adult female 29 April 1974. Its ovary was granular although only slightly enlarged. The bird weighed 20.2 g.

Charadrius alexandrinus. Snowy Plover. I saw 2 birds and collected one at the mouth of the Rio Los Esclavos, Department of Santa Rosa, 28 April 1973. The specimen was an excessively fat female that weighed 50.4 g.

Limosa haemastica. Hudsonian Godwit. Two birds were collected from a flock of 14 that I flushed from mud flats in the shallow lagoons lying between Avellana and Monterrico on 26 April; 1 to 8 birds were observed 27–29 April 1973. A group of 3 collected 24 April 1974 were the only ones seen that spring. The 2 females collected in 1973 were fat and weighed 252 and 220 g; those taken in 1974, 2 females and a male, all were moderately fat to fat and in heavy molt; they weighed 192.6, 204 and 188 g respectively.

Hydroprogne caspia. Caspian Tern. This species was included by Land based on a Pacific coast sight record made 15 February 1967. Additional records are 2 seen near La Avellana 25 November 1969, 20–50 seen nearly daily 10 April to 6 May 1973, and 1–30 seen nearly daily 6–29 April 1974. One was collected 12 April, thus removing the species from the hypothetical list.

Philomachus pugnax. Ruff. A Reeve was collected on the mud flats in the marsh between La Avellana and Monterrico 16 April 1974. She was in heavy molt about the head, and was without fat (weight 68 g). The ovary was not enlarged but ovules were distinct. The meat was dark and flavorsome, comparable to that of *Limnodromus* and *Numenius*. This is apparently the southernmost verified record of the species in Central America.

Otus cooperi. Pacific Screech-owl. Land (op. cit.) mentioned that this screech-owl was to be expected in Guatemala. A female was collected from a pair by Sergio Romero Ibarra 2 km NE of Papaturro, (*ca.* 5½ km E of La Avellana) 2 May 1974. She weighed 181 g.

Cassiculus melanicterus. Yellow-winged Cacique. This species, formerly considered restricted to Mexico, is common in the riparian zones transecting the arid tropical scrub inland from La Avellana. I saw groups of 30 or more birds feeding in fruiting trees. Nest building was under way in late April 1974. Specimens were collected 6 August 1971, 14 and 29 August 1972 and 11 April 1973.—Robert W. Dickerman, *Dept. of Microbiology, Cornell Univ. Medical College, 1300 York Ave., New York, NY 10021.* *Accepted 26 Nov. 1974.*

A new species of *Spizaetus* from the Pliocene of Nebraska.—The late Pliocene (Kimballian) of Nebraska is producing a rich avifauna which has so far included a small turkey, *Proagriocharis kimballensis* (Martin and Tate, Wilson Bull. 82:214–218, 1970), a goose-like swan, *Paracygnus plattensis* (Short, Am. Mus. Novitates 2369:1–7, 1969), and a giant anhinga, *Anhinga grandis* (Martin and Mengel, Auk 92:137–140, 1975). I will here describe a new species of long-shanked eagle, represented by a tarsometatarsus. The fauna of the Kimballian in Nebraska and a brief history of the "*Amebelodon fricki* Quarry" (Univ. of Nebraska State Museum UNSM collecting locality Ft-40) where this specimen was found, is summarized in Schultz et al. (Bull. Univ. Nebraska State Mus. 9:1–31, 1970).

Comparisons were made with tarsometatarsi of *Geranoaetus melanoleucus* (2 specimens), *Buteo harlani* (5), *B. swainsoni* (5), *B. regalis* (50), *B. jamaicensis* (50), *B. buteo* (2), *B. lineatus* (3), *B. platypterus* (3), *B. nitidus* (5), *B. magnirostris* (10), *B.*

lagopus (20), *Buteogallus anthracinus* (5), *Parabuteo unicinctus* (4), *Leucopternis albicollis* (1), *Hypomorphnus urubitinga* (1), *Haliaeetus leucocephalus* (1), *Aquila chrysaetos* (1), *Spizaetus ornatus* (1), *S. cirrhatus* (1), *S. tyrannus* (1), *S. tanneri* (holotype), *S. grinnelli* (4), and *Morphnus woodwardi* (3).

The fossil tarsometatarsus is larger than in any living species of North American *Buteo*. It is elongate as in *Parabuteo* or *Geranoaetus*, but not as elongate as in *Hypomorphnus*. It resembles *Spizaetus* rather than *Buteo*, *Parabuteo* or *Geranoaetus* in the following: (1) the inner proximal foramen lies along the medial side of the inner calcaneal ridge (this character is variable, but held in 145 of the 151 tarsometatarsi of *Buteo* examined); (2) the sides of the tarsometatarsus slope inward gradually; (3) the position of the tubercle for tibialis anticus is more distal; (4) the antero-proximal face of the shaft is flattened on the internal margin for a greater distance distally; (5) the external and internal calcaneal ridges extend farther distally; (6) the external border of the shaft curves posteriorly; and (7) the shaft is less constricted distally.

Leucopternis differs from the fossil in having a more slender shaft. In most respects the new fossil closely resembles *Spizaetus grinnelli* and may be best placed in the genus *Spizaetus*.

Spizaetus schultzi, sp. nov.

(Fig. 1)

Holotype.—Right tarsometatarsus, lacking only part of the inner calcaneal ridge UNSM 20041, from Coll. Loc. Ft-40, E ½ SW ¼ Sec 15, T5N, R26W, 9.6 km N and 10.2 km W of Cambridge, Frontier Co., Nebraska, from the Sidney Gravel Member of the Kimball formation, Ogallala Group, Pliocene.

Diagnosis.—The tarsometatarsus of *Spizaetus schultzi* is near the minimal size given for the tarsometatarsus of *S. grinnelli* by Howard (Carnegie Inst. Washington Publ. 429: 1–89, 1932). It differs from that species in having: (1) proximal end more compressed antero-posteriorly; (2) external calcaneal ridge diverging laterally in proximal view and extending distally as a thin ridge; (3) distal end with middle trochlea narrower and extending farther proximally and anteriorly; (4) trochleae slightly more arched. *S. schultzi* is larger than *S. tyrannus*, *S. ornatus*, and *S. nipalensis*, but it is smaller and less massive than the fossil species *S. willetti* and *S. tanneri*. Measurements of the type specimen (a phalanx) of *S. pliogryps* given by Howard (Carnegie Inst. Washington Publ. 551:141–149, 1946) indicate that it too, was a much larger bird than *S. schultzi*.

Description.—A long-shanked eagle about the size of a male *Geranoaetus melanoleucus*; proximal end of tarsometatarsus broad with shallow cotylae; internal cotyla nearly circular; external cotyla oval and extending anteriorly past intercondylar tubercle; intercondylar tubercle broad and low; inner calcaneal ridge of hypotarsus short, thick, and extending further distally than in *Geranoaetus*; small inner proximal foramen medial to distal end of inner calcaneal ridge; inner proximal foramen small; proximal foramina set anteriorly in a deep depression which undercuts the articular surface as in *Aquila*; medial side of proximal end of bone excavated about as in *Aquila chrysaetos*; tubercle for tibialis anticus proximally located as in *Spizaetus*; extensor groove leading into distal foramen deep and well defined as in *Spizaetus*; facet for metatarsal I slightly larger than in *Geranoaetus melanoleucus*, and trochleae more arched; medial face of trochlea fairly short and stout; middle trochlea narrower and extending further proximally than in *Geranoaetus* and with base more constricted when viewed posteriorly; lateral ridge of external trochlea rounded. The following measurements are (in mm) from the holotype:

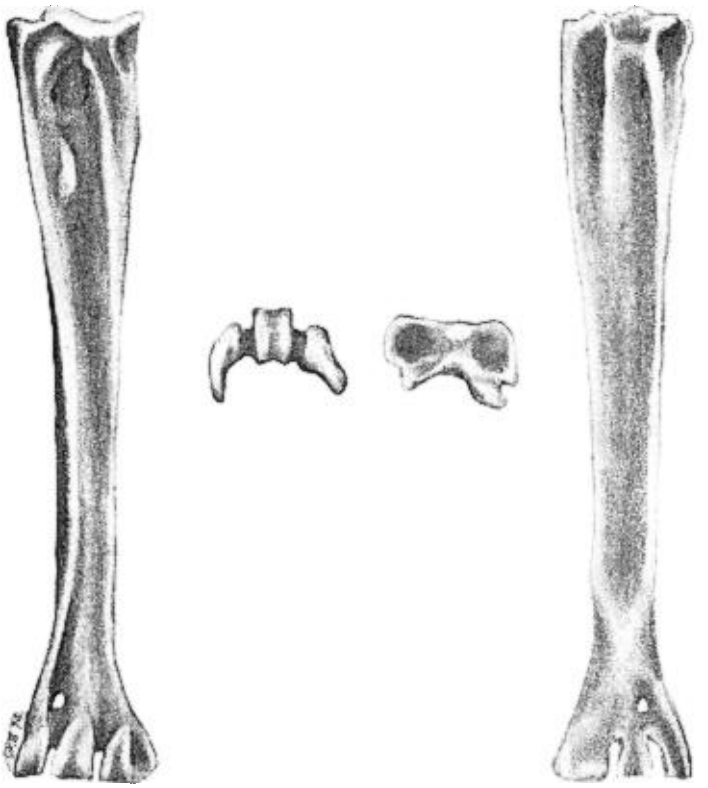

FIG. 1. *Spizaetus schultzi*, holotype, right tarsometatarsus, UNSM 20041. From left to right: anterior, distal, proximal, and posterior views, ×1.

total length 103, distance from distal end of middle trochlea to center of the tubercle for tibialis anticus 80.5, width of proximal end 17.6, depth of proximal end excluding calcaneal ridges 8.1, width of distal end 18.8, depth of middle trochlea 8.2.

Etymology.—Named for C. B. Schultz in recognition of his contributions to our knowledge of the North American Pliocene.

Discussion.—A few other fossil eagles warrant comparison with *Spizaetus schultzi*. The late Pleistocene *Morphnus woodwardi* (Howard 1932) has a much larger, more massive tarsometatarsus with a wider shaft than in *S. schultzi*. It has the tubercle for tibialis anticus more proximally placed and the facet for metatarsal I larger, forming a distinct notch on the medial side of the shaft. It also has the trochleae less arched with the internal trochlea strongly directed medially. *Buteo contortus* from the late Miocene of Nebraska resembles *Morphnus woodwardi* and differs from *Spizaetus schultzi* in these respects. *Buteo contortus* also differs from most other buteos in having the inner proximal foramen medial to the inner calcaneal ridge (Wetmore, Bull. Amer. Mus. Nat. Hist. 48: 483–507, 1923).

Buteo conterminus from the early Pliocene of Nebraska is larger than *Spizaetus schultzi*, has the facet for metatarsal I more proximally situated, the outer ridge of the external trochlea less extended posteriorly, and the trochleae less arched (Wetmore 1923).

Buteo typhoius from the Upper Miocene of Nebraska (Wetmore 1923) has a more distinct anterior groove on the face of the shaft, the shaft thicker antero-posteriorly, and the external trochlea larger and more blunted posteriorly than in *Spizaetus schultzi*.

Buteo fluviaticus (Miller and Sibley, Condor 44:39–40, 1942) from the Oligocene of Colorado has the shaft of the tarsometatarsus wider above the trochleae, the middle trochlea larger, and the trochleae less strongly arched than in *S. schultzi*.

Buteo antecursor (Wetmore, Bull. Mus. Comp. Zool. 75:297–311, 1933) from the Upper Oligocene of Wyoming has a less elongate tarsometatarsus than *Spizaetus schultzi*, and *B. ales* (Wetmore, Ann. Carnegie Mus. 16:403–408, 1926) from the lower Miocene of Nebraska is smaller and has the trochleae less arched.

This is the second record of *Spizaetus* from the Central Great Plains and the oldest reported occurrence of the genus. The other record from this region and the next oldest occurrence is *S. tanneri* from the Blancan of Nebraska (Martin, Condor 73:248–250, 1971). North American fossil species of *Spizaetus* fall into 2 groups: large massive forms which seem similar to *Aquila* (*S. tanneri, S. willetti,* and *S. pliogryps*), and smaller more lightly built forms (*S. schultzi* and *S. grinnelli*).

I am indebted to C. B. Schultz for the privilege of studying the fossil birds in the collections of the University of Nebraska State Museum, to R. M. Mengel and M. A. Jenkinson for critically reading the manuscript, and to D. K. Bennett for the illustrations.
—LARRY D. MARTIN, *Museum of Natural History and Dept. of Systematics and Ecology, Univ. of Kansas, Lawrence 66045.* *Accepted 19 Nov. 1974.*

The bony stapes in the Upupidae and Phoeniculidae: evidence for common ancestry.—Krause (Die Columella der Vögel, Berlin, R. Friedländer and Sohn, 1901) examined the form of the avian bony stapes in a number of groups, but no comprehensive study has yet been achieved. As I reported earlier (Feduccia, Auk 91:427–429, 1974), most of the nonpasserine orders, and the entire "oscine" passerine assemblage of birds possess a bony stapes resembling the primitive reptilian condition, with a flat footplate, and a straight bony shaft. This type of stapes (Fig. 1) no doubt represents the retention of the primitive condition. Both the New and Old World suboscines possess a characteristic derived morphology of the bony stapes, and this I interpreted (op. cit.) as evidence for common ancestry of the Old and New World groups. In the examination of the coraciiform families (to be presented in detail later) I discovered that the Hoopoe (Upupidae: *Upupa epops*) and the wood-hoopoes (Phoeniculidae: *Phoeniculus purpureus* and *Rhinopomastos cyanomelas*) also possess a common derived morphology of the bony stapes which is found in no other of the more than 1000 species I have examined. This type of stapes (Fig. 1) is characterized by a flat bony footplate, but with a short but wide shaft that bifurcates into 2 processes. There is a long, laterally directed thin process, and a shorter, broad process, both of which connect to the tympanic membrane via extracolumellar ligaments, and no doubt function in a complex lever system.

The possession of this bizarre type of stapes in both the Upupidae and Phoeniculidae I interpret as a strong indication of monophyly of the 2 groups that points *a fortiori* to