FIELD NOTES ON THE LITTLE GREBE.

BY

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The following observations on the Little Grebe (*Podiceps r. ruficollis*) were made at Fetcham Pond, near Leatherhead, in Surrey, during the last three years.

TERRITORY.

Little Grebes begin to defend territories in the middle of February. These are small areas—about $\frac{1}{4}$ acre—situated in the parts of the very shallow lake that are overgrown with marestail (*Hippuris vulgaris*). Where several territories border on an open space, free from weeds, this constitutes a neutral area where paired birds can meet and associate with others, without fighting.

The actual territories are strictly protected. Both sexes defend their borders, sometimes working together. Territorial demonstrations—far more often than not they do not end in actual fighting—take place many times daily between pairs whose marches adjoin. One bird makes a series of short rushes towards his neighbours' territory, flapping his raised wings, and keeping his head and neck outstretched; at the same time he utters the shrill, tittering call. The owner of the territory advances in the same set style; between each rush, both birds float with heads drawn in, flank feathers fluffed out, and wings slightly raised. So they approach each other, until they float about a foot apart, and strictly on the territorial border. As they face one another, I have seen one, or both birds peck with an almost nervous movement at the surface of the water, as though picking something up. On one occasion the bird which had started the encounter splashed the water with its beak, and snatched at a weed stem. Both birds then dive, at the same moment, or one very quickly after the other; frequently they emerge farther apart than they went down. After one or two plunges, honour is satisfied and, as an almost invariable finish to the demonstration, each bird swims back to float close beside its mate, and to utter several long "titters" in duet. Both birds of a pair may begin a territorial demonstration, advancing side by side; and sometimes an incubating bird whose mate is being menaced will leave the nest, and hasten to join in.

The demonstrations do not always end harmlessly. There may be furious submarine scrimmages, or fights upon the surface, when the birds strike with wings and feet and seem to try
to drive each other under water. A bird caught in the territory of another never seems to show fight; occasionally the threatened bird does not respond to its neighbour's rushes, but merely floats just within its borders in the "ready" position. If it does this, the attacks are not pressed home. The loud tittering of paired birds is the one feature of territorial encounters which never varies.

In 1932 a pair of birds, K-L in my notation, whose nest had been continually wrecked by a Coot, took up a new territory in mid-May, and built a nest without disturbance. The birds which had been their immediate neighbours—H-I—extended their marches so as to take in almost the whole of the deserted territory, while the next pair again—X-Y—annexed a little water on the far side of H-I's original domain.

Birds with late broods keep up territorial rights until mid-September.

SEXUAL RELATIONSHIPS.

There is no elaborate display as with the Great Crested Grebe. In March I have seen two birds floating side by side with necks stiffly erect and beaks sharply horizontal; this pose may be but slowly relaxed. On one occasion (March 18th, 1933) two Grebes swam some twenty yards together, and then floated close with their foreparts raised, and necks upright. Before a nest has been built I have seen one bird carry some weed to its mate with upright neck (March 12th, 1932), while this same pair, after the loss of their first brood, floated breast to breast while one held some weeds (May 22nd, 1932). These birds continually plucked scraps of weed, and placed them anywhere on the water, not on any of the three small platforms of weed in their territory. Perhaps one bird occasionally feeds the other.

The most marked feature of the inter-sexual behaviour of Little Grebes is their habit of calling in duet—as already observed by Professor Julian Huxley (B.B., Vol. XIII., p. 155). Paired birds are continually calling. Frequently they swim, or emerge from dives close together, and float side by side as they utter their long rippling call. If this habit is any criterion—and I believe it is—some birds pair for life, for in November and January it is quite usual. The interesting feature is that these winter birds not only frequently "titter" together, but that they do so in certain fixed places—keeping an undefended territory throughout the winter. Duets from birds within the flocks that haunt Fetcham in winter are fairly
frequent, but far more often two birds will leave a fleet of Dabchicks, and "titter" when they reach their own "marches"—or one bird will swim from a flock and call with a second which is already at this trysting place. So fixed is this habit in some Little Grebes that, in 1933, two pairs which left the pond at the end of March, kept well-defined, though undefended, territories during January and, in one case, began to defend their borders in February. In mid-March they grew restless, making long excursions outside their own territories, and early in the fourth week of that month had gone.

The only formal sexual behaviour immediately precedes and follows mating, which takes place on the nest. The female has a marked "invitation" pose, crouching low on the platform with her neck sharply angled, and beak almost touching the weeds. If the male is slow to respond she will break her pose to fiddle with the materials of the nest. During actual copulation the female keeps her neck very upright, and with her beak sharply horizontal turns her head slowly but rhythmically from side to side. On June 19th, 1932, I saw the male make this same steady side to side swing of his head before mating took place; at the same time he uttered a high whirring note. On April 25th, 1931, both birds crouched on the nest in the typical "invitation" pose. After coition both birds stand very upright on the nest, and may touch beaks; twice I have seen the female pick up and hold weeds. The platform on which mating takes place is not always used for the reception of eggs.

INCUBATION.

I have not been able to ascertain the incubation-period; it is about twenty-five days. Up to four clutches may be laid in a season, but the proportion of chicks to eggs is small. Many nests are destroyed by flooding.

The first egg laid is brooded at intervals. At this time the birds relieve each other every five to six minutes, whereas, when the full clutch is laid, changes take place about three times in two hours. If a bird be frightened off a clutch of incubated eggs, it covers them carefully with nest materials before leaving, but the first egg is only sometimes hidden, though I have seen a bird get on to the nest, cover the single fresh egg, and immediately leave (April 18th, 1932). So far as my very limited experience of the Great Crested Grebe at the nest goes, that bird, when covering its clutch, picks up strands of weed and actually lays them across the eggs. But the
Dabchick merely rakes some of the material lying on the rim of the cup over its eggs.

**CARE OF THE YOUNG.**

The young are fed by both sexes; while they are very small they remain on the nest with one parent while the other brings food. Although small fishes are carried to the nest and swallowed whole by the chicks, some of the food given at this period is, I think, regurgitated. On these occasions, when several feeds in quick succession are given to one chick, the parent makes a small scooping movement of its head and neck, slightly opening its mandibles, while the throat can be seen working in a manner very suggestive of regurgitation. When the young are rather older, food is sometimes bitten up before being given to them. After the first week of their lives they are fed chiefly on the water, being taken back to the nest for rests. The practice of carrying young birds about upon the back is not so common as with the Great Crested Grebe, though on the nest the chicks always sit beneath their parents' scapulars. Only with a September brood have I seen the chicks regularly carried; in this case there was no nest to which they could repair.

The chicks preen themselves when very small, but I have frequently seen an adult preening the young one's head; this attention seems to be much appreciated judging by the curious, sinuous movements of the head and neck which the chick makes.

**RELATIONS WITH OTHER SPECIES.**

On Fetcham Pond the Little Grebe is more than a match for both Coot and Moorhen, which seem to have no means of defending themselves against the smaller birds' submarine attacks. So healthy a respect have the two larger species for the Dabchicks' torpedoing tactics that they will sometimes turn away or retreat upon its approach. In 1932 a Coot certainly succeeded in driving a pair of Grebes from their territory by destroying their nest, but it did so in spite of several successful attacks, before which it was compelled temporarily to retreat. On May 10th, 1931, two Grebes were joined in their attack upon a Coot by a bird from the next territory.

Little Grebes seem to be afraid of birds flying low over them. Should some of the Black-headed Gulls which visit the pond in winter wheel above a party of Grebes, the latter
make "crash" dives, throwing up flashes of water, and only exposing the head and neck when they emerge; and they will keep this up for as long as the Gulls are overhead. One day, four Grebes dived with a considerable splash when a Peewit wheeled above them.

**Behaviour in Flock.**

Most of the birds wintering at Fetcham—the population is considerably augmented by migration during this season—spend their time in fairly close flocks. The birds in these companies sometimes perform simple mass evolutions. The most usual of these is for a fleet of 20-25 Grebes to dive absolutely as one bird, several times in succession. The movement of a fleet in any direction may, in the same way, be commenced by all the birds making a simultaneous pattering rush along the surface.

At dawn, in January and February, Dabchicks indulge in antics which seem to be quite spontaneous and literally playful. Small parties of birds race to and fro, pattering over the surface, or make simultaneous dives, throwing up big splashes of water. There is a good deal of calling while these games are in progress.