

pebbles, and rounded pieces of Lydian stone and jasper, and containing bones and teeth of fishes and saurian animals. The upper sands are generally fawn-coloured, and contain lignite, bituminous matter, and vegetable impressions.

Ironstone occurs in considerable quantities in the Sussex beds. In the sixteenth century, before the coking of coal for smelting of iron ore was discovered, two thirds of the iron manufactured in England was obtained from the Sussex beds.* The Wealds of Kent and Sussex, being then covered with forest trees, supplied the fuel for smelting the ore.

To the indefatigable and scientific researches of Gideon Mantell, Esq., F.R.S., we are indebted for a knowledge of the true zoological characters of the Wealden beds, which he has described in his "Illustrations of the Geology of Sussex, with Figures of the Fossils of Tilgate Forest." This work contains the most interesting details of local geology which have appeared in this country. The fossil remains of the Wealden beds consist of petrified trunks of large plants, bearing a resemblance to the palms, arborescent ferns, and the gigantic reeds of tropical climates; also of the shells of fresh-water genera, as the fresh-water muscle, the mya, cyrena, paludina, and helix vivipara. Some remains of fish, and three distinct species of turtles, have also been discovered; and the bones, teeth, and scales of at least five gigantic species of the lizard family; namely, the crocodile, the plesiosaurus, the megalosaurus, the iguanodon, and the hylæosaurus or forest lizard.

The crocodilian remains are pronounced by Cuvier, to be almost identical with those of the fossil crocodile discovered at Caen in Normandy, which belongs to the genus Gavial, the crocodile of the Ganges.

The Plesiosaurus.—This animal has been noticed, Chaps. II. and X.

The Megalosaurus.—The bones of this animal, found at Tilgate, are similar to those discovered by Mr. Buckland, in the Stonesfield strata. The megalosaurus is supposed to approach nearer to the form of the Monitor† than to any other species of living lizard; but its size is so enormous, that Cuvier says, if we suppose it to have possessed the proportions of the monitor, it must have exceeded seventy feet in length.

The Iguanodon.—A nondescript herbivorous reptile, which Cuvier pronounces to be the most extraordinary animal yet discovered. Its structure approaches the nearest to that of the Iguana, a large species of lizard in the West Indies: its length was between sixty

* For a knowledge of this fact, I am indebted to a gentleman who has in his possession an ancient work on the iron trade of England, previous to the use of coke.

† The Monitor,—a species of lizard, which is said to give warning of the approach of the crocodile by a hissing noise.