

MONTHLY MEMBERS MEETING

7:15 PM
Tuesday, February 18th

Arizona Game and Fish Department Office
555 North Greasewood Road
(between Speedway and Anklam, west of Pima Community College.)

Taylor Edwards

University of Arizona
School of Renewable Natural Resources

**“Home is where you take it:”
Tracing the movements of desert tortoises with
molecular biology**

Taylor Edwards received his BA in zoology from the University of California, Santa Barbara, and is currently pursuing a master's degree in Wildlife Ecology at the University of Arizona, School of Renewable Natural Resources, under the guidance of Dr. Cecil Schwalbe.

Taylor's main interest is conservation biology, and his research has led him as far off as China and Brazil, but his focus has mostly been in the desert southwest that he calls home. Taylor first moved to Tucson in 1992 where he worked in the Department of Mammalogy and Ornithology at the Arizona-Sonora Desert Museum. He quickly sought out the Tucson Herpetological Society and in no time was carousing the desert with Roger Repp. In fact, Roger showed Taylor his first Sonoran desert tortoise and gave him his first field mirror! Taylor was mentored into herpetological research by assisting Don Swann and Matt Goode in radiotelemetry and mark-recapture studies of tiger rattlesnakes, banded rock rattlesnakes, and Sonoran mountain kingsnakes. This paved the way for his current research emphasis on the population genetics of desert tortoises. Taylor has been an active participant of the THS speakers bureau and has served the THS board since 1988. Taylor is currently the THS president.

AZG&F DEPT. COMMISSION MEETINGS

A public meeting of the Arizona Game and Fish Commission will be held on February 21, 2003
Friday, February 21, 2003, Arizona Game and Fish Commission at the Arizona State Fairgrounds –

Wildlife Building – McDowell & 17th Avenue, Phoenix, Arizona. Meeting begins at 8:00 a.m.

The March meeting will be the only commission meeting held in Tucson this year, and is scheduled for the 21st. For this and other information regarding the department's commission meetings, please visit the following web site: http://www.gf.state.az.us/frames/dir_off/index.htm

Partners in Reptile and Amphibian Conservation (PARC) Meeting Scheduled to Follow DAPTF Meetings

Arizona is organizing a state working group for the conservation of reptiles and amphibians through the national organization Partners in Amphibian and Reptile Conservation (PARC) and its Southwest Regional Working Group. The Arizona group will address issues that affect southwestern herps such as field collecting, habitat preservation, invasive species, disease, public perception, public education, and any others identified by the participants. Efforts at the state level will be integrated with regional conservation in the southwest and ultimately with PARC's national organization. This is a rare opportunity to get involved on the ground floor with a national organization whose focus is herp conservation. The organization is looking for members from all walks of life who are interested in reptiles and amphibians. This meeting will follow the Declining Amphibian Populations Task Force (DAPTF) Southwestern U.S. Working Group meeting to facilitate increased attendance by interested persons from out of state or who must travel long distances. Please attend if you are interested in reptile and amphibian conservation.

The meeting will be held at the Ironwood Gallery of the Arizona-Sonora Desert Museum on March 11, 2003, at 9:00am.

If you plan to attend or need more information, please email Randy Babb at rbabb@gf.state.az.us by March 3, so we can put your name on the list for admittance to the Desert Museum.

Call for papers and registration for the Seventh Meeting of the Declining Amphibian Populations Task Force, Southwestern U. S. Working Group

March 10, 2003
Arizona-Sonora Desert Museum
8:30AM

Continued communication among researchers is vital to the conservation of amphibians in the southwestern United States. Please plan to attend the seventh meeting of the DAPTF Southwestern Working Group.

It has been three years since our last meeting, so we expect to have a full schedule of talks. The meeting will begin with a plenary speaker addressing our current state of knowledge about chytrid fungus. The remainder of the meeting will be dedicated to 15-minute individual talks and 5-minute updates. If you are conducting amphibian research related to population decline issues in Arizona or New Mexico, please consider presenting your work. For talks, abstracts of approximately 250-words should be sent imbedded in an email message (not as an attachment) to careng8@yahoo.com. For updates, please send your name, address, and subject. All submissions must be received by February 28.

If you plan to attend this meeting, please email me at careng8@yahoo.com by March 3 so we can put your name on the list for admittance to the Desert Museum.

In addition, Partners in Amphibian and Reptile Conservation (PARC) will be holding an organizational meeting for the Arizona working group on March 11th also at the Desert Museum.

Abstract format should be:

GOLDBERG, C. S.

Wildlife and Fisheries Science, University of Arizona,

Tucson, AZ 85721

careng8@yahoo.com

Title of talk

Approximately 250 words about your talk. We plan to have these copied for attendees of the meeting.

Admission to the museum will be waived for DAPTF registrants. In March the Desert Museum is open daily from 7:30 am to 5:00 PM. The DAPTF meetings will be held in the Ironwood Gallery adjacent to the Ironwood Restaurant (see Dining and Restaurant Information below).

HERPETOLOGICAL AND COLLECTIONS AT ASDM: The Arizona-Sonora Desert Museum holds one of the most extensive living collections of regionally-native reptiles (361 specimens/86 taxa) and amphibians (122 specimens/23 taxa in the United States. Several of these are threatened, endangered, or of special man-

agement concern. Captive propagation programs established for conservation and educational benefits include those for the Isla San Esteban chuckwalla, Arizona ridge-nosed rattlesnake, banded rock rattlesnake, desert-grassland massasauga, lowland leopard frog, and Mexican treefrog. Preserved collections are not maintained at ASDM.

DINING AND RESTAURANT INFORMATION AT ASDM: The Ironwood Terraces, a self serve grill, offers a complete menu including children's items and is open everyday. Phoebes Coffee Bar and the Cottonwood snack shop offer hot and cold drinks, pastries, sandwiches, ice cream and other snacks. There is a small picnic area near the Museum entrance. No outside food is allowed onto Museum grounds.

MEMBERSHIP: Become a member of the Desert Museum and join over 20,000 individuals and families who already are enjoying free admission to the museum. Other benefits include an annual subscription to the Desert Museum publication *sonorensis*, use of the museum library, and discounts on events and educational programs. An annual family membership at the Desert Museum includes membership cards for two people residing at the same address, free admission for your children ages 17 and under, and three complimentary guest passes valid during the year of membership.

ACCOMMODATIONS near ASDM: (note - Tucson area code is 520)

Econo Lodge, 1165 N. Stone Ave, 622-7763 (\$53-\$63)

Comfort Inn, 715 W. 22nd St/I-10 791-9282, (\$50-\$65)

Best Western, 333 W. Drachman Ave 791-7551, (\$52-\$56)

Inn Suites Hotel, 475 N. Granada 622-3000, (\$119-\$139)

Clarion Santa Rita Hotel, 88E. Broadway, 622-4000, (\$109 +)

El Presidio Bed & Breakfast 297 N. Main Ave., 623-6151, (\$116)

Motel 6, 960 S. Freeway, 628-1339 (\$34-\$41)

Motel 6, 1222 S. Freeway, 624-2516 (\$34-\$41)

LaQuinta Inn, 665 N. Freeway, 622-6491 (\$89-\$96)

Days Inn, 222 S. Freeway, 791-7511 (\$35-\$53)

Gilbert Ray Campground, tent and RV camping, (\$9/night), 883-4200

Comfort Inn, 715 W. 22nd St/I-10 791-9282, (\$50-\$65)

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Gilbert Ray Campground, tent and RV camping, (\$9/night), 883-4200

**Milksnakes (*Lampropeltis triangulum*)
from Cochise County:
Notes on captive breeding and pattern.**

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To the best of our knowledge, a total of only four specimens of Milksnake (*Lampropeltis triangulum*) have been documented from below the Mogollon Rim in Arizona; including a voucher photograph deposited at the University of Arizona (UAZ 50283) and three specimens collected by A. T. Holycross. All four specimens were collected from a Tobosa (*Hilaria mutica*) grassland situated on the divide between the San Simon and San Bernardino Valleys, Cochise County. Of the specimens collected by Holycross, the first two, a male (originally reported in: Holycross and Schwalbe 1995) and female, were collected on 23 June 1994 and 13 July 1995 (respectively) and held in captivity in the Arizona State University Animal Care Facility. The final specimen, a male, was collected 9 August 1995 and released shortly thereafter.

The Milksnakes we captured differed in some aspects of pattern and scutulation. The male snake had seven right and left supralabials, 9 right and left infralabials, 190 ventrals, 21 dorsal scale rows at midbody, 30 white annuli on the dorsum (28 complete, 2 partial; with 27 of these annuli completely crossing the venter), and 28 red-orange saddles on the dorsum which just reach the lateral edges of the ventral scutes. Solid black markings separate the posterior 18 red-orange saddles ventrally. The anterior 10 red-orange saddles are separated ventrally by black markings interrupted by a mid-ventral white line. Ten of the red-orange saddles are bisected mid-dorsally by encroaching black borders. The top of the head is solid black from the tip of the snout to just anterior of the termination of the parietals. The ventral and dorsal pattern of the released male snake approximates the pattern described for the specimen above. The female snake had 8 right and left supralabials, 9 right and left infralabials, 191 ventrals, 21 dorsal scale rows at midbody, 22 white annuli on the dorsum (20 complete, 2 partial; with only the 2 most anterior annuli completely crossing the venter), and 20 red-orange saddles on the dorsum which just reach the lateral edges of the ventral scutes. The venter of this snake is uninterrupted black for the posterior 80% of its body length; white annuli of the dorsum terminate on the lateral aspects of the ventral scutes. None of the red-orange saddles are separated mid-dorsally by encroaching black borders. The top of the head is solid black from the tip of the snout to just anterior of the termination of the parietals. The nearly solid black venter of the female contrasts strongly with the ventral patterns of the two males examined. Female *L. triangulum* with most of the venter covered in black have been observed in Montana populations as

well (L. Vitt, pers. comm.). To further investigate the possibility of sexual dimorphism in ventral pattern in this population, we bred the male and female captives.

Beginning 28 December 2001 the pair was cooled for a period of two months (8 hours of 20 °C and 16 hours of 15 °C each day). The female shed her skin 13 May 2002. On 16 May, she oviposited six eggs with a total mass of 39.4 g. Five eggs totaled 34.0 g. While individual egg masses were not possible because the eggs were adhered to each other, the eggs appeared similar in size. One egg (with incomplete shell formation) was separate from the other five and weighed 5.4 g. The female's post-oviposition mass was 65 g, and therefore the relative clutch mass (RCM = clutch mass / female post-oviposition mass, Shine 1980) was 0.61, which approximates the mean reported for terrestrial oviparous snakes (Shine, 1992). Eggs were placed in moist perlite and incubated at 28-30 °C. The poorly-shelled egg spoiled during the first month of incubation and was discarded. On 29 June, two of the remaining five snakes were pipping. On 30 June, the first two snakes hatched and the remaining three were pipping. All had hatched by 1 July and all had shed by 10 July. Hatch weights were 5.8, 5.4, 5.1, 4.7, and 4.5 g. The sex ratio was 2.3, and no sexual dimorphism in belly pattern was observed. All five neonates appeared to have an aberrant dorsal pattern, possibly caused by high incubation temperatures.

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Shine, R. 1992. Relative clutch mass in lizards and snakes: is reproductive investment constrained or optimized. *Evolution* 46:828-833.



Field Observations of Predation by the Sonoran Whipsnake (*Masticophis bilineatus*)

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Published reports of direct field observations on predation by snakes are relatively rare. Our search of the primary published literature yielded only four field observations of the prey of *Masticophis bilineatus*: young Woodhouse's Jays (Stejneger 1902) [= Western Scrub Jay, *Aphelocoma californicus*; T. Huels, pers. com.], *Peromyscus* sp. used as carnivore bait (Nickerson and Mayes 1970), *Sceloporus undulatus* (Tinkle and Dunham 1986), and juvenile *Crotalus molossus* (Enderson 1999). In a letter published by Klauber (1956), R. R. Humphrey reports an observation that also may represent *M. bilineatus* feeding on *C. molossus*, but the species identification of both the predator and prey is not entirely clear.

Examination of stomach contents of museum specimens constitutes another approach to documenting the natural diet of snakes (e.g., Greene 1984, Holycross et al. 2002; Rodriguez-Robles et al. 1999). For *Masticophis bilineatus*, Tinkle and Dunham (1986) report that specimens from near Sunflower, Maricopa Co., Arizona, were found to contain lizards or lizard eggs, but do not provide additional details. These authors conclude that the Sonoran Whipsnake is an important predator on *Sceloporus undulatus*, whereas they speculate that raptors are the primary predator on the more arboreal *Sceloporus clarkii*. Camper and Dixon (2000) examined 335 specimens of *M. bilineatus* and found that only 5% contained prey items. The 22 prey items identified included 12 *Cnemidophorus*, 3 *Sceloporus*, 2 *Urosaurus*, 2 mammals, 1 *Cophosaurus*, 1 *Uta*, and 1 unidentified lizard. Species identifications were not provided but can be reasonably assumed for all except the mammals, *Cnemidophorus*, and *Sceloporus*. No birds or bats were present among the food items found by Camper and Dixon (2000) for this and two other species of whipsnakes. Rodriguez-Robles (1998) has commented on the differences in results from examination of stomach contents versus field observations of predation by snakes, particularly on birds, and concludes that both are necessary to gain a full perspective on the dietary niche of a given species of snake.

Many regional and species summaries routinely list one or more of the following food items for *Masticophis bilineatus*: frogs, lizards, small birds, and mammals (Bogert and Oliver 1945, Camper 1996, Degenhardt et al. 1996, Fowlie 1965, Grismer 2002, Klauber 1956, Stebbins 1954, 1985, Van Denburgh 1922, Wright and Wright 1957). In many cases it is unclear whether the listing of these items

is based on either original field observations or published material, as details or citations of the primary literature usually are not provided. One somewhat humorous example is the conclusion of Bogert and Oliver (1945) that "it is quite possible that chicks are sometimes taken by this racer" based on the local name, "culebra de pollo," used in the region around Alamos, Sonora. Of particular interest in terms of the observations reported here is the statement by Stebbins (1954) that the species "eats young birds and lizards (*Sceloporus clarkii* and others)", but unfortunately no details are presented (as they are for his observations on reproduction in the species).



Fig.1 *Masticophis bilineatus* attempting predation of *Sceloporus clarkii*

Our observation and photograph (fig. 1) of a Sonoran Whipsnake attempting predation on an adult Clark Spiny Lizard confirm the listing by Stebbins (1954) of *Sceloporus clarkii* as prey of *Masticophis bilineatus*. The event took place on 15 September 2002 at Martina Mtn., Pima County, Arizona (32° 03.84 N, 111° 26.51W) at ca 1100 hrs. We were attracted to the site by a



Fig. 2 *Masticophis bilineatus* attempting predation of *Cophosaurus texanus*.

loud thrashing noise that appeared to be coming from a large roadside rock. Under the edge of the rock we observed a *M. bilineatus* grasping a large *S. clarkii*. After the photograph was taken, the snake dropped the lizard and escaped, perhaps in response to our movements. Thus it is not entirely clear that this attempted predation by a ca 1 m (total length) *M. bilineatus* on a large *Sceloporus clarkii* (UAZ 54779; male; snout-vent length 113 m) would have been successful.

In the upper reaches of Cañada del Oro in the Santa Catalina Mts., Pima Co., Arizona, R. Repp and D. Caldwell observed and photographed (fig. 2) an adult *Masticophis bilineatus* predating a female Greater Earless Lizard (*Cophosaurus texanus*), providing field documentation of the finding of this prey item among the stomach contents of the Sonoran Whipsnake (Camper and Dixon 2000).

Enderson in September 2000 witnessed a large adult *M. bilineatus* consuming an adult lowland leopard frog (*Rana yavapaiensis*) in Buehman Canyon, Santa Catalina Mts., Pima County, Arizona, thus substantiating that the Sonoran Whipsnake preys on frogs, though no voucher was taken.

That *Masticophis bilineatus* feeds at least occasionally (if not commonly) on *Sceloporus clarkii* is certainly not unexpected as the two occur together across a wide geographic area and are often found in the same habitat (e.g., riparian woodlands, rocky bajadas, and Madrean Woodland; pers. obs.). It is notable that the attempted predation reported here occurred in a marginal habitat for *S. clarkii*, the saguaro-paloverde community, where large riparian trees are not available for escape. In contrast, Tinkle and Dunham (1986) did not report *S. clarkii* among the stomach contents of *M. bilineatus* from their study area, which was along a permanent stream with a well-developed riparian community.

Acknowledgments. We particularly thank Dennis Caldwell for making his photograph available for publication and Roger Repp for sharing the details of their observation. We also thank George W. Bradley for making specimens in the University of Arizona Herpetology Collection available for study, Tom Huels for ornithological information, and Kathryn Bolles for review of the manuscript.

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fig. 1 photo by Erik F. Enderson

fig.2 photo by D. J. Caldwell

Clark Spiny Lizard
(*Sceloporus clarkii*)

by
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photo by Erik F. Enderson

This magnificent arboreal lizard is frequently observed in riparian woodlands within the hundred mile circle (centered on Tucson). Look for these large, rough-scaled lizards in the cool of the morning, as rays of sunlight first strike the tree trunks. They often bask, oriented head-downward, searching for insects at a height of 1-2 meters on ash, sycamores, cottonwoods, walnuts, oaks, and other large trees. Later, as temperatures rise, they often ascend into the canopy where they have been observed on branches as high as 40 m. (Balinger in Degenhardt et al. 1996). In some areas, such as the Pinaleno Mts., they also live on massive boulders (Lowe 1964; Nickerson and Mays 1970).

At their study area near Sunflower, Maricopa Co., Arizona, Tinkle and Dunham (1986) found the species to be active from April to October. Females attained sexual maturity at 22 months and a snout-vent length of 89 mm. They produced only one clutch per year (average 20 eggs), which was deposited in June. Population densities fluctuated widely among years, with an overall average of 25 lizards per hectare. Experiments involving the removal of *Sceloporus clarkii* and *Urosaurus ornatus* from sections of the study area did not appear to significantly impact the ecology of

Sceloporus undulatus, thus failing to demonstrate direct competition between the three species of lizards (Tinkle 1982). The available data on stomach contents (summary in Degenhardt et al. 1996) indicate a broad diet including beetles, ants, wasps, butterflies, moths, spiders, and grasshoppers. They also occasionally ingest *Urosaurus ornatus* (Tinkle and Dunham 1986). Bezy and Enderson (2003) document attempted predation by the Sonoran Whipsnake (*Masticophis bilineatus*), and Holycross et al. (2002) found *S. clarkii* among the stomach contents of *Crotalus lepidus*.

Clark Spiny Lizard reaches a maximum snout-vent length 125 mm (Stebbins 1985). The presence of distinct cross bands on the forelimbs is a useful feature for distinguishing the species from the Desert Spiny Lizard (*Sceloporus magister*), a vaguely similar animal that is quite abundant in our region. Analyses of DNA sequences indicate that the nearest relative of *S. clarkii* is *S. melanorhinus* (Wiens and Reeder 1997) found along the Pacific slopes of southern Mexico, providing additional evidence of the tropical affinities of our herpetofauna.

In Arizona, *Sceloporus clarkii* has a distribution somewhat similar to *Masticophis bilineatus* (Camper 1996) and *Crotalus molossus* (Lowe et al. 1986), extending from the Madrean Archipelago (“Sky Islands”) north to the Blue River, and northwest through the sub-Mogollon peninsular ranges to the Aquarius (pers. obs.) and Cottonwood Mts. (UAZ 20191), Mohave Co., and probably beyond (Fig. 1). In southern Arizona, isolated populations occur in the Tucson, Martina, Quinlan-Boboquivari, Ajo, and Puerto Blanco Mts. (Bezy and Enderson 2003; Lowe 1964; Stebbins 1985).

The overall species range extends from the state of Jalisco north along the Pacific slope of Mexico to Sonora, Chihuahua, New Mexico, and Arizona (Sites et al. 1992). The subspecies *Sceloporus clarkii boulengeri* occupies the southern part of the range, north to southern Sonora (Bogert and Oliver 1945; Smith 1939; Smith and Taylor 1950) and has been observed on the trunks of coconut palms along the coast and on trees in the once vast Sinaloan Thornscrub (Hardy and McDiarmid 1969). To the north, *S. c. clarkii* occurs over much of Sonora (except for the Gran Desierto region), including Islas San Pedro Nolasco and Tiburon (Grismer 2002), extending across the Sierra Madre Occidental into western Chihuahua, and northward to southwestern New Mexico (west of the Rio Grande) and northwestern Arizona. Lizards found on boulders at Granite Dells, north of Prescott, Yavapai Co., Arizona, were described as *S. c. vallaris* based on the retention of the juvenile color pattern by large adults (Shannon and Urbano 1954). A thorough range-wide analysis of geographic variation is needed to evaluate the taxonomic status and distribution of the described subspecies.

The species was named by Baird and Girard (1852) for John H. Clark who contributed specimens to the Mexican boundary survey (Degenhardt et al. 1996).

Crother (“2000” [2001]) lists the species as Clark’s Spiny Lizard (*Sceloporus clarkii*) and the subspecies in our area as the Sonoran Spiny Lizard (*Sceloporus c. clarkii*).

Acknowledgments.-I thank George Bradley for information and access to specimens in the Herpetology Collection of the University of Arizona (UAZ), Peter Holm for discussion, Kit Bezy for illustration, and Kathryn Bolles for review of the manuscript.

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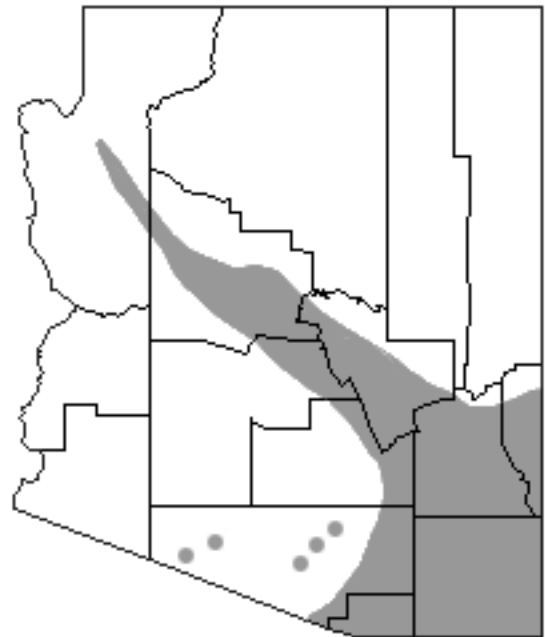
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photo by Robert L. Bezy and Kathryn Bolles

Current distribution of *Sceloporus clarki* in Arizona



To see the herpetofauna of the 100 mile circle in color, visit the THS web site at <http://tucsonherpsociety.org>

**TUCSON HERPETOLOGICAL SOCIETY
BOARD MEETING SYNOPSIS**

29 January 2003

Robert L. Bezy, Secretary

Directors Present: Roy Averill-Murray, Bob Bezy, Jillian Cowles, Taylor Edwards, Cristina Jones, Hans Koenig, Ed Moll, Don Swann, Marty Tuegel.

Directors Absent: None.

Members Present: Dennis Caldwell, Erik Enderson, Caren Goldberg, Bill Savary, Eric Stitt, Dale Turner.

Treasurer's Report -Tuegel: December

Beginning Balance	\$10,361.33
Deposits.	664.00
Expenses	333.79
Ending Balance	\$10,691.54
Speakers Bureau	\$ 1,020.87
Jarchow Award	50.00
FTHL Fund	100.00
C.H.Lowe Research Fund	2,343.00
General Fund	\$ 7,177.67
CRHSDIII (CD)	\$ 6,838.70

Itemized Deposits: Lowe Fund \$100.00, Membership \$290.00, Speakers Bureau \$50.00, T-Shirt/Mug \$224.00.

Itemized Expenses: Bank Charge \$3.77, Gift \$80.26, Newsletter \$163.89, Postage \$9.87, P. O. Box \$76.00.

Treasurer's Report -Tuegel: January

Beginning Balance	\$10,691.54
Deposits	1,561.40
Expenses	361.40
Ending Balance	\$11,891.54
Speakers Bureau	\$ 1,020.87
Jarchow Award	90.00
FTHL Fund	100.00
C.H.Lowe Research Fund	3,403.00
General Fund	\$ 7,277.67
CRHSDIII (CD)	\$ 6,859.03

Itemized Deposits: Lowe Fund \$1,060.00, Jarchow \$40.00, Membership \$273.00, Newsletter \$53.40, Raffle \$79.00, T-Shirt/Mug \$56.00.

Itemized Expenses: Bank Charge \$5.75, Internet Fee \$75.00, Newsletter \$280.65.

Committee Reports

Conservation - Caldwell. Dennis has been busy with the SAWAMP project and has been conducting the surveys with little or no assistance.

Speakers Bureau - Edwards and Moll.

15 January - Moll presented a three our introduction on amphibians and reptiles to 10 docents in training at Tohono Chul Park.

Sonoran Herpetologist - Enderson. Last issue was the first with 100% original material.

Program - Roy Averill-Murray. The lineup of speakers includes

18 February -Taylor Edwards, desert tortoise genetics

18 March - Brian Wooldridge, Mojave rattlesnake venom

15 April - Elissa Ostergaard

20 May - Andy Holycross

17 June - Marty Crump

16 Sept. - Jarchow award.

Old Business

FTHL - Turner. The U.S. Fish and Wildlife has made a decision to withdraw the proposal to list the species. Organizations supporting the listing of this species (THS, Center for Biological Diversity, Horned Lizard Conservation Society, Sierra Club, Defenders of Wildlife) are currently evaluating their options.

C. H. Lowe Research Fund - Edwards. The board wishes to acknowledge substantial gifts received from Michael and Lynn Mares and from the Arizona Herpetological Association.

PARC - Roy Averill-Murray. There will be a meeting of the Arizona Working Group on 11 March. This is an open meeting and anyone with an interest in the subject is welcome to attend.

Declining Amphibian Populations Taskforce Meeting - Goldberg. A meeting of DAPTF (sponsored by the THS) will be held at ASDM on 10 March , 2003.

New Business

New Board Members - Edwards. The Board welcomed new member, Hans Koenig, and elected Eric Stitt to fill the vacant position left by the death of Dick Martin. Dick's presence will be missed by all, but the Board is looking forward to working with Eric and Hans.

Desert Tortoise Council - Edwards. The council will meet 21-22 Feb. in Las Vegas.

Round Table Discussion - Edwards. A number of ideas were presented for the upcoming year, including preparation of original articles for Sonoran Herpetologist, reprinting the collected papers of the SH, continuing the steady growth of the Society in the area of outreach, continuing the important work of the SAWAMP surveys, developing an outreach program to judges regarding the importance of penalties for wildlife violations, joining forces with the Audubon Society on matters of mutual interest, and increased involvement with PARC.

SONORA TIGER SALAMANDER RECOVERY PLAN COMPLETED

USFWS press release

The U.S. Fish and Wildlife Service (Service) has finalized the recovery plan for the Sonora tiger salamander (*Ambystoma tigrinum stebbinsi*). The plan outlines the actions that are needed to move the salamander from an endangered to threatened status and eventually remove it from the Endangered Species List.

The plan was developed by Dr. James P. Collins and Jonathan Snyder of Arizona State University with input from a Participation Team composed of ranchers and residents of the San Rafael Valley, representatives of Arizona state and federal agencies, and other concerned citizens.

"This recovery plan is a much better product because the Service sought and received help from all affected parties," said Dale Hall, Southwest Regional Director for the Service. "The team advised on how recovery actions should be implemented to minimize social and economic impacts while promoting the prompt recovery for the Sonora tiger salamander."

Sonora tiger salamanders have been found in 53 ponds in the San Rafael Valley- located between the Huachuca and Patagonia mountains, bordered by the Canelo Hills to the north and extending into Sonora, Mexico. Adult Sonora tiger salamanders inhabit the Valley's grasslands and adjacent Madrean oak and juniper woodlands but return to standing water to breed.

One of three tiger salamanders found in Arizona, Sonora tiger salamanders are found almost exclusively in cattle tanks or maintained ponds. Sonora tiger salamanders begin life as jelly-coated eggs laid in water. They hatch and grow as aquatic larvae with gills, and then mature as either gilled aquatic adults or land living salamanders without gills. Introduced fish and bullfrogs, disease, crossbreeding with the barred tiger salamander are all threats which led to their being protected under the Endangered Species Act since 1997.

Recovery plans are not binding documents. Rather, they prescribe activities leading to the recovery of a threatened or endangered species. Once implemented, the recovery plan will serve as a blueprint for the conservation the salamander and a compass for the development of policy on conservation and management of the species.

This recovery plan prescribes guidelines for protecting and enhancing salamander habitat and recommends programs to eliminate and regulate the transport of non-native predators, and competitors of the Sonora tiger salamander. The plan also outlines the monitoring and research needs of salamander habitat, population, dispersal, and disease. Furthermore, it establishes a public education program to deter the human-assisted movement

and collection of Sonora tiger salamanders. The Sonora tiger salamander may be reclassified to threatened status when approximately 90 percent of its currently-occupied range and breeding ponds are protected and maintained to prevent habitat loss and degradation, predator introductions, barred tiger salamander introductions, and collection of salamanders for bait.

The Sonora tiger salamander (*Ambystoma tigrinum stebbinsi*) recovery plan is available on the internet at <http://arizonaes.fws.gov> or by contacting Jim Rorabaugh, U.S. Fish and Wildlife Service, 2321 W. Royal Palm Rd., Suite 103, Phoenix, Arizona, 85021-4951 (602/242-0210 x238).



SH MEMBERSHIP UPDATE

As of 4 February 2003

CONTRIBUTING

Paul, Steven & Lorna Condon Tucson

SUSTAINING MEMBERS

Phil Pugliese Tucson

NEW MEMBERS

Tony Canavage Tucson

Richard Felger Tucson

JARCHOW CONSERVATION AWARD

Uncle Don B. Fanning Flagstaff, AZ

John Sullivan Pacific Grove, CA

Bill & Beth Woodin Tucson

HORNED LIZARD FUND

John Sullivan Pacific Grove, CA

C. H. LOWE HERPETOLOGICAL RESEARCH FUND

Bill & Beth Woodin Tucson



OPERATION GAME THIEF 1-800-352-0700

The Arizona Game & Fish Department and the Tucson Herpetological Society would like to encourage members to report reptile and amphibian collector violations, suspected poachers, and habitat vandals.

If you carry a cell phone in the field, please remember this 800 number.

ADVERTISEMENTS

Ads are \$2 per line. The first two lines are free to members (approximately 240 letters and spaces), and are run the number of times specified at the time of listing with prepayment when applicable. Otherwise they are run one time only, but repeats may be requested by letter or phone. Charges for commercial ads are: 1/8th page \$5; 1/4 page \$10; 1/2 page \$20. No ad should be submitted which involves wild caught herptofauna. Acceptance of any ad will be at the discretion of the Editor and in accordance with Society policy. The Society is not responsible for the accuracy of representations made in any ad.

For Sale: Rats- small \$1.00, medium \$1.50, large \$2.00, jumbo \$2.50. \$10 minimum order. Various reptile cages and aquariums, \$10 and up. Contact: Marcia at 744-4211 (Tucson) or e-mail: boahiss@earthlink.net.

Outside cage: free. Large, 6 feet long, 4 feet wide, 2 feet high, made from 3/4" plywood, with dual wing type follow-up top. Wire hardware mesh on the top. Cages for sale: 5- 10 gal aquariums, with screen tops, 4- 20 gal long aquariums with sliding screen tops, 1- 2 foot x 2 foot x 12 inch high aquarium with sliding screen top, 4- 2 x 2 x 2 arboreal Neodesha cages with perches, 3- 4 foot sloped glass front Neodesha cages with metal rack. 1.1 Womas. Adults, proven. Don Hamper stock. Perfect. Fred Wilson 743-3920 fredtj@comcast.net

Arizona Herpetological Association

P. O. Box 64531
Phoenix AZ 85082-4531

Meetings: 4th Tuesday, 7:00 PM
Location: The Phoenix Zoo, Auditorium, 455 North
Galvin Pkwy (between McDowell and Van -
Buren)

Journal: *The Desert Monitor*
Dues: Individual \$20, Family \$25, Contributing \$35
Information: (408) 894-1625

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Information for Contributors

Authors should submit original articles, notes, book reviews to the Editor, either via email using an attached word processed manuscript or by mail to the Society's address. The manuscript style should follow that of *Journal of Herpetology* and *Herpetological Review*, publications of the Society for the Study of Amphibians and Reptiles. For further information, please contact Erik Enderson at eenderson@cox.net

Sonoran Herpetologist Local Research News

The Tucson Herpetological Society has started a column in its monthly newsletter, The Sonoran Herpetologist, titled, "Local Research News". We want to update our readers on interesting herpetology research projects happening around the state.

We are currently collecting pieces for submission. the submissions need not be more than a few paragraphs and do not need to include data, specific localities or other details. The emphasis should be on how science is being applied to herpetological questions.

The style and format are very informal (*see SonHerp 13:123 for an example*). I will be happy to help with editing or if you already have a brief description or project summary, I will be happy to assist in formatting it.
Taylor Edwards, tayache@Ag.arizona.edu

TIME TO RENEW YOUR THS MEMBERSHIP?

I hope this is a helpful reminder to those of you whose membership renewal is due this month. Please call or email with corrections and errors. 624-8879 or dhardysr@theriver.com

Dave Hardy Sr.
Membership Secretary

Due in February:

Joseph Alvarez	Glen Bennett
David Bertelsen	Stephen Cumberworth
Kevin Bonine	Debbie Brewer
Philip & Barbara Brown	Brendan Cummings
Matt Goode	Harry Greene & Kelly Zamudio
Lawrence Jones	Jay Loughlin
Brent Martin	Justin & Li Shen Schmidt
Steve & Maxine Murray	Bill Savary & Jillian Cowles
Robert Villa	Chris Wolner



Dedicated to conservation, education, and research concerning the amphibians and reptiles of Arizona and Mexico. THS is a registered non-profit organization.

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Taylor Edwards	tayache@Ag.arizona.edu	President
Don Swann	donswann@dakotacom.net	Vice President
Bob Bezy	bezyr@theriver.com	Secretary
Marty Tuegel	mtuegel@yahoo.com	Treasurer

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Jillian Cowles	jillian@mindspring.com	2002-2003
Eric Stitt	ecstitt@earthlink.net	2002-2003
Cristina Jones	cajones@u.arizona.edu	2003-2004
Hans Koenig	hfkoenig@comcast.net	2003-2004
Ed Moll	e.o.moll@att.net	2003-2004
Don Swann	donswann@dakotacom.net	Past President

Society Activities

Monthly Members Meeting
 Roy Averill-Murray, Program Chairperson
 3rd Tuesday, 7:15 PM

Board of Directors Meeting
 Tuesday February 25, 7:00pm
 Arizona Game and Fish Department Office
 555 North Greasewood Road

Speakers Bureau
 Taylor Edwards, Director
 Ed Moll, Director
 Scheduled presentations

Herpetological Information Hotline
 Bob Brandner 760-0574

Jarchow Conservation Award
 Taylor Edwards, Chairperson

Publications:
Sonoran Herpetologist
Living with Rattlesnakes
Living with Gila monsters
THS Herp Coloring Book
THS Collected Papers, 1988-1991 (out of print)

THS Internet World Wide Webpage
<http://tucsonherpsociety.org>
 Bill Savary bsavary@mindspring.com



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A complete set of back issues are available in the Special Collections area of the University of Arizona library. They are accompanied by a copy of *The Collected Papers of the Tucson Herpetological Society, 1988-1991*.

Deadline for SonHerp 16 (3) is February 5

MEMBERSHIP INFORMATION

Individual	\$20	Sustaining	\$30
Family	\$25	Contributing	\$50
Student	\$14	Life	\$500

To receive a membership form and recent issue of *Sonoran Herpetologist* call (520) 624-8879 or write:

Tucson Herpetological Society
 P. O. Box 709
 Tucson AZ 85702-0709

Sonoran Herpetologist Natural History Observations

The Tucson Herpetological Society invites your contributions to a regular feature in the *Sonoran Herpetologist*, Natural History Observations of southwestern herps. Similar to Life History Notes in *Herpetological Review*, these can include information such as size, behavior, diet, predation, community structure or other interesting observations. Please submit your noteworthy observations to Dale Turner (dtturner@theriver.com), editor for this section. Submissions should be brief, typed double-spaced, and in electronic form if possible.

Your membership has expired.
This is your only reminder.
Please renew!



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NEXT MEETING

Tuesday, March 18th

Unraveling the Evolutionary Mysteries of Mojave Toxin (well, sort of)

Brian Wooldridge

Engineering and Environmental Consultants, Inc., Tucson

SONORAN HERPETOLOGIST
February 2003