and biogeography: cladistics and vicariance. New York, Columbia Univ. Press.

OLSON, S. L. 1979. Multiple origins of the Ciconiiformes. Proc. Colonial Waterbird Group 1978: 165–170.

———. 1982. A critique of Cracraft's classification of birds. Auk 99: 733–739.

———, & A. FEDUCCIA. 1980. *Presbyornis* and the origin of the Anseriformes (Aves: Charadriomorphae). Smithsonian Contrib. Zool. 323: 1–24.

RAIKOW, R. J. 1981. Old birds and new ideas: progress and controversy in paleornithology. Wilson Bull. 93: 407–412.

———, & J. CRACRAFT. 1983. Monophyly of the Piciformes: a reply to Olson. Auk 100: 134–138.

WETMORE, A. 1934. Fossil birds from Mongolia and China. Amer. Mus. Novitates No. 711: 1–16.

———. 1960. A classification for the birds of the world. Smithsonian Misc. Coll. 139(11): 1–37.

WILEY, E. O. 1981. Phylogenetics: the theory and practice of phylogenetic systematics. New York, John Wiley & Sons.

Received 21 June 1982, accepted 16 November 1982.

Evidence for Hybrid Murre Reconsidered

RONALD SLUYS[1]

In accordance with a recent editorial (Wiens 1981), which expressed the view that scientists should read published papers critically and not hesitate to note in print certain flaws discovered in the articles in question, I would like to make some comments on a paper by Cairns and deYoung (1981).

Cairns and deYoung (1981) described a breeding pair of murres from Newfoundland, one member of which was a Common Murre (*Uria aalge*) and its partner an apparent hybrid between *U. aalge* and the Thick-billed Murre (*U. lomvia*). Indications of the hybrid nature of the latter bird were the white gape mark that was "similar to that of *lomvia* in position, length, and pigment density, but about one half as wide," the intermediate appearance of the inverted white V-form on the throat, and the intermediate color of the upperparts. Neither color (variable in both species and dependent on conditions of observation) nor shape of the point of the breast plumage on the neck was considered decisive evidence for the hybrid origin of the bird. Consequently, the entire argument hinges on the presence of a white gape mark in the bird in question. This feature, however, is unreliable in identifying possible hybrid birds, whereas other distinguishing features were ignored by Cairns and deYoung.

Possible hybrid murres with narrow white gape marks were recorded for the first time from northern Norway (Tschanz and Wehrlin 1968). These authors observed an actual case of hybridization between a mixed breeding pair of *lomvia* × *aalge*, which raised a chick that lived at least 10–12 days. Unfortunately, from the photograph they published of the parents and their young, one cannot see properly whether the juvenile bird was similar to *aalge* or to *lomvia*. It looks as if the young bird lacks the white feathers behind the eye and across the hind neck and the white patches at the side of the neck with a narrowing brown line running backwards from the eye, which are characteristic for chicks of *aalge* (Sluys MS). In the same breeding colony Tschanz and Wehrlin (1968) observed several birds with narrower white gape marks than normal *lomvia* specimens. They stated, cautiously, that this might be the result of hybridization. Tschanz and Wehrlin were quite correct in their critical approach, because a narrow white gape mark is insufficient evidence for a hybrid murre. Pale, horn-colored gape marks are present occasionally in the Common Murre, although they are never as broad as in *lomvia* (cf. Yadon 1970, Smith 1981, de Wijs 1981). According to Cairns and deYoung, their apparent hybrid showed a rather narrow, but still distinctly lanceolate, white gape mark. If the authors were able to observe that the gape mark was "distinctly lanceolate in shape," then it cannot have been all that narrow.

Moreover, in murres the sheath of the bill is shed in bits and pieces, which could explain the temporary narrow appearance of the white gape mark. The timing of this shedding is not well known, but it is probably paralleled by the post-breeding body molt, which lasts from the end of July to late September. The shedding of the bill sheath results in the gape mark of *lomvia* being yellow-brown in winter (Sluys MS).

Thus, cases of possible hybrid murres should be substantiated by stronger evidence. As it may be expected that hybrids are intermediate between their parents in several characters, notice should be taken of a number of features. For example, the shape of the bill should be taken into consideration. Common and Thick-billed Murres differ considerably in the length and depth of the bill, although some overlap exists. In *lomvia* the angle of gonys is generally much more prominent. Cairns and deYoung made no mention at all of the shape of the bill. The Thick-billed

[1] Institute of Taxonomic Zoology, University of Amsterdam, Postbox 20125, 1000 HC Amsterdam, The Netherlands.

Murre also differs from the Common Murre in the fact that the feathering on the bill does not reach the cutting edges of the upper mandible at the gape. With regard to this feature, the apparent hybrid depicted in Tschanz and Wehrlin (1968) could be considered, with some justification, as intermediate. With respect to the bill, attention should also be paid to the tips of the mandibles, which are horn-colored in *lomvia*, as is the angle of gonys in winter (Sluys MS).

There are some differences between *lomvia* and *aalge* in the amount of streaking on flanks and thighs. The Thick-billed Murre shows some brownish black streaks only on the lower part of the flanks. In the Common Murre the amount of streaking varies geographically. For example, birds from Bear Island, Faeroes, and Shetland are generally heavily streaked, whereas birds from the Baltic Sea and Britain generally show few streaks (Sluys MS). Thus, the amount of streaking is not a very reliable character to use in an assessment of the hybrid nature of certain specimens, because in *aalge* character expression depends on the population studied. The same holds true for the amount of brown spotting on the under wing- and primary-coverts. Brown spotting is generally absent on under wing- and primary-coverts of the Thick-billed Murre.

Uria lomvia and *U. aalge* differ in the color of the shafts of the primaries. In *lomvia* these are brownish black and dark horn-colored only at the base, whereas in *aalge* they are for their greater part horn-colored, becoming pale brown at the tips.

In the assessment of the hybrid origin of any particular murre, all the mentioned features should be taken into consideration, weighed carefully, and documented by means of photographs, sketches, or biometrical data. Meager evidence based on a single character should not be considered sufficient in such a difficult problem.

Cairns and deYoung wrote that hybridization could be more extensive than is suggested by the single record of Tschanz and Wehrlin (1968). Tschanz (1972), however, showed that, despite similarities in certain behavior patterns and vocalizations, both species also produce different vocalizations and have different behavior patterns. Certain behavior and calls induce responses only in animals of the same species. Tschanz suggested that the differences in behavior patterns between the two species may act as isolating mechanisms. This seems very likely and I consider the paucity of hybridization records to be representative of the true situation.

I thank Dr. J. Wattel for criticizing the manuscript.

Literature Cited

Cairns, D. K., & B. deYoung. 1981. Back-crossing of a Common Murre (*Uria aalge*) and a Common Murre-Thick-billed Murre hybrid (*U. aalge* × *U. lomvia*). Auk 98: 847.

Smith, D. A. 1981. Plate 30b. Scottish Birds 11, no. 8.

Tschanz, B. 1972. Beobachtungen an Dickschnabel- und Trottellummen (*Uria lomvia* und *aalge*) auf Vedöy (Lofoten, Norwegen). Ornithol. Beobacht. 69: 169–177.

———, & J. Wehrlin. 1968. Kreuzung zwischen Trottellumme und Dickschnabellumme. Fauna 21: 53–55.

Wiens, J. A. On skepticism and criticism in ornithology. Auk 98: 848–849.

de Wijs, W. J. R. 1981. *Uria aalge hyperborea* in Nederland? Limosa 54: 63–64.

Yadon, V. L. 1970. Four Thick-billed Murre records for Monterey Bay. California Birds 1: 107–110.

Received 29 March 1982, accepted 30 September 1982.

Evidence for Hybrid Murre Reconsidered—A Comment

D. K. Cairns[1]

In his paper, Sluys (1983) expresses scepticism on a recent record of a possible Common Murre-Thick-billed Murre hybrid (*Uria aalge* × *U. lomvia*) (Cairns and deYoung, 1981). His dismissal of the possible hybrid is based on the view that "meager evidence based on a single character should not be considered sufficient in such a difficult problem." This argument ignores the fact that a hybrid origin for the bird in question was suggested by three characters, which were intermediate between parental forms. Sluys correctly points out that the one character he considered (the gape mark) does not provide conclusive evidence for hybridization. Likewise, the other intermediate traits we mentioned, namely head and back coloration and the degree of pointedness of the white plumage in the neck region, show intraspecific variability and do not constitute decisive evidence. Intermediate states of three characters in the same individual, however, suggest either a purebred with a statistically improbable combination of aberrant traits, or a hybrid.

Tschanz and Wehrlin (1968) showed that Common Murre-Thick-billed Murre pairing is possible, so the behavioral barriers that normally prevent hybridiza-

[1] Department of Biology, Carleton University, Ottawa, Ontario, K1S 5B6 Canada.