

THE STATUS OF THE  
RED-SPOTTED TOAD IN  
BARBER COUNTY, KANSAS

REPORT  
TO THE  
KANSAS FISH AND GAME COMMISSION  
(non-game wildlife contract)

BY

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INTRODUCTION

The objectives of this project were to find out more about the natural habits of the red-spotted toad (Bufo punctatus) in Barber County, Kansas. This toad has been known only to occur along the southern border of Kansas from Barber County to the west.

The toad has been reported to have limited distribution in Kansas, and Platt, et al. (1974) recommended an increase in stock watering ponds (as potential breeding sites) and a reduction in the use of pesticides in those areas where this toad occurs.

Also, the project called for photos of habitat, the toads, collecting specimens, and recording information about other amphibians and reptiles encountered during the study.

METHODS

Five field trips were made to Barber County during May and June 1983 in search of the red-spotted toad and habitat. The trips were made on the following dates (miles per trip are given in parentheses): 29 May (200 miles); 2 June (350 miles); 3 June (300 miles); 11 June (240 miles); and 14 June (300 miles). The total miles driven for the project was 1390 miles. A total of 12 voucher specimens were collected of the red-spotted toad from Barber County for documentation. They were sent to the KU collection at the Museum of Natural History in Lawrence, Kansas. Several other animals of special interest were collected from Barber, Comanche, and Harper Counties, and they were also sent to the KU collection.

Field notes were kept for all trips, as well as maps for the work in Barber County. A summary of the notes, as well as a map is included in this report. A listing of all species of amphibians and reptiles encountered in Barber County is also included in the report along with the total numbers of each species collected and/or observed during the project.

## HISTORY OF THE RED-SPOTTED TOAD

The red-spotted toad has been recorded from Morton, Clark, Comanche, and Barber Counties (Collins, 1982). The KU collection holds specimens from each of these counties in Kansas. The first being collected by Burt & Parker (a skeleton) on 25 June 1927 from 12 miles north of Elkhart, Kansas in Morton County. Specimens from Barber County have been collected between 22 April and 5 September. The first KU specimen being collected from the county on 28 August 1935 by C.W. Hibbard (KU collection).

Barber County, Kansas seems to be the northwest limits of the toads range (Collins 1982, Conant 1975). The amphibian is found on to the south and west in parts of Texas, Oklahoma, New Mexico, Colorado, Arizona, California, Nevada, and Utah in the United States (Conant 1975). It is more common to the south and west of Kansas.

The red-spotted toad is found in rocky areas of prairies and canyons in southwestern Kansas. It is a nocturnal animal, and spends most of the day under rocks where it is fairly moist. The toad is an opportunistic breeder, and congregates in rather small numbers around canyon streams and pools to mate (Collins 1982).

## RESULTS OF STUDY

During my work in Barber County I was able to confirm the presence of the red-spotted toad in the areas of previously known populations. All of these populations are located near the western border of the county from about Sun City south to the Oklahoma line. Good habitat was found in several other areas of the county, however no toads were found or heard in these areas. Some possible habitats were also investigated in parts of Harper County near Anthony and Sumner County south and west of Caldwell. No toads were discovered in either Harper or Sumner Counties.

The following is a summary of the accounts of the specimens of toads collected. The summary includes the toads collected from locations A,B,C,D,E,&F. shown on the Barber County map at the end of this report.

Location "A" is about 1.5 miles south of Sun City. A sub-adult red-spotted toad was found as it emerged from a crack in hard red soil and gypsum from the top of an east facing hill (photo #7). It was found at 1900 hours on 11 June 1983. There had been heavy rains in the area two days before. The toad was found during a period of clear skies, light winds, and at an air temperature of 27°C. The humidity was quite high. No other toads were found in the area, and no toads were heard calling after sundown.

Location "B" is about 4.0 miles south of Sun City. Two adult red-spotted toads were collected at this location the evening of 11 June 1983. Six to eight other males were heard calling from the same area. The toads were calling from the edge of a shallow pool at the bottom of a canyon (photo #2). They first started calling at 2200 hours at an air temperature of 22°C.

Location "C" is about 2.5 miles north and 1.0 miles west of Aetna. An adult toad was collected at this location the afternoon of 3 June 1983. The toad was found under a small flat rock at the top of a small hill. The air temperature was 25°C. The toad was found at 1315 hours. No other toads were found in the area, and none were heard calling after sundown in the area.

Location "D" is an area extending from about 3.0 to 3.5 miles south of Aetna. It is an area of very deep canyons. Three or four toads were heard calling from the bottom of one of the canyons at 2200 hours the evening of 29 May 1983 at an air temperature of 19°C. Toads were heard calling again in the same area the evening of 2 June 1983 between the hours of 2200 and 2345. The air temperature was 23°C and the humidity was very high with fog in the area.

The first toads to be collected from the area were collected the evening of 3 June 1983. One was found calling from a shallow stream at the bottom of a canyon (photo #4) and the other was found mating with a large woodhousei toad. The male red-spotted toad that was mating with the woodhousei toad was found at a shallow pool about 50 feet from any other standing water or toads of either species. No other woodhousei toads were found in the area. However, they could be heard calling in the distance. There were about four other red-spotted toads calling from the shallow stream where the first toad was collected.

Location "E" is 3.0 miles south and 2.0 miles east of Aetna (photo #3). At least a dozen toads were heard calling from shallow pools and a shallow stream at this location between 2130 hours and 2230 hours the evening of 14 June 1983. The temperature was 27°C with high humidity. One toad was collected from this area.

Location "F" is 3.5 miles south and 1.0 miles east of Aetna (photo #5). Two sub-adult red-spotted were found climbing up a canyon wall at 1230 hours with an air temperature of 30°C on 11 June 1983. There had been heavy rains in the area the day before. One sub-adult toad had been found under a rock in the area the afternoon of 3 June 1983. Six to eight toads were also observed calling from a shallow stream at the bottom of the canyon the evening of 11 June 1983. Photo #6 shows one of the male toads as observed that evening.

Location "G" is about 4.5 miles south and 0.75 miles east of Aetna. Two adult red-spotted toads were collected and about six others were heard calling from a stream (photo #1). The air temperature was 25°C. and the toads were collected at about 2300 hours the evening of 14 June 1983. The habitat shown in photo #1 is quite typical of the habitat many of the toads were found.

#### SUMMARY

Based on past data, and the results of my field work in Barber County, Kansas it appears that the red-spotted toad (Bufo punctatus) will only be found in areas of rocky canyons in the Red Hills and extreme southern High Plains areas of Kansas as stated by Collins 1982. Also, it should be noted that large numbers of the toads (more than a dozen) were never found in any of the areas studied during my work in 1983 in Barber County.

All of the toads heard and/or collected by me were located on private lands. The land where all the sites were found is mostly range land and has not been greatly altered by the ranchers. There has been (and still is) a great deal of oil and gas drilling in the area, but this does not seem to have caused any serious problems to the sites that were investigated during 1983.

The red-spotted toads range in Barber County does not seem to have greatly changed since past reports. Populations at each site (being rather small) could be eliminated by pollution or other changes caused by man, however.

#### RECOMMENDATIONS

Since Kansas is the northwest limit to the range of the red-spotted toad, and since the toads have a rather limited range in the state, I would recommend that the red-spotted toad be considered for threatened species status in Kansas.

The breeding populations found during my work all covered rather small areas of land. The number of toads at each site were also small, thus I feel this species should receive some state protection.

#### OTHER SPECIES OF INTEREST

A total of 40 different species of amphibians and reptiles were observed and/or collected from Barber County during the project. A number of others were found in Sumner, Harper, and Comanche Counties, including two snakes of interest.

A list of all species of amphibians and reptiles from Barber County is included with this report. Those of special interest are given with collection data and comments.

AMPHIBIANS AND REPTILES COLLECTED AND/OR OBSERVED IN BARBER COUNTY

(29 May - 14 June 1983)

Tiger Salamander (Ambystoma texanum)  
 Plains Spadefoot Toad (Scaphiopus bombifrons)  
 Great Plains Toad (Bufo cognatus)  
 Woodhouse's Toad (Bufo woodhousei)  
 Blanchard's Cricket Frog (Acris crepitans blanchardi)  
 Red-spotted Toad (Bufo punctatus)  
 Spotted Chorus Frog (Pseudacris clarki)  
 Plains Leopard Frog (Rana blairi)  
 Bullfrog (Rana catesbeiana)  
 Yellow Mud Turtle (Kinosternon f. flavescens)  
 Ornate Box Turtle (Terrapene o. ornata)  
 Western Painted Turtle (Chrysemys picta belli)  
 Red-eared Slider (Chrysemys scripta elegans)  
 Eastern Collared Lizard (Crotaphytus c. collaris)  
 Eastern Fence Lizard (Sceloporus undulatus)  
 Texas Horned Lizard (Phrynosoma cornutum)  
 Great Plains Skink (Eumeces obsoletus)  
 Prairie-lined Racerunner (Cnemidophorus sexlineatus viridis)  
 Western Slender Glass Lizard (Ophisaurus a. attenuatus)  
 Western Hognose Snake (Heterodon nasicus)  
 Eastern Hognose Snake (Heterodon platyrhinos)  
 Prairie Ringneck Snake (Diadophis punctatus arnyi)  
 Plains Blackhead Snake (Tantilla n. nigriceps)  
 Eastern Yellowbelly Racer (Coluber constrictor flaviventris)  
 Western Coachwhip (Masticophis flagellum testaceus)  
 Great Plains Rat Snake (Elaphe guttata emoryi)  
 Bullsnake (Pituophis melanoleucus sayi)  
 Prairie Kingsnake (Lampropeltis c. calligaster)  
 Common Kingsnake (Lampropeltis getulus)  
 \*Texas Longnose Snake (Rhinocheilus lecontei tessellatus)  
 Ground Snake (Sonora semiannulata)  
 \*Checkered Garter Snake (Thamnophis m. marcianus)  
 Western Ribbon Snake (Thamnophis proximus)  
 Red-sided Garter Snake (Thamnophis sirtalis parietalis)  
 Lined Snake (Tropidoclonion lineatum)  
 Graham's Crayfish Snake (Regina grahami)  
 Blotched Water Snake (Nerodia erythrogaster transversa)  
 Diamondback Watersnake (Nerodia f. rhombifera)  
 Massasauga (Sistrurus catenatus)  
 Prairie Rattlesnake (Crotalus v. viridis)

\*SNAKES OF SPECIAL INTEREST (See Following Notes)

## SNAKES OF SPECIAL INTEREST

A Texas longnose snake (Rhinocheilus lecontei tessellatus) was found under a large rock on a southwest facing hillside the afternoon of 11 June 1983 at a location 4.0 miles south of Sun City in Barber County. This species is quite rare in Kansas. It is found only in the Red Hills and southern High Plains of southwestern Kansas. Little is known of the snakes habits in Kansas, and few records are available (Collins 1982).

Two specimens of the checkered garter snake (Thamnophis m. marcianus) were collected during the field work, both in Barber County. The first was found crossing a road the afternoon of 29 May 1983 at a location of 4.5 miles south and 6.0 miles east of Aetna just north of the Oklahoma border. The second was found crossing a road the evening of 3 June 1983 at a location of 3.5 miles south of Aetna. The checkered garter snake is restricted in Kansas to the southern border of the state (Collins 1982).

A Kansas glossy snake was collected the night of 11 June 1983 as it crossed a road located 5.0 miles southwest of Anthony in Harper County. Little is known of this snakes habits in Kansas (Collins 1982). The Kansas glossy snake (Arizona elegans elegans) is a nocturnal animal that looks for food at night.

A Texas night snake (Hypsiglena torquata jani) was found under a flat rock at the rim of a canyon the evening of 14 June 1983 at a location of 5.0 miles west and 3.0 miles south of Aetna in Comanche County. An adult eastern collared lizard was also found under the same rock with the snake. Collins 1982 states, "Probably less is known of the natural history of this snake (Texas night snake) in Kansas than any other species in the state."

## SUCCESS OF THE PROJECT

I feel the study was successful. The project confirmed the presence of the red-spotted toad in areas of Barber County where specimens were collected as far back as 1927. The dozen voucher specimens taken during my work help to document the toads range in Barber County at this time. Photographs and the other notes on the amphibian can also be of value.

The Red Hills region of Kansas is a biological interesting and unique area of the state. I would recommend that future studies of the wildlife of the area be funded by the Fish and Game Commission.

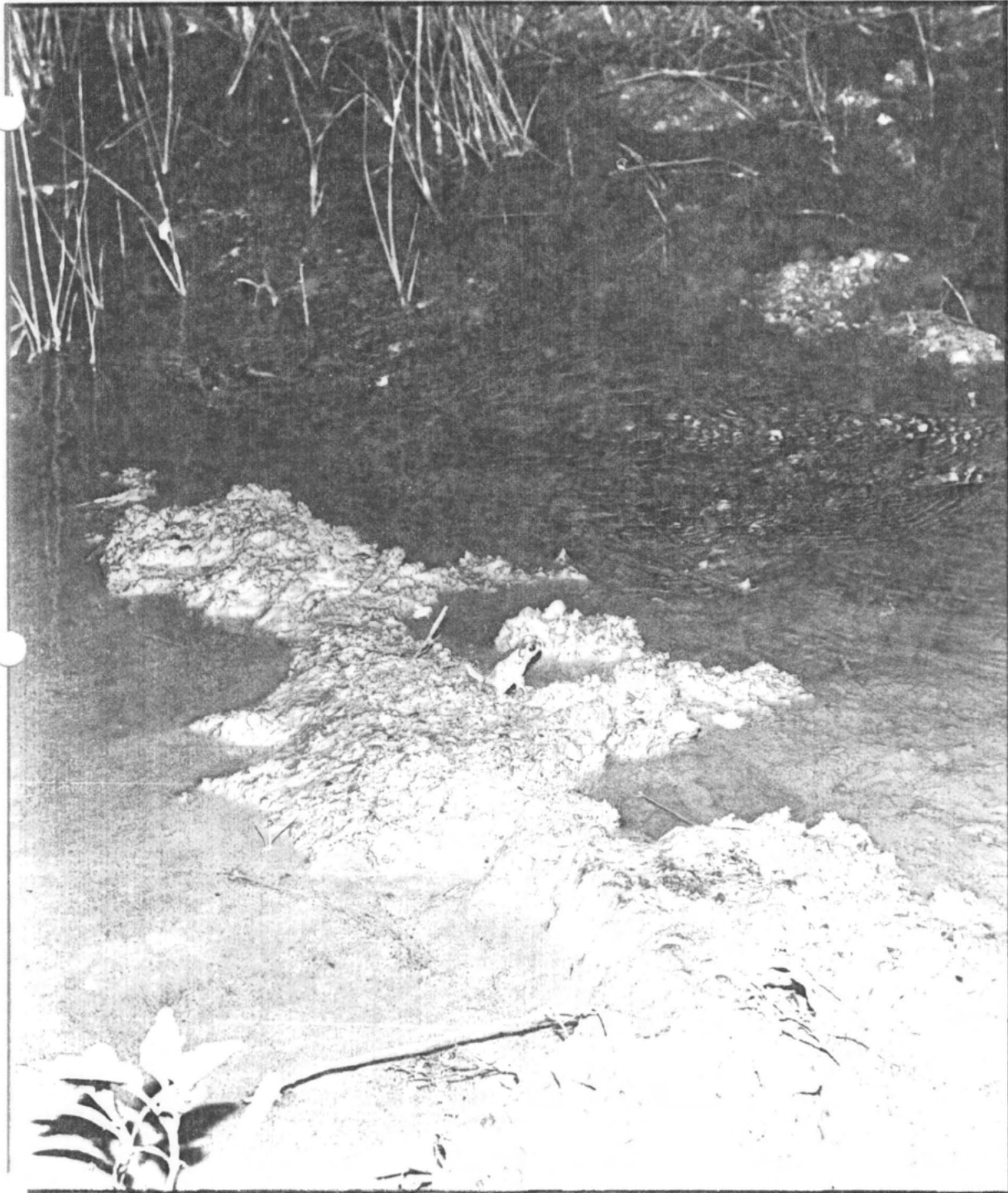
#### ACKNOWLEDGEMENTS

My work during this study was made much easier due to the assistance of a number of individuals. I wish to thank Joseph T. Collins (Lawrence) for suggestions and encouragement, Kelly J. Irwin (Topeka) for his time in looking up KU specimens of toads and sending me a copy of collection data. Both of these men saved me many miles of driving. I was also assisted by several people in the field. Cindy Ehlers (Caldwell) and Andy Janzen (Caldwell) kept detailed field notes that were quite helpful. Others that were helpful with collecting and observations include: Samantha Lamb (Caldwell), Amber Mazzaferro (Corbin), Paula Prochaska (Caldwell), Ronnie Morris (Caldwell), and Gene Trott (Hunnewell). I am most grateful for their help.

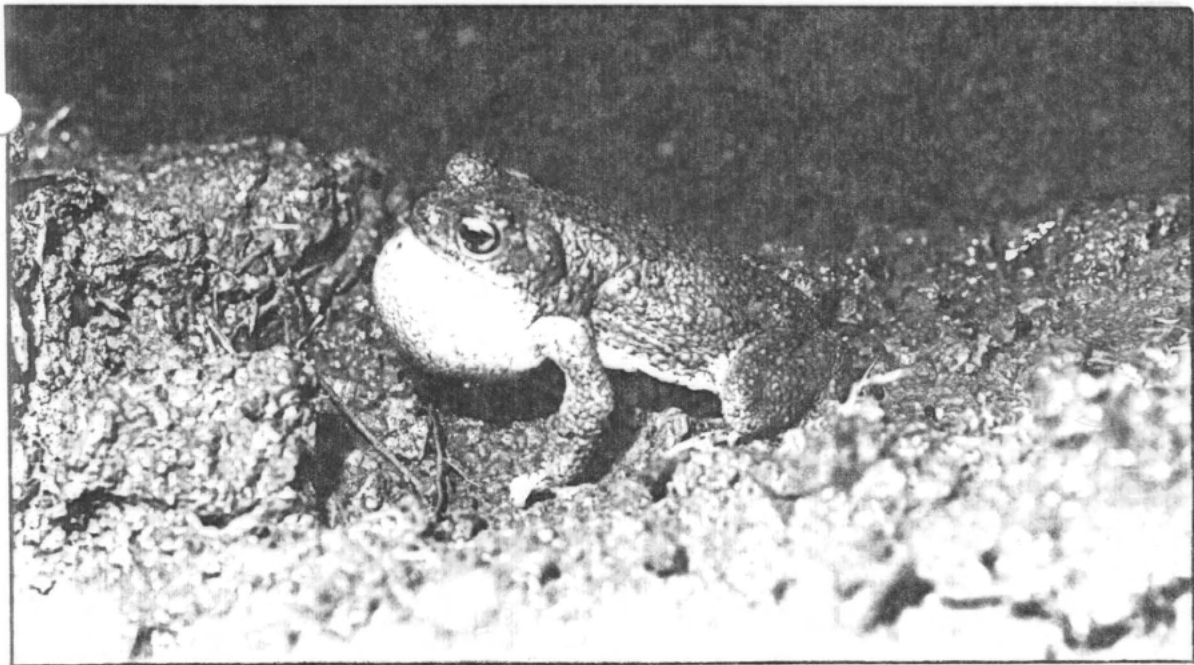
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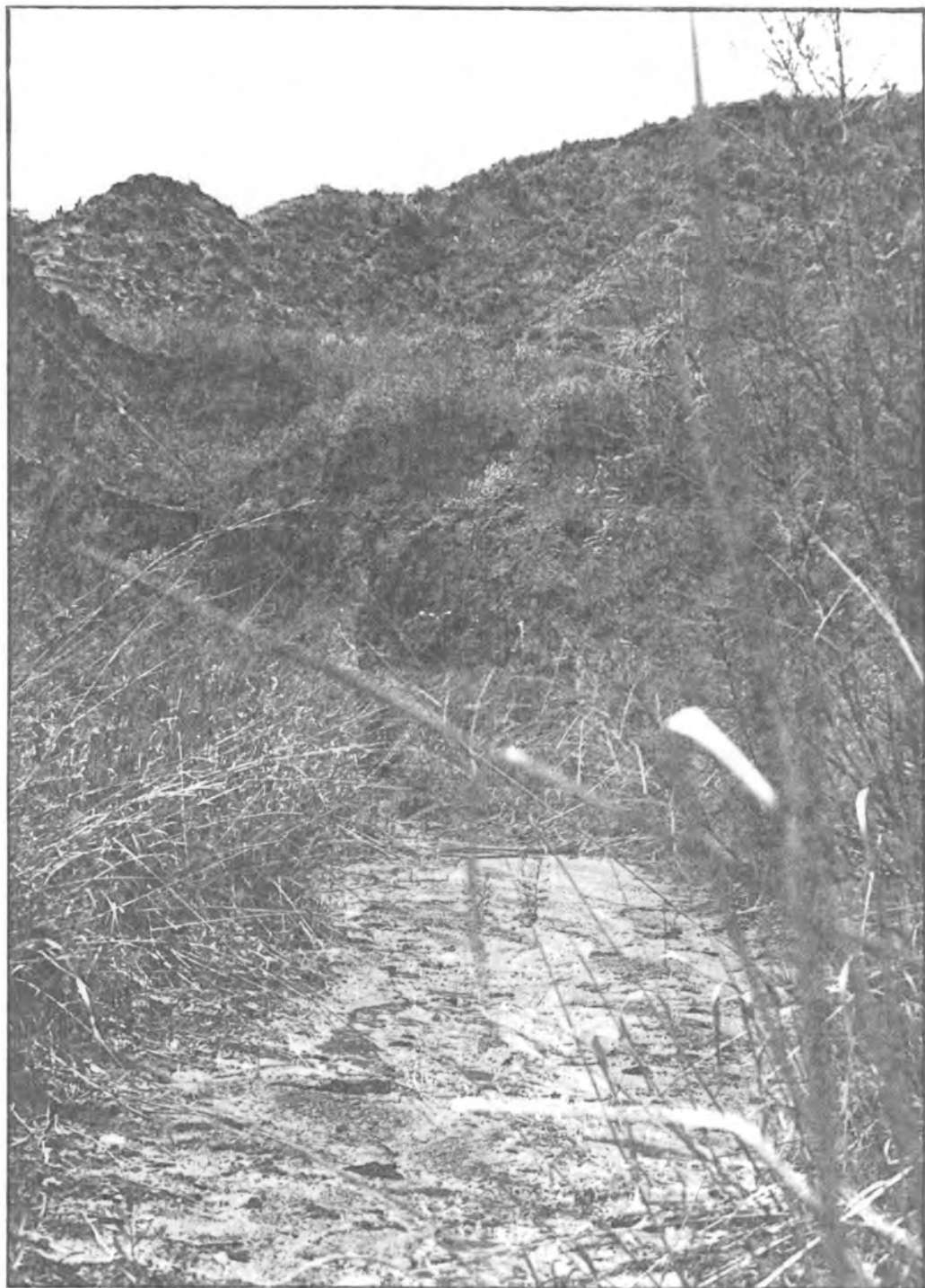
(PHOTO #1)



(PHOTO #2)



(PHOTO #3)



(PHOTO #4)



(PHOTO #5)



(PHOTO #6)





(PHOTO #7)

## COLLECTION DATA

(KU NUMBERS FOR SPECIMENS)

KU Acc. # 6199

- KU 193280 A. One small red-spotted toad collected 1.5 miles south of Sun City on 11 June 1983
- KU 193281-282 B. Two adult red-spotted toads collected apx. 4 miles south of Sun City on 11 June 1983
- KU 193283 C. One adult red-spotted toad collected 2½ miles north and 1 mile west of Aetna on 3 June 1983
- KU 193284 D. Adult red-spotted toad found mating with Woodhousei toad apx. 3½ miles south of Aetna on 3 June 1983
- KU 193285 D-1. One adult red-spotted toad collected on 3 June 1983 from same general location as "D" above.
- KU 193286 E. One adult red-spotted toad collected on 14 June 1983 from 3 miles south and two miles east of Aetna
- KU 193287-288 \* F. Two small red-spotted toads collected on 11 June 1983 from 3½ miles south and one mile east of Aetna
- KU 193290-291 G. Two adult red-spotted toads collected on 14 June 1983 from 4½ miles south and 3/4 mile east of Aetna
- KU 193294 H. Adult checkered garter snake collected on 29 May 1983 from 4½ miles south and six miles east of Aetna near the Oklahoma line.
- KU 193279 I. Tiger salamander collected 3 June 1983 from 4 miles west of Hardtner.
- KU 193295 J. Adult checkered garter snake collected on 3 June 1983 from 3½ miles south of Aetna
- KU 193293 K. Texas longnose snake collected on 11 June 1983 from apx. 4 miles south of Sun City
- KU 193296 L. Texas night snake collected on 14 June 1983 from apx. 5 miles west and 3 miles south of Aetna in COMANCHE COUNTY, KANSAS.

KU 193292

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16 June 1983

- KU 193289 \* F-1 One small red-spotted toad collected 3 June 1983 from same general area as "F".

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