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LEONHARD HESS STEJNEGER 1851–1943

ΒY

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LEONHARD HESS STEJNEGER

1851-1943

BY ALEXANDER WETMORE

Leonhard Hess Stejneger, for more than 58 years a member of the staff of the Smithsonian Institution, was born in Bergen. Norway, October 30, 1851, the eldest of 7 children. Records of his ancestry on the paternal side carry back to Johann Carl Steineger, born in Prague, January 26, 1726, who had as an only son Leopold August Elias Steineger born in Braunschweig about 1755. The eldest son of Leopold, Carl Claus Heinrich Steineger, born in Hamburg, Germany, March 28, 1701, became a cavalry officer, and after a period of service in the army removed to Bergen, Norway, where he established the mercantile business of Steineger & Company. He married Margaretha Stamer, born in Bergen in 1799, who, following the death of her husband in 1828, possibly from the effect of wounds received in war, continued the family business as its head. Leonhard Steineger's father, Peter Stamer Steineger, born of this union in Bergen, December 12, 1826, was educated in private schools and in a commercial academy. He became a merchant, and later an auditor, and died in 1921.

The maternal grandfather, Leonhard Hess, a watchmaker of Bergen, was born in that place in 1789 and died in 1868. He married Maria Margaretha Brock, also of Bergen (born in 1799) who died in childbirth in 1830. Their daughter, Ingeborg Catharina, mother of Leonhard Stejneger, born February 5, 1830, was educated in a private school for girls, and married at the age of 20. She died when 45 years old.

According to records left by Leonhard Stejneger he attended the Smith Theological School in Bergen in 1859-1860, and following that the Bergen Latin School until 1869, when he accompanied his mother to Meran in southern Tyrol, Austria (in recent years included in northern Italy and called Merano). Here he was under a private tutor in 1869 and 1870. Until 1871 he spent the greater part of each year in Meran because of his

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mother's delicate health. There he completed preparation for admission to the University of Kristiania, taking the "artium" in 1870, and beginning his studies in 1871 to become *candidatus philosophiae* in 1872. Following this he studied medicine for two years, mainly to have the advantage of the lecture courses in botany and zoology. As it was his mother's wish that he should become a physician he went to Berlin for further training in medicine. Almost immediately it developed that this profession was not to his liking, so he returned to Kristiania to fit himself to enter his father's business. To this end he took up law and graduated in 1875 as *candidatus juris, haud illaudibilis*. It may be added that in 1930 he received the degree of Doctor of Philosophy, *honoris causa*, from his University in recognition of his accomplishment in science.

Steineger's interests in his chosen field of zoology developed in his boyhood. His earliest notes, which deal with birds, begin in 1867 when he was in his sixteenth year. The record in question, a form of catalog with a number at the top of each page, is on printed forms that list (in Norwegian) 33 items to be observed in specimens that he collected. These include details of place, date, sex, measurement and color, a page for general observations, and another on which he painted a beautifully executed sketch in water color. The work begins with an account of the willow warbler under the heading "Lóvsangeren, Sylvia trochilus" from a specimen shot at Vaaren in 1867. The second species, a dipper, was taken May 10, 1868, and from then until February 9, 1871, he treated in detail 68 species of birds, the observations beginning with No. 49, dated December 13, 1869, being made at Meran. The last two that complete this record, No. 69 and one without number, are from Kristiania, October 24, 1872, and May 3, 1874.

The sketches continue to No. 53 and then cease, all being done in careful detail, and usually in a highly lifelike manner. The earlier drawings are signed L. H. Steineger, but during his work at Meran he adopted for his family name the Norwegian spelling Stejneger, this first appearing as the signature of a painting of *Emberiza cia* on January 27; 1870. This spelling he continued throughout the rest of his life.

His first publication, written in German, entitled Ornithologische Notizen aus Meran, Süd-Tirol, während der Winter 1869/70 und 70/71, appeared in the Journal für Ornithologie for March, 1871, pp. 122-124. The article is dated at Meran January 23, 1871, and consists of an annotated list of 59 species, the notes dealing mainly with abundance, with specific records for certain of the species. The statement indicates a detailed knowledge of the avifauna of the region based both on observations and on collected specimens. His second paper, Nachtrag zu den ornithologischen Notizen aus Meran, Süd-Tirol, followed in the same journal for November, 1871, pp. 462-463, giving additional records. This paper was dated "Kristiania, 15. Nov. 1871," and has at the end a statement that he was interested in the genus Sitta, the nuthatches, and that he would like to exchange skins and eggs of Norwegian birds for specimens of this group from other regions. Another paper, Ornithologisches aus Norwegen, which appeared in the same periodical for May, 1873, pp. 304-307, dated "Christiania (Tilestr. 39), 8. März, 1873," is based in part on manuscript material in the library of the Bergen Museum. Stejneger's first book, Norsk ornitologisk ekskursjonsfauna, a duodecimo of III pages and four plates, was published in Khristiania in 1873. This included a general account of birds and their study, followed by a descriptive list of 260 species of birds then recorded from Norway, with brief descriptions and statements of status. The plates depict technical details, one showing the named parts of a bird, others outlines of the bills, feet, and so on, of the different groups. Genera were listed and characterized on the even pages, and their species on the odd pages opposite, the whole being a clearly written handbook with a masterly grasp of the subject. The manual on birds was followed in 1874 by another dealing with mammals, Norsk mastozoologisk ekskursjonsfauna, a brief publication of 31 pages. Leonhard Steineger began at an early age, therefore, to publish sound contributions to science.

Following graduation Stejneger entered his father's business

in Bergen, at the same time continuing so far as able his scientific studies. He became a member of the Deutsche Ornithologische Gesellschaft in Berlin in 1871, being inscribed on the roll¹ as Mitglied "128. Herr Steineger, Student, in Bergen, Norwegen." Through this membership he received the Journal für Ornithologie and so established contact with others interested in birds. From his publications it appears that he had close association with the Bergen Museum, as his writings mention its collections, particularly those of birds from Madagascar taken on a Norwegian mission, on which he based several papers. This museum, founded in 1825, at the time was housed in a substantial stone building. In 1870 its records state that it had in its library 8192 items. Stejneger's first bird new to science, described in 1878, was named Lanius bairdi, in honor of Spencer Fullerton Baird of the Smithsonian Institution.

A letterpress book marked "L. Stejneger, Privat" for the period November 19, 1877, to May 3, 1881, deals mainly with his scientific work of this period, covering correspondence with many of the ornithologists of that day. It includes letters to such well known men as Bernhard Altum of Neustadt, Jean Cabanis of Berlin, Robert Collett of Kristiania, H. E. Dresser of London, Alfred Grandidier of Paris, G. Hartlaub of Bremen, Léon Olphe-Galliard of Angoulême, I. N. Palmén of Helsingfors, August von Pelzeln of Vienna, J. Reinhardt of Copenhagen, and Anton Reichenow and Herman Schalow of Berlin. The letters are mainly in Norwegian and German, with occasionally one in French. In addition there are numerous communications with dealers in natural history specimens regarding the purchase of skins of birds, particularly of nuthatches, shrikes of the genus Lanius, and swans, all of which he was studying at that time. Various orders went to Wilhelm Schlüter of Halle, others to Bouvier, Verreaux, and Devroche of Paris, A. Frank of Amsterdam, and Charles Jamrach of London. Under date of July 24, 1880, Steineger wrote to Cogswell and Harrison of London asking for a quotation on a "Collectors' walking stick

¹ Journ. für Orn., 1871, p. 78.

gun" that he had seen advertised in the well-known periodical The Field. And on August 31 he placed an order with them for the gun in question, 500 shells, cut wads, a cleaning rod and a set of loading tools, at a price of $\pounds 2$. This served him many years in collecting birds, and later reptiles, for specimens, and is today in excellent condition.

The Steineger family, up to 1880, had been one of the wealthy families in Bergen; but Leonhard's father, through a change in the scope of the business that was the family's support, encountered financial reverses and finally went into bankruptcy. The son had to seek other livelihood and having found his business experience little to his liking decided to take up science. There was nothing available for him at the Bergen Museum, and only minor positions were open elsewhere. For a time he considered locating in Bremen, but one of his principal advisors, Jean Cabanis of Berlin, advised him to go to America since it would be years before he could expect to be considered for any of the few better class posts in Europe, while in the United States there might be greater opportunity. Steineger, in the meanwhile, on October 30, 1876, had married Anna Normann, a school teacher of Bergen, but the two proved to be of such different tastes that they were wholly incompatible. The wife had no desire to go to the United States so they decided to separate, later securing a divorce.

Stejneger left Norway about the middle of August, 1881, and arrived in the city of Washington October 21, where he went immediately to the Smithsonian Institution. He has told me with some amusement of how he sat for a time on a park bench near the building, developing his English vocabulary by means of a pocket dictionary, before entering to call on Professor Baird, Secretary of the Institution. The two were known to one another through correspondence, and Baird, with his wide knowledge, was cognizant of the young Norwegian's competence.

Stejneger seems to have begun work without delay on the birds of the New World to which he had come. The office of the division of birds, with Robert Ridgway as Curator, was located then in the South Tower of the Smithsonian Building, where Dr. A. K. Fisher relates that he met Stejneger in January, 1882, when the latter was working over West Indian solitaires, on which he published a paper that same spring.

Steineger's first interest in the Smithsonian collections was in the aquatic birds, and he seems to have continued his studies on the swans begun in Bergen, as his Outlines of a Monograph of the Cygninae was published in the Proceedings of the U.S. National Museum in 1882. He also prepared an extended paper on the systematics of the American thrushes, another on the West Indian solitaires (*Myadestes*), and a fourth on nomenclatural matters, all of which were published in the volume mentioned. He had offered his services to the Smithsonian for exploration work, and there was consideration of investigations in the Hawaiian Islands and in the West Indies; but finally it was decided that the Commander Islands offered the best opportunity, partly because of the former occurrence there of the northern sea-cow (Rhytina gigas). This arrangement undoubtedly was influenced by the desire of the U.S. Signal Service to establish observing stations in that area. Under these auspices, therefore, with a grant of \$250 from the Smithsonian for miscellaneous expenses, given to him by Professor Baird on the eve of his departure, he left Washington on two days' notice on March 22, 1882, and, after having been snowbound for several days on the Pacific Railroad en route, sailed from San Francisco April 5. The Alaska Commercial Company, which at that time held the Commander Islands under lease from the Russian Government, had offered assistance in the proposed work. Through this company Stejneger obtained transportation from San Francisco on the steamer Aleksander II, which carried the annual supplies to its stations. After a rough voyage the vessel stopped at Copper Island May 6, where Steineger secured three birds, some fish and other specimens. He reached Gavan, Bering Island, May 8 where, as observer, he started the first station for the Signal Service on May 22, taking observations three times daily. At the same time he carried on his natural history work. June 16, Stejneger had opportunity to cross to Petropaulski by steamer to establish the second meteorological station. The ship lay from June 18 to 23 at Copper Island, unable to discharge cargo because of the heavy sea, while shore work was further hindered by fog and rain. His specimen catalog carries the first entry from Petropaulski on June 27 and the last one on July 11. The Signal Service station there was organized to make two observations daily. On July 15 he was again on Bering Island, and the latter part of the summer was given to a careful study of the fur seal rookeries. Between August 21 and September 1 he circumnavigated the island. In the succeeding winter he was occupied in observing and collecting, partly near the settlements, and partly on trips with dog sledges into the interior. In May, 1883, he was again in Petropaulski to inspect the station there, and in June he made studies of the fur seals on Copper Island. He completed the work on Bering Island during the summer, and returned south, reaching San Francisco from Petropaulski on the S.S. St. Paul, October 26, 1883. One of his stories of this expedition related to his first attempt to handle the light skin kayak of the natives. Almost immediately he overturned and remained submerged head down, caught by the legs and unable to extricate himself. As he slowly suffocated, his thoughts were puzzled since, according to tradition, as a drowning man the events of his life were supposed to pass rapidly through his mind, but, instead, he was so intrigued by the play of light on the bottom below him through the surface ripples made by his struggles that he could think of nothing He regained consciousness on the beach, having been else. rescued and revived by his companions.

The accomplishments of Stejneger as a linguist are shown by his journals of this expedition which are written partly in excellent English and partly in Norwegian, while at the same time he was living among natives with whom he must have dealt in the Russian language.

The extensive natural history collections that he made on this trip included many bones of the sea-cow, as well as parts of the skeleton of the great, extinct spectacled or Pallas's cormorant (*Phalacrocorax perspicillatus*), a species known to the older natives in life, but which had been exterminated about 30 years

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previously. The 700 birds secured formed the basis for a report of 382 printed pages, entitled Results of Ornithological Explorations in the Commander Islands and in Kamtschatka, which was published in 1885 as Bulletin 29 of the U. S. National Museum. Throughout the expedition Stejneger, in addition to help from the Alaska Commercial Company, received much assistance from the firm of Hutchinson, Kohl, Philippeus & Co., this including steamer passage and quarters during the period of the work.

On his return to Washington he took up studies in ornithology so energetically that, in addition to the preparation of the larger report just mentioned, he published numerous shorter notes and papers, mainly on birds, but including travel notes, with some observations on plants and on mammals.

Being established now in the New World, to enter more completely into the life of the country to which he had come, on July 14, 1884, Stejneger filed his application for citizenship, and was admitted to that privilege formally on February 4, 1887, when he was 35 years of age.

In the latter part of 1884 the Smithsonian Institution prepared an extensive exhibit for display at the World's Industrial and Cotton Centennial Exposition in New Orleans, the material when finally shipped filling 17 cases. The department of birds arranged a series of 163 mounted game birds, in part under the supervision of Stejneger, who was employed as an assistant for this work from July I to December I, 1884. On December I, 1884, he was appointed assistant curator in the department of birds, under Robert Ridgway as curator. The accession record for that year includes a number of gifts of birds from Stejneger, mainly from the Old World. From January 3 to 16, 1885, he was absent in New Orleans to install the collection mentioned above for exhibition.

J. S. Kingsley at this time was engaged in the publication of the Standard Natural History, and in connection with the preparation of the volume on birds asked Stejneger to submit an outline. This seeming acceptable there was immediate and pressing demand for manuscript, so that he submitted what he thought would be a preliminary draft of the proposed introduction and

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the accounts of the first few orders. To his amazement this manuscript was returned to him in what seemed a remarkably short time in galley proof, with rather peremptory request for more copy. As a result he actually prepared over 360 of the 547 printed pages of this work, being forced to submit his material as rapidly as it was written with no opportunity to check it as a whole. The uniform excellence of the material brought out under such pressure is a definite tribute to the systematic mind of the author. While intended for a popular audience the careful treatment accorded by Stejneger commended the book immediately to his scientific colleagues, who, according to one reviewer, might not agree with all of the author's ideas, but as students of the subject needed to consult and study his findings. This writing was done out of office hours, as during the day he was busy with other ornithological researches.

At this period Stejneger was actively occupied with the birds of Japan, as the annual report of the National Museum for the fiscal year ended June 30, 1886, states that he "continued his revisions of Japanese ornithology." This continued during the following year, when Ridgway in his annual report records 59 papers "written by the curator and assistant curator." Stejneger also made studies of collections of Hawaiian birds.

In the fiscal year 1888 Stejneger proceeded with his investigations on Japanese birds, covering several private collections forwarded to him from Japan, in addition to the materials in the National Museum. He reported also on two collections of Hawaiian birds, and investigated several groups of European species. His work on Japan continued as a principal activity until March, 1889. In that month there came a very definite change in his scientific researches. Dr. H. C. Yarrow in charge of the department of reptiles and batrachians having resigned, Professor Baird and G. Brown Goode, Assistant Secretary, prevailed upon Stejneger to take appointment as Acting Curator effective March I, and to begin investigations in this new field. Though he never gave up his interest in birds his investigations in herpetology soon absorbed him almost completely, and he became one of the foremost authorities in the systematics of

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this branch of science. His first task was to overhaul the collections placed in his charge, to institute new methods in cataloging, and to arrange the specimens so that they were readily accessible. Before the end of the fiscal year he had completed a short paper on boiform snakes and had another in progress.

Interest in these new duties, and a thorough-going curatorial conscience that made him want to see the collections newly placed under his charge in first-class order, led to overwork for which he did not possess sufficient physical strength. By late summer of 1880 he was definitely exhausted, and had developed a bronchial trouble. The condition of his health making it necessary for him to leave the city, he went to Flagstaff, Arizona, to join a field party under C. Hart Merriam that was conducting a general biological survey of the San Francisco mountain region. When Steineger arrived he was so weak that Merriam, a graduate physician, believed he had only a short time to live, so that he consented with great reluctance to Steineger's insistent request that he be taken to the Grand Canyon, which he had always wished to see. The trip was made by buckboard during the middle part of September. The mountain air and sun, and a naturally strong vitality, brought immediate improvement, so that despite Merriam's pessimism Steineger was soon about again as usual. During the two months following, he made collections of reptiles and amphibians in Arizona, New Mexico and Texas, returning to Washington refreshed and fit to resume his museum duties.

During the fiscal year 1890 he prepared an extended report on the herpetological collections made by Merriam and his associates in the Death Valley region, and also on a collection made by Merriam and Bailey around San Francisco Mountain. The collections in his department were moved from the basement to new and more commodious quarters in the top rooms of the South Tower.

The years that followed were occupied with arrangement of the collections in his department, with the addition of specimens, and with studies that led to publication of new knowledge. It may be mentioned that he continued work on Japanese birds and on occasion on other collections concerned with his earlier investigations in ornithology. At the World's Columbian Exposition in Chicago in 1893 he had an exhibition of casts of poisonous snakes, and of turtles, supplemented by specimens preserved in alcohol.

On March 22, 1892, in Washington, he married Helene Maria Reiners (born in Crefeld, Germany), a union that proved happy and congenial in every way. In 1907 when in Kristiania they adopted an infant daughter, Inga, now Inga Stejneger Miller, employed in the service of our government.

An important publication of this period was The Poisonous Snakes of North America, a paper of 150 pages and many illustrations, that appeared in the National Museum report for 1893, actually issued in 1895. This remains a classic in its subject.

In the fall of 1894 Stejneger made a trip to the Bad Lands area of South Dakota during which he obtained various useful specimens. And in the same year he made experiments in the use of formalin as a preservative.

The problem of the fur seal herds of the North Pacific and more northern waters at this time had become both an economic and a political one, and it was natural that Stejneger with his early experience in the Commander Islands and his recognized breadth of knowledge should be a member of the commissions that investigated on behalf of the United States in 1895, 1896, and 1897. The field work involved and the preparation of reports occupied most of his time for these three years.

In 1895, as a special attaché of the U. S. Fish Commission, Stejneger left Washington May 28, bearing letters from the Russian Legation, authorizing his work. He sailed from San Francisco June 6 on the S. S. *Bertha*, and on June 23 continued from Unalaska on the S. S. *Albatross*. After stopping briefly at St. Paul Island in the Pribilofs, he reached Bering Island July 3, where the ship left him two days later. Pages of his journal are filled with observations of the changes that had come in the village since he was there in 1883, of the acquaintances that he encountered, of his dealings with his old friend, the Russian Governor, N. Grebnitski, and of his pleasure at occupying again the old house which served for a second time as his headquarters. In one entry made on July 15 during a journey by dog sled from the village of Gavan to one of the seal rookeries (Severinij) he writes "nearly all of the snow had disappeared from the road so that our progress was slow; in fact we did not reach the rookery village until 5 p.m. To make it lighter for the dogs I walked a good deal of the distance, and a very exhilarating and delightful exercise the trip proved to be. I can stand fatigue about as well as I could twelve years ago. I am a young man yet, at least here in this climate. Most people here also wonder at seeing me so unchanged." Another comment was that his dog drivers now were the sons of those who had served him in his earlier work.

On July 27 he crossed to Copper Island in the Russian Seal Skin Company's steamer *Kotik*, and with Governor Grebnitski went around the island in a small boat, visiting the fur seal rookeries. July 30 he mentions seeing a score of sea otter mothers with their young, and the following day notes that he found them common. August 12 he returned to Bering Island and then continued to Petropaulski, Kamchatka. From here he made another trip to the Commanders in September, finally sailing from Petropaulski on the *Kotik* September 18 to reach San Francisco October 11. His first report, entitled The Russian Fur Seal Islands, which covers 148 quarto pages, he wrote in three and one half months.

In 1896 he went north again under appointment by President Cleveland as a member of the International Fur-Seal Commission. The greater part of July was devoted to the rookeries on the Pribilof Islands, after which he proceeded on the *Albatross* to the Commander Group where he worked mainly on Copper Island from July 30 to August 8. In the following days the *Albatross*, after coaling in Petropaulski, cruised through the Kurile Islands, and from August 28 to 31 stopped at Robben Island. Returning through the Kuriles he came to Hakodate, Japan, September 10, and returned finally to Washington December 22, after an absence of six months.

In 1897 in continuation of his previous year's appointment,

accompanied this time by Mrs. Stejneger, he left home June 5, sailing from Tacoma, Washington, in the S. S. City of Topeka June 13. June 20 they transferred in Sitka to the revenue cutter Grant, which carried them via Unalaska to Nikolski, Bering Island where they landed July 7. From August 16 to 31 he was on Copper Island, and then was given passage on the Imperial Russian Steamship Yakut for Petropaulski. Another trip was made to the Commander Islands in September, and in October the Stejnegers finally sailed from Petropaulski for Hakodate on the Japanese vessel Taiya Maru, arriving October 25. They continued by rail to Tokio and Yokohama, and then by steamer via Honolulu to San Francisco, reaching that city November 27 and Washington December 15.

In 1898 Stejneger made his first visit to Europe since coming to America in the fall of 1881. Leaving Washington May I, accompanied by Mrs. Stejneger, he attended the International Fisheries Exposition at Bergen, and also the Fourth International Zoological Congress which convened in Cambridge, England, August 23. At this Congress he was elected to the International Committee on Zoological Nomenclature on which he remained as an active and influential member until his death. He was also a member of the Permanent Committee that handled the affairs of these Congresses. His travels following the Congress took him to various museums in northern Europe, where he examined types and other specimens and studied methods in museum procedure.

For its displays in connection with the Pan-American Exposition, held in Buffalo in 1901, the Smithsonian required collections of zoological materials from the West Indies, and to supply part of this material Dr. Stejneger, accompanied by Charles W. Richmond, Assistant Curator in the division of birds, travelled in Puerto Rico, then an area not well known. They reached the island February 12, 1900, and on February 20 continued from San Juan to Mameyes where, according to Richmond's diary, "the whole town turned out to see us." The following morning they moved to the finca of Señor Agostini located in the foothills of the mountain El Yunque. From this base they estab-

lished a camp for five days at about 3000 feet elevation in the rain forest that covers the upper slopes of this mountain. Here they worked in constant rain and fog, securing many fine specimens, and making many interesting observations. March 3 they returned to the lowlands to the town of Luquillo. Here both of the naturalists came down with malaria. Steineger made a trip to San Juan for medicines, after which on March 9 the two moved on to Fajardo, but finally returned to San Juan. March 22, after an overnight trip by steamer, they arrived at Vieques Island where they collected until March 29, and then returned by steamer to San Juan. On March 31 they reached Arecibo, and Richmond notes that "I had good sleep, but Dr. S. was troubled with bedbugs and fleas," not an unusual complaint in those early days as I found from personal experience 12 years later. From here they went inland into the hills to Utuado, known from the early work of the naturalist Juan Gundlach, and then to a greater elevation at Adjuntas. They crossed the island by coach to Ponce and on April 17 returned by the same means of travel to San Juan, a long journey with an overnight stop in Cavey. April 10 they embarked for Santiago, Cuba, and New York City. The original plan had been to continue through the Lesser Antilles, but illness through which they lost nearly three weeks time made it desirable to return north. This, Steineger's only venture in the tropics, resulted in his scholarly treatise on the Herpetology of Porto Rico, published in the Report of U. S. National Museum for 1902 (issued in 1904) which today remains a model of its kind.

In the summer of 1901 Stejneger represented the Smithsonian Institution and the U. S. National Museum at the Fifth International Zoological Congress in Berlin. The German Parliament, the Reichstagsgebäude, was placed at the disposal of the Congress for its sessions, and the 750 delegates were lavishly entertained in Berlin, and later in Hamburg. After the close of the Congress he worked at the zoological museums in Berlin, Hamburg, Dresden and other cities. In his report Stejneger speaks especially of the progress made toward the formulation of a complete code of nomenclature. In the series of such Congresses that came in succeeding years Stejneger took a prominent part, both because of his breadth of scientific knowledge and because of his ability as a linguist. Through these contacts he thus maintained personal relations with workers of the whole of Europe to a degree that has been equalled by comparatively few vertebrate zoologists of the United States.

In 1903 the annual report of the National Museum notes that Steineger served as Acting Head Curator of the Department of Biology for August and part of October, indication of the position later in store for him. In 1904, with Gerrit S. Miller, ir., then Assistant Curator of Mammals, and C. W. Stiles, Custodian of the Helminthological Collections, Steineger represented the Institution at the Sixth International Congress of Zoology held in Bern, Switzerland, from August 14 to 10. In addition to the examination of specimens in various museums Steineger and Miller made collections of mammals, birds, reptiles, amphibians, crustaceans, insects, mollusks, and plants at various localities in the Swiss, French and Italian Alps, covering the western section of that range of mountains. Their studies were concerned principally with data on the life zones for comparison with the similar detailed studies that had been carried forward with such success in North America. Their work began near Genoa and then continued into the mountains, in part together, and in part separated, that they might cover more ground. In this way they secured photographs and specimensmammals, birds, reptiles and plants-in the region surrounding Aix-les-Bains, Geneva, St. Cergue, Chamonix, Zermatt, Grindelwald, Vitznau, and Göschenen.

The following year Stejneger was again abroad as representative of Smithsonian interests at the Fourth International Ornithological Congress, held in London from June 12 to 17, 1905. In recognition of his extensive work in ornithology he remained a member of the Permanent Committee of One Hundred of the International Ornithological Congresses until his death. Following this Congress he also attended the convention of the International Catalogue of Scientific Literature, held in London from July 25 to 30. He remained abroad for over three months on a detail that gave him opportunity to study material in connection with his investigations on the reptiles and amphibians of Japan and the West Indies in the museums of Bergen, Kristiania, Stockholm and Copenhagen, and also in Cologne and Altona. While in Denmark he made small collections of mammals, and some other biological material especially wanted for the museum, from the island of Laaland, an important type locality.

Having undertaken studies looking toward a revision of the salamanders he found it was necessary in the summer of 1906 to make some investigations in the field. For this purpose he left Washington July 16 and located at the O'Connell farm, a mile north of Stribling Springs, Augusta County, Virginia, at an elevation of 1700 feet on the south slope of Lookout Mountain, remaining until August 28. The area was selected because of an abundance of springs and small streams, and because it lay in a geographical position that made available a considerable number of species. The work centered especially on observations of living salamanders and on the collection of larval forms.

The following year he was one of the delegates for the Seventh International Zoological Congress, held in Boston from August 19 to 23, and served as organizing secretary to the section of zoogeography. Also in this year there appeared one of his more important scientific contributions, the Herpetology of Japan and Adjacent Territory, a bulletin of the U. S. National Museum that covered 577 pages.

In the summer of 1910 the collections in the division of reptiles and batrachians were moved to the new museum building that had just been completed, so that Stejneger had the major task of the rearrangement of his entire collection in new quarters. Advantage was taken of the opportunity to verify many of the older records, important work that took away from time ordinarily available for other research. It was this necessity that prevented his attendance at the Eighth International Zoological Congress held in August 1910, at Graz, Austria.

On June 1, 1911 Dr. Stejneger was appointed Head Curator of the Department of Biology, a post left vacant by the advancement of Dr. F. W. True, former incumbent, to Assistant Secretary of the Smithsonian Institution. Stejneger's broad knowledge in systematic biology and his extensive experience fitted him especially for this position, one that he occupied with distinction until his death. At the same time he continued in charge of his former division, though necessarily his scientific investigations were curtailed by his enlarged administrative responsibilities. In the summer of this same year he attended the Centenary of the Royal Frederick University at Kristiania, and the 500-year celebration of the University of St. Andrews in Scotland.

In 1913 he was abroad again as one of the representatives of the Institution at the Ninth International Congress of Zoology at Monaco from March 25 to 30. Following the Congress, through a grant from the Smithsonian Institution, he made further life zone studies in the Alps, extending the area covered in his previous work with Miller in 1904. Beginning April 20 he devoted a month to the region between Switzerland and the head of the Adriatic Sea, where his observations covered especially the Val Sugana and the Plateau of the Sette Comuni, a region politically partly in Italy and partly in Austrian Tirol. Further travels took him into the Etsch Valley, and that of the tributary stream, the Eisak, as far as the Brenner Pass. He was able to trace the zones here in considerable detail, and obtained data of much value for correlation with those outlined for North America.

In his position as head of the department of biology his time was more and more absorbed by administrative work, not only in the direction of his department, the largest in the National Museum, but also in matters that concerned the museum as a whole. For years he served as chairman of a committee that considered all of the manuscripts offered for publication to the Smithsonian, and he also had many calls on his time for help from students interested in herpetology. His own published contributions continued, though reduced considerably in volume, and he worked regularly on various scientific problems, in these

later years mainly in herpetology, with only occasional contributions relating to birds.

In the summer of 1922 on behalf of the United States Department of Commerce Dr. Stejneger, at the age of 70 years, made another examination of the northern fur-seal rookeries to determine the conditions that had developed since the last international agreements had been reached in 1911. With Capt. C. E. Lindquist as assistant he left Unalaska June 20 on the Coast Guard cutter *Mojave*, in company with a party under Assistant Secretary of Commerce C. H. Houston that was to study Alaskan fisheries and other matters. The ship made frequent stops in this work on the way north, so that the party did not reach Unalaska until July 10. Steineger and Lindquist transferred at once to the Coast Guard cutter Algonquin and continued to the Pribilof Islands where the increase in the number of seals appeared remarkable, largely because of the elimination of pelagic sealing. The vessel returned to Unalaska to refuel and then left for the Commander Islands, arriving at Nikolski village on Bering Island July 24. Here Steineger and Lindguist remained while the ship returned to Unalaska. The seal herds that had contained 30,000 animals in 1807 now were found to number only 2,000, restricted to the North Rookery. In fact there were so few remaining that regular killing had been abandoned. In fog and rain the men worked here until the Mojave arrived, and then proceeded via Petropaulski to the Japanese controlled Robben Island. The seal herd here, under methods adapted from those in use on the Pribilofs, had increased greatly, indicating the value of the protection given. The *Mojave* then continued to Hakodate and Yokohama, where further information on seals was obtained. There was also opportunity to visit the Imperial Fisheries Bureau in Tokyo, and the Biological Station at Misaki, before sailing for Seattle on the President Jefferson on September 2.

In 1927 Stejneger was abroad as official delegate for the United States and for the Smithsonian at the Tenth International Zoological Congress, convened in Budapest in early September. At the same time he visited a number of European museums to examine type specimens, and also to recover various collections of biological material lent to European scientists during the period prior to World War I. In 1930 he made a similar journey to the Eleventh International Zoological Congress meeting at Padua, Italy at the end of August; and in early September he likewise visited a number of museums and scientific institutions, especially those in Berlin, where he spent some time in consulting publications not available in Washington.

On July 11, 1932, while crossing the street he was knocked unconscious by an automobile opposite the Constitution Avenue entrance of the Natural History Building. Fortunately his injuries were not severe but it was prudent for him to remain quiet for a time. I recall very clearly that to force him to take proper care of himself I had to order him officially to remain at home for two weeks as he was insistent that he should return to his office three days after the accident.

In 1935 Dr. Stejneger attended the International Entomological Congress in Madrid from September 7 to 12. Following this he was chairman of the American delegation at the Twelfth International Zoological Congress in Lisbon from September 14 to 21. His last journey to Europe came in the late summer of 1939 when he crossed to Norway to attend the 65th Anniversary of his graduation at the University of Oslo (known earlier as the University of Kristiania) an experience that can come to comparatively few men. He was also to represent the Smithsonian Institution at the two hundredth anniversary of the Royal Swedish Academy of Sciences and went to Stockholm for the purpose. Though the full plans for the general celebration had been abandoned because of the sudden outbreak of war he was received at a special ceremony where he presented the congratulations of the Institution.

Though Stejneger attained the normal retirement age of 70 on October 30, 1921, because of his excellent physical and mental condition and outstanding abilities he was continued in service. In 1932, under a new law that made retirement mandatory except under highly exceptional circumstances, he was one

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of a very few who on June 30 of that year were exempted indefinitely from compulsory retirement by an Executive Order signed by President Hoover. This action permitted his continuation in the service of the Smithsonian Institution until his death.

On his eightieth birthday, on October 30, 1931, the American Society of Ichthyologists and Herpetologists devoted a number of the society's journal Copeia to Dr. Steineger, publishing a biography by Dr. A. K. Fisher, and a series of papers by his scientific associates. In the same year the society elected him Honorary President for life. On the occasion of his eighty-fifth birthday in 1936, eighty-seven of his friends and associates joined in purchasing a portrait of him for presentation to the National Museum, a most excellent likeness painted from life by the artist Bjorn Egeli. To celebrate his eighty-sixth birthday Stejneger's friends and associates gave him a dinner at the Cosmos Club on October 30, 1937, with Dr. Charles Greeley Abbot, Secretary of the Smithsonian Institution presiding. His Excellency Wilhelm Munthe Morgenstierne, Norwegian Minister to the United States, Alexander Wetmore (through Herbert Friedmann), Albert Hazen Wright, William Mann, Charles Wardell Stiles and Albert Kenrick Fisher presented The friends gathered on this evening papers in his honor. later received from Stejneger a card bearing an excellent reproduction of the Egeli portrait mentioned above, beneath which was the simple inscription "Ex corde pleno".

Though he had been failing in strength appreciably over a period of two years his final illness was of short duration. His death came at 3 p.m. on Sunday, February 28, 1943.

Among Stejneger's many publications listed in the accompanying bibliography, other than those that have been described in previous pages there must be mention of the Check-list of North American Amphibians and Reptiles in which he collaborated with his firm and devoted friend Dr. Thomas Barbour, of the Museum of Comparative Zoölogy of Harvard University. This was first published by the Harvard University Press, December 12, 1017 as a volume of 125 pages. The second edition in November, 1923 was enlarged to 171 pages, the third in June, 1933 to 185 pages, and the fourth in June, 1939 to 207 pages. The fifth edition, which covered 260 pages was in press at the time of his death, appearing finally in July, 1943 in the bulletin series of the Museum of Comparative Zoölogy. Under the authorship of these two recognized leaders the work has provided a standard for forms, names and distribution in the two groups of animals that it covers.

Another work that deserves special notice is a biography entitled Georg Wilhelm Steller, the pioneer of Alaskan natural history, issued by the Harvard University Press in August, 1936, as a book of 623 pages with 29 plates and other illustrations. When Steineger went first to Bering Island in 1882 he had with him as one guide for his work in the field a handwritten copy of Steller's Beschreibung der Bering-insel, based on Steller's experiences when he wintered there in 1741-1742. Stejneger's experience in this first hand check on Steller's work so aroused his admiration for the pioneer naturalist in this desolate region that for fifty years he accumulated biographical data on him as opportunity offered. He searched in European archives, in church and family records, examined labels on scientific specimens, and studied a variety of other papers until he had accumulated the vast amount of data that he presented in this volume, where it forms not only an intriguing biography of a colorful character but also an historical document that will remain a standard of its kind. One of the highlights for the author in the assembling of this data came on the evening of June 29, 1922, when on his way north on his last visit to the Commander Islands he had opportunity to land for a few hours on Kayak Island, on the beach where Steller had first come ashore in 1741, and to collect a few specimens of the plants that Steller had described there. Stejneger's only regret with regard to this book was that the manuscript grew to such length that he could not hope to publish many of the photostats and other source materials that he had accumulated with such care.

Dr. Stejneger's scientific honors included the decorations of the Knight First Class of the Royal Norwegian Order of St. Olav, given October 13, 1906, and Commander of the same Order in 1939. He was also a Life Member of the Bergen Museum. It is interesting to note that in these recognitions from the country of his birth his family name was spelled in the original form, i.e., Steineger. His election to the National Academy of Sciences came in 1923. In that same year he received the Walker Grand Prize of One Thousand Dollars of the Boston Society of Natural History "for his distinguished contributions to the science of herpetology." In 1937 he was made a member of the District of Columbia Chapter of the Society of Sigma Xi.

His memberships in scientific societies were many, including the folowing: American Ornithologists' Union (Fellow Emeritus). American Association for the Advancement of Science (Fellow), Zoological Society of London (Corresponding Member), Ornithologische Gesellschaft in Bayern (Corresponding Member), Academy of Natural Sciences of Philadelphia (Corresponding Member); Biological Society of Washington (President 1907-1908), American Society of Ichthyologists and Herpetologists (President 1919, Honorary President 1931 for life), Washington Academy of Sciences, Association of American Geographers, California Academy of Sciences (Honorary Member), British Ornithologists' Union (Honorary Member), American Society of Mammalogists (Charter Member, later Honorary Member), Deutsche Ornithologische Gesellschaft (Honorary Member), Oslo Academy of Science (Foreign Member), Peiping Natural History Society (Corresponding Member), Baird Ornithological Club (President, 1925) and the Washington Biologists' Field Club (Honorary Member).

Through his field activities, and his wide association with other scientists, it was natural that a variety of forms of life have been named in his honor. The list, segregated by groups, is as follows:

Mammals:

Mesoplodon stejnegeri True Phoca stejnegeri Allen

LEONHARD HESS STEJNEGER-WETMORE

Citellus stejnegeri Allen Lutra stejnegeri Goldman

Birds:

Oidemia stejnegeri Ridgway Hypsipetes amaurotis stejnegeri Hartert Pratincola rubicola stejnegeri Parrot Anthus stejnegeri Ridgway Parus stejnegeri Bangs Zosterops stejnegeri Seebohm Chlorodrepania stejnegeri Wilson Spindalis zena stejnegeri Cory Chrysomitris stejnegeri Sharpe Janthoenas janthina stejnegeri Kuroda

Amphibians:

Ambystoma stejnegeri Ruthven Hymnobius stejnegeri Dunn Borborocoetes stejnegeri Noble Bufo stejnegeri Schmidt

Reptiles:

Anolis stejnegeri Barbour Cnemidophorus stejnegeri Van Denburgh Uta stansburiana stejnegeri Schmidt Cyclura stejnegeri Barbour and Noble Sphaerodactylus stejnegeri Cochran Eumeces stejnegeri Taylor Plica stejnegeri Burt and Burt Crotalus stejnegeri Dunn Typhlops stejnegeri Loveridge Zamenis stejnegerianus Cope Pseudemys stejnegeri Schmidt

Fishes:

Steinegeria rubescens Jordan and Evermann Stelgistrum stejnegeri Jordan and Gilbert Scaphognathus stejnegeri H. M. Smith Sikukia stejnegeri H. M. Smith

Mollusks:

Cerithiopsis stejnegeri Dall Volutopsius callorhinus stejnegeri Dall

Myriapoda:

Lithobius stejnegeri Bollman

Coleoptera:

Tachyporus stejnegeri Blackwelder

Medusae:

Haliclystus stejnegeri Kishinouye

Plants:

Alopecurus stejnegeri Vasey

Stejneger's own descriptions of forms new to science, mainly of birds, reptiles and amphibians number several hundred. The list of these may be ascertained by any interested persons from the papers in the appended bibliography.

In person Leonhard Stejneger was spare and slender, in movement active and energetic. In 1897 in San Francisco, when on his way to the Commander Islands, he recorded in his diary that he weighed 146 pounds, but in later years he fell below this mark. Though never seeming strong or robust he retained his physical powers in his advanced age in a truly remarkable manner. He was heavily bearded, both hair and beard becoming gray but not completely white. His home, in Washington, was a center for friendly hospitality among his fellow workers and associates, including many foreign scientists and visitors from Europe, and at times from other widely scattered places throughout the world. All will recall the gracious courtesy of their host. His more intimate friends will remember also his pleasure and his active skill in dancing on evenings when there was music, a delight that finally, on physician's orders, he had to forego at the age of 85.

Dr. Stejneger bore himself always with dignity, but at the same time was friendly and not at all aloof. The younger workers in zoology who had contact with him found him almost universally kindly and helpful, and few men of his accomplishments have devoted as much time to assisting and advising others, always freely, and without personal bias or selfishness. At the same time he was definite and positive in his ideas, which he advanced in direct and forceful speech and without hesitation. With the knowledge gained through his long experience he coupled a clarity of thought that gave his opinions weight and authority, and those with whom his ideas were at complete variance were inclined to feel that his expression of them was presented without personal animus since while holding to his own views at the same time he had tolerance for those of others. In his scientific researches he was progressive, sound and conservative so that he became one of the important international figures not alone in ornithology and herpetology, in which he worked especially, but in various other branches of systematic zoology as well. His many publications have been standards on which much modern progress in these fields has been based, their influence reaching throughout their part of the scientific world.

Not until he had gone did the younger members of the Smithsonian staff who were closely associated with him realize fully how frequently they consulted him, and the weight that his opinions carried. And this extended into wide fields of knowledge beyond those where he had prosecuted active research.

The accomplishments of workers in the fields of taxonomic research and of geographic distribution are measured not in terms of single discoveries but more as a summation of the total of their results. With a bibliography of serious publication of research beginning in 1871, and extending to the time of his death, we see that the productive period of Stejneger's scientific contributions of more than 72 years was longer than the usual life span of the average scientist. His influence, therefore, has been correspondingly great, not only through the considerable volume

of his investigations but also through the quality of his researches in terms of lasting value from their careful and thoughtful presentation. His papers on the whole remain as basic works of reference in the later researches of today. An eminent Danish writer remarked to me recently that he still used Stejneger's little manual of the birds of Norway, published in 1873, as his handbook for field identification.

KEY TO ABBREVIATIONS USED IN BIBLIOGRAPHY

Amer. Geogr. Soc. Research Ser. = American Geographical Society Research Series

Amer. Geogr. Soc. Special Publ. = American Geographical Society Special Publication

Amer. Nat. = American Naturalist

Ann. Rep. U. S. Nat. Mus. = Annual Report United States National Museum

Arch. Math. Naturv. = Archiv för Mathematik og Naturvidenskab. Oslo Bergens Mus. Årb. = Bergens Museum Årbok

Bull. Amer. Geogr. Soc. = Bulletin, American Geographical Society

Bull. Bur. Fish. = Bulletin, Bureau of Fisheries

Bull. Mus. Comp. Zoöl. = Bulletin, Museum of Comparative Zoölogy

Bull. U. S. Fish. Comm. = Bulletin, United States Fish Commission

Deutsche Geogr. Blätt. = Deutsche Geographische Blätter

Geogr. Rev. = Geographical Review

Journ. Bombay Nat. Hist. Soc. = Journal, Bombay Natural History Society

Journ. für Orn. = Journal für Ornithologie

- Journ. Sci. Coll. Imp. Univ., Tokyo = Journal, Science College, Imperial University, Tokyo
- Journ. Washington Acad. Sci. = Journal, Washington Academy of Sciences
- Nat. Acad. Sci. Biogr. Mem. = National Academy of Sciences, Biographical Memoirs

Norsk Veterin. Tidsskr. = Norsk Veterinær-Tidsskrift

- Norske Geogr. Selsk. Aarbog = Norske Geografiske Selskabs Aarbog
- North Amer. Fauna = North American Fauna, Bureau of Biological Survey, United States Department of Agriculture

Nyt Mag. Naturv. = Nyt Magazin for Naturvidenskapens. Oslo

Occ. Pap. Boston Soc. Nat. Hist. = Occasional Papers, Boston Society of Natural History

Orn. Centralbl. = Ornithologisches Centralblatt

Pop. Sci. = Popular Science

- Proc. Acad. Nat. Sci. Phila. = Proceedings, Academy of Natural Sciences, Philadelphia
- Proc. Biol. Soc. Washington = Proceedings, Biological Society of Washington
- Proc. Boston Soc. Nat. Hist. = Proceedings, Boston Society of Natural History

Proc. U. S. Nat. Mus. = Proceedings, United States National Museum Smithsonian Misc. Coll. = Smithsonian Miscellaneous Collections

U. S. Nat. Mus. Bull. = United States National Museum Bulletin West Amer. Scient. = West American Scientist

Zeitschr. Ges. Orn. = Zeitschrift für die gesammte Ornithologie. Budapest

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