

acquired mineral ones. A second specimen, brought from a deeper bed of the same deposit, might be chosen by the darker brown of its colour, and its nearer approximation to the structure of pit-coal. The Oolitic coal of the Brora or Yorkshire field might furnish at least two specimens more. And thus the collector might pass on, by easy gradations, to the true Coal Measures, and down through these to the deeply-seated anthracite of Ireland, or the still more deeply-seated anthracite of America,—not altogether so assured of his arrangement, perhaps, as in dealing with the processes of the laboratory or the workshop, but at least tolerably sure that both chemists and naturalists would find fewer reasons to challenge than to confirm it.

#### BRORA PEAT-MOSSES OF THE OOLITE.

THE Brora field, so various in its deposits, must have existed in many various states,—now covered by salt water, now by fresh,—now underlying some sluggish estuary,—now presenting, perchance, a superaqueous surface, darkened by accumulations of vegetable matter,—and now, again, let down into the green depths of the sea. To realize such a change as the last, one has but to cross the Moray Firth at this point to the opposite land, and there see a peat-moss covered, during stream tides, by from two to three fathoms of water, and partially overlaid by a stratum of sea-sand, charged with its characteristic shells. It is a small coal-bed, kneaded out and laid by, though still in its state of extremest unripeness,—a coal-bed in the raw material; and there are not a few such on the coasts of both Great Britain and Ireland. Professor Fleming's description of the submerged forests of the Firths of Forth and Tay must be familiar to many of my readers. They must have heard, too, through the far-known *Principles* of Lyell, of the