

and shortly after arrival on the breeding grounds. Males, on the other hand, suffer collisions throughout the season, apparently because they move around much more. The fact that Ruddy Ducks normally fly only during and after dusk, and that they do not climb steeply after taking wing, but rather perform one or two low and wide circles while gaining altitude, adds to their risk of striking wires.

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A note on Golden Eagle talon wounds.—The recent slaughter of Golden Eagles (*Aquila chrysaetos*) in Wyoming has again focused attention on the subject of eagle-livestock relationships. The problem has been variously studied in many parts of the world including the United States (Spofford, 1965, 1969; McGahan, 1968; Mollhagen et al., 1972), Scotland (Brown and Watson, 1964), and Australia (Leopold and Wolfe, 1970). An important aspect of these and related studies is the determination of whether the eagle foods—especially lambs—have indeed been freshly killed (i.e. outright predation) or secondarily secured as carrion.

Hence, emphasis has been placed on the field identification of wounds and other features present on carcasses allegedly killed by eagles. In Australia, Rowley (1970) thoroughly examined the damage inflicted by Wedge-tailed Eagles (*Aquila audax*) and other carnivores on lambs whereas a similar but less exhaustive study was also undertaken in the southwestern United States where Golden Eagles nest and overwinter (Wiley and Bolen, 1971; Boeker and Bolen, 1972).

Talon punctures, coincident with extensive subcutaneous hemorrhages, are a priori indications of eagle predation despite the contrary opinion of some stockmen that talon wounds are more often absent on eagle-killed lambs (and hence, in their view, that the frequent absence of talon punctures on dead lambs does not preclude assigning the cause of death to eagles). Lambs are instead killed, according to some stockmen, by the impact of an eagle attacking with its feet closed in a "fist" or in some other way that does not involve the use of their talons.

We wish to cite an instance where deep talon punctures were indeed made by a Golden Eagle attacking decoys set at Muleshoe National Wildlife Refuge in Bailey County, Texas, on 23 January 1971. The decoy attacked was one of 24 female Pintail decoys set at Paul's Lake immediately within the refuge's eastern boundary. The attack occurred at 10:15 when the eagle flew across the lake and approached the decoys at an altitude of about 15 yards; the bird suddenly dropped onto the back of the decoy. The impact of the attack, even without the advantage of a long stoop, drove the eagle's talons deeply into the back and side of the plastic-bodied decoy leaving ample—and obvious!—evidence of puncture (Fig. 1). Later in the day, after the decoys had been left untended for several hours, another decoy was discovered with a fouled anchor cord; examination of this decoy showed that it, too, had deep punctures similar to the earlier "wounds" inflicted by the Golden Eagle. Sperry (1957) also described the attack of a Golden Eagle ". . . with distended talons" on a male Pintail decoy, although the eagle in this instance approached the decoy by wading.

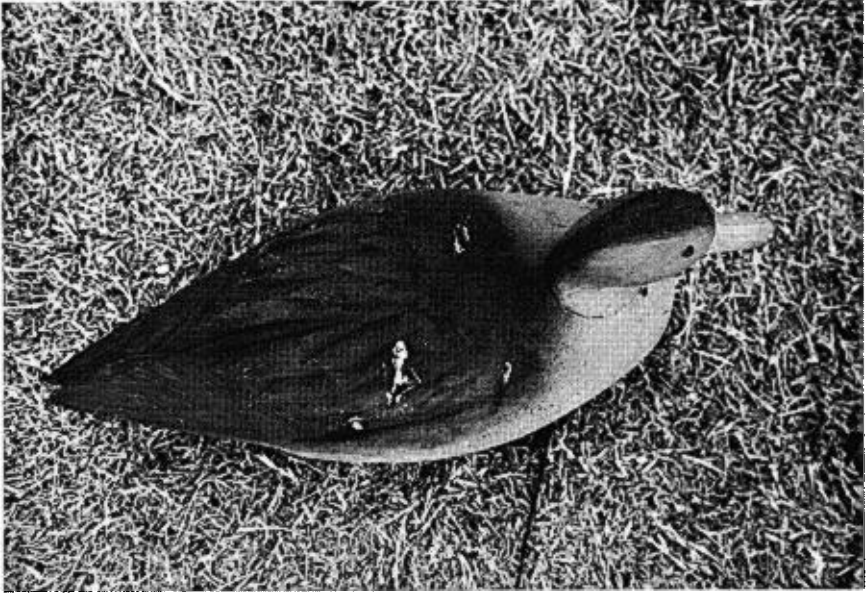


FIG. 1. Golden Eagle talon damage inflicted on a plastic Pintail decoy at Muleshoe National Wildlife Refuge, Texas. Upper picture shows overall view of the damage; in the lower photo, the depth of the punctures are visible at two points on the decoy's back.

Talon wounds are equally present on ducks and geese attacked by Golden Eagles. Duck carcasses (listed only as *Anas* spp.) taken from a Golden Eagle nest showed “. . . talon marks on the shoulders and neck” (Arnold, 1954). Tener (1954) found several talon punctures along the back of a Canada Goose (*Branta canadensis*) attacked by a Golden Eagle whereas Wallace (1937) reported that an eagle “. . . buried its talons” into a domestic goose (*Anser* sp.). Recently, Kelleher and O'Malia (1971) watched a Golden Eagle snatch a drake Mallard in mid-air and hold it in its talons. Federal Game Management Agent Don Kriebel reports that he has seen Golden Eagles at Muleshoe National Wildlife Refuge make mid-air attacks on waterfowl suffering from avian cholera; talons were used prominently in these strikes.

We thus cite our observation, with these others, as evidence that eagles indeed follow the expected course of action when striking at prey. Specifically, eagles use their formidable talons which, of course, are important adaptations to their mode of feeding. Contentions that carcasses of eagle prey are free of talon punctures would thus seem to be largely without merit.

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Roadside raptor census in Colorado—Winter 1971-72.—From 11 November 1971 through 15 February 1972, 13 counts of wintering birds of prey were made in the grasslands and wheatlands east of Colorado Springs and Fort Collins, Colorado. Two routes