Food detection by vultures and condors.—In the literature on food-finding by birds, discussions of the use of smell seem to me to have neglected the possibility of secondary visual and auditory clues. Birds are not the sole animals to be attracted by carrion and it seems possible, especially in tropical forests, that carcases have attracted mammals or insects—flies and butterflies, for example—that might escape the attention of even the most careful naturalist. It also seems possible that carrion-eating birds have learned to associate the presence of these animals with possible food.

In an attempt at a single experiment to exclude all but visual cues, on July 15, 1940, I had two sheep killed in the coastal desert of Peru, some twenty kilometers south of Pisco. This desert strip is one of the most sterile in the world and one may travel, literally, for miles without sight of a living plant or animal. Condors (*Vultur gryphus*), however, cross it, *en route* from breeding grounds in the high Andes to feeding areas along the coast; and Turkey Vultures (*Cathartes aura jota*) and Black Vultures (*Coragyps atratus foetens*) constantly cruise its margins foraging for food.

The sheep were placed a half mile from the sea and several times this distance from terrestrial vegetation. The first was covered with a single layer of gunny sacks, held down by small stones; the slightest tug would have removed the covering. Blood ran through the cloth but the formlessness bore no resemblance to any prey likely to be encountered by the birds. The second sheep was slaughtered about 400 meters away and left in the open. Both carcases were eviscerated to hasten decomposition. Within an hour, both species of vultures, and several Condors, were circling over the exposed sheep.

Two days later the carcases were visited. The exposed sheep had decomposed enough for the birds to begin work (decomposition sets in slowly in the dry, desert air) but it was obvious they had not made much headway. They were gathered in a knot about the sheep and left reluctantly when we drove up. The covered sheep remained disregarded.

By this time there was a perceptible odor—and a small number of flies about twice the size of the familiar *Drosophila!* The presence of these insects, which had found the carrion across a half-mile of sterile desert, of course introduces an undesirable factor into the experiment since they might, possibly, have been visible to the birds. However, though they laid eggs in the hidden carcase, which in two days more smelled to high heaven, they did not serve as a cue to the birds, which cleaned up the exposed sheep and paid no attention to the concealed one.

While this experiment casts only dubious light on the part that insects may, or may not, play as indicators of carrion to birds, it seems to present some evidence that, at least on the coast of Perú, the Black and Turkey Vultures, and the Condor, do not find their food by use of the olfactory sense. Whether or not this is a geographic variation in behavior, characteristic only of these birds, and to be correlated with the lack of concealing cover, can be determined only by laboratory investigations.—WILLIAM VOGT, *Casilla 2147, Lima, Peru.*

[In this connection see the article by P. J. Darlington, 'Notes on the Senses of Vultures' (Auk, 47: 251–252, 1930), in which it is suggested that vultures may be drawn to decaying animal matter by seeing the swarms of certain flies or carrion-eating beetles that come to it. Evidently, carefully devised experiments are needed to test the idea.—Ed.]