Incubation capability and clutch size of the Willow Grouse *Lagopus lagopus*

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In his recent textbook, Johnsgaard (1983) discusses the productivity of tetraonids. He considers that "it seems unlikely that a ptarmigan could effectively incubate a dozen or more eggs". The clutch size of the species varies rather widely: in Norway, for instance, variation is 3–17 (Myrberget 1975). During the present author's field studies rather large clutches of the Willow Grouse were found in the Värriötunturi fell terrain, eastern Finnish Forest Lapland, and thus it appeared justified to look at the relevancy of Johnsgaard's conclusion. The Willow Grouse lays her eggs in a shallow hollow among the (often mossy) ground vegetation, in one layer, which itself limits the clucth size (cf. *Perdix perdix* which may even lay 29 eggs, but in several layers, Krüger 1965, Pulliainen 1971). The greatest clutch sizes recorded and the numbers of eggs hatched in the present study area in 1973-1983 are:

Year	Cluth size	No. of eggs hatched
1981	14	13
1981	13	13
1981	13	13
1983	?	12
1983	11	11
1973	11	11
1973	11	11

These data do not support the opinion of Johnsgaard (1983). The Willow Grouse appears to have no problem in incubating 13 eggs. Johnsgaard (1983) also assumes that "each day that is invested in producing another egg not only reduces the time available for incubation and rearing the young but also exposes the untended nest to possible predation that much longer".

The Willow Grouse lives in the unpredictable northern conditions where natural selection maximizes the reproductive rate and favours any phenotypic variation enabling parents to leave more offspring (Cody 1966). The Willow Grouse tends to commence its egg laying rather late, later, for instance, than the Capercaillie *Tetrao urogallus* (Pulliainen 1982b), but has a much shorter incubation period (20–22 days) than the Capercaillie (usually 25–27 days) (Pulliainen 1982a). The female also covers the eggs with leaves, moss, etc. when it leaves the nest during the egg-laying period (Pulliainen 1978). In fact, the nest is so well hidden that it is very difficult to find it. Although the summer season is short in the north, it is long enough for the Willow Grouse chicks to grow up. In contast, it may be too short in this respect for the Capercaillie (Pulliainen 1982b).

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Selostus: **Riekon haudontakyvystä ja pesyekoosta**

Äskettäin (1983) ilmestyneessä kirjassaan Johnsgaard "epäilee" riekon kykyä hautoa tehokkaasti tusinaa tai useampaa munaa. Riekon munamääränhän tiedetään vaihtelevan laajoissa rajoissa (esim. Norjassa 3–17 munaa, Myrberget 1975). Värriön tutkimusaseman henkilökunta on löytänyt Itä-Lapissa tähän kokoluokkaan kuuluvia riekon pesyeitä, joiden munien kuoriutumista on seurattu.

Viiden pesyeen aineiston mukaan riekolla ei ollut mitään vaikeuksia hautoa 11–13 munan pesyettä niin, että kaikista munista kuoriutui poikanen. Neljäntoista munan pesyeestä jäi yksi muna kuoriutumatta.

Tutkimusalueen riekoilla oli "varaa" aloittaa pesintä suhteellisen myöhään, sillä lajin haudonta-aika on lyhyempi kuin muilla metsäkanalinnuilla. Poikasten kasvunopeus on sitä luokkaa, että ne ehtivät kasvaa hyvin ennen talventuloa. Riekon pesinnän menestyksellisyyttä edistää myös se, että laji peittää muninta-aikaan munat varsin hyvin siksi ajaksi, jolloin naaras on poissa pesästä.

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