

and partly from the fear that with respect to those sciences, whose principles and utility are alike unquestionable, the amount of real information which I should impart in the course of an evening, in a country school house, would be too small even to be dangerous, and would not be an equivalent for the price of my tickets. M.

COAL.

[*Fourth Article.*]

In our last article we endeavoured to show the vast preponderance of vegetable life during the carboniferous era, and to illustrate the flora of the period by its fossil botany. We now propose to call the attention of the reader to the fauna of the age. In this our task is comparatively easy, for although the sea of the coal period must have swarmed with life, yet so rarely have evidences of the existence of land animals been met with, that but a few years ago, it was confidently asserted by the Palæontologist, that none had existed during the formation of coal, or the strata just above it. So strongly was this impressed upon Hugh Miller, that in his great work, "The Testimony of the Rocks," where he endeavours to interpret the vision of the creation as seen by Moses, he describes the day in which the Bible says plants were created, as the period during which coal was being formed, thus ignoring altogether the existence of animal life. And, although he must have been aware of the discovery of the three German fossils which we now intend to describe, yet he evidently considered that they bore so small a proportion to the evidences of vegetable life, as not at all to affect his theory, that the vegetable kingdom reigned supreme during the carboniferous era.

Sixteen years ago it was confidently held by geologists, that reptiles had not been introduced into the earth until after the Permian period, or that comprised in the Magnesian limestone, above the coal; for up to that time no fossil remains of them had been discovered. And yet it seemed very extraordinary to the naturalist that a period so remarkable for its vegetable life should not present us with co-existing animals. At length in 1844 a portion of the skeleton of a small air-breathing reptile was found in a coal mine at Munster Appel in Rhenish Bavaria. It is known as the *Apatconpedestris*. Three years after, the remains of three more fossil reptiles of the same type were discovered in the Saurbrück mines of Germany. These animals were all about three feet in length and were quadrupeds. They belonged to the very lowest order of reptiles, and from the evident fullness of their limbs, it is thought by naturalists that they were more adapted to move in water than on land.

In 1852 while Sir Charles Lyell and Mr. Dawson were visiting