

the Mallard are white or near-white with a central stripe of brown; on the New Mexican Duck they are dark brown with an edging of light brown. Observations made so far indicate this is the most striking single difference between the two (Figure 1-4).

The small under wing coverts, at the proximal end of the ulna, are boldly barred on the New Mexican Duck and on the Mallard are hardly marked at all (Figure 1-5).

The flank area of the Mallard is lighter than the flank on the New Mexican Duck, with more bold patterning as described for the tail feathers. The buff area under the chin and throat is darker on the New Mexican Duck. This area on the male was described by Huber (*Auk*, 37: 273-274, 1920) as "pinkish buff." The head of the New Mexican Duck is browner with very little of the greenish, iridescent effect present on the Mallard.

The bill of the female New Mexican Duck as immature was more finely spotted and the spots less numerous than on the Mallard. As maturity developed and the orange and black of the bill of the female Mallard intensified, the bill of the female New Mexican Duck became darker, shading to olive-green with very little orange near the base.

In the wing, the tertials of the New Mexican Duck are overlaid with a slightly iridescent, greenish cast, and in the Mallard the same area is gray. The speculum in the New Mexican Duck was described as "dark dull bluish-violet" by Huber. In some cases and under poor light conditions this is correct. However, under other conditions, especially when the wing is wet, the speculum is greenish-blue to really bright green. The white border of the speculum on the forward edge is much less distinct on the New Mexican Duck than on the Mallard (Figure 1-6) and in some cases almost absent; the white being diffused with brown and dusky splashing.

The breast of the Mallard is much lighter in color than that of the New Mexican Duck. The breast feathers of the Mallard are light tan to tannish-gray, with a brown spot near the center of the tip, and lighter brown stripes on either side of the quill. On the New Mexican Duck this may vary from three larger brown spots, one at the tip and one on either side of the quill, to a pattern in which these spots are joined in a *fleur-de-lis*-like pattern with a light stripe along both sides of the quill (Figure 1-7).—WILLIAM S. HUEY, *P.O. Box 4201, Santa Fe, New Mexico*.

**An Enigmatic Northward Migratory Flight off North Carolina in September.**—On 26 September 1960 I witnessed northward flights of migrating landbirds across Onslow Bay, North Carolina. I observed the migrants with binoculars from the bridge of a U.S. Navy ship that was anchored about three kilometers (two miles) off-shore, just north of the New River Inlet (about 58 kilometers—35 miles—west-southwest of Beaufort). By referring to a gyroscopic compass

---

**Figure 1. Feather comparisons between New Mexican Duck (*Anas diazi novimexicana*) and Mallard (*Anas platyrhynchos*) females in adult plumage. These feathers are from various sections as listed, where obvious differences occur. 1—tail, 2—upper tail coverts, 3—saddle, 4—under tail coverts, 5—under wing, 6—secondary wing coverts, 7—breast. In all cases the specimen labeled A is from the Mallard and B from the New Mexican.**

repeater mounted on the bridge, I was able to estimate the approximate direction of flight of birds flying toward or away from the ship. Most of the birds were warblers, although several Yellow-shafted Flickers (*Colaptes auratus*) and a Wood Thrush (*Hylocichla mustelina*) also flew by. The only warblers positively identified were two Redstarts (*Setophaga ruticilla*) and a Black and White Warbler (*Mniotilta varia*); a Yellowthroat (*Geothlypis trichas*) was found dead on the ship.

TABLE 1

FLIGHT DIRECTIONS OF LANDBIRDS OFF NORTH CAROLINA, 26 SEPTEMBER 1960

Time	Identification	From	To	Remarks
0540	flicker			landed
0540	3 small passerines			landed
0545	flicker	south		
0553	small passerine	270°		
0554	small passerine	185°		landed
0555	small passerine	300°		called "zip"
0600	warbler	305°		
0602	Black and White Warbler			on ship
0607	small passerine		045°	
0648	Wood Thrush		050°	landed before flying
0648	Redstart	250°		
0649	2 warblers		050°	
0650	Redstart (male)	250°		
0650	warbler (yellowish)	250°		
0651	flicker		080°	
0659	warbler			circled
0711	flicker			landed
0724	small passerine (brown)			landed
0725	flicker	225°		landed
0729	flicker		045°	
0734	(warbler)			"zeet" heard overhead
0735	(warbler)			"zeet" heard overhead
0737	small passerine (olive)		060°	landed
0737	warbler			landed

Table 1 presents a summary of the birds seen between 0530 E.S.T., when it first began to become light, and 0740, when I left the bridge. The directions are in degrees true, as estimated. It is evident from Table 1 that the general direction of flight was from the south to the north. More properly, the directions appeared to parallel the coastline, which runs approximately 240° to 060°.

The weather was cool and foggy, although the coast could be seen from the ship. Most of the birds were seen arriving or departing from the ship. But some were seen only while on the ship, and their directions of flight are unknown. Such was the Black and White Warbler that I discovered at 0602 on a life raft. A sailor explained that, a moment before I arrived, he had frightened about half a dozen small birds from inside the raft. Apparently they had been seeking shelter from the unusual cold and from the wind, which was coming from 025°-035° at about 20 knots. A warbler at 0737 took off facing 060°, but the wind carried it backward; after losing several hundred meters, the bird swooped down near the water, flew back to the ship and landed. I noted that flickers

invariably flew close to the water, perhaps to escape the wind. A warbler at 0659 circled higher and higher above the ship until the bird was out of sight.

A female Yellowthroat was found dead on the ship and given to me. I noted that it had none of the subcutaneous fat reserves characteristic of many warblers that I have banded during fall migrations in past years. After inspecting the abdomen, flanks, and furculum, I dissected the bird and likewise found no visible fat stored in the alimentary tract. The autopsy confirmed its sex, since the specimen appeared to have a partially recrudescing left ovary. The bird seemed to have died of a broken neck, possibly as the result of flying into some part of the ship.

Why should these migrants have been heading north? Lack (*Auk*, 77:171-209, 1960) has recently concluded that in north-temperate regions, fine weather, clear skies, light winds, and, in autumn, cold are favorable for normal, migratory flights. The migration on the morning of the 26th followed a night with clear skies and a north-northwest wind. The synoptic weather map showed a low-pressure area near Bermuda and a high-pressure area over the Eastern United States. Since air movement around a low is counterclockwise, and, conversely, around a high is clockwise, a trough of air should have been moving from the north down the Atlantic coast to the south on that morning. This conclusion is in accord with my observations on the local surface winds. At any rate, all prevailing conditions except the fogged-over sky were not only favorable but were ripe for normal southward migration. Sky cover is known to halt migration. The warbler that circled above the ship may be evidence of confusion in navigation. However, the coastline was visible, and most of the birds were well oriented to the northeast. It seems unlikely that navigational difficulties per se caused the reversal in flight direction.

The emaciated Yellowthroat could indicate that the birds made long flights the previous night and exhausted their lipid reserves. But, in that case, one might expect the birds to settle down on the coast to feed, rather than to reverse the direction of flight.

Recently, Baird and Nisbet (*Auk*, 77: 119-149, 1960) have reviewed northward fall migration along the Atlantic coast, although they had few at-sea records available. They point out that northwestern-flying migrants appear to be re-orienting toward the coast after having "drifted" to sea during the night because of northwest winds. However, the North Carolina flight was to the northeast after a night of northeast winds, and was *parallel* to the mainland coast, not directed toward it. The other explanations for northward fall flights reviewed by these authors (especially p. 134) likewise fail to explain either the occurrence or orientation of the flight. I am indebted to several Navy aerographers who supplied and helped analyze meteorological data, and to other Navy personnel for assistance in observations. Dr. Carl W. Helms helpfully criticized the manuscript. —JACK P. HAILMAN, *Department of Zoology, Duke University, Durham, North Carolina.*

**Interspecific Relationships among Birds.**—Field observers have often observed birds of one species pursuing individuals of another species. Such interspecific encounters usually occur during the reproductive season, and often involve the chasing or harrying of a larger species by a smaller bird. My own observations in Oregon most frequently involved Sparrow Hawks (*Falco sparverius*) or Brewer's Blackbirds (*Euphagus cyanocephalus*) diving at Red-tailed Hawks (*Buteo jamaicensis*), during April, May, and June. Blackbirds were also seen