

limb while the hawk, standing on the limb, attempted to catch him. Inadvertently, the observers flushed the hawk.—WILLIAM Q. WICK and HARTE E. PENTTILA, *Washington Department of Game, Mount Vernon and Aberdeen, Washington, March 23, 1957.*

An Unusual Merganser Fatality.—A female Common Merganser (*Mergus merganser*) was found dead (fig. 1), apparently from choking, at Cascade Lake, Orcas Island, Washington, on March 24, 1957. Inspection indicated that a sculpin, *Cottus* sp., which the bird was attempting to swallow, became lodged in the merganser's throat. The preopercular spines of the sculpin were embedded posterior to the commissural point on each side of the duck's head. The fish had a standard length of 149 millimeters and weighed 64.3 grams.

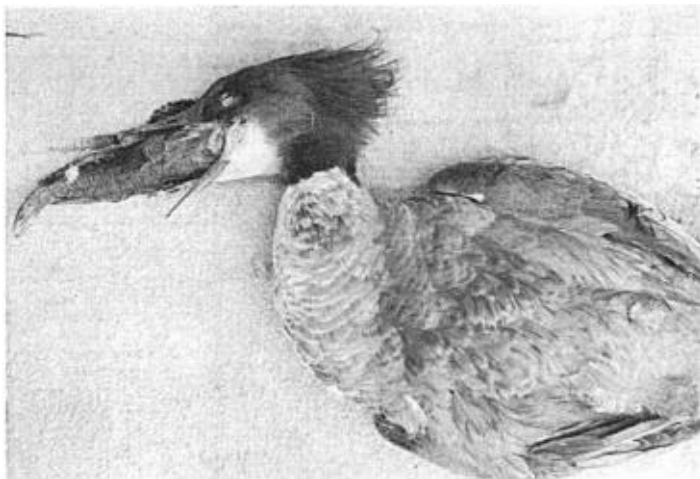


Fig. 1. Common Merganser with sculpin locked in throat; Cascade Lake, Orcas Island, Washington, March 24, 1957. Photograph by William Q. Wick.

Jewett, Taylor, Shaw, and Aldrich (Birds of Washington State, 1953:155) mention that "when opportunity offers [this merganser] is known to eat to surfeit" and that "many of the fishes eaten are of little or no economic value, but others, as the salmon and trout, are of high importance."

The merganser discussed in this note was dissected for food analysis. Cascade Lake, where the bird was found, contains a basic game fish population of four species of salmonids. Listed in order of abundance, the species are: rainbow trout (*Salmo gairdneri*), cutthroat trout (*Salmo clarki*), silver trout (*Oncorhynchus nerka kennerlyi*), and eastern brook trout (*Salvelinus fontinalis*). In addition to game fish, Cascade Lake has a small population of non-game fish. Of these, sculpins are apparently in the majority. The food content of the throat, gullet, and gizzard is shown in the table.

Item	Weight in grams
<i>Cottus</i> sp. (the choking agent)	64.3
<i>Cottus</i> sp.	2.7
<i>Cottus</i> sp.	.4
Family Cottidae (partial)*	1.4
Family Cottidae (partial)*	6.2
Cestode (2) adult (host undetermined)	.8
Miscellaneous gizzard contents (eggs, grit, bones, etc.)	18.9
Total food weight	94.7

* Probably genus *Cottus*, diagnostic characters partly digested.

The family Cottidae made up almost the entire feeding. No inferences may be drawn from this data other than that cottids may be easier to catch than salmonids in Cascade Lake or, perhaps, they were preferred by this particular merganser.

The Common or American Merganser has received major attention from fishery management personnel of the Washington Department of Game and other agencies in recent years. This duck, with dietary predilections aimed at fishes, has been rather justifiably accused of extensive predations on game fishes, particularly trout, in rehabilitated lakes. By way of explanation, lake rehabilitation includes treatment of multi-specied lakes with a chemical agent which removes the fish population. After treatment, game salmonid species, tailored to the lakes' capabilities, are planted in the lakes. Rehabilitation, in effect, is a weeding process, removing food competition between game and non-game species of fish by doing away with non-game fish. The rehabilitation process is a costly one. Every effort, therefore, is made to insure the success of the program.

For the past three years, special extended seasons on mergansers have been permitted for certain rehabilitated lakes and steelhead migrant streams in western Washington. Random food-habit checks of mergansers killed during the special season have shown that many trout are taken by these ducks.

One of us (Wick, unpublished manuscript) found in a study in 1946 in Oregon that the Common Merganser was an important predator at the Alsea trout hatchery. It was further noted in the Oregon study that "the American merganser was particularly harmful to trout that had been transferred from the raceways of the hatchery to the holding ponds in the river."

A study of the preferences of the Common Merganser for available fish species, in a variety of waters, is needed to determine, in proper perspective, actual food choice.—WILLIAM Q. WICK and HAROLD E. ROGERS, *Washington Department of Game, Mount Vernon and Friday Harbor, Washington, April 20, 1957.*

Some Interspecific Relations in the Feeding of Estuarine Birds.—The following observations were made in the northeastern corner of the west half of Mission Bay, San Diego County, California. This section of the bay is characterized by a narrow, sandy beach and a channel about fifteen feet deep and thirty-five feet wide. This, in turn, is parallel to the abrupt edge of an extensive mud flat that is exposed at low tide. Both the channel and the deeper portion of the mud flat support eel-grass (*Zostera marina*).

On January 29, 1948, at 9:00 a.m., three Red-breasted Mergansers (*Mergus serrator*) were seen swimming in a southeasterly direction in the middle of the channel with their heads frequently held just underwater. They often dived, and upon surfacing always continued in the same direction parallel to the shore. Three Snowy Egrets (*Leucophoyx thula*) ran parallel to the mergansers in the shallow water near the beach and frequently made stabbing motions with their heads and necks into the shallow water, in typical foraging manner.

At least fifty Double-crested Cormorants (*Phalacrocorax auritus*) were seen on March 5, 1948, at 7:45 a.m., in the channel moving in a southeasterly direction. The cormorants were foraging by diving and swimming forward under water; upon surfacing they flew ahead of the submerged portion of the group and once again dived. This behavior was typical of that described by Bartholomew (Condor, 44, 1942:13-14). In this case one Snowy Egret and two Common Egrets (*Casmerodius albus*) ran parallel to the main body of submerged cormorants. Again the egrets appeared to forage in the shallow water of the beach. Later in March another early morning observation was made about a quarter of a mile southeast of the previous area. About thirty-five Common Egrets were following an undetermined large number of foraging cormorants.

It appears from these observations that egrets often purposely follow diving mergansers and cormorants and they appear to catch occasional fish frightened into shallow water by the diving birds. In each case the egrets had to run to keep abreast of the advancing divers. Possibly the larger Common Egret can profit from this behavior more than the Snowy Egret because of its longer legs which enable it to cover a greater area of the sloping beach.—GENE M. CHRISTMAN, *Museum of Vertebrate Zoology, Berkeley, California, April 10, 1957.*