

the hybrid is that its *Anser* parent was a White-fronted Goose.

Mr. Montgomery also mentioned that he feels that the hybrid goose in my published photographs shows subtle domestic characteristics, specifically upright carriage and a pot belly. If one looks at the photo showing the hybrid with a Canada Goose, one will note that both birds show upright carriage. This is because they were alert — I had been stalking them with my camera for a few minutes, and the hybrid's entire subgroup (the presumed family) was well aware of my presence and consequently appeared nervous. As for the pot belly, this is a somewhat subjective observation which is not apparent to me.

Mr. Montgomery's observations of hybrid geese during the migratory and wintering periods do not preclude *Anser albifrons* as a parent if the hybrid is with a migratory flock of *Branta canadensis* (particularly if they are of the *interior* race). For example, were the hybrid birds seen at Fermi Lab with a migratory group of Canada Geese? Were they seen at Fermi all winter? What subspecies of Canada Goose were they closely associating with? It is possible that these were more hybrids similar to the one at Brookfield Zoo, also associating with a flock of *Branta canadensis interior*, some of which were their "families" (see Palmer 1976 for a discussion of Canada Goose families).

Finally, to address Mr. Montgomery's questioning of my identification of the Canada Goose race *interior* as the parent of the observed hybrid goose (his point c), I feel that in his discussion of the wintering ranges of White-fronted and *interior* Canada Geese he is begging the issue of overlap. A quick comparison of the full extent of the wintering ranges of the two species (see Ely and Dzubin 1994 for White-front; Palmer 1976 for *interior* Canada) shows at least historical overlap along the Gulf Coast, and Trost *et al.* (1981) mention that Mississippi Valley population Canada Geese alter their wintering areas, staying in more northerly areas unless cold weather forces them

to move south. They therefore move in and out of the wintering range of White-fronted Geese, depending on the conditions in a given year. Also, Mr. Montgomery's point that both *interior* and *Anser albifrons* are now found wintering in southern Illinois actually lends weight to the presumed parentage of the observed hybrid. Both species form pair bonds during winter (Palmer 1976), and it is much more likely that an *interior* Canada would encounter and then mistakenly pair with a White-front than with a domestic goose.

Greater White-fronted Geese are known to engage in extra-pair copulations both forced and unforced (Ely 1989). While these observations were of intra-species behavior during the breeding season, this establishes that promiscuity is part of the behavioral repertoire of a seemingly monogamous bird with strong, stable pair bonds (Ely 1989; Ely and Dzubin 1994). The fact that extra-pair copulations occur is important, because it shows that there would be no need for a permanent pair bond in an *Anser*

X Branta cross. If a female Canada Goose was forcibly copulated with by a male Greater White-fronted Goose during her laying period, a hybrid could result and be raised by two Canada parents. This would explain why the observed hybrid was not with a mixed-species family.

The rarity of this cross in the wild, as commented on by Mr. Montgomery, is to be fully expected. Hybrids are rare even in the notably promiscuous ducks and are probably more so in the monogamous geese, which hold territories on the breeding grounds and show male mate defense. Also, a cross-generic hybrid would be extremely unusual, but it is clear that the observed hybrid arose from just such a cross. All that I have presented above has further convinced me that I was accurate in my original identification of a hybrid goose found on the Brookfield Zoo grounds on 27-28 November 1994 as the result of a cross between *Branta canadensis interior* and *Anser albifrons frontalis*.

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