

HARRY SCHELWALD SWARTH

WITH THREE ILLUSTRATIONS

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Wherever the Cooper Ornithological Club is discussed one of the names surely to be mentioned is Harry Swarth. This may result from the eminence of the man as a student of western birds, from the many services he rendered to the Cooper Club, or from his widespread friendship with naturalists everywhere. Whatever the nature of the benefit we as members of the Club received from association with him, it is fitting that we record in this magazine a résumé of his activities and especially some mention of the material contributions he made to the study of birds.

Swarth's interest in natural history was aroused and fostered by his early close association with George Frean Morcom. This relation which amounted almost to kinship was of mutual advantage and long duration. It has been related in detail in Swarth's biographical account of Morcom (*Condor*, vol. 36, 1934, pp. 16-24). Because of its significance some of that story has been extracted and is repeated here in order to give basis for interpretation of many later events in Swarth's life. Incidentally it reveals how the influence of one naturalist may extend on to reach persons of succeeding generations and more or less control their activities.

This story, then, will commence with the year 1870. Swarth related that "soon after Mr. Morcom settled in Chicago there occurred the great fire of 1871 that destroyed most of the city. He had already become acquainted with the families of Ernst and Auguste Swarth, and with them fled northward, to camp in the cemetery that later became Lincoln Park. From that time on they dwelt together. At different periods two houses were occupied, both adjoining Lincoln Park, and in each Mr. Morcom occupied the uppermost story. He was building up his collections during these years, both of birds and eggs, and the bulky cabinets took much space."

The birth of Harry Schelwald Swarth on January 26, 1878, in Chicago, thus came several years after an active center of interest in natural history had been established in the household. Even if his parents, Corrinne Themmen and Ernst Adriaan Swarth, had planned Harry's career they doubtless could not have moulded it so well as it was done by a person really outside the family.

The Swarth families and Morcom spent the winter of 1885-1886 in Los Angeles and they established permanent residence there in 1891. They settled at the western edge of the then quiet town where the land was mostly in grain fields interspersed with deserted cement sidewalks, rows of shade trees, empty houses, and unused railroad tracks—the remains of a period of too enthusiastic real estate development in the '80's. The environment was ideal for making a naturalist. Swarth himself wrote of it: "I could not remember a time when I had not had the run of rooms where bird skins and birds' eggs were being handled; I had always had available books about natural history, and, altogether, to investigate animal life, particularly birds, seemed not merely obvious but the inevitable course of existence." He learned to make birdskins in order to help Morcom and together they explored the rich surrounding area for birds.

The daily program, followed faithfully for years, was crowded with activities that make up the training of a naturalist. A hunt each morning took two hours before breakfast and school time. The resulting specimens were examined and skinned after school in the afternoon. The intimate acquaintance with the birds of the region gained by actually stalking, and then handling examples, was supplemented by an extensive shelf full of the best reference books of that time. The keys, descriptions, and pictures were as important in this training as the extensive experience in the field.



Fig. 29. Harry Schelwald Swarth, 1878-1935.

Industrious tramping over the varied collecting grounds in the Los Angeles area soon made the Morcom collection rather complete for that district and attention was directed to a more distant field. In 1895, with the advice of Major Bendire the Huachuca Mountains, Arizona, were selected as the most promising section for exploration. Swarth, then seventeen years old, along with O. W. Howard, W. B. Judson, and H. G. Rising, started in the spring from Los Angeles and drove with a team and wagon across the desert. They were in the field from February 29 to July 20. The experiences of this first extensive field trip impressed Swarth in many ways and he mentioned them frequently in later years; especially did he contrast those early conditions of the landscape and travel with the ones which replaced them in the 1930's.

By 1904 it was plain that ornithology would remain Swarth's occupation, and plans were made to join some museum. Through the help of Morcom he became assistant in the Department of Zoology in the Field Columbian Museum, Chicago. There was no opportunity to work in California, for at that time natural history museums were scarce in this country. This marked the close of the first major division of Swarth's life, when he was so closely associated with Morcom and influenced by him. However, that influence was so great that it lasted for all the rest of his life.

At the Field Museum, Swarth worked for Professor Charles B. Cory and although he had some opportunity to collect birds, at Fox Lake, Illinois, in the summer of 1905 and in Will County in the summers of 1906 and 1907, and he was in friendly surroundings, the whole situation was different from what his long preparation demanded. He was therefore considerably elated when, in the spring of 1908, an invitation came from Joseph Grinnell to return to California and join the staff of the Museum of Vertebrate Zoology, shortly after that institution was founded. He began as an Assistant Curator, and from 1910 he was Curator of Birds, except for an interval (1913 to 1916) as Assistant Director, Museum of History, Science and Art, Los Angeles, until 1927, when he became Curator, Department of Mammalogy and Ornithology, California Academy of Sciences. He held this position at the time of his death.

At Berkeley, Swarth found compelling incentive to exercise the talents which he had been so long developing. His major, and almost sole, interest in natural history then was in the study of geographic distribution and variation in the birds of western North America. The area had been explored just enough to show where concentrated studies would be profitable. For many years after its establishment the Museum was seriously working along this line in that region and Swarth's part in the work was a large one. He not only made long trips into the field in remote districts, but between trips he worked with the growing collection, handling and identifying the skins. Thus, he enriched his already full knowledge of the characters of western birds.

Soon he became interested in certain genera or sections of genera which had aroused special difficulties in identification. Clearer understanding of these troublesome groups involved long study of specimens from many parts of the ranges of the birds. Among these monographic studies which constituted an exceptional type of combined philosophic and systematic bird work, papers dealing with the following groups of birds were issued in the decade beginning in 1913.

Spotted towhees	1913
Canada geese	1913
Rock wrens	1914
Bush-tits	1914
Bewick wrens	1916
White-fronted geese	1917
California jays	1918
Brown towhees	1918
Fox sparrows	1920
Song sparrows (part)	1923

Although naturalists generally came to appreciate long ago the high value of the type of work represented in the studies listed above, it is doubtful if they realized the full extent of the preparation involved in those studies. Some inkling of it comes when we recall that Swarth had already published work in faunal and systematic zoology for fifteen years before the first of these revisions appeared and that that first one was his seventieth paper. It is not surprising that later he was sometimes emphatic in urging that ability, exactitude, and patience be displayed more often in systematic bird work.

Another measure of the subject matter of these revisions is supplied by the following list of new forms of birds discovered and described by Swarth. The names are arranged chronologically in order to show the trend of interest and activity of this systematic worker. The total is not high, but a high proportion have found approval by other workers.

<i>Pipilo maculatus montanus</i>	1905 Arizona
<i>Strix occidentalis huachucae</i>	1910 Arizona
<i>Otus asio gilmani</i>	1910 Arizona
<i>Dryobates villosus sitkensis</i>	1911 Alaska
<i>Pipilo maculatus falcinellus</i>	1913 California
<i>Salpinctes guadeloupeus proximus</i>	1914 Lower California
<i>Telmatodytes palustris aestuarinus</i>	1917 California
<i>Aphelocoma californica oocleptica</i>	1918 California
<i>Passerella iliaca mariposae</i>	1918 California
<i>Passerella iliaca fulva</i>	1918 California
<i>Passerella iliaca canescens</i>	1918 California
<i>Dendragapus obscurus sitkensis</i>	1921 Alaska
<i>Spizella taverneri</i>	1925 British Columbia (with A. Brooks)
<i>Pipilo maculatus umbraticola</i>	1926 Lower California (with Grinnell)
<i>Pipilo fuscus petulans</i>	1926 California (with Grinnell)
<i>Pipilo fuscus bullatus</i>	1926 Oregon (with Grinnell)
<i>Balanosphyra formicivora martirensis</i>	1926 Lower California (with Grinnell)
<i>Penthestes gambeli atratus</i>	1926 Lower California (with Grinnell)
<i>Baeolophus inornatus affabilis</i>	1926 Lower California (with Grinnell)
<i>Baeolophus inornatus sequestratus</i>	1926 Oregon (with Grinnell)
<i>Psaltriparus minimus melanurus</i>	1926 Lower California (with Grinnell)
<i>Chamaea fasciata canicauda</i>	1926 Lower California (with Grinnell)
<i>Lagopus lagopus alascensis</i>	1926 Alaska
<i>Cactospiza giffordi</i>	1929 Galapagos
<i>Camarhynchus conjunctus</i>	1929 Galapagos
<i>Camarhynchus aureus</i>	1929 Galapagos
<i>Dendragapus obscurus pallidus</i>	1931 Oregon
<i>Nesomimus parvulus wenmani</i>	1931 Galapagos
<i>Geospiza septentrionalis nigrescens</i>	1931 Galapagos
<i>Cactospiza pallida striatipecta</i>	1931 Galapagos

Although mammals came second in his interest, Swarth made important contributions to our knowledge of them in the west. At least twelve of his papers dealt wholly or in part with mammals and he discovered new kinds, as follows:

<i>Evotomys phaeus</i>	1911 Alaska
<i>Microtus coronarius</i>	1911 Alaska
<i>Ursus americanus pugnax</i>	1911 Alaska
<i>Marmota vancouverensis</i>	1911 British Columbia
<i>Marmota ochracea</i>	1911 Alaska
<i>Scapanus latimanus occultus</i>	1912 California (with Grinnell)
<i>Thomomys jacinteus</i>	1914 California (with Grinnell)
<i>Sciurus hudsonicus picatus</i>	1921 Alaska
<i>Dipodomys merriami olivaceus</i>	1929 Arizona
<i>Lemmus harroldi</i>	1931 Alaska
<i>Microtus mordax littoralis</i>	1933 Alaska

Of all his undertakings, Swarth's revision of the fox sparrows (*Passerella iliaca*) was no doubt the most difficult. At the same time, it stands out not only among his own reports, but in general systematic ornithology as a model of organization, clear presentation, and significant interpretation. This publication is probably the best example among his writings of his ability to simplify a complicated problem and then to present it in a logically consistent and concise manner. This is apparent at the first

examination, and long study confirms the early impression. The hand-written manuscript in early stages has been preserved and it is remarkably like the final printed copy in organization and arrangement, thus demonstrating that the pleasing appearance is not merely the result of meticulous editorial care, but it comes from thorough mastery of the situation before writing was begun.

Unlike those naturalists whose field experiences end when they undertake serious museum studies, Swarth was able to continue work in the field through his whole life. His explorations and field study were thorough in four distinct regions—California, Arizona, northwest coast of North America, and the Galapagos Islands. Interest was



Fig. 30. Swarth preparing specimens in camp in the Sierra Nevada at Hume, Fresno County, California, August 21, 1916.

aroused in the order here indicated, and it was maintained continuously in each area for many years. He worked in many localities in California, especially in the southern part of the state from 1894 to 1916. The most important paper resulting from this work was the one published in 1913, with Dr. Grinnell, on the birds and mammals of the San Jacinto area. I valued greatly the privilege which came to me to go with Mr. Swarth on my first field trip to the mountains of California, on a search for *Passerella*, in 1926, and this happened to be his last collecting expedition in the State. It is hard to say which was most impressive—his remarkably accurate recognition of the plumages of certain birds we encountered, or his patience in withstanding, with meager camping equipment, an exceptionally stormy May in the north coast ranges.

An early interest in Arizona resulted in trips to that state in 1896, 1902, 1903, 1907, 1917, and 1927; and, although the list of bird workers in the area has been a long one, Swarth remained the authority on Arizona birds. After 1914, especially, his distributional list for that state was looked to as the guide for Arizona bird work.

Next, he acquired an interest in the northwest coastal region of North America and soon became one of the leaders in the faunal analysis of that puzzling district. His visits in 1898, 1909, 1910, 1919, 1921, 1924, 1929, 1931, and 1934 covered the whole span of his activity in the field, and they provided basis for several faunal reports as well as his contribution to a general distributional account of the birds of British Columbia. This appeared as number 17 of the Pacific Coast Avifauna series and was prepared in collaboration with Major Allan Brooks.

Still another district attracted Swarth's attention, and he spent most of the last ten years of his life thinking of the peculiar bird problems centering around the Galapagos Islands. When he went to work at the California Academy of Sciences in 1927, one of the main enticements was the opportunity to study the land birds from those islands in the collection, which had never been studied critically. Soon after the publication of his report on this material, in 1931, an opportunity came for him to visit the islands. He was in charge of the scientific staff of the Templeton Crocker Expedition of the California Academy of Sciences, 1932, which visited the Galapagos, and there he saw in life many of the peculiarities of the fauna that had been so impressively suggested in the preserved material. Many new specimens were obtained and extensive notes were recorded. These were the foundations for an elaborate account of the avifauna of this archipelago, which he was planning to bring to completion for publication. Another important result of this trip was the conviction that the animals and plants on these islands required some special protection if they were to be preserved in proper manner. Swarth was active in keeping this question alive until some favorable action was induced.

Reviews formed a prominent part of Swarth's writings; no fewer than sixty-four, nearly thirty per cent of all his papers, were reviews. In his case reviews were not merely casual acknowledgments of receipt of papers, but they were conscientious attempts to analyze and appraise each article. He felt that he got more out of the reviews he wrote than did anyone else, because the writing made him study carefully many papers that he might otherwise have skimmed over pretty hastily. He once said that it was so hard in reviewing to mention, without giving undue prominence, relatively unimportant defects in a generally excellent paper, that he hated to be thoroughly critical. Also he tried to keep in mind that it had seldom happened that a reviewer had appreciated certain features of his own papers over which he spent the most time and pains and which seemed to him of greatest importance.

In his Cooper Club History (1929) Swarth included mention of his own connection with the Club in the same vein as his comments on other members. There he recalls that after the "Southern California Natural History Society" had passed away he "attended meetings of the Southern Division of the Cooper Club for a year or more with fair regularity before mustering up courage to ask if the Club would accept membership dues from him." His account continues: "Not only was this privilege cheerfully granted, but within a few months he was elected treasurer of the Division. He can point with pride to the fact that it was during his regime that the Club took the momentous step of increasing dues from \$1.00 to \$1.25, this in connection with the launching of the 'Bulletin.' Other offices came to him without seeking—offices laborious rather than ornamental. He was 'secretary, pro-tem.' with such monotonous regularity that he was finally left undisturbed in that position for many years, alternately in the Northern and Southern Divisions. At last, in 1922, he was elected president of the Northern Division, and as such he was so successful that he was enthusiastically made an ex-president the following year."

This understatement reveals little of the real nature of his many services to the

Club and the important part he had in guiding its affairs through its whole history. In the seventeen years he was Associate Editor of *The Condor*, the hours he spent in correcting manuscripts, reading proofs, and preparing indexes made a huge total. His widespread acquaintance among the membership brought many opportunities to help solve questions which continually arise for naturalists. His interest and concern for the welfare of the Cooper Club were never diminished and in late years he often

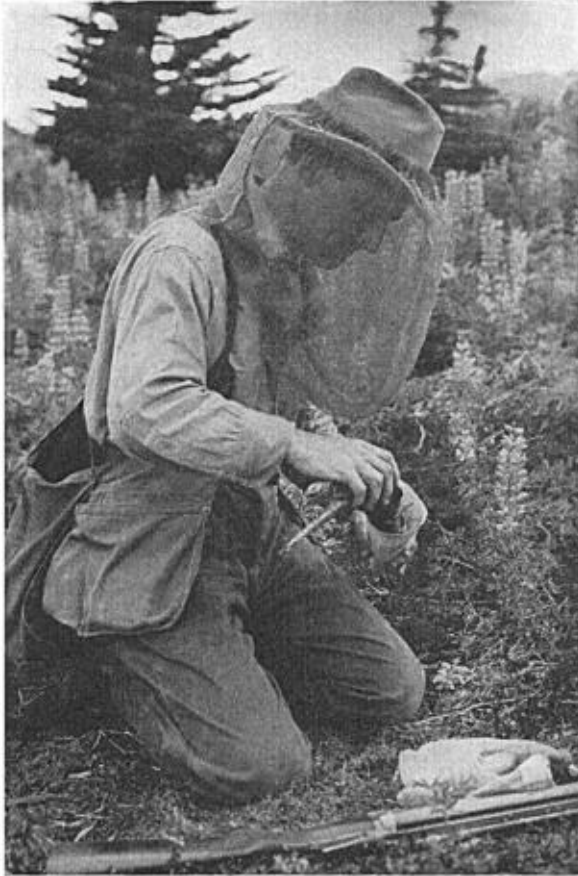


Fig. 31. Swarth in the field at timberline on Doch-da-on Creek, British Columbia, July 23, 1919.

discussed the problems which came with increase in membership and the shift in interest from that of a few active collectors to that of a large group of enthusiastic bird watchers. He was constantly in search of a way to make the Club beneficial to all types of bird students and especially to retain the participation of the more advanced ones.

A life so continuously filled with thought and attainment as Swarth's, participates in much more than can be included here and accomplishes more than this brief summary can even suggest. Swarth resolved early to reserve part of his energy for other interests than the systematic study of birds and he sought especially an acquaintance with English literature and acquired an intimate knowledge of the work of many

writers. He delighted to discover a counterpart in life of some character found in his reading and he saw many current incidents as they had been described long before. His trip to England and western Europe, in 1930, although mainly for studying type specimens from the Galapagos, in the British Museum, brought many opportunities for greater acquaintance with English customs which always had attracted him.

This account has been concerned mostly with activities which reached large numbers of people because the results of them were printed, but by the persons who knew Swarth he was valued for many qualities not revealed in that work. His interest in other naturalists, especially beginners, is appreciated by many individuals who profited from his genuine concern for their welfare. He rarely made ambitious promises, but whenever he discovered that one of his acquaintances was in need of some particular bit of equipment that he could supply, that need was likely soon to be filled. Sometimes this required much planning and effort, but once started on such an errand, he persisted until it was accomplished.

Even though Swarth was often away on a long trip, or else preparing for a new trip, he invariably liked to be at home. After his marriage in October, 1910, to Winifern Wood, a permanent home was established in Berkeley where it was maintained except for a short stay in southern California, which was really only a prolonged visit to a former dwelling place. Their two sons, George Selwyn and Morton Themmen, were reared in Berkeley, but the whole family took part in some zoological exploration at various places from Arizona to Alaska. Mrs. Swarth, in 1920, contributed to a publication on the birds of Grand Canyon.

It was on one of the visits by the family to Atlin, British Columbia, in 1934, that Swarth became seriously ill. Although he made slow progress toward recovery, he continued to study and to write at home when not at his office in San Francisco. His material accomplishments ceased when he died quickly on the morning of October 22, 1935, but his influence will persist so long as people study birds in western North America.

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90. California screech owl in the Humboldt Bay region. Condor, vol. 17, p. 167.
91. Scissor-tailed flycatcher in southern California. Condor, vol. 17, p. 203.
92. Western gull and Arctic tern: Corrections of records. Condor, vol. 17, pp. 205-206.
93. Review of J. Grinnell's "A distributional list of the birds of California." Condor, vol. 17, pp. 237-239.

1916

94. Townsend solitaire in the San Jacinto Mountains. *Condor*, vol. 18, pp. 32-33.
 95. The Pacific coast races of the Bewick wren. *Proc. Calif. Acad. Sci.*, 4th ser., vol. 6, pp. 53-85, pl. 2 (map).
 96. The broad-tailed hummingbird in California. *Condor*, vol. 18, p. 130.
 97. The Sahuaro screech owl as a recognizable race. *Condor*, vol. 18, pp. 163-165.

1917

98. Geographical variation in *Sphyrapicus thyroideus*. *Condor*, vol. 19, pp. 62-65.
 99. A revision of the marsh wrens of California. *Auk*, vol. 34, pp. 308-318, 1 fig. (map).
 100. Observations on some Fresno County birds. *Condor*, vol. 19, pp. 129-130.
 101. Review of A. T. Wayne's "A list of avian species for which the type locality is South Carolina." *Condor*, vol. 19, p. 146.
 102. [with H. C. Bryant] A study of the races of the white-fronted goose (*Anser albifrons*) occurring in California. *Univ. Calif. Publ. Zool.*, vol. 17, pp. 209-222, 1 pl., 2 figs. in text.

1918

103. Notes on some birds from central Arizona. *Condor*, vol. 20, pp. 20-24.
 104. Review of "Report of field-work in Okanagan and Shuswap districts, 1916" by J. A. Munro. *Condor*, vol. 20, p. 48.
 105. The Pacific coast jays of the genus *Aphelocoma*. *Univ. Calif. Publ. Zool.*, vol. 17, pp. 405-422, 1 fig. in text (map).
 106. The subspecies of the Oregon jay. *Condor*, vol. 20, pp. 83-84.
 107. Review of F. M. Chapman's "The distribution of bird-life in Colombia." *Condor*, vol. 20, pp. 95-97.
 108. The distribution of the subspecies of the brown towhee (*Pipilo crissalis*). *Condor*, vol. 20, pp. 117-121, 2 figs. in text.
 109. Review of P. A. Taverner and R. M. Anderson's "Divisional reports," in "Summary report of the Geological Survey, Department of Mines, for the calendar year 1916" (Ottawa). *Condor*, vol. 20, pp. 141-142.
 110. Review of J. Dwight's "The geographic distribution of color and of other variable characters in the genus Junco: a new aspect of specific and subspecific values." *Condor*, vol. 20, pp. 142-143.
 111. Review of C. B. Cory's "Catalogue of birds of the Americas and the adjacent islands in the Field Museum of Natural History." *Condor*, vol. 20, pp. 143-144.
 112. Three new subspecies of *Passerella iliaca*. *Proc. Biol. Soc. Wash.*, vol. 31, pp. 161-164.

1919

113. [with J. Dixon] Some Sierran chipmunks, with notes on photography of small mammals. *Sierra Club Bull.*, vol. 10, pp. 401-413, pls. cccxiii-ccxxv.
 114. Review of P. A. Taverner's "The hawks of the Canadian prairie provinces in their relation to agriculture." *Condor*, vol. 21, p. 46.
 115. A California specimen of the sandhill crane. *Condor*, vol. 21, pp. 212-213.

1920

116. Bohemian waxwing in southeastern California. *Condor*, vol. 22, p. 72.
 117. Gulls following a train. *Condor*, vol. 22, p. 75.
 118. [with Winifern W. Swarth] Some winter birds at the Grand Canyon, Arizona. *Condor*, vol. 22, pp. 79-80.
 119. Review of H. C. Oberholser's "A revision of the subspecies of *Passerculus rostratus* (Cassin)." *Condor*, vol. 22, pp. 81, 84.
 120. The subspecies of *Branta canadensis* (Linnaeus). *Auk*, vol. 37, pp. 268-272.
 121. In memoriam: Frank Slater Daggett. *Condor*, vol. 22, pp. 129-135, 1 fig.
 122. Revision of the avian genus *Passerella*, with special reference to the distribution and migration of the races in California. *Univ. Calif. Publ. Zool.*, vol. 21, pp. 75-224, pls. 4-7, 30 text figs.
 123. Birds of the Papago Saguaro National Monument and the neighboring region, Arizona. U. S. Dept. Interior, National Park Service, 63 pp., 8 pls., 1 fig. (map).

1921

124. Fables and fallacies of ornithology. *The Gull*, vol. 3, no. 3.
 125. The Sitkan race of the dusky grouse. *Condor*, vol. 23, pp. 59-60.
 126. The red squirrel of the Sitkan district, Alaska. *Journ. Mammalogy*, vol. 2, pp. 92-94.
 127. *Bubo virginianus occidentalis* in California. *Condor*, vol. 23, p. 136.
 128. The type locality of *Crotalus willardi* Meek. *Copeia*, no. 100, p. 83.
 129. Review of B. W. Evermann and H. W. Clark's "Lake Maxinkuckee, a physical and biological survey." *Condor*, vol. 23, p. 142.

1922

130. Review of B. W. Evermann's "Notes on the birds of Carroll, Monroe, and Vigo counties, Indiana." *Wilson Bull.*, vol. 34, p. 47.
131. Birds and mammals of the Stikine River region of northern British Columbia and southeastern Alaska. *Univ. Calif. Publ. Zool.*, vol. 24, pp. 125-314, pl. 8, 34 text figs.
132. The Bohemian waxwing: a cosmopolite. *Univ. Calif. Chronicle*, vol. 24, no. 4, pp. 450-455, col. pl.
133. Review of R. C. McGregor and Elizabeth J. Marshall's "Philippine birds for boys and girls." *Condor*, vol. 24, p. 139.

1923

134. Review of A. C. Bent's "Life histories of North American petrels and pelicans and their allies." *Condor*, vol. 25, p. 35.
135. Review of B. T. Gault's "A check list of the birds of Illinois." *Condor*, vol. 25, p. 73.
136. The systematic status of some northwestern song sparrows. *Condor*, vol. 25, pp. 214-223, 1 fig. (map).

1924

137. Birds and mammals of the Skeena River region of northern British Columbia. *Univ. Calif. Publ. Zool.*, vol. 24, pp. 315-394, pls. 9-11, 1 fig. in text.
138. Sexual variation in *Nephoecetes niger*. *Auk*, vol. 41, pp. 383-384.
139. Fall migration notes from the San Francisco Mountain region, Arizona. *Condor*, vol. 26, pp. 183-190, 2 text figs.
140. White wing-markings in the Heermann gull: a record from the past. *Condor*, vol. 26, p. 192.
141. Notes upon certain summer occurrences of the gray flycatcher. *Condor*, vol. 26, pp. 195-197.
142. [with F. B. Sumner] The supposed effects of the color tone of the background upon the coat color of mammals. *Journ. Mammalogy*, vol. 5, pp. 81-113, pls. 6-12.

1925

143. [with Allan Brooks] The timberline sparrow, a new species from northwestern Canada. *Condor*, vol. 27, pp. 67-69.
144. Review of H. Kirke Swann's "A monograph of the birds of prey." *Condor*, vol. 27, pp. 85-86.
145. Review of A. C. Bent's "Life histories of North American wild fowl. Order Anseres (Part)." *Condor*, vol. 27, pp. 213-214.
146. Review of Wyman and Burnell's "Field book of birds of the southwestern United States." *Condor*, vol. 27, p. 242.
147. A visit to the Stikine glaciers. *Sierra Club Bull.*, vol. 12, pp. 121-125, pls. 41-43.
148. [with Allan Brooks] A distributional list of the birds of British Columbia. *Pac. Coast Avifauna* No. 17, 158 pp., 2 pls., 38 text figs.

1926

149. Northern Say phoebe in California. *Condor*, vol. 28, pp. 45-46.
150. The Audubon's warbler. *The National Association of Audubon Societies: Educational Leaflet* No. 126. *Bird-Lore*, vol. 28, pp. 82-84.
151. Gulls feeding on star-fish. *Condor*, vol. 28, pp. 97-98.
152. [with J. Grinnell] An additional subspecies of spotted towhee from Lower California. *Condor*, vol. 28, pp. 130-133, 2 text figs.
153. Review of W.E. Wait's "Manual of the birds of Ceylon." *Condor*, vol. 28, pp. 136-137.
154. [with J. Grinnell] Systematic review of the Pacific Coast brown towhees. *Univ. Calif. Publ. Zool.*, vol. 21, pp. 427-433, 2 text figs.
155. [with J. Grinnell] A new race of acorn-storing woodpecker, from Lower California. *Condor*, vol. 28, pp. 176-178, 1 text fig.
156. [with J. Grinnell] New subspecies of birds (*Penthestes*, *Baeolophus*, *Psaltriparus*, *Chamaea*) from the Pacific Coast of North America. *Univ. Calif. Publ. Zool.*, vol. 30, pp. 163-175, 2 text figs.
157. Report on a collection of birds and mammals from the Atlin region, northern British Columbia. *Univ. Calif. Publ. Zool.*, vol. 30, pp. 51-162, pls. 4-8, 11 text figs.
158. James Hepburn, a little known Californian ornithologist. *Condor*, vol. 28, pp. 249-253.
159. [with J. Grinnell] Geographic variation in *Spizella atrogularis*. *Auk*, vol. 43, pp. 475-478.

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160. Review of P. A. Taverner's "Birds of Western Canada." *Condor*, vol. 29, pp. 84-85.
161. Review of "Checklist of the birds of Australia." *Condor*, vol. 29, pp. 129-130.
162. Valley quail imported from Chile. *Condor*, vol. 29, p. 164.
163. Birds of the Atlin region, British Columbia: A reply to criticism. *Condor*, vol. 29, pp. 169-170.
164. The rufous-necked sandpiper on St. Paul, Pribilof Islands. *Condor*, vol. 29, pp. 200-201.
165. Eversmann shrike not a North American bird. *Condor*, vol. 29, p. 205.
166. The rufous-necked sandpiper in Alaska. *Condor*, vol. 29, p. 274.

1928

167. Winter birds of California highways. *National Motorist*, vol. 4, no. 9, pp. 6, 23-24, 1 text fig.
 168. Winter occurrence of Sierra Nevada rosy finch and black rosy finch in California. *Condor*, vol. 30, p. 191.
 169. Review of Taverner's "A study of *Buteo borealis*, the red-tailed hawk, and its varieties in Canada." *Condor*, vol. 30, pp. 197-199.
 170. Occurrence of some Asiatic birds in Alaska. *Proc. Calif. Acad. Sci.*, 4th ser., vol. 17, pp. 247-251.
 171. A bush-tit's nest on a pedestal. *Condor*, vol. 30, pp. 359-360, 1 text fig.
 172. Annual Report, Department of Ornithology and Mammalogy. *Proc. Calif. Acad. Sci.*, 4th ser., vol. 16, pp. 743-745.

1929

173. [Editorial comment upon plumage sequences.] *Condor*, vol. 31, p. 40.
 174. The meeting of the American Ornithologists' Union at Charleston, S. C., November 20-22, 1928. *Condor*, vol. 31, pp. 41-42.
 175. A new bird family (*Geospizidae*) from the Galapagos Islands. *Proc. Calif. Acad. Sci.*, 4th ser., vol. 18, no. 2, pp. 29-43, 6 text figs.
 176. Birds on the bay. *The Gull*, vol. 11, no. 2.
 177. [with L. H. Miller and W. P. Taylor] Some winter birds at Tucson, Arizona. *Condor*, vol. 31, pp. 76-77.
 178. Review of Mrs. F. M. Bailey's "Birds of New Mexico." *Condor*, vol. 31, pp. 82-83.
 179. The faunal areas of southern Arizona: A study in animal distribution. *Proc. Calif. Acad. Sci.*, 4th ser., vol. 18, pp. 267-383, pls. 27-32, 7 text figs.
 180. The C. O. C. 1893-1928. A systematic study of the Cooper Ornithological Club. Published at the fourth annual meeting of the Cooper Ornithological Club, San Francisco, May 17, 1929. Pp. 1-78, many text figs.

1930

181. Notes on the Avifauna of the Atlin region, British Columbia. *Condor*, vol. 32, pp. 216-217.
 182. Annual Report, Department of Ornithology and Mammalogy, for 1929. *Proc. Calif. Acad. Sci.*, 4th ser., vol. 18, pp. 556-558.
 183. Nesting of the timberline sparrow. *Condor*, vol. 32, pp. 255-257, 1 text fig.
 184. [Biographical notice of] Frank Aleman Leach. *Auk*, vol. 47, pp. 308-309.

1931

185. Review of H. C. Oberholser's "Notes on a collection of birds from Arizona and New Mexico." *Condor*, vol. 33, pp. 81-82.
 186. Geographic variation in the Richardson grouse. *Proc. Calif. Acad. Sci.*, 4th ser., vol. 20, pp. 1-7, 3 text figs.
 187. The avifauna of the Galapagos Islands. *Occas. Papers, Calif. Acad. Sci.*, vol. 18, pp. 1-299, 1 pl. (map), 57 text figs.
 188. The tyranny of the trinomial. *Condor*, vol. 33, pp. 160-162.
 189. Black-footed albatross on San Francisco Bay. *Condor*, vol. 33, pp. 214-215.
 190. The lemming of Nunivak Island, Alaska. *Proc. Biol. Soc. Wash.*, vol. 44, pp. 101-104.
 191. Annual report, Department of Ornithology and Mammalogy for 1930. *Proc. Calif. Acad. Sci.*, 4th ser., vol. 19, pp. 441-447.

1932

192. Review of Fisher and Wetmore's "Report on birds recorded by the Pinchot Expedition of 1929 to the Caribbean and Pacific." *Condor*, vol. 34, pp. 55-57.
 193. Status of the Baikal teal in California. *Condor*, vol. 34, p. 259.
 194. [Biographical notice of] George Frean Morcom. *Auk*, vol. 49, pp. 519-520.

1933

195. Off-shore migrants over the Pacific. *Condor*, vol. 35, pp. 39-41.
 196. Review of van Rossem's "Descriptions of new birds from the mountains of southern Nevada," Taverner's "A partial study of the Canadian Savanna sparrows [etc.]," and Oberholser's "Descriptions of new birds from Oregon, chiefly from the Warner Valley region." *Condor*, vol. 35, pp. 43-45.
 197. Frigate-birds of the west American coast. *Condor*, vol. 35, pp. 148-150, 1 text fig.
 198. [Editorial: Governmental reorganization in Manila.] *Condor*, vol. 35, p. 169.
 199. Exposicion relacionada con la creacion de un refugio en el Archipelago de Galapagos para su flora y su fauna. *Annales de la Universidad Central, Quito, Ecuador*, tomo 50, no. 284, pp. 633-641.
 200. Relationships of Coues and olive-sided flycatchers. *Condor*, vol. 35, pp. 200-201.

201. The long-tailed meadow-mouse of southeastern Alaska. Proc. Biol. Soc. Wash., vol. 46, pp. 207-212.
202. Peale falcon in California. Condor, vol. 35, pp. 233-234.
203. The Savannah sparrows of northwestern North America. Condor, vol. 35, pp. 243-245.
- 1934
204. In Memoriam: George Frean Morcom, March 16, 1845—March 25, 1932. Condor, vol. 36, pp. 16-24, fig. (photo).
205. Problems in the classification of northwestern horned owls. Condor, vol. 36, pp. 38-40.
206. The ten-year index to "The Auk." Auk, vol. 51, pp. 126-128.
207. Bush-tit fighting its reflection. Condor, vol. 36, pp. 87-88.
208. A criticism of certain "new" subspecies. Condor, vol. 36, p. 90.
209. Birds of Nunivak Island, Alaska. Pac. Coast Avifauna No. 22, pp. 1-64, 4 figs.
210. The bird fauna of the Galapagos Islands in relation to species formation. Biological Reviews [Cambridge, England], vol. 9, no. 2, pp. 213-234, figs.
211. [H. S. Swarth, editor] Ten-year index to The Auk, volumes 38-47—1921-1930, pp. i-xxiii + 1-328.
- 1935
212. Review of D. M. Gorsuch's "Life history of the Gambel quail in Arizona." Condor, vol. 37, pp. 45-46.
213. A barn swallow's nest on a moving train. Condor, vol. 37, pp. 84-85, fig.
214. Review of E. R. Hall's "Mammals collected by T. T. and E. B. McCabe in the Bowron Lake region of British Columbia." Canadian Field-Naturalist, vol. 49, pp. 77-78.
215. Injury-feigning in nesting birds. Auk, vol. 52, pp. 352-354.
216. Systematic status of some northwestern birds. Condor, vol. 37, pp. 199-204.
- 1936
217. Savannah sparrow migration routes in the northwest. Condor, vol. 38, pp. 30-32, 1 fig.
218. An early estimate of California's fauna. Condor, vol. 38, pp. 38-39.
219. A list of the birds of the Atlin region, British Columbia. Proc. Calif. Acad. Sci., 4th ser., vol. 23, pp. 35-58.
220. Origins of the fauna of the Sitkan district, Alaska. Proc. Calif. Acad. Sci., 4th ser., vol. 23, pp. 59-71, 1 fig.

Museum of Vertebrate Zoology, University of California, Berkeley, May 11, 1936.

FROM FIELD AND STUDY

Feeding Habits of the Snowy Egret.—The Snowy Egret (*Egretta thula*) is a clever bird, for he is able to adapt his fishing methods to time and tide. When fishing in the shallow pools of a mudflat he employs stealth. He approaches the pool with care and caution; deliberately he lifts his feet; deliberately he puts his feet down. A successful stalk brings him to the edge of the pool without disturbing his intended victim. His head is held forward on his long stretched neck. He now presents a picture of poised alertness. He is prepared to strike, but there is no movement in the pool. Now he reaches forward with one foot and gently pats the surface of the pool. His light touch starts a fish without muddying the water. Like a flash he strikes and then with a careless toss of his head his victim is sent to a new resting place.

On January 28, 1936, at Bolsa Chica Slough a Snowy Egret was seen employing an entirely different method to get himself some lunch. He was fishing in one of the main arms of the slough and in order to insure success he must somehow contrive to get the fish into water not more than four or five inches deep. He knew the answer to this problem. His method was to walk along the mud bank at the edge of the slough until he had located a school of small fish and then, flying out over the water, he would approach from behind and by flapping his wings wildly he would herd the fish toward the shore into shallow water. This maneuver was remindful of a woman shooing flies out of the house by waving a dish-towel.

When the fish were in fairly shallow water the Egret dropped to his feet and became amazingly active, striking whenever within reach of a fish, leaping upward, leaping from side to side, fanning his wings, all efforts to keep the fish headed for the shore. This weirdly grotesque dance continued until the last fish had been taken or had escaped to sea. And to make the hunting dance more spectacular every movement of the snow-white bird was reflected in the dark still waters of the slough.—CHAS. W. MICHAEL, *Pasadena, California, February 13, 1936.*