

Brief report

Turnstones *Arenaria interpres* brooding Redshank *Tringa totanus* clutch

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During archipelago bird censuses in summer 2001 in Kustavi, situated in the Archipelago Sea area, SW Finland, we found a very unusual wader nest on the island of Juhanööri (60°41.4'N, 21°09.5'E). A pair of Turnstones *Arenaria interpres* was alarming around a nest where three chicks had just hatched. The fourth chick was hatching, and there was also an egg with no signs of hatching. The chicks and the hatching chick were Redshanks *Tringa totanus*, whereas the egg was Turnstone's! Both parents were alarming around us as close as about 2–3 metres while we were examining the clutch, but there were no alarming Redshanks at the nest. After we had retreated about 10 m from the nest, we saw the female Turnstone go quickly back into the nest to warm the chicks.

The island of Juhanööri is a favourable place for both Turnstone and Redshank, with two breeding pairs of both species. The size of the island is about three hectares. In the middle of the island there are Junipers *Juniperus communis*, some single small Scotch Pines *Pinus sylvestris* and Common Alders *Alnus glutinosa*, but the overall landscape is quite open with large areas of short grass. There are also small islets at the northeast corner of the island. Other nesting birds include Curlew *Numenius arquata* (nest found), Common Gull *Larus canus* (50 pairs), Eider *Somateria mollis-*

sima (16 pairs), Black Guillemot *Cephus grylle* (6 pairs), Arctic Tern *Sterna paradisaea* (8 pairs), Great Black-backed Gull *Larus marinus* (10 pairs) and Ringed Plover *Charadrius hiaticula* (1 pair).

What has led to this situation? One possibility is that the Turnstones began nesting close to the Redshank nest and erroneously, at some point of egg laying, switched to the Redshank nest and took it over. Another explanation is that the Turnstones had lost their first clutch, taken over the Redshanks' clutch and laid an egg into it. It is even possible that the Turnstones' original plan was to predate the Redshank nest, but the incubation reflex took over.

Interspecific brood adoption has been reported in several species of birds, ranging from incubating eggs (Larson 1978, Midura *et al.* 1991, McAlpine 1996) to brooding chicks (Hildén 1977, Håkansson 1978) and feeding chicks (Ossiannilsson 1978, Lozano & Lemon 1998). It has been interpreted to be a result of misdirected parental care due to e.g. loss of own clutch by predation (McAlpine 1996) or merely due to a mistake (Midura *et al.* 1991).

Waders have often been reported to occasionally adopt chicks of the same species or to express social care (e.g. Hario & Komu 1979), but interspecific adoption seems to be more unusual.

Hildén (1977) assumed that e.g. similar discomfort calls of chilled chicks of different species trigger adoption, as an acoustic signal may be a stronger stimulus to parental care than the visual signals of chicks. Bergman (1946) reported an experiment where Turnstones incubated Redshank eggs and brooded the chicks, and concluded that Turnstones do not need specific signals to parental care.

In addition to the experiment made by Bergman (1946), we could not find any reports about mixed Turnstone clutches except a case reported by Nyström (1925). Nyström found a Turnstone nest with four Turnstone eggs and three Common Tern *Sterna hirundo* eggs. The Turnstones were incubating the eggs. Nyström assumed that the Turnstone had stolen the tern eggs from a nearby tern nest.

The absence of the original parents is not always a prerequisite for adoption (Lozano & Lemon 1998). As the Redshank clutch was fully numbered, however, the Redshanks had invested so much in the clutch that it is unlikely that the Redshank parents would let the Turnstones overtake the nest. Therefore, it seems probable that at least one of the Redshank parents had died during the hatching period.

In addition to interspecific brood adoption, interspecific brood parasitism could be a possible factor behind mixed clutches. Interspecific nest parasitism is a reproductive strategy, wherein a female deposits eggs in the nest of different species (Slagsvold 1998). Several evolutionary explanations have been put forward for this strategy, which is surprisingly rare in birds given the potential advantages for the parasite of exploiting the parental care of other species (Payne 1977, Lyon & Eadie 1991). Usually nest parasites exploit the parental care of smaller species or species with a longer incubation period (Slagsvold 1998).

The incubation times of Redshank and Turnstone are about the same: 24 days (22–29 days) in the Redshank and 22–24 (–27) days in the Turnstone (Cramp & Simmons 1983). The single Turnstone egg may have been laid after the Redshank eggs, in which case nest parasitism by the Redshanks is not a possible explanation. It is, however, also possible that the Turnstone egg had been laid before the Redshank clutch but the em-

bryo had died. As the Turnstones are very territorial and aggressive against birds of their own or other species on their territory (Nyström 1925, Bergman 1946, Vuolanto 1968), it seems more likely that the Turnstones had taken over the Redshanks' nest than vice versa. To our knowledge there are no reports about nest parasitism by Redshanks.

The case reported here is probably due to a mistake. The eggs of Turnstone and Redshank are about the same size, which might have misled the Turnstones. The adoption was costly to the foster Turnstones, as they only produced one egg of their own that did not hatch, as well as to the Redshanks that lost their clutch, the chances of which to survive are poorer when hatched by foster parents.

To our knowledge, it has not been reported that chicks adopted by parents of another species would have survived until fledging. Disturbances in parental care arise at the latest when the chicks begin to grow their species-specific juvenile plumage (Bergman 1946). In the case reported by Midura *et al.* (1991), a Piping Plover *Charadrius melodus* reared by Least Terns *Sterna antillarum* fledged successfully, but only after introduction into a foster Piping Plover family group. If these Redshank chicks, however, survive to adulthood, to whom will they display in their first breeding season — Turnstones or Redshanks?

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Selostus: Karikukot punajalkaviklopoikueen emoina

Karikukkopari kasvatti punajalkaviklon poikasia kesällä 2001 Juhanöörin luodolla Kustavissa. Varoittelevat karikukkoemot vartioivat pesää,

jossa oli kaksi munaa ja kolme vastakuoriutunutta punajalkaviklon poikasta. Munista toinen oli karrikukon ja toinen punajalkaviklon. Kirjoittajien poistuttua paikalta karrikukkoemot kiirehtivät takaisin pesälle poikasia lämmittämään, mutta aikuisia punajalkavikloja ei pesän läheisyydessä näkynyt. Karrikukot ovat saattaneet vallata punajalkaviklon pesän tai ovat munien syömisen sijaan alkaneet hautoa niitä.

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