

Ridgway, R. 1901. The birds of North and Middle America. Bull. U.S. Nat. Mus., No. 50:343-346.
 Stewart, P.A. 1937. A Preliminary List of Bird Weights. Auk 54:324-332.
 Stewart, P.A. and R.W. Skinner. 1967. Weights of Birds from Alabama and North Carolina. Wilson Bull. 79:37-42.
 Wetherbee, K.B. 1934. Measurement and weights of live birds. Bird-Banding 5:55-64.
 Wetmore, A. 1936. The number of contour feathers in Passeriform and related birds. Auk 53:159-169.

Whittle, C.L. 1927. Some additional bird weights. Bull. Northeastern Bird-Banding Association 3:70-71.
 Whittle, C.L. 1930. Additional live bird weights. Bird-Banding I:192-193.
 Wolfson, A. 1954. Weight and fat deposition in relation to spring migration transient White-throated Sparrows. Auk 71:413-434.

(Inland)

Bill Deformity in a Pearly-Eyed Thrasher from Montserrat, West Indies

Wayne J. Arendt
 U.S. Department of Agriculture, Forest Service
 Institute of Tropical Forestry
 Southern Forest Experiment Station
 P.O. Box 21390
 Rio Piedras, Puerto Rico 00928

Angela I. Arendt
 P.O. Box U
 Palmer, Puerto Rico 00721

The causes of bill deformities in birds have been summarized in an excellent review by Pomeroy (Brit. Birds 55:49-72, 1962). Causes include genetic mutations, disease, accident, poor nutrition, and, in caged birds, an absence of bill-filing substrates (e.g., stones, coarse bark). In wild birds, however, bill deformities are most often associated with injury to the bill. Easterla and Todd (Auk 88: 677-678, 1971) reported such an apparent injury in a free-living Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*) from Clay County, Missouri. The blackbird apparently had suffered a fractured mandible (dentary), resulting in a longitudinal fissure and jagged broken edge. The injury allowed unchecked growth and abnormal development of the rhamphotheca (horny sheath covering the bony mandibles).

In the passerine family Mimidae (mockingbirds, thrashers, and allies) at least two eastern North American species with deformed bills have been reported. Allard (Auk 47: 93, 1930) reported a Catbird (*Dumetella carolinensis*) with an upturned maxilla, while more recently Post (Chat 49: 20-21, 1985) reported a Brown Thrasher (*Toxostoma rufum*) with a long decurved bill, the mandible apparently having suffered a previous fracture. A similar bill injury in a West Indian mimid, a Pearly-eyed Thrasher (*Margarops fuscatus*) from Montserrat, is reported herein.

The Pearly-eyed Thrasher was captured during studies on Montserrat from 15 May to 2 August, 1984. During 19-21 May 1984, we sampled the bird community in the Centre Hills at a site known locally as Jubilee Heights in a secondary hygrophytic forest at an elevation of about 450 m.

On the morning of 20 May 1984, we captured and banded (1433-78863) a Pearly-eyed Thrasher with an abnormally long (length 42.84 mm), decurved bill (Fig. 1). Upon examination of the deformed bill, we found that about half of the distal portion of the mandible had been severed, leaving a jagged edge to the remaining mandibular base. The maxilla extended about 20 mm beyond the truncated mandible. The tomia (cutting edges) of the bill appeared normal from the base of the feathers distally to the fractured portion of the mandible, forming a smooth commissure (line along which the mandibles meet). Beyond the broken mandible, however, the tomia of the maxilla were less distinguishable. The sides of the maxilla were growing inward, giving the maxilla an almost tubular appearance.

Figure 1. Pearly-eyed Thrasher with deformed bill.



Measurements of the deformed thrasher are compared in Table 1 with mensural data for 9 morphometric characters from 82 Pearly-eyed Thrashers without deformities captured at the Jubilee Heights banding site. Although the deformed individual was not a juvenile (no dark iris), 7 of 9 morphometric criteria (excluding maxillar and mandibular lengths) suggest that it was a second-year bird. It

weighed less and was smaller in all of the principal appendicular measures (chord, primary 9, tarsus, tail) than the average thrasher (Table 1). Sexual dimorphism is slight in the Pearly-eyed Thrasher, although females often weigh more than males and have longer culmens, while males exhibit longer wing chord and longer tails (Arendt, unpubl. data).

Table 1. A comparison of 9 morphometric characters (g and mm) between a single Pearly-eyed Thrasher with a physically deformed bill and 82 Pearly-eyed Thrashers with no apparent physical deformities.

	Wing Chord	Body Weight	Culmen Measurements				Length of Primary 9	Length of Tarsus	Length of Center Rectrix
			Length from Feathers	Length from Nares	Depth	Width			
x	136.1	102.7	27.35	18.55	8.24	6.51	87.3	37.82	109.9
S.D.	4.45	8.67	1.11	0.84	0.32	0.34	3.03	1.06	4.93
Range	123-145	86-131	23.84-30.15	16.86-21.30	7.17-8.96	5.78-7.35	80.8-89.3	34.27-40.85	96.6-128
*	130.0	96.0	42.84	33.77	7.68	6.73	83.2	36.68	103.8

*Individual Pearly-eyed Thrasher with deformed bill.

Excepting the abnormally long, decurved bill, all other morphological features of the deformed thrasher appeared normal. Although it was almost 7 g lighter than the average thrasher, the handicapped thrasher was 10 g heavier than the three lightest individuals, all of which appeared to be healthy but also young. The average weight (102.7 g) of the 82 thrashers captured at Jubilee Heights was affected by the inclusion of gravid females. The heaviest female thrasher recorded (131 g) exhibited the beginnings of a brood patch. Fifteen of 82 thrashers captured (18.3%) weighed less than the deformed thrasher, further suggesting that the bird was not starving and would not necessarily die from the injury.

Like many other passerine species, Pearly-eyed Thrashers frequently wipe their bills on the nearest substrate upon completion of a meal. In addition to cleaning excess food particles from the exterior surfaces of the bill, this wiping action serves to file the tips of the mandibles, assuring that they remain close-fitting. Broken mandibles apparently lower the effectiveness of bill wiping in general and bill filing in particular. Besides the unchecked growth of the rhamphotheca of the maxilla in the deformed thrasher, food and dirt particles were found on both inner and outer surfaces of the maxilla extending beyond the broken tip of the mandible and on the outer surfaces of the mandible. Moreover, the bird's plumage appeared "ragged" and it hosted an abnormally heavy infestation of bird lice (Mallophaga). Therefore, while a bird that has suffered a broken mandible may not die directly as a result of its deformity, chances of a premature death are increased by threat of disease and heavy infestation of parasites, resulting from an inability to preen and clean itself properly.

We thank Bill Johnson (former U.S. Peace Corps Volunteer), Mr. and Mrs. Dennis Gibbs, and other members of the Montserrat National Trust for their assistance. C. Delannoy, W. Elder, J. Faaborg, and an anonymous reviewer offered helpful suggestions on the manuscript. Funding for our research came from the Montserrat National Trust, U.S. Agency for International Development, and the U.S. Department of Agriculture Forest Service, which included wildlife assessments as part of the United Nations Environment Programme's Caribbean Action Plan.

(Eastern)

WBBA Research Grant

The Western Bird Banding Association annually awards a grant for research incorporating banding by a student or non-professional ornithologist. Applications are invited for the 1986 award of up to \$250. Applicants should submit the following items: (1) a description of the project (3 pages or less), (2) a project budget, (3) a curriculum vitae, and (4) a letter of recommendation (from the major professor or other person familiar with the applicant's work). Application materials should be sent to Dr. Martin H. Balph, Chairman of the WBBA Research Grant Committee, Department of Fisheries and Wildlife, UMC 52, Utah State University, Logan, UT 84322.

It is hoped that recipients of this award will consider submitting an article on their findings to *North American Bird Bander*.