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AN APPARENT HYBRID BETWEEN HOODED MERGANSER AND BARROW'S GOLDENEYE AT LAKE MERRITT, OAKLAND, CALIFORNIA

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Hybridization in birds usually occurs between closely related species within the same genus. Intergeneric hybrids are of particular interest because they may be evidence of a close relationship between two genera. Originally described in the genus *Mergus*, the Hooded Merganser (*L. cucullatus*) was segregated in the genus *Lophodytes* in 1853, and the American Ornithologists' Union has maintained it in that genus through all seven editions of its checklist. Delacour and Mayr (1945), however, lumped *Lophodytes* back into *Mergus*, and some authors, such as Johnsgard (1975, 1979), have followed this classification. In some respects the Hooded Merganser is intermediate between *Bucephala* and *Mergus* (Johnsgard 1961, Dugger et al. 1994). In his studies of waterfowl morphology and relationships, Livezey (1986, 1995, 1997) maintained the genus *Lophodytes*. He found the Hooded Merganser to represent an early branch of the mergansers, lying outside a cluster including the Common (*M. merganser*) and Red-breasted (*M. serrator*) mergansers and just above the branch leading to the genera *Bucephala* and *Mergellus*.

I report here an apparent natural intergeneric hybrid between the Hooded Merganser and Barrow's Goldeneye (*B. islandica*). This hybrid combination has not been described previously (Gillham and Gillham 1996, 2002). Hybridization between the Hooded Merganser and Common Goldeneye (*B. clangula*) is well known, and there have been reports of hybrids between the Hooded Merganser and a goldeneye where the parental species of goldeneye was unknown. One of the parents of some of these previously undetermined hybrids could have been Barrow's Goldeneyes (Gillham and Gillham 1996).

In the wild, the Hooded Merganser has hybridized with the Wood Duck (*Aix sponsa*), Common Goldeneye, Red-breasted Merganser, and Bufflehead (*B. albeola*) (Russell 1978, Cockrum 1952, Dugger et al. 1994, Gray 1958, Gochfeld 1976, Johnsgard 1960, Sibley 1994, Millard 1994, Gillham and Gillham 1996, Jorgensen 1997, Erickson 1952, Marcisz 1981). In captivity it has also hybridized with the Redhead (*Aythya americana*), Smew (*Mergellus albellus*), and Common Merganser (Gray 1958, Gillham and Gillham 1996, Johnsgard 1960). Sibley's (1994) report of a hybrid between a Gadwall (*Anas strepera*) and a Hooded Merganser appears to have been an error (D. A. Sibley pers. comm.).

In the wild, the Barrow's Goldeneye has previously been known to hybridize only with the Common Goldeneye (Eadie et al. 1995, 2000, Snyder 1953, Gray 1958, Jackson 1959, Johnsgard 1960, Martin and Di Labio 1991, 1994a, b, Nelson 1993, Sibley 1994, Gillham and Gillham 1996). In captivity, however, hybrids have been reported with the Spectacled Duck [*Anas (Specularnas) specularis*] and Bufflehead (Scherer and Hilsberg 1982, Gillham and Gillham 1996).

On 15 March 2004, Bob Battigan found and photographed (middle photo on back cover) an immature male diving duck at Lake Merritt that he identified as a Hooded Merganser × goldeneye. The bird was seen and photographed (photo posted at www.petrels.com/duck1.htm) the next day by Rich Stallcup and Deborah Fitzpatrick (Terrill et al. 2004). Note that, except for the bill shape, this bird looks very similar to an immature male Hooded Merganser and would be easy to overlook.

On 8 January 2005, at Lake Merritt, Ron Thompson reported an "interesting bird that seems to be a hybrid between a Hooded Merganser and Barrow's Golden-

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eye.” This bird was described independently on 12 January 2005 by Travis Hails, who noted it displaying to, and head-bobbing with, a male Barrow’s Goldeneye. On 19 January, Steve Look obtained photos (posted at <http://home.earthlink.net/~chamaea/20050119.htm>), and on 22 January, I observed the bird and obtained photos (posted at <http://community.webshots.com/album/257396144ThUYje>) (Terrill et al. 2005). On 23 January, Joyce Gross obtained a superb set of photos (posted at <http://hyla.cs.berkeley.edu/hybrid/>) showing the bird devouring mussels. One of the images from her series is the top photo on the back cover of this issue.

This bird continued to be seen and photographed through 27 February (Mast 2005, Terrill et al. 2005). Because of the rarity of this hybrid combination, the immature male seen in 2004 is likely the same individual returning to this location as an adult in 2005. It associated with a mixed flock of both goldeneye species and may have migrated with them.

Given the appearance of this individual, it seems certain that one parent was a Hooded Merganser. There has been a strong consensus among waterfowl experts and others who have examined the photos that the other parent was a Barrow’s Goldeneye. It shows some features found on known hybrid Hooded Merganser × Common Goldeneyes including a fairly long narrow black bill with a broad base, vermiculated dark sides, dark head, and fairly obvious crest. Features that support the identification of one parent as a Barrow’s Goldeneye include the dark scapulars with well-defined white “piano key” markings, strong purple iridescent head sheen when seen in good light, and a steeply angled forehead in most views. I compared our bird with photos of presumed Hooded Merganser × Common Goldeneyes and found that our bird differed consistently from them in these characters. For comparison, an example of a Hooded Merganser × Common Goldeneye appears as the bottom bird on our back cover. It was photographed at Lake Ogalalla, Nebraska, on 31 December 2004 by Bill Schmoker. Note the obvious green sheen to the head, more extensively white scapulars, and lack of a forward shoulder stripe on this bird.

Hybrids between the Hooded Merganser and Common Goldeneye vary considerably. One fairly common variant shows a white patch on the side of the head. Although identity of the Oakland hybrid is tentative, its being a Hooded Merganser × Barrow’s Goldeneye is strongly supported not only by the bird’s appearance but by its behavior in displaying to male Barrow’s Goldeneyes. Furthermore, this hybrid combination is not unexpected given the breeding biology of cavity-nesting ducks (see below).

A plausible mechanism for this type of hybridization is interspecific brood parasitism (egg-dumping) by females of one species into the nests of other cavity-nesting species. Barrow’s Goldeneyes parasitize, and are parasitized by, Common Goldeneyes, Buffleheads, Hooded Mergansers, Wood Ducks, and Red-breasted Mergansers (Palmer 1976, Eadie et al. 2000). Hooded Mergansers parasitize, and are parasitized by, Common and Barrow’s goldeneyes, Common Mergansers, and Wood Ducks. Hooded Mergansers normally reject goldeneye eggs from their nests, but goldeneyes apparently accept Hooded Merganser eggs (Dugger et al. 1994, Eadie et al. 2000). Thus it is more likely that a Hooded Merganser chick would be raised by a goldeneye than the reverse. When this happens, the foster chick may imprint on its adoptive parent.

An interesting example of this type of interspecific imprinting occurred a few years ago when a male Hooded Merganser, wintering on Lost Lagoon in downtown Vancouver, British Columbia, ignored the other Hooded Mergansers on the lagoon, consorting only with a flock of Barrow’s Goldeneyes. Throughout the season, this bird displayed to a female Barrow’s Goldeneye, behavior that might be expected of a bird that had been raised by Barrow’s Goldeneyes (Michael Price pers. comm.).

Most previously documented natural hybrids of the Hooded Merganser or Barrow’s Goldeneye involve the same species pairs involved in known mixed clutches. The exception is Hooded Merganser × Barrow’s Goldeneye, which has known mixed

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clutches but no previously documented natural hybrids. Thus this hybrid combination was expected.

Studies of the diet of the Hooded Merganser have found that it normally eats fish, with shellfish forming less than 5% of the diet. Compared to other mergansers, however, this species has an unusually thick-walled gizzard, allowing it to eat more hard-shelled invertebrates such as crayfish (Dugger et al. 1994). The diet of Barrow's Goldeneye is quite different with mollusks, notably blue mussels and periwinkles, particularly important during winter (Eadie et al. 2000). Thus the observed diet of the Lake Merritt hybrid was more like that expected of a Barrow's Goldeneye than of a Hooded Merganser, although its bill structure was close to that of a Hooded Merganser.

Reports of hybrids between the Hooded Merganser and Common Goldeneye are increasing, and such hybrids now appear annually in the Great Lakes region (John Idzikowski in litt.). Hybrids between the Hooded Merganser and goldeneyes are far more frequent than hybrids between the Hooded Merganser and other mergansers. Thus the Hooded Merganser's current placement in a genus other than *Mergus* seems warranted.

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Back cover “Featured Photos” by © Joyce Gross of San Leandro, California: presumed Hooded Merganser × Barrow’s Goldeneye (*Lophodytes cucullatus* × *Bucephala islandica*), Oakland, California, 23 January 2005 (top); © Bob Battagin of Oakland, California: presumed Hooded Merganser × Barrow’s Goldeneye (*L. cucullatus* × *B. islandica*) Oakland, California, 15 March 2004 (middle); and © Bill Schmoker of Longmont, Colorado: presumed Hooded Merganser × Common Goldeneye (*L. cucullatus* × *B. clangula*), Lake Ogalalla, Nebraska, 31 December 2004 (bottom).