TABLE 1
COMPARATIVE EGG SUCCESS IN PARASITIZED AND UNPARASITIZED SUCCESSFUL MALLARD NESTS ON THE MEDINA STUDY AREA IN 1976

Habitat	Total eggs		Eggs hatched	
	Host	Parasite	Host	Parasite
Unparasitized				
Upland	50	—	37	—
Marsh	25	—	20	—
Parasitized				
Marsh	23	20	10	8

nests. Infertility and death of embryos, primarily because of cracked eggs, caused most other egg losses.

Egg deposition by Redheads often preceded incubation by Mallards and may have suppressed ovulation in Mallard hens. The comparable hatching success of host and parasite eggs (Table 1) indicated that many parasitic eggs were deposited in Mallard nests before incubation began. On average, 3.8 Redhead eggs were deposited in each parasitized Mallard nest, and 1.5 Redhead ducklings hatched from each successful parasitized nest. This occurred when densities on the study area were about four pairs of Redheads per km^2 and three pairs of Mallards per km^2 (A. D. Kruse, unpubl.).

Our data suggest that Redhead nest parasitism reduces the number of Mallard ducklings hatched at marsh sites in the Prairie Pothole Region. Presumably, the extent of Redhead nest parasitism varies with water conditions, densities of parasite and host, and the relative number of Mallards nesting in marsh habitat. Because Mallards commonly nest in marshes, potential exists for substantial Redhead nest parasitism and attendant reduction in number of Mallard eggs per nest and egg success. However, additional research is needed to evaluate this potential.

Acknowledgments.—The study was supported by the Northern Prairie Wildlife Research Center (Contract No. 14–16–0003–2038) and conducted under the auspices of the Oregon Cooperative Wildlife Research Unit; Oregon Department of Fish and Wildlife, Oregon State University, U.S. Fish and Wildlife Service and Wildlife Management Institute cooperating. Oregon State University Agricultural Experiment Station Technical Paper No. 5406.

We thank J. A. Crawford and J. R. Serie for critically reviewing the manuscript; D. G. Jorde, L. Kludt, and R. Green for assisting with collection of data; and S. D. Becker for helping locate Mallard nests.—LARRY G. TALENT, *Oregon Cooperative Wildlife Research Unit, Oregon State Univ., Corvallis, Oregon 97331,* GARY L. KRAPU, *U.S. Fish and Wildlife Service, Northern Prairie Wildlife Research Center, Jamestown, North Dakota 58401* AND ROBERT L. JARVIS, *Dept. of Fisheries and Wildlife, Oregon State Univ., Corvallis, Oregon 97331.* (Present address LGT: *Dept. Zoology, Oklahoma State Univ., Stillwater, Oklahoma 74078.*) *Accepted 14 Oct. 1980.*

Wilson Bull., 93(4), 1981, pp. 563–565

Survival of a demaxillate Red-winged Blackbird.—The literature contains numerous reports of birds with abnormal bills. Surprisingly, in view of the supposed adaptiveness of

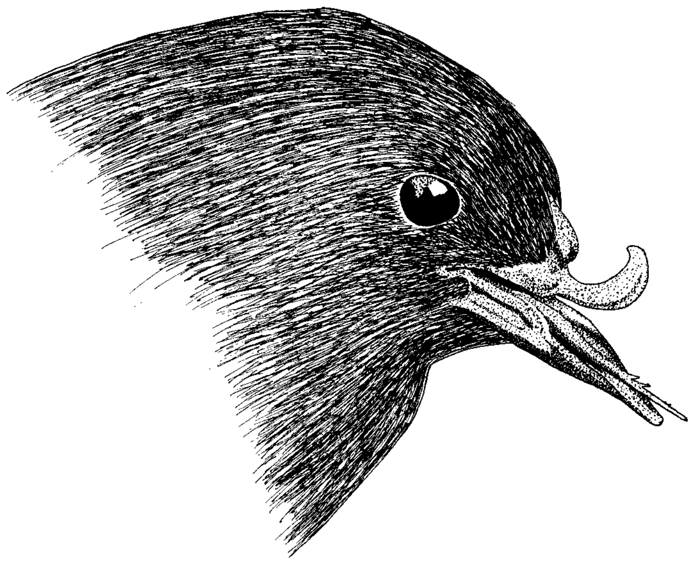

FIG. 1. Red-winged Blackbird with abnormal bill; drawn from photograph taken 16 April 1977.

bill structure, such birds often appear to have adjusted successfully to their deformity, judging from their apparent good health at the time of collection or observation or from the apparent long standing of the deformity by the time it is noted. However, confirmations of long-term survival are few; I have found only five reports of survival for a year or more (Stamm, Kentucky Warbler 49:75, 1973; Donark, Dansk Ornithol. Foren. Tidsskr. 44:16–19, 1950; Nowak, Der Falke 12:122–130, 1965; Pomeroy, Br. Birds 55:49–72, 1962; Wystrach, Auk 94:781–782, 1977). I report the survival for at least 3 years of a male Red-winged Blackbird (*Agelaius phoeniceus*) that lacked most of its maxilla.

I first trapped the bird, then in subadult plumage, on 25 May 1976, at the University of Michigan's E. S. George Reserve, Livingston Co., Michigan. The stump of its maxilla extended to the middle of the nostrils, which had become closed, forcing the bird to breathe through its mouth. The normal structure of the base of the maxilla suggested that the loss was the result of an accident (perhaps with a spring-type rodent trap; I have seen an American Robin [*Turdus migratorius*] so caught) rather than a congenital defect. The tongue was normal and the mandible complete, but the tomia were slightly hypertrophic. The bird's weight (68.0 g) was normal, and it was in vigorous condition. Although I happened to observe the bird arrive at the corn-baited trap and feed briefly before becoming caught, its behavior was not unusual and I noticed the abnormality only after retrieving the bird. I banded and released it, but did not observe it again that year.

On 11 March 1977, and on the next few days, I saw the same bird singing in woods on the George Reserve. The area in which it sang adjoins areas annually occupied by territorial males, but does not itself contain suitable nest-sites, and the bird did not remain there. At this time the bird had a recurved horny outgrowth from the ventral side of the maxilla (Fig. 1). I trapped it again on 16 April 1977, and found it still in good condition, weighing 71.8 g, but about 12 ectoparasites crawled onto my hand as I held it. This has not occurred on any of a few hundred captures of adult males with normal bills. At this capture the bird received a unique color-band combination. I observed it once more that year, on 13 June, in an area where a flock of males was beginning to congregate. By then it had lost the horny outgrowth.

I again observed the bird on 7 May 1978, when it intruded briefly into the territory of another male. On several occasions from 28 July–13 August 1978, it appeared with other males feeding on cracked corn on the lawn under my feeding tray. It picked up the corn from among blades of grass with as much facility as the other birds, scooping up a grain with the mandible then manipulating it at the base of the bill as do normal birds. Its behavior was sufficiently normal that, although I was only 5 m distant, I recognized the bird by its color bands sooner than by its bill.

My final observation of the bird was on 24 March 1979, when it briefly visited the trapping station. I did not specifically note its bill on this occasion and identified the bird only after a later check of the color bands.

Bill structure is usually associated most closely with survival aspects of fitness, but it probably has indirect effects on reproductive success as well. Unfortunately, I have no information on this bird's reproductive success. During the four breeding seasons in which I observed the bird I was studying the redwings breeding in the marshes near the trapping site and would have found its territory had it had one there. However, there are numerous other marshes slightly more distant where it could have had a territory.

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Wilson Bull., 93(4), 1981, pp. 565–569

Minimizing investigator disturbance in observational studies of colonial birds: access to blinds through tunnels.—Colonial nesting birds present unique advantages and disadvantages to the investigator of behavior and ecology. A major advantage is that there are many birds concentrated in a relatively small area, which allows accumulation of large data sets. A disadvantage is that investigator disturbance can bias or affect efficiency of data collection, particularly if birds in a colony are not accustomed to humans. Investigator effects can range from simple disruption of ongoing breeding activities and colony dynamics (Vermeer, Can. Wildl. Serv. Rept. Series 12, 1970; Smith, Br. Birds 68:142–156, 1975; Sears, Bird-Banding 49:1–16, 1978) to chick mortality as young run from their territories and become lost or are killed (Emlen, Wilson Bull. 68:232–238, 1956; Ashmole, Ibis 103b:297–364, 1961; Kadlec and Drury, Ecology 49:644–676, 1968; Kadlec et al., Bird-Banding 40:222–232, 1969; Roberts and Ralph, Condor 77:495–499, 1975; Gillet et al., Condor 77:492–495, 1975; Davies and Dunn, Ibis 118:65–77, 1976). Predacious gulls (*Larus* spp.) also may take advantage of the disturbance and eat eggs and chicks of their own and other species nesting in or near the same colony (Kury and Gochfeld, Biol. Conserv. 8:23–34, 1975; Ellison and Cleary, Auk 95:510–517, 1978). These disturbance related effects are inherent in studies conducted from observation blinds placed within nesting colonies simply because the investigator creates a disturbance while entering a blind. To minimize unwanted disturbance and related effects in sparsely vegetated Lake Michigan bird colonies, we have designed and used an easily constructed tunnel system which permits access to blinds.

Methods and materials.—The design described here was used in 1978 and modified in