

NOTES ON PRESERVING SPECIMENS  
AND DEVELOPING COLLECTIONS:

by John Thornton Wood, M.D. VHS Pres.

One of the most encouraging arguments that developed during our '58 statewide meeting was a challenge by some of our naturalist members to our scientists to justify their killing and preservation of amphibians and reptiles. In the discussion the question of a humane attitude toward living creatures was raised. The issue of conservation of wildlife also was considered. I ask each member who wishes to preserve specimens to first weigh carefully his reasons for doing so. If each of us pauses to think first I believe that our sincere naturalist members will find little deserved criticism in our actions.

Scientifically useful collections of reptiles and amphibians from Va. are needed to answer many questions that can only be learned incompletely without specimens. ..WHAT is the growth-rate of larval two-lined salamanders? WHAT changes in diet occur with the season in newts? DO spotted salamanders deposit their eggs in single masses or series of masses? IS the snapping turtle (*Chelydra serpentina*) predator or scavenger -- beneficial to pond life, or destructive? WHAT herpetofauna are important in mosquito control -- if any? These questions and a myriad of others can only be answered fully and reliably from systematic study of appropriate collection of specimens.

Before starting a collection review your reasons for preserving the animals you are concerned with. If you have worked out a problem and are seeking a solution to it through your work with preserved specimens your herpetocidal activities are probably justified --- if your project is well planned, may contribute something to our knowledge of the species involved, and is not a duplication of another's efforts. Seek advice from the officers of the Society if you are in doubt about any of these points. We may not know the answers, but we'll try to steer you to a source that does.

If you are interested in preserving specimens simply as a "hobby", find out what areas are poorly represented in museum collections, and gather your series there. Then, when you are through with your finds they can be placed in a large collection where they are available to all who wish to work with them. Some species occur in tremendous abundance, are widespread in occurrence, and will never be depleted by collectors. Often these are the forms that are rare in collections, and the "rarities" are relatively abundant!

## PREPARATION:

The step of getting an animal into proper condition for preservation is called preparation. This involves selection of suitable specimens for the purposes of the collection. If, for example, you plan to study food habits of some species from stomach contents you would not preserve any animals not "fresh from the field" -- or the stomachs might be empty. Then, the animals must be killed in a way that is humane (causes as little suffering as possible) and that will leave the animal in a relaxed, flexible state. In the case of animals that respire through their skins this is easy; proper preparation of reptiles is more difficult. For amphibian preparation obtain from your druggist an ounce of CHLOROTONE. This is a moderately water-soluble anesthetic that can be used again and again. Put  $\frac{1}{2}$  teaspoon in a qt. of water, and after 2 hours strain through a cloth to remove undissolved crystals. The remaining fluid will anesthetize effectively as long as it lasts. Put salamanders in it for half an hour, and they will be relaxed, ready for arranging for "hardening."

(continued)

For reptiles, I suggest putting the animals into hibernation (via a freezer), and then inject a liberal quantity of chlorotone in the area of the heart. This will require a little study of anatomy from the manuals before first attempts are made. It is simple with most snakes and lizards because you can observe the ventral (under) side of most of them and note under which scale the heart is pulsating. Count down from the chin to this scale and record your number for that species -- and you have the cardiac area well limited. In the case of turtles, it is simply a matter of deep injection of much chlorotone for most workers, for it is hard to locate the heart without practice. (NOTE: If other members have better ways of anesthetizing reptiles please advise)

After anesthesia is complete the animal (amphibian) is arranged in a position suitable for study -- head, body, and tail in a straight line, limbs extended from sides, and toes separated. Then a few drops of commercial formaldehyde are dropped on it with a medicine dropper. (Get thorough instructions on handling this strong poison before attempting it.) After 20 minutes the salamander may be lifted with wooden or plastic tweezers and dropped into a vat of dilute formalin solution (1, one part formalin to 16, sixteen parts water.) In the reptiles the dilute formalin is injected into the body cavity since it will not pass effectively through the skin. For larger amphibians (large frogs, toads, or giant salamanders such as Congo eels and Hellbenders) injection into the body cavity is also necessary. Make it a rule to inject a stronger solution of formalin into all large muscle masses (dilution of formaldehyde to water, 1, one part formalin to 6, six parts of water). Along the trunk of the animal space points of injection about  $\frac{1}{2}$  to  $1\frac{1}{2}$  inches apart, and put a small amount of preservative in each site. If we are not more successful in avoiding "inflation" than the government has been, the collection that results will have lost much of its value. Avoid distortion of the shape of the animal. Don't crowd specimens into a few jars -- give them space, and cover them with preserving fluid. Large snakes should be coiled in gallon glass jars. Be sure to put a piece of strong plastic beneath the screw-on jar lids to keep the fumes of formaldehyde from eating away the lids, or causing excessive rusting.

**LABELING:** Without an adequate label your specimens are worthless as study material. Attached to each specimen by a short length of cord, the label lists two facts: (1) WHEN the specimen was caught, and then WHERE. Record the date, county, state and locality in soft pencil on waterproof cardboard. If none is available, pieces of manila file-folder will do, cut down to useful size. These two facts are all-important. Locality should be listed as a distance and direction from some location found on most road maps. For example: "2.3 mi. W. of Chester, Chesterfield County, Va. 10/18/58." Habitat data is also very helpful -- "found under decaying log in oak grove, etc." Your name, a collecting number and the identity of the specimen may be added if desired, but are not essential on a good label. (WARNING: Treat FORMALDEHYDE with the care it deserves -- it is a strong poison. Work out-of-doors so the fumes can easily escape. Keep hands out of it as much as possible. In pouring it from one container to another, pour slowly, don't splash!

Burkeville, Va. 5/'59/

John T. Wood (M.D.)

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EDITOR'S NOTE: The supplement to VHS Bulletin No. 4 (June, 1958) called attention to 18 rare herptiles likely to be found in Virginia marked \* and tentatively included in the list of Virginia Herptiles pending verification. Members and friends who would like a summer "project" might take a look around and come up with additional records on these

**BEST-OF-MONTH (APRIL) FIND GOES TO SOCIETY CO-FOUNDER WITT NOW OVERSEAS**

The Scarlet King Snake (mentioned on last page of Bulletin No. 10) has been identified as an intergrade (Lampropeltis d. doliata x temporalis). The specimen was captured by VHS Co-founder William L. Witt and is said to be a new county record for Charles City county, Virginia. It is the second such specimen to be taken on the James Peninsula. Bill Witt, now on Okinawa with the US Air FORCE captured the Scarlet King Snake while out log-rolling with Les Burger, Faculty member of the College of William and Mary, and president-elect of the society. The identification was made formally, and announced to Bill Witt by Dr. Roger Conant of the Philadelphia Zoological Society. Dr. Conant is widely known for his study of the Milk Snakes of the Coastal Plain and the Scarlet King Snakes. He has come to the attention of many amateur herpetologists through the latest addition to the PETERSON FIELD GUIDE SERIES (# 12) "A FIELD GUIDE TO REPTILES and AMPHIBIANS" \$3.50 Houghton Mifflin Co.

**DOCUMENT YOUR RECORDS WITH PRESERVED SPECIMENS PLACED IN A DEPOSITORY:**

Specimens should be deposited, properly preserved (see leading feature) in a permanent collection. There is a depository in the three main Virginia regions. (Northeast) U.S. National Museum, Dep't of Amphibians and Reptiles, Dr. Doris M. Cochran, 10th & Constitution, NW, Washington, D.C. (Southeast) College of William & Mary, Biology Department, Washington Hall, W. Leslie Burger, Williamsburg, Virginia. And, (Southwest) Virginia Polytechnic Institute (VPI), Department of Biology, Dr. R. D. Ross, Associate Professor of Zoology, Blacksburg, Va. (Dr. Robert E. Ross notes that VPI will keep specimens that are sent in good condition with good field notes.)

**LOG ROLLERS' ROUND-UP** -- We're waiting for a report on how many VHS members "showed" at the Robert E. Lee Council's SCOUT-O-RAMA on May 23, --we hope, if you were able, you gave this event your support in co-operation with Robert J. Gagnon of Ellerson, Va. \* \* \* \* The nearness of the Society's new membership roster makes it impractical to list new members since the last bulletin, there have been several renewals. Notable among the new members was Dr. Robert H. \*McCauley, Jr. (Sf) of the National Institutes of Health, Bethesda, Maryland and author of an excellent guide to the "Reptiles of Maryland and the District of Columbia." We are delighted to have Dr. McCauley with our growing Maryland section of the Society. \* \* \* \* **NEW SOCIETY ROSTER COMING IN JULY!** \*

Dr. R. D. Ross, VPI, observes in a letter to your society president: "Poverty Hollow Pond (just west of Rt.#460, between Brush and Gap mountains, about 3 mi. northwest of Blacksburg, Montgomery County, Va. is a good place to locate Wood Frog (Rana sylvatica) egg masses, green with Oophilus, the mutualistic green algae of amphibians. As is well known, this alga is very common with Ambystoma salamanders. It is not uncommon with the Wood Frog, but cases are perhaps less common?" RDR \* \* \* \* After a full Saturday's hunt in the mountains around Dr. P.H. Knipling's mountain retreat, several biology instructors returned empty-handed. The next day, a Timber Rattler "turned itself in" at the front step of the Knipling ranch. It came up the path to within a few yards of a high-school student who was whittling on the step. With presence of mind said student turned a barrel upside down over (Crotalus h. horridus) and not long afterward was "in the bag". He (The rattler) is now on exhibit at the Wakefield High School, Arlington, Va., courtesy of member George Taylor, (F), biology instructor at Wakefield. \* \* \* A former student of Mr. Taylor's, Allan G. Dillon, a VHS student member

OVERSEAS NEWS - A note from a research malacologist ("that branch of zoology dealing with mollusks") "but a herpetologist at heart" writes: (from Liberia, West Africa.)-- "Today I bought a hatchling "boney striker" (Python sebae) from a Liberian -- very neat, but the price was exorbitant ( 2 dollah ...he asked for fi' dollah). Boney striker is the obvious corruption of the common name of the New World Boa Constrictor. The Americo-Liberians who founded this republic (Liberia) brought over common names of American animals and applied them to African animals-- e.g., "possum" is used on a giant bush rat; "deer" are several kinds of antelope; "raccoons" are civet cats; "armadillos" are pangolins. Cobras are called "blacksnakes" and of course, let's not forget the "boney striker." Two weeks ago a native killed a 6'4" cobra about 1/4 mile from my room and brought it to me. I identified it as (Naja melanoleuca). The Gaboon Viper ("Cassava Snake") (Bitis gabonica) is said to be common and often approaches 6' in length; the Rhinoceros Viper (Bitis nasicornis) and Green Mamba (Dendraspis viridis) also occur." (note from JTW)

\* \* \* From Bill Witt, USAF, on Okinawa, The Ryukyus, in the Pacific, on May 11th, wrote: "I have been on Okinawa one week; have seen 3 herps-- 1)gecko, 2) lacerta (?), and 3) a frog (Rana (sp.?) -- none kept. The "Habu" (Trimeresurus f. flaviviridis) and (T. okinawensis) are out and have killed three persons in our area thus far ... It would seem to be as common as Matrix, Thamnophis and Storeria combined. Temperature, 70° at night to 80° at 3:00 P.M. Humidity 75 to 95%. Almost always cloudy except at night." WLW requests his bulletins be sent AIR MAIL! \* \* \* \*

Dr. Ernest P. Walker, Washington, D.C. wrote some time ago saying he's sent our VHS bulletins to a young lady in Japan who may have friends who are interested in herpetology. Suggested corresponding & exchange. Dr. E.P. Walker is engaged in a research project "Genera of Recent Mammals of the World" a project sponsored by the N.Y. Zoological Society.

\* \* \* \* M. (Jack) DePrato, senior keeper at the National Zoo's Reptile House, confirms the fact that exotic turtles may be found in Md.-D.C.-Va. area pet shops. The Japanese Water Terrepin (Geoclemmys reevsi), Philippine Box Turtle ("Kura Kura") (Cuora amboinensis) may be a rare find. One has lived at the National Zoo for years. \* \* \* \* A letter from Friedrich Pözl, Radbruch, Landkreis Harburg, Germany requests the names and addresses of Virginians (and out-of-state friends) who will exchange reptiles or amphibians actively. He is a member of virtually all of the American societies (N.Y., Pa., etc.) He is an importer for the German Herpetological Society "SALAMANDER". He is interested in Newts and Salamanders - a 50-year hobby, veteran (wounded) in World War I, -- he would correspond in advance of any shipment, purchase, or exchanges. It is the editor's belief that Herr Friedrich Pözl would like to have a marked copy of our membership roster (out in July) with names of those who are interested in bona fide export-import marked in a distinct way. If this idea appeals to you write the editor or write Herr Pözl. His town is in the Allied Occupied Zone just across the Elbe river from Hamburg, 50 miles from Hamburg and 20 miles from Lüneburg. (Ed's note: About the only import-export type herp known to me is Douglas Landwehr of Tulane University, New Orleans, Louisiana, U.S.A. who worked at the National Zoo last summer. We hope Doug will return to Washington this year for that visit we tried to arrange last year - job-shift prevented the get-together. FT)

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Virginia (and Maryland) field notes for mention in next bulletin should be accompanied by county. An accumulation of members' stateside observations will be contained in next issue. Foreign notes will be infrequent - spasmodic. But, we carry them on this page knowing some are interested and will want to make good contacts overseas, . . . . .

Next VHS bulletin will be out early in July, carrying June notes, etc.