw refers to his slow recovery of strength after six weeks in the hospital. The attack of influenza that caused this, and his long confining over-work culminated in a break down which invalidated him for years thereafter. His condition was such that in 1892 Major Powell sent him to California to do light field work among the Indians and to recuperate. Writing from California in January, 1893, he records his inability to walk much owing to weakness. A letter from the Bidwell Ranch, near Chico, dated May 1, 1894, says "Yes, in January I had high hopes of returning to W.[ashington] and to work soon, for I was getting on well. I came up here to put on the finishing touches and in some way or other walked two or three yards too far and down I went. All my new found strength left me and up to date has not returned. I am now thinking of a sea voyage."

Between 1892 and 1894 Henshaw visited many parts of California and met interesting Californians among whom were, Walter Bryant and Frank Stephens, the latter of whom he visited at his home on Witch Creek, in San Diego County. He collected Indian material for the World's Fair at Chicago, and various specimens of animal life. In 1894 he resigned from the Bureau and in December of that year went to the Hawaiian Islands in search of health.

On April 16, 1896, he wrote from Hilo, Hawaii, of his improved physical condition and turning to another subject says, "No, the mongoose has not driven the birds away from Hilo. The Minah [a starling introduced from India] has probably fought them off, but they are a curious lot, these Hawaiian birds and any change what-

ever in environment seems fatal to them. It is simply astounding the way they disappear. I have been in Hilo over a year and not one native bird have I seen here."

On February 7, 1900 he wrote to Deane from Hilo, "I have taken up bird work again and find that through it I am gaining strength rapidly. For a long time walking was denied me and that is why I have been so long pulling out of the mud. I find Hawaiian birds immensely interesting in their habits and the search for them has the added charm that so many are rare and their habits comparatively unknown. On the other hand the Hawaiian forest is a veritable jungle and practically impassable. One has to cut his way as he goes. Add to this that it rains much of the time and that the temperature is somewhat less than Arctic and you have a combination of difficulties that tax the patience and ingenuity of even a veteran of the Fresh Pond Marshes [near Cambridge, Mass]. I have just returned from a ten days trip into the bush after one of Hawaii's rarest birds and am glad to say that I was successful. The coffee planters are opening trails in many districts where a few years ago there was nothing but dense jungle and this fact is greatly to the advantage of the collector. At the same time the same planters are felling the forest in every direction and if they keep on many, perhaps most, of the island birds are doomed to speedy extinction as already has occurred on the Island of Oahu. * * * I have just read of the death of Elliott Coues. It was a great surprise to me. He was a comparatively young man and as a rule in the best of health. He was a man of great abilities and possessed a charming personality. Few men could be more delightful than he. I knew him well for years and for a long time saw him daily."

From Hilo, March 9, 1901, he wrote: "As to snow, it is true that my acquaintance with the article of late has been rather limited so far as its worst qualities are concerned, but I have only to step to the door of my cottage and I can see miles of snow fields. Mauna Kea, Hawaii's highest mountain, raises its head in the clouds over 14000 feet, and anyone who wants to indulge in snow-balling at any season of the year, or sliding down hill has but to visit its summit to indulge to his heart's content. The snow banks are just about 30 miles from where I am, and that is just about the



Upper: HENRY W. HENSHAW AT CAMP BIDWELL, CALIF., AUGUST 1878, AGED 28,
ON LAST FIELD TRIP ON WHEELER SURVEY.

Lower: HENSHAW'S COTTAGE AT HILO, HAWAII.

right distance according to my way of thinking. Snow is best viewed through a canopy of fig trees, or from the shade of a grove of palms."

One result of Henshaw's bird work in the Hawaiian Islands was a list of the birds with notes on them which was published privately at Honolulu. In regard to this he writes Deane on December 22, 1902, "I am sorry that I have not a copy of the 'list' to send you. The fact is that I made my publisher pay me one hundred dollars for the work on the thing to buy a typewriter. This sum pretty nearly sent him into bankruptcy and I had not the heart to make any further demands on him. I made out a list of the friends I wanted to send the list to and when I found it was going to cost me over \$50.00 I concluded to let it go for the present. Thomas Thoun is the publisher, Honolulu, and if you care to squander a dollar on the vagaries of a friend why he is your man. But let me tell you that it is not worth the money. There should have been plates but then the cost would have prevented it from reaching the folks down here for whom I intended it."

On February 14, 1904, he wrote Merriam that he was at Honolulu negotiating the sale of his collection of more than 1100 Hawaiian bird skins to the Bishop Museum. It contained a number of species already extinct and others that he thought would be gone in another ten years. In this letter he refers to his proposed return to Washington the coming fall. A short letter to Deane written May 20, 1904, says "Your letter was very welcome. It finds me in the agony of packing, for on the first of June I leave the tropics for the mainland. I am prepared to resign all claim to invalidism and trust to be able to join the battle at the front."

Henshaw's residence was at Hilo amid beautiful tropical surroundings. After being there several years, expecting to spend many more years, he became a citizen of the short-lived Hawaiian Republic but when the islands were annexed to the United States as a territory, in 1898, he automatically became again a citizen of the United States.

As his health improved and the picturesque beauty of his surroundings became more impressive he began taking photographs. He proved to have an artistic sense and such a special aptitude for this work that the public demand for his prints became so

insistent that he placed his negatives in the hands of an agent in Honolulu and became famous as a photographer and thousands of his prints were sold and taken to all parts of the world. In his autobiography* Henshaw states that he looks upon his "adventure in photography with great pleasure and regards the results as a partial but grateful return for the delightful years spent in this island garden spot, of the many friends I was privileged to make, and their innumerable acts of kindness and hospitality." Some years after he returned to the United States all of his negatives, more than 300 in number, were purchased by George Shiras 3d and presented to the National Geographic Society. These negatives are of special value as Henshaw secured pictures of native costumes, houses and other views that are difficult or impossible to duplicate.

As might have been expected the marvellous beauty and variety of native land and tree shells for which the Hawaiian Islands are famous throughout the world, among conchologists, soon attracted Henshaw's attention. He began a collection of them with the idea of publishing on them. This materialized only in one short paper on deposits of semi-fossil shells in which he described four new species.

In the summer of 1904 Henshaw returned to California and early in 1905 was again in Washington in good physical condition and eager to get into some congenial work. It was natural that he should desire to be among his old friends in the Biological Survey. To this end he took a Civil Service examination and on June 1, 1905, became Administrative Assistant under Dr. C. Hart Merriam. In December of the same year he was made Assistant Chief of the Survey. In 1910, when Dr. Merriam resigned from the Biological Survey, in order to be free to devote all his time to scientific research, Henshaw was appointed Chief and he continued in this position until his resignation on account of failing health in 1916. For some years before his resignation the writer had been his assistant, and upon his recommendation to the Secretary of Agriculture succeeded him as Chief.

I am glad to record here the satisfaction and pleasure I experienced working in intimate association with such a friend. No

* 'Autobiographical notes,' *The Condor*, 1920, p. 95.

more cordial, considerate and appreciative superior could have existed.

From early in his service in the Biological Survey Henshaw was much impressed by the vast importance to the country of the economic problems involved in wild life and its relations to the welfare of man. The investigations of the food habits of birds and mammals, the establishment of bird and mammal refuges, the enactment and enforcement of conservation laws, the control of birds and mammals when they became pests by their destruction of crops or livestock, or as carriers of disease, all aroused his greatest interest. It was during the period of his connection with the Survey that these economic phases of its activities began an increasing development that has continued to the present time. Although a great lover of birds and other wild life he held strongly that whenever a species became seriously destructive to crops or live stock of any kind that it should be controlled in the area of its destructiveness. This did not mean the extermination of any species for his field experience had taught him that wild things are so fecund that even a drastic reduction in their numbers in parts of their range would have no effect elsewhere and only a temporary effect in the area in which they were destroyed.

While Henshaw was Chief of the Biological Survey that landmark in American conservation the "Federal Migratory Bird Law" originating with George Shiras 3d, known as the "Weeks-McLean Act," was passed by Congress. Concerning this on October 1, 1913, he wrote Dr. Merriam, then in California. "As you are entirely outside of all communication by land or sea I am sure you will be interested to know that at 12:40 today the President signed the migratory bird law in the presence of the Secretary [of Agriculture], Dr. Palmer, Dr. Fisher, Professor Cooke and myself. It was with no little relief that I saw him trace his name with a big quill pen which I had provided, for during the past few days we have been in receipt of numerous protests against signing the bill which had been sent to the President and forwarded to us, so we naturally felt a little doubtful of their effect.

"As a rule the protests do not concern the substance of the law but relate to changes of the seasons to suit the convenience of local sportsmen. Many of them deal with the provision against

night shooting, which in the minds of many sportsmen is a serious prohibition, but the principal cause of protest is the shortness of the spring season. All over the country the sportsmen are fully agreed as to the necessity of a law better protecting game birds and it is rather remarkable how unanimous they are in the belief, or at least the statement, that a Federal law is the only possible means of effecting the result.

“A large number of them admit the iniquity of late spring shooting and are willing to give it up but many of the protests that are now coming in are on account of that clause in the regulations. In other words, many sportsmen believe that it is necessary to protect birds and at the same time they want the privileges of shooting them to the same extent they have always done, and chafe at any really effective limitation. However, the law as a whole seems to be satisfactory to most of the country. Any serious attempt at enforcement of the regulations is, of course, impossible from the Federal standpoint since only ten thousand dollars is available for the purpose and practically most of the enforcement for the first year must depend upon the coöperation of State wardens. The prospects are excellent that in most States we shall obtain hearty coöperation.”

Later came the Migratory Bird Treaty with Great Britain in connection with which and the preparation of a bill for its enforcement Henshaw was actively interested.

During his service as Chief of the Biological Survey, Henshaw interested the Secretary of Agriculture, James Wilson, in the publication of a bulletin on common birds to be profusely illustrated with colored plates by Louis Fuertes. As a result in March, 1913, was issued by the Department Farmers Bulletin 513 ‘Fifty Common Birds of Farm and Orchard.’ This proved to be one of the most popular publications ever issued by the Department. The first edition of 200,000 copies was quickly exhausted and several others followed a few years later.

The popularity of this work and the felicity of Henshaw’s accounts of the birds interested Dr. Gilbert Grosvenor of the National Geographic Society so much that he obtained from Henshaw two similar articles on other American birds, also illustrated by Fuertes, that were published in the National Geographic Magazine. Later

these articles with others were combined and published as a "Bird Book" by the National Geographic Society that has had a very great popularity. These articles have no doubt, resulted in interesting many people in birds and thus aiding conservation, which was Henshaw's desire when he wrote them.

For several years while in the Biological Survey Henshaw was much interested in the study of diatoms. The beauty and variety of the microscopic skeletons of these minute plants opened a new little world to which he had been introduced by his close friend Dr. Albert Mann. Under such skilful guidance Henshaw soon mastered the technique of the microscope and the mounting of the objects. After resigning from the Survey he devoted much more time to this subject and built up a series containing thousands of slides.

He continued to follow in a general way the affairs of the office and took a kindly interest in the activities of his former associates, seeming always eager to discuss with them matters of mutual interest. As time went on his health steadily declined and he died in his 81st year, in Washington, on August 1, 1930.

Washington, D. C.