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THE CAVES OF UVALDE COUNTY

PART I

Edited by James R. Reddell

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TEXAS SPELEOLOGICAL SURVEY

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UVALDE COUNTY

INTRODUCTION

Uvalde County has an average annual rainfall of approximately 25 inches and its precipitation is often torrential. Its annual mean temperature is near 70° with the hottest months being July and August, and the coldest December.

The northern half of the county is dissected by numerous intermittent streams giving it a rough topography. Most of these streams arise in the northern part and flow southward in nearly parallel courses. The southern half is part of the Coastal Plain and lies about 500 feet lower than the northern plateau. The relief in this area is slight.

The Medina River and the Leona River are the only perennial streams in the county which have continuous flows from their sources to their mouths.

Uvalde County is divided into 2 great geomorphic provinces by the Balcones escarpment. This escarpment is the result of the Balcones fault zone which extends across the county in an east-west direction. The northern half is topographically higher and stratigraphically lower than the southern half due to the zone of east-west trending normal faults downthrown to the south and also to the highly resistent Edwards limestone which outcrops over most of the northern part.

Those upper Cretaceous and Eocene formations which cover nearly all of the southern part of Uvalde County consist primarily of sandstones with some shale and marl. The exception occurs in the southwestern and eastern parts of the county where the Anacacho limestone covers a large area. Even it, however, is interbedded with an increasing amount of marl from west to east to that the probability of caves is diminished to some extent as one proceeds in that direction. It is mentioned in the literature (Sayre, 1936) as being somewhat cavernous in the Sabinal area but so far no caves are known from it in Uvalde County. That the Anacacho can produce good caves, however, is proved by the existence of Marguerite Cave in Medina County.

The lower Cretaceous Edwards limestone is by far the predominant cave-former. Therefore the caves are concentrated in the northern half of the county. In the southern half, predominantly covered by non-cavernous formations, a few caves do occur (Rambies, Cargyle, and Leona River Sink) but even these are in faulted blocks of Edwards.

The Edwards is an excellent cave-former for two reasons. First, and most important, it is lithologically ideal. It consists of massive, marine beds of rather pure coarse-to-fine-grained usually nonfossiliferous limestone. Its stratigraphic thickness averages about 600 feet. Even where it is exposed to the surface its resistance to erosion gives it a thickness sufficient for fairly large caves in all areas except the margins along its normal contact with the underlying Comanche Peak.

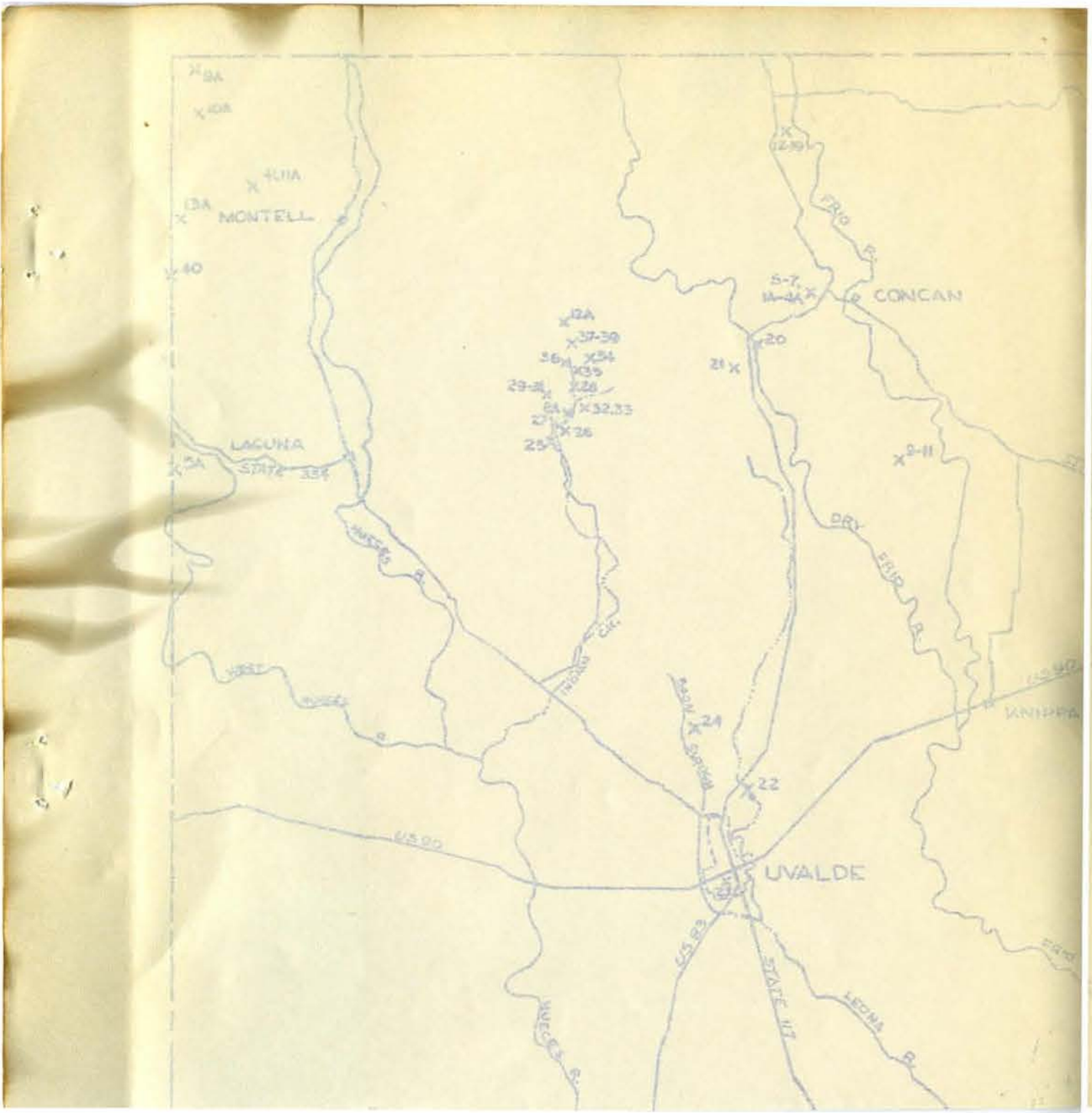
Circumstantially it produces caves because of the impermeable clay layers occurring above and below it. The natural recharge of rain water that it receives along its numerous intermittent and permanent streams is stopped when it reaches the basal Comanche Peak clay. It then migrates along the passageways of existing caverns, enlarging them and forming new ones in its course through embryonic caves in the phreatic zone.

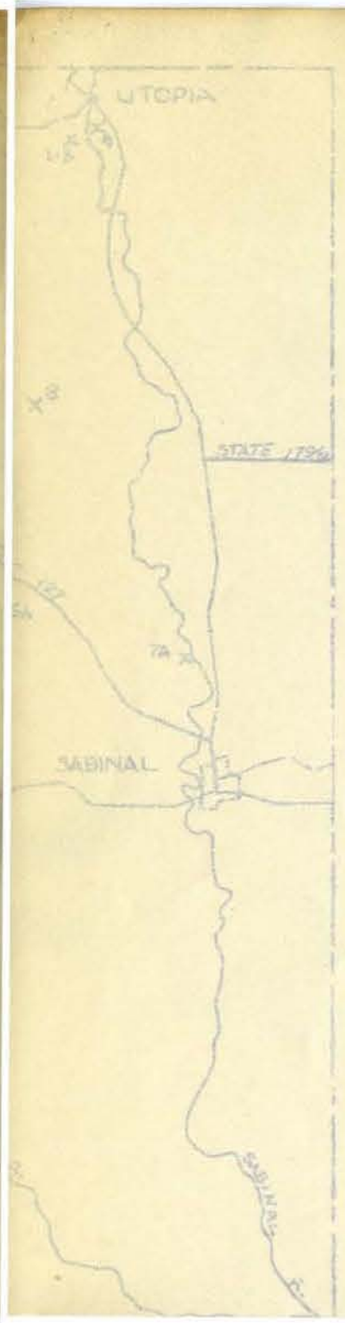
In this respect the caves of Uvalde County are of great economic importance, for they provide storage tanks for water in an area where nearly all of the water for industrial and private use is obtained from wells.

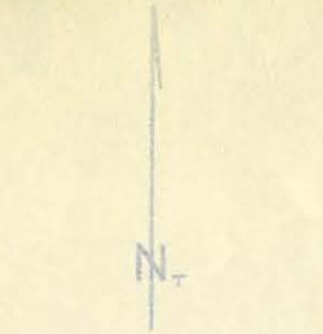
In the valleys of northernmost Uvalde County there occur exposures of two other formations. The Comanche Peak limestone which immediately underlies the Edwards and the Glen Rose limestone beneath the Comanche Peak. Neither of these are significant as cave-formers. The Comanche Peak is thin and, lithologically, its upper part may be considered the base of the Edwards. The Glen Rose, nearly twice as thick as the Edwards, is a soft, thin-bedded, chalky to argillaceous limestone with alternating beds of marl.

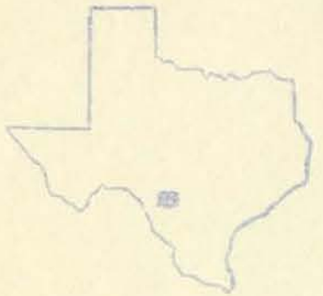
Along the Balcones fault zone, in that area between the Edwards limestone and the sandstones of upper Cretaceous and Eocene age, there is a dense, massive and resistent limestone known as the Buda. It could support small caves although it is not very thick (50-65 feet) and one would have to find an area where only a small amount has been eroded away.

There are parts of Uvalde County that are relatively virgin to spelunkers and in which there is a high probability of large caves. Reference is made especially to that area along the northeast border adjacent to Kinney County where large caves have been rumored and to the southwest corner of Uvalde County.









UVALDE COUNTY, TEXAS

x² CAVE LOCATION NUMBER REFER TO INDEX NUMBER

NO.	NAME	LOCALITY	LENGTH	DEPTH	PAGE
1.	Stockton Ranch Cave # 1	Utopia	50'	20'	28
2.	Stockton Ranch Cave # 2	Utopia	50'	40'	30
3.	Stockton Ranch Cave # 3	Utopia	20'	?	30
4.	Utopia Cave	Utopia	400'	?	30
5.	Caddel Cave	Con Can	50'	10'	6
6.	Lousebound Shelter Cave	Con Can	35'	5'	23
7.	Horseshoe Bend Cave	Con Can	50'	?	22
8.	Cave Hollow Cave	Con Can	?	?	7
9.	Frio Bat Cave	Con Can	2,000'	100'?	10
10.	Frio Owl Cave	Con Can	100'	35'	16
11.	Owl Cave Pit	Con Can	80'	30'	24
12.	Garner Park Cave	Garner State Park	67'	10'	18
13.	Garner Park Fissure # 1	Garner State Park	?	?	18
14.	Garner Park Fissure # 2	Garner State Park	300'	10'	18
15.	Garner Park Fissure # 3	Garner State Park	230'	25'	18
16.	Garner Park Fissure # 4	Garner State Park	200' (?)	100'	19
17.	Garner Park Fissure # 5	Garner State Park	?	10'	19
18.	Garner Park Fissure # 6	Garner State Park	50' (?)	60'	19
19.	Garner Park Fissure # 7	Garner State Park	50'+	100'+	19
20.	Dry Frio River Cave	Uvalde	?	40'	8
21.	Briscoe Bone Cave	Uvalde	120'	60'	6
22.	Leona River Sink	Uvalde	200'+	35'	22
23.	Cargyle Cave	Uvalde	150'+	25'	7
24.	Rambie's Cave	Uvalde	1500'	97'	26
25.	Grating Cave	Uvalde	300'	30'	20
26.	Burial Cave	Uvalde	30'+	40'+	6
27.	Cut-ant Cave	Uvalde	25'	5'	8
28.	Indian Creek Cave	Uvalde	22,000'	200'	22
29.	Elizabeth's Cable Ladder Picture Cave # 1	Uvalde	10'	60'	10
30.	Elizabeth's Cable Ladder Picture Cave # 2	Uvalde	25'	10'	10
31.	Profanity Pothole	Uvalde	50'	60'	26
32.	Unnamed cave	Uvalde	50'	40'	31
33.	Unnamed cave	Uvalde	10'	60'	31
34.	Wind Cave	Uvalde	300' (?)	125'	30
35.	Hackberry Cave	Uvalde	150'	20'	20
36.	North Well Cave	Uvalde	500'	90'	24
37.	Cave Spring Cave	Uvalde	?	0'	8
38.	Gonzales Cave # 1	Uvalde	?	60'	20
39.	Gonzales Cave # 2	Uvalde	?	60'	20
40.	Silverlake Ranch Sinkhole	Montell	10'	75'	28
41.	Montell Shelter Cave	Montell	70'	0'	25

SHELTERS AND DOUBTFUL CAVES

1a.	Do It Yourself Yankee Cave	Con Can	15'	4'	31
2a.	Fly Cave	Con Can	20'	0'	31
3a.	Goat Trap Cave	Con Can	15'	4'	32
4a.	Crawldig Cave	Con Can	20'	10'	32
5a.	Herndon Shelter				32
6a.	Hobbs Shelter				32
7a.	Kincaid Shelter	Sabinal			32
8a.	Mason Ranch Shelters	Uvalde			33
9a.	McGowan Shelter				33

10a. Mitchner Shelters		33
11a. Montell Shelter	Montell	34
12a. Roberts Shelter		34
13a. Wells Shelter	Montell	34

ALTERNATE CAVE NAMES

Annandale Ranch Cave -- Frio Bat Cave
Burns Ranch Caves 1-3 -- Stockton Ranch Caves 1-3
Florea Cave -- Frio Bat Cave
Frio Cave -- Frio Bat Cave
Kennedy Cave -- Leona River Sink
Leona River Cave -- Leona River Sink
Montell Creek Shelter -- Montell Shelter Cave
Montell Shelter -- Montell Shelter Cave
Nigger Navel -- Rambie's Cave
Scott Cave -- Rambie's Cave
Uvalde Cave -- Cargyle Cave; Frio Bat Cave; Rambie's Cave
Verdi Cave -- Frio Bat Cave

BRISCOE BONE CAVE — Uvalde County (# 21)

Davenport Hill 15' Quadrangle

Owner: Dolph Briscoe; Foreman: Roy Luce

Description: The entrance to the cave is located about 2/3 of the way up the side of a fairly steep hill, and consists of a 2' wide, 5' long crack. The entrance drops 35' into a room about 20' wide and 30' long. Equipment is necessary to gain entrance. To the northwest a 4' drop, followed by a 6' drop leads to a passage about 40' long, 3'-5' high and 3'-6' wide, ending in massive breakdown. To the northeast, holes in the breakdown-floored room drop a total of about 25' and may be easily climbed, but nothing leads off from the bottom. Numerous animal bones are to be found in the cave, most if not all recent. At the top and in several of the holes leading down from the room numerous human bones were found. Several human skulls were found and removed by the Davenports and by Bill Smith who owned and worked on the ranch several years ago. Among the bones removed, all Indian, were those of an infant. No anthropological work has as yet been done in the cave but bones taken from it were identified by Dr. T. W. McKern of the University of Texas Anthropology Department as Indian. Exploration was made in 1961 by Philip Russell and James Reddell of the University of Texas Grotto. Fauna observed in the cave included cave crickets, isopods, and harvestmen. The cave is formed in the Edwards limestone of Cretaceous age.

Ref: TSS files

BURIAL CAVE — Uvalde County (# 26)

Uvalde 30' Quadrangle

Owner: Fred Mason, Jr.

Description: This cave will be discussed more fully in the forthcoming SURVEY report on the Caves of Indian Creek. Briefly, the cave consists of a 40' or deeper shaft currently being excavated by the owner. The cave is the repository of numerous Indian skeletons.

Ref: TSS files

CADDEL CAVE — Uvalde County (# 5)

Utopia 15' Quadrangle (?)

Owner: John Caddel

Description: The cave is entered by a shallow sink in an outcrop of the Edwards limestone about 3/4 of the way up a hill. A cedar pole was found in place at the entrance which is undercut. The cave itself consists of a single room about 30' long and 20' wide, with the ceiling about 7' high. The left wall of the cave is covered with breakdown, while the right side of it is composed of washed-in silt and guano, with chunks of charcoal from torches of early day cowboy explorations. Several small leads exist but are too small to negotiate. The cave was explored and mapped by P. E. "Reb" Howard, H. R. "Doc" Jackson, and G. "Slim" Spurling. (See map, page 8)

Bibliography: Spurling, Slim. "CCSS Visits New Caving Area." The Texas Caver, Vol. III, No. 2, page 17. Mar-Apr 1958.

Ref: CCSS files

GARGYLE CAVE (UVALDE CAVE) Uvalde County (# 23)

Uvalde 30' Quadrangle

Owner: James Eugene Brice

Descriptions: The cave, located as it is in the center of the city of Uvalde, has been for many years the playground of local schoolchildren. Originally the cave consisted of one entrance in the Leona formation, a gravel deposit of Pleistocene age, with the cave itself in the Edwards limestone of Cretaceous age. A second entrance was opened when the Cargyle Brothers dug a well in 1908 which hit the cave. Fred Mason, when a boy, entered the cave and reports that it then consisted of a series of rooms and crawls, but of no known great extent. The cave was sealed several years ago to prevent children entering the cave and possibly becoming lost or trapped. In attempts to discover if the cave might be suitable for Civil Defense purposes the well entrance was re-opened in 1961 and members of the University of Texas Grotto explored and partially mapped the cave. The well entrance drops 8' to a small room floored with rubble and trash thrown in the cave. A narrow fissure, almost blocked by the trash, extends to the northeast down a slope formed by the trash. About 6'-10' consists of the loosely conglomerated gravel while the remainder of the cave is in limestone. From the narrow fissure the cave extends down about 10' and horizontally about 15' to a room about 20' wide and 30' long ending in a dirt and trash fill corresponding on the surface to a hole at the side of a house into which much water from a yard runs. The floor of the room is covered with massive breakdown and several domes extend up to the gravel. A crawl to the right immediately after entry is gained to the room extends about 70' where it intersects a cross passage. This passage in turn leads to a passage to the left paralleling the first and after about 70' re-enters the main room of the cave. Several crawls were left unexplored because of a high concentration of carbon dioxide which made breathing quite difficult and prevented lighting of a match. Apparently the main part of the cave extends from the opposite side of the well, beyond the rubble fill. A cave about 200 yards from the well has been reported recently and may connect with the new blocked part of the cave, but the report has not as yet been investigated. (See map, page 8)

Ref: TSS files

CAVE HOLLOW CAVE Uvalde County (# 8)

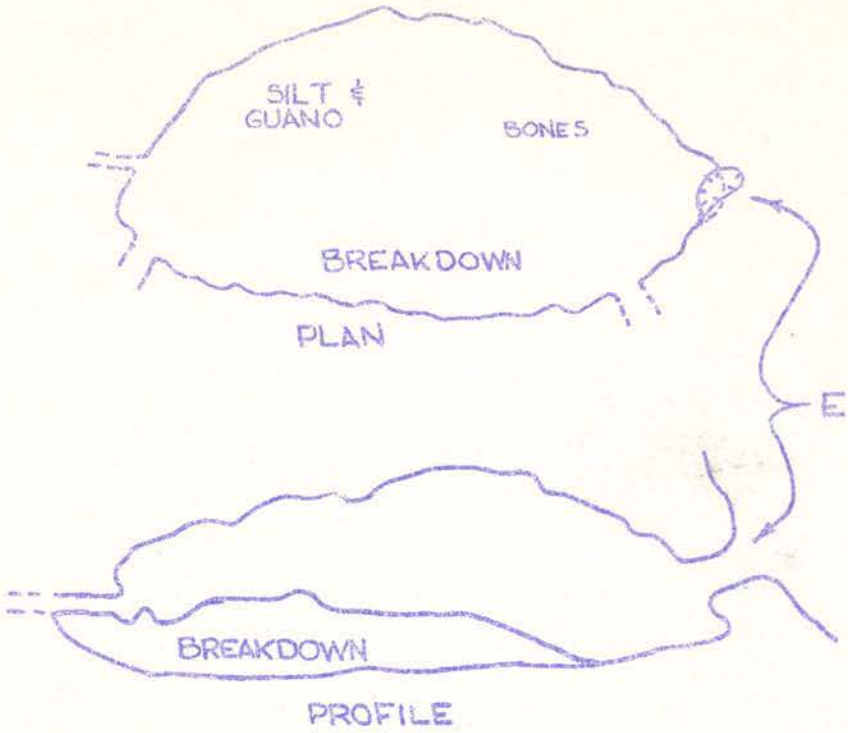
Shut-In 15' Quadrangle (?)

Owner: unknown

Descriptions: The cave has not been visited by cavers but is described by Vaughan (1900) as being 200 yards long, 50'-100' wide, and 50' high. It is a bat roost with much guano and the entrance is used as a camping ground. The cave is formed on the south side of Cave Hollow, a fault-controlled creek.

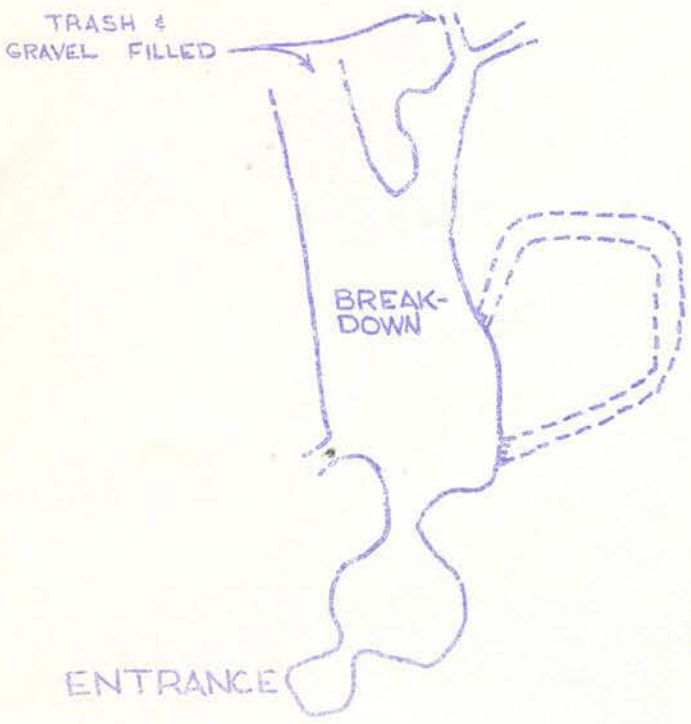
Bibliography: Vaughan, Russell T. "Description of the Uvalde Quadrangle." Geologic Atlas of the United States: Uvalde Folio, Texas, pages 1, 5-7. United States Geological Survey. 1900.

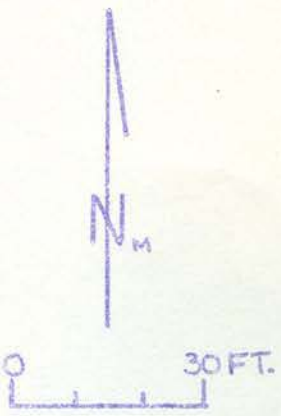
Ref: TSS files



CADDEL CAVE
UVALDE CO., TEXAS

COMPASS & TAPE SURVEY BY
P.E. HOWARD, H.R. JACKSON & G. SPURLING





CARGYLE CAVE
UVALDE CO., TEXAS

BRUNTON & TAPE SURVEY

CAVE SPRING CAVE Uvalde County (# 39)

York Hollow 15' Quadrangle

Owner: Dolph Briscoe

Description: The cave was discovered quite a few years ago when it consisted of a spring issuing from a cave entrance. Since then the opening has been blocked by concrete and the water issuing from the cave channelled into a stock tank. The cave is formed in the Edwards limestone of the Cretaceous age.

Ref: Fred Mason, Jr.

CUT-ANT CAVE Uvalde County (# 27)

Uvalde 30' Quadrangle

Owner: Fred Mason, Jr.

Description: The entrance was originally a small circular hole dropping a few feet to a block of clay fill. The owner enlarged the entrance and removed the clay fill to a depth of about 6' where a horizontal passage was excavated for about 25' as a 5' high, 7' wide passage. Because of the abundance of clay fill and no indication of an air-filled passage excavation has been stopped.

Ref: TSS files

DRY FRIO RIVER CAVE Uvalde County (# 20)

Shut-In 15' Quadrangle (?)

Owner: unknown

Description: "The writer, in company with Messrs. Stephenson and Turner, located a cave in the bed of the Dry Frio River just below the Uvalde-Leakey road crossing. This cave was about 18 inches long and 8 inches wide at the entrance and extended downward a distance of 40 to 50 feet, beyond which it could not be followed with the eye. It was apparently very extensive, as indicated by the fact that a current of cold air issued from the opening." (Sayre, 1936) An attempt made in 1960 to locate the cave was unsuccessful, and previous attempts by Fred Mason and Grady Mahaffey to locate crevices and caves in the bed of the Dry Frio River revealed no cave such as described by Sayre. At the approximate location given by Sayre there is an extensive gravel bar, indicating that the cave is probably intermittently covered and uncovered by changing gravel bars. The cave is in the Edwards limestone.

Bibliography: Sayre, Albert Nelson. The Geology and Ground-Water Resources of Uvalde and Medina Counties, Texas. USGS Water Supply Paper 678, page 43. Washington, 1936.

Ref: TSS files

ELIZABETH'S CABLE LADDER PICTURE CAVE NO. 1 Uvalde County (# 29)

Uvalde 30' Quadrangle

Owner: Fred Mason, Jr.

Description: This is a 60' pit, developed along a fairly prominent joint in the Edwards limestone. The joint strikes approximately NNE. Entrance is a small hole halfway up the hill the cave is in. The pit drops fairly tightly, about 4 x 5 feet in size to a ledge about 12' down. At the bottom the pit is slightly enlarged along the joint, forming a small room. The cave was explored in 1960 by Elizabeth Kelley Smith, Bob Benfer, Mills Tandy, and Tommy Evans. The name of the cave refers to a picture of Elizabeth Kelley Smith as she descended a cable ladder into the pit.

Ref: TSS files

ELIZABETH'S CABLE LADDER PICTURE CAVE NO. 2 Uvalde County (# 30)

Uvalde 30' Quadrangle

Owner: Fred Mason, Jr.

Description: This is a small cave developed along the same joint and about 250' from Elizabeth's Cable Ladder Picture Cave No. 1. It is about 25' long and runs NNE. It is 8'-10' deep. The entrance is on the north side of a small gulley about 60' below the entrance to the pit and is about 10' x 4'. The joint is mineralized with limonite similar to Kelly's Vein in Indian Creek Cave. The enlarged fissure passage has a height of about 8'-12'. The cave is dry and no fauna was observed. It is difficult to get out of the sight of day in winter midday. It was explored in 1960 by Dick Smith, Elizabeth Kelley Smith, Bob Benfer, Mills Tandy, and Tommy Evans.

Ref: TSS files

FRIO BAT CAVE (FRIO CAVE) (ANNANDALE RANCH CAVE) (FLOREA CAVE)
(UVALDE CAVE) (VERDI CAVE) Uvalde County (# 9)

Shut-In 15' Quadrangle

Owner: Al McQueen

Description: The main entrance to Frio Cave is a large hole about 50' wide on the side of a hill. It is down this entrance that a road has been built by guano miners in the process of their guano-mining operations. A second entrance to the left of this entrance is a low wide hole used by the bats in their flights. To the right of the main entrance a third smaller entrance is found, and yet two more entrances are encountered farther into the cave in the form of shafts connecting the large entrance room to the surface. From the main entrance a road S-curves down through the large entrance room and into the main room of the cave. Down the middle of this room are the remnants of a pushcar railroad which was used to haul guano out of the cave. Remnants of the railroad also exist in the passage back to the "warm" room. The entrance room consists of a 225' wide, 80' long room through which the road winds. A low wide fissure to the left of the room extends about 120' where it ends, being connected to the right once again to the main room of the cave by two fissures. Numerous crawls and a rumored pit to an extensive lower level exist in this area. The entrance room is connected to the main room of the cave by two large passages on each side

of a huge piller of rock. The floor of the entrance room and connecting passages slopes steeply down into the main chamber of the cave and is floored with large rocks and guano. The main room of the cave is a huge chamber about 300' long, 200'-300' wide, and 40' or more high. Two large rock pillars are left standing in the room. An alcove along the right wall of the cave extends about 100' beyond the end of the room before it ends. At the end of the room and to the left a 40° slope leads down a slope about 15' below the floor of the main chamber. This opens up into the "warm room", which is about 100' long and 50' wide. Temperature in this room is much greater than in any other part of the cave and it is here that the baby bats are born. Guano covers the floor about waist deep and abounds in small black beetles and red mites. Guano has filled the room until there is only about three feet of ceiling clearance in most of the room. From this room a narrow passage extends for about 100' where the passage bends to the right, continues an additional 60' where it opens into a 60' long, 30' wide room. The ceiling on one side of this room slants downward until it leaves an irregularly defined one- to two-inch horizontal space above the guano. The possibility exists, therefore of more passage lying beyond this room but if so it is filled by guano.

Geology and Meteorology: The cave has formed in the Edwards limestone of the Cretaceous age. The entrances to the cave are apparently the result of collapse following the intersection of the main cave chamber with the canyon cutting into the cave. The floor of the cave is covered with large boulders which have fallen from the ceiling and possibly walls and which are now largely covered with great accumulations of guano. In July the temperature in the main chamber of the cave was 71°F. and each room was successively warmer until the temperature was 86° in the final room. At 11:00 P.M. on July 13, when most of the adults had left the cave for the evening flight the temperatures of these rooms were one to three degrees cooler than at 1:00 P.M. that afternoon. Although change in surface temperature may have affected the cave temperature slightly the absence of the heat radiated by the bats themselves is believed to be the primary factor in lowering the temperature of the cave rooms. In December the rooms were four to twelve degrees cooler. Relative humidity was between 82 and 100 per cent, the dampest atmosphere being that of the last room. (Constantine, 1958) On December 29, 1955, the main chamber temperature was 60°F. and the humidity 70 per cent while the "warm" room temperature was 80°F. and the humidity 96 per cent. The only air sample available is that made in April 1952 when ammonia was only slightly detectable to the olfactory sense. The air samples from the "incubator room" showed an ammonia content of 0.017 per cent. At times, however, the ammonia content of the room is so high that it is overpowering, and when the cave was mapped in June 1960 the air in the warm room and room beyond it would not support combustion for carbide lights. This, however, is the result of either a high concentration of CO_2 or a low per cent of oxygen in the atmosphere.

Biology: The amount of intensive biological work that has been done in Frio Bat Cave is considerable and as a result all of the data that has been obtained cannot be included in this report, but it is believed that the following summary is as complete a report as has been published anywhere. Work done on bat rabies in the summers of 1960 and 1961 by Dr. Denny Constantine has not yet been published.

Invertebrates: Frio Bat Cave teems with invertebrate life, especially during the summer months when the huge colonies of Free-tailed bats inhabit the cave. Among these animals the most striking is the Dermestid beetle, Dermestes carniverus. These beetles live in the cave by the millions and their larvae feed on fallen bats. They are able to completely skeletonize a fallen bat in minutes and their numbers attest to a high bat mortality. The adult dermestids inflict a sharp bit on humans. The most noticable among the other invertebrates are the mites.

The mite, Ichoronyssus robustipes, is a considerable source of annoyance to anyone entering the cave. They number in the millions and in the summer they completely cover any explorer venturing into the back part of the cave. At least one tick, Ornithodorus stageri, inflicts a painful bite on human beings, but no instance of relapsing fever has been reported from the cave. Numerous species of internal parasites have been found in Tadarida mexicana bats taken from this cave, but since they are not actually associated with the biology of the cave they have been ommitted from the faunal list.

Mormoops megalophylla senicula, the old man bat: In October 1955 and January 1956 D. K. Jameson and R. W. Mitchell observed Mormoops at Frio (Watkins, 1956) while none were present in April 1957, indicating that the cave is used primarily as a winter retreat. "In February and early March, 1955, the colony was at full strength. Toward the end of March and throughout the summer none could be found in this location. September 16, 1955, a dozen or so were found and by November 16, 1955, the colony was approaching its maximum size." (Eads, Menzies, and Wiseman, 1956) The colony ranges in size from 6,000 to 10,000 and lives in the "warm room". Constantine observed that the guano floors of rooms containing the Mormoops colony were quite wet and no dermestids and lower concentrations of ammonia were present. (Constantine, 1958)

Myotis velifer incautus, the cave bat: This species is present in the thousands in Frio during April, July and August, inhabiting the final room of the cave. Thousands of Myotis retreat through the space above the guano in this room, indicating that a room my lie beyond. (Constantine, 1958) In November three Myotis were found hibernating in the fissure just inside the entrance, but none were observed elsewhere and none were found in the cave in December. In July and August the Myotis aggregation was estimated to be about 9,000, while in April it was estimated to be 20,000. As with the Tadarida atypically light-coated specimens were found, having undergone bleaching by ammonia gas and high humidity. (Constantine, 1957, 1958)

Tadarida brasiliensis mexicana, the Mexican free-tailed bat: This is by far the largest population of bats to be found in Frio, numbering in the millions during the summer. Intensive bat banding in Frio and other of the large Texas bat caves has shown that the free-tailed bat migrates into Mexico or Central America for the winter. Tadarida usually begins its return to the cave in late February and reaches a peak in May. The entrance room, fissure connecting to it, and the second, main chamber, are irregularly occupied by Tadarida. In April, no Tadarida were found in the entrance room and in November none were found in the cave. In July the small room to the left of the main chamber was occupied by young bats. The adult female bats occupied this room until July 12 when most of them were in the main chamber, returning only to suckle the young bats. When the young bats become old enough to fly they join the adult bats in the main room of the cave. During summer dermestid beetles and their larvae infiltrate and blanket the relatively dry guano beneath Tadarida clusters. The presence of the beetles is associated with scant to overpowering concentrations of ammonia in proportion to the size of the beetle population. In the winter few beetles and only a slight odor of ammonia is present. (Constantine, 1958) Bats examined in Frio were found to have undergone pronounced bleaching of the pelage by the excessive ammonia gas and water vapor in much of the cave. (Constantine, 1957, 1958) Bats banded in Frio Bat Cave have been captured in Wilson's Cave, Kerr County, and bats banded in Merrihew, Selman's, Connor's, and Vickery Caves, Oklahoma, in the summers of 1952-1956 were recovered in Frio Cave in May. The bats are preyed upon by the duck hawk, Falco peregrinus anatum, skunks, owls, bobcats, and probably numerous other animals. In recent

years the Texas Public Health Department has devoted considerable attention to Tadarida mexicana because of the association of the rabies virus with this bat. This work was largely precipitated as a result of the death by rabies of George C. Menzies on January 4, 1956. He had visited Frio Bat Cave on Nov. 15, 1955, and had probably rubbed a chronic skin eruption on his neck with contaminated gloves while working with bats in the cave. Because of this and the death of a California mining engineer, who had died from rabies without having been bitten by bats but who had worked in close contact with them, Dr. Denny Constantine was assigned to study bats and the possibility of contracting rabies by inhalation. Frio Cave was used by Dr. Constantine in his studies and in 1960 he placed dogs, domestic cats, raccoons, ringtail cats, coyotes, grey foxes, and one striped skunk in the cave in wire cages in such a way that they were safe from both the bats and the ectoparasites living on the bats. One week after being placed in the cave one fox, two coyotes, and one ringtail cat died of rabies. The results of this and other research during 1961 by Dr. Constantine has not yet been published. Although the indications are such as to indicate the probability of contamination without actually being bitten by a bat the possibility of such a contraction is slight. This is evidenced by the frequent visiting of the caves containing large bat populations by hundreds of people without a single reported instance of rabies having been so contracted.

Faunal List of Frio Bat Cave:

Pseudoscorpion:
- Dinocheirus stercoreus

Black scorpion:
- Vejovis mexicanus

Harvest-man spider:
- Leiobunum townsendi

Running spider:
- Herpyllus blackwalli

Mites:
- Acantophrhirius longa
- Bdellonyssus robustipes
- Ichoronyssus robustipes
- Perischnus strandtmanni
- Speleocola tadaridae (chigger mite)
- Spinturnix
- Trombicula sp.

Ticks:
- Antricola coprophilus
- Ornithodoros concanensis
- Ornithodoros stageri

Cricket:
- Ceuthophilus cunicularis

Fleas:
- Ceratophyllus coahuilensis, n.sp., (host is Petrochelidon fulva pallida)
- Myodopsylla collinsi (host is Myotis velifer)
- Myodopsylla gentilis (host is Myotis velifer)
- Myodopsylla insignis (host is Myotis velifer)
- Rhynchopsyllus megastigmata (sticktight flea)
- Sternopsylla texana (host is Tadarida mexicana)

Bed bug:
- Primicimex cavernis

Flies:
Trichobius major
Trichobius sphaeronotus
Beetles:
Alphitobius diaperinus
Alphitobius laevigatus
Dermestes carnivorus (carnivorus dermistid beetle)
Embaphion muricatum
Rhadine, n.sp.
Trox suberosus
Owl
Hawk:
Falco peregrinus anatum (duck hawk)
Cave swallow or Coahuilan cliff swallow:
Petrochelidon fulva pallida
Opossum
Bats:
Mormoops megalophylla senicula (old man bat)
Myotis velifer incautus (cave bat)
Tadarida brasiliensis mexicana (Mexican free-tailed bat)
Striped skunk:
Mephitis
Bobcat

History: Frio Bat Cave is one of the best known caves in Texas. Its history goes back to the early settlers who used the cave to obtain badly needed fertilizer, their wagons being driven into the cave and loaded with the nitrate rich guano. During the Civil War guano was removed from the cave and used to make saltpeter for use in gunpowder. Prior to 1879 the Texas Guano Company was organized by a Mr. Huertzall for removing the guano from Frio. He removed 3-10 tons each day, shipped it to Galveston from whence it was shipped to Scotland. A tramway was constructed upon which were run cars or carts with a carrying capacity of about one ton each. At this time the bats took 3 hours of continuous flight for the morning and evening bat flights, as opposed to about 45 minutes today. The indications are, therefore, that as enormous as the present population of Frio is, at this time it must have been considerably greater. In about 1918 the cave was worked on a large scale and two systems of cable ways were built to remove the guano, and a rotary kiln constructed at the entrance to dry the guano. After this a cable railway was built into the interior of the cave to remove the last of the large deposits of guano that had been accumulating ever since the bats began inhabiting the cave. Since that time comparatively small amounts of guano have been removed from the main room of the cave. When mining was done the cable railroad was powered by a tractor--one wheel being replaced by cable drum. This guano required much labor to extract, since what remained was that between rocks. Even though the cheapest possible labor was used few of the operators made a profit--some being forced to flee with their tractors just ahead of their creditors. In about 1958 Twin Star Industries of Austin investigated the cave for nitrate deposits by drilling 3 or 4 holes deep into the breakdown floor of the cave. A road was constructed over 500' into the cave to enable the drilling rig to reach favorable locations, but the hoped for minerals were not found. At present most of the work done in Frio has been of a rather negligible nature, with little guano removed. The cave has been visited by hundreds of people during the history of the cave, and has been thoroughly explored by qualified cavers. Rumors to the effect that a vast labyrinth of rooms and passages on a lower level exists have been pretty well proven false or else the entrance to

such a labyrinth has been closed by rock fall or filled with guano. The cave has proved invaluable from the biological standpoint and its history, only roughly and incompletely sketched here, is one of the most interesting chapters in the history of Texas speleology. The cave was mapped in June 1960 by Bill Russell, John Zuck, and Bob Benfer of the University of Texas Grotto for the Tom Warden Plant Food Company. At that time 2,767 feet of cave was mapped, most of it being a circuit around the main room of the cave. It has also been mapped by Bill Gray and other members of the Alamo Grotto. (See map, page)

Bibliography: Anonymous. "Beware of Bats." Time, Vol. 78, No. 13, pages 50 & 52. Sept. 29, 1961.

Anonymous. "Frio Cave." Texas Almanac and State Industrial Guide, 1947-1948, page 575.

Anonymous. "News of the Grottos: Alamo Grotto." The Texas Caver, Vol. VI, No. 2, page 20. Feb. 1961.

Anonymous. "Report on the Coahuilan Cliff Swallow." The Texas Caver, Sept. 1956, pages 3-4.

Anonymous. "Russell Gurnee's Visit Texas." The Texas Caver, Vol. II, No. 1, p. 7. Jan-Feb 1957.

Anonymous. "Swallows that Nest in Texas Caves." NSS News, Vol. 15, No. 1, pp. 6-7. Jan 1957. (Reprinted from The Texas Caver, Sept. 1956, pp. 3-4)

Anonymous. Uvalde Umpire. Prior to 1879, quoted in Campbell, Bats, Mosquitoes and Dollars.

Baker, Ken. "Biological Notes." The Texas Caver, Vol. II, No. 1, p. 3. Jan-Feb 1957.

Blair, W. Frank. "Bats of the Edwards Plateau in Central Texas." Texas Journal of Science, Vol. 4, No. 1, pp. 95-98.

Campbell, Charles A. R. Bats, Mosquitoes and Dollars, opp. pp. 36 and 38; pp. 163 and 167. The Stratford Company. Boston, 1925.

Constantine, Denny G. "Bleaching of Hair Pigment in Bats by the Atmosphere in Caves." Journal of Mammalogy, Vol. 39, No. 4, pp. 513-520. Nov. 1958.

Constantine, Denny G. "Color Variation and Molt in Mormoops megalophylla." Journal of Mammalogy, Vol. 39, No. 3, pp. 344-347. Aug 1958.

Constantine, Denny G. "Color Variation and Molt in Tadarida brasiliensis and Myotis velifer." Journal of Mammalogy, Vol. 38, No. 4, pp. 461-466. Nov 1957.

Constantine, Denny G. "Great Bat Colonies Attract Predators." The Caves of Texas, p. 100. Bulletin of the National Speleological Society, No. 10. April 1948.

Cooley, R. A., and Glen M. Kohls. "Further New Species of Ornithodoros from bats (Acarina: Argasidae)." Public Health Reports, Vol. 56, No. 17, pp. 910-915. April 25, 1941.

Crisman, Bart and Crisman, Bob. "Letters to the Editor." The Texas Caver, Feb. 1956.

Eads, Richard B. "Bats." Texas Game & Fish, Vol. 14, No. 1, pp. 8-9 and 28-29.

Eads, Richard B. "Ectoparasites from Swallow Nests, with the Description of a New Ceratophyllid Flea." The Journal of Parasitology, Vol. 42, No. 4, pp. 73-75.

Eads, R. B., J. S. Wiseman, and G. C. Menzies. "Observations Concerning the Mexican Free-Tailed Bat, Tadarida mexicana, in Texas." The Texas Journal of Science, Vol. IX, No. 2, pp. 227-242. June 1957.

Eads, R. B., J. S. Wiseman, and G. C. Menzies. "New Locality Records for Texas Bats." Journal of Mammalogy, Vol. 37, No. 3, p. 440. Aug. 1956.

Folsom, Franklin. Exploring American Caves. Pages 106 and 160. New York: 1956.

Glass, B. P. "Additional Returns from Free-Tailed Bats Banded in Okla." Journal of Mammalogy, Vol. 40, No. 4, pp. 542-545. Nov 1959.

Halliday, William. Adventure Is Underground, plate 38, pages 153-160. Harper & Brothers. New York, 1959.

Hutchinson, George Evelyn. Survey of Contemporary Knowledge of Biogeochemistry. "Cave Guano in N. Am." Bulletin of the American Museum of Natural History, Vol. 96, p. 396. 1950.

Irons, J. V. A Study of Bats as Possible Reservoirs of the Rabies Virus. First Annual Progress Report for the National Institutes of Health Research Grant E 758 (C). Pages 6 and 13-14. Dec. 13, 1955.

Irons, J.V., R.B. Eads, Thelma Sullivan, and J.E. Grimes. "The Current Status of Rabies in Texas." Texas Reports on Biology and Medicine, Vol. 12, No. 3, pp. 489-499. Fall 1954.

Irons, J.V., R.B. Eads, J.E. Grimes, and Alice Conklin. "The Public Health Importances of Bats." Texas Reports on Biology and Medicine, Vol. 15, No. 2, pp. 292-298. Summer 1957.

Langford, Othell F. Collapsed Caverns as Modifiers of Older Structures in the Vicinity of the Balcones Zone of Faults in Uvalde County, Texas, pp. 39-40. Unpublished MA Thesis of the University of Texas. August 1942.

Longsworth, Polly. Exploring Caves, p. 147. Thomas Y. Crowell Co. New York, 1959.

Mohr, Charles E. "Texas Bat Caves Served in Three Wars." The Caves of Texas, pp. 92 and 94. Bulletin of the National Speleological Society, No. 10. April 1948.

Mohr, Charles E. "Texas Cave Bats." The Caves of Texas, pp. 104-105. Bulletin of the National Speleological Society, No. 10. April 1948.

Mohr, Charles E. and Howard N. Sloane, eds. Celebrated American Caves. "Bats and Bombs," by Charles E. Mohr. Pages 209-212, 213, and 216. (Reprinted from The Caves of Texas, pp. 89-96) Rutgers University Press, 1955.

Nelson, Edward W. "Bats in Relation to the Production of Guano and the Destruction of Insects." U.S. Department of Agriculture Bulletin No. 1395, p. 7. March 1926.

Raun, Gerald G. and James K. Baker. "Some Observations of Texas Cave Bats." The Southwestern Naturalist, Vol. 3, pp. 17-27. 1958 (printed 1959)

Selander, Robert K. and James Kenneth Baker. "The Cave Swallow in Texas." The Condor, Vol. 59, No. 6, pp. 345-363. Nov-Dec 1957.

Sellards, E.H. and Glen L. Evans. "Index to Texas Mineral Resources," p. 370 and plate XXIV. Texas Mineral Resources: UT Publication No. 4301. Jan. 1, 1943 (issued Nov. 1946)

Thrall, Homer S. A Pictorial History of Texas, from the Earliest Visits of European Adventurers to A.D. 1879, p. 72. St. Louis, 1879.

Walker, Jimmy. "Palaces Under the Earth." Sun and Soil, Vol. III, No. 4. April 1958.

Walker, Jimmy. "Wild Caves of Texas: An Underground Wonderland." Texas Parade, pp. 16-18. April 1957.

Walker, Jimmy. "Wonderful World Underground." Travel, Vol. 104, No. 4, pp. 30-38. Oct. 1955.

Watkins, Sue. "The Old Man of Frio Cave." Texas Game & Fish, Vol. 14, No. 9.

White, Patrick J. "Bat Blitz." The Caves of Texas, p. 101. Bulletin of the National Speleological Society, No. 10. April 1948.

White, Patrick J. "Caves of Central Texas." Ibid, pp. 61-62.

Ref: TSS files

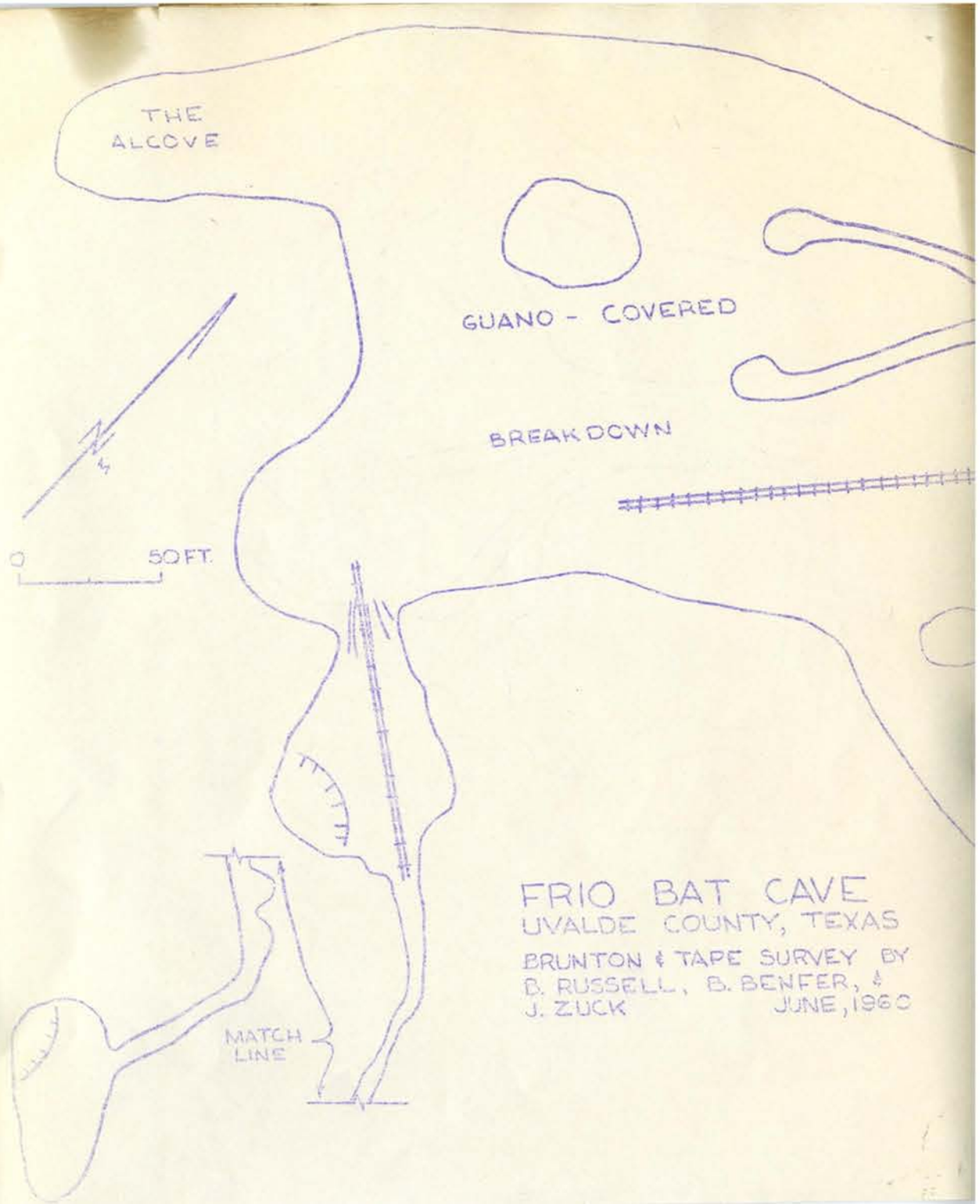
FRIO OWL CAVE — Uvalde County (# 10)

Shut-In 15' Quadrangle

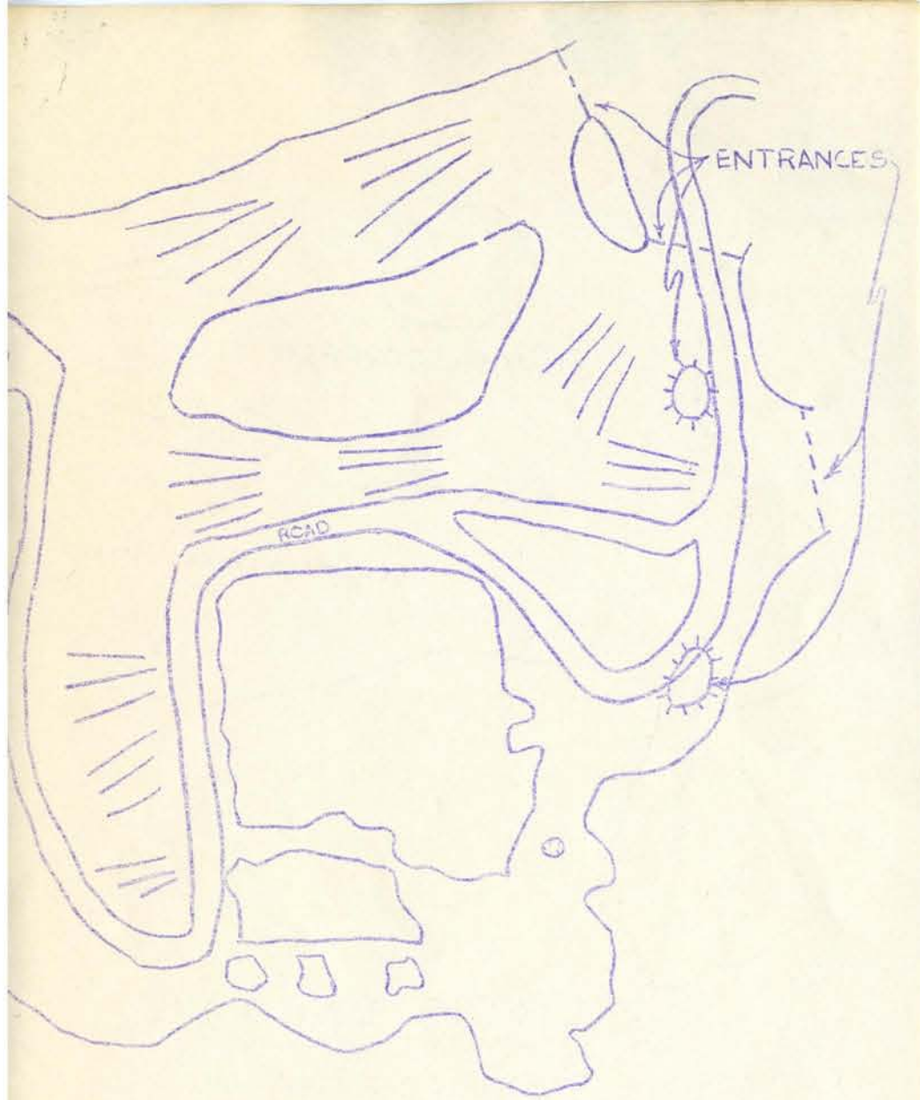
Owner: Al McQueen

Description: The cave is formed on one level, consisting of a 35' deep sink to a room. It is dry except after a rain and is used as an owl roost. Entrance requires 30' of ladder or rope. Total length of the cave does not exceed 100'. It is formed in the Edwards limestone. It was explored in August 1960 by Bill Russell of the UT Grotto.

Ref: TSS files



FRIO BAT CAVE
UVALDE COUNTY, TEXAS
BRUNTON & TAPE SURVEY BY
B. RUSSELL, B. BENFER, &
J. ZUCK JUNE, 1960



GARNER PARK CAVE (GARNER PARK CAVE # 1) Uvalde County (# 12)

Utopia 15' Quadrangle

Owner: State of Texas

Description: The entrance to the cave is 5' high, 4' wide, and in the side of a hill. A 20° slope leads into the single room constituting the cave. This room is 20' wide, 30' long, and 8' high. Total length of the cave is 67'. Although it must at one time have been quite beautiful the only formation surviving vandals is a 3' in diameter, 7' high white column in the center of the room. A trail in the park leads to the cave. The only fauna observed in the cave were cave crickets and spiders. The cave is formed in the Edwards limestone. It was visited and mapped in March 1961 by Graham Bell, Eugene Blum, and James Reddell. (See map, page)

Ref: TSS files

GARNER PARK FISSURE NO. 1 (GARNER PARK CAVE # 2) Uvalde County (# 13)

Utopia 15' Quadrangle

Owner: State of Texas

Description: The cave is primarily an enlarged fissure. A number of formations are found back into the cave, past an area of crawling and squeezing through small holes. The cave is formed in the Edwards limestone.

Ref: Carl Clayton

GARNER PARK FISSURE NO. 2 Uvalde County (# 14)

Utopia 15' Quadrangle

Owner: State of Texas

Description: The cave is about 100 yards long, and has a very high ceiling. It is entered at the bottom of the fissure where it is 2-3 feet wide. By chimneying about 30' up, there is found a crawlway running the length of the cave. The few formations found in the cave were dead. It ends in breakdown.

Ref: Orion Knox

GARNER PARK FISSURE NO. 3 Uvalde County (# 15)

Utopia 15' Quadrangle

Owner: State of Texas

Description: The cave is entered by a 15' drop to a 3-6 foot wide passage about 75' long, with breakdown about 30 yards from the entrance. At the end of the passage 3 fissures lead off, the one straight ahead blocked by breakdown and the other two, which take off on opposite sides of the passage, quickly become too small. Immediately after the breakdown, nearer the entrance, a small hole on the left drops 10' to a small room 16' x 10' x 5½' high. Only a few formations were found in the cave. It was explored in 1958 by Orion Knox, Ernest Kaltermann, Leonard Hill, and Arturo Solis.

Ref: Orion Knox

GARNER PARK FISSURE NO. 4 — Uvalde County (# 16)

Utopia 15' Quadrangle

Owner: State of Texas

Description: The entrance to the fissure is about 10' at the top, with boulders wedged at points along it. The total depth of the fissure is about 100. The cave to the east leads to a steep slope up to a point where boulders have blocked the passage. At this point, which is probably no more than 20' below the surface, light may be seen from a hole in the ceiling. To the west from the entrance the passage leads past a hole in the floor to a point where it splits into two narrow fissures, rapidly becoming too narrow. The hole in the floor leads to a small room about 20' down. There are a few formations in the cave.

Ref: Orion Knox

GARNER PARK FISSURE NO. 5 — Uvalde County (# 17)

Utopia 15' Quadrangle

Owner: State of Texas

Description: This is nothing more than a small crevice becoming too narrow at the end. Nothing more is known.

Ref: Orion Knox

GARNER PARK FISSURE NO. 6 — Uvalde County (# 18)

Utopia 15' Quadrangle

Owner: State of Texas

Description: The cave extends about 20' before it reaches a 60' drop. Nothing of any extent leads off from the bottom. Nothing more is known.

Ref: Orion Knox

GARNER PARK FISSURE NO. 7 — Uvalde County (#19)

Utopia 15' Quadrangle

Owner: State of Texas

Description: The cave is entered by a vertical drop of 20'. After a short distance a second drop of about 100' is encountered. It was not explored on the trip on which it was found.

Ref: Orion Knox

GENERAL NOTE ON THE GARNER PARK FISSURES: All seven of the above caves are located in a high bluff in the Garner State Park. They have all probably been largely explored but the exact nature and extent of the fissures is unknown. Although they appear to be sloughing off from the bluff the presence of cave formations, rooms, etc., indicates that they are more than simply talus caves. More work is planned for the future on this area.

GONZALES CAVE NO. 1 Uvalde County (# 38)

Uvalde 30' Quadrangle (?)

Owner: Dolph Briscoe

Description: This 60' shaft has been dug out by the Uvalde County Water District, in preparation for its use as a recharge site, but before excavation could be extended beyond the 60' levela change in ownership prevented any further work's being done on the cave. The same holds true for the following cave. A full report on both this and Gonzales Cave No. 2 will appear in the Caves of Indian Creek.

Ref: Fred Mason, Jr.

GONZALES CAVE NO. 2 Uvalde County (# 39)

Uvalde 30' Quadrangle (?)

Owner: Dolph Briscoe

Description: This is a 60' shaft, blocked at the bottom with breakdown. See Gonzales Cave No. 1.

Ref: Fred Mason, Jr.

GRATING CAVE Uvalde County (# 25)

Uvalde 30' Quadrangle

Owner: Wayne Winn

Description: This 300' long crawlway is about 30' deep and is located in the bed of Indian Creek. It has been converted into a recharge site by the Uvalde County Water District. A full report and description will be included in the Caves of Indian Creek.

Ref: TSS files

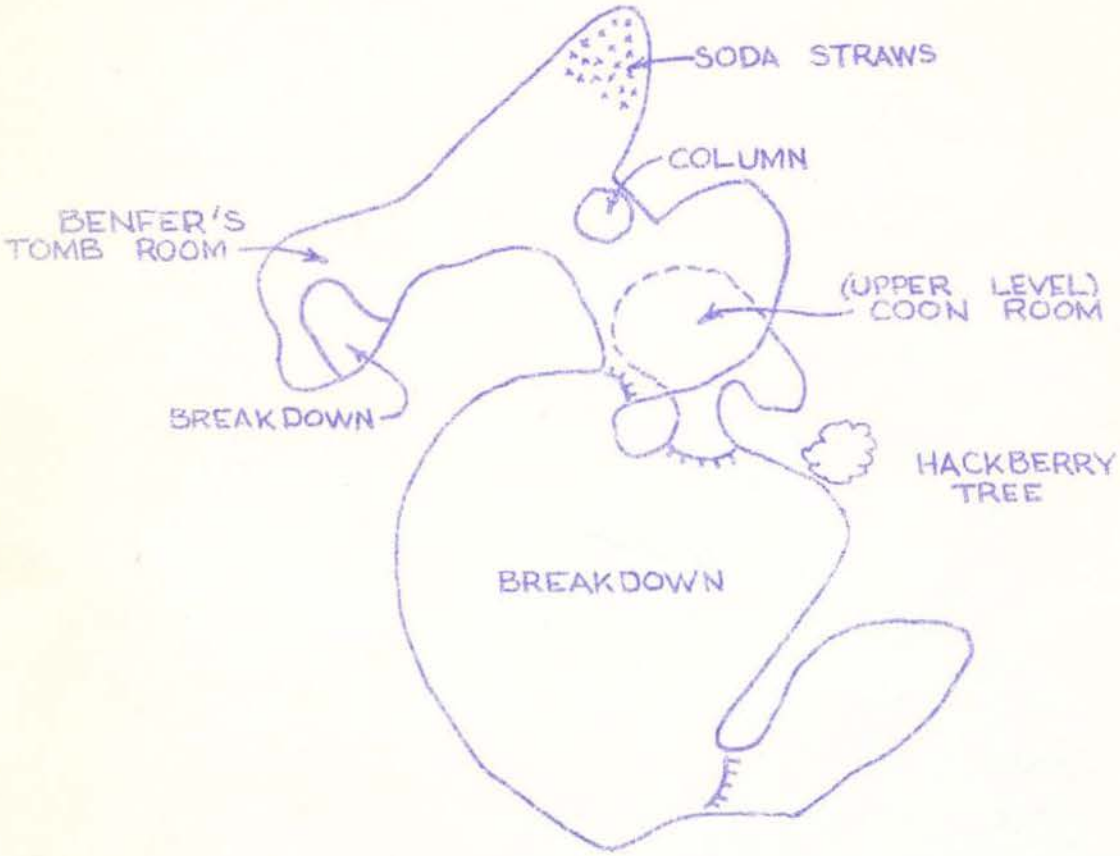
HACKBERRY CAVE Uvalde County (# 35)

Uvalde 30' Quadrangle

Owner: Fred Mason, Jr.

Description: The cave consists of a series of rooms encircling a 12' deep breakdown sink, 20' in diameter. A crawl to the northwest leads into a 15' x 20' room separated from a somewhat smaller room by a 6' in diameter, 10' high stalagmite. A very tight crawl, partially opened with a rock hammer, leads from this room into an 8' high, 20' in diameter room. To the southeast a sloping crawl leads down into a 25' wide, 15' long, 5' high room with no outlets. An upper level crawl directly above the northwest passage leads for about 30' before it dead-ends. The only formations in the cave are the stalagmite already described, a fine 10' high column and many 1'-2' long soda straws. Most of the formations are alive and a small pool is found at the base of the large stalagmite. The cave is formed in the upper portion of the Edwards limestone. The skull of a recently dead goat was removed from the upper level crawlway. The only fauna in the cave were cave crickets and numerous surface-type beetles. It was discovered in 1923 by Fred Mason and partially explored by him then. It was not revisited until December 18, 1960, by Bob Benfer, Bud Frank, Graham Bell, Philip Russell, and James Reddell of the UT Grotto. This same group mapped the cave. (See map, page 21)

Ref: TSS files



HACKBERRY CAVE

UVALDE CO., TEXAS

BRUNTON & TAPE SURVEY 12-18-60
BY BELL, BENFER, FRANK & REDDELL

HORSESHOE BEND CAVE — Uvalde County (# 7)

Utopia 15' Quadrangle (?)

Owner: John Caddel

Description: The cave is formed along a bedding plane and in a soft and crumbly honeycombed limestone. Entry was forced into two of the rooms, which were wet and contain live formations. The entrance is a shallow sink, which leads into a small, circular room. Small holes lead into rooms on either side of the entrance room. The floor of these rooms is largely covered with washed-in silt and guano. Total length of the cave does not exceed 50'.

Bibliography: Spurling, Slim. "CCSS Visits New Caving Area." The Texas Caver, Vol. III, No. 2, p. 17. Mar-Apr 1958.

Ref: CCSS files

INDIAN CREEK CAVE — Uvalde County (# 28)

Uvalde 30' Quadrangle

Owner: Fred Mason, Jr.

Description: A full report on this cave and other caves in and near the bed of Indian Creek will be published as a survey report on the Caves of Indian Creek at a later date. The cave is a recharge site of the Uvalde County Water District and is the longest surveyed cave in Texas. Entered by a 120' sink broken into 5 levels by ledges and upper levels, a total of 16,400' of passage has been surveyed, with an additional one mile of passage explored but unsurveyed.

Ref: TSS files

LEONA RIVER SINK (LEONA RIVER CAVE) (KENNEDY CAVE) — Uvalde County (# 22)

Uvalde 30' Quadrangle

Owner: Kennedy Estate

Description: The original entrance to Leona River Sink was described by Langford (1942) as being 35' deep and 9' in diameter. From the bottom the cave is reported as consisting of two large passages extending out at or near a straight angle to each other. The cave was explored prior to this by a number of local people and geologists, including Frank Welder, an early explorer of Indian Creek Cave. A few years ago the Uvalde County Water District placed a grating over the cave to prevent trash blocking the cave and to thus improve it as an underground water recharge site. After some time the owner removed the grate and filled the cave with gravel. The first flood completely washed away the gravel, but since that time subsequent floods have filled the cave with trash and gravel to within 20'-25' of the surface. At the present the entrance to the cave, which lies in the center of the Leona River bed, may be described as a 7' square hole surrounded by concrete which has been set in flush with the river bed. After about 6' solid rock is met. Here the cave is about 4' wide and 7' long and drops about 15' to the present "floor" of the cave. A narrow crack, too plugged with debris to enter, extends to the southeast out of the "bottom" of the sink. At this time members of the UT Grotto investigated the cave and found it is described. They observed three ribbon snakes, thousands of mosquitoes, numerous spiders, cave crickets,

and surface-type beetles living in rotting logs at the bottom of the entrance. The cave, which is in the Edwards limestone, will probably hit the water table, which is fairly shallow in this area. The county is in the process of building a dam downstream from the cave to trap and hold water for a recreation lake. When this is done a concrete dam will be erected around the cave entrance to prevent loss of the water and to catch all flood water for recharge purposes.

Bibliography: Holt, Charles L. R., Jr. Geology and Gound-Water Resources of Medina County, Texas, p. 68. Texas Board of Water Engineers Bulletin 5601. Aug. 1956.
Langford, Othell F. Collapsed Caverns as Modifiers of Older Structures in the Vicinity of the Balcones Zone of Faults in Uvalde County, Texas, pp. 37-38. Unpublished MA Thesis of the University of Texas. August, 1942.

Ref: TSS files

LOUSEBOUND SHELTER CAVE — Uvalde County (# 6)

Utopia 15' Quadrangle (?)

Owner: John Caddel

Description: The cave is entered by a shallow sink, which in turn leads to a flat-roofed breakdown-filled room that shows evidence of recent falls. There are active formations on the left side of the room but the rest of thecave is dry and dusty. The room is about 35' long, 15' wide, and 15" high. It is located on a saddle in a ridge facing up a ravine and is formed in the Edwards limestone. The cave is used as a shelter by goats as is evidenced by two skulls in the cave. It is heavily infested with lice.

Bibliography: Spurling, Slim. "CCSS Visits New Caving Area." The Texas Caver, Vol. III, No. 2, p. 17. Mar-Apr 1958

Ref: CCSS files

MONTELL SHELTER CAVE (MONTELL SHELTER) (MONTELL CREEK SHELTER) — Uvalde County (# 41)

Barksdale 15' Quadrangle

Owner: Ray Miller

Description: The fill on the shelter floor is about 65' above the adjacent stream bed of Montell Creek, while the highest point of the roof is about 95' above the same level. The total length of the opening parallel to the bluff is 60', and the maximum depth 25'. A second shelter of similar dimensions and at the same level is about 200' upstream. The bedrock floor of the shelter is covered by uncemented debris consisting of pebble- and boulder-size rock spalls from the shelter roof and refuse of animals and man which have occupied the shelter. Depth of excavation reached 14.5' before the project was closed with bedrock still not reached. In the process of excavation, near the bottom of the present "floor" level the entrance to a second chamber was found. Exploration revealed a small chamber 38' long and 28' wide. The floor of this room is breakdown and further exploration must await removal of this debris. The cave has been mapped by Glen Evans and other members of the staff of the Texas Memorial Museum. (See map, page 25)

Archaeology: Evidence of human habitation is found in the form of paintings on the back wall of the cave and in numerous artifacts and buried fire pits in the loose fill. Up to the present time about 250 broken and complete artifacts have been collected from the shelter and if the cave should be fully excavated they would probably number in the thousands. In addition to the more common types, such as arrow and dart points, found were two painted pebbles similar to those of the Pecos River Cultures, and several partially complete bone, wood, and antler implements. A badly rusted piece of metal, possibly the tip of a large iron spike, was found in the upper zone. This indicates that the later Indian inhabitants of the cave may have been in contact with Europeans--possibly the Spaniards who built the mission in Montell in the 18th century. The excavation revealed the following layers:

Surface zone: Ashes, fine dirt, animal excretion, pebbles, charcoal--arrowheads abundant

Burned rock zone: A midden with hearths, broken bones, and large darts

Boulder zone: Large boulders and roof spall--few artifacts

Lower zone: Fine-grained brown and grey earth with some rock spall, more compact, lowest horizon from which artifacts found in place to depth of 8'3"

Spall zone: Loose limestone spalls from shelter roof--no artifacts in place

Material taken from the shelter is described in the Texas Memorial Museum Accession Book under # 804.

Bibliography: Evans, Glen. "Report on Cave on the Ray Miller Ranch, Uvalde County, Texas." Unpublished manuscript. April 3, 1947.

Kelley, J. Charles. "Arrow or Dart Shaft Tools and Problematical Incised Stones from Central and Western Texas." El Palacio, Vol. 55, No. 3, pp. 75-85. March 1948.

Reuter, Paul. "Notes and News." American Antiquity, Vol. 13, No. 3, p. 273. January 1948.

Wedel, Waldo R. "Notes and News." American Antiquity, Vol. 14, No. 1, p. 74. July 1948.

Wedel, Waldo R. "Notes and News." American Antiquity, Vol. 14, No. 3, pp. 244-245. January 1949.

Ref: TSS files

NORTH WELL CAVE — Uvalde County (# 36)

Uvalde 30' Quadrangle

Owner: Fred Mason, Jr.

Description: The cave consists of a large oblong room, containing numerous formations. The ceiling of the room ranges from 1'-7', and a 76' deep pit is found in the cave. Because of the relation of this cave with Indian Creek a full report is reserved for the report on the Caves of Indian Creek.

Ref: TSS files

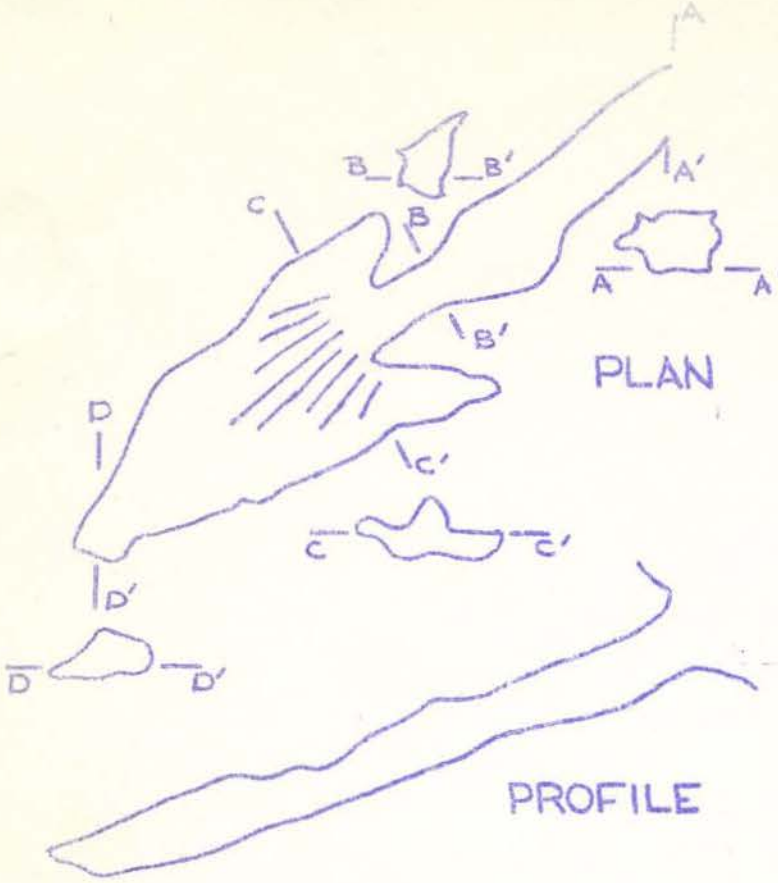
OWL CAVE PIT — Uvalde County (# 11)

Shut-In 15' Quadrangle

Owner: Al McQuown

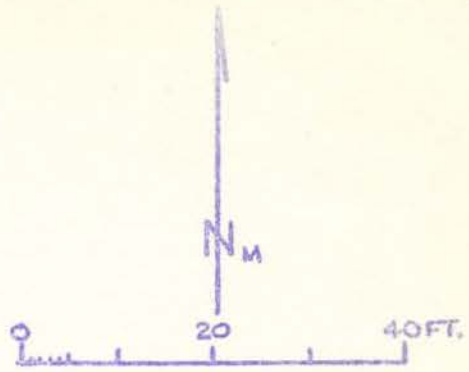
Description: The cave consists entirely of a 30' deep pit, with no passages leading off from the pit. It is about 8' x 8' in size for its entire depth. It was explored by Bill Russell and is formed in the Edwards limestone.

Ref: TSS files



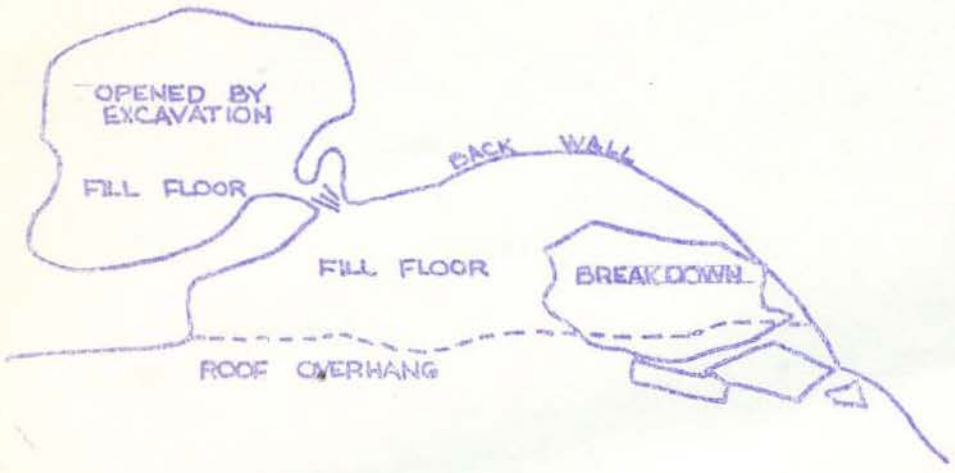
PLAN

PROFILE



GARNER PARK CAVE
UVALDE CO., TEXAS

BRUNTON & TAPE SURVEY BY
J. REDDELL, G. BLUM, G. BELL



MONTELL SHELTER
UVALDE CO., TEXAS

PROFANITY POTHOLE Uvalde County (# 31)

Uvalde 30' Quadrangle

Owner: Fred Mason, Jr.

Description: The cave is a 60' deep pit in the Edwards limestone, with a small entrance near the top of a low hill. At the bottom the pit is enlarged along a joint striking approximately east and forming a room about 22' along the joint and 10' wide. The entrance is above the west end of the room. Above the east end a dome approximately 40' rises, while along the southeast wall there is a very small hole which drops into 3 small lower levels with a total horizontal extent of about 40' developed along the joint. The cave is dry with only a few crickets in the lower levels. There is no clay fill in the cave and the joint is not mineralized. It was explored in 1960 by Dick Smith, Elizabeth Kelley, Bob Benfer, Mills Tandy, and Tommy Evans of the UT Grotto.
Ref: TSS files

RAMBIE'S CAVE (NIGGER NAVEL) (SCOTT CAVE) (UVALDE CAVE) Uvalde County (# 24)

Uvalde 30' Quadrangle

Owner: Marcellus Rambie

Description: The entrance to Rambie's Cave is located along the gently sloping side of a hill draining into Boon Slough. A diversion dith has been cut to channel run-off water into the cave, in connection with the Uvalde County Water District's recharge program. The entrance is an 18" in diameter hole in a shallow sink, dropping 12' to a 15' in diameter room. Along one side of this room another small hole allows one to drop 10' into the main cave. A small shelf drops a few feet into the largest room in the cave. This room or passage ranges from about 20'-60' wide, 15'-30' high and is about 300' long, extending to the northwest. A duck-under leads into a 40' x 80', 20' high room, which is the lowest point in the cave at 97' below the entrance. A short 4' high crawl leads out of this room and into a 40' long, 30' in diameter room floored with clay. A slope at the end of the room leads to a chimney and a small upper-level room. A steep slope from the right side of the clay-floored room leads to an upper-level passage which in turn connects by three holes with the previous room and by another passage to the south with the Birthday Room. This is a 25' high, 80' long, 40' wide room which is floored with a steeply sloping clay fill rising to its far end, where a 20' high dome has not been explored. On the opposite side of the room from the entrance to it a short passage leads to a high dome with a drop into a 30' long stream passage below the dome. This stream was running in 1961 but in 1959 when the map was made it consisted only of a pool at its end. Going west from the entrance a junction of three passages is encountered. Immediately in front a slope leads down into a low rock-floored crawl about 5' wide which after 30' opens up into the Pit Room. The floor of this room is covered with breakdown while the walls are sheer and rise about 30', but can be climbed. A hole in the breakdown leads into numerous small clay-floored crawls, all of which end in fill. A total of 200' of passage extends from the Pit Room. At the top of the room a passage immediately above the entrance into the room extends for about 80' of alternate walking and crawling passage before it connects with the main passage. Another crawl from across the pit has not been explored. At the junction of the three passages that to the left extends for about 230' before it ends. Ceiling heights in the passage drop from 20' to 6' and it narrows from 20' to 5'. A small crawl to the left,

Floatstone Crawl, extends about 75' before it too ends. The floor of this crawl is covered with slabs of "enigmatite" or "floatstone", a very light porous mineral of undetermined nature. The passage to the left or south of the junction extends extends about 200' before it forks. The floor of this passage, as of most of the main portion of the cave, is covered with small breakdown. To the right a smaller passage leads past a 10' high, 5' in diameter white formation to a small, 15' deep pit. A few soda straws and helictites are to be found in and around the pit. To the left the passage extends about 30' to a 15' drop into a 20' high, 20' wide room, with the floor sloping steeply down for an additional 10'. This passage extends for about 100', with the ceiling at 6', before it encounters a short drop. After this drop it turns sharply to the left where it rises by a ledge to a 6' high passage extending about 100' before ending in breakdown. Before the second drop a walking passage to the right extends for 60' where a crawl to the left extends about 20' before ending. Straight ahead the passage opens up into a 10' high, 20' wide, 40' long room. A passage out of this room extends about 30' before encountering a 15' in diameter, 10' high room. At various points throughout the cave domes rise as much as 30' or 40' and occassionally holes several feet up in the walls of the cave lead to a honey-combed areas of very white, chalky limestone. In general, the cave, though not a beautiful one nor a huge one, is extremely interesting. In the small intermediate room at the entrance two large rattlesnakes and one large black-widow spider were killed. Other fauna observed in the cave include cave crickets and millipedes. The cave is well-known among local people and has been explored numerous times by members of the University of Texas Grotto. It was mapped October 9-10, 1959, by Bill Russell and Dick Reed of the UT Grotto. (See map, page 29)

Meteorology: Air has been observed blowing out of the entrance on every occasion that the cave has been visited. Each instance, however, has been made when the air outside was colder than that of the cave itself. At the time of the visit in 1960 when air was observed blowing more strongly than at any other time a strong wind was also blowing outside.

Geology: The cave is formed in a fault-block of the Edwards limestone of Cretaceous age. The lower part of the cave east of the entrance seems to have been almost filled with laminated red clay which has since been almost completely washed out. Only small clay banks along the wall and small fills in solution pockets remain. Calcitic fossils exposed in the wallrock below the level of the fill have been partially silicified, probably by silica leached from the clay, while aragonitic fossils were dissolved out, leaving only molds and internal casts. Some of the invertebrate fossils collected have since been found to be new species, but as yet no serious work has been done on them. Of considerable interest is the unusual material known as "enigmatite" or "floatstone" which is known only from Rambie's Cave. "At first glance, enigmatite resembles punky rotten wood. It occurs loose on the floor in pieces up to two feet by two feet by eight inches. A few pieces occur in solution pockets on the walls, but none has been found solidly embedded in limestone. It ranges from 'limonite brown' to black and is very light and very friable. Careless handling of a piece will reduce it to a powder. It is spongy in appearance with 80 to 90 percent open pore space. Under a microscope the walls of the pores can be seen to consist largely of branching and interconnected rounded fibers. Some thin sheets of the same material are scattered throughout and may be either flat or curved. A few of the sheets can be seen to break up laterally into the more common fibers. The size of the openings varies irregularly within a single specimen, but average perhaps 1.0 mm with the diameter of the fibers ranging from 0.05 to 0.1 mm. Within a small area the openings appear to be somewhat aligned, but the direction of alignment changes rapidly and produces an appearance of randomness when a larger area is seen. The name "floatstone" was proposed when it was first found because of its low specific gravity,

estimated to be about 0.3. Unfortunately, the name turned out to be inappropriate because the pore spaces are all interconnected and it "sinks like a rock". No attempt was made to measure the specific gravity of the solid portion alone. X-ray diffraction patterns were run on powdered samples by George Thomas of the UT Geology Department. Untreated samples gave the pattern of iron oxide hydrate, $Fe_2O_3.H_2O.nH_2O$. One sample heated for 24 hours at 600°C underwent a weight loss of 10.8 percent and gave the pattern of goethite, $Fe_2O_3.H_2O$. "Limonite" is a common and useful sack term for material of this general composition. Enigmatite appears to the author to be a limonitic replacement of some type of organic material introduced after the cave was formed, with the major problem the identification of the original organism. Others have suggested pore-filling or partial replacement of the limestone wall-rock or of fill material, followed by solution of the limestone to leave a boxwork, but in this case the pore walls should be mostly sheets instead of mostly fibrous. Both types of replacement are found in the cave, with delicate limonite casts of fossils in a few areas and thin sheets of limonite along cracks in the walls." (Whiteman, 1960)

Bibliography: Whiteman, C. D. "Enigmatite (Floatstone) from Rambie's Cave." The Texas Caver, Vol. V, No. 1, p. 7. Jan-Feb 1960.
Whiteman, C. D. "Rambie's Cave, Uvalde County, Texas." Ibid, p. 6.

Ref: TSS files

SILVERLAKE RANCH SINKHOLE — Uvalde County (# 40)

Barksdale 15' Quadrangle (?)

Owner: W. L. Moody

Description: The cave consists of a 75' sinkhole, the bottom of which is filled with a very spongy layer of leaf mold and twigs. The cave fills with water every time the creek rises. The walls of the sink are covered with stalactites, and indications are that the hole was once much deeper and perhaps led into a rather large cave which is now completely filled with debris. The cave is formed in the Edwards limestone. Location is uncertain and the cave may lie in Kinney County, since the ranch encompasses parts of both counties. It was explored by Carl Clayton.

Ref: Carl Clayton

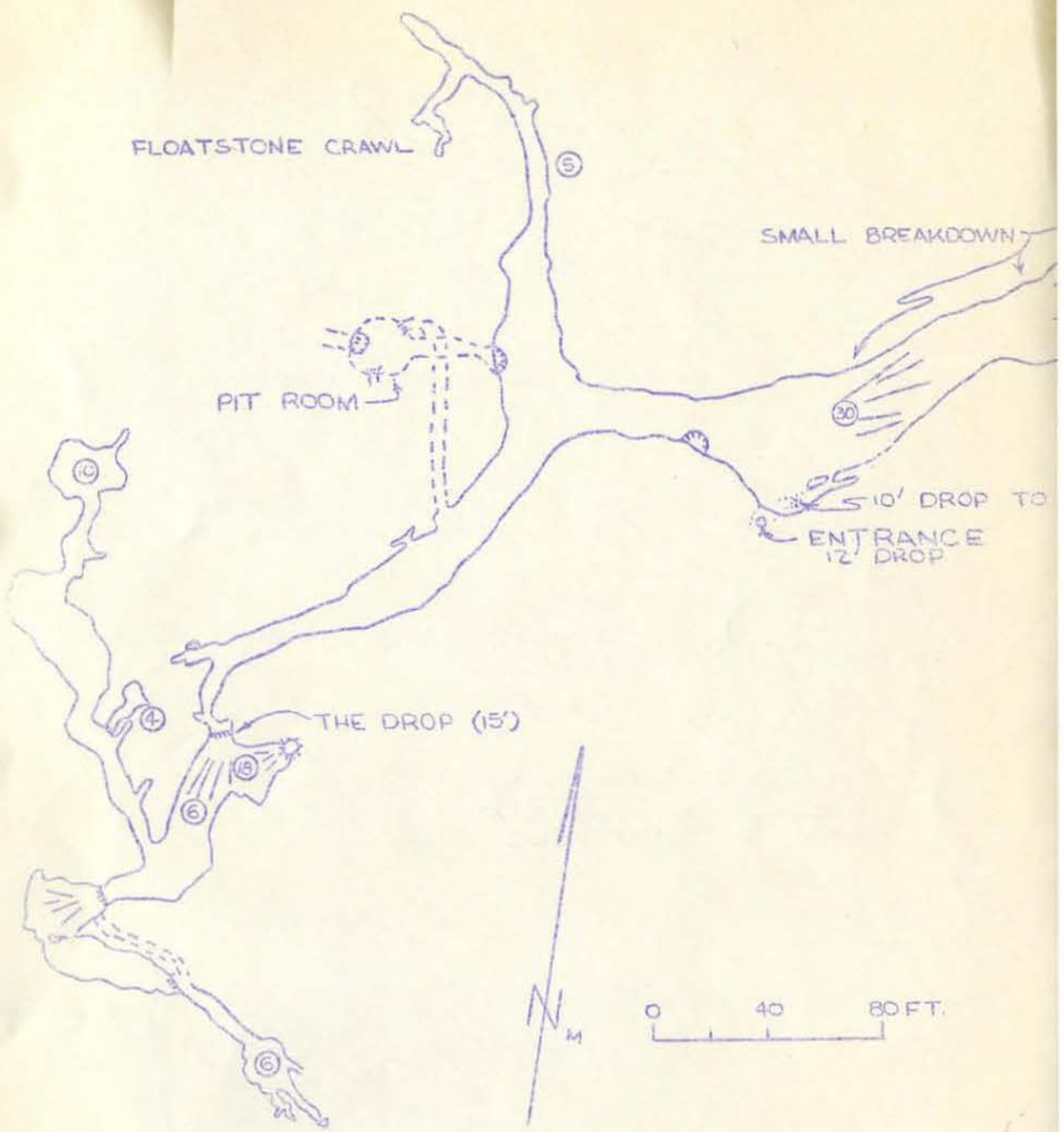
STOCKTON RANCH CAVE NO. 1 (BURNS RANCH CAVE NO. 1) — Uvalde County (# 1)

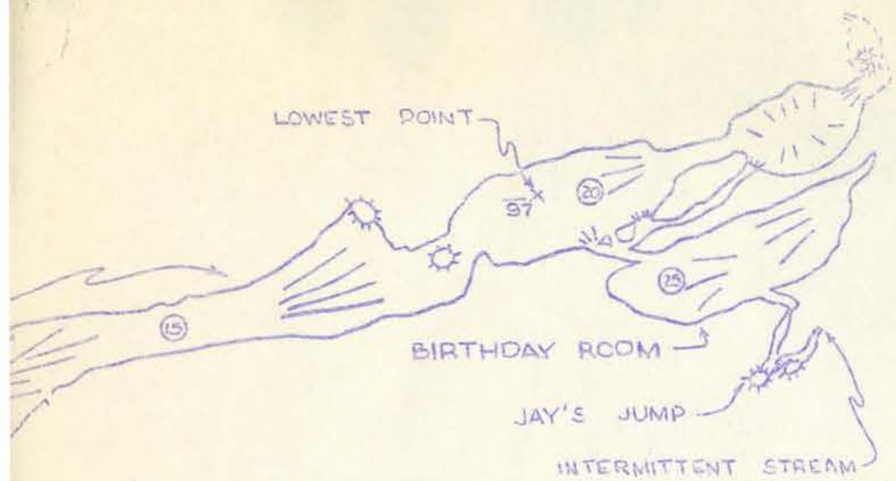
Utopia 15' Quadrangle

Owner: Curtis Stockton

Description: The entrance drops about 20' into a small room with a passage leading off to the east. This passage ends after about 40'. The cave is formed in the Edwards limestone. It was explored by Carl Clayton. It was originally listed as on the John Burns Ranch.

Ref: Carl Clayton





RAMBIE'S CAVE
UVALDE CO., TEXAS

SURVEYED 10-9,10-'59 BY
B. RUSSELL & D. REED
DRAWN BY B. RUSSELL

STOCKTON RANCH CAVE NO. 2 (BURNS RANCH CAVE NO. 2) Uvalde County (# 2)

Utopia 15' Quadrangle

Owner: Curtis Stockton

Description: The entrance drops about 40' into a crevice. It is formed by a huge block of limestone shifting about three feet away from the mountain, forming a passage 50' long. The walls are crusted over, but it is now dead. The cave was explored by Carl Clayton when the ranch was owned by John Burns.
Ref: Carl Clayton

STOCKTON RANCH CAVE NO. 3 (BURNS RANCH CAVE NO. 3) Uvalde County (# 3)

Utopia 15' Quadrangle

Owner: Curtis Stockton

Description: The entrance is a large one, into which one can walk upright. A room about 10' x 20' is used as a goat shelter during stormy weather. The back of the room ends in a vertical crevice which was not explored. The cave was explored by Carl Clayton when the land was owned by John Burns.
Ref: Carl Clayton

UTOPIA CAVE Uvalde County (# 4)

Utopia 15' Quadrangle

Owner: unknown

Description: The cave is reported as consisting of a single chamber about 200 or 300 yards long. The few stalactites found in the cave measure only 2 or 3 inches in length and numerous ledges encircle the room. The floor is well packed at the entrance but at the rear is ~~composed~~ of loose ash soil.

Bibliography: White, Patrick J. "Caves of Central Texas." The Caves of Texas, p. 62. Bulletin of the National Speleological Society, No. 10. April 1948.
Ref: TSS files

WIND CAVE Uvalde County (# 34)

Uvalde 30' Quadrangle

Owner: Fred Mason, Jr.

Description: The entrance to the cave was first seen many years ago but since that time attempts to locate the entrance had proved unsuccessful until November 1961. Bob Benfer, Stiles Roberts, and Johnny Greer of the University of Texas Grotto re-discovered and explored the cave. The entrance is 2' in diameter and drops about 5'. This leads into a series of crawls and pits. Two of these pits drop 40' each. Only one was entered, using cable ladders, but was found to be blocked by silt at the bottom. Another pit, from which much air issued, was explored but found to narrow towards the bottom and so was not completely explored. Several crawls lead out of the general area of the pits but all dead-end or become too small, with one exception which leads in turn to a series of drops. Total depth reached was about 125'. At the bottom a crawl extends out but is silted-up. The current of air issuing from the cave is considerable, possibly as much as 15 or 20 miles per hour, but apparently it is coming from fissures and cracks too small to enter.
Ref: TSS files

UNNAMED CAVE — Uvalde County (# 32)

Uvalde 30' Quadrangle

Owner: Fred Mason, Jr.

Description: This cave is a 60' deep pit. Mr. Mason explored it many years ago, and reported at the time that a small stream issued from a hole in the wall and then sank into gravel at the bottom of the pit. Nothing further is known about the cave.

Ref: Fred Mason

UNNAMED CAVE — Uvalde County (# 33)

Uvalde 30' Quadrangle

Owner: Fred Mason, Jr.

Description: Entrance is made by a 1½' in diameter, 5' deep sink. A 1' wide crack extends from the bottom of the entrance for about 7'. It then turns to the right where there is a very narrow drop. The floor is about 25' down. Mr. Mason reports going down the crack for about 40' and seeing that it continued down for some distance further as a 2'-4' wide crack. Apparently it has been blocked by rocks as it is now impossible to negotiate.

Ref: Fred Mason, TSS files

DOUBTFUL CAVES

CRAWLDIG CAVE — Uvalde County (# 1a)

Owner: John Caddel

Description: This cave is a wet, solution type bedding plane cave with sewer pipe leads too small to enter without extensive chiselling of rock. No formations are to be found although the cave is wet. The cave is entered by a shallow sink. Total length is no more than 20' with the narrow part only 15" wide and tapering.

Ref: CCSS files

DO IT YOURSELF YANKEE CAVE — Uvalde County (# 2a)

Owner: John Caddel

Description: The cave is a bedding plane, solution type cave with active formations and a damp guano and silt floor. It was discovered by Roger Gregg, who poked his walking stick into an air hole and found that it kept on going. Digging enlarged a vertical drop of 3' and enabled the cave to be entered. It measures 12' x 5' x 14" high.

Ref: CCSS files

FLY CAVE — Uvalde County (# 3a)

Owner: John Caddel

Description: The cave is a dry solution type cave, presently an animal hole, and full of flys. The cave is located 10' up from the bottom of a ravine. It is about 20' long and 2' high at the entrance and starting to pinch off.

Ref: CCSS files

GOAT TRAP CAVE — Uvalde County (# 4a)

Owner: John Caddel

Description: The cave is formed along a bedding plane and is full of broken rotten stone. The entrance sink is full of breakdown and formations which were uncovered by excavation. The cave is 15' long and 6' wide with the entrance sink 4' x 6' x 2'. Two goat skulls were found in the cave.

Ref: CCSS files

SHELTERS

HERNDON SHELTER — Uvalde County (# 5a)

Owner: unknown

Description: Nothing is known about this shelter.

Bibliography: White, Patrick J. "Caves of Central Texas." The Caves of Texas, p. 62. Bulletin of the National Speleological Society, No. 10. April, 1948.

Ref: TSS files

HOBBS SHELTER — Uvalde County (# 6a)

Owner: unknown

Description: This shelter contains dim paintings and midden.

Bibliography: White, Patrick J. "The Caves of Central Texas." Ibid, p. 62.

Ref: TSS files

KINCAID SHELTER — Uvalde County (# 7a)

Owner: Edgar Kincaid

Description: The Kincaid Shelter was discovered by Eugene Mear in 1948 and digging begun in the rubble pile left by a treasure hunter. He found artifacts of the Round Rock focus and Pedernales type points. Also discovered were three Folsom points. The Texas Memorial Museum made a full excavation of the shelter. It is located about 900' above sea level and is formed in the Anacacho limestone. At the upper level of its floor fill the shelter is roughly semicircular in plan. It has a maximum interior width of 35' and extends into the bluff a maximum of 32.5' from the edge of the overhanging limestone ledge. The shelter ceiling is an irregular dome, rising into the roof limestone bed 4'-5' above the level of the

overhang. This dome and other solution features suggest the main shelter may be part of an old solution cavern dissected by the river cutting into the limestone bluff. A thick body of fill rests on the shelter floor. In the same bluff and within a few hundred feet of the main shelter are several smaller shelters and shallow overhanging ledges. The bluff faces slightly east of south towards the Sabinal River. The excavation of the Texas Memorial Museum began on Oct 4, 1948, and ended Dec. 19, 1948. They collected artifacts of various types from different cultural groups, samples of the several formations penetrated in the excavation, and specimens from a stone pavement found within the cave. This material is listed in the Texas Memorial Museum Accession Book under No. 908. The faunal list of bones taken from the cave includes the following: deer, jack rabbit, cottontail rabbit, pack rat, bison, skunk, human, bob cat, wolf, coyote, antelope, turtle, badger, shark, horse, elephant, alligator, armadillo, sloth, camel, peccary, raccoon, large bird, and Aenocyon. One of the turtles was identified as Terrapene caniliculata. Work on the shelter was done by Glen L. Evans, Grayson E. Meade, and E. H. Sellards. A full report on the shelter is to come out soon as a bulletin of the Texas Memorial Museum.

Bibliography: Mear, Charles E. "Folsom Culture." Man, Vol. 1, No. 2, pp. 15, 39-40. December 1948.
Mear, Charles E. Quaternary Geology of Upper Sabinal River Valley: Uvalde and Bandera Counties, Texas, pages 42 and 56. MA Thesis for the University of Texas. January 1953.

Ref: TSS files

MASON RANCH SHELTERS — Uvalde County (# 8a)

Owner: Fred Mason, Jr.

Description: A 15' wide, 8' high, 10' deep shelter is to be found facing Indian Creek. The floor is bedrock and it is used as an animal den. Several smaller shelters are nearby but none show signs of occupation. A large burnt-rock midden is along the side of the creekbed within a few hundred feet of the shelters.

Ref: TSS files

MCGOWAN SHELTER — Uvalde County (# 9a)

Owner: unknown

Description: Nothing is known about the site.

Bibliography: White, Patrick J. "Caves of Central Texas." The Caves of Texas, p. 62. Bulletin of the National Speleological Society, No. 10. April 1948.

Ref: TSS files

MITCHNER SHELTERS — Uvalde County (# 10a)

Owner: unknown

Description: Nothing is known about the site.

Bibliography: White, Patrick J. "Caves of Central Texas." Ibid, p. 62.

Ref: TSS files

MONTELL SHELTER — Uvalde County (# 11a)

Owner: Ray Miller

Descriptions: This shelter is about 200' upstream from Montell Shelter Cave. It is located about 65' above the creek bed. The size of the cave is about 60' wide, 30' high, and 25' deep.

Bibliography: Evans, Glen. "Report on Cave on the Ray Miller Ranch, Uvalde County, Texas." Unpublished manuscript. April 3, 1947.

Ref: TSS files

ROBERTS SHELTER — Uvalde County (# 12a)

Owner: unknown

Descriptions: Nothing is known about this site.

Bibliography: White, Patrick J. "Caves of Central Texas." Op cit, p. 62.

Ref: TSS files

WELLS SHELTERS — Uvalde County (# 13a)

Owner: unknown

Descriptions: The shelters contain very dim paintings.

Bibliography: White, Patrick J. "Caves of Central Texas." Ibid, p. 62.

Ref: TSS files

NOTE

Palace Cave, often reported to be in Uvalde County, is actually located in Kinney County. It is the same as Wells Cave. The ranch on which it is located extends into both counties.

Ref: TSS files