

A MIOCENE HAWK FROM CALIFORNIA

By HILDEGARDE HOWARD

Among the specimens collected by the California Institute of Technology from the Tick Canyon formation near the head of Vasquez Canyon, Los Angeles County, California, are the bones of an incomplete foot of a large hawk. The specimen has been made available to me for study through the kindness of Dr. Chester Stock.

The distal end of a tarsometatarsus, a fragment of metatarsal 1, and nine disarticulated phalanges are represented. Although the phalanges of digits 1 and 2 seem unusually large for the size of the tarsus, there is no doubt but that all of the bones are part of the same (left) foot. In describing the locality and its fauna, Jahns (Carnegie Inst. Wash. Publ. no. 514, 1940:145-194) figured similarly associated skeletal parts of certain of the mammals which occurred in the same deposit. A number of fairly complete mammalian skulls and limb bones were recorded (*op. cit.*), including specimens of *Parahippus maxsoni*, *Merychys calaminthus*, and *Miolabis californicus*, as well as two tentatively identified rodents. On the basis of the mammalian fauna the beds are regarded as late Lower Miocene.

The avian tarsometatarsus appears to be distorted and somewhat crushed laterally. It is likely, therefore, that the narrowness across the trochleae and the arching of the distal contour are abnormal. The measurement across the distal end is 17.7 mm., which is slightly less than the distal breadth of a large female specimen of *Buteo regalis* at hand. Individual trochleae, however, are larger than in *regalis*, and the phalanges, too, indicate a bird of larger size than the rough-legged hawk.

Compared with modern forms, the fossil is closest to the buteonine hawks and eagles. The bird, however, is clearly distinct from any living buteonine hawk available for comparison, and is here recorded as representing a new genus.

Miohierax, new genus

Characters.—Inner trochlea of tarsometatarsus heavy at base, with high, and deeply excavated alar portion; facet of outer trochlea short in proximal extent; hallux and second toe large.

Type species.—*Miohierax stocki*.

Miohierax stocki, new genus and species

The species is named in honor of Dr. Chester Stock, who made the first examination of the fossil material from this area.

Type.—Bones of incomplete left foot (distal end of tarsometatarsus, fragment of metatarsal 1, and nine phalanges), California Institute of Technology no. 201/1396; Tick Canyon formation, near head of Vasquez Canyon, Los Angeles County, California; Lower Miocene.

Description.—Slightly larger than *Buteo regalis*. Differs from members of the genus *Buteo* as follows: base of inner trochlea of tarsometatarsus broad; excavation of alar portion deeply cut and large, extending high above distal end and well above facet of trochlea; top of alar excavation on a line with distal foramen. Outer flange of trochlea for digit 4 markedly extended posteriorly; anteriorly, facet of this trochlea short in proximal extent and delimited by distinct groove-like depression. Middle trochlea of moderate size. Tarsometatarsus strongly arched anteriorly, possibly due to lateral compression during entombment; groove leading to distal foramen very deep and narrow, possibly also abnormally produced. Hallux large in proportion to tarsometatarsus; comparable to condition found in *Paleoplancus sternbergi* Wetmore, from the Oligocene of Wyoming, but hallux of latter slightly narrower and first trochlea of tarsometatarsus lacking heavy base and alar development. Phalanx 2, digit 2 also large. First phalanx of third and fourth toes of more moderate size, longer relative to breadth of tarsometatarsus than in *Buteo regalis*, but similar to proportions found in *Aquila chrysaetos*.

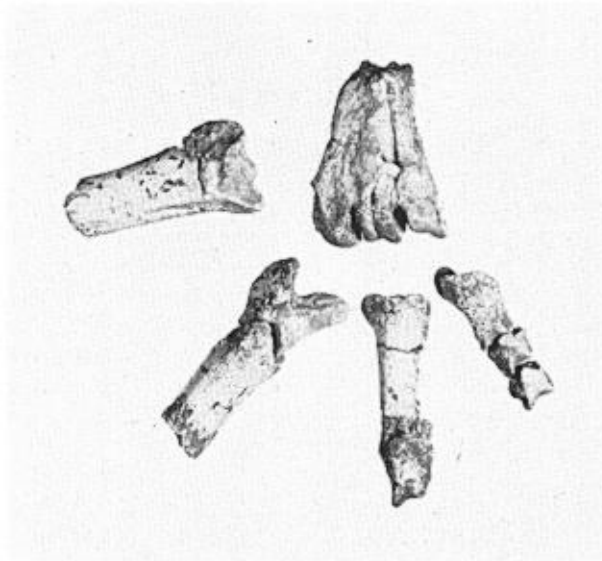


Fig. 40. *Miohierax stocki*; fragments of left foot, $\times 1$.

Fifteen other extinct accipitrids have been described from Tertiary beds in the United States. Of these, seven buteonine hawks have been assigned to the genus *Buteo*, and one to *Hypomorphnus*; one is the type of an extinct genus and subfamily of hawks (*Paleoplancus* of subfamily Paleoplancinae); four have been assigned to two genera related to the aegyptiines of the Old World (*Paleoborus* and *Neophrontops*); and two species of kites occur in the extinct genus *Proictinia*. Although three of the Tertiary species assigned to now existing genera are not represented by foot bones, the elements upon which they are based do not seem sufficiently aberrant to consider relationship with the genus and species here described. From the other species, and from the extinct genera (for all of which tarsometatarsi are available), *Miohierax* is distinguished by the broad base of the first trochlea, with high alar excavation, and short proximal projection of facet of outer trochlea, as described for the genus.

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