

How-To-Do-It

Using Taxidermy as a Science Motivator

June W. Pimm

Teachers are always seeking ways of encouraging their students to explore the many areas of science. To incite more interest, we have used field trips to local natural history museums, zoos or just around the school campus. We ask our students to observe their pets and we courageously engage in maintaining a menagerie in an accessible corner of the room. In spite of volunteer help from well-meaning students, the ultimate responsibility for such animals' welfare rests with the teacher. During holidays when the campus is closed, special arrangements must be made. Even with all of these problems, few of us would choose to give up these experiences for our students.

How about another possibility? Mounted animals. They can add another dimension to such areas as ecology, mammalogy, ornithology, behavior or genetics. The materials for such projects are relatively inexpensive and easily acquired if you wish to mount the animals yourself or have your students do them under your supervision. If properly prepared, such animals can be used for many years. Since most mounted animals elicit a touch response from students unfamiliar with them, museum quality is something to be strived for but not necessary. Even poorly prepared specimens are more interesting than specimens in jars of liquid preservative. Once prepared, mounted animals require little maintenance. Even such usually odoriferous captive animals such as a crayfish, can easily be mounted displaying protective coloration or defensive postures. Involving students in these worthwhile projects can be challenging and rewarding to them, as well as producing tangible contributions for the classroom to enhance learning by future science students.

Areas of Science That Could Benefit

As every enthusiastic science student knows, the more models and science related equipment that are available to explain principles, the more one enjoys the subject. It is usually not possible for the school to purchase all of the materials that any one teacher might want to use to enhance a program. Some are not essential even though they add flavor. Such is the status of mounted animals. By investing a small amount of time, one can portray a variety of biological principles at both the junior and senior high levels.

What better way is there to introduce special adaptations in animals than to have a single mounted beaver displaying the split grooming claw, the patagium of a flying squirrel or the special filtering beak of a shoveler duck for feeding on aquatic vegetation? Capturing the action of a rattlesnake ready to strike or a spraying skunk is easy to accomplish with a single specimen. One can activate a genetics discussion of mutations with a leucinistic phase pheasant or a hybrid fish.

Ecological principles have been the central theme of museum exhibits for the last quarter century. Such exhibit techniques could be used equally well to bring excitement into the classroom in miniature form. Burrows, dens or underwater settings can be built with styrofoam to provide backdrop for predator-prey exhibits. Game laws and an appreciation of wildlife can be exemplified using mounted mammals in different seasons.

Behavioral studies often depend on observations made by students of their domestic pets or animals in a local zoo. Some students do not have



domestic animals and a zoo or museum may not be accessible. However, classroom displays showing a submissive or aggressive coyote head with ears laid back and with snarling lips, a prairie chicken during courtship with extended pouches, or a fish with fins extended in territorial display can help a student appreciate the subject. The finished mount, while useful to the biological program, is not limited to it. The mount could also be used to trigger a chemistry discussion. That primary question, "How is it preserved?" is one that can be a springboard to more involved discussion. Practical questions such as, "What reactions occur during the preservation of a skin?" or "Why were the earlier preservatives harmful to their users?" are just two. A comparison of modern methods and slight alterations of various techniques to obtain a constant pH and a better tan could prompt a Science Project.

Who Does the Work?

Who has the time to invest in such a project as this when there are already so many demands on teachers? These projects can be excellent group projects for hobby clubs or art and sculpture classes. They would also make good independent study projects or summer vacation activities. At one junior high where I was teaching, we had special interest clubs which met once a month. The Taxidermy Club, which I sponsored, was a huge success and had to turn away students for lack of working space.

The time it takes to complete a project depends on the complexity of

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the display, the number and kind of animals it contains and the level of expertise you have attained as a taxidermist. Finishing animals, such as higher mammals that communicate with diverse facial expressions, is sure to take considerable time and would not likely be attempted by a beginner. Simpler animals, for example rodents with little expression or invertebrates, can be quickly done with complete success. If you are making a single animal display, the time for completing the animal, including building the form for a bird or kangaroo rat, can be several hours or less. With each animal you mount, the time is considerably reduced while the quality is improved.

Where Do I Obtain My Supplies?

When you first consider these activities, it is well worth the effort to write for a few good supply catalogs to see what kind of supplies are available. Some addresses of suppliers are provided at the end of this article. However, local craft shops, taxidermists and grocery stores probably can supply all of your needs. Small gauge wire, eyes and excelsior can be found at local craft shops, whereas most grocery stores carry common borax. Borax is probably the best and least harmful dry preservative for use by the beginning student.

There is usually a bountiful supply of plants and animals available if one is alert to the possibilities. Some teenage hunters or fishermen are happy to donate specimens or eager to practice on their own specimens if a reasonable amount of instructional help is available. Other sources of game may be from local hunt clubs or game farms. If there are no such sources, one can check out the advertisement section in the local newspaper or hunting magazines such as *Field and Stream*, *Outdoor Life* or the journals published by NRA. In addition, one should not overlook recent road-killed specimens or the possibility of local trappers. A last resort may be to borrow traps and trap your own. Be aware of what animals may be taken legally. If in question, be sure to contact the local Fish and Game Department for permits and information on hunting seasons and protected species.

How Do you Prepare the Specimen?

There are several excellent books

available for the taxidermist, from the amateur to the seasoned professional. Migadelski (1981) has one of the best, most thorough, yet practical books available on fish taxidermy. In addition to the traditional method, he includes casting techniques and the most popular freeze-dry method. Phillips and Phillips have incorporated fish preparation techniques into their 1983 supply catalog. They have also included methods of assembling a variety of habitats. Books on mounting large animals or fish also are offered through their catalog.

Another timely, yet economical instructional guide for mounting small animals, birds and game heads is a series of lessons published by Touchstone and Touchstone (1968). An authoritative three-volume work which encompasses the major areas of small mammals, birds and game heads is offered through Jonas Brothers, Inc. Joe Kish's treatment of birds in Volume 1 is especially practical because he not only explains the methods in detail but gives a series of pictures critiquing finished products (Kish 1976). The remaining two volumes are probably too advanced for the amateur taxidermist.

An older, yet well written and easily understood instrument for general taxidermy for the beginning student is the self-taught method offered by Northwestern School of Taxidermy (Elwood 1969). The school advertised in *Boys Life* for many years, which is indicative of the level on which it is written. Another good, inexpensive book for beginners that includes a variety of techniques for both vertebrates and invertebrates is *Taxidermy* (Pray 1970). It was first published in 1943 and is now in the 25th printing.

What is a Possible Timetable?

One may choose to prepare a mount over several days instead of all at one session. A suggested time schedule for preparing a ground squirrel or other small mammal might be as follows for a 20-minute homeroom or a before-school exercise. Step 1: Measure, skin, add preservative and re-freeze the skin and skull. Step 2: Demonstrate building the form with wire and excelsior. Step 3: Clean the skull and set the eyes in paper mache. Step 4: Mount the animal. Step 5: Complete the finishing touches such as paint around the eyes, shellac the nose and around the eyes to give a wet appearance. See that it is in the proper position for placement into a small setting. Step 6: Set it aside for a week or so to dry. Make periodic checks to see that

the animal does not distort while it is drying. If it does, make corrections as the changes occur. During this time one may want to give some attention to preparing some vegetation for use in a setting. Step 7: The mammal is now dry and the final touch-up is necessary. Removing any traces of preservative, repainting any places on the nose etc. that might have distorted while drying, and final placement in the setting can now be completed.

Perhaps one would want to add relevant local vegetation to the exhibit. If so, the vegetation should be collected early in the fall just after the first frost. If collected then, it will retain more of its color, require less touch-up and is least likely to be wind damaged.

These plants can be put aside indefinitely to be used at a later date. Materials collected during the summer and dried can be air-brushed to the original colors. These should be suspended upside down and left to dry for a few days to a few weeks, depending on the amount of water they contain. Some experimentation in this field with desiccants such as silica gel has been successful (Argyle 1972), and cacti supposedly preserve well after freeze-drying. Locally collected mushrooms can be added to an exhibit if one is willing to use a paraffin-embedding technique or other such method (Richter 1985).

I have attempted to show several ways that mounted animals can be used to interest students in science. I do not propose inserting taxidermy into the curriculum as a replacement of any major areas covered in biology, but rather to enhance the existing areas. It does, however, generate interest among students and can have a beneficial effect on future science students when the room is made more exciting. My own fascination with preserved specimens caused me to experiment with formalin as a student in high school. When I found a mole for the first time, I was intrigued with the beauty of its fur. I took it home, eviscerated it, stuffed in some cotton, sewed it up and put the entire specimen in formalin. After a week, I took it out and took it to school. I still remember the thrill of showing it off to fellow classmates who had never seen a mole before. Of course, the nose shrank and turned black, but that did not distract from the usefulness of showing those specialized digging claws and the vestigial eyes that I wanted to demonstrate when I was teaching 6 years later. Likewise, my first birds were also very crude. I had

used large-headed pins for eyes and injected alcohol to get a pair of flying and nesting birds for a part of a science project. Even when the color faded, the heavy, seed-eating beak and feather patterns could still be distinguished. I mounted several more animals for my students before I found and studied a self-help taxidermy guide. At the heart of any science program is experimentation; go for it!

Suppliers

Archie and Bubba Phillips Taxidermy Supplies
200 52nd Street
Fairfield, Alabama 35064
Phone: (205) 787-6902

Dan Chase Taxidermy Supply Co., Inc.
Route 2, Box 317A
Baker, Louisiana 70714
Phone: (504) 216-3795

Touchstone Taxidermy Supply Co., Inc.
5011 E. Texas
Bossier City, Louisiana 71111
Phone: (318) 746-5792

Van Dyke's
Woonsocket, South Dakota 57385
Phone: (800) 843-3320

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