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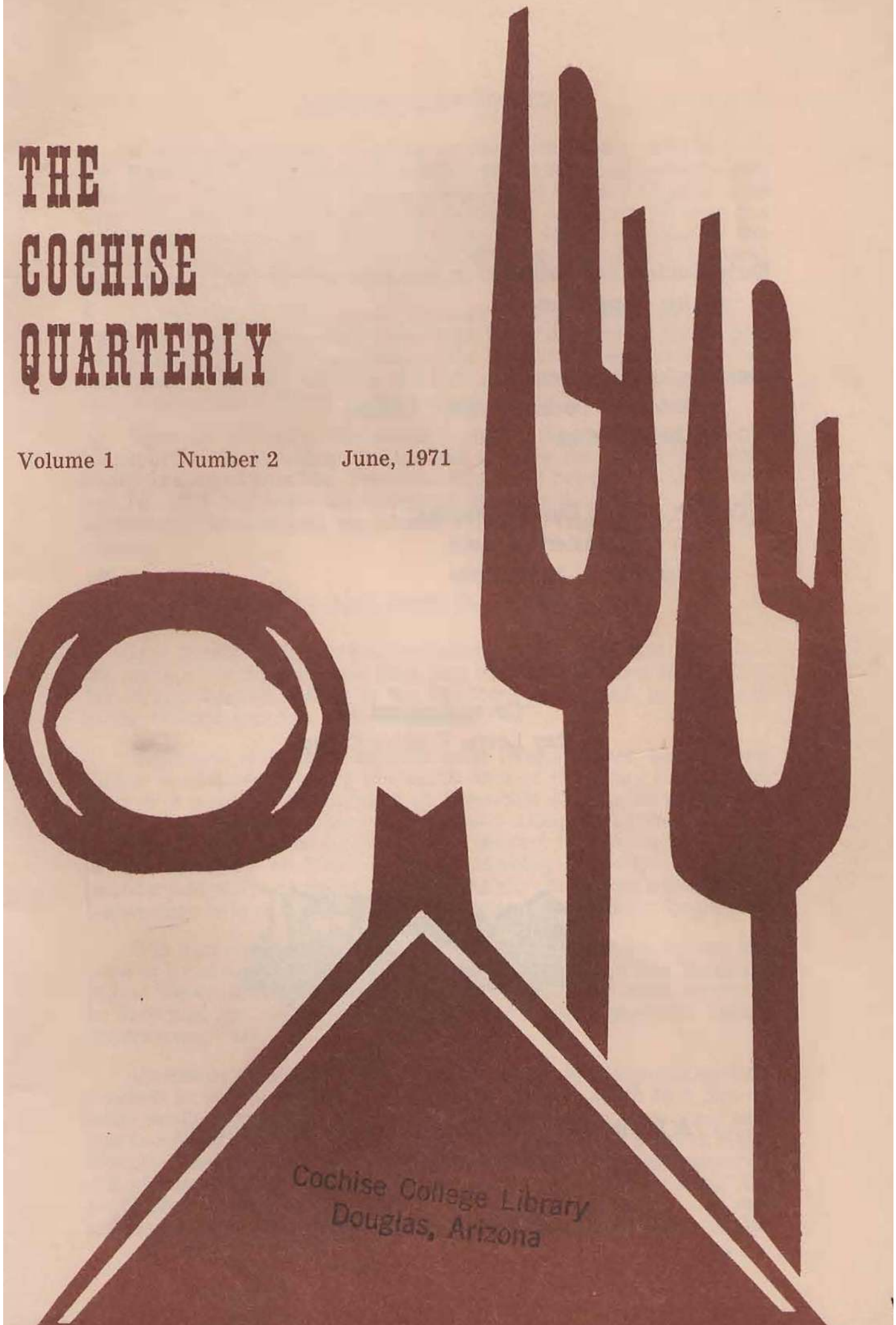

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EARLY HUNTERS AND GATHERERS IN SOUTHEASTERN ARIZONA*

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During the summer, 1970, the Arizona State Museum, in cooperation with the State Highway Department and Cochise County, excavated an ancient pre-pottery archaeological site and remains of a mammoth near Double Adobe, Arizona. Although highway salvage archaeology has been carried out in the state since 1955, last summer's work on Whitewater Draw, near Double Adobe, represented the first time that either the site of early hunters and gatherers or remains of extinct mammoth had been recovered through the salvage program. In addition, excavation of the pre-pottery Cochise culture site on a new highway right-of-way has revealed vital evidence for the reconstruction of prehistoric life-ways in southeastern Arizona, an area that is little known archaeologically, yet which has produced evidence to indicate that it was early one of the most important areas for the development of agriculture and a settled way of life in the Southwest.

Early Big Game Hunters

Southeastern Arizona is also important as the area in which the first finds in North America of extinct faunal remains overlying cultural evidences of man were scientifically excavated. In 1926, fragments of a mammoth tusk were discovered by school children in Whitewater Draw, a short distance from Double Adobe. The find location was subsequently visited by Byron Cummings, Dean, University of Arizona, and the remainder of the skull uncovered and artifacts revealed in a geologic bed underlying the mammoth remains (Cummings 1927, 1928). The geologic positions of the mammoth skull and artifacts indicated at least their contemporaneity if not the possibility that the artifacts predated the mammoth.

During the same year, 1926, finds of extinct bison and associated projectile points near Folsom, New Mexico, brought closer to the scientific community the idea that man had indeed coexisted with extinct animals in North America (Wormington 1957: 23-29). Subsequent finds of mammoth in association with evidence of early man at Blackwater Draw near Clovis, New Mexico (Sellards 1952), in Greenbush Draw near Naco, Arizona (Haury 1953), on the Lehner Ranch near Hereford, Arizona (Haury 1956) and in other areas of the western United States and Mexico have left no doubt that man not only coexisted with extinct animals at the close of the last Glacial Period, but hunted them as well. Some of the best documentation

*Contribution to Highway Salvage Archaeology in Arizona, No. 30.

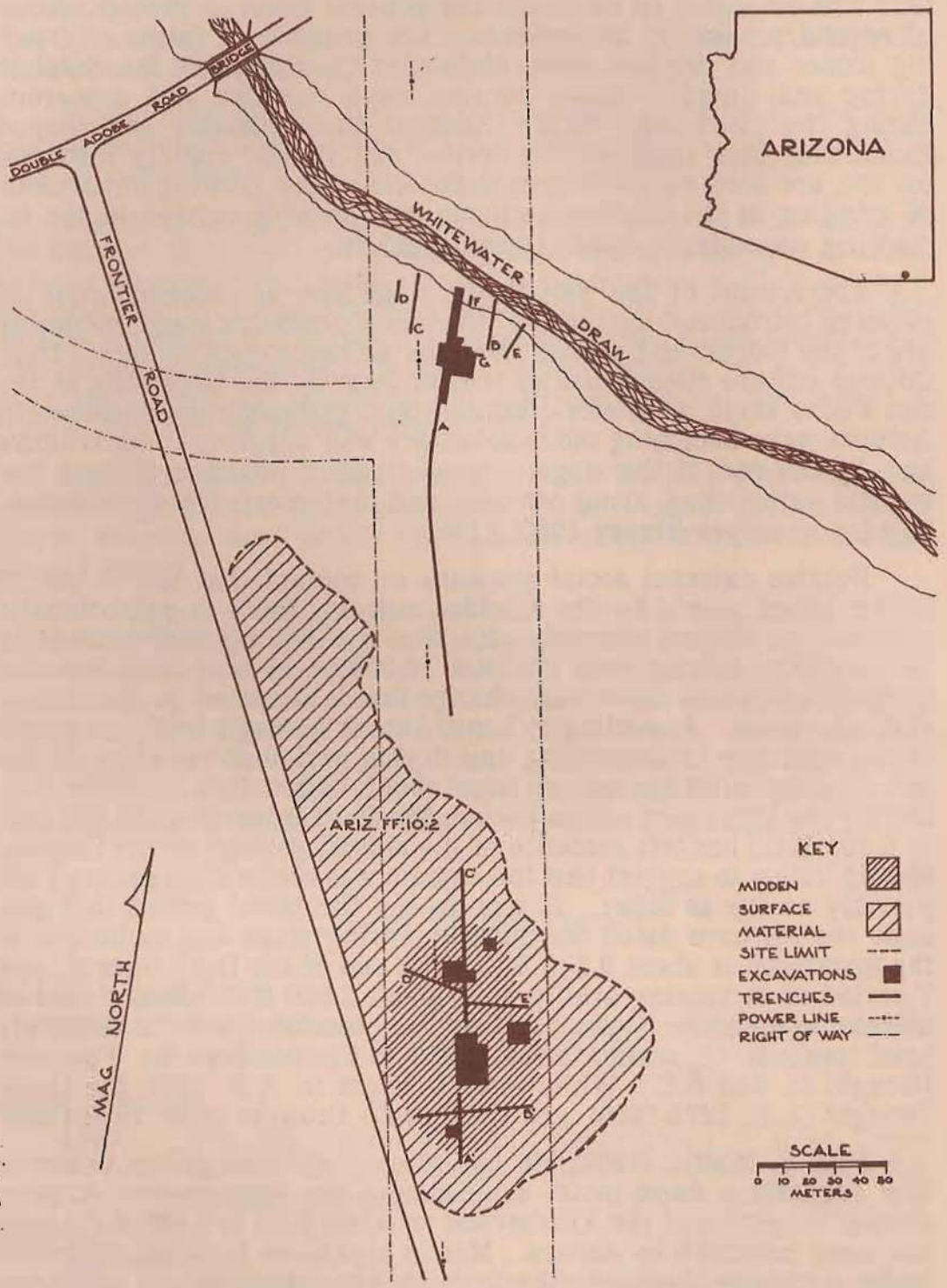
for this conclusion has come from the Naco and Lehner sites, although many other find localities in the New World have upheld it.

The Cochise Culture

Shortly after the original find of mammoth remains and stone implements by Cummings in 1926, E. B. Sayles, Emil W. Haury and Ernst Antevs began a reconnaissance of Whitewater Draw to discover further evidence of an early culture that was associated with extinct fauna and which apparently relied heavily on gathering and processing wild vegetal foods. The published work of Sayles and Antevs (1941) and unpublished manuscript of Sayles and others (1958) forms the basis for this review of their work in southeastern Arizona.

Results of the early archaeological surveys along Whitewater Draw in the Sulphur Spring Valley indicated a long succession of prehistoric hunting and gathering groups beginning at about 10,500 B.C. and ending with the establishment of fully-settled village life that was dependent upon agriculture (cf. Sayles and others 1958: 114, and Martin and others 1952: 504). Sayles and Antevs postulated three stages of cultural development for the newly-defined Cochise culture, beginning with the Sulphur Spring stage which was found in part to be contemporaneous with now-extinct animals such as the mammoth. Recent skepticism of the idea that the early part of the Cochise culture coexisted with the mammoth has been alleviated by Haury's statement of the circumstances under which the discoveries were made (1960: 609-610). The following stage, Chiricahua, was for the most part economically based on the hunting of modern forms of game and gathering wild herbs and seeds, although there are indications that cultivation of some domesticated plants was introduced at this time. Occupation of specific sites was most likely on a seasonal basis, as was probably the case during the Sulphur Spring stage. By the time the last stage (San Pedro) began, maize and squash were being cultivated to a greater extent—supplementing a greater part of the previously exclusive diet of wild vegetal foods and game than during the Chiricahua stage. The end of the San Pedro stage, shortly before the beginning of the Christian Era, marked a significant step toward a settled way of life that was to become characteristic of much of the prehistoric Southwest. Later work in the Sulphur Spring Valley brought to light the existence of a fourth cultural stage, the Cazador, which is apparently transitional between Sulphur Spring and Chiricahua stages. Archaeological work in other parts of southern Arizona has added to our knowledge of the Cochise culture, but has not greatly modified the archaeological sequence defined by Sayles and Antevs. Sayles had early recognized the continuous evolution of Cochise material culture and by expressing it in stages, successive changes were easily illustrated.

Recent work in the southeastern Arizona-southwestern New Mexico region has added explanations for some material culture



The system of trenches and excavation units on the Cochise culture site (Ariz. FF: 10: 2) and exploratory trenches in which mammoth bones were discovered near Whitewater Draw are shown in relation to the highway right-of-way.

changes, specifically the introduction of maize presumably from Mexico by 3,500 B.C. (cf. Dick 1965: 100, and Martin 1963: 50). Thus, Sayles has summarized patterns of change within the Cochise culture tool inventory to illucidate the general trend in diversification of vegetal processing implements. The generalized forms of grinding stones and chipped stone tools that characterized the Sulphur Spring and Cazador stages became more complex and numerous during the Chiricahua stage. Shallow basin metates and shaped handstones that replaced the earlier flat stones, slightly modified for use, are according to Sayles indicative of the growing importance of grinding in the Cochise economy and possibly related to the increasing dependence upon primitive maize.

The advent of the San Pedro stage saw an intensification of patterns introduced during the previous Chiricahua stage, including use of the mortar and pestle. To date, archaeological evidence from Cochise culture sites indicates that at least by the beginning of the San Pedro stage, prehistoric hunters and gatherers in southeastern Arizona were becoming more sedentary and adapting to agriculture and, by the end of the stage, semi-permanent pithouse villages had become established along streams and wet meadows of mountain bajadas or slopes (Haury 1962: 115).

Besides external social pressure or contact that led to use of domesticated plants by the Cochise culture, there is paleoclimatic evidence to support the inference that a changing environment in southeastern Arizona over the past 10,000 years may have been an additional impetus for culture change that is reflected in the archaeological record. According to Ernst Antevs, geologic evidence points to the existence of a warming and drying period at the close of the last Glacio-pluvial Period, or from about 13,000 B.C. to 8,000 B.C. During the latter part of this period, the Datil Interval (c. 10,500 B.C. to 8,800 B.C.) has left evidence in the aluvial geology of the Sulphur Spring Valley to suggest that the climate was cooler than present, but possibly as dry as today. It was during the latter period that geologic studies have dated the Sulphur Spring stage and extinction of the mammoth at about 9,500 B.C. The end of the Datil Interval saw a period of increasing aridity until about 2,000 B.C. when a time of increasing moisture began. Antevs has postulated several relatively brief periods of aridity since 2,000 B.C., notably the Fairbank Drought (c. 500 B.C.), Whitewater Drought (c. A.D. 330), the Great Drought (A.D. 1276-1299), and the Pueblo Drought (A.D. 1573-1593).

Paul S. Martin (1963: 70) has presented fossil pollen evidence that suggests a more moist environment for southeastern Arizona during the period of the Altithermal (c. 5,500 B.C. to 2,000 B.C.) than has been indicated by Antevs. Martin continues by suggesting that under a climate similar to the present, early hunters and gatherers of the area were able to cultivate introduced plants that gradually led to a greater reliance on agricultural products.

Whatever the climate during the Altithermal, the intensification in diversification of tool forms associated with plant seed processing and increasing use of cultigens during the San Pedro stage coincides

with Antevs' climatic reconstruction of the beginning of a relatively moist period by 2,000 B.C. Cultural reprocussions of brief periods of drought suggested by Antevs shortly before and after the time of Christ are not well known, but it is likely that any change was not as dramatic as those associated with longer periods of aridity as during the Altithermal.

The 1970 Discoveries

This brief introduction, although a selective and much abbreviated account of present archaeological, geological and climateological knowledge of post-Pleistocene times in southeastern Arizona, serves as a background to a description of last summer's finds near Double Adobe. Initial survey of the Cochise College-Double Adobe Highway right-of-way early in 1970, located a single archaeological site on a ridge paralleling South Frontier Road, south and west of Whitewater Draw. Scattered chipped stone, mano and metate fragments, and a few projectile points on the surface led to its provisional identification as belonging to the Chiricahua stage of the Cochise culture. During subsequent excavation of the site, test trenches were placed perpendicular to Whitewater Draw on the highway right-of-way for the purpose of finding further evidence to substantiate the contemporaneity of extinct animals and the Sulphur Spring stage (see Figure 1). Although the analysis of evidence uncovered by the trenches is by no means completed, our knowledge of the early post-Pleistocene is being greatly enhanced.

Mammoth Find

During twelve days early in September, 1970, while most of the field crew were excavating on the Cochise culture site, seven backhoe trenches were placed adjacent to Whitewater Draw on the floodplain below the surface site. Although the main purpose of the trenches was to explore for evidence of buried cultural material associated with the Sulphur Spring stage of the Cochise culture and any evidence of its contemporaneity with extinct fauna, evidence of past geological events and paleoclimate was also being sought.

During the first phase of the backhoe operations while six trenches were being excavated roughly at right angles to the draw, bones of recent domesticated animals were recovered near the surface, bison bones were found scattered in a limited quantity throughout the dark clay immediately below the shallow, recent aluvium and a small mammoth bone splinter was recovered from a gravel lense within a rusty sand layer which underlies the dark clay. Three stone flakes that were probably man-made were later found in the same trench (Trench E) only a few centimeters from the mammoth bone splinter. Unfortunately, the position of the flakes in a gravel lense with the mammoth bone splinter that appeared to have been stream-rolled is not a positive indication that they were deposited at the same time. Remains of a mammoth, represented only by a

splinter of bone, and the flakes could have been deposited thousands of years apart and come into association from stream action mixing the deposits. Another trench (Trench C) yielded a mano in the rusty sand matrix, the same layer in which Sulphur Spring stage artifacts are supposed to occur, but no other artifacts or associations were found. Near the completion of the trenches, pollen and charcoal samples were taken from several areas of the exposed strata, analysis of which is adding to our present knowledge of the age and plant types of past environments along Whitewater Draw during times when the area was inhabited by man. After backhoe work was finished in the six trenches, stratigraphy was recorded in four of the trenches (Trenches A, B, C, and E) and it was suggested that one additional trench (Trench G) be placed perpendicular to the longest existing trench (Trench A) for the purpose of gaining a three-dimensional picture of the geology.

As Trench G was begun, excavation four meters from its intersection with Trench A revealed one complete long bone, several vertebrae and another long bone fragment of a mammoth. Within a short period of time, larger equipment than used previously widened Trenches A and G to expose an area around the find (Figure 2). As soon as possible, hand excavation resumed and revealed what have been tentatively identified as two humeri and two radius-ulnae, unarticulated but in close proximity to one another, several vertebrae, fragments of a scapula and other mammoth bone fragments scattered throughout the same level in gravels underlying the rusty sands. A study was made of the deposition of the bones and their relationships to the mano previously found in a rusty sand matrix and three flakes uncovered in a gravel lense in Trench E. According to Vance Haynes, geological specialist in early man sites and now at Southern Methodist University, both the mano and the flakes appear to be stratigraphically higher than the mammoth bones. Charcoal samples for radiocarbon dating were recovered from the vicinity of the bones with the aim of placing the remains in chronological perspective with regard to natural and cultural events that have taken place in southeastern Arizona.

Near the close of the excavation a small exploratory trench (indicated by the arrow in Figure 2) in the main pit revealed the bank of an ancient arroyo that was probably in existence at the time during which the mammoth had died and whose remains were deposited in the arroyo gravels. A few small mammal and bird bones collected from this excavation will supplement knowledge of the paleoenvironment during the time mammoth roamed the Sulphur Spring Valley and give a more accurate picture of the setting in which the Cochise culture developed.

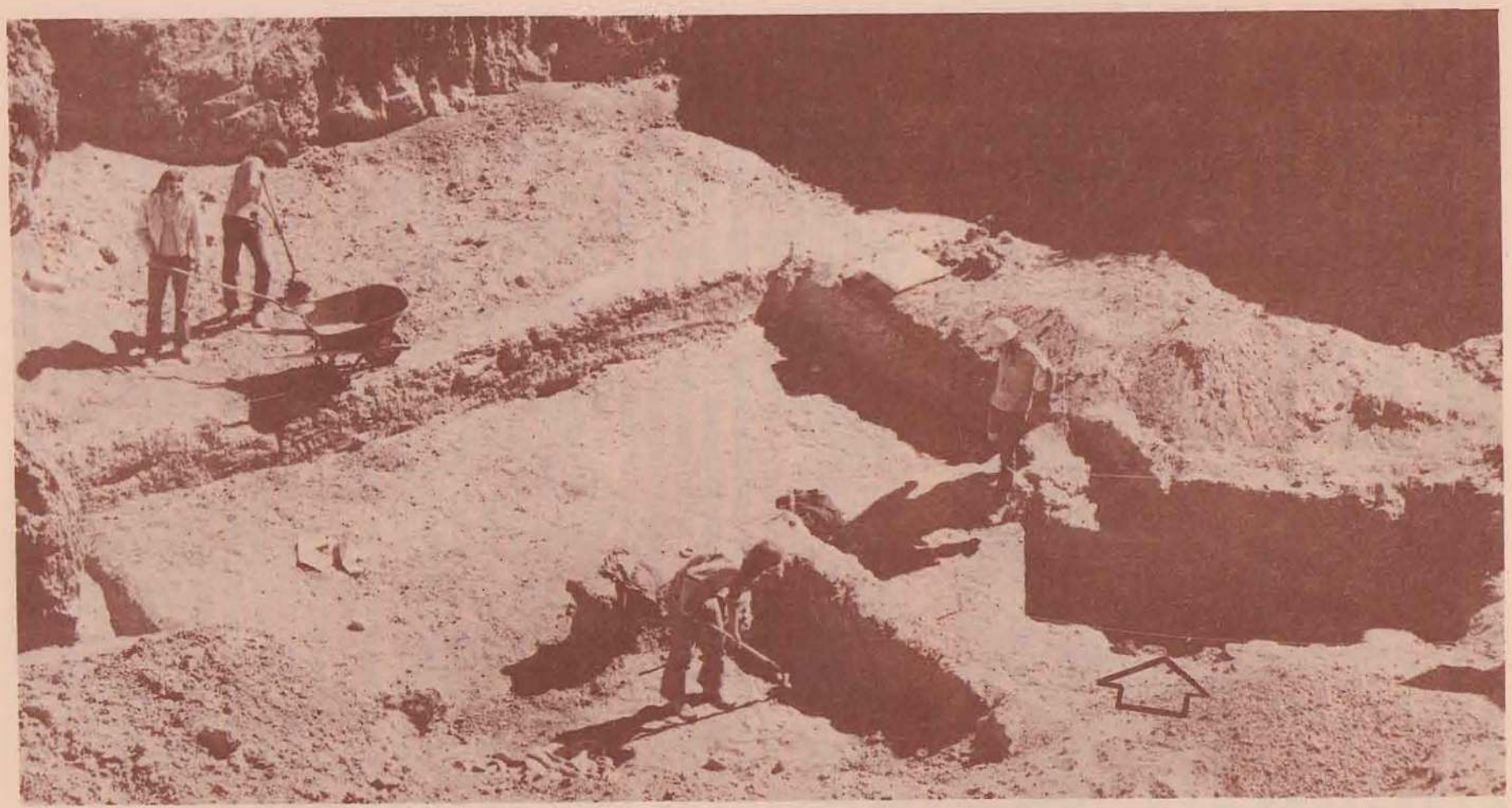
The Fairchild Site

Although excavations of the mammoth remains near Whitewater Draw did not reveal any clear associations between extinct fauna and the earliest stage of the Cochise culture, results of radiocarbon dating and pollen analyses will add to current knowledge

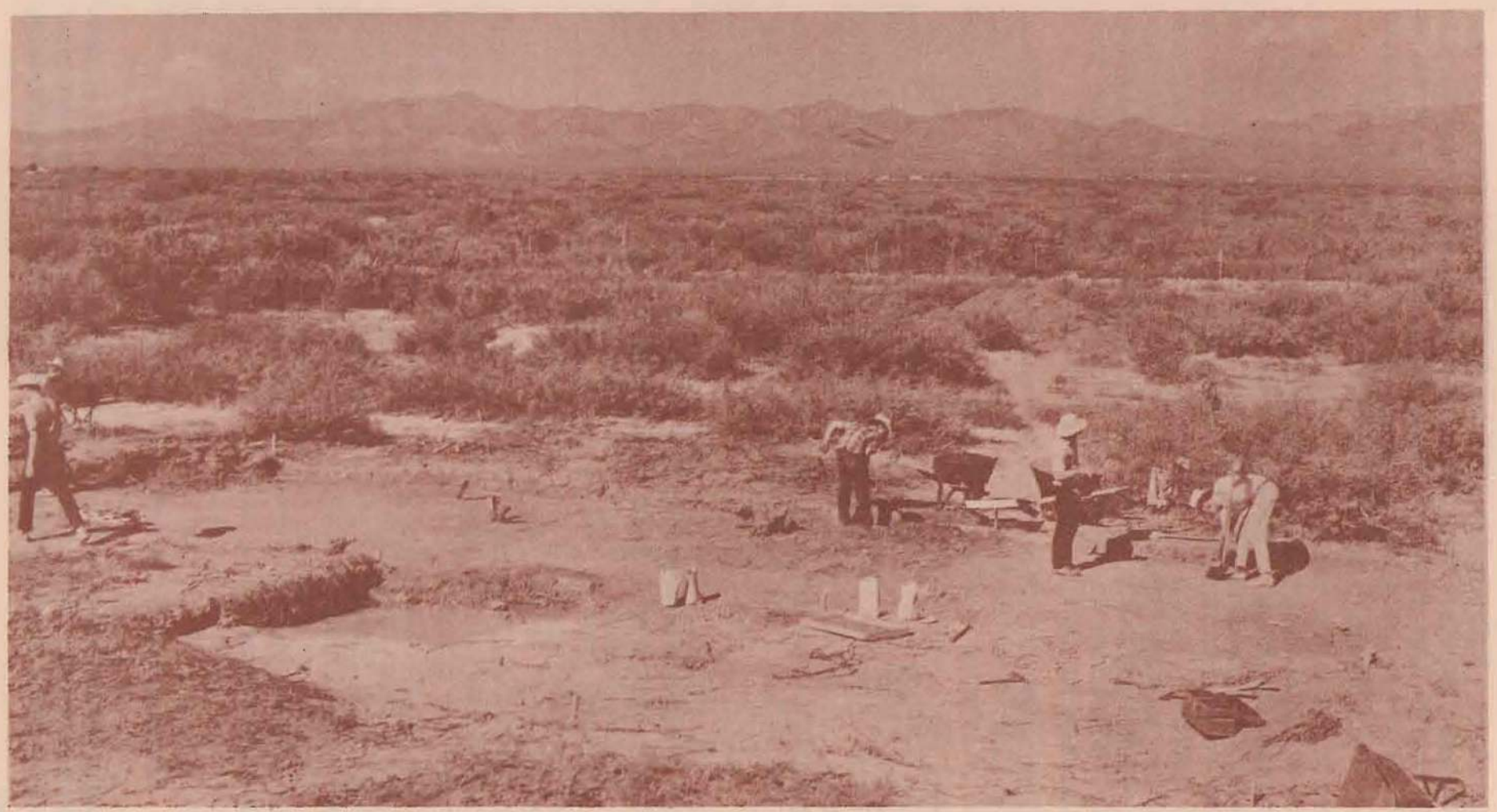
about Pleistocene extinctions and the local environment during and prior to occupation of the nearby Cochise culture site, Ariz. FF: 10: 2 (Arizona State Museum designation for the Fairchild site). First impressions of the Fairchild site were dominated by its size. Surface clusters of firebroken rock and scattered chipped stone covered an estimated area of 50,000 square meters on an almost imperceptible ridge above the narrow floodplain of Whitewater Draw. The highway right-of-way bisected the site and joined Double Adobe Road at its junction with the Elfrida Cutoff.

Although the entire site was covered with a light-colored sand deposited by sheet erosion, excavation of several five-meter squares was begun on the highest portion within the right-of-way for the purpose of determining areas with the deepest occupational refuse accumulation (Figure 3). Such areas would yield the best evidence for length of aboriginal occupation and changes through time of the material culture. Artifacts and features, such as fire hearths, from the surface of the site could be placed on a rough time scale only through comparison of stylistic elements of similar cultural items which had been recovered from a known stratigraphic context in the excavated areas.

The first test excavations revealed clusters of manos, firebroken rocks, and other stone material, as well as scattered small animal bone fragments, projectile points and chipping waste, all of which were buried in a dark layer of midden. Fourteen contiguous five-meter squares were eventually opened in what appeared to be the area of deepest midden accumulation. In some instances, the depth of occupational debris extended to forty-five centimeters below the surface, the base of which was determined by the surface of a thick layer of calichified clay. Test excavations to a depth of about three meters below the surface revealed the considerable depth of the sterile clay and diminished the possibility of Cochise culture artifacts occurring below it. Upon completion of the large excavated area, forty-seven features had been uncovered and a great quantity of artifacts collected that had been scattered throughout the midden. Of the features recorded, most were clusters of mano and metate fragments, firebroken rock, burned caliche nodules that may have been used in cooking processes, small animal bone fragments, some chipping waste and a few scrapers, knives and projectile points. One of the features was a shallow depression in the sterile clay with a diameter of nearly two meters, from which a large amount of burned animal bone fragments and a few firebroken rocks were recovered. Although it was the only such feature recorded during our excavations and there is little comparative data in published archaeological accounts of the Cochise culture, the depression appears to have been used as a roasting or cooking pit. What is provisionally defined as a small storage pit was located about four meters from the shallow roasting pit. Unfortunately, the storage pit had been badly disturbed by rodent activity, destroying its original shape and any possibility of recovering a pollen sample from which some indication of the former contents might have been postulated. Surrounding the top of the pit was a very hard packed surface which could conceiv-



This large pit was excavated near Whitewater Draw to recover mammoth bones, some of which were exposed during trenching operations. The arrow indicates a test excavation on the extreme right side of which was discovered the bank of an old arroyo.



These first several contiguous squares were excavated near the highest point on the Fairchild site (Ariz. FF: 10: 2). The Mule Mountains to the west of the site are in the background.

died and the nature of the environment during the time of its death. No artifacts were found with the mammoth bones and it remains highly questionable that its death was caused by man. Previous pollen analyses of sediment from Whitewater Draw indicate that at the close of the last Glacio-pluvial Period, about 10,000 years ago, the Sulphur Spring Valley was grassland, bisected down part of its length by a perennial stream that was probably lined with cottonwoods and other trees characteristic of a Riparian environment (cf. Sayles and others 1958: 21, Martin 1963: 36). The ensuing period, until the latter part of the Chiricahua stage, probably became increasingly arid or perhaps saw a shift in the seasonal rainfall that would account for discrepancies between the geologic and fossil pollen evidence of past climates. At any rate, some areas in the southeastern Arizona-southwestern New Mexico region have shown archaeological evidence for the beginning of cultivation and the following gradual spread of domesticated plants through the San Pedro stage of the Cochise culture.

The Fairchild site was probably occupied near the end of the Altithermal Period and during a time when knowledge of cultivated crops was on the increase. In fact, inhabitants of the site may have known about domesticated plants, even though present evidence does not indicate use of cultigens on the Fairchild site. Pollen extracted from the grinding surfaces of metates recovered from the site appears to reflect the use of **Chenopodiaceae, Amaranthus** and some grasses with evidence totally lacking for maize or other cultigens. It is conceivable that the inhabitants of the site were cultivating or encouraging plants in the **Chenopod** family because of the unusually high frequency in which their pollen grains were encountered during the analysis, but their prevalence may also be due to disturbed soil conditions inadvertently caused by everyday activities of the former human occupants.

The absence of any evidence of permanent or semi-permanent structures at the Fairchild site and the rare occurrence of storage pits and frequent presence of what have provisionally been defined as grinding stone caches, suggest that the site was inhabited seasonally. The relative abundance of **Chenopodiaceae** pollen in one storage pit and on the surfaces of metates intimates the use of plants common only during and after the late summer rainy season. Assuming the rain fall patterns of 3,000 to 5,000 years ago were similar to those of today, the pollen evidence would argue for a late summer and possibly fall occupation of the site. An additional analysis of stone material used on the site and possible source areas that is presently under way, may give clues in the direction of finding areas in nearby mountains and slopes with which the former inhabitants of the Fairchild site may have had contact. Further analysis of features and the artifact inventory recovered from the site will give us a better idea of the ways in which Cochise culture people exploited the environment, but only excavation of other similar sites in southeastern Arizona will provide the evidence needed to establish the seasonal pattern of migration of these people and make clearer the subsequent transition to a settled way of life.

ACKNOWLEDGMENTS

Excavations were carried out by the Arizona State Museum with the cooperation of the Arizona Highway Department and Cochise County under provisions of the Statewide Archaeological Salvage Program directed by Laurens C. Hammack. The following individuals from the University of Arizona are gratefully acknowledged for their assistance during the project: Mr. E. B. Sayles, Curator Emeritus, Arizona State Museum; Dr. Emil W. Haury, former Director and present Advisor to the Arizona State Museum; Dr. Paul S. Martin, Chief Scientist, Laboratory of Paleoenvironmental Studies; Dr. Austin Long, Associate Professor of Geology; Dr. Everett H. Lindsay, Chief Scientist, Laboratory of Paleontology; Mr. James H. Garbani, Preparator of Vertebrate Paleontology, Department of Geosciences; Mr. James E. King, Research Associate, Laboratory of Paleoenvironmental Studies; Mr. Jay Quick, Graduate Student, Department of Geosciences; Mr. Bruce Huckell, who served as assistant supervisor during excavations; Mr. Charles Sternberg, draftsman for the project; and Miss Sharon Urban, who washed and catalogued field specimens that were recovered.

I would particularly like to thank Dr. Vance Haynes, Professor of Geology, Southern Methodist University, for his study and interpretation of relationships between the stratigraphy and mammoth remains uncovered during the project.

I would also like to express our appreciation for the cooperation of the property owners, Mr. and Mrs. Marion Fairchild, and to numerous people in the Bisbee and Douglas areas who served as crew members during excavations. Local interest and enthusiasm added greatly to the success of the project.

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It will be one of the purposes of **The Cochise Quarterly** to publish from time to time rare and often unpublished documents pertaining to Arizona history and particularly to Cochise County. The first to appear in this series is the executive order establishing the Chiricahua Indian Reservation and the San Carlos division of the White Mountain Reservation. It is of particular interest to Arizonians for the exact boundaries established.

In the fall of 1872, Major General O. O. Howard, emissary of President U. S. Grant, made peace with the Chiricahua Apaches and Chief Cochise in their Stronghold in the Dragoon Mountains. During the course of the negotiations, the Indians agreed to go onto a reservation with Tom Jeffords as their agent.

Upon his return to the nation's capital, General Howard made his report to the President and insisted that the reservation be established as soon as possible. President Grant did not delay. On December 14, 1872 he issued an executive order in accordance with the agreement Howard had made with Cochise. That executive order follows:

EXECUTIVE MANSION, December 14, 1872.

It is hereby ordered that the following tract of country be, and the same is hereby, withheld from sale and set apart as a reservation for certain Apache Indians in the Territory of Arizona, to be known as the "Chiricahua Indian Reservation," viz:

Beginning at Dragoon Springs, near Dragoon Pass, and running thence northeasterly along the north base of the Chiricahua Mountains to a point on the summit of Peloncillo Mountains or Stevens Peak range; thence running southeasterly along said range through Stevens Peak to the boundary of New Mexico; thence running south to the boundary of Mexico; thence running westerly along said boundary 55 miles; thence running northerly, following substantially the western base of the Dragoon Mountains to the place of beginning.

It is also ordered that the following tract of country be, and the same is hereby, withheld from sale and added to the White Mountain Indian Reservation in said Territory, which addition shall hereafter be known as the "San Carlos Division of the White Mountain Indian Reservation," viz:

Commencing at the southeast corner of the White Mountain Reservation as now established, and running thence south to a line 15 miles south of and parallel to the Gila River; thence west along said line to a point due south of the southwest corner of the present White Mountain Reservation; thence north to the said southwest corner of the aforesaid White Mountain Reservation, and thence along the southern boundary of the same to the place of beginning; the said addition to be known as the "San Carlos division of the White Moun-

tain Reservation," which will make the entire boundary of the White Mountain Reserve as follows, viz:

Starting at the point of intersection of the boundary between New Mexico and Arizona with the south edge of the Black Mesa, and following the southern edge of the Black Mesa to a point due north of Sombrero or Plumoso Butte; thence due south to said Sombrero or Plumoso Butte; thence in the direction of the Piache Colorado to the crest of the Apache Mountains, following said crest down the Salt River to Pinal Creek to the top of the Pinal Mountains; thence due south to a point 15 miles south of the Gila River; thence east with a line parallel with and 15 miles south of the Gila River to the boundary of New Mexico; thence north along said boundary line to its intersection with the south edge of the Black Mesa, the place of beginning.

U. S. GRANT

The Cochise Quarterly is a journal of Arizona history and archaeology. It is published quarterly in March, June, September, and December by the Cochise County Historical and Archaeological Society, Box 207, Pearce, Arizona 85625. It contains articles by qualified writers on Arizona historical and archaeological subjects and reviews of books on Arizona history and archaeology. Contributions are invited. Manuscripts should be submitted to the Editor at the above address.

Editor's Note:

With this issue of **The Cochise Quarterly** we begin the publication of the history of Cochise County written by the late Carl Trischka. We are indeed fortunate to have this privilege of publishing this fine contribution to Cochise County history and we thank Mrs. Trischka for it.

In the next and subsequent issues of the quarterly we will continue this fascinating story and give you further information about the author.

FROM ROCKS TO GADGETS
A HISTORY OF COCHISE COUNTY, ARIZONA

by Carl Trischka

Chapter 1

After having enjoyed many years of interesting worthwhile living in Cochise County and having learned to love and appreciate its nice people; its wonderful mountains and valleys; its most remarkable mineral wealth; its important cattle industry; its agricultural possibilities and above all its deep blue skies, gorgeous sunsets and its unparalled climate, it seems only natural to have the desire to impart comprehensively and chronologically such knowledge and information of historical and other events about people, events and places which have been accumulated over the years, by observation, reading and study from many widely scattered sources.

This is done here for newcomers and "Oldtimers" alike who, having gotten a glimpse here and there of such matters, may be desirous to see the whole picture, but have not had the time or opportunity to satisfy their curiosity or interest.

The deeper one probes into the history of the county, the more one becomes convinced that it is a place where in the geological past great crustal changes and turmoil of the earth have taken place, of aborigine thousands of years ago, conquistadores, missionaries, romance ,enchantment, legend, treasures, murder, wealth and everlasting change; of Indian attacks on covered wagons, stage coach robberies and wild and wooly frontier brawls. Beyond this it has been a progressive county of great industry, strong men, great mines and of fine people with courageous daring enterprise, who won out against sometimes seemingly insurmountable obstacles.

The very abundant and varied animal and plant life which is found here is a never ending surprise, in what is designated as an inhospitable, semi-arid land of scarce rainfall.

One may have the choice of living in a climate which is semi-tropical, in a temperate zone or in between by selecting a place for a home at any elevation between 2,600 and 10,000 ft.

Subject materials for vocations or hobbies such as botany, zoology, sports, archaeology, geology, hunting, gardening, etc., are available in large numbers in a climate where they may be followed in comfort during most of the year. There are also opportunities to make a good living by farming, cattle and horse raising, mining and various businesses.

The great mineral wealth of the county which has come from the mines of Tombstone and Bisbee will be discussed further on.

The beautiful mineral specimens of Malachite and Azurite found in museums and collections all over the world are no longer discovered in the Bisbee mines.

The four C's, Copper, Cattle, Cotton and Climate lead the list of industries in the county, but the raising of both thoroughbred and quarter horses are also important.

The search for oil has been going on for the past forty years; it has so far been without success near such places as Benson, Bowie, Willcox, Bisbee-Douglas Airport, Fronteras, Double Adobe and Douglas. In spite of extensive "Wildcat" wells put down by large oil companies no oil has been as yet found in Arizona.

Of late years "Dude Ranches" have become numerous and popular. They offer everything that the West can to the "Tenderfoot" Easterner. Cochise County has become the playground for vacationists and health seekers who the year around follow the beneficial rays of the sun. Children play outdoors the year around with great benefit to their growth and health.

Educational facilities of both grade and high schools are excellent and equal to any in the United States.

Strangers to these parts who travel through the county on its excellently paved highways and fine railroads, are as a general thing not too greatly impressed by what they have seen; however, if once they stop off for only a short time, the charm, beauty and unusualness of the country captivates them.

Many who have come on a visit, have bought homes or ranches in the mountains and valleys and live here part-time or all year around.

One of the real and wonderful assets of this area, is its people, who have a warm, openhearted hospitality among themselves and toward others. Something difficult to explain and which seems to have departed from many parts of our country, it is found here tangible in the way they live and meet people with a smile and a hearty handshake.

The 1950 Census gives Cochise County a population of 31,438. This figure may be larger now because of the influx of Easterners.

The naming of the county for an individual, namely the Apache Chief Cochise, is unique among the other counties of the state. The name is also spelled Cocheis or Cheis, which means hickory wood.

The town of Cochise, Cochise Strong Hold and Cochise Lake were named for him.

Cochise (1804-1874) was a great man, respected by his enemies and for many years chief of the Chiricahua Apache Indians who lived and fought in the Chiricahua and Dragoon Mountains. They raided east and west of these strongholds as well as into Mexico.

A certain section of the rocky skyline of the Chiricahua Mts. seen from Rhyolite Park in Silhouette against the sky, shows the reclining profile of the head and shoulders of an Indian. This is known as "Cochise's Head." Looking at the opposite side of this formation, which is plainly visible from the Animas Valley of New Mexico, it is easy to visualize the head and body of Cochise as though on top of the mountains, reclining as in sleep, making a massive and enduring and appropriately located sarcophagus of a great Indian.

Cochise County is situated in the southeastern corner of Arizona, Grand Canyon, Baby or Valentine State. It is square in shape, roughly seventy-five by eighty miles on the sides.

The area of 6,170 square miles is four times that of Rhode Island, three times that of Delaware and is larger than Connecticut.

It is half the size of Belgium and twice the area of Luxemburg.

Ninth in area among the counties of Arizona, Cochise is bounded on the south by the State of Sonora, Mexico; on the east by Hidalgo County, New Mexico; on the north by Graham County and on the west by Santa Cruz and Pima Counties.

The State of Sonora, Mexico, which lies south of Cochise County, has great charm and attractiveness due to its distinctively different atmosphere and way of living from that of our own country.

There are two cities on the border in Mexico, Naco and Agua Prieta, which are always worthy of a visit. Further south there are many beautiful, interesting, old missions which were established three or four hundred years ago by Spanish Missionaries. These are worthy of inspection as are the towns in which they are located.

In time good roads will be built which will make it possible to see these places.

The county is noted archaeologically for the fact that it contains several cultural sites of hunting and food gathering humans of the stone age, of a date probably earlier or as early as any in the United States. They lived here about ten or twelve thousand years ago when the country may have been at sea level.

Spaniards coming from the south traveled along its river eighty or more years before the landing of the Pilgrims on Plymouth Rock. The result of this impact on some of the population, language and place names still persists.

The Fauna of the Sonora Desert Region is varied and numerous. There are large and small game animals such as mountain lions, bear,

lynx, ocelot, wild cat, gray fox, mule deer, white tailed deer, also a small Mexican deer weighing not much more than fifty pounds, javalina or wild hog, the head of which is considered a worthwhile trophy, (the meat is inferior), racoons, porcupines, ringtail cats, skunks, rabbits, prairie dogs, kangaroo rats, squirrels, chipmunks, pack rats, mice, shrews, various bats and many kinds of birds such as: Quail, wild turkey, Mexican doves, Sonora pidgeons, mourning doves, white wing doves, many kinsd of wild ducks, mergansas, mud hens, heron, cranes, roadrunners or chaparral cock, king fishers, several species of owls, Mexican eagles, buzzards, raven, bluejays, bluebirds, whipoorwills, orioles, butcher birds, mocking birds, swifts and swallows as well as many kinds of small birds such as flycatchers, song birds, humming birds and others. The thick billed parrots usually found only in Mexico have been observed in the southern end of the Chiricahua Mountains.

Fair game laws are enforced and certain sections of the county are closed to hunting and are designated as game refuges.

The Pacific migratory fly way passes through the county and many birds which are not normally found here may be seen during the spring and fall seasons as they fly north or south. The tops of the mountains serve these birds as stopping places or islands in an ocean of valleys.

Some bird study by ornithologists, with repaying results, has been done but much more could be and needs to be done.

In the valleys and foothills there are in addition to the animals mentioned, rattlesnakes, bullsnakes, coral and king snakes, also a rare green slender eighteen inch long rattlesnake found only in the mountains above five thousand feet elevation. There are scorpions, vinegarroons, tarantulas, lizzards, horntoads, gila monsters, trap door spiders, black widow spiders, chuckawallas; and a search has been made for a never found and perhaps nonexistant, two-legged lizzard.

The above named creatures and others are found in the mountains and valleys where they may be stalked by gun, trap, camera, binocular or sketch book and pencil, giving thereby great pleasure and chances for recreation for lovers of nature.

Bones of pre-historic animals such as the mammoth, horse, bison, camel, and others have been found in the valleys in draws made by recent erosion.

There are at least two hundred kinds of butterflies and more than one thousand kinds of moths which with other insects are collected here by naturalists because some of them are rare and unusual. An entomologist's paradise, where, because the climate is so mild, unfortunately insects thrive and multiply as in few localities, to do damage to crops, trees, bushes and plants. All kinds of grasshoppers are especially plentiful and numerous.

On the Fort Huachuca game reserve there is a herd of two hundred buffalo, all that remain after a state-sponsored buffalo hunt.

Also present there are pronghorns or antelope. Beaver have been set out in the mountains and some of the mountain streams have been stocked with trout.

In the county there are a number of large, lofty, lovely and verdant mountains, the tops of which are covered by a very diverse flora such as Ponderosa pines, Spruce, and other coniferous trees as well as many trees found in the temperate climate zone. Snow falls here in the winter and often lies for a time making it possible to indulge in skiing and toboganing.

On the slopes of the mountains there are found manzanita, pinon, madrona, ash, spruce, sumac, aspen, live and decidous oak, ample, mountain mahogany, alligator juniper, cedar, walnut, cypress, deer brush, sycamore, cottonwood and other trees and brush as well as many flowering plants and grasses.

In the wide gently-sloping dunn colored valleys there are patches of mesquite, catclaw, ocatilla, creosote and sage brush, Spanish bayonet, and yucca. The "yucca elata" belongs to the lily family, and it and the yucca moth are entirely dependent on each other; the yucca for pollination and the moth for food for its larva. It is known also as the soap weed or tree because the roots are sometimes used by the Mexicans to wash clothes; they call it amole or sotol.

The night blooming cereus has enchantingly beautiful and exquisitely sweet smelling flowers. There are also a great variety of cacti with their bright vari-colored waxey flowers among them the saguaro or giant cactus and cholla which are found in the northwestern part of the county in the San Pedro Valley. Spineless cactus have been introduced as cattle feed, but have not prospered.

After the winter and summer rains there are seasons of profuse flowering when the blooms of the various plants beautify and greatly enhance the usually barren aspect of the land.

A serious study of some of the plants, for their medicinal or commercial products, provides opportunities for qualified investigators and would not be amiss because both the Indians and the Mexicans have, for many years, used native herbs and other plants for certain ailments.

The first tender hands of the prickly pear cactus which come in the spring are considered a delicacy among the Mexicans who dip these leaves into a batter and fry them, calling them "nepales." Candy is also made of these hands.

This southeastern area of Arizona like much of the states of Sonora, Mexico and New Mexico is included in the Sonora Desert Region.

Depending on its various subdivisions of altitude the region falls into various life zones in which the flora and fauna are different with respect to each other. The table which follows gives these life zones:

The lower Sonora Zone 2000-4000 ft. elevation.
Desert life, agricultural if irrigated. Thorny flora, lizzards, snakes, rabbits, quail, doves.

The upper Sonora Zone 4000-6000 ft. elevation.
Grazing, fruit trees can be cultivated, various game animals, deer, javalina, fox, etc.

The Transition Zone 6000-8000 ft. elevation.
Lumbering, pine, etc. Some snow lies here in the upper part during some of the year as water reserve. Deer, mountain lion, lynx, wild cat.

The Canadian Zone 8000-10,000 ft. elevation.
Small area, important as water storage. Snow lies here during a good part of the year. Deer and preditors. Plants and trees of the Temperate Zone.

The mean elevation of the county is 5320 ft. and the lowest about 2600 ft. while the maximum elevation is the 9800 ft. Chiricahua Peak in the mountains of the same name.

Cochise County lies in the Mexican High Land section of the Basin and Range physiographic province which lies between the Continental and the Sierra Divides. It is a part also of what is known as the Mountain and Sonora Desert Regions of Arizona.

This section or region is characterized by the abruptness with which the comparatively short parallel, generally north and south striking ranges, rise from the long, wide and gently sloping valleys. Generally speaking, the valleys are ten to twenty miles wide.

The higher ranges as we see them today are most likely the remnants of the original glacier-topped ranges whose peaks have been cut down at least three or four thousand feet during the past seven hundred and fifty thousand years or so. That is, the peaks when first made or elevated were much higher than at present. The valleys were once much deeper, say at least 2000 ft. below their present surface, and they are now filled with the material which has been removed from their former high places by the natural continuously acting causes of erosion.

It is the work of rain, heat, frost, wind, stream action and chemical changes in the rocks. Tectonic and volcanic activities which are responsible for earthquakes and faults have contributed their share to the changing scene.

During many years, the water of melting snow and rain coming down off the mountains and flowing with considerable velocity, in canyons, creeks, arroyos, and draws carried broken-up rocks and sand, using them as powerful scouring, cutting and grinding tools to wear down the heights of the mountains.

The carrying power of water varies as the sixth power of its velocity and because of this energy almost unbelievably large boulders and quantities of small ones are carried and moved for considerable distances by swiftly flowing waters.

Close to the top of the ranges and under the cliffs there are found accumulations of small and large angular boulders which are called talus slopes. Between the talus slopes and the valleys there is grently sloping ground which is known as the "bajada slope" or "alluvial fan" which is made up of coarse sand and small rounded water-worn rocks called detritus. The bottoms of the valleys proper are filled with still finer material which is silt and known as alluvium.

As we look at the valleys and mountains the talus, detritus and alluvium appear to be stationary or frozen in place; however in time, little by little after each rainfall, flash flood and stream action, they will be carried slowly but surely by way of the drainage systems of the valleys, to their eventual destination, the ocean.

Along with the accessibility of a country, the presence or absence of water determines much of what the intruder does when he gets there.

Some of the rain which falls on the mountains and in the canyons as it flows toward the center of the valley frequently seeps into the ground before it gets to the valley center. This water and part of the live water in the streams, percolates down through the ground to feed the underground water or the ground water reservoirs of all the valleys.

In the valley center most of the rainfall runs off. Caliche, a calcarious, impervious layer or deposit, is found in many places a comparatively short distance below the valley surface. Rain water penetrates to this layer but cannot get to the main ground water reservoirs.

The greatest source of the valley water reservoirs comes from the mountains and gains admission through the coarse detrital material, that is, the margin between the mountains and the valleys.

Until about 1900 the only activities in the valleys was the cutting of hay for the cavalry and stock raising. Some attempts at "dry farming" which depended on the uncertain, scarce and limited rainfall were tried with little success.

Some time between 1900 and 1910 water was discovered in the various valleys and with it farming by irrigation was started. The cultivation of land on a sustained basis has come from this time from alternate success and failure to its present rather stable status.

In the valleys one now sees rectangular fields in which there are grown cotton, chili peppers, higera, Kaffir corn, alfalfa and other forage crops. Corn, wheat, onions, sugar beats and vegetables of many varieties are also cultivated.

At present cotton is king in spite of the possibilities of an early killing frost, hail, summer floods, strong and prolonged periods of wind, and wet or early fall. Cotton is a good quick cash crop if the gambling farmer is lucky.

Many cotton farmers from other states have been attracted to the county because until lately the suitable land here was very reasonable in price.

Rural electrification and improved deep well pumps make it economically possible to irrigate quite large tracts of land from deeper ground water reservoirs than was previously possible. Near the fields there are comfortable and modern homes served by electricity for cooking, light and refrigeration.

A COCHISE CULTURE HUMAN SKELETON FROM SOUTHEASTERN ARIZONA

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In January, 1970, a human skeleton with associated mane and metate fragments was recovered by Mr. Herb Reay of Douglas. The burial site (Ariz. EE:12:1) was located near Hereford, approximately 60 miles west of the Arizona-New Mexico border and less than 10 miles north of the International Boundary. Excavation of the grave, which was indicated on the surface by a concentration of small pebbles, disclosed a human interment at a depth of two feet. The broken manes and metates had apparently been included incidently in the grave fill. There were no other artifacts. The grinding implements were identified by C. C. DiPeso (pers. comm.) as belonging to either the Chiricahua or San Pedro Phase of the Cochise Culture. Notes, bones and artifacts are in the possession of R. D. Myers, Cochise College, Douglas, Arizona.

The bones of the burial were very well preserved and solid, but showed many fresh fractures with missing parts. The identifiable fragments present indicated that the skeleton was probably complete when discovered. Stains on the bones indicated that the skeleton lay in the grave on its left side.

Age: 18-24. The epiphyses of the long bone were attached, but some retained an indistinct line of fusion suggesting recent closure. All four third molars had erupted. The basi-occipital joint and the pubic symphysis, both useful age indicators, were missing. All the cranial sutures were open.

Sex: Female. The orbital rims were sharp, with only a trace of a supraorbital ridge. The frontal boss was single, and the frontal sinuses small. The mastoids were also small. The body of the mandible was of medium height, and the gonial angles slightly obtuse. The post-cranial skeleton as well as the skull were quite gracile. The maximum diameter of the right femoral head was only 39 mm. No part of the pelvis diagnostic of sex was present.

Stature: Lack of restoreable long bones precluded any estimate of stature.

Osseus Pathology: There was no evidence of pathology or mechanical trauma in the bones present except that discussed under the dentition. There was no evidence of the cause of death.

Dentition: All but one of the adult teeth were present at the time of death. The 16 adult maxillary teeth remained in their sockets (fig. 1), but three mandibular teeth were lost postmortem. These were the right lateral incisor, canine and second premolar. The mandibular first molar had been lost shortly antemortem.

Dental attrition was present but not pronounced. The three re-

maining first molars were worn flat with some exposure of rentin. The second molar cusps were worn, but were not flat. The third molars were not in complete occlusion with one another and were only slightly worn. The wear gradient from first to second molars suggested a fairly rapid rate of attrition considering the age of this individual, indicating an abrasive diet. There was no dental chipping.

Gingival pathology was indicated by resorption of the alveolar process partially exposing the tooth roots throughout the maxilla, and to a much lesser extent in the mandible. No caries or abscesses were present in the maxilla, but the lower right first molar had been lost not long before death due to an abscess which showed slight evidence of healing. The distal half of the crown of the left second mandibular molar had been destroyed by caries, and a small abscess was present with an outlet at the neck of the tooth buccally.

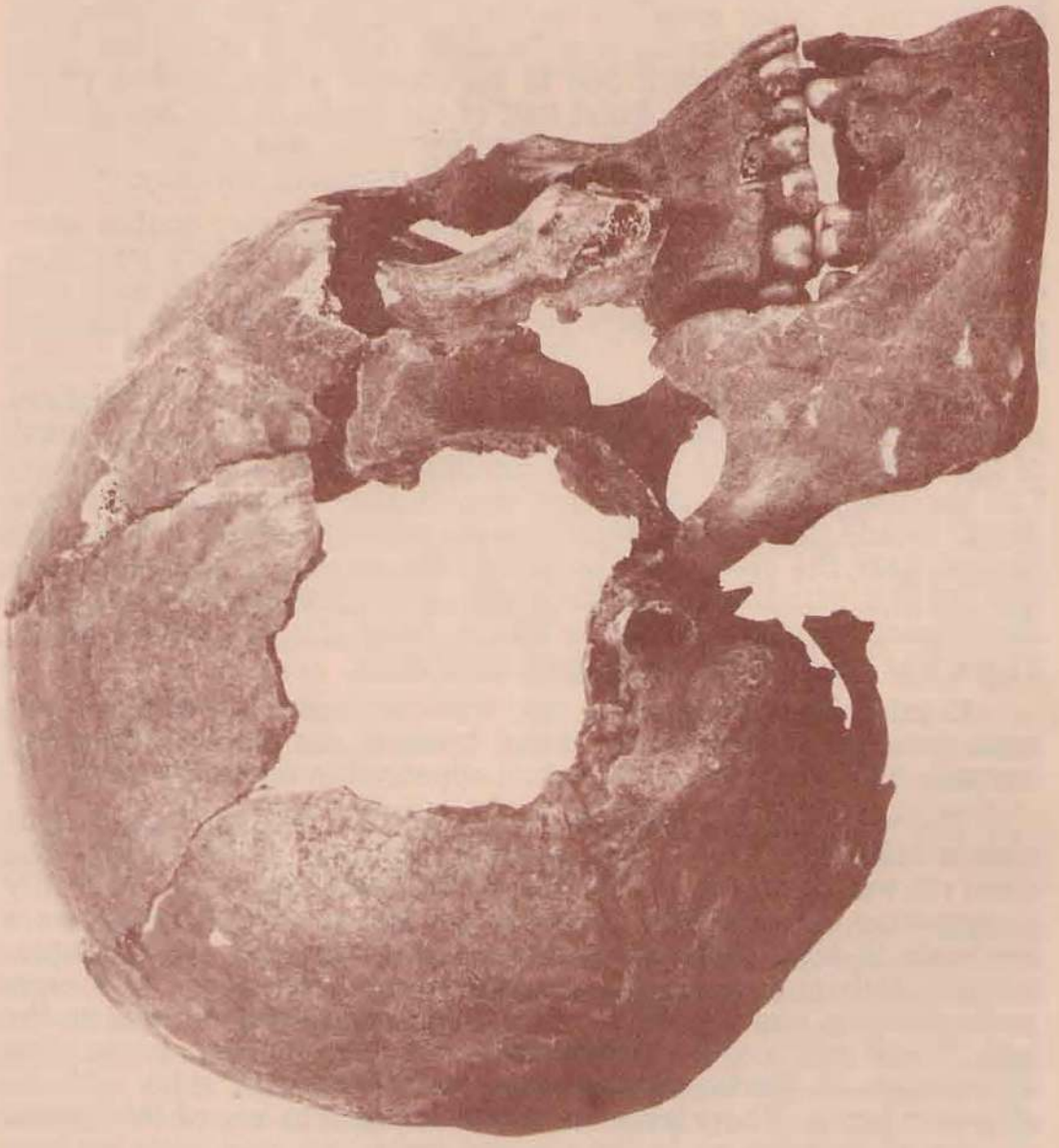
All of the maxillary incisors showed three-quarter double shoveling except the anomalous right lateral (see below) which was shoveled only on the lingual surface. The mandibular incisors exhibited shoveling on the lingual surfaces with double shoveling of the central pair.

Crowding of teeth was evident in both jaws with some displacement lingually of the left lateral mandibular incisor. The placement of the socket suggested the same condition existed on the right side. The maxillary left lateral incisor was displaced lingually from the dental arcade (fig. 1). The right was normal. Hypoplastic lines were present near the crown-root border of the maxillary lateral incisors and the left mandibular canine (right missing) suggesting a growth disturbance, possibly an acute illness, near the age of 3-4 years. There was no mottling to suggest flouridosis.

Cranial Morphology: (Fig. 2). The left temporal and parietal were detached from the rest of the cranium and were cracked and warped. The remainder of the skull appeared to be undistorted.

The vault and face were small and gracile, with only very slight muscle markings. There was moderate alveolar prognathism. The nasal sill was rounded. There was no nasal root depression, and only a suggestion of a glabellar prominence. The suborbital fossae were moderate in depth, with single infra-orbital foramina. Both a supra-orbital notch and foramen were present on both sides. The zygomatic foramen was double on the right side but unobservable on the left. There was a small but definite "mound" palatine torus. The articulation at pterion was spheno-parietal on both sides with no epipteric bones. There were no wormian bones in any of the cranial sutures, at asterion, or in the parietal notch, nor was there an Inca Bone. There was no distinct saggital keel although the parietals met to form a peak. There was a small occipital bun. The obelionic area was relatively flat, but not deformed. There was no postcoronal depression. No observations could be made on the cranial base due to damage to the bone in that region.

The mandible was gracile with only a trace of gonial eversion. The mental foramina were single and the chin square. A very slight mandibular torus was present bilaterally.



The maximum length of the skull was 166 mm with an estimated breadth of 132 mm, producing an approximate cranial index of 80. Basion-bregma height was estimated to be 130 mm. The minimum frontal breadth was 89 mm and the upper facial height was 61 mm. The bicondylar diameter of the mandible was 107 mm, the bigonial 87 mm, and the height of the symphysis was 32 mm.

Post-cranial Morphology: The fragmentary nature of the post-cranial skeleton did not permit any measurements. In general, it may be noted again that the bones were markedly gracile.

Discussion: The few metric observations that could be taken on the EE:12:1 skull were compared (tables 1 and 2) to females of series defined by Seltzer ('44) as belonging to the Southwest Plateau physical type, and to Brues' ('46) San Simon type. The EE:12:1 skull fell outside the range of the San Simon skulls in two measurements and one index, possibly due to the cranial deformation of the latter. However, the gracile Cochise skull did not match Brues' description of the moderately robust San Simon females.

The measurements and indices of the EE:12:1 skull were included within the range of all the Southwest Plateau groups, and in five of six cases most nearly matched the means of undeformed Salt River females.

In shape, the Cochise skull did not resemble the series of Salt River Valley skulls illustrated by Matthews, Wortman and Billings ('93) whose measurements were used in the comparison above. It did, however, resemble in many features other early crania from throughout the United States (Angel, '66; Renaud, '27; Smith, '41; Woodbury and Woodbury, '35; Snow, '48; Stewart, '46; Jenks, '37; etc.). These features included a high, narrow vault; some degree of occipital bun; obelionic flattening and alveolar prognathism.

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Table 1. Measurements and calculated data of the female skull from Ariz. EE:12:1 compared to means of female skulls from other Southwestern series.

	EE:12:1	Deformed San Simon[1]		Undeformed Old Zuni[2]		Utah Basketmakers[2]		Undeformed Salt River[2]	
		n	X	n	X	n	X	n	X
Cranial module	(142.6)	2	140.9	50	140.9	28	142.2	8	142.8*
Cranial index	(79.5)	6	86.2	51	80.1	20	74.9	11	79.9*
Min. front. brdth.	89	5	85.8	----	----	—	—	—	—
Upper facial height	61	2	72.0	42	68*	22	68.4	8	68.9
Cranial length	166	6	158.2	51	163.9	21	171.1	11	165.8*
breadth	(132)	6	136.3	51	131.3	20	128.1	11	132.6*
height	(130)	3	125.7	49	127.6	21	127.0	8	130.1*

*Closest match to EE:12:1

1. Brues, '46
2. Hrdlicka, '31

Table 2. Measurements and calculated data, in millimeters, of the female skull from Ariz. EE:12:1 compared to ranges of female skulls from other Southwestern series.

	EE:12:1	Deformed San Simon[1]	Undeformed Old Zuni[2]	Southeast Utah Basketmakers[2]	Undeformed Salt River[2]
Cranial module	(142.6)	146.3-149.0*	134.7-148.0	137-7-147.3	138.7-147.0
Cranial index	(79.5)	78.2- 93.5	70.6- 90.3	69.9- 80.8	72.6- 90.5
Min. front. brdth.	89	(78)- 90		----	----
Upper facial height	61	70- 74*	61 - 75	61 - 73	62 - 73*
Cranial length	166	153-165*	152 -177	164-177	158 -176
breadth	(132)	(126)-143	120 -142	123 -137	122 -143
height	(130	119-132	120 -136	120 -132	126 -134

*Does not include EE:12:1

1. Brues, '46
2. Hrdlicka, '31