

# Detergents—A New Hazard for Water Birds

by Robert W. Nero, Regina

Water birds face a vast array of natural hazards throughout their lives including weather factors, parasites, predators, and diseases. In addition, they are subject to mortality through several man-made hazards, such as floundering in oil slicks on lake and ocean, or through ingesting poisonous insecticides. Complex chemicals may be expected to have a variety of unforeseen effects on wildlife. "New organic chemical exotics such as detergents" have already attracted the attention of ornithologists in respect to the deleterious effects of detergents on aquatic plants and animal-food organisms used by birds (Ann. Report, Conservation Comm., Wilson Orn. Soc., *Wilson Bull.*, 74: 218). Ordinarily, detergents occur as pollutants in dilute form and their effect on birds is only indirect. However, we now have good evidence of a direct effect of this hazard, namely, the **wetting** of water birds as a result of encountering waste detergents in concentrated form.

Late in the evening of April 29, 1963, my wife and I discovered a flock of about two dozen Horned Grebes sitting on floating boards on a bank of the Regina city sewage lagoon. The birds appeared wet, cold, and dirty, and were obviously in some difficulty. The area of the lagoon in which we found the grebes had a thick scum on the surface of the water, evidently waste detergent, perhaps concentrated in this area by the wind; we surmised that the grebes had become immersed in detergent sometime during the previous 24 hours. They had evidently arrived as migrants during the previous night, since they had not been seen when we checked the area on April 28. We easily captured two of the exhausted grebes which were sitting up on the bank, and found them to be quite wet—an unusual condition for a water bird. There were also three dead grebes at the site, and it may be assumed that these had died of exhaustion and exposure. When a water bird loses its water-proofing it becomes wet, and for a grebe, which always takes flight with some effort, the excess weight of wet plumage may be a real handi-

cap. Moreover, a wet bird is subject to chilling. This was a particularly cold and windy evening so we decided to attempt to "rescue" as many as possible; we had no doubt that the majority would have perished overnight. Accordingly, we returned after dark with Dot and Doug Wade, their son, Alan, Greg Keith, John Comrie, and David Newsome, and with the aid of flashlights were able to capture an additional 18 grebes, all of which were wet, cold, and clearly exhausted. They were found sitting chiefly on the bank in grass or weed cover, evidently attempting to avoid the chill wind.

In a delightful little book on caring for birds (*Bird Doctor*. 1963. Country Book Club, London. 162 pages) Miss Katherine Tottenham describes the nature of the "wet-feather" condition which plagued our grebes. She points out that detergents may be used effectively to remove fuel oil from birds which have suffered oiling, but the detergent also removes the natural coating of oil which is part of the waterproofing mechanism of the plumage of water birds. She also discusses the results of failure of the bird's oil gland in this respect, which renders the bird equally wettable. In order to maintain their plumage in a waterproof condition water birds need to be in a healthy condition and need to preen constantly their feathers, thus straightening the complex arrangement of the fine parts of the feathers, and also thus ensuring the anointing of the plumage with the natural oil from the oil gland.

We were interested to see how long it would take our grebes to recover their waterproofing, so we kept seven of them in captivity for some time afterwards. Our first concern was to remove the detergent and dirt from their feathers and get them warm. Upon reaching home, we put them in the bathtub in warm water. We were surprised to see how quickly they adjusted to their new and certainly unfamiliar surroundings, drinking, bathing, preening, scolding, and even deliberately swimming over to stand in ecstasy beneath a torrent of hot water from the tap! After a thorough

rinse in plain water we dried them and kept them near a hot-air register so that they would dry out thoroughly. From this time on we kept them in a small pen, indoors, putting them into the tub once a day in order that they might drink and preen. We fed them on raw cod and halibut, and occasionally gave them vitamin A-D capsules. They soon learned to eat the strips and chunks of fish which we offered them a few times daily; and they also soon learned to call when they were hungry. For the first few days, immersion in water at once wet them thoroughly, and they took a long time to dry. It was four days later before I recorded that they seemed slightly less wettable, and then mainly on the wings and head. On the seventh day they were still wettable, but definitely less so than previously. On the 10th day it was apparent that they were quite a lot more buoyant and drier while they were bathing, but they were still far from normal. By the 15th day two of three surviving grebes (three died between the second and fourth day, one on the 12th day) were in good feather condition, though quite thin. On the 16th day (May 4), the weakest was dead, but the remaining two were released into Wascana Lake: they kicked their heels and bathed and preened in obvious delight at being out in the sun and open air of their native environment. Thirteen of the other grebes maintained under similar conditions by Dot Wade fared slightly less well (imagine feeding 13 grebes!), only one surviving the 16-day period of captivity. (Evidence of simultaneous migration of both sexes was obtained from our dead grebes; of 15 which I dissected, 11 were males and four were females.)

Our experience suggests that it takes at least two weeks for captive grebes to recover any real degree of waterproofing (under the conditions described above). No doubt diet, access to sun and water, and exercise would have some effect on the rate of re-establishment of waterproofing. Miss Tottenham notes that an oiled guillemot which she washed and cared for, had only temporary buoyancy after a month. "Three months after her arrival Gilly was buoyant for nearly half an hour at a time..."

We checked the sewage lagoons as often as we could for indications of

other marooned "wet-feather" cases. On May 7 we noted a dead adult Canada Goose floating amidst a mass of debris in a distant corner of the lagoon; it had clearly died in recent weeks, but we have no certain knowledge of the cause of its death. On May 9, however, we found four newly-arrived Western Grebes which were clearly suffering from wet-feather. A group of three were sitting up on the bank, wet and obviously tired. They moved slowly into the water only after we approached them on foot. It was apparent that they were having difficulty swimming and they returned to shore almost immediately. The fourth grebe was found sitting on shore on the other side of the lagoon and was captured by hand. This bird had a gray head when captured and when placed in a tub of warm water it had very wet feathers chiefly on the breast and sides. Apparently, the detergent had taken effect in a short period while the bird was swimming on the surface of the lagoon. Although this grebe was force-fed both fish and vitamin capsules, it died on May 11. I checked the sewage lagoon on June 21 and found the carcasses of six Western Grebes where the live birds had been seen on May 9. It is of some interest to recall that we found a dead Western Grebe on the lagoon on May 12 in the previous year (1962): "It was found dead on a small wooden raft which had floated to shore, on which a pile of clay pellets had been heaped into the semblance of a nest mound; a few sticks and grasses laid on top completed this odd structure. An autopsy revealed the bird had starved to death, which is not surprising as the lagoon contains no fish. What could induce the grebe to stay?" (F. Brazier, **Spring migration report for Regina district**, 1962. Sask. Mus. Nat. Hist. Mimeo, 18 pages). It now seems very likely that this was another wet-feather bird which had simply been unable to leave the lagoon.

There may well be additional victims of detergents at this lagoon, although we have no other records from the many days on which we visited the area. The lagoon attracts a variety of water birds—most species of ducks, Common Loon, and even White Pelican have been recorded on the lagoons (actually, two adjacent water bodies) at one

time or another. Presumably, the detergent is not always in sufficient quantity or concentration to "de-grease" water birds, and perhaps most of those which do suffer somewhat are able to fly to clear waters, and can thus recover. An incredible amount of detergent foam blankets Wascana Creek for a considerable distance below the sewage lagoons, so it is feasible birds may suffer ill effects in the creek (for miles of its length) as well as in the lagoons. The total biological effect of this quantity of waste detergent flowing into our local streams may be more deleterious than we imagine. There have been newspaper accounts of recently developed chemicals which can be added at sewage treatment plants to alter detergents so that they can be broken down by bacteria (as is the case for ordinary soaps) and thus rendered harmless. We should perhaps bring this discovery to the attention of authorities concerned with waste disposal problems.

## 1963 RECORDS OF THE LAZULI BUNTING AND YELLOW-BREASTED CHAT

by **Dianne Fahselt**, Regina

On Saturday, June 1, 1963, while on a weekend camping expedition with the Regina Natural History Society at Estevan, Sharon Haggerty and I identified a male Lazuli Bunting in the camping area near Roche Percee. Mrs. Mayot of Moose Jaw also saw the bird. With George Ledingham in the Missouri Coteau near Claybank on July 6 another male Lazuli Bunting and possibly also a female were sighted. Since two male Lazuli Buntings were seen in approximately the same area in 1962 by a party on July 20 (Getting to know our less common birds, by M. Belcher and M. Rever, **Blue Jay** 20: 146-150), it is likely that these birds nest regularly in this part of the Missouri Coteau. E. M. Callin's 1960 record of a Lazuli Bunting at Fort San (**Blue Jay** 18: 120) emphasizes how rare the bird is in that area. Other reports and nest records of Lazuli Buntings may be found through reference to the **Blue Jay Index**.

In the camp grounds near Roche Percee, Sunday, June 2, 1963, Sharon

Haggerty and I observed a Yellow-breasted Chat for some time as it flew from the top of one bush to the next, often "snapping" its tail in flight. Later we were not able to show the bird to Connie Pratt and Sylvia Harrison but they heard the song. Ross Lein of Estevan regards both the Yellow-breasted Chat and the Lazuli Bunting as possibly regular (but not common) nesting species in the Estevan area.

On July 1, I saw a Chat on two occasions along the South Saskatchewan River. At the old Empress ferry on July 12, my brother, Norman, and I sighted a Yellow-breasted Chat and George Ledingham heard it. The next morning, July 13, George Ledingham and I saw another chat along the river bank east of Cabri. Frank Brazier reported a pair with young in Boggy Creek Valley as recently as July, 1960, and a pair was found breeding at Fort San in 1955, but reports of the Yellow-breasted Chat in Saskatchewan are not numerous.

These sightings of the Lazuli Bunting and the Yellow-breasted Chat are interesting because they seem to indicate the northern limit of the ranges of both birds.

## RED-HEADED WOODPECKER IN CYPRESS HILLS

by **R. V. Folker**, Saskatoon

On June 20, 1963, while travelling through the centre block of the Cypress Hills, Saskatchewan, we noted an adult Red-headed Woodpecker (*Melanerpes erythrocephalus*) as it landed on a fence post ahead of the car. With its striking pattern consisting of a completely red head, black body and wings showing large white patches, the bird was identified almost immediately by Bob Caldwell and myself.

Caldwell and myself, and then J. Nelson and J. Donovan, who were following in a second car, were able to approach quite close to this bird and obtained good views of it. The Red-headed Woodpecker is seen sporadically in the Cypress Hills region and Godfrey (1950, Birds of the Cypress Hills and Flotten Lake Regions, Sask., Nat. Mus. Canada, Bull. No. 120) lists several sight records for it as well as evidence that it may nest in this area.