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## EMBRYONIC DOUBLE MONSTER IN THE WEDGE-TAILED SHEARWATER

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During a study of embryonic respiration in the Wedge-tailed Shearwater (*Puffinus pacificus*), an egg was collected and found to contain an embryonic duplicitas: a double monster or Siamese twin. This egg was collected on 7 August 1979 from Manana Island, Oahu, Hawaii and was  $40 \pm 1$  days old; the incubation period for this species averages 52 days. After respiratory data had been obtained, the egg was dissected and a double-monster embryo was found inside. The body of the embryo was completely duplicated except for a common head with one eye absent and the brain exposed on the left side. This embryo conformed to Ulshafer and Clavert's (J. Embryol. Exp. Morphol. 53:237-243, 1979) Group I classification of avian double monsters. The yolk-free mass of the abnormal embryo (10.3 g) equalled 47% of the yolk-free mass of normally developed shearwater embryos of the same age.

The incidence of malformation in Wedge-tailed Shearwaters is difficult to assess but in 170 eggs we have examined over a three-year period, this is the first embryonic anomaly found. This would place the incidence of malformation at 0.59%. Romanoff (Pathogenesis of the avian embryo, John Wiley and Sons, 1972) reported values of 0.8% to 0.06% for embryonic duplicitas in chicken eggs. In ducks the phenomenon is more common: about 2% of all fertilized eggs form double monsters. The effect is believed to be caused by changes in orientation of the egg within the shell gland during the critical period of symmetrization, resulting in the formation of two organizing centers (Ulshafer and Clavert 1979). Other teratogenic factors may include high levels of pesticides and mercury. Fisher (Pac. Sci. 27:220-225, 1973) reported high levels of toxic substances in the Laysan Albatross (*Diomedea immutabilis*) on Midway Atoll but we know of no such studies on other procellariiform birds.

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## RECENT PUBLICATIONS

**The Great Gray Owl/Phantom of the Northern Forest.**—Robert W. Nero, photographs by Robert R. Taylor. 1980. Smithsonian Institution Press, Washington D.C. 167 p. \$17.50. For ten years, Nero and his colleagues have been pursuing and watching Great Gray Owls in the spruce-tamarack bogs of Manitoba and adjacent Minnesota. Coupling his observations with published findings, he presents here a good basic account of the natural history of his subject and its world. Its feeding, breeding behavior, and other habits are portrayed with much new information gained from intimate studies. At the same time, he tells of his experiences and feelings while hunting the hunter. Taylor's photographs are remarkably good, whether they are intended to be didactic or poetic, they complement, not simply illustrate, the text. One of the few books devoted to a single species of owl, this highly readable work should appeal to all those who like owls. References, index.

**An Annotated Bibliography of Bald and Golden Eagles in Washington.**—G. T. Allen, R. L. Knight, and M. V. Stalmaster. 1980. Washington Dept. of Game. 66 p. Paper cover. Source: Washington Dept. of Game, 600 North Capitol Way, Olympia, Wash. 98504. This catalog attempts to include all publications that refer,

however slightly, to eagles in the State of Washington. It also offers a list of selected articles on Bald or Golden eagles in which the research was conducted elsewhere. The bibliography appears very comprehensive, yet not significantly more useful than those by Lincer, Clark, and LeFranc (1979. Noted in *Condor* 81:257) and by Knight (1979. Noted in *Condor* 82:290). Eagle biologists in Washington, Oregon, and British Columbia who may not have the latter work should get this one instead.

**The Common Raven.**—Richard L. Knight and Mayo W. Call. 1980. Technical Note #344, U.S. Dept. of the Interior, Bureau of Land Management. 61 p. Paper cover. Source: DSC, Federal Center Building 50, Denver, CO 80225. This report, apparently intended for BLM biologists, provides well-organized information on the populations, life history, and ecology of the Common Raven. Coverage is largely restricted to North America, although this is not stated. Brief chapters also give management recommendations, research methods, and a partial list of current investigations on the species. Findings have been studiously compiled from the literature without synthesis, critical evaluation, or interpretation. Errors exist at least in the sections on taxonomy and distribution. Photographs, references.