STRIP MINES YIELD FOSSIL TREASURES

BY GEORGE LANGFORD CURATOR OF FOSSIL PLANTS

WHEN I CALLED on the Director of the British Museum (Natural History) in 1896, I identified myself as coming from Joliet, Illinois. "That's not far from Chicago," I added. He looked rather doubtful and reached for an atlas on his desk. As he was turning the pages, I mentioned that I had frequently collected fossils from Mazon Creek and was interested in the British Museum's display of fossil plants from that locality, also not far from Joliet. That cleared things up. Dr. Lankester put away the atlas, remarking, "Oh, I know where Mazon Creek is."

The fame of Mazon Creek lies not in its scenic beauty but in the small rounded or elongated bodies called concretions that occur in the shale exposed in its banks. They were formed after deposition of the enclosing shale and were the product of accumulation of mineral matter about a center or nucleus, which may be a fossil shell, leaf, or bone. The true concretion is characterized by a concentric structure. Being much harder than the shale that encloses them, these concretions are not damaged by the stream erosion that cuts into the banks. They remain in the creek bed or at the foot of the low bluff. In each one is a beautifully preserved fossil, readily exposed by cracking the concretion with a hammer. For many years the banks and bed of Mazon Creek itself were the only source of these fossil-bearing concretions, but so plentiful were they and so well preserved were their enclosed fossils that they achieved a worldwide distribution in collections of both museums and private collectors. Most geology textbooks contain illustrations of these beautifully preserved fossils.

The concretion-bearing bed lies directly above an important bed of coal, known by various names, such as "Wilmington Coal," "Colchester Coal," and "Number Two Coal." In 1927, work was begun near Wilmington to strip off the twenty-five feet or so of shale in order to scoop up the coal and sell it. The venture was a success, and by the time the stripping stopped in 1950, many square miles of shale had been piled up in Will and Grundy counties, reaching nearly to Mazon Creek on the west.

The fossil-bearing part of the locality, where concretions are freed by weathering from the heaped-up shale, is for the most part in Will County, with only a small portion of the spoil heaps in Grundy County to the west yielding good fossils. Beyond an unmined stretch of about seven miles lies Mazon Creek. Beneath the ground, where it has not already been scooped up, is the Wilmington Coal, the most ancient of the coal beds suitable for economical mining in this district. Its age is computed at about 250 million years. When I began collecting in 1937, the Wilmington area was already given over to strip mining. Giant electric cranes were picking up the overburden of glacial sand and concretion-bearing shale and piling it aside. The pebble-like concretions lay conspicuously on the surface where the shale

In these reminiscences of sixteen years of intensive collecting, Curator George Langford covers a period in which he turned from his profession of engineering to spend full time on his lifelong hobby, fossils. A member of the class of 1897 at Yale's Sheffield Scientific School, he was stroke of the crew that raced Oxford and Cambridge on the Thames in 1896. On graduation he went to work for the McKenna Process Company in Joliet, where he improved methods of treating defective railroad rails and took out more than one hundred patents in railroad metallurgy. He made important archaeological excavations in Illinois, supervised the building of four steel-treating mills, collected several Ice Age mastodons, and started his fossil-plant collection. Since retiring from the McKenna Company, of which he had become president, he has devoted most of his time to the Wilmington fossils.

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had weathered to clay. When I split them open I found that many of them contained fossils like those of the Mazon Creek beds. These fossils were mostly ferns and other plants, but occasionally I found small in-



CURATOR GEORGE LANGFORD Museum's fossil-plant expert with part of collection.

vertebrate animals—insects, clams, crustaceans, and other forms.

One half of a concretion containing a fern displays the impression of the top sur-

YOU MAY WEAR SALMON AS WELL AS EAT IT

Exhibits in the Museum often display years in advance—the latest innovations in modern dress style, scooping even the "newest fashion" zealots of Fifth Avenue and Michigan Boulevard. Such a scoop can be found in Hall L where there is a salmon-skin dress on display. Not that American women are going to be donning salmon-skin dresses as their winter outfit, but they may be wearing salmon-skin shoes, belts, and purses. According to a report in the "New Ideas" column of a national magazine, salmon-skin will be the featured leather in many Manhattan stores this fall.

The discovery that fish skin can be used for clothing might cause us mild surprise, but the Ainu of Yezo (now Hokkaido) and Sakhalin Islands, north of Japan, would give this bit of information no more notice than we would give to a report that cotton is being used to make dresses in some far-off place. Authorities on the Far East point out that the Ainu's use of salmon skin to make clothing is not something new. They have long practiced the skill of preparing the skins by removing them from the newly caught salmon, drying them, and then pounding them to softness. To make a dress, the Ainu women fit and sew the skins together, binding and ornamenting the garment with fur or cotton.

Perhaps it would be a good idea for dress and fabric designers to make frequent trips through the halls of the Museum. They might discover that the people of Siberia, Malaya, Africa, etc. have costume ideas which are really "fashion firsts."

face and the other the impression of the bottom surface. A thick fruit may be represented by an outer husk impressed on one half and a nut-like seed on the other, giving two views of the specimen. The preservation of the specimens is remarkably fine. Veins of delicate leaves remain as clear as the engraving on a bank note. One may see minute details of the spore cases of ferns, the scale-like bark of strange extinct trees, the hairs of a pubescent leaf. The eyes, bristles, and even the heart of spider-like arachnids have been recognized.

While the mine pits were being actively dug, I collected principally from the spoil heaps, but I managed also to collect many specimens in their original undisturbed positions in the walls of the cuts. No two pits were alike in depth or in the succession of beds exposed in the walls; some were almost barren of fossils or yielded concretions with only poor specimens. The pits to the west and north, actually those nearest to Mazon Creek, yielded practically no fossils.

I hunted over the whole mined area while (Continued on page 7, column 1)



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