the *Spalacotherium*. The average thickness of this stratum called No. 93, or the "dirt-bed," is about 5 inches.* It lies at the base of the middle Purbeck, and consists of a soft marl, or calcareous mud, and contains the remains of a few insects with freshwater shells of several genera (*Paludina*, *Planorbis*, and *Cyclas*), and many reptiles. As the fruit of his second day's excavations (Dec. 11th) Mr. Beckles sent me the lower jaw of a mammal of a new genus, a discovery soon followed by others in rapid succession, so that at the end of three weeks there were disinterred from an area not exceeding 40 feet in length by 10 feet in width, the remains of five or six new species belonging to three or four distinct genera, varying in size from that of a mole to that of a hedgehog, besides the entire skeleton of a crocodile, the shell or carapace of a freshwater tortoise, and some smaller reptiles. While these investigations were in progress, Mr. W. R. Brodie of Swanage kindly forwarded to me at my request the fossils which he had been accumulating during two years (1855 and 1856) from the same thin bed in a contiguous area no less limited in its dimensions. Besides reptilian remains, there were among his acquisitions three lower jaws of three mammalian species, and Dr. Falconer, who interpreted for me the meaning of these and other fossils, as they arrived from day to day, called my attention to one slab in which was seen the upper portion of a skull, consisting of the two parietal bones in a good state of preservation, with the sagittal crest well marked, as also the connection with the frontals and the occipital crest. Although the lateral and basal portions of this cranium are wanting, enough remains to show that it agrees with the ordinary type of living warm-blooded quadrupeds, implying probably a higher organization than that of such genera as the Stonesfield *Phascolotherium* and *Amphitherium*, though affording no clear evidence whether the creature was placental or marsupial. It is singular that this specimen should have been the first example ever seen of a cranium, or indeed of any part of the skeleton of a mammifer other than a lower maxillary bone with teeth, from rocks more ancient than the tertiary. It supplied therefore a more significant kind of evidence to the osteologist than had previously been obtained of the exact correspondence in structure of the mammalia of a very remote period with the higher types of living vertebrata.

In the same slab with the cranium is one entire side of a lower jaw of a quadruped, for which Professor Owen proposes the generic name of *Triconodon*. It contains eight molars, a large and prominent canine, and one broad and thick incisor. This creature must have been nearly as large as the common hedgehog.†

* This so-called "dirt-bed" is designated as No. 93 both in the Guide to the Geology of the Isle of Purbeck, by the Rev. G. H. Austen (1852), and by the Rev. O. Fisher, in his paper on the Purbeck strata. Trans. Camb. Phil. Soc., vol. lx. (1855). It has not the character of an ancient vegetable soil, as the name would seem to imply.

† The compressed crowns of the inferior molars in this *Triconodon* have each