

ANOTHER OLD WORLD VULTURE FROM THE NEW WORLD

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The Old World vultures (Accipitridae: Aegypiinae) comprise a group of raptors presently confined to Africa and Eurasia. One of the great surprises in avian paleozoogeography was the discovery of fossils of such vultures in the Tertiary and Quaternary of North America. Aegypiine vultures are very likely derived from an eagle-like ancestor and are placed in the same family and order (Falconiformes) as living hawks and eagles. The New World vultures (Falconiformes: Cathartidae), presently confined to North and South America (first known from the Eocene of North America), are not closely allied to their Old World counterparts. Although placed in the same order, cathartid vultures are rather distantly related to other accipitriforms. In fact, some workers (see Ligon, 1967) believe that they may be more closely related to storks and their allies (Ciconiiformes).

The first vultures to be described as definite aegypiines from North America were *Neogyps errans* and *Neophrontops americanus*, both from the Pleistocene Rancho La Brea and named by the late Loye Miller (1916). Years after describing them, Miller (Miller and DeMay, 1942:95) admitted that, "... announcement was withheld for two years because of the wide geographic separation from other members of the Old World vulture group." Since then an even earlier aegypiine, originally described as a cathartid, *Cathartes umbrosus* (Cope, 1874), has come to light in North America (Howard, 1932:70); this Pliocene species is presently called *Palaeoborus umbrosus* (Cope). Old World vultures have now been found commonly in the Pleistocene of California, and additional species representing three genera are known from the Miocene, Pliocene, and Pleistocene of North America, including Mexico (Table 1).

The species described herein represents a late Pliocene occurrence of the genus *Neophrontops*, and the first Old World vulture recorded from Idaho. It is described below, as

Neophrontops slaughteri, sp. nov.

Holotype.—Distal end of left tibiotarsus, University of Michigan Museum of Paleontology no. V52265 (Fig. 1); no other material seen.

Horizon and locality.—Late Pliocene Hagerman local fauna (locality 540) of the Glens Ferry Formation (Malde and Powers, 1962), Twin Falls

TABLE 1
THE FOSSIL OLD WORLD VULTURES KNOWN FROM THE NEW WORLD¹

| Species | Range | Age |
|--|--|---------------------------|
| <i>Palaeoborus rosatus</i> A. H. Miller & Compton | South Dakota | Lower Miocene |
| <i>Palaeoborus howardae</i> Wetmore | Nebraska | Middle Miocene |
| <i>Palaeoborus umbrosus</i> (Cope) | New Mexico | Lower Pliocene |
| <i>Neophrontops vetustus</i> Wetmore | Nebraska | Middle Miocene |
| <i>Neophrontops dakotensis</i> Compton | South Dakota, Oregon | Lower and middle Pliocene |
| <i>Neophrontops slaughteri</i> Feduccia | Idaho | Upper Pliocene |
| <i>Neophrontops vallecitoensis</i> Howard | California | Middle Pleistocene |
| <i>Neophrontops americanus</i> L. Miller | California, New Mexico (Howard, 1971), Mexico | Upper Pleistocene |
| <i>Neogyps errans</i> L. Miller | California, Nevada, Mexico | Upper Pleistocene |

¹ Primarily from Brodkorb (1964).

County, Idaho. Although the Glens Ferry Formation was deposited from late Pliocene (early Blancan) to early Pleistocene (latest Blancan), the deposits in the vicinity of Hagerman are late Pliocene (see Hibbard et al., 1965; Zakrzewski, 1969; and Bjork, 1970). There is a potassium argon date of 3.48 ± 0.27 million years B. P. for the horizon (Evernden et al., 1964).

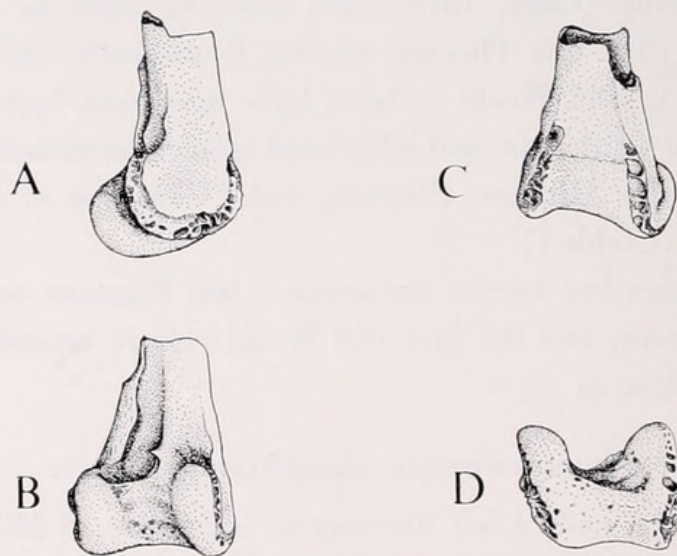


FIG. 1. Holotype tibiotarsus (UMMP V52265) of *Neophrontops slaughteri* (actual length, 21.7 mm). A, external condyle; B, posterior view; C, anterior view; D, distal end. Approximately natural size.

Etymology.—The specific name is in honor of Bob H. Slaughter, Director, Shuler Museum of Paleontology, Southern Methodist University, for his contributions to vertebrate paleontology.

Diagnosis.—Distal end (21.7 mm) of left tibiotarsus similar to that of *Neophrontops americanus* L. Miller (see Miller, 1916, and Howard, 1932, for generic diagnosis), but differing as follows: anterior intercondylar fossa relatively deeper; tendinal groove relatively broader; internal ligmental prominence relatively more pronounced; external ligamental prominence relatively less pronounced; shaft relatively more robust at condylar area; external condyle notched at its union with shaft (running smoothly into shaft in *N. americanus*). *N. slaughteri* is similar in size to the largest of the tibiotarsi of *N. americanus*, measured as follows: breadth of distal end of tibiotarsus—15.0 mm in *N. slaughteri* and 14.3 ± 0.8 (standard deviation) (range 13.2 to 15.0) in 6 *N. americanus*; depth of distal end of tibiotarsus—11.4 in *N. slaughteri* and 11.0 ± 0.5 (range 10.2 to 11.3) in 6 *N. americanus*.

DISCUSSION

With the description of *N. slaughteri*, there are now five species of the genus *Neophrontops* known from the fossil record of the New World. The oldest form, *N. vetustus* (Wetmore, 1943), was described on the basis of a humerus from the Miocene of Nebraska. It represents a species smaller than *N. americanus* and therefore presumably smaller than *N. slaughteri*. *N. dakotensis* was described on the basis of a humerus from the lower Pliocene of South Dakota (Compton, 1935). A coracoid from the middle Pliocene of Oregon has also been assigned to this species, on the basis of similar relative size and of general similarity of horizon (see Brodkorb, 1961). *N. dakotensis*, like *N. vetustus*, was a smaller form than *N. americanus* and *N. slaughteri*. The only other species, *N. vallecitoensis* (Howard, 1963), was described from the middle Pleistocene (Vallecito Creek fauna of the upper part of the Palm Spring Formation) of California, on the basis of a fragmentary tarsometatarsus that is somewhat larger than the same elements of *N. americanus*.

Neophrontops slaughteri would probably most closely approximate *N. vallecitoensis* in size, although it also overlaps the upper limits of *N. americanus*. *N. slaughteri* differs in important characters from *N. americanus*, and it occurred at a much earlier time than that species. The Vallecito Creek fauna (*N. vallecitoensis*) is older than that of Rancho La Brea (*N. americanus*), but younger than the Hagerman or Rexroad local fauna. Consequently, the Hagerman species, *N. slaughteri*, is at least a million years older than either of those two species. Although similar elements of all the forms

of *Neophrontops* are not available for comparison, it would appear almost certain from indirect evidence that *N. slaughteri* represents a distinctive species, albeit closely allied to the other North American species of the genus.

Because Old World vultures occur as early as the lower Miocene in both the Old and New Worlds (*Palaeohierax* and *Palaeoborus*, respectively), we have no firm evidence as to the group's area of origin. Additional fossils from earlier horizons will be needed to aid in answering this and other questions about the evolution of aegyptiines. *Neophrontops americanus* is osteologically close to the living Egyptian Vulture (*Neophron percnopterus*), an aegyptiine of Eurasia and Africa. The fact that *Neophron* is unknown from the Old World fossil record strongly suggests that the genus is derived from an invasion of the Old World by New World *Neophrontops* stock, possibly as late as Pleistocene time.

ACKNOWLEDGMENTS

The late Professor Claude W. Hibbard placed the specimen at my disposal and encouraged this study. I wish to thank the Los Angeles County Museum for the loan of specimens of *Neophrontops americanus*, and Dr. Robert W. Storer of the University of Michigan Museum of Zoology for the loan of specimens of *Necrosyrtes monachus* and *Neophron percnopterus*. I am indebted to Dr. Pierce Brodkorb for examining the fossil, and to Carolyn Moseley for her independent evaluation of the fossil. R. H. Wiley, H. C. Mueller, and Carolyn Moseley offered helpful suggestions on the manuscript. Mrs. Yvonne Lee skillfully rendered the camera lucida drawings for Fig. 1.

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27514. ACCEPTED 2 APRIL 1974.

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Feduccia, Alan. 1974. "Another Old World Vulture from the New World." *The Wilson bulletin* 86(3), 251–255.

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