

Michael Clifford
50 Gillis Road
PORTSMOUTH, VA.

BREEDING HABITS OF AMERICAN TOADS

by: Kent Wells
(Springfield, Va.)

Last April I was investigating and photographing breeding habits of various species of frogs and toads at Back Lick Run, a small creek, near Springfield, Virginia. I had the good fortune to happen upon a large number of American Toads (Bufo a. americanus) on the peak night of the breeding season. As I approached the spot where the main concentration of toads was to be found, the noise was deafening.

Standing in one spot and shining my flashlight around I was able to count at least thirty to thirty-five individuals, mostly males. I estimated that the males outnumbered females by at least seven-to-one. There were several mated pairs laying eggs. I was able to photograph their activities. The next morning I found thousands of eggs in the shallow water.

During the night activity, the majority of the male toads were calling on the land or in shallow water, while others were floating on top of the water but were not calling. Frequently, two males would try to mate with the same female and a brief battle or pushing contest would follow. If a male tried to mate with another male the male underneath would protest, violently, and shake the offender off.

A description of the breeding-site follows: The creek is narrow at this point, probably eight to ten feet wide. The toads called from both banks but layed eggs on one side of the stream only.

On this side, the water is only a few inches deep for two or three feet out from the bank. Then it drops suddenly to a depth of more than a foot and it gradually becomes deeper. The toads layed their coiled strings of eggs on the three-foot-wide shallow shelf near the bank. I hope to continue my investigations this spring.

Kent Wells joined VHS recently. He is a Junior at Annandale High School in Annandale, Virginia, and plans to major in zoology in college. His main field of interest is herpetology, especially amphibians. He spends much time making observations and color photographs of the various species of frogs and toads which occur in his area. Slides he has taken have been shown in biology classes at high school.

*Note: In amphibians, fertilization of eggs may take place outside the female's body -- or externally; or within the body of the female -- or internally. The former is less efficient and requires water as a medium in which eggs and sperm can unite. It is the rule in the case of frogs and toads. In all salamanders (except Hellbenders, Sirens) fertilization is internal. In frogs and toads, the calls of the males may serve to bring the females and other males to the ponds in mating season. Charles M. Bogert found toad calls carry more than $\frac{1}{2}$ mile.

NOTES ON THE SNAKES AT ASHLAND, HANOVER COUNTY, VIRGINIA

by: Jeffrey L. Richmond
Box 802, Ashland, Va.

There seems to be a considerable lack of information on specimens found in Hanover County, Va., and to some degree in New Kent County. There should be a number of preserved specimens that confirm reports of many species expected in these counties. I have captured a number of specimens that I thought common, made a brief note on them and let them go in the belief that many of these surely were recorded.

Following the same order as the list in VHS Bulletin No. 38, p. 4, "Snakes of Virginia by Counties:" Northern Water Snake (Natrix s. sipedon) are numerous in ponds and streams throughout Hanover County. There is, I believe, one preserved in the bio lab at Randolph-Macon.

The Northern Brown Snake, the Red-bellied Snake (Storeria), and the Garter Snake (Thamnophis), all occur in quantity. A Hognosed Snake (Heterodon) was brought in for the laboratory last spring. Early in May we found both Ringneck & Worm Snakes on a farm on the North Anna River not far from Ashland. Black Racers, Rough Green and Black Rat Snakes are quite common around Ashland. Earlier this year, Patrick Henry High School had both Black Racer and Black Rat Snakes, alive, in their biology laboratory.

On the other hand, I know of no Rainbow, Mud, or Crowned Snakes in Hanover County. I feel that these species do not occur in this area. Of the three, the Rainbow Snake is the most likely to be found in the area. I have seen no habitat matching that in which I have found the

Rainbow Snake in other counties. (Robert J. Gagnon, reports one from near Ellerson, Va., released after capture, several years ago. FJT)

There are two records of Mole Snakes from the Ashland area. One was picked up, dead, on a secondary road near Ashland, late April 1964. The second was found within sight of the Ashland city limits on a secondary road; also dead.

As for New Kent County, Rough Green Snakes, Black Rat Snakes, & the Eastern King Snake occur most abundantly there. I have preserved specimens of all three.

JLR

If the specimens are deposited in a permanent scientific collection the data they represent may be put on the VHS distribution maps and would be reflected in a revised edition of "Snakes of Va. by County." FJT

WHAT IS A PERMANENT COLLECTION ?

A cataloged, scientific collection available to the public. One which receives regular care. Unless rare, specimens must be in useful condition. Flattened DORs unaccepted, unless species is exceedingly rare; recognizable. If a private collection, specimens must be available for study by visit, or by mailing and the collection should be slated for a permanent museum collection. A list of depositories appears on the next page. Comment solicited.

DEPOSITORIES FOR PRESERVED
REPTILE & AMPHIBIAN
SPECIMENS

American Museum of Natural History,	New York City	*Dr. R. Zweifel
Bridgewater College,	Bridgewater, Va.	*Dr. H.G.M. Jopson
Carnegie Museum,	Pittsburgh, Pa.	*Neil D. Richmond
Eastern Mennonite College	Harrisonburg, Va.	*Dr. R. Hostetter
Lynchburg College	Lynchburg, Va.	*Dr. R. Freer
Norfolk Museum	Norfolk, Va.	*R.H. deRageot
Randolph-Macon Woman's College	Lynchburg, Va.	*Dr. J. Chamberlain
U.S. National Museum (Div. of Reptiles & Amphibians)	Washington, DC	Dr. J.A. Peters *Dr. D.M. Cochran

Others should be on this list -- please communicate with VHS Secretary.

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DO NOT SEND YOUR ORDER TO VHS!

* Member of VHS.

LETTERS TO THE EDITOR OF VHS-B

Due to the Indian summer we have been enjoying for the past several days, I decided to venture outside this morning (December 26, 1964) in search of a Christmas snake. Of course, I was not really expecting to find any. I hunted the causeway at Knott's Island, just south of the Virginia line, for one hour. I caught six Eastern Cottonmouths.

They were all out and several in the act of moving about. They resisted about as much as they would on any mid-summer day. These snakes measured from 2 feet to at least three and one half feet.

Actually the day was far from being ideal. It was extremely overcast and quite breezy. I realize this was not quite in the state -- but still I thought it would be of interest to VHS members.

While I am at it, I would also like to report that last May 27th, in Rockingham County, Virginia, I collected three Black Rat Snakes, two Eastern Garter Snakes, three Northern Ringneck Snakes and a Timber Rattlesnake (black phase) of fair size. The next day, in Augusta County, Va., I collected 11 Northern Ringneck Snakes. These were unusually large and several measured 18 to 19 inches. I might add that all were released, except for the Eastern Garter Snakes and the Timber Rattlesnake. Also, I observed a big Eastern Milk Snake, dead on the road (DOR) in Augusta County.

I find the special VHS bulletin of last fall extremely valuable. I certainly appreciate the work it must have taken to produce it.

Editor's Note: Gary M. Williamson sent the editor a copy of an item from the Virginian-Pilot, Norfolk, Va., December 27. It gave a few more details that may be interesting to readers. Also, Gary provided some observations of his own.

The Virginian-Pilot reported that Martin planned to take the Eastern Cottonmouths to the Department of Biology at Old Dominion College. It quoted Mr. Martin as saying: "The only snakes I ever caught at Christmastime were in Florida 1000 miles to the south!"

Gary Williamson suggests that Jim Martin may have made the latest catch of the year 1964. He notes the temperatures for the period:

December 24, 1964	68°F
" 25,	75°F
" 26,	70°F

On Friday, January 8, the temperature was 65 degrees (F) and on the next day (the day of the VHS NZP meeting) it was 70 degrees (F). Gary Williamson, David Jones, and Henry Ripley went to Back Bay to catch snakes. One Ribbon Snake was caught on a bank. It is suggested, and doubtless it is true, that this was the first snake to be caught in Virginia in 1965 --- and perhaps is the earliest record for such a capture. Would anyone care to comment? Opinions sought.

Write: Gary M. Williamson
411 - 53d Street
Virginia Beach, Va.

Letters for publication in the VHS Bulletin are eagerly sought. The editor has little sparetime, however, in which to handle the volume of correspondence in a direct personal acknowledgment

NATIONAL ZOOLOGICAL PARK MEETING ---- VHS' BIGGEST, SEVENTY-FIVE THERE!

The VHS National Zoological Park meeting, January 9, was a success.

Dr. James A. Peters, U.S. National Museum, Division of Amphibians and Reptiles, addressed the assemblage on "The Amphibians of Ecuador." The color slides of many frog species were an excellent contribution to the program. *Dr. Robert Lee Guillaudeu, VHS' medical adviser, presented a set of slides and tape recorded message on snake venoms, toxicology, snakebite first aid, and medical treatment. The slides and message were provided by WYETH LABORATORIES, INC., Marietta, Pa. Guest scientists participated in the ensuing discussions.

*Dr. William J. Riemer, Chairman, Catalogue Committee, American Soc. of Ichthyologists and Herpetologists (ASIH), spoke on the catalog (see separate item in this Bulletin).

Dr. *A. James Barton, National (NSF) Science Foundation, gave a brief talk on the Bog Turtle, (Clemmys muhlenbergi) with four color slide illustrations for identification.. He asked that VHS members keep on watch for the Bog Turtle in Va. He observed that it has been found in Maryland and in North Carolina but no locality record is known in Va.

Our host -- the National Zoological Park -- was represented by Dr. Ted H. Reed, Director of the NZP, who, despite a busy schedule, was on hand to greet the VHS members.. Mr. *Lee D. Schmeltz, Senior Keeper of Reptiles; Mr. *Lester Ratliff, Head Night Keeper, and Mr. *Mike Bishop of the Reptile House staff were introduced to the assemblage.

Contributing to the discussion was a guest of Dr. Peters, Dr. Aaron Taub, Department of Zoology, -- Pennsylvania State University. He cautioned members about careless and unnecessary handling of venomous snakes and expressed, without realizing it, the VHS policy --- "The best place for poisonous snakes is in the zoo." (VHS does not encourage members to keep venomous species at home or to handle them unnecessarily.) Mr. *Leslie Southall of Petersburg, Va. and Mr. *Richard E. Goetz, city government, Hampton, Va. were among members coming from localities a distance away.

Distinguished guests included: Mr. *Leonard A. Knapp, vice president of the Philadelphia Herpetological Society. Mr. Knapp is a biology instructor residing in Silverdale, Pennsylvania.. He was accompanied by PHS member Charles Boyer of Perkasie, Pa.

The meeting ended with a film on the biology of fishes, amphibians and reptiles, one of the biological sciences curriculum series of films for use at the high school level. The film was supplied by the American Institute of Biological Sciences through the courtesy of Dr. Robert R. Leisner. The projectors were loaned by the U.S. Atomic Energy Commission which was a co-sponsor of the AIBS film. Mr. *T. Darrell Drummond, Principal of Hillandale Elementary School, Silver Spring, Md., was the projectionist, as in past NZP-VHS meetings. Joe Tobey assisted.

*Robert J. Gagnon, Ellerson, Va., VHS regional chairman for the SE, introduced the officers of SEVHS.

SKELETONS LOOKING FIT AT SMITHSONIAN

The Smithsonian Institution has let the skeletons out of its closets and, quite contrary to the usual implication, the results reflect nothing but credit to the family tree (zoologically speaking).

For the last four years the public has had to get along without these only slightly grisly exhibits of anatomical structures of everything from tiny humming birds to gargantuan whales. Now they have emerged anew in an almost glamorous array on the second floor of the U.S. National Museum. The refurbished Hall of Osteology is no longer a clutter of large, dusty and dark museum cases that no one would care to look at twice. It is a well-laid-out series of carefully selected specimens, arranged in softly-lighted wallcases.

The backgrounds are vari-colored pastel shades, and each exhibit is clearly and interestingly-

Herman Schaden, The Evening Star,
Washington, D.C. January 29, 1965..

labeled. The new exhibits bring the specimens close to the viewer. The rest really did the apes, the horses, buffaloes, sharks, snakes and turtles good! They've such good color now, a light amber, and each bone has been tidily put in place by expert restorers.

Properly, the visitors are greeted at the door by a contingent of assorted apes and men. From there the exhibits are arranged artistically in rooms -- mammals, birds, reptiles and amphibians and fishes.

The hall is the cooperative enterprise of four museum divisions headed by David H. Johnson, mammals; Richard Zusi, birds; Stan Weitzman, fishes; and *Doris M. Cochran, reptiles and amphibians.

Back in the reptile department the convoluting serpents make lacy patterns, and the giant turtles catch the imagination with the sea stories they could tell.
