valuable research, which might elucidate many points now obscure in the history of the disentegrated materials of igneous rocks.

SECONDARY SYSTEMS OF STRATA.

Carboniferous System.

Composition.—Six substances are interstratified in this system: arenaceous, argillaceous, and calcareous rocks form the principal masses, and are associated with beds of chert, ironstone, and coal. Some of the arenaceous rocks are conglomerates, as millstone grit. which is partially filled with quartz, felspar, and fragments of shale, and old red conglomerate, which is full of rock fragments; others are freestones of an open grain and equal texture, breaking equally in all directions; others are compact close grits, called hazle; or still finer grained, called calliard; or laminated with mica, or carbonaceous matter, as flagstone. In colour these rocks are white, brown, grey, greenish, yellow, or red. There is almost every possible gradation between the sandstones and argillaceous deposits; which latter are frequently much laminated, and are then called plate, or bass; less remarkable lamination causes shale; deficiency of lamination belongs to some varieties, associated with coal, called clunch, bind, and other local names: most of them are more or less bituminous; colour blackish, greyish, bluish, yellowish. The limestones are compact or oolitic, or granularly crystallised; mostly pure carbonate of lime (except the granular sorts, which usually contain magnesia), white (rarely yellowish), grey, blue, black, red, or mottled. Some beds contain quartz pebbles. Nearly all are of marine origin, but some exceptions occur.

Chert nodules and beds, of white, black, yellow, or red colour, lie in the limestone, like lumps and layers of flint in chalk; and require similar suppositions to explain their occurrence. Some considerable beds of