

map is no more than is required in physiography, though the kind of knowledge is dissimilar.

The advantage of requiring this geological basis for geography is that it converts the otherwise unintelligible facts which the geographer observes into logically dependent parts of natural processes. It changes what was a mere effort of memory into a reasoning process which affords excellent mental discipline. This can be seen by superimposing one map upon the other; or, better still, by comparing them side by side, when they will be found mutually helpful. The geological map furnishes the causes, and the geographical map supplies the details of elevation and configuration of the ground, which have no obvious relation to the distribution of the different kinds of rocks.

Many years since, I conceived the possibility of combining this fund of geographical knowledge and exploration which the new ordnance survey affords with that which may be obtained from a geological map; and, to bring about an appreciation of the possibility of combining them so that geography could rest upon geology, I have conducted the weekly excursions of the Field Class to accessible places in the London district where the relations of geography to geology could be practically seen. My method has been, during the past eleven years, to prepare as far as possible a geological map and a geographical map, so that both should be in the hands of each member of the class. The map is always limited to the immediate district which is seen, and a mile or two to the north and south, or east and west, as the case may be. These excursions have been planned to illustrate the nature and structure of river valleys and river gorges, escarpment valleys, escarpment ranges of hills, isolated hills, and the plains out of which these features have been carved by denudation. This kind of practical knowledge may, I believe, be imparted in some degree by a large number of teachers who are engaged in secondary education; and I believe that the result would justify the teaching in their case, as it has done in my own experience.

The first point which I urge is that the subject should be considered with the object of giving the learner a better knowledge of geographical facts in general, by giving him as good a knowledge as possible of a few physical features, which may be taken as types of similar features