



Gizzard Grotesqueries

**Q**UEER things have been found in birds' stomachs by Miss Phoebe Knappen of the U. S. Biological Survey, who has examined the contents of thousands of them collected for scientific purposes. Her catalogue of odds and ends that had been swallowed by birds reads almost like the tale of a small boy's pocket.

Some of the things she has found are of course simply byproducts of things swallowed by the birds in regular line of business. American cuckoos, for example, are great eaters of hairy caterpillars, so their stomachs are often found stuffed with bristles. Owls eat mice, and the wads of indigestible stuff ("pellets", ornithologists call them) which they regurgitate contain large quantities of mouse bones and skin. One winter's collection of owl pellets left by one pair of barn owls that live in a Smithsonian Institution tower yielded well over 200 mouse skulls.

But the real, unexpected oddities turn up in largest variety in the stomachs of garbage-eating birds, like gulls and crows, and to a secondary extent in birds of prey like hawks and eagles. Small birds, though, sometimes bring astonishing contributions. Ducks, too, are remarkable catch-alls.

Garbage items have included such things as cooked fish, meat, and vegetables, peanuts, tomato seeds, hair, rubber bands, and string. Paper, oddly enough, is apparently seldom eaten. Miss Knappen explained the discovery last fall of tropical papaya seeds in the stomach of a southbound duck on the garbage basis; the duck had evidently picked up the remains of somebody's lunch.

Chunks of rock are often swallowed by birds, even those that do not ordi-

narily use gravel. Among the strange minerals that have been found are such things as furnace slag and coral. One seaside bird had swallowed part of the rib of a seal.

Some of these meals of junk turn out to be suicidal. One dead eagle's stomach contained a large fish-hook. The poisoning of ducks by shoveling up quantities of lead shot, or scraps of phosphorus from exploded bombs at the Army Proving Grounds, was noted not long ago. The lead-poisoning from spent shotgun ammunition is still a difficult problem for the custodians of our wild waterfowl.

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RADIO

Battle for Radio Waves Foreseen For Future

**T**HERE may be no galloping ponies and covered wagons lined up at the starting line as there were on April 22, 1889, when Oklahoma territory was thrown open to homesteaders, but the race is now on for the allotment of one of the last American frontiers.

This frontier is a great natural resource; the yet unused radio frequencies between 30 and 200 megacycles. In wavelengths the range is from one and a half to ten meters.

The Federal Communications Commission—watchdog of these untapped radio waves—has been permitting scientific scouting parties to enter the territory on experimental licenses. Experimental television in New York and Philadelphia has thus been achieved.

But the government too, particularly the Bureau of Air Commerce, has been testing the possibilities of the new radio region and for more than 18 months has been operating teletype machines in Washington by radio signals coming from Baltimore. Perfect 24-hour reception through all kinds of static has been demonstrated.

What that means to commercial aviation safety can be realized. Improved radio beacons and markers, anti-collision devices and a superior weather report transmitting system are only a few possibilities. It costs the government some \$382,000 a year to lease the telegraph wires now used to send its aviation weather reports and the hope would be to reduce markedly this expense.

In the offing also are the other governmental agencies, the Army, Navy, Coast Guard and other similar organizations with communications systems could use the new radio region.

What the new leadership in the Bureau of Air Commerce will do with the projected communications plans may decide the battle now under way between government and private business. But whichever way it comes out the FCC will make some enemies.

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