

Inter-specific pairing in Scaup and Tufted Duck

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Introduction

In no other group of birds are so many hybrids described as in ducks. The largest number of hybrids are found within the dabbling ducks, tribe Anatini but hybridization also occurs frequently in other tribes (cf. Gray 1958, and Johnsgard 1960). It is well known that peculiar pairs may be formed among ducks in captivity where many species are kept in relatively small pens. A great many of the recorded duck hybrids originated from birds in captivity but so far we know very little about hybridization among free-living birds. As it is very unlikely that a single person will be able to collect enough data on his own to be able to draw any conclusions, it is very important that incidental observations on wild hybrids and inter-specific pairs should also be published.

Johnsgard (1960) has summarized the hybridization within the tribe Aythyini and recently Gillham, Harrison J. M. and Harrison J. G. (1966) published a detailed description of plumages and bill characters of some *Aythya* hybrids including those between Scaup *A. marila* and Tufted Duck *A. fuligula* which are the subject of the present paper.

Scaup and Tufted Duck at Myvatn

During seven years of field-work on waterfowl at Myvatn in north-east Iceland I have been able to make a number of observations regarding the inter-specific relationships between the Scaup and Tufted Duck. Some of the findings throw light upon possible hybridization in the two species. The Scaup has for more than a hundred years been the most numerous duck in the well-known duck area around Myvatn. The Tufted Duck, however, did not start to breed in Iceland until the end of the nineteenth century. Today the Tufted Duck is the second most numerous duck in the area, of about 50 sq. km., where some 5,800 Scaup and 3,800 Tufted Duck pairs breed. Both species have recently declined, the Scaup in particular. They frequent roughly the same habitat and hence the opportunities for hybridization are good.

I have never been able to confirm any Scaup x Tufted Duck hybrid in the area but I have a dozen observations or so of 'suspect' individuals during my duck counts. In a few cases they may only have been Scaup and Tufted Ducks in aberrant plumages but most certainly some

of them have been hybrids. To describe a hybrid bird acceptably the specimen has generally to be collected or you have to have a very good photograph or an observation at close quarters. At Myvatn no shooting is allowed during the breeding season and consequently it is hard to obtain evidence of the sort required. As far as I know no hybrid Scaup x Tufted Duck has been collected in the area of Myvatn. However, in 1956 P. L. Wayre got some Scaup eggs for hatching purposes from the area and the ducklings that hatched from them turned out to be hybrids (Sage 1963). When Dr. Jeffrey G. Harrison visited a pond in the middle of Reykjavik in May 1965, he saw and photographed a male hybrid (cf. Gillham, Harrison J. M. and Harrison J. G., 1960).

Inter-specific pairs

Pair formation in *Aythya* occurs later in the season than in *Anas* species and typical diving ducks (Mergini) which usually are in pairs early in the winter (e.g. Lebreton 1961, and personal observations). At the end of May some Tufted Ducks and many more Scaup are still unpaired at Myvatn. Scaup arrive later than Tufted Ducks, some not until the first week of June.

In the years 1960-66 I have noted eleven certain inter-specific pairs and also five less certain cases. These are listed in Table I. Twice a male Tufted Duck has been accompanied by and apparently paired with a female Tufted Duck and a female Scaup at the same time. Polygyny has previously been found in the Tufted Duck (Bezzel 1964, Reichhoff 1965). It is interesting to see that most of the observations are from June and not from the end of May, when I conducted most of my counts and had the best opportunities to find inter-specific pairs. Another interesting point is that there were fourteen instances of a male Tufted Duck paired with a female Scaup and only two the other way round.

Behaviour of inter-specific pairs

Only on two occasions have I been able to observe the behaviour of the inter-specific pairs in detail.

On 5th June 1963, I watched a pair of male Tufted Duck and female Scaup. In the immediate vicinity pairs of Tufted Duck and Scaup were displaying or loafing on the water. The male Tufted Duck displayed but with rather low intensity. I

Table I. Observations of inter-specific pairs of Tufted Duck x Scaup at Lake Myvatn, N.E. Iceland. Above dotted line certain cases, below less certain.

Date	Tufted ♂ x Scaup ♀	Scaup ♂ x Tufted ♀	Tufted ♂ x (Tufted ♀ x Scaup ♀)
29 May 1965	X		
29 „ 1966			X
3 June 1963	X		
5 „ 1963	X		
11 „ 1962			X
18 „ 1962		X	
20 „ 1961	X		
22 „ 1962	X		
22 „ 1964	X		
26 „ 1963	X		
4 July 1963	X		
27 May 1961		X	
28 „ 1963	X		
2 June 1962	X		
10 „ 1962	X		
16 „ 1963	X		
11 + 5 = 16 observations	12	2	2

recorded the most common display movements such as Coughing, Head-throw, various preening movements, once a sort of Sneak posture and several times he uttered the characteristic bubbling call, i.e. Kinkered-neck call (terminology after Johnsgard 1965). His mate (Scaup) remained inactive all the time. However, when suddenly a party of five male Scaup entered the arena the female became active and repeatedly performed Inciting and a couple of times rushed at the newcomers. The drake Tufted Duck now became the inactive partner and swam away, closely followed by the female and the five courting drakes. The Scaups constantly displayed and performed the same movements made by the drake Tufted Duck just before. After a short while the whole courting-party took off and disappeared. An hour later I observed an inter-specific pair, probably the same, at very long range and I witnessed a copulation.

On 29th May 1965, I watched an *Aythya* courting-party for about an hour. A drake Tufted Duck and a female Scaup were apparently paired and a varying number of Scaup drakes (2-6) displayed around them. The Tufted Duck led the party all the time and, so to say, served as pace-maker and director. All the time he was in an alert posture but I never saw him perform any display movements. His mate stayed close behind him and every now and then she turned, trying to fight off the pursuers. She even showed overt aggression. When hard pressed the

female dived and so did the Tufted Duck and some of the Scaup drakes. The latter performed Head-throw and Kinkered-neck call and rushed after the female. Two of them were more aggressive and pressing in their attendance than the others. The courting-party moved around within an area of 50 × 200 yards. Finally the whole party flew away, the males still chasing the female. Flying courting-parties are common in these two *Aythya* species although Bezzel (1959) states that they are lacking in *Aythya*.

Discussion

The display movements and sequences of species belonging to the genus *Aythya* are extremely similar (Steinbacher 1960, Johnsgard 1965 and personal unpublished observations). It is evident that the sexual behaviour involved in pair-formation and copulation is not a very effective isolating mechanism in *Aythya* (cf. Johnsgard 1963). This is supported by observations on inter-specific pairs of Tufted Duck and Pochard *A. ferina* in Germany (Bezzel 1960).

The most noteworthy feature of my observations at Myvatn is that most mixed pairs comprise a drake Tufted Duck and a female Scaup. The females of the two species may sometimes be difficult to distinguish at some distance but, since typically Scaup females have white patches near the base of the bill and Tufted Ducks do not, if recognition was crucial inter-specific pairs of either combination should be equally plentiful. I do not think

Table II. Observations on pair-formation and sex-ratio in Scaup and Tufted Duck at Lake Myvatn, N.E. Iceland.

	<i>Scaup</i>	<i>Tufted Duck</i>
Number of birds observed	13,480	9,645
Percent females not paired		
15-31 May	12	7
1-15 June	8	3
Sex-ratios (males : 100 females)	120	138

my observation technique caused any discrepancies in the material, while observations by Bezzel (1960) show the same tendency.

Table II summarizes some information concerning the proportion of unpaired females in late May and June and the sex-ratios of Scaup and Tufted Duck. The greater excess of males in the Tufted Duck seems unlikely to provide a complete explanation of the preponderance of Tufted Duck males in the inter-specific pairs. The chronology of pair-formation is, however, somewhat different in the two species. Unfortunately I cannot present any figures from March and April when according to Bezzel (1959) pair-formation in *Aythya* in south Germany reaches its peak. According to my material from Myvatn a larger percentage of female Scaup is still not paired at the end of May and in the first half of June than is the case in the Tufted Duck. As pair-

formation in the Tufted Duck proceeds, an increasing number of unpaired surplus males can re-direct their interest to female Scaups that are not yet paired. This, together with the similar displays of the two species, may explain the formation of our inter-specific pairs. Bezzel (1960) explained wild hybrids of Tufted Duck x Pochard in a similar way.

Recently Weller (1965) put forward a theory that late breeders of *Aythya* form pairs later than early breeders. This is consistent with the breeding of Scaup and Tufted Duck at Myvatn, where the Scaup breeds much later on average. It also supports the hypothesis about surplus males of Tufted Duck intervening in the pair-formation of the Scaup.

The problem of hybridization in the wild of sympatric species like the two *Aythya* concerned is of ecological, ethological and zoogeographical interest and deserves further attention.

Summary

In seven years observations on very large numbers of Scaup and Tufted Ducks at Myvatn, Iceland, sixteen mixed pairs have been seen. In fourteen the male was a Tufted Duck. Two such males were accompanied by both a female Scaup and a female Tufted Duck. Tufted Duck x Scaup pairs are probably more frequent than Scaup x Tufted Duck for two reasons: there is a greater excess of males in the Tufted Duck population and, because that species forms pairs and breeds earlier than the Scaup, unsuccessful male Tufted Ducks can more easily find unpaired female Scaup.

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