

(average measurements, 130×164 mm); two cowbird eggs (150×190 mm and 148×188 mm), which are different in coloration.

EN-417: 22 June 1943; nest similar to the above; three vireo eggs (average, 129×190 mm); two cowbird eggs (151×204 mm and 150×207 mm) with no marked color or size differences.

E-418: 26 June 1943; no nest; four vireo eggs (average, 134×189 mm); one cowbird egg (156×198 mm).

E-419: 26 June 1943; no nest; one vireo egg (130×192 mm); three cowbird eggs (150×187 , 158×196 , and 160×200 mm). The first cowbird egg listed is different in size and color from the last two.

The field notes of the collector, Chester Lamb, do not indicate that any of the nests were deserted and, in fact, a male vireo (Moore Collection, 37714) was taken at the same time as specimen EN-416.

The Dwarf Vireo seems to be scarce throughout its range in Michoacán, Oaxaca, and Guanajuato (A. H. Miller *et al.*, *Pacific Coast Avif.*, no. 33, pt. II, 1957; p. 224) and there are few specimens in museum collections. Considering the apparently low numbers of the Dwarf Vireo, and the fact that all four specimens of nests and eggs show evidence of brood parasitism, the effects of cowbird parasitism on the population structure of the Dwarf Vireo certainly warrant investigation.—DENNIS M. POWER, *Museum of Natural History, University of Kansas, Lawrence, Kansas.*

Nesting of Hooded Mergansers on the Patuxent Wildlife Research Center, Laurel, Maryland.—The first known record of Hooded Mergansers (*Lophodytes cucullatus*) nesting on the coastal plain of Maryland was in 1961, when Mr. Francis Uhler (pers. comm.) found two clutches in Wood Duck nest boxes in impoundments at the Patuxent Wildlife Research Center, about five miles southeast of Laurel, Maryland. R. E. Stewart and C. S. Robbins ("Birds of Maryland and the District of Columbia," *N. Amer. Fauna* no. 62, 1958; see p. 102) reported two records of broods for Maryland, one for the Piedmont and one for the mountains.

From 1961 through 1964, two pairs have nested annually in nest boxes on the Research Center; there has been no indication of nesting in natural cavities. The data from the nestings were recorded because of the paucity of information in the literature on nesting of Hooded Mergansers.

The earliest clutch was begun on 14 March 1961 and the latest on 25 March 1963. Mumford (*Indiana Aud. Quart.*, 39: 5, 1952) gave the starting dates of three clutches in Indiana as 23 March to 1 April.

Assuming one egg was laid each day, incubation time in the three clutches was 28, 36, and 37 days. The assumption of one egg laid per day was made because the literature gives no information concerning the frequency of egg laying. Delacour (*The waterfowl of the world*, p. 199, 1959) reported that an incubator-hatched clutch required 30.5 days. According to Hochbaum (*The Canvasback on a prairie marsh*, American Wildlife Institute, 1944; see p. 90), incubation time is 21 to 28 days for incubator-hatched puddle ducks (Mallard, Gadwall, Pintail, Shoveler) and 23 to 29 days for diving ducks (Redhead, Canvasback, Lesser Scaup). The early nesting during cold weather together with the nervousness of most females, often resulted in their being off the nest for long periods, which may have prolonged incubation. A hen was found on the nest only once during inspections.

Once incubation began, adult male Hooded Mergansers were not seen at Patuxent until the fall migration. Mumford (*op. cit.*: 6) also reported absence of males during nesting in Indiana. It would appear that effective renesting would be severely handi-

capped if the absence of the male during nesting occurs over a wide part of the breeding range.

Although Hooded Mergansers had nest boxes available in both dead timber impoundments and cleared, open impoundments, six of the eight clutches were in open areas.

The hens were so secretive that only once was a hen seen entering a box. In 1964, I observed a hen flying across the marsh headed toward a nest box known to contain a clutch. The hen flew directly to the box at full speed and at the last moment closed her wings and dived into the nest without any apparent hesitation at the entrance.

Four of the eight clutches observed were at least partially successful. Of the four unsuccessful clutches, one was destroyed by a raccoon, two were abandoned, and one was deliberately broken up after the hen had been on the nest for 70 days. Of the 11 eggs in the last clutch, 3 showed no signs of development and 8 had embryos that had died very early.

One of the four successful clutches was laid in 1961. Eight of nine eggs hatched and the brood was seen once when about one-third grown. In 1963, two clutches were hatched. One hen hatched only 2 of 12 eggs; 8 of the unhatched eggs had embryos about one-half developed and 2 had embryos about one-fourth developed. This hen was very nervous and remained off the nest for long periods, probably disturbed by daily mist netting for song birds within about 300 feet of the nest box. The brood was never seen. The other hen hatched all eight eggs of her clutch. She was on the nest the day of hatching, but was not seen with her brood when the young birds left the nest the following day. The ducklings remained in the box about 24 hours. The nest box of this brood was in an old gravel pit pond practically devoid of cover. The brood remained intact for two days after leaving the box. Unusually low temperatures, below 40°F, occurred the second night after hatching. By the third day, only two ducklings were left, and all had disappeared by the fifth day.

The one brood hatched in 1964 was seen frequently until nearly ready to fly. The entire clutch of 11 hatched on 4 May near an impoundment called Duvall Unit One. The hen and 10 ducklings were seen two days later on Duvall Unit Two, an impoundment immediately adjacent. This second unit was an 8.7 acre impoundment consisting of about 50 per cent flooded woodland and 50 per cent open marsh. It was shallow, averaging less than 17 inches deep when full, with the depth between 10 and 20 inches over 50 per cent of the area. The brood was observed almost daily from 6 to 18 May in the open marsh within about 30 feet or less of the timber. The brood consisted of nine ducklings from 8 to 18 May. On 18 May, the brood was observed on an old gravel pit pond immediately adjacent to the marsh. Lack of cover may have made the brood more vulnerable to predators, for when it was seen two days later back on Duvall Unit Two, there were only seven ducklings.

By 1 June, water levels had dropped 14 inches in Duvall Unit Two and most of the open marsh substrate was exposed. The brood left, moving through Duvall Unit One where it had hatched and into "Knowles Unit Three" immediately adjacent upstream. Each of these three units is separated from others by a dike approximately 60 feet wide. Knowles Unit Three was a 14.7 acre impoundment closely resembling Duvall Unit One (13.8 acres). Both units are flooded swamps containing large areas of dying, dead, and downed timber and various swamp shrubs. It is not completely clear why the mergansers shunned the impoundment where they hatched. The average depth of Duvall Unit One, where the birds hatched, was 17 inches, not much greater than the 15 inches of Knowles Unit Three where the birds spent much time. However, water between 10 and 20 inches deep covered only 30 per cent of Duvall Unit One whereas it covered over 50 per cent of Knowles Unit Three. This difference may

have been important because the water in these impoundments is deeply stained by decaying organic material and the mergansers may have required rather shallow water to find their food.

When seen on Knowles Unit Three on 5 June, the brood still contained seven ducklings. It consisted of six ducklings when last seen on 10 June. On 29 June, two of the young, both males, were caught in a bait trap. They were then within about three days of flying, indicating that flying age is reached in about 71 days. Hochbaum (*op. cit.*: 108) found most puddle ducks (Mallard, Gadwall, Baldpate, Pintail, Shoveler) fly in from 38 to 63 days, while diving ducks (Redhead, Canvasback, Lesser Scaup, White-winged Scoter) required 63 to 77 days. It appears that flight age for Hooded Mergansers is attained later than in most puddle ducks and about the same as in most divers.—FRANK B. MCGILVREY, *Bureau of Sport Fisheries and Wildlife, Patuxent Wildlife Research Center, Laurel, Maryland.*

Competitive exclusion and birds at fruiting trees in western Colombia.—

During an hour or two of observations from 20 to 22 March 1962, I observed 28 species of birds feeding on the small, blue berries of *Conostegia* sp., affinities with *icosandra* (Melastomaceae). These small trees produce abundant fruit and are common on the steep slopes at 4,500 feet elevation by the Cali-Buenaventura road below Queremal (3°32' N lat., 76°43' W long.), Valle, Colombia. The species observed were: pigeons, *Columba fasciata*; barbets, *Capito bourcierii*; woodpeckers, *Piculus rubiginosus*; manakins, *Alcotopterus deliciosus*; tyrant flycatchers, *Tyrannus melancholicus*, *Elaenia flavogaster*, *Elaenia* sp. (*obscura?*); thrushes, *Turdus ignobilis*, *Myadestes ralloides*; wood warblers, *Vermivora peregrina*; honeycreepers, *Coereba flaveola*, *Chlorophanes spiza*; tanagers, *Chlorophonia cyanea*, *Pipraeidea melanonota*, *Tangara arthus*, *T. icterocephala*, *T. parzudakii*, *T. labradorides*, *T. cyanicollis*, *T. gyrola*, *T. ruficapilla*, *T. nigroviridis*, *T. heinei*, *Thraupis virens*, *T. palmarum*, *Ramphocelus icteronotus*, *Habia cristata*; finches, *Saltator atripennis*.

It has been shown in several recent accounts that flowering and fruiting trees and other sources of food, such as swarms of termites, attract many species of birds. Miguel Alvarez del Toro (*Miscelanea Ornithologica*, 1963; pp. 3–5) lists 69 species which visit the flowers of *Combretum farinosum* in Chiapas, México. E. Eisenmann (*Auk*, 78: 636–638, 1961) lists 13 species eating catkins of *Cecropia mexicana* and 17 species at swarms of termites in the Panamá Canal Zone. H. Land (*Wilson Bull.*, 75: 199–200, 1963) reports 20 species feeding on fruits of another melastome tree (*Miconia trinerva*) in eastern Guatemala.

The observations at Queremal are noteworthy mainly because so many species of one genus, *Tangara*, fed on the berries. In all, 9 species, or 10 if the possibly congeneric *Pipraeidea melanonota* is included, fed on the berries in the brief time of my observation.

In addition to these 10 species, 2 species of the related genus *Chlorochrysa* and 7 other species of *Tangara* (*larvata*, *johannae*, *palmeri*, *ruficervix*, *rufigula*, *xanthocephala*, *florida*) were encountered at or below Queremal on the western slopes of the Andes. These small and spectacularly beautiful tanagers differ widely in coloration but have similar foraging habits and are similar morphologically in such features as bill size and body size. Pairs or small groups readily join other birds feeding in fruiting trees. They also wander or join wandering mixed flocks searching for insects; commonly these small tanagers peer underneath limbs in the fashion of Black-and-white Warblers (*Mniotilta varia*), or pick small prey off nearby leaves. The foraging behavior and interspecific interactions of these 19 related species are worthy of intensive study.