

**First Japanese records of
crosses between Whistling
Cygnus columbianus
columbianus and Bewick's
Swans *C. c. bewickii***

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"Crossed" families of Bewick's and Whistling Swans were observed four times. Three of four were between "Darky" Bewick's and Whistling Swans and the other between a "Yellowneb" Bewick's and a Whistling Swan. The bill patterns of juveniles varied but were intermediate types of the two subspecies.

Cygnus columbianus has two subspecies; *C. c. columbianus* (Whistling Swan) is distributed mainly in North America, and *C. c. bewickii* (Bewick's Swan) in Eurasia. Both subspecies breed in the Arctic region, *columbianus* in Alaska, Hudson Bay, and Buffin Island of North America, and *bewickii* along the Arctic Ocean in Eurasia (Palmer 1976). In Japan, some 10,000 *bewickii* winter and, at the same time, several *columbianus* have been observed every year, mainly among the flocks of *bewickii*. I have recorded hybrid *columbianus* x *bewickii* four times in Japan since December 1985.

As far as I know, these constitute the first records. The first trustworthy observation was made at R. Kitakami, Kitakami, Iwate Pref., on 28 February 1988 by members, including myself, attending the meeting of the Swan Society of Japan at Morioka, Iwate. Among about 80 Whooper Swans *Cygnus cygnus* and 70 *Cygnus columbianus bewickii* we found one mixed family of *Cygnus columbianus* (Fig. 1) containing four birds, two adults and two juveniles. One adult, which acted like a male throughout the long-term observations by T. Ito *et al.*, was *C. c. columbianus* whose bill was almost black except for a very small yellow



Figure 1. Mixed family of *C. columbianus* at R. Kitakami. Photo by Kaneshiro Kon.

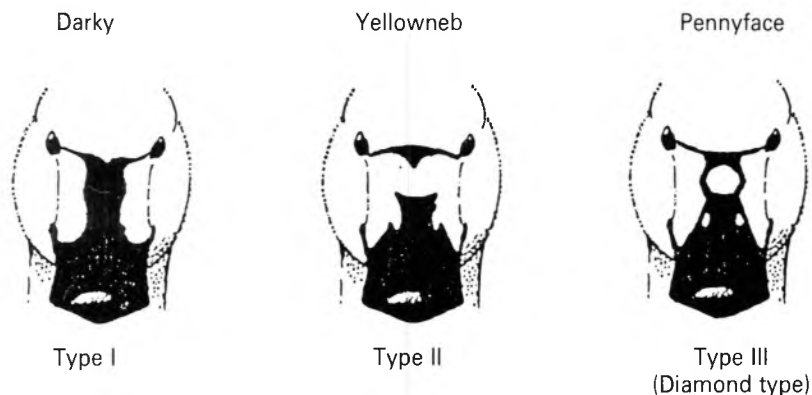


Figure 2. Bill patterns of Bewick's Swans (from Evans 1977).

line only on the left lore. The other adult, supposed to be female (by T. Ito *et al.*) was a *C. c. bewickii* which belonged to the "Darky" type (Fig. 2) (Mikami 1966, 1971, 1976, 1977, 1988, Evans 1977). One juvenile was somewhat similar to *columbianus* and the other juvenile to *bewickii*.

Another "cross" family was found at Kohya-ike, Kagamiishi, Fukushima Pref., on 7 November 1987 (Y. Suzuki and H. Yagi). I observed this family on 6 March 1988 with the help of Mr Suzuki and Mr Yagi. Two adults and two juveniles made up the family of which one adult seemed to belong to *columbianus*, the other to the "Darky" type of *bewickii*. Two hybrid juveniles were distinguished among others by checking dozens of photos taken by Mr Yagi. Kohya-ike is a small pond, where about 800 swans (both *C. cygnus* and *C. columbianus*) winter in a compact flock, so that photos of this family could not be taken.

When I arrived at Kohya-ike, I found a photograph in the album owned by Mr Y. Suzuki taken by Mr M. Omata, showing another mixed family. Though the head of one adult was out of frame, this individual is known from the observations of Mr Yagi and Mr Suzuki to be a typical *C. c. columbianus*. The other adult is *bewickii*

belonging to the "Darky" type. Two juveniles of the three belonging to this family seem to resemble *bewickii* and *columbianus*.

Thus there are three records of hybrids between "Darky" *bewickii* and *columbianus*. On the other hand, a fourth 'cross' family was found at Mawarizeki in Hirosaki, Aomori Pref., on 14 November 1987 by Mr H. Kawaguchi. This family, which stayed for a short time on its way to the wintering ground, had one adult of typical *columbianus*, one adult "Yellowneb" type *bewickii* (Fig. 2) and two juveniles.

A few hybrid families and several possible *columbianus* x *bewickii* intergrades have been reported recently in North America (Stallcup & Winter 1975, 1976, Winter & Manolis 1978, Evans & Sladen 1980).

D.K. Scott (1981) showed that the proportion of "Darkies" in Japan was significantly higher and of "Yellowneb" lower than among western Bewick's Swans wintering in England. She also suggested a substantial gene flow across the Bering Straits between eastern Bewick's Swans and the con-specific Whistling Swan which agrees well with our findings.

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