

Courtship Habits

It's one of those spring mornings when March "comes in like a lamb". Now's the time to check up on our local grebes who have been intermittently appearing down on the loch since late January whenever the frost has let up enough. I try to get down early before there's too much disturbance with people (like me!) exercising their dogs on the path round the loch shore. I always start at one of the two small reedbeds where eventually the grebes will nest. These nesting areas are very small for a species which demands a hidden nest-site in growing reeds and won't tolerate another pair at all close. The first thing I hear is the whinnying call of a Little Grebe, also establishing its claim to a part of the reedbed. Its mate, a tiny powder-puff of a bird, swims out and dives to go feeding. But it's the Great Crested Grebe, three times the size of its smaller relative, that I'm looking for.

The sun is up and the loch is smooth after a cold, still night - ideal conditions for watching display. But having done little grebe watching so far this year I'm not prepared for what happens next. The first bird I spot out on the loch looks oddly large. It has its wings spread and arched, showing the bold black and white pattern on them to good effect. Its head plumage is also spread in full display so that facing forward, with its black and russet neck-ruff distended into a full circle, it bristles round-faced like a cat. And I know that the 'Cat' display is a threat posture by a bird anticipating attack. So I lift my binoculars and watch intently. The bird swivels round on the surface. There's no other grebe in sight, and I realise that I am watching the first stage of the famous 'Discovery Ceremony', and that the bird is adopting this threat posture towards its own mate approaching underwater.

The 'Cat' posture gets more exaggerated till the bird looks twice its normal size. Suddenly, as though from nowhere, a long slim bird emerges vertically from below immediately in front of its mate, and, as an appeasement gesture, with its back to the threatening bird. It rises up almost like a ghost, and then slowly subsides into a swimming posture with head and neck held stiffly erect, facing away from its mate until they're a few feet apart, when suddenly it turns to face the threat. But the appeasement has worked and its mate relaxes its puffed-up plumage and the two swim together and start their customary head-shaking display, their frequent spring courtship ritual by which they have been getting to know each other now for several weeks.

Suddenly, just when one thinks it is all over, one bird leaps up and with a flurry of wings and pattering of webbed feet scutters across the surface as though pursuing an unseen rival. It stops twenty feet away, turns and immediately adopts yet again the 'Cat' attitude. This time its mate has more confidence and swims towards it on the surface and when they meet they start a high intensity version of their head-shaking

ritual, with their neck ruffs fully extended and loud chattering calls which echo across the loch. I have just witnessed one of the rarest of the courtship displays of the Great Crested Grebe, seldom seen and till now, so far as I can tell from the published evidence, never satisfactorily photographed. Because it is one of the earliest displays in the season during the pair-forming stage, and because of the mysterious approach of the cock bird unseen underwater, Huxley called it the 'Discovery Ceremony'.

From 1910 to 1912, Julian Huxley was a lecturer at Balliol College, Oxford, following a brilliant career there as a student. In his last year before going off to Houston, Texas to take up his first Professorship at the Rice Institute, he took a fortnight's holiday in the spring of 1912 - and in a way 'invented' a new art, bird-watching. Luckily for us he had observed that Great Crested Grebes did a lot of displaying while pairing up for the breeding season and felt this might repay more intensive study. What he discovered and then described with great insight in his now famous paper 'The Courtship Habits of the Great Crested Grebe' was that this species probably has the most elaborate and fascinating set of spring rituals of any British bird. The significance of his detailed observations and records was the discovery that their behaviour is mostly ritualised and follows certain fixed patterns, one stereotyped action leading to another, and all determined by the birds' genetic make-up.

Thus Huxley invented the new science of ethology, of which Konrad Lorenz called him 'the Founding Father'. Many of today's 'twitchers' and the bird-watchers who never wait long enough really to understand what they are seeing, would do well to read the second paragraph of Huxley's introduction to his paper, published in 1914, when he says: "This paper will, I hope, show what wealth of interesting things still lies hidden in and about the breeding places of familiar birds. A good glass, a notebook, some patience and a spare fortnight in the spring - with these I not only managed to discover many unknown facts about the crested grebe, but also had one of the pleasantest of holidays. 'Go thou and do likewise.'"

Over eighty years after his discovery and his brilliant descriptions of the displays, I still meet ornithologists who have never seen the Discovery Ceremony and seldom witnessed the most dramatic display of all, the Weed Dance. Admittedly it does take time and patience, and only happens for a few weeks of the year, mostly in March and early April. But each pair will perform the dance (Huxley called it the 'Penguin Dance' because of the upright posture of the birds at the climax) several times at the period when they have established the pair bond and are thinking about mating and nest-building. I have often seen half a dozen Weed Dances in a morning in the period a few years ago when my favourite local Great Crested Grebe site at Linlithgow Loch in West Lothian held as many as ten pairs all trying to muscle in to one small reedbed for nesting. It certainly helps of course to have a good location, with several pairs in

competition, as one pair displaying will often trigger other pairs into action in the general excitement.

The chief reason why this species is so prone to ritualised courtship is that the birds are naturally aggressive and fiercely territorial. Their natural instinct is to attack any rival on the breeding ground, so it becomes essential for each member of a pair to be able to recognise his own mate. To enable them to do this, from as early as January, the two birds of a pair will frequently go through elaborate head-shaking ceremonies, greeting each other with close head-to-head contact every time they meet. Nearly every birdwatcher will have seen this head-shaking display by which the pair-bond is established. It can become very intense when their breeding plumage is fully developed, often quite early in the spring, and they erect the full circle of the feathers of their neck-ruff while at the same time both making a loud ticking call.

Perhaps the most instructive grebe behaviour to observe first of all is fighting over territories. They use both wings and bills to attack a rival on the surface, often with much spray flying; and I have watched one bird gripping the neck of a rival and trying to drown it. Like most birds they usually start with threats and only come to blows as a last resort. A pair will often swim side-by-side to threaten a rival pair, with heads and necks lowered and bills pointing straight forward, facing the enemy with two formidable spears. The purpose of this is usually clear enough to persuade a less motivated rival to retreat. If it doesn't work, one of the birds usually dives, which often induces panic in a rival who will either also dive or flee across the surface. No wonder when faced with that deadly weapon as an unseen menace from below. So perhaps it's not so surprising that when the cock bird dives within view of his mate, she adopts the aggressive 'Cat' posture which not only inhibits his possible attack but induces the astonishing 'Ghostly Penguin' display as an appeasement approach to his future breeding partner.

The Weed Dance (or 'Penguin Dance' as Huxley called it) comes at a later stage in pair formation and also has an underwater element. It is closely associated with nest-building and once again takes an ordinary functional activity - diving to the bottom to collect weed for building the floating nest-platform - and makes a ritual out of it. If the full performance is witnessed there are about seven stages and it all takes up to 2 minutes to complete. It is essentially a mutual display, each bird of the pair performing the same synchronised actions as its mate, each move stimulating both birds to continue to the next part. If anything goes wrong and one bird defaults at any stage, the whole ceremony fizzles out, which can of course be particularly frustrating for the photographer waiting through all the early stages to record one of the later stages or, best of all, the final dramatic climax. The normal pattern is as follows:

The pair, now familiar with each other through frequent bouts of 'head-wagglings',

meet and start with this ritual recognition display, face-to-face and often quite far out on the water. If ever the photographer spots this happening close to the bank, it's always worth trying to focus onto it, just in case the full display develops within camera range instead of too far away to record any detail.

If this first stage turns into intensive head-shaking, with the two birds facing each other with neck ruffs fully distended into a black-rimmed circle and with much loud calling, then watch closely.

Either bird may then start 'habit-preening', where the normal action of preening the wing feathers - so necessary in a bird which spends so much of its time 'flying' underwater in pursuit of its food - is turned into a ritual where it turns and flicks the wing feathers on the back and then turns back to head-wagging with its mate. This may be repeated many times and is normally a vital preliminary to the Weed Dance.

The crucial stage which decides that this is turning into a Weed Dance then may follow. Both birds, often still flicking occasionally at their wing feathers, turn and swim away from each other. This can be recognised at once as a highly formalised ritual by the strange attitude they both take up, stiff and straight like a statue with neck erect, crest flattened, and neck-ruff fully raised. After a short distance one bird will purposefully lower its ruff and dive silently, slipping without any splash out of sight. If its mate then does the same, (and especially if all this has happened so far within camera range) one's heart starts thumping and one's finger itches on the shutter button of the camera. There's nothing to be seen except water. What will happen when they surface?

It's an anxious moment for things can still go wrong; and the next stage is also crucial.

If one bird surfaces carrying a beakful of weed, it looks around for its mate but does not move till it appears. So far, so good. If the second bird also appears with a beakful of weed, you're in business. An agonising choice has now to be made. The birds are still many yards apart but start swimming purposefully towards each other. One must latch onto one and follow it across the surface, while, if possible, keeping an eye on the other one at the same time. They swim together, heads up, weed dangling from their bills.

At the last second as they meet, both birds rear up on their tails, feet paddling like mad to keep themselves erect in the water which flies everywhere with much splashing; and then, breast-to-breast, they dance while head-shaking with their beakfuls of weed. Gradually they subside, the paddling slows and they systematically throw away all that hard-won weed, ending up with a bout of normal head-shaking.

When the dance is over, one bird, which I often presume is the hen, turns and swims in towards the reed-bed where they have established their nesting territory, closely followed by her mate, and they disappear into the reeds to select their future nest-site. I have run a 16mm cine-camera for a full two minutes on one continuous action-play of these seven stages, which is clearly the right medium in which to record such a fascinating succession of events, each stage triggering the next. And it's worth remembering that the 16mm film frame is so much smaller that the image is double the size on the screen, so a display at a greater range is still worth filming. Capturing the crucial moments of the whole display with a still camera is far more difficult. The 35mm format calls for either a lens twice the focal length or the birds half the distance from the camera, both rather unlikely. So the opportunities for displays within range for still photography are far fewer - but of course doubly exciting. Movie film exonerates one from the agonising decisions with still shots of when to press the button. With either format the whole thing is a waste of time and effort if the range is too great. Even on the rare occasions when the display takes place reasonably close, the use of a powerful telephoto lens (I suggest a minimum of 600mm focal length) is essential - and quite impossible in a boat however calm the weather. So one has no option but to wait and watch on the bank behind one's tripod praying for that rare 'close encounter' which will give a reasonable result. I must have watched at least a dozen Weed Dances for every one I have attempted to photograph.

Opportunity is the name of the game. Sadly, it looks as though the opportunities on my own patch so conveniently close to home may already be over. Three years ago, twenty pairs could be counted on Linlithgow Loch. In 1996, there were hardly any birds displaying in spring and only one pair reared a small brood of two young very late in the season. Only a few miles away on the Firth of Forth there are dozens, sometimes hundreds, of Great Crested Grebes wintering in the estuary.

They linger there late into the spring, in full breeding plumage, and often display on the sea where I have even seen a full Weed Dance performed with seaweed - except of course for the final stage, as they have no reedbed there to swim to.

So I presume the loch, only a few miles inland, is no longer able to support the birds through lack of food, as the two nest locations are virtually unchanged. One pair did occupy my favourite reed-bed this last spring and even laid three eggs but nothing came of it. So what is putting them off? We have had hot summer spells but the algal blooms have been no worse than in previous years when a dozen pairs competed to get into the one small reedbed to establish their territories. Sometimes several pairs were head-shaking at once and I had the unusual problem of being spoilt for choice of subject in the viewfinder. Maybe they will come back. But if the grebes are

seriously at risk from pollution, as so many water-birds are, my advice is the same as Huxleys's but more urgent now with so many threats to our wetlands and waterbirds - 'Go thou and do likewise' before it is too late. You will not only have 'the pleasantest of holidays' as he did, but you will witness one of the most fascinating displays of bird behaviour anywhere in the world right on your own doorstep.

Great Crested Grebes are strangely primitive but their courtship rituals are complex and fascinating, and well worth the little extra time they demand and deserve.