GENERAL NOTES.

Observations of the Horned Grebe in Captivity.—On April 8, 1929, a Horned Grebe (*Colymbus auritus*), was brought in to the Buffalo Museum of Science by a boy who reported having found it near his house in one of the city streets. The bird was immediately put in one of our 500 gallon glass aquarium tanks for observation. It seemed to feel at home immediately and began swimming about and occasionally thrusting its head under water and peering about in search of food. I put a few minnows in the water and the Grebe at once began diving for them. At first the bird was confused by the glass while swimming under water, but quickly became accustomed to it and after bumping into the side of the tank quite hard several times, it learned to avoid the peculiar substance and to swerve quickly just before striking it.

After it had gone under water several times it was apparent that its plumage was in poor condition. Instead of shedding the water in the way they should do, the feathers became soaked and plastered down close to the body. I realized that this was an unhealthy condition, especially as the water was rather cold, so I put a wooden raft in the tank. The bird immediately availed itself of this, jumping clear out of water with a single, simultaneous stroke of both feet and landing on the float. It then began to preen its plumage vigorously, running the soaked feathers through its beak to squeeze the water out of them and then shaking off the drops with a quick flirt of the head.

For the first week the Grebe spent the greater part of the time on the raft either preening its plumage or sleeping, going into the water only to feed and then coming right out again. At the end of a week its plumage was in good condition and did not become soaked even when the bird went under water many times. As a result the raft was abandoned almost entirely and the Grebe floated or swam about the tank or slept with its head resting along its back, its bill pointing towards its tail.

The little fellow soon learned that when I approached it generally meant a fish or two for him, so he would come to the side of the tank, swim rapidy back and forth, and thrust his head repeatedly under water to catch a glimpse of the food. His fearlessness, for a wild bird which had been in captivity such a short time, was astonishing. I had an excellent opportunity to observe his manner of diving and feeding. As soon as the fish was sighted the bird would go after it, but the manner of diving was not like that of wild birds that I have seen in the open bodies of water. This Grebe did not leap forward and downward in a sort of arc nor did it sink straight down feet first. It simply stretched its neck straight out toward the fish and swam in that direction propelled by rapid alternate strokes of its feet. There was no sudden plunge, it was merely a continuation of the surface swimming, only the course was changed to either straight down or obliquely downwards, depending on the location of the prey.

While swimming under water the feet were always used alternately as in swimming on the surface. They were, however, held farther out to the side while the bird was under the surface than while on top, when the stroke was more nearly under the body. When the fish was approached, the head was drawn slightly back and then darted out suddenly. If the fish eluded the thrust, it was followed by other thrusts in quick succession even before the feet had had a chance to change the direction of the body. If the prey escaped all of these, the Grebe swam rapidly in pursuit until near enough to repeat the volley of lightning-like thrusts. It did not take many of these sallies before even the swiftest shiner was caught. If the fish was a small minnow and was captured at the first rush, it was generally swallowed under water and the Grebe continued his dash after another. If however, the fish was as much as three inches long, or the bird had become wearied by a long pursuit, it would come to the surface to swallow its prey. The fish was generally caught either across the middle or near the end of the tail. The procedure of swallowing was always the same. The fish was maneuvered about by quick opening and closing of the beak until its head pointed down the bird's throat and was then swallowed, aided often, if the prey were large, by strenuous gulping. The Grebe was able to swallow shiners (*Notropis cornutus*) up to four inches or suckers (*Catostomus commersonii*) up to four and three-eighths inches. After vainly trying to swallow a trout perch (*Percopsis guttatus*) four and one-half inches long, and finally having to let it go, the bird did not attempt to catch this same fish again although it swam about in the tank for the rest of the day. I generally fed the Grebe five or six minnows, two or three inches long, twice a day. This seemed to be all the food it desired. Often it would attempt to catch the fish when they were near the surface without diving by merely thrusting its head down. This method was employed more frequently as time went on and one of the bird's legs began to stiffen up at the joint. Eventually all use of this member was lost, which greatly handicapped the bird in its diving and it avoided going under as much as possible. However it could do so if necessary and did it very frequently, stroking vigorously with its one good leg. The cause of the stiffness was unknown, but was assumed to be the result of an injury sustained when the bird landed in the street. At no time did the Grebe vary its method of diving from that previously described, even after losing the use of its leg, and at no time was it ever seen to use its wings in any manner whatsoever while swimming under water. This checks with what Dr. Charles W. Townsend has to say in his paper "The use of wings and feet by Diving Birds" (Auk—July 1909, Vol. XXVI).

The Grebe had considerable difficulty in getting under water when it had the use of only one leg and the manner of swimming was very jerky, also it was unable to change its course as rapidly as formerly. Because of these difficulties I let most of the water out of the tank so that the bird could easily reach the bottom when its neck was stretched out to its

fullest extent and the fish were caught with little difficulty without diving. At this stage I tried feeding cut up pieces of larger fish as my supply of small fish was not inexhaustible. This, however, proved unsuccessful. The cut fish was apparently not recognized as food.

The Grebe continued in apparent good heatlh with the exception of its lame leg up until May 4, when I noticed that its plumage had suddenly lost its ability to shed water. The bird again looked like a drowned rat as it had when first put into the tank. This time however, it did not avail itself of the raft. Although it continued to eat well that day, on the next morning it was found floating on the water dead.—JOHN W. ALDRICH, *Buffalo Museum of Science.*

Red-throated Loon in Northern Illinois.—The Red-throated Loon (*Gavia stellata*) appears to be a casual visitor within the state of Illinois. Nelson recorded the bird as a common winter visitor on Lake Michigan in 1876, yet, at present, there are few skins of this bird obtained within the state. I have been able to discover only three occasions on which specimens have been taken, namely: February 15, 1870, three birds; February 13, 1885 and April 18, 1908.

During a snowstorm on April 14, 1928, I was collecting along the lake at Beach, Lake County and was surprised to discover a Loon of this species in the canal which empties into Lake Michigan. The bird, a male in winter plumage, was collected.—JAMES STEVENSON, *Los Angeles, California.*

Auk Flights at Sea.—While I was crossing from England to America last winter on the Leviathan, flights of Auks were observed on two successive days and it may be of interest to put them on record. On February 25, I came on deck at 8:40 in the morning and walking forward to starboard saw two small flocks of Razor-billed Auks (*Alca torda*) cross the bow and, flying in more or less the direction of the ship's course, they slowly moved away on the starboard beam. Crossing to port, I saw at once that a general movement of some sort was in progress and this continued for more than half an hour. There is no way to tell how long it had been under way when first noticed.

Birds—all of them Razor-bills—were passing continuously, flying steadily close to the sea, and all in the same direction. They were mostly in flocks of from ten to sixty individuals which had a definitely typical arrangement with about one-third of the birds closely grouped in front and the rest following more and more widely separated until a straggler or two brought up the rear, but there were also twos and threes and at times large areas over which irregularly scattered individuals were moving. Occasionally larger flocks were formed but these soon divided to make two or more of the usual smaller ones for which an average of thirty birds might be fairly accurate. The flocks, however, had little permanence as such and seemed only temporary points of concentration in the moving mass.