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COLLECTING REPTILES AND AMPHIBIANS FOR CLASSROOM USE

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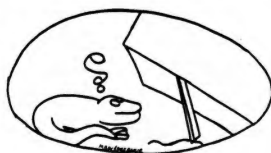
The advantages of living organisms in the classroom are well known to biology and elementary teachers. Live animals and plants spark interest, provide color and movement, can be used as teaching materials, and can generally improve the classroom environment. Organisms commonly found in classrooms include plants from the genera *Coleus*, *Dracena*, *Philodendron*, and many others, and animals which are often small mammals or perhaps tropical fish. Seldom does one find more primitive vascular or non-vascular plants, invertebrate animals, reptiles or amphibians. It has been my experience that these organisms have much to add to the classroom and should not be ignored or discounted.

As classroom "pets" reptiles and amphibians have certain advantages over the more traditional mammals. With their low metabolic rates they require much less food and care than do mammals. They can be ignored for a long weekend or even a week's vacation without worry. They are quiet, nearly odor free, if properly maintained, and can be confined in small cages or aquaria. Teachers will find that their students take to the reptiles and amphibians as they do to mammals, and finding student caretakers will be no problem. Having reptiles and amphibians in the classroom on a day-to-day basis also will help break down the learned aversion that some students have toward these animals and will provide important lessons in ecological relationships.

Once one has decided to add some herpetological specimens to the classroom fauna, the problem arises as to source of supply. Three or four choices present themselves. One may wish to visit local pet stores where often may be found African underwater frogs (*Hymenochirus* sp.), African clawed frogs (*Xenopus* sp.), box turtles (*Terrapene* sp.), red-eared and painted turtles (*Chrysemys* sp.), Carolina anoles (*Anolis* sp.), newts (*Taricha* sp.), and occasionally salamanders, snakes, and lizards. These animals frequently cost three dollars or more each, may be diseased and are often in a poor nutritional state. These same species ordered from a biological supply house may be in better condition (and guaranteed) but usually will be more expensive, and their arrival is influenced by weather conditions and the whims of the delivery service.

Another source of reptiles and amphibians is students. Science teachers know that on any day, at any time, a student is likely to walk through the door with something caught at the lake last weekend or found under the garbage can last night. Animals commonly found this way include salamanders, frogs, toads, and some of the more common and more urban snakes. If the student has been careful, the animal is usually in pretty good condition and may be kept successfully, providing a suitable home is devised for it.

Probably the best way to acquire reptiles and amphibians for your classroom is to go out and collect them yourself. By doing this the animals can be obtained when wanted and in the numbers and condition required. The collector can benefit from the field experience as students benefit from what is collected. Although collecting is an inexpensive and very appealing way to obtain specimens, one should always remember to take only what is needed, to ask permission to collect on private property, and to check the legal status of any animal before it is collected. "Herps" on the endangered or threatened species lists can not be collected.



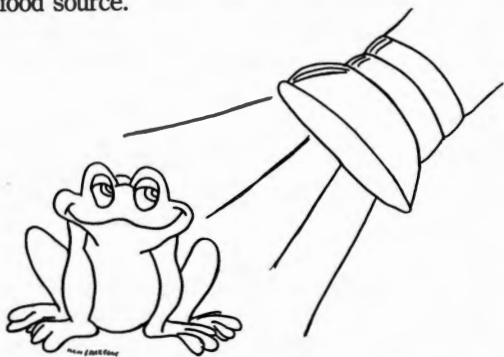
Collecting reptiles and amphibians is different from collecting small mammals or other animals. They cannot be snap-trapped, coaxed into drop traps with bait, or in most cases captured by pit-fall traps. Ropes, wires, nooses, and commercially available traps aren't much help. There are other problems in "herpin'", too. Snapping turtles and poisonous snakes add to the "dangers" of poison ivy, mosquitoes, and twisted ankles. Successful "herpin'" depends upon knowing the behavior of the target animals and then going where and when they are expected. To collect reptiles and amphibians, go where they are. This is not intended as a flippant remark. "Herps" do not wander much, and their behavior is strongly weather related and predictable. One has to have some knowledge of their habits or an enormous amount of luck.

An important piece of equipment to have when looking for reptiles and amphibians is a field guide. Good field guides (Conant, 1975; Behler, 1979; Collins, 1981; Wernert, 1982) contain the information on behavior necessary for a beginner to have success, as well as the facts needed to identify the organism. Comfortable and drip-dry shoes, a few cloth and plastic bags, a flashlight, and a pair of leather gloves are also needed. A five-gallon bucket, a cooler, and a dip net may come in handy.

If frogs are one's quarry, one needs to find water: falling, standing, or running. Spring is the best time. With much creeping and lunging, frogs can be collected by day using a net or just hands. Frogs, though, have excellent eyesight and don't like animate objects five hundred times their size creeping up and diving at them. Their bug-catching quickness can make one look rather foolish. Another method is to dip net the larvae (tadpoles) of the frogs and raise them in the classroom. This has some obvious advantages for the students' education, and works fine for most native species of frogs and toads.

Algae and other plant material (e.g. lettuce) are often used for food and Tetra Min fish food provides an excellent diet. The biggest problem comes in getting the newly metamorphosed frog to eat some type of suitable food so that it will

grow and thrive. Vestigial wing fruit flies used for genetic studies are one good food source.



A proven and highly successful time to capture all species of frogs and most toads is at night. Use the frog's call to locate it or simply search the edge of a pond or stream with a flashlight. When a desired animal is located, hold the flashlight out in front and point it directly at the frog. The frog will sit bewildered in this bright spot

while one gets close enough to simply reach over the light and grab.

Salamanders, particularly of the genus *Ambystoma*, make ideal classroom pets. They require very little care, are long lived, thrive at low or fluctuating temperatures, and can be handled by students. They also have a number of interesting behaviors suitable for study. Salamanders are fairly common throughout rural and some urban areas, but if sought at the wrong time, they are almost impossible to find. Wandering through the woods turning logs is not likely to be a very successful salamander hunting strategy. Some herpetologists set up a fabric or wire drift fence that funnels foraging salamanders into a pit-fall trap, but this method requires much know-how and plenty of set up time. Even so, I have seen hundreds of yards of drift fences produce nothing but a couple of crawdads and a few beetles. A good time to collect salamanders is on a warm fall night when a light rain is falling.

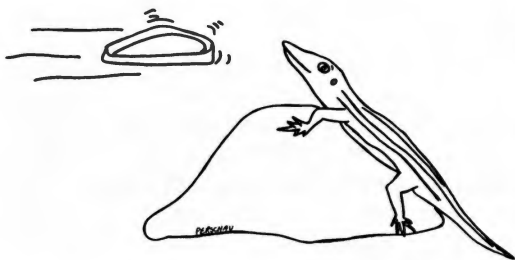


On such a night the salamanders will be out moving around and available for the taking. I have seen thousands of salamanders on the blacktop or highway within a few miles of large towns. Larvae of salamanders can be collected in May or June from ponds by using a dip net and flashlight at night.



Larval tiger salamanders can be kept in gallon jars, plastic shoe boxes or aquaria. Some teachers prefer to use an aeriated ten-gallon aquarium, but this has often been proven to be unnecessary. The larvae will eat large flake Tetra Min, earthworms, tubifex worms, brine shrimp or even white fish or chicken which has been frozen. One must always remember to use aged or dechlorinated water.

Native lizards, while more difficult to keep than amphibians or snakes, can provide excellent learning opportunities for students. Prior research is essential to finding lizards. Once found, the lizards cannot be collected easily by hand in the heat of the day because they are too quick, too wild, and all too willing to shed their tails. The best time to collect lizards is on a cool and cloudy morning. They will be found hiding stiffly under rocks and debris waiting for the sun, and can



safely and easily be collected by hand. Wear gloves. A herpetology professor once told me of collecting lizards by shooting them with large rubberbands. This is supposed to roll and stun them long enough for one to grab them. I have never used this method and would love to see it done.

Most knowledgeable people do not recommend keeping aquatic turtles in a classroom. These turtles are known to transmit *Salmonella* and are very messy. In addition, they are difficult to maintain in good health for more than a month or so. Box turtles (*Terrapene* sp.) are a much better choice for the classroom. Box turtles can be collected in the wild, but they are not common in Iowa. Pet stores or biological supply houses are probably better sources.

There are several methods of collecting snakes. The wander-about-in-the-park-and-hope method occasionally will yield a specimen, but it can lead one to believe that all of the snakes have been extirpated from the area. Driving about in the spring or fall on warm nights can be fruitful if one already has a fair idea of where the species sought can be found. The best way is to use snake traps.

No, a snake trap does not have ropes, wires, pits, nooses, jaws, or any of that sort of equipment. Instead, a snake trap is any flat object that is lying on the ground particularly if it is inclined to the south or west. Except in the heat-of-the-day in warm seasons, snakes of all species seem drawn to such objects by their thermal properties, and the snakes can be caught simply by lifting the trap, identifying, and grabbing. Road signs, appliance cartons, boards, car hoods and other rubbish will suffice for traps but better than these are limestone rocks or roofing tin. A true herpetologist never would pass by such a snake trap without lifting it to look underneath. In poisonous snake territory (the field guide will explain) stand to one side of the snake trap, reach across to the opposite edge, (preferably with a snake hook) and lift by pulling it toward you. This reduces the

risk of a poisonous snake attacking while you try to identify it. If one is interested in collecting poisonous snakes, one should wear heavy boots, thick gloves, long pants, carry a snake hook, snake bite kit, and first aid kit. Don't go alone. Check with the local hospital first, and then wait until *January* to go out!

The very best snake collecting spots are areas of exposed limestone such as road cuts and old quarries, and places where an old farm building's tin roof has blown off and been abandoned for a while. Experienced herpers rarely reveal their best spots to anyone else. Just get out in the country and drive or wander a bit.



Although a wide range of native and exotic reptiles and amphibians can be used in the classroom, the following are proven native keepers: snakes — foxsnake (*Elaphe vulpina*), milksnakes and kingsnakes (*Lampropeltis* spp.); salamanders and newts — tiger and spotted salamanders (*Ambystoma* spp.), woodland salamanders (*Plethodon* spp.), California and redbelly newts (*Taricha* spp.); frogs and toads — tree frogs (*Hyla* spp.), true frogs (*Rana* spp.), toads (*Bufo* spp.); turtles — box turtles (*Terrapene* spp.), small snapping turtles (*Chelydra*); lizards— skinks (*Eumeces* spp.).

Be certain that you check the local laws pertaining to the collecting of threatened and endangered species.

Reptiles and amphibians have many advantages over other traditional classroom pets. In addition to providing an important field experience, they can be the source of new and exciting learning situations in behavior and ecology for students. All biology classrooms should have some of these animals.

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