

**A new owl from the Eocene of Wyoming.**—The specimen described below was found by a University of Kansas field party during the summer of 1970. It was recovered as surface float about 40 feet below the top of the escarpment on the southeastern side of Cottonwood Creek in Fremont County, Wyoming, in the NE  $\frac{1}{4}$ , sec. 22, T. 90 W., and comes from the Lysite Member of the Wind River Formation. The exact locality is recorded on a Lysite SE 7  $\frac{1}{2}$ -minute quadrangle map on file with the University of Kansas vertebrate paleontological collections. The stratigraphic position from which this specimen was obtained equates with Guthrie's (Mem. Southern California Acad. Sci., 5: 5, 1967) "middle cliff" localities and is to the southwest along the escarpment about a mile from Granger's (Bull. Amer. Mus. Nat. Hist., 28: 245, 1910) type locality of the Lysite Member. The only avian material previously reported from the Lysite Member of the Wind River Formation is that mentioned by Guthrie (1967) under the name of *Paragrus prentici*. Material upon which this identification was based is not specified; *Paragrus prentici* was originally described by Loomis (Amer. J. Sci., 4: 481, 1906) as *Gallinuloides prentici* on the basis of material recovered from the Willwood Formation in the Bighorn Basin of Wyoming.

The specimen was compared with the tarsometatarsi of the following Recent owls: *Bubo virginianus*, *Nyctea nyctea*, *Pulsatrix perspicillata*, *Strix nebulosa*, *S. occidentalis*, *S. varia*, *Asio otus*, *Otus asio*, *Speotyto cunicularia*, *Ciccaba virgata*, and *Tyto alba*. Published illustrations and descriptions were used for comparison with other fossil owls. The only other North American Eocene owl for which the tarsometatarsus is known is *Eostrix mimica* (Wetmore). *E. mimica* differs, as does the new form, from all the Recent owls examined in having the trochlea for digit 3 projecting farther distally than the trochlea for digit 2 and having the anterior

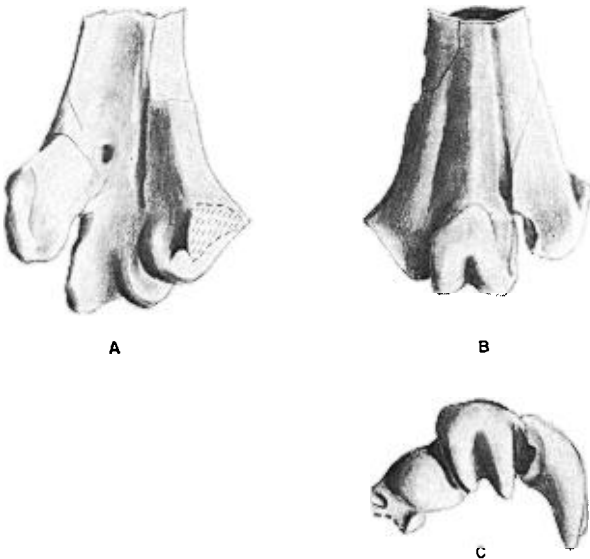


Figure 1. Left tarsometatarsus the holotype of *Eostrix martinellii* new species. A, posterior aspect; B, anterior aspect; C, distal aspect. Scale  $\times 3$ .

portion of the trochlea for digit 3 not deeply grooved on its anterior face that blends smoothly into the shaft proximally.

The genus *Eostrix* was set up for *Protostrix mimica* by Brodkorb (Bull. Florida State Mus., 15: 214, 1971). That species and the one described in this paper represent the only known early Eocene owls. The genus *Protostrix* is presently only known from the middle and late Eocene. These two genera are the only members of the family Protostrigidae, which seems to be confined to North America. Owls of a basically modern type first appear in the late Eocene of Europe.

#### *Eostrix martinellii* new species

TYPE: Distal end of the left tarsometatarsus (Figure 1), University of Kansas Museum of Natural History (paleontological collections) No. 16601.

DIAGNOSIS: Smallest known species of the genus; outer rim of the trochlea for digit 4 directed posteriorly but not medially as in *E. mimica*; otherwise the conformation of this element is essentially as in that species.

REMARKS: This owl was about the size of the living Long-eared Owl (*Asio otus*), with a small distal foramen at about the same position as in that species. The lateral margin of the trochlea for digit 2 is set apart by a groove from the main body of the trochlea much as in *A. otus*. When viewed anteriorly the sulcus between the trochlear ridge on the trochlea for digit 3 is extremely shallow, but when viewed posteriorly it is deeply grooved and seems relatively narrower than in the Recent owls examined. The lateral ridge of this trochlea also projects farther posteriorly in relationship to the medial trochlear ridge than it does in most of the Recent genera of owls examined. The trochlea for digit 4 is more rounded and does not seem to project so far posteriorly as it does in the modern genera examined. The width of the distal end of the tarsometatarsus is 9.8 mm.

*Eostrix martinellii* is one of the earliest owls known, if not the earliest. The only owl probably close to the same age is *E. mimica*, which Wetmore (Proc. U. S. Natl. Mus., 85: 27, 1938) states is from the Wasatch (Willwood) Formation, 12 miles northwest of Worland, Wyoming, in the Bighorn Basin. *E. mimica* could therefore be either Greybullian or Lysitean in age. *E. martinellii* cannot be compared directly with most of the species of *Protostrix* as these generally lack the tarsometatarsus, but it is considerably smaller than any that have previously been described. Of the fossil European owls with which *E. martinellii* might be compared, *Asio henrici* (Milne-Edwards) and *Necrobyas edwardsi* Gaillard from the late Eocene or early Oligocene differ from the Protostrigidae and resemble most modern owls in having the trochlea for digits 2 and 3 of about equal lengths. The species name *martinellii* is chosen in honor of Jorge Martinelli, a student in vertebrate paleontology at the University of Barcelona, Spain, who found the holotype while with the University of Kansas field party in 1970.

The authors wish to express their appreciation to Pierce Brodkorb for providing them with a copy of the section on the Strigiformes from his "Catalogue of fossil birds" prior to publication. Thanks are also due Pat Rich for access to her unpublished manuscript on the Protostrigidae. The illustration was prepared by Marshall Andersen. We thank Robert M. Mengel for consultation and a helpful reading of the manuscript.—LARRY D. MARTIN AND CRAIG C. BLACK, *Museum of Natural History, The University of Kansas, Lawrence, Kansas 66044*. Accepted 12 Oct. 71.