GENERAL NOTES

A System of Easily Manipulated, Elevated Mist Nets.—During studies of bird migration in the northern French Alps, we perfected a system of netting migrants 40 m above the ground. Situated at an altitude of 2460 m in the "Massif des Aiguilles Rouges" near Chamonix (Haute-Savoie), France, the Col de Berard where we worked is steep and very rugged terrain—unsuitable for ground level migration (Fig. 1). There is almost always a strong and turbulent wind in the area. In order to avoid striking prominent structures, migrant birds fly relatively high when passing the Col—even higher at night than during the day. Under such conditions the use of ordinary mist nets, as used at other high altitude banding stations, would be of little use.

The system we developed (Fig. 2), has been used to capture birds and bats as high as 50 m above the ground and in suitable terrain could no doubt be used at even greater heights. It is relatively easy to install and operate and capable of resisting the extreme weather conditions that prevail in this area. Systems using poles (e.g., that of Humphrey et al., Bird-Banding 39:43–50, 1968) were not suitable for our work due to their relative fragility and complexity.

Materials.—The materials needed for the construction of this net system include: (1) the nets; (2) various diameters (9 mm, 5.5 mm, 3 mm, 2 mm) of caving cord; (3) 2 30 mm diameter metal rings per shelf-string; (4) a few karabiners; and (5) a few pitons. All of these materials except the nets are available at stores providing supplies for mountain climbing.

Preparation of the nets.—The nets should be tied together using linen cord with knots at 1 m intervals along the length. The netting should also be tethered along every shelf string in the same manner so that individual shelves cannot move along the strings in

FIGURE 1. The site of Col de Berard in the Massif des Aiguilles Rouges, France. The arrow indicates our net location.

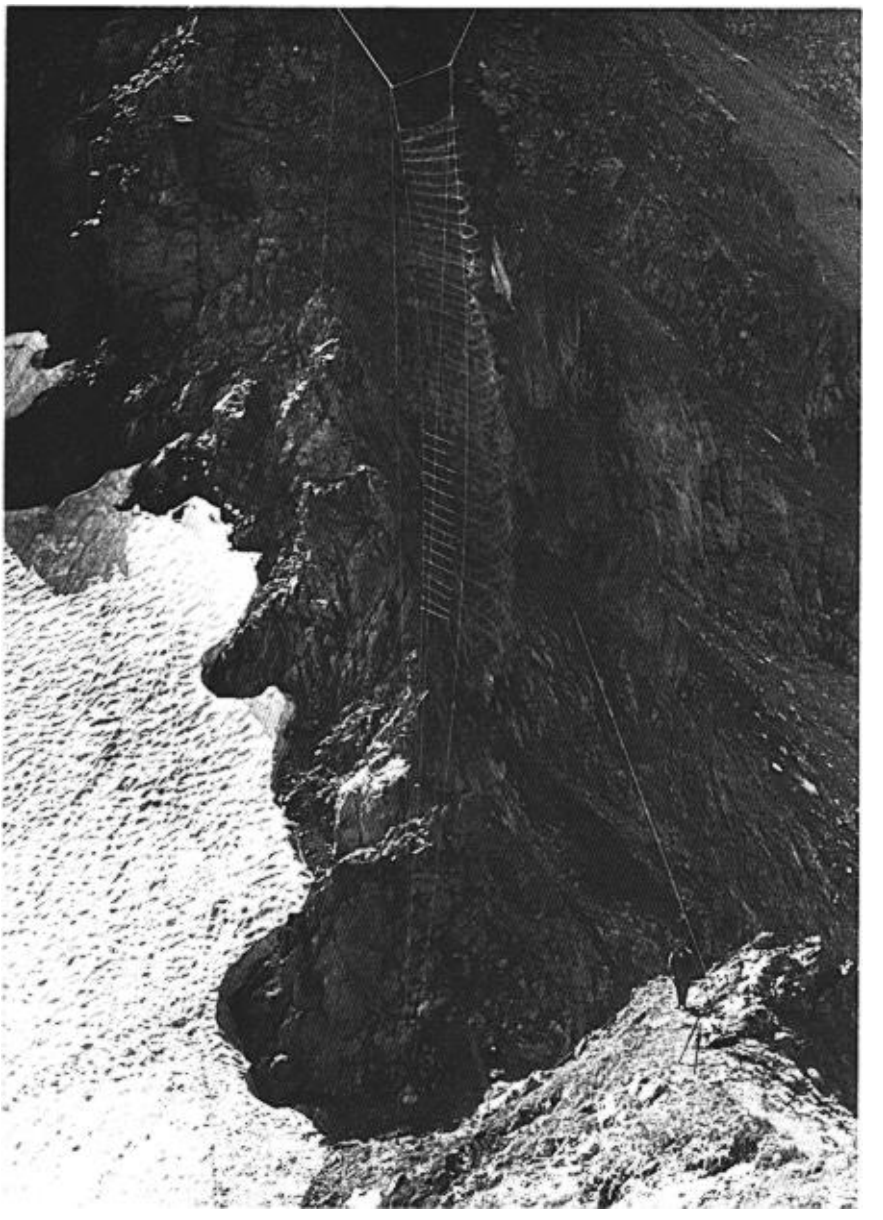

FIGURE 2. The elevated mist-net rig in place at the Col de Berard. For scale, note the man at the lower right of the net.

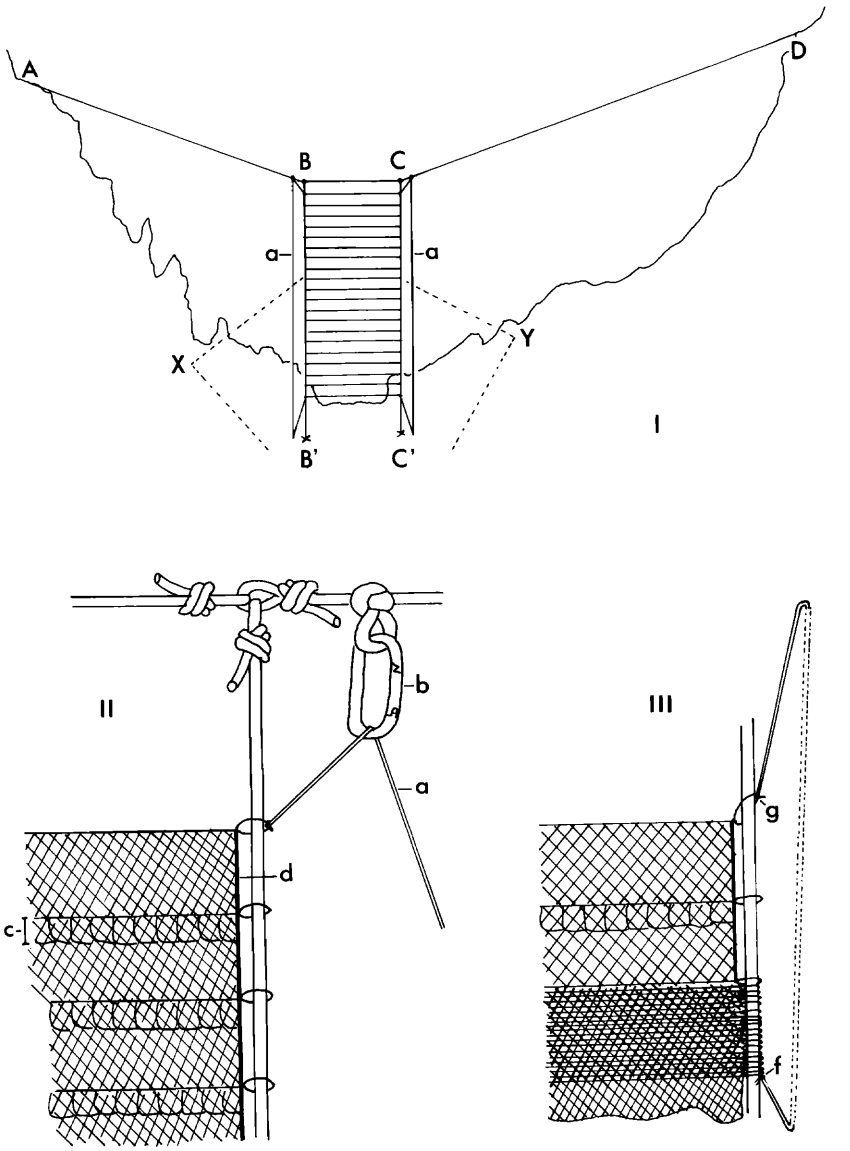

FIGURE 3. Elevated mist-net system as used in the northern French Alps. (I) Schematic of complete rig; (II) Closeup of the upper corner of the rig showing positions of knots, lines, and nets; (III) Schematic showing folding of nets.

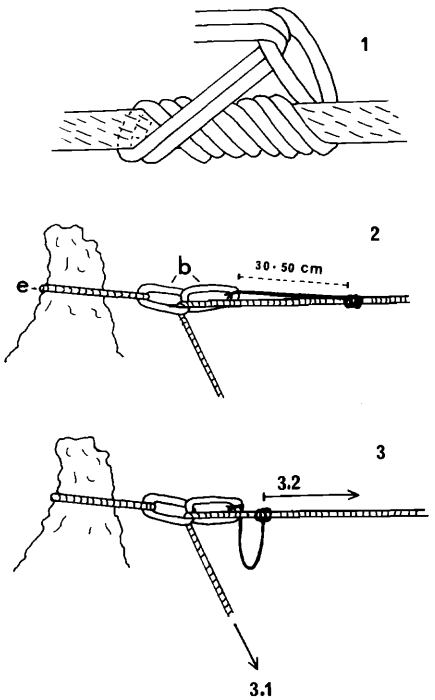

FIGURE 4. The autoblocking knot and method of attachment of the net rig to a rock face, tree, etc. See text for details.

high winds. Steel rings (preferably stainless) of 30 mm diameter are tied to each shelf-string loop. The pocket depth (Fig. 3.II.c) is fixed by the shelf-string loops being attached one to another by means of a 2 mm diameter nylon cord (Fig. 3.II.d). Each shelf-string loop can be numbered for calculating the height at which each bird is netted.

The supporting framework.—The supporting framework includes 3 horizontal cords (Fig. 3.I.A–B, C–D, and B–C). Cords A–B and C–D are 5.5 mm diameter caving rope; cord B–C is 9 mm caving rope. The first 2 cords must be long enough to reach from the end of the net to the point of anchorage. Cord B–C is the same length as a net. The 2 vertical lines (B–B′ and C–C′) are 5.5 mm diameter nylon cord. Two double cords (Fig. 3.I.a) are just outside and parallel to cords B–B′ and C–C′. These allow the net to be raised and lowered and are also 5.5 mm cord, but equal to twice the length of B–B′ or C–C′.

Erecting the net rig.—After anchoring either cord A–B or cord C–D onto a rock face, tree, etc. with the aid of a nylon cord loop (Fig. 4e), connect the vertical components B–B′ and C–C′ to the horizontal component at points B and C by knots as shown in Fig. 4.I. Tie 2 karabiners (b in Figs. 3 and 4) 20 cm from each end of B–C during the erection of cords A–B and C–D. These allow the erection cords (B–B′ and C–C′) to slide freely. These must then be placed in position before the cords between points A and D are pulled taut. The complete framework is pulled taut from either point A or point D.

Sufficient tension is easily obtained by using a simple automatic blocking knot, a system requiring a cord loop (e in Fig. 4), 2 karabiners (b in Figs. 3 and 4), and a meter of cord having a diameter different from that of the cords in the line from A to D. We used 3 mm cord. (Fig. 4). The cords comprising line A–D are passed through a karabiner and hand-held to tie a French autoblocking knot (1 in Fig. 4, after Mazzenga, Sciurezza in

roccia, A.P. Mazzenga Edit., Rome, 1967). The 3 mm cord is doubled and wound around line A–D moving toward the karabiner. After 5 turns it is passed back through itself and then fastened onto the karabiner. A small pull stabilizes the knot. Once tied, one or two persons should pull on cord A–D (3.1 in Fig. 4) until it touches the karabiner. The autoblocking knot is then slid back to its original position (3.2 in Fig. 4). At this time it is important to firmly fix cord A–D by tying a small loop in it which is secured to one of the karabiners. This prevents a possible later release of tension.

Attaching the net.—Once ready, the net is attached to the supporting structure in the following manner. The 2 sets of shelf string loops (Fig. 3.III) should be threaded onto cords B–B′ and C–C′ respectively. The ends of the 2 erection cords are then attached to the terminal rings (Fig. 3.III.f and g) and cords B–B′ and C–C′ are pulled taut and firmly secured to the ground. The complete erection requires 2 people and can be finished within 4 or 5 hours; dismantling takes less time.

Use of the net.—The handling of the net rig is simple; 2 people hoist the nets up and open them simultaneously by pulling the 2 erection cords (Fig. 3.a). It is lowered and folded by pulling down the erection cords and then the shelf loop rings one-by-one. Each pocket can be successively examined and any netted bird extracted as from an ordinary mist net. We highly recommend the installation of lateral tension cords (Fig. 3.I, dotted lines) which pass through karabiners attached at points X and Y. When lowered, the nets can be furled in the same manner as ordinary mist nets.

Discussion.—The high net capture technique described by Humphrey et al. (op. cit.) is not appropriate for use in an open, windy environment. The net described here worked admirably under such conditions. Our net system was raised and lowered 20–30 times each day for a month without any problem. The materials withstood freezing mist, snow, sub-zero conditions, and winds of 60 km/h. It seems probable that this system could also be adapted to capture birds in the forest canopy, the form of the trees enabling its erection to be quickly achieved.

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Observations of Fishing by a Barred Owl.—The diet of Barred Owls (*Strix varia*) and several other species of North American owls includes fish (Errington, Condor 34: 176–180, 1932 and others). Screech Owls (*Otus asio*) and Snowy Owls (*Nyctea scandiaca*) have been reported capturing fish using ice holes cut by fishermen (Bent, U.S. Natl. Mus. Bull. 170:253, 366, 1938), but there are no published descriptions of how Barred Owls hunt for fish although Brown (Kentucky Warbler 56:66–67, 1980) observed a Barred Owl chasing a surface fishing lure. Herein we describe our observations of Barred Owls hunting fish in the St. John's River near Orange City, Florida.

At 1835 on 23 February 1982, we observed a Barred Owl sitting on the rail of the Blue Spring State Park fishing dock. The owl appeared to scan the water intently for about 3 sec, then flew down to the water in a shallow dive and returned to the rail with a fish in its talons. The captured fish was approximately 10 cm long with silver sides and a sunfish-shaped body. The owl picked at the still wriggling fish with its beak, then abruptly flew past us and landed in a large tree approximately 5 m above us and resumed eating the fish. At 1850 the Barred Owl flew back to the dock and again scanned the water until 1915 when chased away by a house cat on the dock. At 1840 on the next night, we again observed a Barred Owl on the dock railing. In the next 12 min the owl made several short flights, landing on pilings which protruded from 0.5–1.5 m out of the water. At each piling it watched the water for several minutes, slowly moving its head from side to side. It then flew approximately one third of the way across the river and hovered about 35 sec over the water before returning to the same initial perch on the dock railing and watched the water below. After 23 min it flew down in a shallow dive and hit the water