

ments of humeri that even exceed in size Lucas' type from Los Angeles. No humerus of the larger form, however, is complete though three from the smaller form, *M. diegense*, are almost as perfect as recently prepared bones. One coracoid seems almost beyond question to have come from an immature individual.

Lechusa stirtoni, new genus and species. Stirton's Owl. Type specimen No. 45331 University of California Museum of Paleontology, a right coracoid from Lower-Middle Pliocene (San Diego Formation) San Diego, California, collected by Joseph F. Arndt. This specimen, a single almost perfect coracoid, represents a heretofore unknown genus and species of Barn Owl (Family Tytonidae). Size approximately equal to the corresponding bone in the male of *Tyto alba pratincola*, the living Barn Owl. Though shorter it is relatively heavier through the shaft. Head slightly larger and less globular (i.e., more angular). The triosseal canal is slightly larger. The procoracoid process is placed lower on the shaft and its axial border merges more gradually into the shaft below the fenestra. The shaft is relatively broader at the central zone. In all but one of eight Barn Owls examined, there is a tendency to form a notch on the axial border just above the sternal articulation. During life of the bird this represents a fenestra in the tough membrane that seals off the anterior end of the thoracic cavity. The one exception shows some evidence of juvenility. The fossil coracoid lacks this frail character and the margin is less sharp-edged in that region.

The proximal end of the coracoid is about equal in width to the average in Recent Barn Owls but the inter-muscular line on the ventral surface, instead of being almost rectilinear, is strongly curved outward as its proximal end.

Unfortunately the sterno-coracoidal margin is not entirely preserved, but the suggestion is that the pectoralis-tertius muscle is less strongly developed, with respect to the pectoralis secundus, than it is in the Recent specimens of *Tyto*.

Furthermore this intermuscular line is depressed almost to disappearance at a region between 5 and 6 mm. distal to its external extremity. The whole bone is depressed in this area in a manner difficult to define with accuracy yet it is evident to the eye. There is herein a resemblance to the Short-eared Owl, *Asio flammeus*.

When the bone is viewed from the proximal end, the sternal facet appears weaker than in *Tyto* and its dorsal margin falls away as the eye travels toward the external margin of the bone.

The dorsal aspect of the bone offers another one of those intangible yet observable differences. It suggests that the sterno-coracoidal process (unfortunately incomplete) began more abruptly to diverge from the shaft and it began at a point farther up the shaft, i.e., toward the coracoidal head.

The missing portion of the process may have been more extensive than at first suspected. In which case the pectoralis tertius muscle may not have been reduced as is suggested by the out-swing of the intermuscular line on the ventral surface of the bone. In other words this muscle may have been attached more to an expanded process and less to the shaft of the bone.

We thus appear to have a Pliocene owl that is definitely related to but differs from the Recent Barn Owls, a strongly marked group of almost world-wide distribution with but limited geographic modification.

The fossil was submitted to Dr. A. Wetmore of the Smithsonian Institution who very generously gave his reaction from which, by permission, I quote the following: ". . . it proves to belong in the Barn Owl family Tytonidae but represents what I consider to be a peculiar and unknown genus. . . . The lower end of the intermuscular line on the ventral (external) surface, however, shows a tendency toward what is found in typical owls. . . . A very interesting new genus and species of barn owl that shows some cross over toward the other family of owls." I greatly appreciate Dr. Wetmore's friendly courtesy and find myself in full accord. I feel sure, however, that neither of us would place too great emphasis on the suggestion of "cross over" as a phylogenetic indicator particularly in the absence of a complete sterno-coracoidal process.

Although the Pliocene bird so strongly resembles the living forms of *Tyto*, it was not considered permissible to establish a new category within the family Tytonidae without examining the only other living genus assigned to that group, *Phodilus badius* of the Indian orient. This peculiar creature has been bandied about somewhat freely by three or four generations of systematists but has finally come to rest (it is hoped) in a monotypic sub-family of Tytonidae, the Phodilinae (Peters, 1940). After much delay and correspondence, the body skeleton of this species was obtained on loan from the U. S. National Museum. The most casual inspection of this material was sufficient to show that the Pliocene bird is not assignable to that sub-family. This is not the place to discuss the relationships of the genus *Phodilus* further than to say that its assignment to a distinct sub-family, if not even a full family, appears to be well founded.

The true Barn Owls are set off so positively from all the other Strigiformes that this Pliocene form seems to occupy a position of considerable importance. Certainly it is one of great interest.

The taxonomist who searches through the literature on the nocturnal birds of prey finds much confusion down through the years, in the application of generic and specific names. *Strix*, *Asio*, *Otus*, *Syrnium*, *Scops*, and *Athene* have all been pretty freely shuffled about or even reversed as generic and specific terms.

It seemed proper to this writer therefore to introduce a new strain into the "taxonomic blood stream." In northern Mexico and Arizona the

name *lechusa* (Latin-American spelling) is applied to the Barn Owl in distinction from the eared owls that are called *tecolote*. I have therefore chosen a generic name from the Spanish instead of the Greek. The specific name is proposed in honor of my long known friend and colleague in Paleontology, Dr. R. A. Stirton.

SUMMARY

Additional information is presented regarding several Pliocene species of water birds. Generic re-assignment of one species is suggested. A new genus and species of Barn Owl is described.

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