

Experiences with Darvic colour-rings in Australia

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INTRODUCTION

The comprehensive paper by Ward (2000) on Darvic colour-rings for shorebirds studies was most welcome. It largely parallels my own experience but there are a number of differences that we have recorded here in Australia which are perhaps worth putting on record for the benefit of shorebird ringers worldwide.

Australian Climate

Temperatures are generally warmer throughout Australia than in most other parts of the world occupied for prolonged periods by shorebirds. Temperatures in the range 30 to 40°C regularly occur and even in Victoria, south-eastern Australia (38°S), where most of my experience has occurred temperatures occasionally exceed 40°C.

Sunlight levels are also extremely strong in Australia because of the relative lack of cloudy weather (resulting in the highest levels of human skin cancer in the world). The potential for fading of Darvic rings is therefore high, although this is mitigated slightly by the fact that the sun is very vertical at the hottest

times of the year meaning that the colour rings are shaded by the bird's body during the middle part of each day.

DARVIC RINGS ON PIED OYSTERCATCHERS

Haemotopus longirostris

The Victorian Wader Study Group started putting a single plastic spiral colour ring on Pied Oystercatchers in 1981. These were the standard product supplied by A.C. Hughes (Hampton Hill, Middlesex, UK). Within a year or two occasional reports were received of rings which appeared to have unwound to some extent and on occasions these had slid down over the bird's foot and caused injury.

From 1983, specially manufactured Darvic colour rings made of thicker (0.75mm) material, and with two and a quarter complete turns, have been obtained from A.C. Hughes and, more recently, from P.J. Art in Sweden. These immediately eliminated the main opening up problem. However some relaxation of the rings was still apparent and the gluing of the outside centimetre

or so of the colour ring was introduced. Super glue was tested but Marley's Clear PVC Solvent Cement was found to be superior and lacked any side problems (stuck fingers etc!). This can be obtained from hardware stores in tube form that was found to be the most convenient for application (via the tip of a small screwdriver).

Individual colour combinations for Pied Oystercatchers and Sooty Oystercatchers *Haemotopus fuliginosus* were introduced in 1988 and this involved putting five colour rings and the metal ring on the tarsus of each bird. Since then some 2,500 individuals have been marked in this way.

Birds are regularly recaptured as well as being observed in the field. Performance of the bands has generally been good but, especially in recent years, a couple of further problems have emerged:

(a) grit gradually accumulates between the spirals of some rings. This is a slow process and generally is not significant until the colour ring has been on a bird for several years.



The effect of this grit is to cause the inner end of the spiral to tighten up, reducing the clearance on the Oystercatcher's leg, occasionally to the point where injury has occurred.

Since 1998 we have also been gluing the inner end of the spiral at the time the ring is originally placed on the bird (or for any replacement rings). This is achieved by opening out the inner end of the spiral with a small screwdriver whilst some PVC solvent cement is injected from the tube or placed in there by the tip of another small screwdriver. This double gluing process has now proved to be successful in reducing the ingress of sand/grit and it has therefore stopped any change in the dimensions of the colour ring.

(b) after a prolonged period some delamination of the Darvic material has become apparent. The appearance has been somewhat like plywood that gets wet and separates into layers and expands. This has particularly occurred on yellow colour rings and especially if the colour ring is in direct contact with the metal ring. Neither colour ring manufacturer has been able to provide any explanation or potential remedy. At present the problem is not serious but it may lead to reduced life of some colour rings.

Colour fading and staining

The greatest level of fading has been recorded in dark blue Darvic rings.

After 5+ years some of these have lost all semblance of their original colour and appear grey. Red colour rings can also become dark brown in appearance after 5-10 years.

Yellow bands fade, sometimes almost to white, but as mentioned by Ward (2000) it is often still possible to see the core colour even in the field. Dark green colour rings seem to be the most resistant to colour change, apart from white and black. The light green colour also seems to be reasonably well retained but, unfortunately, the use of two different green colours has led to quite a number of records being lost when less experienced observers have failed to record which shade of green was present.

At one or two specific locations in the muddier areas of enclosed bays colour rings have become severely stained with an orange/brown colour. In such locations it is more difficult to read colour ring combinations correctly, even with a telescope. However, in birds inhabiting more open sandy shores staining has not been recorded.

Butted Darvic rings

Experience with non spiral Darvic rings of smaller internal diameter (e.g. 4-6 mm) has shown that these can not only be adequately sealed with a portable soldering iron but that PVC solvent cement can also be used. However the success of this

depends on getting a very neat tight fit of the colour ring by repeatedly clicking the ends under during application until the join is almost invisible to the naked eye.

Application of a blob of solvent cement to the outside of this seems to provide a durable seal.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended that wherever necessary Darvic colour rings be glued with PVC solvent cement to prevent any changes in the ring's profile after application to a shorebird's leg. This is particularly important in climates where high temperatures may lead to a relaxation of the Darvic material. For shorebirds that feed in coarse substrates, it may also be necessary to glue the inner ends of a spiral ring, particularly in the larger ring sizes.

REFERENCES

Ward, R.M., 2000. Darvic colour-rings for shorebird studies: manufacture, application and durability. *Wader Study Group Bull.* 91: 30-34.

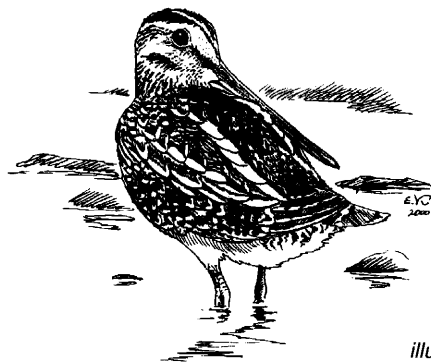


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