

1. *Their lithological characters.*—De la Beche describes the new red sandstone group, as a “deposit of conglomerate, sandstone and marl, in which limestones occasionally appear in certain terms of the series”—and such a deposit, we have seen, is the sandstone in this valley. I have no doubt in respect to any member of this list, unless it be the marl. There occurs here, indeed, a fine red rock, resembling the English red marl; but not usually containing much carbonate of lime. It is rather a reddish shale, although it will frequently effervesce with an acid. The variegated aspect of the new red sandstone, which in some deposits of that rock is so striking, is frequently present along the central parts of the valley, although I should judge, less common, than in Europe. In fine, I can hardly distinguish a suite of specimens from the Connecticut valley, from a suite obtained in Nova Scotia, from a group of rocks proved to be new red sandstone by containing beds of gypsum.

2. *Their mineral contents.*—Excepting a minute quantity of gypsum, this rock is wanting in that mineral and rock salt—and this seems to be the principal difficulty in deciding whether it is the new red sandstone; since these minerals are so generally present in that formation, and are regarded as characterizing it. But since it is admitted that limestone may occasionally be absent from it, without destroying its geological identity, why may not gypsum and rock salt be sometimes wanting, without taking away its essential characteristics?

In this rock, however, other minerals occur, that are somewhat peculiar to the new red sandstone. Copper may be mentioned, which is frequently found near the junction of this rock with the greenstone; and also to some extent disseminated through its layers. In Germany, it is well known that one variety of this group, the copper slate, is wrought as an ore of that metal. The sulphates of baryta and strontia are found, also, in our rock, as they are in the new red sandstone in England: and the same is true in respect to magnetic iron sand.

3. *Their organic remains.*—A few years since, there were found in one of the coarser varieties of this rock in Connecticut, the remains of a vertebral animal, of what kind, has never been ascertained. But, as no vertebral animal, except perhaps a few fish, has been found below the new red sandstone, the presumption is, that the rock in the valley of the Connecticut, containing these remains, cannot be older than the new red sandstone. The occurrence of birds, so low down in the rock series, however, contrary to all pre-