

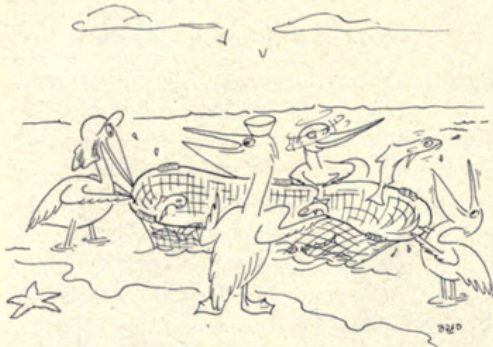
## CO-OPERATION BY BIRDS

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CURATOR OF BIRDS

**C**O-OPERATION, according to my desk dictionary, is the working together of two or more individuals for a common object. The working together of two birds to rear a family is so well-known an affair that one forgets that it is an example of co-operation, not only in building the nest and brooding and feeding the young but also in defending nest and young.

Sometimes more than one species will join in ousting an enemy. For example, when a cat caught a young robin, recently out of the nest, the parents, in their frantic effort to make the cat release the bird, attracted the attention of another robin and a pair of cardinals nesting near-by in a honeysuckle. All five birds jumped on the cat's back, screaming and pecking it so vigorously that it released the young robin and returned to its home.

More spectacular are some of the co-operative activities of birds in food-getting. Bald eagles sometimes feed on ducks. Frequently two eagles may combine their efforts. The two birds may work together to force a black duck from the air onto the water, and when they are trying to catch a diving duck, they much more quickly exhaust their



prey by swooping at it in turn. Bald eagles sometimes take water birds too large for them to carry, and then they must flap along dragging their prey on the surface of the water to the nearest shore. On one occasion an eagle dragging a large cormorant ashore was joined by two other birds, and all three took turns in dragging it. When they got it ashore, all three shared it.

Several fish-eating birds co-operate in capturing their prey. "The merganser is primarily a fishing duck... very skillful and a voracious feeder. It pursues under water and catches successfully the swiftest fish. Often a party of sheldrakes may be seen fishing together, driving the panic-stricken fish into the shallows or into some small pool where they may be more easily caught."

When a school of fish approached a flock of white pelicans, the birds suddenly assumed a circular position, surrounding the school. All the pelicans moved slowly but cautiously toward the center of the circle,

their heads near the surface of the water or partly submerged and their necks slightly extended. The birds moved in perfect unison, making the circle progressively smaller, ready to engulf their helpless victims at the first opportunity. When all the pelicans were close to the fish, the birds made rapid jabs at the fish and apparently consumed a large number of them. It appeared that every bird got from one to several fish.

### 13,000 BAND TOGETHER

Avocets and, to a lesser extent, the black-necked stilts also band together for co-operative drives on small fry and aquatic insects. Such drives are made in water of wading depth. Instead of forming circles, the birds present compact spearhead and wedge formations and sweep the bottom muck with the characteristic back-and-forth side movements of their long bills. As many as 13,000 avocets have been observed taking part in such co-operative feeding projects.

Another striking example is furnished by black vultures. A three-quarters-grown skunk was wandering across a field. "One vulture (after having been banded and liberated) alighted near the skunk which was then about two hundred feet from where I stood at my banding work. The skunk immediately stopped and raised its tail. Other vultures that were sitting around on the ground soon joined the one that was near to the skunk, and when six or eight of them had gathered about the animal one suddenly attacked it from the side. The skunk immediately discharged its musk, but this seemed to have no effect on the vultures, which, on its discharge, attacked in a mass.

"As soon as the attack was made, other vultures that were circling above the meadow or sitting in the trees near-by joined the group, until there were probably twenty-five or more around the skunk. They piled on to it, and with much flapping and croaking, pulled it about until it was dead, then devoured it." (McIllhenny.)

On another occasion a black vulture came from high in the air to alight near two full-grown opossums "that were following a narrow cattle trail which led from the cypress swamp at the foot of the hills across a wide piece of open land to the timber on the hills. The first vulture was almost at once joined by many others that dropped down from the sky with almost unbelievable swiftness, until there were probably between seventy-five and one hundred black vultures following the opossums, some on both sides, some in the rear. Suddenly, three or four of the vultures attacked one opossum at the same time." Quickly, "both opossums were covered with a swarm of hissing, flapping birds, and within fifteen minutes there was nothing left of them but the larger bones and the hides, and these were stripped of every vestige of flesh." (McIllhenny.)

## EIGHTEEN EXPEDITIONS FOR MUSEUM IN 1950

A program calling for fourteen new expeditions, in addition to the continuation of four already in the field, has been announced by Colonel Clifford C. Gregg, Director.

The fourteen new expeditions are as follows:

Florida Keys Fish Collecting Trip (January)—Loren P. Woods, Curator of Fishes.

Appalachian and Ouachita Mountains Zoological Field Trip (March)—Clifford H. Pope, Curator of Amphibians and Reptiles.

Field Work for Cave Fishes (March)—Loren P. Woods, Curator of Fishes.

British North Borneo Zoological Expedition (April)—D. Dwight Davis, Curator of Vertebrate Anatomy, and Robert F. Inger, Assistant Curator of Fishes.

Texas Zoological Field Trip (April)—Karl P. Schmidt, Chief Curator of Zoology.

Wilmington (Illinois) Paleobotanical Trips (April)—George Langford, Curator of Fossil Plants.

Texas Paleontological Expedition (April, May, and June)—Bryan Patterson, Curator of Fossil Mammals, and Dr. Rainer Zangerl, Curator of Fossil Reptiles.

Mississippi Valley Field Trip (May)—Robert Kriss Wyant, Curator of Economic Geology.

Sixteenth Southwest Archaeological Expedition (June)—Dr. Paul S. Martin, Chief Curator of Anthropology, leader.

Bermuda Zoological Expedition (June, July, and August)—Dr. Fritz Haas, Curator of Lower Invertebrates, and Joseph B. Krstolich, Artist.

Utah Paleontological Expedition (June and July)—Dr. Robert H. Denison, Curator of Fossil Fishes.

Florida Zoological Field Trip (June)—Leon L. Walters, Taxidermist, and Ronald J. Lambert, Assistant Taxidermist.

Canadian Invertebrate Paleontological Expedition (July and August)—Eugene S. Richardson, Jr., Curator of Fossil Invertebrates.

Arkansas Zoological Field Trip (September)—Colin Campbell Sanborn, Curator of Mammals, and Kenneth Woehle, Assistant Taxidermist.

### ALREADY IN FIELD

The four expeditions continuing activities begun in 1949 or earlier are:

Micronesian Anthropological Expedition (1949-50)—Dr. Alexander Spoehr, Curator of Oceanic Ethnology.

Middle Central American Botanical Expedition (1948-49-50)—Paul C. Standley, Curator of the Herbarium.

Colombian Zoological Expedition (1948-49-50)—Philip Hershkovitz, Assistant Curator of Mammals.

United States Naval Medical Research Unit No. 3, Cairo, Egypt (1949-50)—Harry Hoogstraal, Field Associate.



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