

PREVIEW

LATE PLEISTOCENE RAPTORS FROM
DRY CAVE, EDDY COUNTY, NEW MEXICO

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LATE PLEISTOCENE RAPTORS FROM
DRY CAVE, EDDY COUNTY, NEW MEXICO

By

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THESIS

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ABSTRACT

Dry Cave, Eddy County, New Mexico, contains large and varied Late Pleistocene fossil faunas, including sixteen species of predatory birds. Extinct predatory birds found in Dry Cave are the Western Vulture (Coragyps occidentalis), La Brea Condor (Breagyps clarki), Fragile Eagle (Buteogallus fragilis), Early Caracara (Caracara prelutosus), and La Brea Owl (Strix brea). Extant birds are the Golden Eagle (Aquila chrysaetos), Cooper's Hawk (Accipiter cooperii), Red-Tailed Hawk (Buteo jamaicensis), Swainson's Hawk (B. swainsoni), Prairie Falcon (Falco mexicanus), Sparrow Hawk (F. sparverius), Barn Owl (Tyto alba), Short-Eared Owl (Asio flammeus), Great Horned Owl (Bubo virginianus), Screech Owl (Otus asio) and Burrowing Owl (Speotyto cunicularia). The presence of these birds tends to support earlier theories, based on other organisms, as to the climates represented by the fossil faunas. Fossils from the front part of the cave suggest that a sagebrush prairie with scattered pine and nearby streams occurred in the area during the Wisconsinan Pluvial, about 12,000 - 15,000 years ago. Fossils from the rear part of the cave are considerably older and represent a warmer climate suggesting an interstadial or perhaps the end of the Sangamonian Interpluvial.

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PREVIEW

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Table 1. Raptors of Dry Cave, showing minimum number of individuals found in each locality. Extinct species are marked by *.

Portion of Cave:	Lost Valley Local Fauna					Dry Cave Local Fauna					
	Rear					Bison Sink	Entrance Fissure				
Localities:	1 and 2	5	26	27	4	6	12	22	23	25	31
<hr/>											
Order Falconiformes											
Family Cathartidae											
* <u>Coragyps occidentalis</u>	1	4	4	2	1			4	1		1
* <u>Breagyps clarki</u>	1	1									
Family Accipitridae											
<u>Aquila chrysaetos</u>								2			
* <u>Buteogallus fragilia</u>								1			
<u>Accipiter cooperii</u>								1			
<u>Buteo jamaicensis</u>						1		1			
<u>Buteo swainsoni</u>								1		1	
Family Falconidae											
<u>Falco mexicanus</u>			1								
<u>Falco sparverius</u>								1			
* <u>Caracara prelutosus</u>								1	6	2	1
<hr/>											
Order Strigiformes											
Family Tytonidae											
<u>Tyto alba</u>											1
Family Strigidae											
* <u>Strix brea</u>			1								
<u>Asio flammeus</u>							1	1			
<u>Bubo virginianus</u>					1			1			
<u>Otus asio</u>					1						
<u>Speotyto cunicularia</u>										1	
<hr/>											

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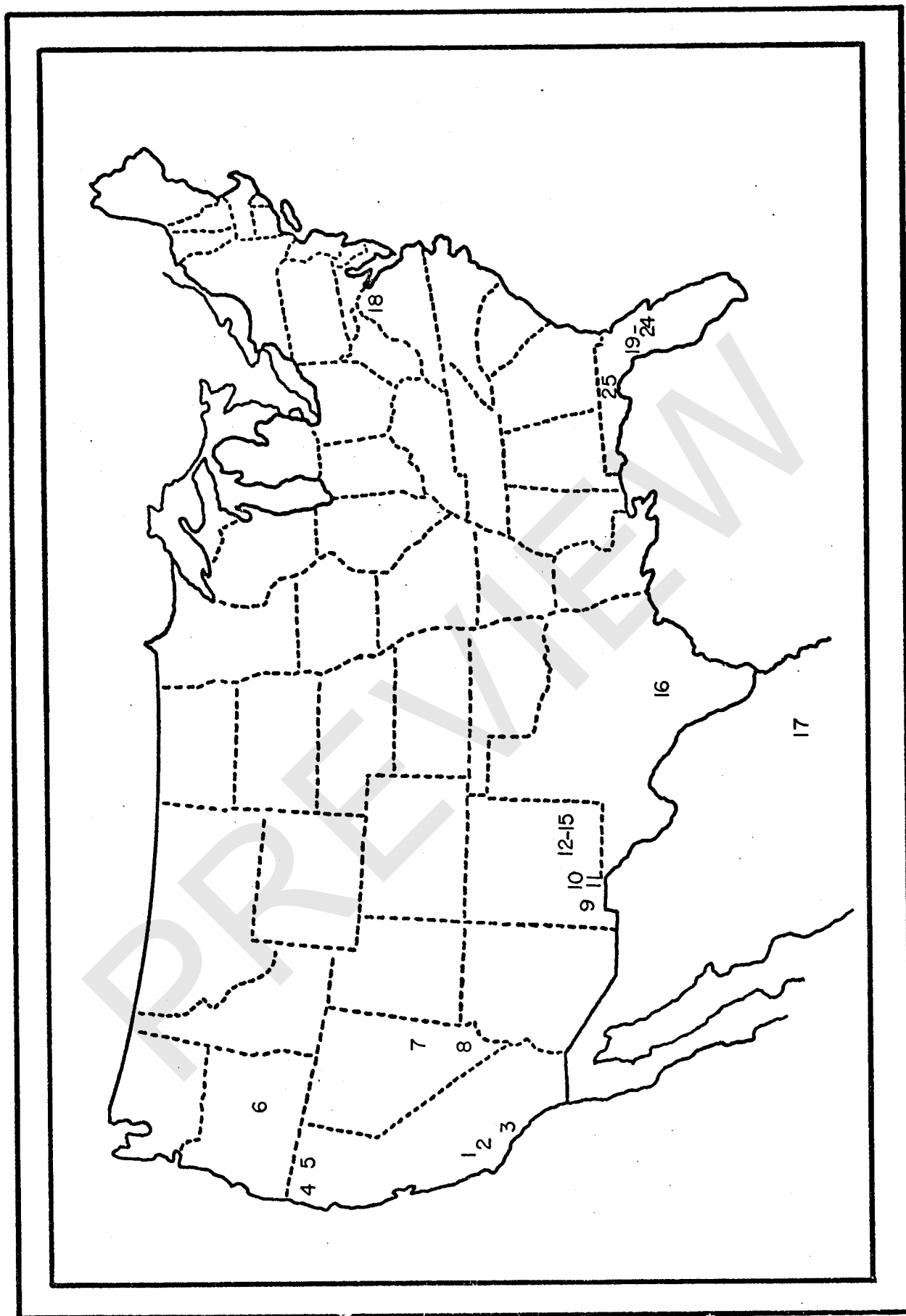
Introduction

Dry Cave, Eddy County, New Mexico, has been a site of entombment of animals for periods ranging back to 30,000 years or longer (A. H. Harris, 1972, personal communication). Among the thousands of Late Pleistocene fossils are at least two predatory avifaunas. Members of the Orders Falconiformes and Strigiformes are particularly well represented. These bird remains are important because they not only add to our knowledge of the evolution of their kind, but they also help us to understand the general climatic conditions prevalent in the Southwest in the Late Pleistocene. For these reasons, the following study of the predatory bird fossils of Dry Cave was made.

Fossil predatory birds have been of interest to paleontologists for many years. Of the many fossil sites which have produced fossils of predatory birds (Fig. 1), Rancho La Brea, California, is the type locality of most of the extinct raptors. From this area, Miller described Teratornis merriami (Great Pleistocene Condor), Breagyps clarki (La Brea Condor), Coragyps occidentalis (Western Vulture), Spizaetus grinnelli (Grinnell's Eagle), Buteogallus fragilis (Fragile Eagle), Wetmoregyps daggetti (Daggett's Eagle), Morphnus woodwardi (Walking Eagle), Neophrontops americanus (American Neophron), Neogyps errans (Errant Eagle), and

Figure 1. Pleistocene fossil localities containing predatory bird fossils.

1. Rancho La Brea	L. Miller, 1909
2. Carpinteria Asphalt	L. Miller, 1931
3. McKittrick Tar Seep	L. Miller, 1935
4. Samwel Cave	L. Miller, 1911
5. Potter Creek Cave	L. Miller, 1911
6. Fossil Lake	Shufeldt, 1913
7. Rampart Cave	L. Miller, 1960
8. Smith Creek Cave	Howard, 1935
9. Howell's Ridge Cave	Howard, 1962
10. Conkling Cavern	Howard and A. H. Miller, 1933
11. Shelter Cave	Howard and A. H. Miller, 1933
12. Rocky Arroyo	Wetmore, 1932
13. Dark Canyon Cave	Howard, 1971
14. Burnet Cave	Schultz and E. B. Howard, 1935
15. Dry Cave	
16. Miller's Cave	Weigel, 1967
17. San Josecito Cave	L. Miller, 1943
18. Natural Chimneys	Wetmore, 1962
19. Haile	Ligon, 1965
20. Seminole Field	Wetmore, 1931
21. Venice	Wetmore, 1931
22. Melbourne	Wetmore, 1931
23. Reddick	Brodkorb, 1957
24. Arredondo	Brodkorb, 1959
25. Rock Spring	Woolfenden, 1959
26. Itchtukee River	McCoy, 1963



Falco swarthi (Swarth Falcon). Other faunas studied by Miller include those from Carpinteria (1931), McKittrick (1935), Samwel and Potter's Cave (1911), San Josecito Cave (1943), and Rampart Cave (1960). Howard has studied Late Pleistocene birds from Smith Creek Cave (1935), Conkling Cavern and Shelter Cave (1933), Howell's Ridge Cave (1962), and Dark Canyon Cave (1971). Birds from Reddick (1957) and Arredondo (1959) were identified by Brodkorb. Wetmore studied the birds from Rocky Arroyo (1932), Natural Chimneys (1962), Seminole Field, Venice, and Melbourne (1933). Other studied avifaunas include those of Haile (Ligon, 1965), Rock Spring (Woolfenden, 1959), and Itchtuknee River (McCoy, 1963).

Location and Present Conditions

McKittrick Hill is one of a series of low, limestone hills between the Pecos River (about 15 miles to the east) and the Guadalupe Mountains (about 16 miles to the west). The highest point of the hill is Azotea Peak (4297 ft); there is a low saddle to the southwest of the peak with another, lower prominence (4242 ft) just west of the saddle. The entrance to Dry Cave is located on the southern slope of this lower peak at about 4200 ft elevation. At the southern base of McKittrick Hill runs the normally dry West Fork of Little McKittrick Draw. About eight miles farther south is Dark Canyon.

The climatic conditions for Carlsbad, the nearest weather

station, are summarized in Table 2. Because Carlsbad is about 1000 ft lower, temperatures near the cave are probably slightly lower and there is probably more precipitation near the cave (Harris, 1970). The highest temperature recorded at the cave by The University of Texas at El Paso Biology Field Schools of June, 1970, and June, 1971, was 107°F in 1971.

McKittrick Hill lies in an ecotone between the Upper and Lower Sonoran Life Zones and vegetation typical of both zones is present. This vegetation includes Sotol (Dasylirion wheeleri), Crucifixion Thorn (Koeberinia spinosa), Sacahuista (Nolina sp.), One-Seeded Juniper (Juniperus monosperm), Desert Sumac (Rhus microphylla), Skunkbush (R. trilobata), Mexican Buckeye (Ungnadia speciosa), Mormon Tea (Ephedra sp.), White Thorn (Acacia constricta), Ocotillo (Fouquieria splendens), Narrow and Broad Leafed Yuccas (Yucca spp.), Hackberry (Celtis reticulata), Mahonia (Berberis trifoliolata), and several cacti (Opuntia spp.). Among these plants is interspersed a variety of grasses. While there is no Creosotebush (Larrea divericata) on McKittrick Hill, it does occur nearby.

Common vertebrates living in the area of Dry Cave are the Desert Cottontail (Sylvilagus audoboni), Black-tailed Jack Rabbit (Lepus californicus), Rock Squirrel (Spermophilus variegatus), Merriam's Kangaroo Rat (Dipodomys merriami), Encinal Mouse (Peromyscus pectoralis), Checkered Whiptail Lizard (Cnemidophorus tessellatus), Common Whiptail Lizard