Soil Sampling by the Lewis and Clark Expedition

Stanley P. Anderson

President Thomas Jefferson’s instructions to Meriwether Lewis, Captain of the Lewis and Clark Expedition (1803–1806), lists various “objects worthy of notice” by the members of the expedition. Among these are “the soil & face of the country, it’s growth & vegetable productions, especially those not of the U.S.” (Jackson, vol. 1, p. 63). A letter from Lewis to Jefferson written in Cincinnati on October 3, 1803, indicates the kind of soil sample that Lewis thought appropriate to send to the President (Jackson, vol. 1, p. 126–131).

Sample from Big Bone Lick

Lewis had stopped to rest his crew for a few days and decided to take a side trip by land to Big Bone Lick (a trip of 17 miles by land and 53 miles by water). The lick is in what is now Boone County, Kentucky (Fig. 1). Buried at this site were huge bones of mammoths and other creatures that, while seeking salt centuries earlier, had become mired in mud and died. Lewis visited with Dr. William Goforth, a Cincinnati physician who in May of 1803 had dug some of the bones from “a pitt 30 feet square and eleven feet in depth in a moist part” of the lick and from “a small pitt, sunk in the dryer part of the Lick.” Goforth showed Lewis “two handsome specimens,” both from the moist part of the lick. The first was the grinder of what Lewis calls an elephant, and the second was the grinder of a mammoth. The first grinder weighed 10 1/2 pounds. The mammoth’s tooth had not yet been weighed. Its roots were attached to “a lump of clay.” After Goforth agreed to let Lewis ship the mammoth’s tooth and selected bones to Jefferson, Lewis decided to leave the clay attached during shipment because it “will not only guard the tooth from injury in transporting it, but will at the same time furnish a good specimen of the earth of which the lick is formed.”

So, a lump of clay attached to the tooth of a mammoth was Lewis’s idea of a good soil sample and the catch-as-catch-can means by which it was acquired was his method of soil sampling.

The specimens never reached Jefferson. They were lost at Natchez either because the boat carrying them sank at a landing (Jackson, vol. 1., p. 132, note 6) or because deliberate actions were taken to destroy the boxes con-