100 Years Ago in the American Ornithologists' Union

Author: Smith, Kimberly G.

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In 1912, about 40 major articles were published in *The Auk*, as well as the Sixteenth Supplement to the American Ornithologists' Union *Check-list of North American Birds*, which dealt primarily with adding new subspecies to the check-list. Several articles from this year have been discussed previously, such as Brewster's "red-legged" Black Duck (*Anas rubripes)* and the demise of the Passenger Pigeon (*Ectopistes migratorius)* in the wild.

Joseph Grinnell (1877–1939) led off the volume with a description of the Hawaiian Linnet (*Carpodacus "mutans"* = *mexicanus*) based on males being yellow or orange instead of red (29:24–25). The species had been introduced to Hawaii only 40 years earlier, and Grinnell assumed that the change in color represented a genetic change worthy of description as a new species. Two issues later, John C. Phillips (1876–1938) took Grinnell to task on two fronts (29:336–338). The name *mutans* implied that the species had arisen through a mutation, which Phillips believed was unlikely. Secondly, Phillips pointed out that many red-colored birds lose their red color in captivity and that being on an island would be like living in captivity. He suspected that the change in color was due to a decrease in "tyrosine oxidation." In the next issue (29:543), Grinnell expressed his "chagrin" and "humiliation" over the choosing of *mutans*—he was using the Latin to mean "changing" and had not thought about the "mutation" interpretation. As for the color differences, he defended the use of changes in color as a perfectly good taxonomic basis. Today, marked differences in male coloration exist based on island of occurrence in Hawaii (Van Riper and Hirai 1994), and that variation is now known to be due to diet (Brush and Power 1976), primarily to the ingestion of carotenoids (Hill 1992). Grinnell and Phillips would both become Fellows of the AOU, and Grinnell served as President from 1929 to 1932. At age 24, in 1901, Grinnell was the youngest member ever elected as Fellow in the AOU.

William Alanson Bryant (1875–1942) presented the history of the introduction of the Laysan Finch (*Telespiza cantans*) and the Common Canary (*Serinus cararia*) to Midway, based primarily on a letter from D. Morrison, who was superintendent of the Commercial Pacific Cable Company's relay station there for the telegraph line across the Pacific Ocean (29:339–342). Midway is actually made up of two islands: Sand and Eastern. In May of 1905, Morrison was at Laysan Island and procured a "cage of these birds." Another cage of finches was sent to Midway in September of 1905. These were released on Eastern Island because of a feral cat problem on Sand Island. In January of 1910, finches and "wingless birds" (= Laysan Rail [*Porzana palmeri*]) were brought to Sand Island, but they did not do well because of the cats on that island.

During a trip to Honolulu in March of 1909, Morrison purchased a pair of canaries on a steam ship bound for San Francisco. He kept them in separate cages until January, when he put them together for breeding. Over the next several months, the female laid 25 eggs, 11 of which hatched successfully. Wanting to release the birds on Sand Island, Morrison and one of his servants began a trapping campaign in 1910 and by May they had eliminated the cats. In July, Morrison received two male canaries from Hawaii and they were released with the 11 young birds. Breeding commenced in December and after the first breeding season, Morrison estimated the population to be about 60 birds. With the elimination of the cats, another group of finches and rails were released on Sand Island from Eastern Island, and Morrison stated that they were expanding rapidly. Morrison was not sure how the rails got to Midway, stating that the introduction had predated the establishment of the relay station in 1903. (They had been introduced on 13 July 1891 while Henry Palmer was collecting birds for Walter Rothschild and the son of Captain F. D. Walker released a pair of rails [Rothschild 1893:xiii]).

The introduced populations thrived on Midway until the introduction of rats (*Rattus* sp.) on the island from ships in 1943 during World War II. During the following 2 years, the islands were overrun by rats, likely causing the rapid extinction of both the finch and the rail (Fisher and Baldwin 1946). The canary was also thought to be extinct, but in a largely overlooked example of rapid natural selection, the few canaries nesting in treetops survived the rat infestation. Fisher and Baldwin (1946) stated that all the canaries were now nesting in treetops. They estimated the population on Sand Island to be about 30 birds in 1945, with possibly 500 canaries today on Midway.

Bryan was an early ornithologist at College of Hawaii, beginning his tenure in fall of 1909, the second year of the college. He also worked at the Bishop Museum starting in 1899, where he was Curator of Ornithology from 1901 to 1906. Shortly after his wife's death in 1919, he resigned and moved to Los Angeles, where he became the director of the Los Angeles Museum of Natural History.

One of the strangest pieces by today's standards was by Charles W. Townsend, who attempted to link the ancestry of modern birds to the past through behavior and morphology (29:285–295). Titled "Bird Genealogy," his essay started with the premise that "the links between birds and their reptilian predecessors are very perfect." He further stated: "Now if birds are descended from reptiles, one may perhaps still find some traces of this lowly origin in the infantile period of bird life." For Townsend, the quadruped movement of reptiles was reflected in the movement of young

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herons before they could fly, moving about the vegetation using their wings and legs like some graceful ancient reptile ancestor.

Townsend found some young House Sparrows (*Passer domesticus*) and decided to drop them into a bucket of water to watch them sink to the bottom. To his amazement, they began swimming. "Blood will out, the reptilian ancestry was working!" he declared. So he started dumping other baby birds in water (Red-winged Blackbirds [*Agelaius phoeniceus]*, crows, grackles) and found that they could all swim equally well, using a movement reminiscent of quadruped reptiles. At the time, it was believed that swifts moved their wings in an alternating motion, which Townsend likened to the way reptiles move their front legs. Although it is aerodynamically impossible for a bird to flap its wings in an alternating motion, this idea concerning swifts persisted for about 40 more years (Savile 1950).

Townsend reasoned that the ability to swim must be linked to the origins of groups of birds, and he went on to discuss which groups arose from aquatic ancestors and which arose from terrestrial ancestors. All shorebirds can swim, so they must have had an aquatic ancestry. The fact that some remain semipalmated is evidence of the aquatic origin. Most have become terrestrial now, and Townsend considered phalaropes to be cases of "reversion" back to an aquatic existence. Webbed feet are "wasted" on gulls and terns, given that terns rarely land on water and gulls rarely swim—rather, they just "drift about," according to Townsend. They must have an aquatic origin, however, because crippled gulls that have been shot and then land on the beach quickly swim (!) out to sea. Citing a passage from a book by Frank M. Chapman where tern chicks were seen swimming before they could fly, the conclusion was reached that webbed feet may be "functionless" in adults, but important for movement in chicks.

In 1912, some classifications included pigeons in the order Charadriiformes. Not a problem for Townsend: he dropped some half-grown domestic pigeons in a bucket of water and they swam like ducks, linking them to an aquatic origin. Adult herons rarely swim, but Townsend found that a nestling Green Heron (*Butorides virescens)* could swim perfectly well, suggesting an aquatic origin. Classifications of that time also linked cormorants with New World vultures, and Townsend thought they were probably related because they both hold their wings out to dry in similar manners. Young cormorants head for shore when put in water, suggesting a terrestrial origin, and many cormorants still nest in trees, further suggesting an arboreal origin, according to Townsend.

Townsend's essay ends with a rambling discussion about evolution and bird speciation, and the notion that evolution is occurring all around us. One example he put forth was the recent occurrence of "Myrtle" Yellow-rumped Warblers (*Setophaga coronata)* that remain in New England in winter eating seeds and fruits, primarily bayberries (*Myrica pensylvanica*), while other warblers migrate south for winter and continue to be insectivorous. Although he had yet to investigate this fully, he suggested that the northern birds will become bigger, have larger and stronger bills, and develop greater muscular gizzards than the southern members of the species. He ends by stating that the Ipswich Sparrow (*Passerculus sandwichensis princeps*) is probably a relatively new species, having evolved from the Savannah Sparrow (*P. s. savanna*) since the last Ice Age. As vast areas of sand became available, those light-colored birds would be favored over their darker relatives in response to hawk predation, and, finally, increased isolation on Sable Island had led to the formation of a new species. A nice story in 1912, as C. J. Maynard had described the sparrow as a new species from a bird collected in Ipswich, Massachusetts, in December of 1868 and two more in fall of 1870 (Maynard 1872). Molecular analysis, however, has shown that the Ipswich Sparrow is a subspecies of the Savannah Sparrow.—Kimberly G. Smith, *Department of Biological Sciences, University of Arkansas, Fayetteville, Arkansas 72701, USA. E-mail: kgsmith@uark.edu*

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