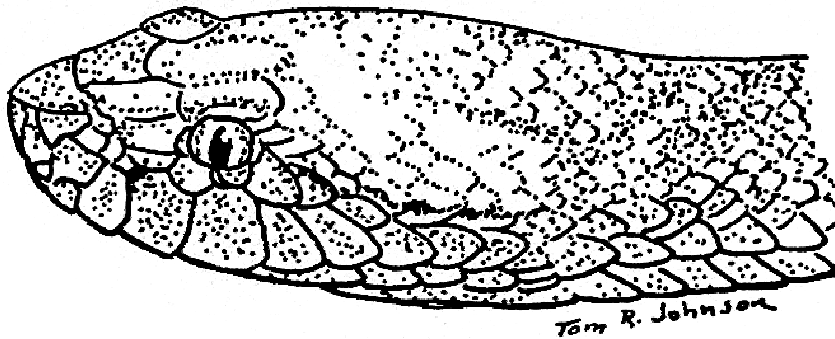


# Missouri Herpetological Association

## Newsletter



Number 4

# 1991

Copyright © 1991 Missouri Herpetological Association

CONTENTS

INTRODUCTION.....1

ANNOUNCEMENT OF THE FIFTH ANNUAL MHA MEETING.....1

ABSTRACTS OF PAPER PRESENTED AT THE FOURTH ANNUAL MEETING  
OF THE MISSOURI HERPETOLOGICAL ASSOCIATION.....2

**Do leopard frogs hybridize in Missouri? They do in Texas!**  
    R.D. Sage.

**Notes on the natural history of Hemidactylus brookii battianus  
(Sauria: Gekkonidae) from the Dominican Republic.** J.R.  
    Lynxwiler, R. Powell, J.S. Parmerlee, Jr., A. Lathrop, and  
    D.D. Smith.

**Notes on the natural history of Anolis cybotes (Sauria:  
    Polychridae) from the Dominican Republic.** T.M. Fobes,  
    R. Powell, J.S. Parmerlee, Jr., A. Lathrop, and D.D. Smith.

**Reproductive ecology of the Zigzag Salamander, Plethodon  
    dorsalis, in northwestern Arkansas.** D. Moll, R.F.  
    Wilkinson, Jr., C.L. Peterson, and T.L. Holder.

**Diet specialization and growth of the turtle Graptemys  
    geographica in a Missouri stream.** D. White, Jr. and D.  
    Moll.

**Turtles in trouble.** Tom R. Johnson.

**Missouri's endangered species program and regional projects.**  
    D. Figg.

NEW RECORDS OF AMPHIBIANS AND REPTILES IN MISSOURI FOR 1991.  
R. Powell, T.R. Johnson, and D.D. Smith.....5

NOTES.....11

**A range extension of the Western Massasauga (Sistrurus  
    catenatus tergeminus) in Missouri.** Kevin R. Toal and  
    Randy S. Reiserer

**On the status of the Northern Fence lizard (Sceloporus  
    undulatus hyacinthinus) from Jackson County, Missouri.**  
    R. Powell

ADDITIONS TO THE BIBLIOGRAPHY OF REFERENCES TO THE  
HERPETOFAUNA OF MISSOURI. R. Powell.....12

## INTRODUCTION

The Fourth Annual Meeting of the **Missouri Herpetological Association** took place on 28-29 September 1991 at the Reis Biological Station near Steelville in Crawford County, Missouri. This organization is designed to provide herpetologists in Missouri and surrounding states with an opportunity to meet and exchange ideas regarding current efforts in research and other professional activities. High on the list of priorities is to provide students, involved in research at either the graduate or undergraduate levels, 1) the chance to interact with senior herpetologists and 2) an outlet to present, in a semi-formal setting, the results of their labors.

This Newsletter is the result of a decision made at the inaugural meeting to provide a means of publicly acknowledging papers presented at this and subsequent Annual Meetings. Further, it will inform the herpetological community of new distributional and size records of Missouri's herpetofauna and serve to provide an outlet for the publication of short notes dealing with the state's amphibians and reptiles.

At this time the Association would again like to acknowledge the contribution of Dr. Nevin Aspinwall, of the Reis Biological Station, for allowing us the use of the Station's excellent facilities.

## ANNOUNCEMENT

### **Fifth Annual Meeting of the Missouri Herpetological Association**

The Fifth Annual Meeting of the **Missouri Herpetological Association** will be held on 28-29 September 1992 at the Reis Biological Station. Registration forms and calls for papers will be mailed at a later date. For more information please contact Tom R. Johnson at (314) 751-4115 or write:

Mr. Tom R. Johnson  
Missouri Department of Conservation  
P.O. Box 180  
Jefferson City, MO 65102

**Abstracts of Papers presented at the Fourth Annual Meeting  
of the  
Missouri Herpetological Association**

**28-29 September 1991**

**DO LEOPARD FROGS HYBRIDIZE IN MISSOURI? THEY DO IN TEXAS!**

**R.D. Sage**

University of Missouri, Columbia, MO 65211

I review information on the geographical ranges and molecular genetic studies of hybridization of leopard frogs (*Rana pipiens* complex) in Texas and Missouri. Three species (*R. berlandieri*, *R. utricularia*, and *R. blairi*) occur in Texas. Their ranges are parapatric, with narrow zones of hybridization at their borders. Along a 150 mile stretch of the contact zone between *R. berlandieri* and *R. utricularia* hybridization occurs only in a band about 20 miles wide. Within the zone, mating is apparently random, and some populations contain only hybrid individuals. Hybridization has been happening for long enough to allow the evolution of zone-specific electrophoretic alleles. The frequency of hybrid genotypes was lower in transformed froglets than in their cohort of premetamorphic tadpoles at one pond. This suggests that hybrids are less fit than parental genotypes during this transitional stage from aquatic to terrestrial life.

Three species of leopard frogs occur in Missouri (*R. blairi*, *R. utricularia*, and *R. pipiens*). Studies of adult morphology suggest that *R. blairi* and *R. utricularia* have broadly overlapping ranges throughout northcentral Missouri, and undergo little or no hybridization. A preliminary molecular study of frogs from Weldon Springs showed that a few hybrids were present in a sample that was composed mostly of pure individuals of both species. If this is the usual pattern in this state, then interactions between these two species are very different in Texas and Missouri. More studies of Missouri frogs are planned in order to study this problem.

**NOTES ON THE NATURAL HISTORY OF HEMIDACTYLUS BROOKII  
HAITIANUS (SAURIA: GEKKONIDAE) FROM THE DOMINICAN REPUBLIC**

**J.R. Lynxwiler**

Southwest Missouri State University, Springfield, MO 65804

**R. Powell, J. S. Parmerlee, Jr.**

Avila College, Kansas City, MO 64145

**A. Lathrop**

University of Kansas, Lawrence, KS 66045

**D. D. Smith**

University of Kansas Medical Center, Kansas City, KS 66103

We describe aspects of natural history in a population of *Hemidactylus brookii haitianus* from the Hotel Guarocuya in Barahona, Barahona Province, Dominican Republic. We marked and released 107 individuals during the span of 5-16 June 1991. The adult sex ratio (M:F) was 61 :12, which differed significantly from the expected 1 :1 ratio previously reported in Dominican populations. Snout-vent lengths of males were not significantly greater than those of females, but males were significantly heavier. Seven of the adult females were reproductively active. Estimates of population size were  $128 \pm 28.8$  (Lincoln-Peterson index) and 104 (Schnabel method), when adjusted for an equal sex ratio, estimates were increased to 189 and 148, respectively. Population

density based on the Lincoln-Peterson index was estimated by floor area<sup>3</sup> (0.15/m<sup>2</sup>, adjusted 0.22 m<sup>2</sup>), wall and ceiling area (0.03 m<sup>2</sup>, adjusted 0.04 m<sup>2</sup>), and volume (0.04 m<sup>3</sup>, adjusted 0.07 m<sup>3</sup>). Estimates based on the Schnabel method were proportionate. Mean home range size was 18.9 m<sup>2</sup> and mean distance between sightings was 7 m. Over 90% of individuals were on or within 1 m of the ceiling, > 60% were oriented horizontally. Cloacal temperatures varied < 2° from substrate temperatures, indicating a pattern of thermal conformity. Escape behavior usually consisted of upward followed by lateral movements. Territorial behavior was not observed. Nearly 25% of animals demonstrated tail autotomy, with no significant difference between sexes, but positively correlated with snout-vent length.

**NOTES ON THE NATURAL HISTORY OF *ANOLIS CYBOTES* (SAURIA:  
POLYCHRIDAE) FROM THE DOMINICAN REPUBLIC**

**T. M. Fobes**

Northwest Missouri State University, Maryville, MO 64468

**R. Powell, J. S. Parmerlee, Jr.**

Avila College, Kansas City, MO 64145

**A. Lathrop**

University of Kansas, Lawrence, KS 66045

**D. D. Smith**

University of Kansas Medical Center, Kansas City, KS 66103

We describe aspects of natural history in a small population of *Anolis cybotes* from Barahona, Barahona Province, Dominican Republic. Fifty-one individuals were observed from 5-16 June 1991. An estimate of actual population size was  $53 \pm 3.8$  (Lincoln-Peterson index) and application of the Schnabel method indicated that actual population size was approached. Males were significantly larger than females. Males occupied significantly larger 2-dimensional and cylindrical home ranges than females. Ninetyfour percent of all observations were of individuals in the shade and active thermoregulation was not seen. During daylight hours individuals utilized trunks and branches of trees and bushes 71% of the time and utilized perch heights of  $\leq 2.0$  m 83% of the time. Male perch heights were significantly higher than those of females or juveniles. No 2dimensional home ranges of males overlapped. Staged interactions between males resulted in aggression and demonstrated territorial defense. Ingesta from stomachs of 45 individuals were examined, resultant data suggested that this species is a generalistopportunist.

**REPRODUCTIVE ECOLOGY OF THE ZIGZAG SALAMANDER,  
*PLETHODON DORSALIS*, IN NORTHWESTERN ARKANSAS**

**D. Moll, R. F. Wilkinson, Jr.**

Southwest Missouri State University, Springfield, MO 65804

**C. L Peterson**

Cottey College, Nevada, MO 64772

**T. L Holder**

College of the Ozarks, Point Lookout, MO 65726

Monthly collections of *Plethodon dorsalis* were made from a wooded hillside from February 1988 through January 1989. Fixed gonads and ducts were weighed and the means plotted to provide information on the timing of reproductive events. Both ovarian and oviducal weights began increasing in October. Maximum weights were attained in April. No females were caught from May through August. Presumably this indicates that females became fossorial and

oviposition and egg care occurred during this time. Young of the year were first caught in September. Testis weights began increasing in May-June, reached a peak in August, then decreased to minimal levels in November. Vasa deferentia weights began increasing in September. Maximum weights were reached in December. Vasa weights decreased sharply in March-April suggesting that breeding may have occurred during this period.

### **DIET SPECIALIZATION AND GROWTH OF THE TURTLE (*GRAPTEMYS GEOGRAPHICA*) IN A MISSOURI STREAM**

D. White, Jr.

Drury College, Springfield, MO 6

D. Moll Southwest Missouri State University, Springfield, MO 65804

The diet and growth of the Common Map Turtle (*Graptemys geographica*) has been studied from April 1988 through September 1991 in the Niangua River, Dallas County, Missouri. Growth rates were determined from growth rings of the right abdominal plastral lamina. Male and female turtles grow at nearly the same rate during their first 2 years; thereafter, females grow significantly faster than males and reach significantly larger adult body sizes. Age and minimum size at maturity are tentatively estimated at 3 years, 60 mm plastron length for males, and 9-10 years, 170-180 mm plastron length for females. Quantitative analysis of gut contents indicate that Common Map Turtles are mollusk specialists; gastropods made up 94.1% by volume of all food items eaten.

### **TURTLES IN TROUBLE**

T.R. Johnson

Missouri Department of Conservation, Jefferson City, Missouri 65102

Slides were presented to illustrate problems associated with the conservation of turtles. Sea turtles are in serious trouble because of: loss of nesting (beach) habitats, drowning in shrimp nets, eating plastic bags, a viral disease (papaloma) that is killing turtles in several parts of the world, and the fact that "head start" turtles are not in good physical condition when released.

Other species, such as sliders (*Trachemys*), cooters (*Pseudemys*), and map turtles (*Graptemys*) are being exported by the thousands, either for the pet trade (to Europe) or for human consumption (to Asia). Annually, 8-15,000 box turtles (*Terrapene*) of various species are exported to Europe. Large individuals may be sold for up to \$100. The U.S. Fish and Wildlife Service has been petitioned to add box turtles (4 species, 11 subspecies) and members of the genus *Clemmys* (wood, spotted, bog, and Pacific pond turtles) to the Convention on International Trade in Endangered Species (CITES) Appendix II, enabling documentation of species, numbers, and origins of exported turtles. In general, turtles have slow reproductive rates, have lost a great deal of natural habitat, suffer heavy losses to nest predation, and large numbers are lost to highway traffic. Surplus turtles, capable of supporting heavy export to Europe or Asia simply do not exist.

### **MISSOURI'S ENDANGERED SPECIES PROGRAM AND REGIONAL PROJECTS**

D. Figg

Missouri Department of Conservation, Jefferson City, Missouri 65102

No abstract submitted.

# NEW RECORDS OF AMPHIBIANS AND REPTILES IN MISSOURI FOR 1991

Robert Powell<sup>1</sup>, Tom R. Johnson<sup>2</sup>, and Donald D. Smith<sup>3</sup>

<sup>1</sup>Avila College, 11901 Wornall Road, Kansas City, MO 64145

<sup>2</sup>Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO 65102

<sup>3</sup>University of Kansas Medical Center, 39th St. & Rainbow Blvd., Kansas City, KS 66103

The new county or maximum size records listed below are those accumulated or brought to our attention since previous updates (Johnson and Powell 1988, Powell et al. 1989, 1990) of records listed in Johnson (1987). Publication of this list allows us to express appreciation to the many individuals who contributed specimens or information. Further, recipients of this list have the opportunity to update range maps and size maxima listings. Finally, these new records represent information that extends our knowledge of these animals in Missouri.

The specimens listed represent the first records for the given county based on preserved, cataloged voucher specimens (unless indicated as observations only). Size records require the deposition of the specimen in an institutional collection. All new records listed here are presented in the standardized format of Collins (1989, 1990): common and scientific name, county, specific locality (when available or unless withheld for rare or endangered species), date of collection (when available), collector(s), and place of deposition and catalog number (if available or applicable). If the record was published elsewhere, the citation is given. New size maxima are presented in accordance with criteria established by Powell et al. (1982) and are expressed in both metric and English units, but the metric value is the precise measure (the English equivalent is only an approximation).

The following acronyms apply to institutional collections in which specimens are deposited: BWMC -Bobby Witcher Memorial Collection, Avila College, Kansas City, MO 64145; CMSU - Central Missouri State University, Warrensburg, MO 64093; KU University of Kansas Museum of Natural History, Lawrence, KS 66045; MDC -Missouri Department of Conservation, Jefferson City, MO 65102; MSB -Museum of Southwestern Biology, University of New Mexico, Albuquerque, NM 87131; UIMNH -University of Illinois Museum of Natural History, Urbana, IL 61801.

## NEW COUNTY RECORDS

### **Amphibia: Caudata**

SPOTTED SALAMANDER (*Ambystoma maculatum*)

**RANDOLPH CO:** Rudolph Bennitt Wildlife Area S25 T52N R14W, 27 August 1987, C.A. Phillips and E.J. Routman (UIMNH 95479, 11 larvae) (Phillips 1991 a). **OZARK CO:** Caney Mountain Wildlife Area S18 T23N R13W, 14 August 1987, C.A. Phillips and E.J. Routman (UIMNH 95480, 7 larvae) (Phillips 1991a).

MARBLED SALAMANDER (*Ambystoma opacum*)

**DENT CO:** Indian Trail State Forest S2 T34N R4W, 2 October 1991, T .R. Johnson (KU cat. pend.).

SMALLMOUTH SALAMANDER (*Ambystoma texanum*)

**VERNON CO:** Osage Prairie S3 T34N R31W, 21 April 1990, D.J. Pflanz (KU cat. pend., 4 larvae).

EASTERN TIGER SALAMANDER (*Ambystoma tigrinum tigrinum*)

**HOWELL CO:** Tingler Lake S32 T23N R8W, 3 May 1988, C.A. Phillips and E.J. Routman (UIMNH 95481-2, 2 adults; UIMNH 95483, 3 larvae) (Phillips 1991b).

FOUR-TOED SALAMANDER (*Hemidactylium scutatum*)

**BENTON CO:** Big Buffalo Wildlife Area S12 T41N R20W, 11 April 1991, T.R. Johnson and M. Currier (KU 218636-7).

CENTRAL NEWT (*Notophthalmus viridescens louisianensis*)

**CRAWFORD CO:** Huzzah State Forest S6 T38N R2W, 19 March 1988, C.A. Phillips and C. Bryon (UIMNH 95492)(Phillips 1991c) (a previous record of *Notophthalmus viridescens louisianensis* from Crawford County was reported in Johnson and Powell 1988). **RANDOLPH CO:** Rudolph Bennitt Wildlife Area S25 T52N R14W, 27 August 1987, C.A. Phillips and E.J. Routman (UIMNH 95484- 7, 7 adults; UIMNH 95488, 2 larvae) (Phillips 1991c). **RIPLEY CO:** Cupola Pond S29 T25N R1W, 21 July 1988, C.A. Phillips and S.M. Phillips (UIMNH 95489-90,90 adults; UIMNH 95491, 4 larvae) (Phillips 1991c).

WESTERN SLIMY SALAMANDER (*Plethodon albagula*)

**OSAGE CO:** Meta Community Park HW 133 1 mi N Maries County line S9 T41N R11W, 17 May 1991, K.R. Toal (KU 218584).

OZARK ZIGZAG SALAMANDER (*Plethodon dorsalis angusticlavius*)

**McDONALD CO:** HW 71 S36 T23N R33W, 27 March 1991, J.D. Bainville (BWMC04702).

**Amphibia: Anura**

BLANCHARD'S CRICKET FROG (*Acris crepitans blanchardi*)

**ANDREW CO:** HW 463 1.1 mi N HW K S13 T59N R35W, 27 July 1991, K.R. Toal (KU 218599). **MONITEAU CO:** North Moreau Creek at HW 87 S9 T44N R15W, 29 September 1991, J.S. Parmerlee, Jr. (BWMC 04781).

EASTERN AMERICAN TOAD (*Bufo americanus americanus*)

**MONITEAU CO:** North Moreau Creek at HW E S4 T 44N R16W, 29 September 1991, T.M. Fobes (BWMC 04781).

FOWLER'S TOAD (*Bufo woodhousii fowleri*)

**McDONALD CO:** HW K 0.4 mi E HW 71 S3 T21N R32W, 23 August 1991, K.R. Toal and R.S. Reiserer (KU218598). **RIPLEY CO:** Ripley County Lake S10 T23N R1E, 20 July 1991, K.R. Toal and J. Evans (KU 218597).

EASTERN NARROWMOUTH TOAD (*Gastrophryne carolinensis*)

**McDONALD CO:** HW 90 2.7 mi W HW E S2 T21N R30W, 23 August 1991, K.R. Toal and R.S. Reiserer (KU 218602).

NORTHERN SPRING PEEPER (*Pseudacris crucifer crucifer*)

**WASHINGTON CO:** S4 T38N R2E, 9 June 1991, K.R. Toal and J.Gudiswitz (KU218601).

PLAINS LEOPARD FROG (*Rana blairi*)

**ATCHISON CO:** 5.25 mi N Watson S11 T66N R42W, 8 May 1991, T.R. Johnson (KU 218647). **BATES CO:** HWY 2.2 mi S Amsterdam S5 T40N R33W, 6 September 1991, K.R. Toal and R.S. Reiserer (KU 218671). **HENRY CO:** SW 500 Road 1.5 mi E HW K S35 T41 N R28W, 6 September 1991, K.R. Toal and R.S. Reiserer (KU 218672).

BULLFROG (*Rana catesbeiana*)

**ATCHISON CO:** 5.25 mi N Watson S11 T66N R42W, 9 May 1991, T.R. Johnson (KU 218648, 2 larvae).

GREEN FROG (*Rana clamitans melanota*)

**GASCONADE CO:** Price Creek at HW B S28 T40N R6W, 29 September 1991, E.M. Thompson (BWMC 04775).

PICKEREL FROG (*Rana palustris*)

**McDONALD CO:** S2 T21N R31W, 23 August 1991, K.R. Toal and R.S. Reiserer (KU 218606). **PETTIS CO:** Heaths Creek 0.5 mi E HW 65 13 mi N Sedalia S27 T48N R21W, 3 August 1991, T.R. Johnson and R. Krager (KU cat. pend.).

**Reptilia: Testudines**

WESTERN SPINY SOFTSHELL (*Apalone spinifera hartwegi*)

**LIVINGSTON CO:** Utica S17 T57N R24W, 5 July 1991, C.B. Cohick and D.D. Smith (KU 218516). **McDONALD CO:** Big Sugar Creek at HW E S21 T22N R30W, 11 July 1990, T. Smith (observation only, photo on file at MDC).

COMMON SNAPPING TURTLE (*Chelydra serpentina serpentina*)

**ANDREW CO:** HW T 0.4 mi N HW K Chester Anderson farm S36 T59N R36W, 27 July 1991, K.R. Toal (KU218685). **OSAGE CO:** HW P 0.25mi E HW 133 S34 T42N R11W, 17 May 1991, K.R. Toal (KU 218625). **SALINE CO:** I- 70 1.1 mi E HW EE and KK (Houstonia exit) S3 T48N R21W DOR, K.R. Toal (KU 218679).

WESTERN PAINTED TURTLE (*Chrysemys picta bellii*)

**CAMDEN CO:** Lake of the Ozarks Cartright Springs Cove S35 T40N R18W, 5 July 1991, R. Powell (KU 218293). **SALINE CO:** 1-70 3.1 mi W HW EE and KK (Houstonia exit) S1 T48N R21W, 9 June 1991, K.R. Toal (KU 218678). **WARREN CO:** 1-70 0.5 mi W HW AB S15 T47N R3W, 16 July 1991, K.R. Toal (KU 218626).

FALSE MAP TURTLE (*Gratemys pseudogeographica pseudogeographica*)

**CAMDEN CO:** Lake of the Ozarks Cartright Springs Cove 535 T 40N R18W, 7 September 1991, R. Powell and J.E. Howe (BWMC 04771). This specimen clearly exhibits "typical" subspecific characteristics, extending the range of the subspecies farther south than illustrated in Johnson (1987) and Conant and Collins (1991). **FRANKLIN CO:** Meramec State Park Meramec River, 23 September 1988, D. Drees (KU 218669).

THREE- TOED BOX TURTLE (*Terrapene carolina triunguis*)

**SALINE CO:** I-70 3.7 mi W HW K (Blackwater exit) S6 T48N R21 W DOR, 8 June 1991, K.R. Toal (KU 218680).

ORNATE BOX TURTLE (*Terrapene ornata ornata*)

**CARROLL CO:** HW M 4.1 mi E HW 65 S20 T54N R22W, 13 July 1991, C.B. Cohick and S.L. Cohick (KU 218515). **COOPER CO:** HW J 2 mi E HW 5 S31 T47N R17W, 29 September 1991, R. Powell (BWMC 04785). **MILLER CO:** HW 52 2.1 mi E Morgan County line 532 T42N R15W, 17 May 1991, K.R. Toal (KU 218627).

RED-EARED SLIDER (*Trachemys scripta elegans*)

**LACLEDE CO:** HW 44 N Webster Co. line near Conway S18 T32N R17W DOR, 23 May 1983 J.N. Stuart (MSB 39519) (Stuart 1990). **WARREN CO:** 1-70 4.8 mi W Wright City exit S23 T47N R2W, 17 August 1991 K.R. Toal (KU 218629).

**Reptilia: Squamata: Sauria**

EASTERN COLLARED LIZARD (*Crotaphytus collaris collaris*)

**OSAGE CO:** near Loose Creek, 21 July 1984, P. Nelson (KU 218654).

FIVE-LINED SKINK (*Eumeces fasciatus*)

**BUCHANAN CO:** Bluffwoods Wildlife Area S29 T56N R36W, 31 March 1991, F.E. Blake, C.B. Cohick, and D.D. Smith (BWMC 04422). **MARION CO:** 0.25 mi E Jct. 233 and 247, 13 August 1991, R. Milas (observation only, photo on file at MDC).

GREAT PLAINS SKINK (*Eumeces obsoletus*)

**BARRY CO:** HW E 1.8 mi E HW M S2 T21N R26W, 16 August 1991, K.R. Toal and R.S. Reiserer (KU 218527) (Toal 1991).

WESTERN SLENDER GLASS LIZARD (*Ophisaurus attenuatus attenuatus*)

**COLE CO:** Russellville S3 T43N R42W, 1 September 1983, D. McIntosh (KU 218650).

GROUND SKINK (*Scincella lateralis*)

**HENRY CO:** S33 T40N R24W, 28 March 1991, K. McPherson (CMSU 1526). **LAWRENCE CO:** S28 T28N R27W, 30 March 1991, C. Chesher (CMSU1473). **NEWTON CO:** S18 T26N R31W, 28 September 1991, C. Schmidt and M. van Doren (KU 218681).

### **Reptilia: Squamata: Serpentes**

OSAGE COPPERHEAD (*Agkistrodon contortrix phaeogaster*)

**IRON CO:** S24 T34N R2E, 6 July 1991, K.R. Toal and J. Toal (KU 218622). **McDONALD CO:** HW K 1.3 mi E HW 71 S35 T22N R32W, 15 August 1991, K.R. Toal and R.S. Reiserer (KU 218623).

WESTERN COTTONMOUTH (*Agkistrodon piscivorus*)

**LAWRENCE CO:** Goose Creek at YMCA Camp Wakonda 3 mi S Halltown S10 T28N R25W, no date, T. Swift and J. Gorman (given to L. Rizzo) (KU cat. pend.).

WESTERN WORM SNAKE (*Carphophis amoenus vermis*)

**BUCHANAN CO:** Bluffwoods Wildlife Area S29 T56N R36W, 31 March 1991. F.E. Blake, C.B. Cohick, and D.D. Smith (BWMC 04424). **LAFAYETTE CO:** S14 T48N R28W, 29 April 1990, M. Rogers (CMSU 1229).

EASTERN YELLOWBELLY RACER (*Coluber constrictor flaviventris*)

**BARTON CO:** HW F ~ 2 mi S HW C S35 T33N R29W, 4 May 1991, D.L. Howard (BWMC 04709). **GASCONADE CO:** HW B 4 mi S HW 28 S32 T41N R6W DOR, 29 September 1991, E.M. Thompson and DJ. Pflanz (BWMC 04778).

PRAIRIE RINGNECK SNAKE (*Diadophis punctatus arnyi*)

**BUCHANAN CO:** Bluffwoods Wildlife Area S29 T56N R36W, 31 March 1991, F.E. Blake, C.B. Cohick, and D.D. Smith (BWMC 04422).

BLACK RAT SNAKE (*Elaphe obsoleta obsoleta*)

**COOPER CO:** Bunceton HW J S33 T47N R17W DOR, 29 September 1991, J.S. Parmerlee, Jr. (BWMC 04784). **IRON CO:** S33 T34N R2E, 6 July 1991, K.R. Toal and J. Toal (KU 218616). **MARION CO:** HW E 3.25 mi N HW 36. 16 June 1989, R. Milas (observation only, photo on file at MDC).

**OSAGE CO:** 2 mi SSW Useful S34 T43N R7W, 27 May 1991, G. Emick (KU cat. pend.).

PRAIRIE KINGSNAKE (*Lampropeltis calligaster calligaster*)

**MONITEAU CO:** HW F 6 mi E HW E S23 T44N R16W DOR, 29 September 1991, R. Powell (BWMC 04782). **PHELPS CO:** 2 mi SE St. James S33 T38N R6EW, 29 September 1991, R.S. Reiserer and K.R. Toal (BWMC 04772). **WASHINGTON CO:** HW 185 3.9 mi SE HW T at Fourche Renault Creek S13 T38N R1E, 8 May 1991, D.D. Smith (BWMC 04786).

SPECKLED KING SNAKE (*Lampropeltis getula holbrooki*)

**SHANNON CO:** HW 19 near jct. HW D S5 T29N R4W DOR, 25 September 1991, V.D. von Frese (KU 218683).

EASTERN COACHWHIP (*Masticophis flagellum flagellum*)

**MILLER CO:** S23 T41N R12W, 17 May 1991, K.R. Toal (KU 218618).

NORTHERN WATER SNAKE (*Nerodia sipedon sipedon*)

**ANDREW CO:** Chester Anderson farm HW T 0.4 mi N HW K S36 T59N R36W, 27 July 1991, K.R. Toal (KU 218619). **GASCONADE CO:** Price Creek at HW B S28 T40N R6W, 29 September 1991, D.L. Howard (BWMC 04774).

MIDLAND BROWN SNAKE (*Storeria dekayi wrightorum*)

**OSAGE CO:** HW 89 3 mi S HW E S27 T 4 2N R8W DOR, 29 September 1991, R. Powell (BWMC 04779).

BROWN SNAKE (*Storeria dekayi wrightorum x texanum*)

**LAWRENCE CO:** S28 T28N R27W, 30 March 1991, C. Chesher (CMSU 1451).

WESTERN RIBBON SNAKE (*Thamnophis proximus proximus*)

**BARTON CO:** HW F ~ 2 mi S HW C S35 T33N R29W, 4 May 1991, D.L. Howard (BWMC 04710). **GASCONADE CO:** Price Creek at HW B S28 T40N R6W, 29 September 1991, R. Powell (BWMC 04773).

EASTERN GARTER SNAKE (*Thamnophis sirtalis sirtalis*)

**CARTER CO:** S35 T28N R2W, 14 April 1990, M. Rogers (CMSU 1227). **GASCONADE CO:** HW B 8 mi S HW 28 S21 T40N R6W DOR, 29 September 1991, E.M. Thompson and D.J. Pflanz (BWMC 04777).

ROUGH EARTH SNAKE (*Virginia striatula*)

**CARTER CO:** S35 T28N R2W, 14 April 1990, M. Rogers (CMSU 1228). **OSAGE CO:** HW 133 0.25 mi N Maries County line S16 T41N R11W, 17 May 1991, K.R. Toal (KU218621).

WESTERN EARTH SNAKE (*Virginia valeriae elegans*)

**GASCONADE CO:** Price Creek at HW B S28 T40N R6W DOR, 29 September 1991, R.S. Reiserer and K.R. Toal (BWMC 04776). **HENRY CO:** S33 T40N R24W, 28 March 1991, K. McPherson (CMSU 1525).

## NEW MAXIMUM SIZE RECORDS

### Amphibia: Anura

BULLFROG (*Rana catesbeiana*)

**MONTGOMERY CO:** I-70 3.8 mi E Danville/Montgomery exit S32 T48N R4W, 9 June 1991, K.R. Toal and J. Gudiswitz (KU 218604). Snout-vent length: 170mm (6.7 in).

### Reptilia: Testudines

THREE-TOED BOX TURTLE (*Terrapene carolina triunguis*)

**STONE CO:** Tablerock Lake Road 39-48 0.6 mi W HW 39 S21 T22N R23W, 16 August 1991, K.R. Toal and R.S. Reiserer (KU 218670). Carapace length: 154 mm (6.0 in).

### Reptilia: Squamata: Sauria

SIX-LINED RACERUNNER (*Cnemidophorus sexlineatus sexlineatus*)

**BARRY CO:** HW E 1.8 mi E HW M S2 T21N R26W, 16 August 1991, K.R. Toal and R.S. Reiserer (KU 218611). Snout-vent length: 84 mm (3.3 in), total length: 267 mm (10.5 in). This exceeds the maximum snout-vent length reported in Conant and Collins (1991).

GROUND SKINK (*Scincella lateralis*)

**BARTON CO:** HW F ~ 2 mi S HW C S35 T33N R29W, 4 May 1991, R. Powell and D.L. Howard (BWMC 04708). Snout-vent length: 54 mm (2.1 in), total length: 138 mm (5.4 in).

## LITERATURE CITED

- Collins, J.T. 1989. New records of amphibians and reptiles in Kansas for 1989. Kansas Herpetol. Soc. Newsl. (78):16-21.
- . 1990. Maximum size records for Kansas amphibians and reptiles. Kansas Herpetol. Soc. Newsl. (81):13-17.
- Conant, R. and J.T. Collins. 1991. A field guide to reptiles and amphibians, eastern and central North America. 3rd ed Houghton Mifflin Co., Boston.
- Johnson, T.R. 1987 .The amphibians and reptiles of Missouri. Missouri Dept. Conservation, Jefferson City.
- and R. Powell. 1988. New records of amphibians and reptiles in Missouri for 1988. Missouri Herpetol. Newsl. (1):4-8.
- Phillips, C.A. 1991a. Geographic distribution: *Ambystoma maculatum*. Herpetol. Rev. 22: 22.
- . 1991b. Geographic distribution: *Ambystoma tigrinum*. Herpetol. Rev. 22:22.
- . 1991c. Geographic distribution: *Notophthalmus viridescens louisianensis*. Herpetol. Rev.22:24.
- Powell, R., K.P. Bromeier, N.A. Laposha, J.S. Parmerlee, and B. Miller. 1982. Maximum sizes of amphibians and reptiles from Missouri. Trans. Missouri Acad. Sci. 16:99106.
- , T.R. Johnson, and D.D. Smith. 1989. New records of amphibians and reptiles in Missouri for 1989. Missouri Herpetol. Newsl. (2):4-8.
- , T.R. Johnson, and D.D. Smith. 1990. New records of amphibians and reptiles in Missouri for 1990. Missouri Herpetol. Newsl. (3):4-8.
- Stuart, J.N. 1990. Geographic distribution: *Trachemys scripta elegans*. Herpetol. Rev. 21 : 95-96.
- Toal, K.R. 1991. Geographic distribution: *Eumeces obsoletus*. Herpetol. Rev. 22:in press.

## Notes

### A RANGE EXTENSION OF THE WESTERN MASSASAUGA (*SISTRURUS CATENATUS TERGEMINUS*) IN MISSOURI

Kevin R. Toal and Randy s. Reiserer  
Museum of Natural History  
University of Kansas

On 8 September 1991 an adult Western Massasauga (*Sistrurus catenatus tergeminus*) was found DOR in Holt County, 1.2 mi S Corning on HW 111 (S14 T62N R40W). The specimen was not preserved. This observation extends the currently known range of the species in Missouri seven miles north and five mile west of the only previously known population in Holt County (Johnson 1987; Seigel 1981, 1983). This record is significant because the species, endangered in the state, was thought to be restricted to the Squaw Creek National Wildlife Refuge. This record would seem to indicate that at least some individuals may range well beyond the boundaries of the Refuge.

### LITERATURE CITED

- Johnson, T.R. 1987. The amphibians and reptiles of Missouri. Missouri Dept. Conservation, Jefferson City.
- Seigel, R.A. 1981. The status of the Massasauga (*Sistrurus catenatus*) at the Squaw Creek National Wildlife Refuge, 1979-1981. Unpubl. Rept. to the Missouri Dept. Cons.
- . 1983. Final report on the ecology and management of the Massasauga, *Sistrurus catenatus*, at the Squaw Creek National Wildlife Refuge, Holt County, Missouri. Unpubl. Rept. to the Missouri Dept. Cons.

### ON THE STATUS OF THE NORTHERN FENCE LIZARD, *SCELOPORUS UNDULATUS HYACINTHINUS*, IN JACKSON COUNTY, MISSOURI

Robert Powell  
Department of Natural Sciences Avila College

The Northern Fence Lizard, *Sceloporus undulatus hyacinthinus*, is quite common throughout the southern two-thirds of Missouri (Johnson 1987) and has been recorded from extreme eastern Kansas (Collins 1982). Although specimens have been taken from Johnson and Cass counties in Missouri and from Johnson County, Kansas, none had been collected in Jackson County until 1985 (Johnson and Powell 1988), in spite of extensive work in the area by numerous collectors. Anderson (1965), who lived in Jackson County, indicated this lack of specimens by showing the range of the species circumventing the southern boundaries of both Jackson and Lafayette County to the east (a pattern followed by Johnson 1987).

The description of the specimen (Bobby Witcher Memorial Collection, BWMC 02382) from south Kansas City by Johnson and Powell (1988) as "an escaped pet from the Ozarks" was due to the lack of previous records, rather than any obvious discontinuity in suitable habitat. They noted further, however, that a population had become established. This was based on the discovery of six additional specimens, including two juveniles, in 1986 and 1987 in the vicinity of the original record. None of these were collected and deposited in collections.

Subsequent to the two animals taken in 1987 and in spite of occasionally intense efforts, no further specimens have been taken in Kansas City or elsewhere in the county. It must be presumed that this population has been extirpated by unknown causes and that *Sceloporus undulatus*, for reasons that remain obscure, should not be considered a part of Jackson County's herpetofauna.

### LITERATURE CITED

- Anderson, P. 1965. The reptiles of Missouri Univ. Missouri Press, Columbia.  
Collins, J.T. 1982. Amphibians and reptiles in Kansas. 2nd ed. Univ. Kansas Mus. Nat. Hist. Publ. Educ. Ser. No.8.  
Johnson, T.R. 1987. The amphibians and reptiles of Missouri. Missouri Dept. Conservation, Jefferson City.  
— and R. Powell. 1988. New records of amphibians and reptiles in Missouri for 1988. Missouri Herpetol. Assoc. Newsl. (1):4-8.

### ADDITIONS TO THE BIBLIOGRAPHY OF REFERENCES TO THE HERPETOFAUNA OF MISSOURI

Compiled by Robert Powell

Department of Natural Sciences, Avila College, Kansas City, MO 64145

Following is a list of references addressing the biology of amphibians and reptiles in Missouri which have been brought to my attention since the publication of Powell (1990. Bibliography of references to the herpetofauna of Missouri Missouri Herpetol. Assoc. Newsl. (3):13-17) and Johnson (1987. The amphibians and reptiles of Missouri. Missouri Dept. Conservation, Jefferson City). Readers are requested to notify the author of any additional publications that should be included in future lists.

- Bradford, J. 1973. Reproduction and ecology of two species of Earth Snakes: *Virginia striatula* and *Virginia valeriae*. Ph.D. diss., Univ. Missouri-Columbia. Correction: title was incorrectly listed in Powell (1990).  
Ernst, C.H. and J.F. McBreen. 1991. *Terrapene*. Cat. Amer. Amph. Rept.:511.1-511.6.  
— and —. 1991. *Terrapene carolina*. Cat. Amer. Amph. Rept.:512.1-512.13.  
Johnson, T.R. 1990. Additions and changes to Missouri's rare and endangered species list: amphibians and reptiles. Missouri Herpetol. Assoc. Newsl. (3):9.  
—. 1991. Toads of Missouri. Missouri Conservationist 52(5):12-17  
Magliola, L. 1973. Parathyroid function in the box turtle, *Terrapene carolina triunguis*. Ph.D. diss., Univ. Missouri-Columbia.  
Peterson, C.L., R.F. Wilkinson, D. Moll, and T. Holder. 1991. Premetamorphic survival of *Ambystoma annulatum*. Herpetologica 47:96-100.  
Pflanz, D.J. and R. Powell. 1990. Death feigning by a coachwhip from Missouri. Missouri Herpetol. Assoc. Newsl. (3):12.  
Philbert, R.L. 1964. The seasonal neurosecretory cycle of *Diadophis punctatus*. Ph.D. thesis, Univ. Missouri-Columbia.  
Phillips, C.A. 1991a. Geographic distribution: *Ambystoma maculatum*. Herpetol. Rev. 22:22.  
—. 1991b. Geographic distribution: *Ambystoma tigrinum*. Herpetol. Rev. 22:22.  
—. 1991 c. Geographic distribution: *Notophthalmus viridescens louisianensis*. Herpetol. Rev. 22:24.  
Powell, R. 1990. Bibliography of references to the herpetofauna of Missouri. Missouri Herpetol. Assoc. Newsl. (3):13-17.

- , T.R. Johnson, and D.D. Smith. 1990. New records of amphibians and reptiles in Missouri for 1990. Missouri Herpetol. Assoc. Newsl. (3):4-8.
- Rossman, D.A. and Y. Wallach. 1991. *Virginia*. Cat. Amer. Amph. Rept.:529.1-529.4.
- Sexton, O.J. 1990. Life history notes (bird attack): *Tropidoclonion lineatum*. Herpetol. Rev.21:94.
- Smith, D.D. 1990. Possible effects of temperature on incubation period and hatchlings in eggs from a Rough Green Snake, *Opheodrys aestivus*. Missouri Herpetol. Assoc. Newsl. (3):10-12.
- Stuart, J.N. 1990. Geographic distribution: *Trachemys scripta elegans*. Herpetol. Rev. 21 : 95-96.
- Weil, M.R. and R.D. Aldridge. 1979. The effect of temperature on the male reproductive system of the common water snake (*Nerodia sipedon*). J. Exp. Zool. 210:327-332.
- and —. 1981. Seasonal androgenesis in the male water snake, *Nerodia sipedon*. Gen. Comp. Endocrinol. 44:44-53.
- Wilkinson, R.F. Jr. 1965. Seasonal and hormonal changes in the oviduct of *Diadophis punctatus*. Ph.D. thesis, Univ. Missouri-Columbia.