

# How to catch and take blood from birds and lizards

## Birds

Catching birds and taking a blood sample requires permits in the USA and most other countries. Special skills are required, and are only learned by apprenticing with a veterinarian or experienced field ornithologist. We use mist-nets to catch flying birds and potter traps (a funnel trap) for birds foraging on the ground.

Blood is taken from the brachial vein. The underside of the wing is held still, and a moist Q-tip is used to spread open the feathers to reveal the white vein. A sterile syringe needle is used to puncture the vein (usually a 28 gauge), entering laterally (thus at about the same plane as the vein itself). A drop of blood quickly forms and is taken up with a heparin-treated capillary tube. A piece of cotton is pressed gently to the wound to stop bleeding and the wing placed back against the body. The capillary tube then can be used to make a blood smear and dried blood dots on filter paper. The smallest wound should be made to insure that bleeding stops very quickly. Only 1/3 to 1/2 capillary tube of blood should be taken.

Syringe needles are on 1 cc Insulin syringes (which provide a good handle for the needle) from Becton Dickinson (#309309). Capillary tubes are heparinized micro-hematocrit capillary tubes from Fisher (22-362-566). [Some workers report that heparin reduces the efficiency of PCR, but the molecule must be either destroyed or removed, or both, by the extraction method we use, and we have not had any obvious problems using these tubes.] The syringe needles are used once before being autoclaved. After a few uses, the needle become blunt (not obvious to the eye!) and can damage the vein, so we discard the needles after a few uses.

Birds in the field are released as soon as they are processed (species ID, sexed, measured, banded, etc.). Recaptures (sometimes within an hour!) indicate that the vein puncture stops bleeding and heals quickly. For companion birds which may be returned to their humans, it would be best to wait some period of time, then wash off the dried blood with a wet Q-tip for cosmetic reasons.

# Lizards

Lizards can be caught by hand, such as *Anolis* on tree trunks or skinks in the leaf litter. However, in most cases a noose on the end of a fishing pole is the best strategy. We use a telescoping pole made for backpackers. These are difficult to find, so when seen in a sporting goods store, we buy a bunch. These poles should cost less than \$20 each.

We use tri-filament fishing line, either 36 or 45 pound (the line is used for various purposes understood only by fisherpersons, such as Ice Fishing [a bizarre practice common in Vermont] or Squidding Line [what is that?]). Mono-filament line is more commonly used by herpetologists, but the noose tends to open on its own (releasing the lizard) and also tends to cut into the skin of soft lizards such as *Anolis*. Making a noose is easy, but not exactly intuitive. The pictures given on the website show the method. We carry extra nooses into the field, but sometimes a single noose can be used for months.

It is very rare for a lizard to be hurt by noosing, but it is important to take an animal off the noose as quickly as possible. If the lizard has spun around, allow it to spin back (or spin the pole) so that the line does not get twisted (taking a lizard off before allowing it to spin back will often ruin a noose).

Take a lizard off by simply pulling on the “handle” which opens the noose.

We use home-made lizard bags to store animals until processing in the evening and releasing the next morning. For *Anolis* we use organza that is available in most fabric shops (it is enjoyable getting odd looks when buying a large quantity of this material for a mysterious purpose). For *Sceloporus* and *Cnemidophorus* and other tougher lizards, we use cotton sheets (flat kind) which are very cheap in discount stores as the base material. When in use, the sewn edges should be on the outside of the bag so lizards do not get tangled in loose threads. In the field, bags containing lizards are closed with a knot and hooked over the belt. A tray of bags full of *Anolis* can be seen being held by Andrew Wargo on the Undergraduate Projects section of the website.

Choice of site for drawing blood from a lizard will vary. Companion or zoo lizards cannot be marked in any way by the procedure (no toe or tail clips!). Some workers do a heart tap with a syringe needle pushed into the body through the ventral surface. We never do this because of fear of injuring the lizard. A needle stick under the base of the tail will sometimes work, or a stick under the toe of lizards with fleshy toes such as *Cnemidophorus*. For chameleons we have used a needle stick at the “heel” of the foot.

For field studies, blood is easily taken from a lizard by a toe clip. *Anolis* and *Sceloporus* have non-fleshy toes and heal very quickly. Other lizards such as geckos and *Cnemidophorus* have fleshy toes that can become infected easily, so we tend to use a tail tip clip for these lizards. The best toe to clip is one of the outside ones, and best on the hind foot. Cut about 1/2 of the toe, then wait a few seconds and gently stroke the leg. Drops of blood should come very quickly. One of the mysteries of life is why lizards bleed easily for some people and refuse to bleed for others.

After the smear and dried blood dots are made, simply press against the toe with a kim-wipe or other such soft paper to stop the bleeding...even without this pressure, bleeding tends to stop quickly. For mark-recapture studies, the same toe can be clipped, but only about 0.5 mm needs to be removed. From our mark-recapture experience over many years, lizards do not suffer mortality from removal of toes. In fact, lizards are often caught that are naturally missing toes or even an entire foot.