

gregarious with the approaching mating season. This average flock-size dropped from 32 to 2.7 throughout the course of the winter. However, a definite drop occurred early in the winter, and the average did not drop toward spring as gradually as one might expect it to do. In this connection it was noted that active "courting" occurred throughout the period of observation, with little increase being observed in March over that seen in December. This suggests that perhaps these antics should be considered more as social behavior than as courting. Unfortunately,

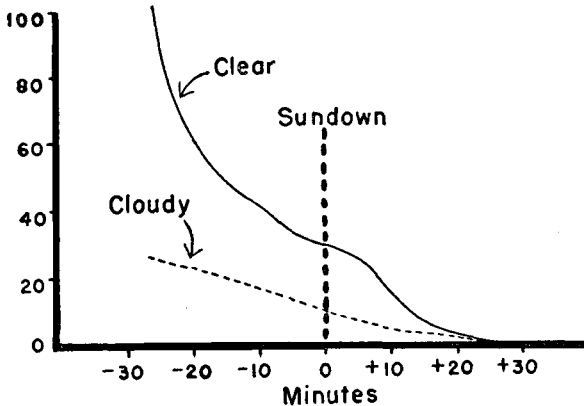


FIGURE 3. Light intensity readings at raft site on clear and cloudy days.

little could be recorded as to sex ratios in this study, since the majority of the birds came in after it was too dark to distinguish sexes. However, of those checked early in the winter, there were between seven and eight adult males to one female or immature.

The author appreciates the field assistance in this study rendered by the following: Harvey Gunderson, Bruce Hayward, John Jarosz, R. A. Kortmann, Warren Nord, Brother Pius, A. C. Rosenwinkel, Mr. and Mrs. Morris Self, and J. Donald Smith.—WALTER J. BRECKENRIDGE, *Museum of Natural History, University of Minnesota, Minneapolis, Minnesota.*

**Notes on the Greater Sandhill Crane (*Grus canadensis tabida*).**—*Feeding on acorns.*—On March 28, 1948, Harold Wing, Clarence Owens, Robert Whiting, and I observed a group of about 45 Sandhill Cranes feeding in a wood-lot on the Jasper-Pulaski State Game Preserve in Pulaski County, Indiana. The woods consisted almost entirely of white oak (*Quercus alba*) 30 to 75 feet in height and one to two and a half feet in diameter. The trees extended from the roosting marsh of the cranes up a gradually sloping hill. Apparently the cranes had gone into the woods from the marsh. Surprised at our sudden appearance, they took to the air. Until they had cleared the woods their wings often struck branches of the surrounding trees. Apparently they were feeding on acorns in the woods. Arthur E. Staebler at the W. K. Kellogg Bird Sanctuary, Augusta, Michigan, reported that a captive crane fed on acorns during 1951 when it was allowed to roam about the grounds.

*Flying with retracted legs during cold weather.*—On November 4, 1951, Robert Cornell and I watched 405 cranes come from the roosting area at Jasper-Pulaski Game Preserve in the early morning. The terrific snow storm of the previous night had covered the feeding area, a field of uncut corn, with several inches of snow. The

temperature at 6 a. m. was 17° F. The high temperature for the area on November 4 was 25° F. and the low, 10°. On November 3 the temperature had reached 7°. The highest mean temperature there for the first week of November was for the first, 33°, the next highest, 31° on November 7. Where the cranes roosted, we were not sure, but as they came over the woods into the corn field they carried the legs drawn in under the body, not trailing as is usually the case. All but four or five flew with the feet tucked into the feathers of the belly region. Once, I watched one crane, which was flying with feet stretched out behind, draw them in and fold them underneath, tucking them into the feathers. When they prepared to land they dropped their legs in the usual manner, but during their circling flight preparing to land in the field, they flew with feet drawn in. Their tails were much more conspicuous while flying when the feet were drawn in and were apparently spread more than usual. During the morning when the cranes rose periodically from the corn field to circle the area, they immediately tucked their feet into the lower feathers. From time to time, groups of two, three, and up to twelve cranes wheeled off to the south. Whether they were leaving for their southward flight we did not know, but a letter from Cecil H. Rowe, manager of the area, reported that 593 cranes were counted there on November 11, indicating that the low temperature of the previous week had not produced an early migration.

*Copulation.*—In the Mud Lake marsh, Leoni Township, Jackson County, Michigan, Dr. and Mrs. Powell Cottrille, Ken Bunting, and I were observing birds with a 20-power spotting scope on March 18, 1951. At 6:30 a. m. we observed two Sandhill Cranes along the west side of the marsh, standing beside each other. Suddenly one gave a jump, followed immediately by the other. One then stood still and the second hopped with outspread wings onto her back. She stood, without crouching, perfectly still as he settled down onto her and with his wings vibrating slowly he copulated with her. Apparently the wing motion was merely to aid his balance. He was on her less than a minute, then hopped off, and both stood preening for some time a few feet from each other.

In some notes from the Michigan Conservation Department sent to me by C. T. Black, Marvin Cooley observed copulation by a pair of Sandhill Cranes at the Rose Lake Wildlife Experiment Station area on March 25, 1942.—LAWRENCE H. WALKINSHAW, 1703 Wolverine Tower, Battle Creek, Michigan.

**Terns Recorded at Lake Texoma, Oklahoma, in Summer of 1951.**—From June 7 to August 7, 1951, my ornithology class and I recorded terns of four species at Lake Texoma, on the Oklahoma-Texas border. Our base was the University of Oklahoma Biological Station along the lake's north shore, in Marshall County, Oklahoma. As a result of heavy rains the lake was exceptionally high in June.

From June 9 to July 29 we saw a few Least Terns (*Sterna albifrons*) almost daily, but we found no breeding colony. On June 15, Kenneth J. Starks and I each collected an adult. Starks's specimen, probably a female, weighed 38.8 grams. My specimen, a male with much enlarged testes, weighed 43.7 grams. We did not see any young birds before July 24. On that date, and again on July 29, we saw two or three young birds at the so-called "Engineers' Tract," a mile or so southwest of the village of Fobb. I believe that most Least Tern colonies were flooded out in June and that very few young birds were reared anywhere in the area.

We recorded a few Black Terns (*Chlidonias niger*) between June 15 and July 24. Not one of these was, so far as we could ascertain, in full breeding plumage, nor was one of them obviously a young bird of the year. Two specimens collected by Starks on June 20, and a bird found dead by William H. Adams, Jr., on July 1, were adults