TECHNIQUES

AN ALTERNATIVE METHOD OF COLLECTING BLOOD FROM SMALL BIRDS FOR BLOOD SMEARS

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In birds, blood is usually sampled from the brachial vein (Bennett 1970), situated under the wing. This normally involves a procedure in which the bird is held on a table with one hand, while the other hand is used to open the wing. A third hand then moves the underwing coverts out of the way to make the vein more visible while a fourth hand is needed to puncture the vein, dip the slide and, together with a fifth hand, make the blood smear.

Although ringers are famed as being rather particular people, the majority are at most double handed and probably do not feel very comfortable about molesting their beloved study objects with less than the five hands needed to make blood smears in a rather orderly way. Furthermore, even the smallest available disposable needles (27g-28g) can cause considerable damage to the brachial vein of small passerines, resulting in the risk of shockingly large haematomes and/or continued bleeding. This generally affects the natural performance of the bird for some time afterwards and also interferes with the normal time schedule of ringing activities. As a consequence, taking blood from small passerines can become rather messy, particularly among less experienced operators. Many ringers may never try it again, and the apparent complexity of the operation could discourage otherwise enthusiastic people from cooperating in the blood parasite research project (Earlé 1991, 1993).

In principle, blood smears can be made from any droplet of fresh blood drawn from an animal by any means. Several ringers in southern Africa evidently use one of the smaller veins on the distal part of the wing (Earlé *in litt.*). In contrast to the experience of Bennett (1970), I find it easier to draw blood from the medial metatarsal vein (in the leg) than from the wing. In this procedure, the bird is held in one hand with the tibio-tarsal joint of the distal leg between thumb and forefinger, exposing the inside of the tarsus. A needle is then inserted for a short distance (in fact just a prick) on the inside of the leg, from just above the foot **parallel to the tarsus bone** towards the tibio-tarsal joint (Fig. 1) in order to puncture the medial metatarsal vein. Obviously birds with pale legs, where the targeted vein is visible through the scales, are the most suited for practising this method of sampling. With experience, 100% sampling success can also be achieved 'blind' in birds with dark legs.

Except for a few bird groups with thick and fleshy legs (e.g. doves), blood flow from the leg is generally slow and can be controlled by changing pressure from the fingers on the tibio-tarsal joint. There is virtually no risk of haematomes on the leg because the hardness of the scales generally prevents swelling. Bleeding is easily and quickly stopped by slightly increasing the pressure at the tibio-tarsal joint.

There does not seem to be great risk of damage to nerves or tendons from the needle in this procedure. Birds that have had blood taken from the leg appear less stressed when released than those that have been bled from under the wing. The main risk involved in sampling blood from the leg is of infection either by inserting a needle into a dirty leg, or from birds with a small

fresh wound near the foot perching on soft ground or in water, soon after being released. It is therefore probably advisable to clean/disinfect the tarsus in all species before puncturing it and not to obtain blood from the leg in waders or other waterbirds.

There is one drawback to this method: at low temperatures, the vaso-constriction of the peripheral blood veins, particularly those in the legs, results in a very poor 'yield' of blood from the leg. In the Kalahari in Botswana, with morning temperatures in winter close to freezing, it was regularly quite problematic to obtain sufficient blood from the leg of small birds, but by mid-day – when the temperatures reach 15-25°C – there was no problem anymore. Throughout summer the method worked perfectly except on very hot days, when it became somewhat more difficult to stop the bleeding because of exceptional vaso-dilation.

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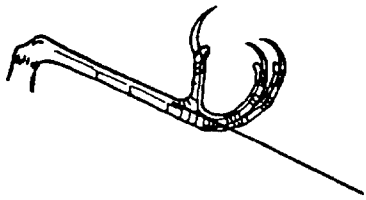

Figure 1. Direction of pricking with a needle to obtain blood from the leg in a small passeriform bird (drawing modified after Svensson 1984).

SWALLOW TRAPPING WITH TAPE LURES

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European Swallows like to sleep together in groups. In Europe, starlings do the same and, in Africa, so do the weavers. Swallows prefer to roost in reedbeds along rivers and lakes or in swamps. If these are lacking, they will use maize fields or even bushes or trees, but they greatly prefer reedbeds. Such roosts make very good trapping sites.

In Europe, the roosts are used once the nestlings of the first broods have fledged, usually around mid June. The parents take their young to the roosts and the loud singing of the males courses over the site. From this time onwards, swallows can be trapped at the roost. When the nestlings of the second brood have also fledged and the adults are breeding yet again, the number of birds at the roost increases. They use the roost until the start of migration to their African wintering quarters in mid September. Most of the swallows have left by the first week of October.

The swallows' behaviour at roosts in Africa is similar to that in Europe. The swallows start arriving about an hour before sundown. During this time they fly around and often drink or take a short bath. The nets should be set up at this stage and, with luck, a number of birds may be trapped. The nets should be set at right angles to the water if possible, as the swallows like to fly parallel to the water's edge when preparing to land. It is better to trap in the middle of the reedbed than at the periphery.

About 10-15 minutes after sunset they gather in large groups above the roost and often form dense clouds when preparing to