

It is to be noted that in practically all of these articles, the work of a single worker or station is represented. There is a notable lack of coöperative attack or report upon a particular species or topic. A number of difficulties usually are encountered in trying to bring together data from scattered stations on a given species or subject, but in a field where coöperative effort is especially needed to present a broad picture, it would seem that effort in this manner would be more worth while than a series of disconnected papers.

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GENERAL NOTES

Differential Erosion of Gastroliths in a Mourning Dove.—While doing a post mortem on a Mourning Dove (*Zenaidura macroura carolinensis*), I thought I saw bird-shot in its gizzard. Examination of all the gastroliths under a dissecting microscope disclosed the following facts about them.

There were two chief kinds. The first were grains of quartz, the largest one 5 mm. in diameter in its longest axis. They were uneven in their outlines, and the more transparent white and yellow ones showed internal fracture-lines or crystal-faces which accounted for the irregular surfaces. During the wearing-down process, cleavage occurred along one of the internal planes, so that only occasionally did any of the well-worn ones begin to approach a spherical shape. Even the most perfect of these, however, would have only partially rounded zones, the result being oval or kidney-shaped bodies.

The second kind, resembling bird-shot, were black cinders worn down into perfect spheres. All of these averaged smaller in size than the quartz gastroliths, indicating that they wore down not only more evenly but also more quickly. Some of the cinders showed an admixture of quartz sand. In these cases the sand particles protruded from the cinder, again showing that the sand offered greater resistance to the eroding process. A pure slag cinder of homogeneous structure wore down into a perfect sphere, its further reduction in size being continued in spherical form. Its surface was pitted with small holes which were gas bubbles trapped when the slag congealed. The margins of these holes probably make good cutting edges during the process of trituration by the gizzard. The cinder spheres, seen under the microscope, looked like close-up photographs of the moon, the gas bubbles corresponding to lunar craters.

One gastrolith was evidently a piece of brick, and there was one child's white bead 2 mm. in diameter.—C. BROOKE WORTH, Rockefeller Institute for Medical Research, Princeton, New Jersey.

Chimney Swifts Destroy Many Insects.—Interesting results were obtained from an experiment conducted during the past summer to determine the approximate number of insects a family of Chimney Swifts (*Chaetura pelagica* Linnaeus) might consume in a day. Authorities tell us that insects form a large part of the Chimney Swift's diet, but none of them state this information in quantitative terms. The results obtained indicated that the Chimney Swift is perhaps our most valuable bird as a destroyer of large numbers of insects.

The experiment began when three young Chimney Swifts, which had fallen into a neighbor's fireplace, were entrusted to my care on August 7, 1939. They were soon doomed to a diet of hamburger and water because my ability to catch enough insects to satisfy these little wide-mouthed creatures was extremely limited.