A HYBRID GLAUCOUS X HERRING GULL FROM SAN DIEGO

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The northward spread of the Herring Gull *(Larus argentatus)* into Iceland in the last several decades has resulted in extensive hybridization with the Glaucous Gull *(L. hyperboreus;* Ingolfsson, 1970). Hybridization between these species in North America is almost unknown, although two apparent hybrids have been collected in New Jersey in recent years (Jehl and Frohling, 1965). In the eastern Canadian arctic, where the species are widely sympatric, interbreeding is unrecorded. In the western Canadian arctic and in Alaska occasional hybridization has been inferred (Dwight, 1925; Ingolfsson, 1970). Because hybrids may provide evidence about the relationships and evolutionary history of species, they are of particular interest to biologists.

In early March 1969, a large gull of apparent hybrid origin appeared at a sanitary fill in San Diego, California (Fig. 1). It closely resembled an adult Glaucous Gull except for blackish markings on the outermost primaries. I collected the bird on 24 March and identified it as a Glaucous X Herring Gull hybrid. The specimen is deposited in the San Diego Natural History Museum (no. 37028).

Description. Similar to adult Glaucous Gull but slightly smaller (Table 1), and with distinct slaty-black markings on the outermost five primaries (Fig. 2). Adult female, weight 1365 g, ovary 14 X 10 mm, largest ovum 2 mm. Bill bright pale yellow with large red spot at gonys; iris clear yellowish, with one dark fleck in right eye and three in left; orbital ring pale yellow-orange; legs and feet bright pink; head, neck and body white, a few light brown streakings on hind neck; mantle slightly darker than in Glaucous Gull and much paler than in Herring Gull. Primaries slaty-black, not black as in Herring Gull, and extent of pattern much reduced as compared to that species; hybrid index of primary pattern = 3.6 (A. Ingolfsson in litt.; see Ingolfsson, 1970: 341); undersides of primaries whitish.

Comments. The identification of unusually-plumaged gulls is difficult but the identity of the San Diego hybrid seems obvious. In life it was noticeably larger than a Herring Gull; its measurements are intermediate between those of Herring and Glaucous gulls from the eastern Canadian arctic; and are within the range of female Glaucous Gulls from the Western Canadian arctic, which are slightly smaller

than eastern birds (Manning, Hohn, and Macpherson, 1956). In general, its coloration closely approximates that of known Glaucous X Herring Gull hybrids from Iceland. However, the primary pattern closely resembles that of Thayer's Gull *(Larus thayeri)*, even to the

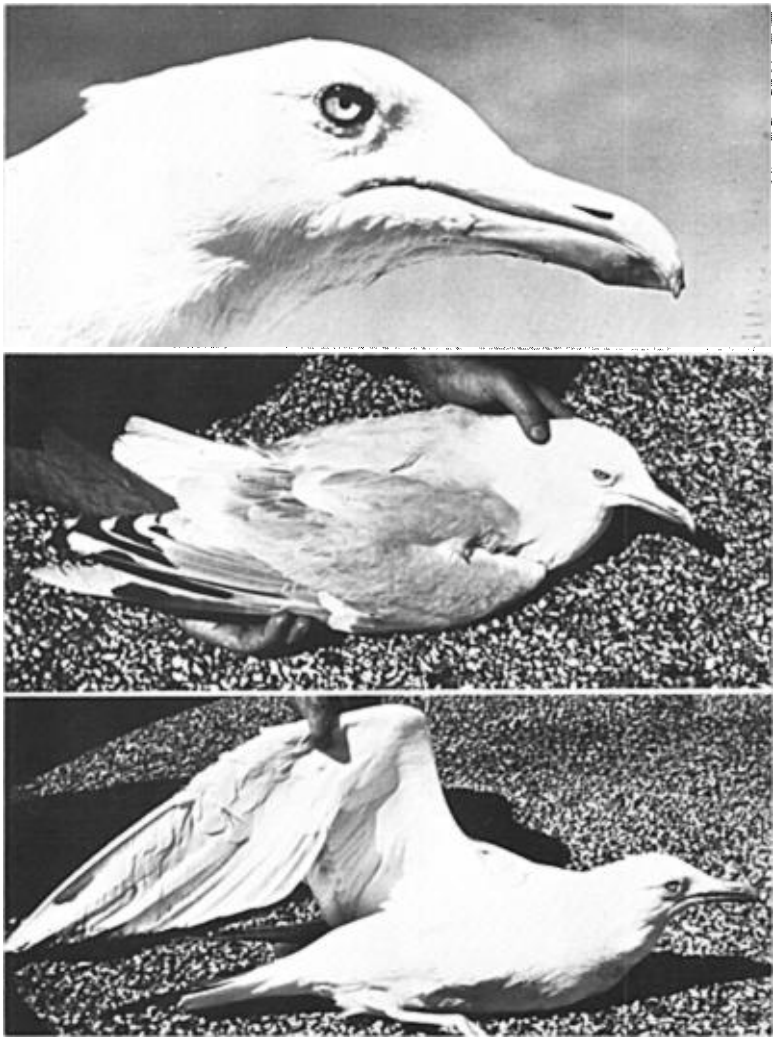

FIGURE 1. Three views of an adult Glaucous X Herring Gull collected in San Diego, California, 24 March 1969.

white undersides of the primaries. Hybrids between Thayer's and Glaucous gulls are unknown; presumably they would be smaller and darker-mantled than the present specimen and would possess deeply colored orbital rings (purplish in Thayer's) and dark irides, perhaps with extensive flecking (see Smith, 1966, for a description of variation in iris color in *thayeri)*. The specimen cannot represent a cross between Glaucous-winged *(L. glaucescens)* and Herring gulls because its mantle color is paler than in either of those species; the dark primary pattern eliminates its possiblity as a Glaucous X Glaucous-winged cross.

DISCUSSION

The precise distribution of gull colonies in western North America is imperfectly known, particularly in the critical area extending from western Alaska to northwestern Canada, but breeding ranges of the four large gulls are largely allopatric. Three species nest along the coast: Western Gulls *(L. occidentalis)* from Baja California to Vancouver Island, British Columbia; Glaucous-winged Gulls *(L. glaucescens)* from Oregon to western Alaska; Glaucous Gulls from western Alaska through the Canadian arctic and circumpolarly. Herring Gulls nest largely on inland lakes and rivers, reaching the coast only in a few areas of Alaska and northwestern Canada (A.O.U., 1957; Gabrielson and Lincoln, 1959; Fay and Cade, 1960; Williamson and Peyton, 1963; Godfrey, 1966).

Table 1. Measurements of adult female gulls. Herring and Glaucous gull measurements are from Smith, 1966, Table 5, and refer to eastern Canadian arctic populations.

	Herring Gull (57)	Hybrid	Glaucous Gull (34)
Wing (Flat)	409-423 (419.2)	438	430-454 (438.1)
Tarsus	60.0-66.2 (63.4)	64.4	60.0-72.1 (66.3)
Bill: Culmen	48.3-55.1 (51.4)	52.9	50.1-63.0 (56.3)
Bill: Anterior nares to tip	22.0-25.9 (24.4)	23.4	23.0-30.11 (26.1)
Bill: depth, post. nares	15.5-18.8 (17.0)	17.8	18.3-22.4 (20.5)

In all but one case where the ranges of two species overlap hybridization has been shown or postulated. Interbreeding of Western and Glaucous-winged gulls has been found in southern British Columbia (Pearse, 1946) and in Oregon (J. M. Scott, pers. comm.). Swarth (1934: 36-38) suggested that Glaucous-winged and Glaucous gulls hybridize on Nunivak Island, Alaska; Handley (*in* Gabrielson and Lincoln, 1959) reported a probable hybrid from St. Michael, Alaska; and specimens that almost certainly represent this cross are present in several museum collections (Jehl, pers. obs.). Where Herring Gulls

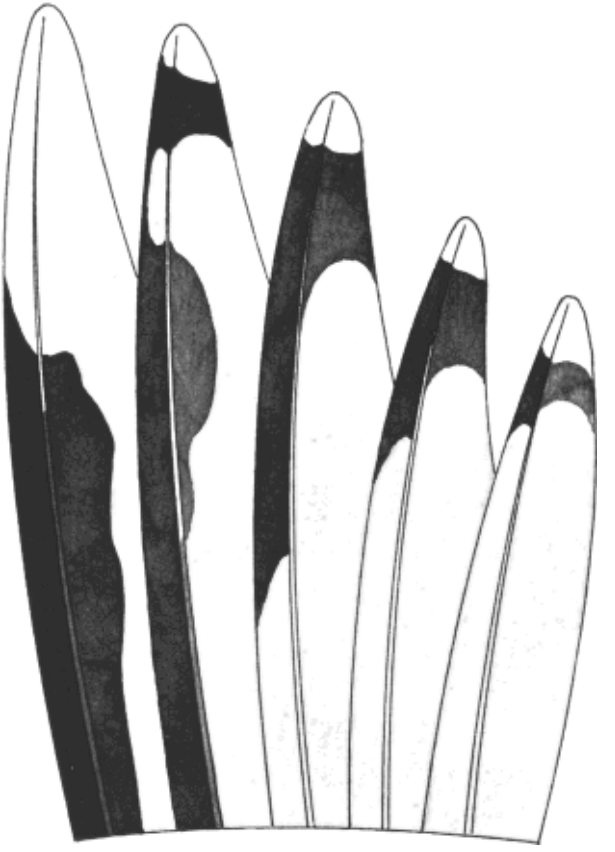

FIGURE 2. Primary pattern of Glaucous X Herring Gull.
Drawing by Anne Acevedo

reach the coast in southwestern Alaska they hybridize extensively with Glaucous-winged Gulls (Williamson and Peyton, 1963).

Herring and Glaucous gulls have not yet been found interbreeding in western North America, but specimen evidence indicates that hybridization certainly occurs in that region. Ingolfsson (1970) showed that the proportion of Herring and Glaucous gulls with aberrant primary patterns reached a peak in western Alaska. He suggested that this probably resulted from occasional crossing between Siberian Herring Gulls *(L. a. vegae)* and Glaucous Gulls in the Bering Straits region. That American Herring Gulls *(L. a. smithsonianus)* are also involved may be inferred from a hybrid (Natl. Mus. Canada no. 425558) collected in a colony of Glaucous Gulls at the mouth of the Anderson River, N.W.T., Canada; in that area both parental species occur in close proximity.

Although hybrid gulls are not well known, they are certainly more frequent along the west coast than the literature suggests. Few workers in the past several decades have been seriously concerned with problems of gull taxonomy. As a result, most collections have received inadequate study. Misidentified specimens, including adult hybrids, can be found in even the best-curated collections (Devillers et al., 1971) and serious field study backed by collecting would certainly turn up more.

In summary, isolating mechanisms are not yet well developed among the large gulls of western North America and hybridization may be expected in zones of overlap. Moreover the combined effects of climatic amelioration and the population explosion occurring among many species that inhabit dumps in winter can be expected to result in shifts in distribution, the establishment of new colonies, broader zones of overlap, and increasing probability of hybridization. Field observers should be aware of these possibilities. They can contribute significantly to our knowledge of gull relationships by documenting changes in size and distribution of gull colonies and by collecting oddly-plumaged gulls for critical examination.

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