

GENERAL NOTES

Patagial streamers as markers for Red Grouse chicks.—We needed to mark wild Red Grouse (*Lagopus lagopus scoticus*) chicks soon after hatching, without distressing them or reducing their survival. This note evaluates a miniature variation of a plastic patagial streamer (Hewitt and Austin-Smith, *J. Wildl. Manage.*, **30**: 625-7, 1966) as a marker.

We used colored streamers measuring 3 x 70 mm, cut from tough, light, flexible plastic cloth (Safety Flag Co. of America, Pawtucket, R. I.). With a large darning needle, we threaded the streamer through the prepatagium, taking care to miss the tendon that runs along its leading edge. The length of the streamer was adjusted so that the ends met when reflected over the dorsal side of the wing. The two ends were then stapled about 8-9 mm from the leading edge and excess plastic was cut off to within 10 mm of the staple. When fixed, the streamer was adjusted to follow the contours of the dorsal aspect of the wing. Different individuals in a brood were marked distinctively by punching small holes (from 0 to 6, but more would be possible) in the streamer's free end. Each brood was given a distinct color or color combination. When in place, the markers were easily visible with 7 x 35 binoculars from 100 meters.

We had hoped to put a metal leg band on each bird handled, but many chicks were so small that the diameter of their heel joints or closed toes was not yet sufficient to prevent the movement of the band beyond these points. Such chicks received patagial streamers. Most chicks could be banded at 12 days old but a few were not large enough until 18 days. We did not put wing tags on chicks younger than 3 days old because their patagia were very small. The tag weighed 0.23 g or less than 1% of the body weight at 3 days old.

Chicks that we marked with streamers and older chicks that we leg-banded were all from the same population and study area. Of the 46 chicks marked only with patagial streamers, 20% were retrapped in the autumn (13% cocks, 7% hens), and of the 949 slightly older chicks that we only leg-banded, the figure was again 20% (15% cocks, 5% hens). Of the 46 tagged chicks, 11% occupied territories in early winter (9% cocks, 2% hens), and of the 949 banded chicks, the figure was similar at 9% (8% cocks and 1% hens). This shows that survival until autumn and success in establishing a territory were no worse among patagial-tagged chicks than among leg-banded chicks. In addition, when tagged chicks were later retrapped as chicks or adults, the skin around the puncture had always healed leaving feather arrangement normal and flight unimpeded.

Thus there was no evidence that patagial streamers harmed the birds or reduced their subsequent performance as compared with the standard techniques of leg-banding. As the method worked so well with Red Grouse, it would probably be of use for marking very young chicks of other species of Tetraonidae and Phasianidae.—D. A. BOAG (present address: Dept. of Zoology, Univ. of Alberta, Edmonton, Canada), A. WATSON, AND R. PARR, Institute of Terrestrial Ecology, Blackhall, Banchoy, Scotland. Received 24 September 1974, accepted 10 April 1975.

Capturing and marking Oldsquaws.—The migration routes of the Oldsquaw (*Clangula hyemalis*) are at present unknown. Unfortunately, due to low harvest rates, published recoveries of banded birds are negligible. It is therefore necessary to rely almost exclusively on sightings of marked birds in migration investigations.

Published accounts describing capture techniques suitable for diving waterfowl, especially sea ducks, are rare. At Churchill, Manitoba and in Northumberland County, Ontario from 1967 through 1974, Oldsquaws were trapped and marked with nasal saddles (Fig. 1) constructed of polyvinylchloride tape similar to those described by Sugden and Posten (*J. Wildl. Manage.*, **32**, 1969). The structures were fastened to the bill by means of 1.5 mm diameter "Linde 60" stainless steel welding rod pins bent to form an angle of 150° to accommodate the nasal openings. Washers, 4.8 mm in diameter and constructed from 27 gauge stainless steel, prevented loss of the pins, which were also crimped at both ends. Each saddle was numerically coded.

In May and June, pairs of Oldsquaws were captured in 10 cm mesh mist nets placed horizontally over holes in the ice on inland tundra lakes at Churchill. The birds, while attempting to dive for food in the holes, were invariably en-

tangled in the mesh (Alison, Ph.D. Dissertation, Univ. of Toronto, 1972). In early August, adult females and broods were captured using a drive trap comprised of three 18 m, 10 cm mesh mist nets stretched between 1.8 m aluminum poles driven into the bottom sediment of small lakes. Each net protruded about one foot above the water surface. To prevent birds from diving beneath the structure, the nets were anchored by 160 g lead weights. The two 27 m leads formed a 155° angle. In the shallow water two people, wearing chest waders completed an entire individual marking operation in about 2½ hours. U. S. Fish and Wildlife Service aluminum leg bands were placed on all birds trapped and released.

Typically, entire flocks of flightless immatures comprising six to 60 individuals and a few adult females capable of flight would be driven into the net. Immatures were easily captured, although some adult females, especially those captured previously, avoided the nets. During the period 11 to 15 August 1974, eight adult females and 62 immatures were marked. An additional 26 immatures were released unmarked. In May and June 1974 in the same area, 25 adults were captured and marked.

The saddles apparently did not adversely affect any of the birds. Almost invariably, saddled adult females successfully reared broods. Adult females captured with broods always returned to their young subsequent to marking and release. Marked immatures behaved normally and were apparently accepted by other immatures and adult females.

Conflicting evidence has been published concerning the effect of nasal saddles or discs on mortality rates in waterfowl. Erksine (*Proc. XIII Intern. Ornithol. Congr., Ithaca, 1962*) found that mortality rates were higher among marked mergansers as compared to unmarked birds. However, Bartonek and Dane (*J. Wildl. Manage., 28, 1964*) reported that marked teal did not have significantly higher mortality rates than unmarked birds. Apparently, geese marked with nasal discs become easily entangled in netting during banding operations and occasionally the marker is lost (Sherwood, *J. Wildl. Manage, 30, 1966*). In this study, mortality rates did not differ initially between marked and unmarked birds. Tentatively, a much larger sample will be marked within a two-year period. It is possible that ice freezing to the marker may be important in those species wintering in northern latitudes. Nonetheless, similar structures are presently being used in research programs of diving waterfowl in southern Manitoba, and Greenwood and Bair (*Wildl. Soc. Bull., 2 (3), 1974*) found that although

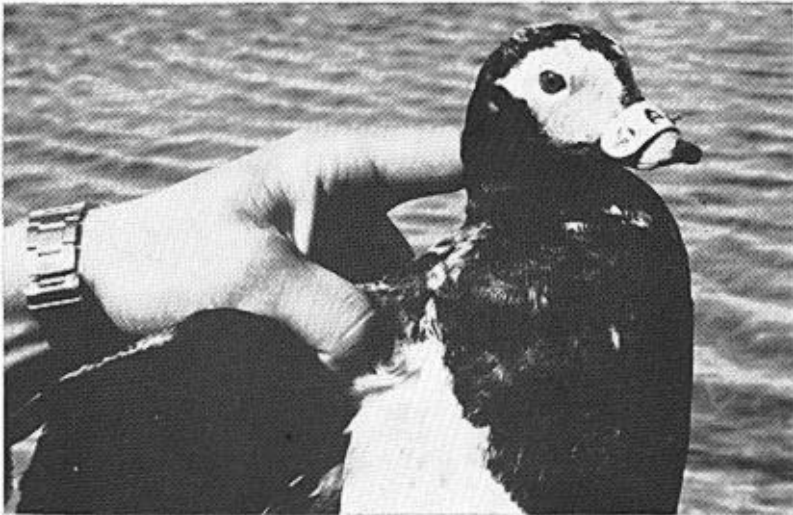


FIGURE 1. Adult male Oldquaw with saddle captured in June 1974, Churchill, Man.

severe icing did occur on Mallard (*Anas platyrhynchos*) nasal markers during sub-freezing weather, most individuals were able to de-ice the saddles.—ROBERT M. ALISON, *Ontario Ministry of Natural Resources, Wildlife Branch, Whitney Block, Queen's Park Cres., Toronto, Ontario M7A 1W9, Canada*. Received 15 November 1974, accepted 8 April 1975.

A Blue Jay in captivity for 18 years.—In midsummer of 1956 Mr. and Mrs. Wilbert Selves parked their car in a driveway in Sarnia, Ontario with a window open. When a Blue Jay (*Cyanocitta cristata*) flew into the car they decided to keep it and brought it to their farm home at Hensall, Huron County. They have had the bird there ever since.

On 2 November 1974 I examined the bird. It was in full adult plumage, active, in good health, and frequently gave the typical jay squawking call. The left eye was slightly clouded. Mrs. Selves reported that this condition had appeared about a year earlier and that its sight in that eye now seemed to be subnormal.

Since its capture the jay has been kept in a cage 23 x 13 x 10 inches. It has been given a variety of foods, including canned cat- and dogfood, raw egg, peeled potatoes, biscuits, soda crackers, earthworms, grapes, lettuce, apples, shelled sunflower seeds, flies, and other insects. Water is available ad libitum. When the water level gets low the bird puts solid objects such as bits of food and trash into the water to raise the level to within its reach.

When the bird is given an occasional ant, it picks up the ant in its bill, spreads one wing, and scrapes the ant against its lower surface and then repeats the process with the other wing. The bird then commonly eats the ant. This is a case of 'active' anting as described by Simmons (Feather maintenance. Pp. 278-286 in *A new dictionary of birds* (A. L. Thomson, Ed.), New York, 1964, McGraw-Hill Book Co.) Simmons particularly refers to the Blue Jay's habit of anointing one wing at a time.

Mrs. Selves reports that the bird is adept at mimicking the mewing of cats and the cawing of crows. In the first few years of its captivity the jay was taken from the cage at times to ride around the house on Mrs. Selves' shoulder. When she was shelling peas the bird picked up the peas and tried to put them back into the empty pods. Apart from these releases within the house the bird has lived continuously in the cage for 18 years.

Being caught in 1956 the jay was at least 18 years old by the summer of 1974. Mrs. Selves does not recall any features of the bird when captured that would indicate its age, beyond that when found in the car it could fly well. Having been caught in midsummer it could have been hatched that year.

A captive bird, well fed and sheltered from predators and other adverse features of the environment, can greatly exceed the normal life expectancy of its species in the wild. Middleton (*Bird-Banding*, 45, 206, 1974) studied the ages of 202 wild Blue Jays trapped and banded in Pennsylvania and showed that most of them lived for 6 years or less and a few of them for more than 6 years. One reached the age of 14½, the maximum longevity for a wild individual reported by Kennard (*Bird-Banding*, 46: 66, 1975)—WILLIAM W. JUDD, *Department of Zoology, University of Western Ontario, London, Ontario, Canada*. Received 12 March 1975, accepted 8 April 1975.

Longevity of the Brown Noddy.—Despite its abundance and pantropical range, little published information exists on the longevity of the Brown Noddy (*Anous stolidus*). Woodward (*Atoll Research Bull.*, 164: 280, 1972) reported a maximum known survival of 10 years for Brown Noddies banded as adults on Kure Atoll, Hawaii. Brown Noddies on Manana Island, Oahu, Hawaii (*A. s. pileatus*), and the Dry Tortugas, Florida (*A. s. stolidus*), are among the few populations that have been banded over a period long enough to provide quantitative data on longevity. Records of the Bird Banding Laboratory, U.S. Fish and Wildlife Service, show that 2,334 Brown Noddies were banded on Manana from 1938 through 1947 under the permits of G. C. Munro, and 246 were banded on the Dry Tortugas from 1936 through 1941 under various permits. After a lapse from 1948 through 1962 on Manana and from 1942 through 1958 on the Dry Tortugas, banding of Brown Noddies was resumed in both colonies with more than 3,000 banded on Manana from 1963 to date and more than 6,500 banded on the Dry Tortugas from 1959 to date. The more recent banding should