

AN INTEREST IN HERPETOLOGY -- A Foothold FOR SCIENCE EDUCATION

Two young boys hunting for shells along the banks of the James River, south of Hopewell, discovered some bones that had been exposed by a small landslide. Thinking the bones to be those of a dinosaur, the boys carried them by car to the Norfolk Museum for identification. Though not from a dinosaur the bones prove to be from 30 to 55 million years old! -- The story is not without parallel elsewhere. It is a tribute to the scientific curiosity of the young.

It is as normal for the young inquiring mind to have an active curiosity about living things including frogs, turtles, salamanders and snakes as in the working of a mechanical toy or an alarm clock. The exploring boy (or girl) sooner or later develops an interest in unusual animals. Often this opens the door to a broader interest in the natural sciences. The embryo scientist is curious about nature. It is vital that his curiosity be satisfied, not frustrated, and that his fascination with nature be encouraged.

With care, enthusiasms can be channeled and may become productive. The American Museum of Natural History announced recently that three teen-age boys, digging in an abandoned quarry in New Jersey, unearthed the fossil remains of a gliding reptile 175,000,000 years old --- older than any previously known to science. The announcement was made by Dr. Edwin H. Colbert, chairman of the Museum's department of vertebrate paleontology, under whose aegis the boys have been exploring the quarry on the Jersey shore of the Hudson River for several months.

"The world of the natural sciences may seem like a misty never-never land to most laymen, but it still needs to be understood," Dr. Willard F. Libby, University of California chemist who won the Nobel Prize for discovery of the radiocarbon method of dating ancient artifacts, firmly believes. Getting talented youngsters interested in the sciences, he says, must begin early. He believes that parents have a responsibility to encourage their young to enter the sciences if they show the slightest inclination and aptitude.

"The natural sciences," Dr. Leonard I. Schiff, head of Stanford University's physics department, said, "constitute an important part of our culture, on a par with literature, music, the fine arts, religion, philosophy and the social sciences." The cultural aspect of science derives from the fact that it presents us with an orderly, rational view of the natural world. This has important esthetic value. Order and unity are important esthetic elements that apply as well to a scientific concept as to an early Greek vase or a classical symphony. The concept is a triumph of the human mind over ignorance and superstition.

Man's ignorance leaves many frontiers to be explored by today's youth, according to Dr. Norman Hilberry, director of AEC's Argonne National Laboratory. He told science teachers and their students that the horizons of ignorance approach the infinite and lands of potential discovery will be limited only by the individual's own creative ability, depth of resolve, and native endurance. He cautioned students not to become disinterested through the mistaken belief that there is little left to discover.

FOOTHOLD FOR SCIENCE continued

There is plenty of interesting and exciting work to be done by the enthusiastic -- carefully supervised -- student, as well as by the well-trained scientist.

It is not obvious to the embryo scientist that he, as a young student, could make any contribution to knowledge. This is so despite the fact that very important and significant new data are needed to validate and substantiate present beliefs some of which are based on inadequate data.

Dr. Glenn T. Seaborg, AEC Chairman, addressing the National Science Teachers' Association late in March, reviewed the efforts underway to improve high school science curriculum. He noted that the biology course content committee, under the chairmanship of Dr. Glass of Johns Hopkins University, is trying to revitalize the laboratory aspects of biology teaching. Dr. Bentley Glass has stated that the key to training the student in the understanding of science as a reliable method of gaining objective knowledge lies in meaningful lab and field study which incorporates honest investigation of real problems. To administrators of school science this added emphasis on lab work presents a serious budgetary problem.

Virginia's herpetology offers a wide field of opportunity. Here, close at hand, is one of the least-explored outdoor laboratories east of the Mississippi River.

Knowledge of Virginia's reptiles and amphibians is by no means complete. The surface has barely been scratched. We have some vague ideas about range of certain species of amphibians and reptiles -- but largely untested.

Many a county in the central and southwestern portions of the state is, herpetologically speaking, a terra incognita. Opportunity abounds for taking the first scientific records of the occurrence of many species "believed to occur" or "expected" by educated guess. With no preserved specimens in the depository collections the range of numerous species in many localities has yet to be validated.

New locality records for Virginian reptiles and amphibians are being actively gathered to complete our knowledge of their distribution. For technical purposes, the only proof of the occurrence of an animal from a particular area is a specimen from there.

We hope that enthusiastic naturalists will be willing to contribute live and preserved specimens from precisely indicated localities. DEPOSITORIES for specimens are: The U.S. National Museum, Washington 25, D.C.; The National Zoological Park, Washington 9, D.C. The Norfolk Museum, Norfolk 10, Virginia; Virginia Polytechnic Institute, Blacksburg, Va.; and the Carnegie Museum, Pittsburgh 13, Penna.

FROM SWIMMING POOL TO THE WHITE HOUSE -- THE TALE OF A SALAMANDER

A Spotted Salamander (Ambystoma maculatum) reached the desk of the President of the United States on March 11. President John F. Kennedy was presented with the seven-inch salamander by his nephew, Robert F. Kennedy, Jr., age 7, the son of the U.S. Attorney General, during an official call at the White House. The Spotted Salamander was found in the swimming pool of the Attorney General's home in McLean, Virginia.

This is, perhaps, the first time that a lowly salamander got nationwide press and television time. Seen on television during a newscast, the amphibian was readily identifiable as a Spotted Salamander. The President recommended that the animal be returned to the swimming pool.

The salamander, correctly referred to as an "amphibian" in some papers was billed elsewhere as a "reptile" or a "lizard". Those who were aware of the difference were quick to write the local papers about it. A United Press International (wire service) reporter had been among several who called the salamander a "reptile." First graders of the Masonville School, Annandale, Virginia -- without prodding from VHS -- wrote a letter with the help of their teacher, Miss Shirley Lewis, setting the facts straight.

Hand-lettered on a sheet of paper 27 inches by 24 inches, they explained:

"Our class has been studying 'Animals with Backbones'. We have learned about reptiles and amphibians. We enjoyed the article in Sunday's paper about Robert F. Kennedy, Jr., visiting President Kennedy"
In the article you called the salamander a reptile. The salamander is in the Amphibian Class."

Sincerely,

Grade One Room 16
Masonville School, (Fairfax County)
Annandale, Virginia

NOTE: Had the seven-inch salamander been an Eastern Tiger Salamander (Ambystoma tigrinum) it would have been worthy of scientific reporting for the state of Virginia and the McLean locality. Tiger Salamanders, which unfortunately this was not, are believed to occur in the state but have not been preserved for record in a scientific collection from a precise locality within Virginia. An article on the Mole Salamander group, written especially for this issue of the VHS Bulletin by our President, W. Leslie Burger, appears on the next three pages:

A SPRING RESEARCH PROJECT FOR VIRGINIAN NATURALISTS :-

Object: Information on Mole Salamanders

A SPRING RESEARCH PROJECT OF JOE MILLER FOR VIRGINIAN NATURALISTS

Object: Information on Mole Salamanders
 by W. Leslie Burger
 President, VHS

During very early spring when many cold blooded animals are hibernating soundly mole salamanders (species of Ambystoma) reach a peak of activity. They emerge, migrate to ponds, and lay their eggs. Although warm rains are the stimulus, temperatures may dip toward freezing without harming the salamanders, eggs, or larvae. They are hardier than most biologists. Virginia naturalists, enterprising enough to brave the elements, may join in an interesting investigation and, if successful, gather valuable information.

The spring opportunity for studying most mole salamanders quickly passes. After migrating to ponds, adults join forces in community mating groups with the males attaching gelatinous receptacles of semen (spermatophores) to leaves and sticks in the pond bottom. The females find spermatophores and draw them into their cloacas. After these rather impersonal romances, the females lay the fertilized eggs. Each fertilized egg is a dark sphere, somewhat smaller than a B-B, in a pea-sized envelope of transparent jelly. Dozens of these egg envelopes are joined to form large egg masses. Eggs hatch into larvae which live in the ponds for several months. After metamorphosis, the young adults disappear into underground burrows. Hence, the name of this group.

MOLE SALAMANDERS OF VIRGINIA

Background: There is an appalling lack of precise information on the species of Ambystoma in Virginia. Five kinds of mole salamanders probably occur in the state but only three kinds are definitely recorded. Only the Marbled Salamander and the Spotted Salamander have been observed very often. The distribution of Jefferson's Salamander is limited and very poorly known. With such fragmentary information on hand, an excellent chance remains that the Tiger Salamander will be found in the eastern part of the state and that the Small-mouthed Salamander will turn up in the extreme western part of the state. Local naturalists, alert to the spring opportunity have the best opportunity to find and study them.

Habitat: Vernal ponds (shallow ponds that fill with water in the spring and dry up later) in or near woods are the preferred breeding habitats of the mole salamanders. Low parts of cultivated fields and roadside ditches are used as often as natural woodland ponds. Permanent ponds and lakes and flowing water are used less often, at least when vernal ponds are available.

(continued on next page)

A SPRING RESEARCH PROJECT continued

PROCEDURE: Likely situations should be methodically sampled as occasion permits. In areas with which the investigator is not familiar choruses of Spring Peepers or Chorus Frogs will often lead the way to suitable salamander breeding sites. The first non-freezing January or February rains bring out the first of the mole salamanders. Trying conditions (rain and cold) must usually be braved to see the actual breeding aggregations and collect adults of the Tiger, Small-mouth, and Jefferson's salamanders. However, eggs and spermatophores may be found during succeeding days. Although eggs may be identified larvae collected on a return trip are preferable for identification. Repeated methodical surveys through March, April, May and June are often productive for, although the eggs may be missed in the early spring, the larvae as they develop become more conspicuous.

FIELD NOTES: The place, date, time and essence of your observations should be recorded on the spot. If rain is wetting your field notebook, observations may be recorded immediately under cover of your car or at home. Your impressions, recorded the following day, week, or month are increasingly inaccurate. Distortions of a mellowed, long-memory play havoc with scientific accuracy.

PRESERVATION OF SPECIMEN: Field naturalists and connoisseurs of the living creature often prefer to preserve no sample of their subjects. Their ideals of humane regard for animals and of conservation are laudable, but, in their extreme such ideals can impede the advance of knowledge. I urge that the first adult and the first larvae found be preserved, and, if individuals are numerous, 3 or 4 of each stage be preserved, with data included inside the bottle.

Dilute formalin, made by adding 1 to 2 parts of commercial 40 percent formaldehyde to 8 parts of tap water, is good. For immature stages of amphibians, alcohol is not a satisfactory preservative.

The following summaries of the distribution of the Virginia species of *Ambystoma* will show where contributions may be made.

Ambystoma jeffersonianum (Green) Jefferson Salamander

Blue Ridge and Allegheny mountains, north of the New River. This salamander has been collected at scattered localities in the mountains and in one locality (Dead Run Swamp, Fairfax County) on the lower Piedmont. Although information on Virginia populations is scant, they apparently belong to this species.

Ambystoma maculatum (Shaw) Spotted Salamander

Statewide or very nearly so. Although moderately common in many areas, the Spotted Salamander may not occur in the vicinity of the Dismal Swamp.

A SPRING RESEARCH PROJECT continued

Ambystoma opacum (Gravenhorst) Marbled Salamander

Statewide. Adequate habitat may be absent in some parts of the Piedmont, but all major portions of the state are inhabited by Marbled Salamanders.

Ambystoma tigrinum tigrinum (Green) Tiger Salamander

No specific locality records in Virginia. The Tiger Salamander may occur in eastern Virginia but intensive collecting has failed to uncover it. The species occurs just 4 miles south of the North Carolina line and less than 10 miles north of the Potomac River in Maryland. Naturalists searching for the Tiger Salamander in Virginia will find much useful information in the following references:

Readers will find Conant's "FIELD GUIDE TO REPTILES AND AMPHIBIANS OF EASTERN NORTH AMERICA" (1958) the best identification aide; Bishop's "HANDBOOK" (1947) the best source of general information; and, Brimley's account of North Carolina herpetofauna (1939-1943) the most useful regional study. Among the most interesting recent investigations of mole salamanders are those of the Jefferson Salamander by Minton, (1954) and of the Tiger Salamander by Stine, Fowler and Simmons (1954).

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- Conant, Roger 1958 "A Field Guide to Reptiles and Amphibians of Eastern North America" Peterson Field Guide Boston, Mass., Houghton Mifflin
- Minton, Sherman A., Jr. 1954 Salamanders of the Ambystoma jeffersonianum Complex in Indiana. HERPETOLOGICA, vol. 10, pp 173-179, figures 1-2.
- Stine, Charles J., Jr., Fowler, James A., and Simmons, Robert S. 1954 Occurrence of the Eastern Tiger Salamander, Ambystoma tigrinum tigrinum (Green) in Maryland with notes on its life history. Annals of the Carnegie Museum, vol. 33, pp 145-148, pl 17-20.

WE HOPE TO SEE YOU IN NORFOLK ON SATURDAY, APRIL 29, AT 2:00 PM EST

WHY A VIRGINIA HERPETOLOGICAL SOCIETY ? In no other nearby state is there the natural variety of reptiles and amphibians to be found in Virginia. This is due to the size, location, and variety of climates -- or life zones -- to be found within our state boundaries. These factors combine to provide a great variety of habitats supporting an interestingly diversified herpetofauna.

Also, in no other neighboring state has the native herpetology been so little known, and unfortunately, so long neglected. Its many counties, river basins and highlands pose a staggering project for the individual herpetologist -- or a whole corps of them -- a project which will require the efforts of a sizable group over a long period.

The VIRGINIA HERPETOLOGICAL SOCIETY links the amateur herpetologist with the formally-trained herpetologist and other zoologists and biologists who share an interest in the lower vertebrates -- esp. the reptiles or amphibians of this and adjacent states.

Several individuals, working at different times and on different levels, have contributed to knowledge of Virginian reptiles and amphibians. Something was needed to bring together these scientists, able technicians, and enthusiastic laymen.

VHS was organized in March, 1958, to fill the need for an information collecting agency capable of cementing these diversified elements. The objectives, restated from the first bulletin, are: (1) Scientific study of the state's herpetofauna; (2) The qualitative improvement of recording of collecting data; (3) County surveys and exchange of verified information; (4) Broaden public understanding in the interest of conservation of herptiles; (5) Accurate news reporting; and, (6) Deposition of needed specimens in permanent scientific collections for scientific study and for educational purposes.

As we enter our fourth year as a Society we note that we have not realized the goals set, unless in part. Conservation activities are still badly needed. We have as yet only scratched the surface of improved public reporting of herpetological discovery and news.

VHS is non-profit. Our officers serve without pay. Dues are applied to reproduction of the bulletin and postage. All labor is donated.

With this issue of VHS-B the Society is endeavoring to reach those high school instructors in biology and science who have an interest in the reptiles and amphibians of the state and adjacent states. If you have such an interest let us know. If you have a student who has such an interest write us about him (or her).

Our aim is to collect and disseminate information on the state's reptiles and amphibians. Our bulletins are aimed at providing useful materials to the biology or science instructor for the benefit of interested students. We hope to attract at least one new member (or friend) at each secondary school -- instructor or student -- may we hear from you that you would like your name retained on our list ?

AN INVITATION TO MEMBERS AND FRIENDS
OF THE VIRGINIA HERPETOLOGICAL
SOCIETY

H.B. CALDWELL, DIRECTOR, and ROGER H. RAGEOT, CURATOR OF
NATURAL HISTORY, OF THE NORFOLK MUSEUM OF ARTS AND SCIENCES
HAVE EXTENDED AN INVITATION TO MEMBERS AND FRIENDS OF VHS
TO VISIT THE MUSEUM ON MUSEUM PLAZA IN NORFOLK, VIRGINIA

SATURDAY, APRIL 29, 1961 AT 2:00 P.M. E.S.T.

A TALK, SLIDES, AND A FILM ON THE DISMAL SWAMP WILL BE THE
MAIN FEATURE OF THE PROGRAM UNDER ROGER RAGEOT'S DIRECTION.

(FILM IS BY COURTESY OF THE VIRGINIA DEPARTMENT OF EDUCATION)

THE PLACE: MUSEUM PLAZA, NORFOLK, VIRGINIA
THE SATURDAY MEETING WILL BE FOLLOWED (FOR THOSE WHO CAN
STAY OVER) BY A FIELD TRIP ON SUNDAY -- DETAILS TO BE SET
FORTH AT THE SATURDAY MEETING, NORFOLK MUSEUM, NORFOLK, VA.

Chairman O.K. Goodwin, and Secretary F.J. Tobey will attend.

SEE YOU ON SATURDAY AFTERNOON, APRIL 29, AT NORFOLK, VA.