# Brief reports • Tiedonantoja

## The behaviour of a flock of Black-throated Divers on lake Ala-Kivijärvi in Luumäki 15.9.1990

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Voipio (Ornis Fennica 67:142–143, 1990) has described the behaviour of a flock of Black-throated Divers. As his observations and conclusions are in sharp contrast both with my own experience, which covers studies of more than 2000 diver flocks over a period of about 30 years, and with the information obtainable from the relevant literature, I feel obliged to make the following comments.

Voipio writes: "The heads of the peacefully behaving adults rose over the numerous, restlesly moving heads of the juveniles, which did not keep their necks erect". This statement cannot be valid because in the nesting area of divers young birds are not seen in the flocks of the adults (Lehtonen 1970, Sjölander 1978). This is easily verifiable as the young birds differ clearly from the adults in both colour and general appearance.

The parents even actively hinder their offspring from coming too near other birds of the same species (Lehtonen 1970). This is accomplished in two ways: either the entire family swims or dives out of the way of approaching birds, or the parents move swiftly towards the strangers, while the young birds flee in the opposite direction, finally hiding amongst the lakeside vegetation or in other suitable cover. There are no exceptions to this pattern of behaviour. It prevails during the entire growth period of the young birds and continues until the end of the autumn migration.

During the flock behaviour of the adults, the young birds are left alone, sometimes for hours. Even in these situations they avoid approaching strange adults.

Voipio writes further: "In this case, however, there was no typical wide arc of fishing birds chasing and diving after their catch, but a compact group of eleven individuals. It was precisely this formation and the unusual bustle within the group...".

It is, however, well known that the divers never form "a typical wide arc of fishing birds" (my own observations). In fact, they fish without any special order in an area with a diameter of 20 to 50 metres, depending of the size of the lake. Of the total fishing time, 80–90% is spent in diving (Lehtonen 1970). The flock does not dive simultaneously. On the contrary, the birds dive either in small groups or individually. They dive at intervals of some seconds and then return to the surface for varying lengths of time.

In other aspects as well, Voipio's description of the diver flock is based on an incorrect interpretation of the observations. That the flocks become dense and loose alternately is not, as stated by Voipio, due to the efforts of the adult birds. The birds move closer to each other due to flock rituals, that require close positioning of the birds. In late summer and in autumn when the social behaviour is most intense, closing up of the flocks is a common event during the beak-to-beak greeting ceremonies and when the birds circle around each other. Voipio has observed that two birds may stay straight-necked and immobile op-

posite each other. This is a normal signal action in flock behaviour and as such a phase in the known nodding movement ("Kopfnickzeremonie") (Lehtonen 1970, Sjölander 1978). During this act the partners stand face to face slightly moving their beaks up and down.

Voipio was further surprised to see that after an observation period of 1.5 minutes the flock had disappeared. He continues: "I realized that I had totally missed the splendid view when eleven magnificent birds, splashing water, rose over the lake in the strict flight order first formed by the adults on the surface of the lake, and started on their long journey to their wintering areas".

The sudden disappearance of a diver flock is quite a common occurrence. The situation was evidently not the start of migration, but an event which normally begins with lively movements of the birds in the flock (my own observations). These movements end suddenly with a period of intensive diving. Within a few seconds one bird after another ducks, uttering a loud "cuick". When all the birds have submerged the surface of the lake looks totally empty because of the length (100–250 m) and the extended duration (1–2.5 min.) of the dives.

The birds spread in different directions, reappear at the surface for a moment and dive again, this time without splashing. After a few dives each bird is already hundreds of metres from the original gathering site and they are normally not found without careful scanning of the lake with a telescope. After the dives leading to total dispersion of the flock, the birds move rapidly to their respective nesting sites.

It happens, however, although very rarely, that entire autumn flocks start exercise for the flight in such way that at first 1–3 birds fly off simultaneously and then the others follow at intervals of a few seconds. In this way the flock will assume an irregular drawn-out formation from the very beginning and can achieve a length of several hundred metres and a considerable breadth. This flock behaviour evidently does not constitute the start of a migratory flight because, after describing a large arc or a loop, the birds redescend to the water surface, where the flocking ritual may start again.

The majority of the divers from Southern and the Central Finland disappear from their nesting lakes between 25 September and 10 October (Lehtonen 1970 and later observations). During the hours just preceding the departure the birds behave rather passively. They depart singly or in pairs, or it might be possible that a whole family starts together without any particular formalities.

The behaviour of the flock described by Voipio did not present any exceptional features. In the late summer and early autumn this type of conduct is a common event on lakes with a large diver population.

## Selostus: Kuikkaparven toiminnoista Luumäen Ala-Kivijärvellä 15.9.1990

Paavo Voipion selostus erään kuikkaparven koostumuksesta ja toiminnoista (Ornis Fennica 67:142–143, 1990) sisälsi tulkintoja, jotka ovat jyrkässä ristiriidassa sekä omien — koskien yli 2 000 kuikkaparvea — että kirjallisuustietojen kanssa.

Pesimäjärvien kuikkaparvet ovat pelkästään aikuisten lintujen muodostamia. Muutenkin nuoret yksilöt pysyvät visusti erossa vieraista aikuisista kaikissa tilanteissa. Perheen ollessa koossa emot väistävät lähestyviä lajikumppaneita ja poikasten ollessa yksin ne pakenevat vastaavassa tilanteessa näkösuojaan rantakasvillisuuden sekaan, kivien taakse ym.

Kuikat eivät koskaan kalastele laajakaarisena rintamana, vaan hajalleen sirottuneina alalla, jonka halkaisija on parven koosta riippuen 20–50 m.

Parven tihentyminen ei johdu siitä, että vanhat linnut yrittävät ajaa nuoria yhteen. Sen sijaan eräät parvirituaalit, jotka edellyttävät lintujen lähekkäin oloa, synnyttävät tihentymiä. Näitä ovat mm. nokkatervehdys ja pyöröuinti.

Kahden aikuisen kuikan asettumisella kaulat ojossa vastakkain ei ole mitään tekemistä parven tihentämisen kanssa. Kyseessä on parvissa yleinen signaalitoiminta, ns. päännyökyttelyele. Sen aikana kumppanukset pysyvät hievahtamatta alallaan lukuunottamatta vähäistä nokkien ylös-alas nyökyttelyä.

Vilkkaasti toimivan parven äkillisen katoamisen syynä ei ole kaukolennolle lähtö, vaan joko parven nopea hajoaminen tai siirtyminen lentäen johonkin muuhun järven osaan. Parven hajotessa kuikat ryhtyvät äkillisesti suorittamaan pitkiä ja kauan kestäviä sukelluksia eri suuntiin, kunkin

edetessä kohti omaa reviiriään. Sukellusten välillä linnut nousevat pinnalle vain hetkeksi, mikä vaikeuttaa niiden havaitsemista. Vasta etäännyttyään satojen metrien päähän ne jatkavat matkaansa rauhallisesti uiden.

Varsinainen muutolle lähtö ei tapahdu suurissa parvissa vesi kohisten, vaan varsin eleettömästi 1–2 linnun ja mahdollisesti myös perheen puitteissa.

## References

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# Reply to the comments of Leo Lehtonen

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Dr. Leo Lehtonen has criticized my interpretation of the behaviour of a group of Black-throated Divers (Voipio 1990), commenting on the following four behavioural patterns: 1) presence, in the flock, of young birds together with the adults, 2) groups forming "a typical arc of fishing birds", 3 a) the closing up of a compact group of young and adult birds through b) the activity of adults displaying certain behaviour during the event, and 4) the alleged, though not observed, sudden start of such a group on migration.

I will begin with pattern No. 2. I did not use the word "arc" in the sense that a group of several swimming birds were located precisely on the same curved line. What I meant is a group keeping in a more or less loose formation and swimming in approximately the same direction, thus forming, at times, a configuration reminiscent of a wide arc. That the birds are fishing (so-called Gruppenfischung = group fishing by L. L.), can be and has been seen from the catch now and then floundering in the bill of an individual bird. I did not write anything about simultaneous diving of the flock.

As for pattern No. 3, the following analysis may be in order. The gatherings of adults in fishing flocks always take place farther away, on the open lake, but this condensed group, never seen by me before, deviated from the former in appearing much closer to the shore, in this case near my summer house. The location of the group accords with that of the excursion areas (Streifzugbereiche) described by Lehtonen (1970), whose centres lie not far from the shores of islands or the mainland, as can be seen from the map in his paper. According to Lehtonen, however, such areas are visited repeatedly during the late summer, from July on. So the event observed by me can hardly belong to this category of occurrences. Otherwise, I should have seen it, at least now and then, at about the same place in the late summers of the eight years during which I have followed the bird life on the lake. There must thus be some other reason for this phenomenon. Further, the observation (pattern No. 3b) that the behaviour of the adult birds contrasted strongly with that of the young demands an additional remark here. As stated in my paper, the