

MANNERS OF HOLBOELL'S GREBE IN CAPTIVITY.

BY F. B. WHITE.

A HOLBOELL'S GREBE (*Colymbus holboelli*), perishing in the snow in a field in Warner, N. H., January 27, 1930, was picked up by Warden C. B. Malchow and given to me by Mr. Parker, Game Commissioner. After its untimely demise, the bird was proved to be a female. This bird I kept in a small box, giving it each day half an hour to an hour or more in a bath-tub or in a metal tub three feet in diameter. As it fouled the water and the floor in a way that was very offensive, constant change of the water and of paper on the bottom of the box was necessary. Mr. Sim (*Wilson Bulletin*, 1904) seems to have kept his Grebe in a room in his house, but does not explain why this was not too offensive; Mr. Crosby (*Bird Lore*, 1913) kept two in a box-stall. Mr. Shelley (*Auk*, 1930) doesn't specify, but notes that his Grebe escaped over a partition eighteen inches high. I should recommend where possible a wire enclosure six feet square with an ample supply of straw that could be scraped out conveniently. Water ought to be available for swimming, in a pool or tub that could be easily flushed out.

Out of water my Grebe's customary position was sitting flat on its belly. The feathers of the sides then made a pretty border (white gray-barred, an inch or two wide) for the small triangular area that its wings formed, closed tight and small, coming to an acute point at the tail. White of the wings was never shown except momentarily when the bird rose erect and flapped them; but the white of the body-feathers was often conspicuous beneath the edges of the folded wings, along the sides and toward the tail. The feet were usually extended out at right angles, on line with the end of the tail. The neck was held well up most of the time when human beings were present to interest the bird and keep it alert; but at quieter times the neck would lie along the back as far as would go consonant with holding the head up. This was the common position in swimming:—duck-like. In sleep, the bird laid its neck flat to the back, drew down its head, and held its beak close against one side of the upper breast. At that time, its feet were drawn up forward under the wings so that legs and feet were com-

pletely hidden; a good deal of fidgeting seemed necessary to work them up gradually into this position and likewise to bring them down again. Except in the darkness of night, I saw this position assumed only once, and that was on the snow. The breathing in sleep was regular, deep, not rapid.

When the Grebe sat looking at what was going on around, the slender, fine lines of head and neck were extremely graceful and gave an air of pertness and intelligence restrained by dignity. This was a more comfortable companion than most birds captured in maturity that I have had because of its customary quietude—but it had its wild times.

Attempts to walk were humorous: they resulted in a few staggering steps ending in a lurch forward and a bump down on the breast. One time, out on the snow, the bird ran twenty-five feet, flapping the wings; I thought I had lost it, but the effort to rise proved vain. Its efforts to stand were at first abortive; an erect position could be held only momentarily, ending in bumping forward hard on the breast. After a few days, however, it learned to stand erect on the whole length of toes and tarsus, and subsequently this position was frequently assumed and maintained balance satisfactorily. Rarely would it flap its wings when out of water, and the support given to standing erect on the toes was only brief. When dry, the feathers were sleek and attractive in appearance; when wet, mussed on neck and head, except the front of the neck, which had the faculty of shedding water unflinchingly. The slimy, sleeked-down look of the bird when taken out of a lively bath was ludicrous, shrunken and almost snake-like.

In the water, the customary movement of the Grebe was quiet paddling with strokes of leisurely kind alternating left and right. The legs were carried out from the body at a right angle, with depression of about forty-five degrees. As described above, the body-feathers formed a light border for the small dark triangular area of the folded wings. In turning around, the bird worked one leg vigorously and held the other still, acting as a rudder, so that the effect was as if pulling the tail around rather than driving the forward end; the motion of the paddle was a quick vibration, not strokes. To maintain itself erect it used this quick vibration, the feet set at an angle to the horizontal. Only twice did it tread water

in the proper sense. The vibrating seemed much more effective and gave a controlled position upright. This enabled the bird to flap its wings freely. A favorite movement was a lurch forward, humping up the shoulders, relaxing the wings, which lifted slightly, and raising all the feathers, instantly to be smoothed by a violent shake as the bird came to rest again in the water. Sometimes the bird would run the length of the bath-tub and back; this seemed to be accomplished by a combination of the vibrating motion of the feet with forward stepping; the wings were slightly spread.

The double stroke, which the bird had not space to indulge in freely, was of extraordinary power. This was witnessed under three conditions: when the bird was held under water, when it took a notion to escape from the bath-tub, and when it exhibited fear as a rare reaction the first thing in the morning. We were astonished at the force of the stroke when we held the body firmly under water; the complete muscular mechanism seemed to enter into it: the bird was all kick from head to tail. Secondly, the stroke was well exhibited in sudden mad impulses to escape by driving itself again and again up the sloping end of the tub, but happily this uncomfortable attempt was not often made, contented paddling usually being engaged in. Thirdly, the double stroke was exhibited in the small round tub when a sort of madness seized the Grebe for a quarter hour; then hurtling around and around under water wildly as if in terror, it would make pauses to bring its eyes to the level of the surface, then jerk its head down and resume the violent circular course. Why this conduct occurred at all, inasmuch as it occurred only twice, was odd. Perhaps the panic was caused by the restoration during sleep of a normal reaction that had been blurred by its varied tragic experiences of recent days.

The two elements of its life that afforded spectators most amusement were preening and eating. A thorough operation of preening was carried on when the bird was taken out of the water, which regularly cared for the lower part of neck, breast back to belly, part of belly included, body forward of bend of wing, sides and flank feathers below edges of wings. As for reaching for the oil gland at the base of the tail, this bird was rarely seen to do it, and then in a perfunctory way, with a quick dab. Very different was the conduct of another captive, which had come to earth in Concord, N. H.,

at Mr. Smart's, which would frequently be seen drawing the prominent gland deliberately upward through its bill.

In the water, preening was carried on between intervals of quiet paddling. For the breast and forward part of belly, the bird, heaved over on its side, sustained a position on its side long enough by violent strokes of one foot to make a few darts with its beak through the feathers, digging vigorously and reaching a little beyond the middle line. For the sides, the bill was driven along at the edge of the wings and just under the edge. For the back, the bill was passed along between the wings, but this was rarely done. Feathers of back and wings were laid smooth by the forward lurch and shake described before, on water as on ground. This operation was usually followed by lively dippings of the bill to sprinkle the back, which was then rubbed by the closed bill and by the side of the head used like a brush, with quick spasmodic strokes. Rarely it scratched the back of its head with a claw, or by backing against my finger and then wiggling its head. Rising erect and flapping the wings has been referred to above as done on the ground and was likewise done on the water. It seemed part of the preening, but may have displayed merely a desire to stretch the muscles.

For food, I experimented with raw beef shredded up, but in vain. Live goldfish were welcome, but were diminutive and extravagant at the price. Smelt, four to six a day, constituted the diet; they were from six to seven and three quarters inches long. One lot that was decapitated made the bird trouble because the blunt end would not slip down well and fragments would stick about the bill, resulting in a great deal of uneasy thrashing and knocking on the ground. Scraps it would leave lying around but never a whole smelt (except for two days when it definitely refused food). The fish would be seized across the middle and moved in the bill till the head pointed down the throat, then swallowed with no special exertion, merely four or five scarcely visible gulps. Sometimes a tail protruded from the bill a minute or two. A very big smelt or a frozen one would be vigorously bitten just back of the head and along the spine a short way. With the large ones, there was a motion of the bird's head not forward and back nor up and down, but a combination of the two, vigorous but not violent. The anxiety was all on the part of the spectators. Even a decapitated smelt

slipped down with no trouble, after a sound pecking and thrashing to improve the shape of the blunt end. If two smelt were given inside a half hour, the first went down quickly, the second slowly. It happened that on one occasion the swallowing of a second smelt was followed by a period of quiet ending in evidences of concern: "It's coming up again!"—and it was. The tail of the fish slowly worked up into the bill. Suddenly the bird began a series of violent quick sideways swings with the head, nearly completing a circle, and snapped the fish out two or three feet. Live goldfish were taken with sharp darts of the bill; one was seen to slip through but was taken on the second attempt. Only two small feathers were shed by this bird while I had it; one of these it ate.

The notes heard from this Grebe were three in number, all of the same fundamental nature, varying in closeness of vibration and in strength of tone. An appearance of threatening rage accompanied a series of loud somewhat nasal syllables: "oo, a, a, a, a, a, a," the opening note of lower pitch. This was a sort of whinney. At the opposite extreme was a soft closely-timed call, almost a trill, which to man conveyed an effect of contentment. The third note, vibrating but not in syllables, might be expressed as a groaning whine; this was very harsh and ascended in the scale after an opening syllable; it was only given at certain unhappy periods during which the Grebe went mad and tried persistently to escape, thrashing about and leaping up the side of box or tub. The first described note was often given when I could be heard in an adjoining room, and would fit in with an interpretation as a call for food, since it characterized early morning and ceased with feeding.

The frantic conduct that occurred at times was like that of several mature birds that I have put in a cage for short periods, but they would not learn complaisance. The Grebe reminded me of a captive Sparrow-hawk in its usual placidity, in its learning to know human beings as sources of food supply, and in its quiet glances about, that had the effect of engaging curiosity and enjoyment of attention.

The death of the Grebe after twenty-six days was sudden; shortly after being observed in perfect health it was found belly-up on the water, head and legs dangling down underneath.

Concord, N. H.