

Feeding habits of the Harlequin Duck

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THIS is a summary of observations on the behaviour of Harlequin Ducks *Histrionicus histrionicus* made by members of the Ulster North Iceland Expedition, leader J. Arnold Benington, from 7th to 15th July, 1961. We were camping on an island in the River Laxá, which flows from Mývatn to the sea, at a point some one and a half miles below the lake itself, near Helluvað Farm. This proved to be in the heart of an area favoured by Harlequins, and it will be as well to describe the habitat briefly before proceeding further.

The Laxá valley runs through wide sweeping moorland. At some comparatively recent time lava has flowed down the valley in a narrow strip, presumably occupying what was once the bed of the river itself. Once the lava had cooled the river evidently found its previous course blocked, and had to flow around or over the lava or to cut a way through it. In many parts of the valley what has happened is simply that the river has cut two parallel streams, one on either side of the lava, leaving a very long, narrow island in the middle consisting entirely of lava. In the area around our camp, however, whilst this basic phenomenon could be observed, the river had also cut numerous channels through the lava itself, so that instead of there being just one long island there was a series of small islands between the two main arms of the river. Parts of the river were slow-moving, and in one place it broadened out into a sort of small lake, but in most stretches it was very fast-flowing, with numerous rapids and small waterfalls. The volume of water hurtling down the valley appeared to be immense, and the roar of the river was always in our ears.

With few exceptions the banks were abrupt and firm. The vegetation on both the banks of the mainland and on most of the islands consisted chiefly of coarse grasses, kept in check by the cattle which grazed them, but in a few places, and especially on islands which could not be reached by the cattle, there was a much more luxuriant vegetation of scrub birch and willow. The river and its valleys are noted both for salmon and trout and also for midges, which exist in an abundance which has to be seen to be believed. Though I have no direct knowledge of the subject I presume that there are great numbers of midge larvae of one kind or another in the river, and that this may account for the abundance not only of the midges but also of the fish and the Harlequins.

At the time when we were in the area the sun went below the horizon for about two and a half hours at night, but there was no real darkness. If the sky was clear, it could be almost as light as day at this time, but with an overcast sky the effect was rather as of twilight, and it was not always easy to see exactly what a dark duck on dark water was doing in such conditions.

Most of the Harlequins we saw were females, of which some at any rate had nests on the islands in the neighbourhood. As we were living in the middle of a good Harlequin area, there was rarely a time of day or night when at least some members of our party were not in sight of some. In these circumstances perhaps the most remarkable thing about the feeding habits of the Harlequins, which should be stated before anything else, is that they were very rarely observed to feed at all. In fact many members of the expedition never once saw a Harlequin feeding. The favourite occupation of the Harlequins, as far as we could see, consisted of just simply sitting around doing nothing—commonly perched, with feet awash, on a boulder in one of the more

rapid parts of the river, or perhaps afloat on one of the calmer stretches, or sitting on the bank a foot or two from the water, or even afloat on one of the rougher streams, nonchalantly keeping position with reference to the bank despite the strength of the current. Odd birds would be seen flying up and down the river, the flight being characteristically low (even under bridges) and following the course of the water, but these flights did not seem to have any particular purpose beyond taking the bird from one place where it had been doing nothing to another where it could do nothing even better. During these long periods of little activity the birds would be, if not exactly tame, at least fairly indifferent to what was going on about them, so that they were quite easy to approach.

All this was a little mysterious, as the Harlequins had a contented, well-fed look, and obviously must have been doing some feeding at some time or other. The solution to the problem appears to be, however—all the evidence is strong on this point—that when the Harlequins do feed they do so very intensively, with an energy and persistence that give the impression of being far greater than that shown by other diving ducks. There were two distinct manners of feeding, by diving and by “head-dipping,” by which I mean the immersion of the head and the neck whilst the bird is swimming on the surface. Diving would on occasions be varied with short periods of head-dipping, but head-dipping, which required much less energy, was sometimes seen to take place for very short periods unassociated with diving. For example, a bird swimming from one resting-place to another might occasionally indulge in a little head-dipping on the way; but diving, when carried on at all, was while it lasted the bird’s main, indeed all-absorbing, occupation.

Diving was observed on one occasion at about 3-4 p.m., when four ducks were seen diving; on many occasions at about 10.30-11 p.m., just before sunset; and on one occasion from 12.30 to 1.15 a.m. Unfortunately the observers were asleep between 1.15 and about 6 a.m., so we have no means of knowing whether the Harlequins were feeding during that time. The fact that feeding was most commonly observed just before sunset suggests a strong possibility that it might take place just after sunrise also. So far as has been reported to me no member of the expedition ever saw a Harlequin diving between our getting-up time and the mid-afternoon.

We observed ducks diving singly and in numbers up to four, but it must be emphasised that when two or more Harlequins were diving together this meant simply that they were not far away from each other and doing more or less the same thing at more or less the same time, and not in any way that they were co-operating with each other in any direct or systematic way. I stress this because it is at variance with what is stated in the *Handbook of British Birds*.

Harlequins were seen diving in very strong and swift currents, the depth varying between about three feet and about five feet, as far as could be judged from the bank. The length of dive (checked by the second-hand on an ordinary wrist watch, not by stopwatch) varied between five and twenty-five seconds. It was remarkable that a diving Harlequin would emerge from a strong current at the same point as that at which it went down, or commonly a few feet upstream, and only rarely downstream. This argues very powerful underwater swimming or walking on the river floor, or both, as in places the current was strong indeed. On emerging after such an athletic feat a diving Harlequin would pause for only five or ten seconds—apparently just long enough to gain

breath—before diving again; and so it would go on for perhaps five minutes at a stretch, after which the duck would normally come out on to the bank for a period of about a minute (apparently to rest, though it would look very alert during this time). After this brief rest period, the duck would go straight into the water again and immediately dive, right up against the bank, although it might surface further out.

The longest period during which I observed a Harlequin feeding in this manner was 45 minutes (12.30 a.m. to 1.15 a.m.). As the time went on, the rest-periods on the bank became gradually longer and the diving periods gradually shorter. Also towards the end of the period the bird was more inclined to vary diving with the less laborious head-dipping. Other Harlequins I observed might well have carried on feeding for an equally long period if I had not disturbed them. This latter remark, about disturbing feeding birds, reminds me that I observed very clearly that feeding Harlequins were far more alert and also far more shy than those we so commonly watched doing nothing during the course of the day. In fact great stealth was required to watch feeding Harlequins at sunset or later. At about sunset, moreover, the birds were much more active on the wing than normally. They would fly very rapidly up and down the river, and even (surprisingly) overland across the islands, in tight little groups of three, four or five. These flight movements did not seem to follow any clear pattern but were indicative of the frenzy of energy and the wildness which appeared to grip the Harlequins at this time. Similar movements, on a much smaller scale, were also observed at about 7 a.m. In the course of these flights a Harlequin would occasionally utter a musical call-note which always reminded me of the distant trumpeting of a Whooper. It would be interesting to know if any extensive flight-movements take place at sunrise.

It was clearly observable on the Laxá, where many diving ducks were present, that Harlequins dived with greater vigour and persistence than the others, though their feeding periods were much more restricted. A Scaup, for example, might dive on and off throughout the day and night (I saw one diving for a short period at about 1 a.m., whilst I was observing the Harlequin), but would not keep it up for so long at a time and would certainly take a longer period on the surface between individual dives. Harlequins would habitually dive in much stronger currents than the others and definitely seemed to prefer rough water. They were not at all perturbed by the presence of waterfalls and one that I disturbed actually swam over a small waterfall about two feet high! Scaup would occasionally dive in fairly strong currents (more so, as far as I could see, than any other ducks apart from the Harlequins), but normally preferred calm water. I never saw Harlequins feeding in completely still water or in a very moderate current.

Feeding by "head-dipping" seemed to be carried on in an energetic and systematic way most often just before sunset, but was occasionally observed at other times, when something in the water would apparently catch the bird's eye and lead it to dip three or four times in a desultory way. When a Harlequin was "head-dipping" in a persistent way it would normally swim upstream in a strong current and repeatedly push its head and neck forwards and downwards in the water. When I first saw this I thought that the Harlequins were skimming the surface with their bills, but closer observation revealed that the bills were quite definitely pushed down well below surface level. The impression I got was that there was something suspended in the water (not

floating on the top) which interested them.

Most of my observations of feeding Harlequins were made in poor light. Although the July night in north Iceland seems bright enough when one is walking the heaths, visibility can be bad down by the river where the valley slopes, the banks themselves, and the bushes, all conspire to shut out the light. I was unable to see that diving Harlequins emerged with food which they swallowed on the surface, and strongly suspect that they swallow the food underwater, but there may have been above-water gulps which I could not detect in the dim light. Anne Ryan saw one Harlequin with weed in its bill in the afternoon (on the occasion when the first nest was found).

The bill of a Harlequin is short and stout in comparison with that of many other ducks, including that of the Scaup, with which its feeding area to some extent overlapped. It seems to be well adapted to prising objects from rocks and boulders and to pushing loose stones about, but less well adapted to sifting water and weed.

In comparing the observations recorded above with the information in the *Handbook of British Birds* (Vol. III, pages 324 ff., 1943, revised edition), the following points of difference emerge. The *Handbook* quotes C. E. Alford as saying that a valuable aid to identification of the Harlequin is its manner of swimming—"either so closely abreast that flank of each individual touches that of its neighbour, or in step-like formation, manoeuvre executed with wonderful precision and at once distinguishing species." This is something which I never observed. "Has habit of jerking head backwards and forwards at each stroke of legs" : this is something which I observed on many occasions, but more often than not the feeding Harlequins which I watched did not jerk their heads. "Almost entirely a day feeder" : as my notes will have shown, this is just not true as far as the Laxá Harlequins are concerned. "Frequently dives from the wing (Phillips)" : I never saw this happen, but it was noticed on several occasions that a Harlequin leaving the bank to dive would submerge as soon as it reached the water, without apparently remaining afloat even for a moment; this was made possible by the steepness of the banks, which went almost straight down for several feet at some points. I am unable to offer either confirmation or denial of the description of underwater habits given in the *Handbook*, as conditions of visibility were never good enough. I had, however, come to the conclusion from my observation of the dives and places of re-emergence that the Harlequins almost certainly walked Dipper-like, along the river bottom, facing upstream, as the *Handbook* states "Will also wade in shallow streams where they can feed by merely immersing head (Phillips) or "up-end" like surface-feeders (Michael)" : I never saw either of these feeding-methods being used, but, as I have already stated, "head-dipping" whilst swimming upstream was commonly observed. On reflection, I think that this took place most usually, though by no means always, in comparatively shallow water, which would nevertheless usually have been too deep for the bird to be able to reach the river bottom with its bill in this manner.

In conclusion I may say that the extreme industry displayed by feeding Harlequins made me feel they earned their long periods of indolence; and that there is obviously a very great deal more to be found out about these ducks. Perhaps I shall return to the Laxá some day, and perhaps by then somebody will have invented something that really does repel the midges—though I doubt if anything would!