

the model that he will be able to represent with approximate accuracy the proportion between vertical and horizontal areas. The ordinary relief maps are unable to convey this, owing, of course, to the diminutive scale of representation. They are useful, however, for selected and typical districts—such as the Lake District or Swiss Alps—when great elevation has to be figured on a comparatively restricted area.

As models are representations of nature in miniature, it is obviously needful to instruct the class in those details to which the model serves as an index. Here, then, comes in the office of *natural objects*. The teacher has to exercise discretion in his selection of specimens, as the aim should be to acquire only those examples which are typical and which serve to convey a fact with vividness. I would mention that it is a mistake to make for outlandish "curios," or foreign specimens, before the product—mineral, vegetable, and animal—of the neighborhood and then the whole of England, has been sufficiently exhausted.

When models and natural objects are not necessary, or would be too expensive, geographical pictures should be used. There are many aspects of the earth which can be admirably illustrated by pictorial art. Such simple facts as geysers, volcanoes and waterfalls, which, as far as they have influenced the whole family of man, are somewhat unimportant, lend themselves readily to pictorial treatment; and those other geographical phenomena, such as canons, glaciers, llanos, prairies, tropical forests and grasses, which, though important, are not of the model "type," or else present unusual difficulties to the modeller, are capable of being similarly treated. Pictures are particularly convenient for the illustration of those features which

probably would not come under the personal notice of the student; for example, the animals, distinctive vegetation, and the types and habits of humanity found in foreign countries and different quarters of the globe. The chief purpose, then, of geographical pictures is to supplement and extend the work of models and natural objects. As a means of bringing before the pupil the appearance of the earth in some of its ever varying aspects, they are invaluable. To the young—to anyone—an atlas of such pictures would teach more geography than an atlas of mere maps.

#### MAPS.

In the course of instruction—in the regular progress of study—the fouraids to the teacher or the student which I have now mentioned I would put before maps. I do not mean that I would require a pupil to *make* a model before learning to read a map, for the map, provided it be really good, is an indispensable aid to the model-maker. But he should be able to read the main characters on the face of nature, and on the surface of a model, before he is asked to interpret the artificial characters on the map. A map is not such a simple thing as some appear to imagine. Few teachers really grasp its maximum of instruction, or get their pupils to read with accuracy its hieroglyphic eloquence. Maps are beautiful things, and of all geographical aids the most convenient; but it is sheer waste of money and time to place an atlas of forty or fifty maps dealing with the whole earth in the hands of a youth who has not been trained to translate and appreciate justly the geographical symbols employed by cartographers.

Unfortunately, whatever our theories may be, our practice is conservative; and the teacher who finds him-