

## PREHISTORIC HAWAIIAN BIRDS\*

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Until recently, the prehistoric Hawaiian avifauna was known only by the 1926 find of an extinct goose under 25 m of lava at Pahala on Hawai'i. Since 1971, however, remains of 20 or more previously unknown prehistoric Hawaiian bird taxa have been recovered from Moloka'i and Kaua'i (windblown sand dunes), Maui (lava tube), and O'ahu (solution pits in raised limestone reef). A radiocarbon age of 26,000 years for a Moloka'i goose skeleton is the only date presently available.

A remarkable flightless component of this extinct avifauna comprises several geese and rails, and the first known flightless ibis. Yet-undescribed flighted birds include eagle, owl, and raven, as well as a variety of finch-like passerines. Hawaiian Hawk, Nene, Hawaiian Duck, and Chaetoptila (a meliphagid), or closely related forms, apparently occurred contemporaneously. Present-day native wading and marsh birds are relatively scarce or absent in the prehistoric deposits. Remains of modern Drepnididae seem lacking in all sites except those of Kaua'i, possibly because of a relatively more recent date for these latter deposits.

Absence of terrestrial predators originally allowed survival of flightlessness in Hawai'i, and lowered metabolic requirements of the flightless individuals constituted a selective advantage. Evolution of flightlessness in the Islands probably represents neoteny, rather than the more common long-term incremental selective process. Time and cause of extinction of this prehistoric avifauna is unknown but, although no evidence has thus far been found, it is quite possible that original Polynesian settlers or their associated animals were involved.