underwing and red legs at close range when the bird preened and lifted its wings. All three of the authors are familiar with Black and Pigeon Guillemots (*Cepphus columba*) and concluded that this bird was a Black Guillemot, particularly because of its white underwing coverts.

Although Black Guillemots normally winter in the northwestern Atlantic, they are described as casual south to Long Island and New Jersey by Harrison (1983). There are at least three sightings of Black Guillemot from South Carolina (Potter, Parnell, and Teulings, 1980), including a recent find documented with a photograph (Buerger, 1993). However, we have been unable to find any prior reports from North Carolina.

The North Carolina Bird Records Committee accepted the written description of this bird provided by Sam Cooper, placing the species on the Provisional list (North Carolina Bird Records Committee, 1994).

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Mobbing of South Polar Skua by Cory's Shearwaters off the North Carolina Coast

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In the ornithological literature, mobbing is a poorly understood phenomenon involving the collective harassment of predatory or kleptoparasitic birds by potential prey or victim species. Mobbing has not been recorded in Procellariiformes, despite voluminous literature on this group (*e.g.*,

Warham 1990, 1996, 1997). It was therefore of interest when a small party aboard the *Country Girl* observed the repeated harassment of a South Polar Skua *(Catharacta maccormicki)* by some 7-15 Cory's Shearwaters *(Calonectris diomedea)* on 7 June 1993, at 35° 21' N, 74° 55' W, from 1015 until 1028 EDT.

As the boat neared a group of 45 Cory's and 12 Greater *(Puffinus gravis)* Shearwaters feeding in a tight formation, or "beehive," over large predatory fish, we noticed the approach of a juvenile South Polar Skua from the southeast. The bird made an inconspicuous approach in direct-line flight at least 200 m in distance, about 0.5 m above the ocean's surface. As the skua came within several m of the shearwater group, it rose sharply and began stooping on the birds in an effort to force regurgitation (Figure 1; note extreme distension of the neck in the pursued Cory's Shearwater). Of 36 passes, 32 originated from above the shearwaters, as is typical of the genus (Furness 1987, Nelson 1979), whereas four passes were on level terms with the shearwaters (as in Figure 1). Two attacks involved mid-air collisions of apparently considerable force, and about eight resulted in a Cory's Shearwater literally crashing into the water from a height of 1-2 m.

The shearwaters' response to the attack initially showed no coherent, coordinated evasive maneuver: all simply scattered very short distances in different directions. Three times, however, the skua left the group, continuing a low-altitude, direct flight. On all three occasions, small groups (7, 15, 15) of Cory's Shearwaters pursued the skua in single file (once) or V-formation (twice). The shearwaters, joined on one occasion by a Greater Shearwater, flew in a manner not obviously caused by agitation, but their pursuit was in very low (less than one m above the ocean's surface), direct-line flight with very shallow, rapid wingbeats, reminiscent of a small jaeger's flight. The shearwaters were able to keep up with the skua and nearly to overtake it by means of this mode of flight. I have observed this style of flight only rarely, usually by single Cory's that are having difficulty passing Cape Hatteras Point (Dare County) during southeasterly gales.

In the first two departures noted above, the shearwaters' aggressive behavior, apparently a form of mobbing, was met with remounted attacks from the skua. The skua rose rapidly several m, turned on its pursuers, and commenced battering them as before. On the third departure from the group, the skua could not be relocated. Only once was the skua able to force food from a Cory's, but it did not recover the regurgitant from the ocean.

Figure 1. South Polar Skua (Catharacta maccormicki) attacks Cory's Shearwater (Calonectris diomedea) off central North Carolina at approximately 35° 21' N, 74° 55' W. 7 June 1993. Photograph by Alan Brady.

In most instances in which South Polar Skuas have been observed in the vicinity of shearwaters off the coast of North Carolina, the species is occupied with the pursuit of larger shearwaters (T. Hass, B. Patteson, pers. comm.; pers. obs.). A juvenile light-morph South Polar Skua observed on 8 August 1994 was exceptional in our experience in favoring Audubon's Shearwaters *(Puffinus lherminieri),* even though numbers of Cory's were present. This individual, and another observed by Brian Patteson and others on 18 June 1994, pursued adult White-tailed Tropicbirds. In both cases, the tropicbirds unsuccessfully attempted to ascend skyward more rapidly than the skua (see Brinkley 1994). Subsequently, twice in August 1997, Patteson, Grayson Pearce, and the author observed attempted mobbing of single subadult Pomarine Jaegers *(Stercorarius pomarinus)* by Black-capped Petrels *(Pterodroma hasitata).* In both cases, small groups (5-10) petrels rose from the

ocean's surface or moved toward the jaeger with a level, direct flight style similar to that described for Cory's Shearwater. In neither case was the mobbing clearly coordinated, nor did the petrels reach the jaeger, such that no further behavioral interactions were noted.

It is unclear what advantage mobbing might have in a situation such as the one described. A predatory bird with the agility and aggression of a skua would seem unlikely to modify its behavior as a result of collective harassment, and the Cory's Shearwaters expended valuable energy reserves in this powered flight style. As Trivers (1972) points out, expenditures of time and energy are probably less important for assessing behavioral costs than is risk. Several authors (Sordahl 1990, Curio and Regelmann 1986) have argued that mobbing and distraction behavior represent significant risks, although risk as such is very difficult to study and quantify. (As skuas are known to have eaten shearwaters, some risk to Cory's Shearwaters was probably present on 7 June 1993.) Instances in which mobbers are attacked or killed abound in the anecdotal literature (reviewed in Sordahl 1990), but in the overwhelming majority of cases, mobbing and distraction are parental responses to perceived threats (Shedd 1978). The "move on" hypothesis of mobbing states that "a predator should leave an area the sooner, the more intensely, and/or the longer it is molested" (Zimmerman and Curio 1988, Hennessy 1986) and that it is less likely to renew its attacks (Curio 1978).

At first this seems to have little explanatory power in the context of nonbreeding Cory's Shearwaters' mobbing of a skua, a situation of apparent risk and low effectiveness. However, because Cory's Shearwaters off North Carolina are dependent upon patchy and short-lived resources (Haney and McGillivray 1985, Haney *et al.* 1992), the advantages of quickly discouraging kleptoparasitic activity may be worth the risk involved. Zahavi (1977) asserts that self-endangering behavior may serve as a "bluff" to suggest the gravity of the mobbers' threat (see also Maynard Smith and Parker 1976). Inasmuch as the skua eventually left the area, the latter explanation may be the most plausible. In the five years of intensive field study of seabirds aboard the *Miss Hatteras* and the *Country Girl* in this decade, no other instances of mobbing behavior have been noted.

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