



Palegawra Cave, in the Piedmont Zone of northwest Iraq, in the area near Kirkuk on the map.

BONES OF PALEGAWRA

by Priscilla Turnbull

EVERYONE KNOWS that anthropological expeditions are usually concerned with recovering the bits and pieces from ancient cultures. Field workers carefully collect fragments of pottery, flint tools and flakes, beads, and even cloth shreds. Human burials are painstakingly excavated and removed to a museum for study. The walls of ancient mud villages are uncovered and reconstructed, and ashes from long-cold hearths are sifted. Often the bones of animals hunted and eaten by the former residents are among the most numerous elements present. Lists of these animals associated with man's life are usually published along with the details of the excavation, particularly when the site is a prehistoric one. Occasionally, a detailed study of these bones is made, as much for its zoological importance as for the light it sheds on the past environment, and for the understanding it yields of the way of life of the ancient people.

For some time I have been involved in such a study in a field midway between paleontology and zoology, osteo-archaeology, which perfectly illustrates the interdependence of these disciplines. The materials I deal with were collected in the Near East, chiefly in Iraq, by the Oriental Institute (University of Chicago) Iraq-Jarmo Expeditions of the 1950's. These journeys were under the general direction of Dr. Robert J. Braidwood, and their purpose was to investigate and excavate the earliest settled villages known to date. The various sites—caves, rock shelters, open air, and settled villages—were inhabited during that vastly important and critical period between the end of the Pleistocene ice age and the beginning of historic time a few thousand years ago.

One of these sites, a cave known as Palegawra, has been especially important because of the large amount of bone found in it. Based on comparable horizons at Shanidar for which Carbon-14 dates exist, it has been estimated that Palegawra cave was occupied about 11,500 years ago. The cave lies in the foothills of the Zagros Mountains, northeast of Baghdad, in the Baranand Dagh, one of a series of Cretaceous anti-clinal ridges. It is a small cave, measuring about nine feet high at the mouth, with an interior 15 feet deep by 18 feet across. Palegawra's absolute elevation is 3,250 feet, and it lies about 230 feet above the valley floor. It faces south, overlooking the Bazian valley in the bottom of which a stream drains toward, but rarely reaches, a main tributary of the Tigris River.

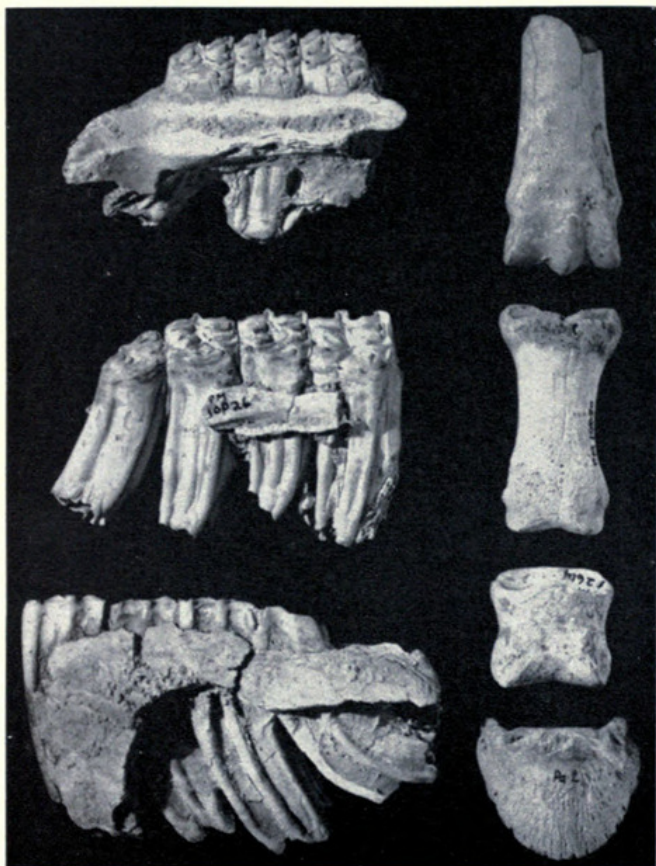
Many people have been involved in the excavation of this little cave. Dr. Bruce Howe of Harvard University, Associate Director of the expedition, acting on behalf of the Baghdad School of the American Schools of Oriental Research, first tested Palegawra in 1951 and excavated it in 1955 with the help of Kurdish field workmen. Dr. Charles A. Reed, zoologist with the expedition, now Professor of Anthropology and Biological Sciences at the University of Illinois at Chicago Circle, visited the site during excavation and was in charge of the preparation and study of the faunal remains. I have been responsible for the laboratory study of the mammalian bones, which have now been cataloged in the Field Museum's paleontological collection in the Department of Geology. The Iraq-Jarmo Expedition had many other members—specialists in geology and botany, pottery experts, tool specialists—all involved in aspects of the expedition work. To describe, assess, and integrate the work accomplished at a score of sites will take many years and many publications.

The people who took shelter in Palegawra 11,500 years ago were hunters; they did not cultivate crops or raise domestic animals. Perhaps they followed the wandering herds of game or came into the valley occasionally seeking food. It is not likely that the cave was occupied continually for long periods of time; it is too small to be comfortable for more than a few people, and the archaeologists found no hearths that would have provided warmth in winter. Besides, the cave drips with water during rains, and winter time can be very wet indeed in northeast Iraq. The cave would offer a cool retreat from hot summer sun, however, and temporary shelter for a small group or family at any time.

The human artifacts, that is, the tools, flint projectile points, scrapers, etc., are of a microlithic type of assemblage that anthropologists term Zarzian. It is usually very difficult or impossible to identify the animals from which the bone tools are made, though I have identified beads made of incisor teeth of deer. It is the unworked but broken, charred, and gnawed bone that is of importance to this study. Probably between 5,000–10,000 bones—bits of skulls, fragments of ribs, ends of limb-bones, pieces of shoulder and hip bones, fingers, toes, and teeth—were collected from Palegawra cave and sent back to the Museum for detailed study.

There are several ways to look at collections from early man sites. The cultural anthropologist would consider the Palegawra assemblage exceedingly primitive and very an-

cient. A paleolithic specialist, on the other hand, would look upon the Palegawra tool kit as quite advanced. To one whose background has been paleontological, as mine has, the mammalian remains are entirely modern; all are from animals that exist today, or did until very recently, in the same or nearby regions. Perhaps the most peculiar aspect of this type of collection, at least to the paleontological eye, is that almost all the bones have been broken “unnaturally” as a result of man’s butchering and cooking.



Examples of Palegawran equid bones, *Equus hemionus*. Left side, three upper jaw fragments with several teeth in each. Right side, top to bottom, end of cannon bone (metapodial), and first, second and third toe bones (phalanges). Many of the bones were more fragmentary and less well preserved.

Many of the bones represent the discarded parts of ancient meals. Others are from scavengers that lived and died alongside man—for example, rats and mice. Still other bone pieces were casual, chance catches; the birds and turtles, though not really game, would have added a tasty bit of variety to the diet. The work of sorting, cleaning, cataloging, and identifying the bones of Palegawra is now proceeding in the laboratories of the Museum. A large per cent of the fragments lacks diagnostic shape, edge, angle, or curve, and therefore are not identifiable at all. Nevertheless, over 4,000 Palegawran bones have been identified.

Among the game (food) mammals, bones of the onager or half-ass, *Equus hemionus*, are the most abundant in the Palegawra collection, indicating that the cave’s visitors were fond of “horsemeat.” Bone fragments of the large red deer, *Cervus elaphus*; wild sheep, *Ovis orientalis*; and wild goats, *Capra hircus aegagrus*, are also numerous. Bone pieces identified as belonging to the pig, *Sus scrofa*; gazelle, *Gazella subgutturosa*; and cattle, *Bos primigenius*, are also present. Rabbit, pika, fox, martin, polecat, badger and cat probably represent occa-

sional chance food animals. Seven genera of rodents have been identified; two genera of insectivores and one bat are also recognized. Among non-mammalian animals—various birds, small land turtles, at least two genera of land snails, and fresh-water crabs—have been identified.

To the anthropologists, the relative abundance of the various animals is an indication of their economic importance to the hunters. To the zoologist, the occurrence of these animals in a prehistoric site extends our knowledge of their history. For example, the onager in Iraq has been identified in decorative motifs within historic time (much more recent than 11,500 years ago) and has been reported in herds as recently as 1927. Currently, though, it is extinct in that country. Now we know definitely that the half-ass lived in northeastern Iraq during the period between the latest Pleistocene and earliest Recent time. Three genera, the pika, *Ochotona*; the hamster, *Mesocricetus*, and the vole, *Arvicola*, were first reported among the fauna of Iraq by the Palegawra expedition. We now know they once lived in the Zagros foothills. Whether they are now extinct in Iraq, or are simply too clever to get trapped, is an open question. Nevertheless, these three animals are well known elsewhere in Asia.

Careful study of the bone fragments can correct misconceptions that have existed many years. A species of small cattle was assumed to have lived throughout the Near East in late prehistoric time. At the first casual glance, some of the Palegawra bones were identified as such a species. Detailed study, however, soon indicated that instead of small cattle, these animals were large deer. Of course, I do not know if *all* the animals that have been identified as “small cattle” in southwestern Asia are deer, but at Palegawra the evidence is irrefutable.

Consideration of the Palegawra fauna gives some strong indications about the climate and vegetation of the past. The animals identified from the bone fragments could live in a climate and setting very similar to those that exist today in the Zagros foothills. Dr. Reed believes that this area was cooler and dryer during the late prehistoric period.



Fortunately for the identification of osteo-archaeological collections, the Museum is almost unrivaled in the extent of comparative materials available. The skulls and jaws in the Mammal Division and the skeletons in the Anatomy Division are the bases on which students and I can work on “recent” fossils from ancient man’s garbage dumps.



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