

A NEW METHOD OF PRESENTING PALÆOGEOGRAPHIC MAPS.

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One of the most practical developments in methods of teaching historical geology during the last two decades is the wide use of palæogeographic maps. As an increasing mass of data bearing on the conditions of past periods of the Earth's history has become available through detailed stratigraphic research and the interpretative study of sediments—especially of continental and marginal marine deposits—correlation of deposits by exact palæontological and other criteria has let us reconstruct the pattern of land and sea often with no small degree of accuracy. At times, such reconstructions have been so complete and coherent as to make possible the "prediction" of unsuspected facts in past ages, the truth of which has afterwards been established by discoveries made since the prophecy. Several such predictions have been made for the first time before this Society by Dr. Grabau. The Existence of the Mongolian geosyncline was foretold before its discovery by the members of the III Asiatic Expedition. As far as concerns Asia, and, for that matter, the whole Northern Hemisphere, geology is under a greater debt to him than to any other for giving the world at last a coherent picture of many of the past stages of the development of the earth surface.

In first presenting such palæogeographic maps to the untrained eyes, there seems often to be difficulty in forming a mental picture of just what a "re-drawn" continent implies. It needs, for example, some imagination to contrast the Ordovician coastline with the map of today, even if the present continental outline is dotted in; so that the facts and what they involve are not appreciated in a sufficiently vivid way to allow of comparing physical and climatic conditions in the two periods. Recently an attempt to apply the principle of a familiar children's toy to a scientific use has been found helpful in projecting two maps of different periods to be compared, upon the same field of vision in rapid succession, without the use of a lantern.

By cutting each of the maps into sections, mounting these and connecting them behind after the manner of "louvres" or french window blinds,

either map can be made to show at will, by a motion of the parts not exceeding three or four inches, however large the map involved.

A palæogeographic wall map is cut into latitudinal strips, say four inches deep, and these are pasted onto five inch strips of carton, so that the bottom of each section of the map is flush with the bottom of the carton strip; the mounted strips are then placed so as to overlap just enough to produce a connected map. The extreme lateral margins of the sectional map are fastened together permanently so as to secure the strips in place.

The second map is similarly treated, except that the strips of carton should be six inches deep and narrow enough to pass, without binding, through the horizontal slits that now exist in the first map. When the strips of the second map are overlapped in adjustment, each is secured independently to two blank strips placed vertically at the back; the attachment behind should be at the extreme upper edge of the mounted strips, otherwise it will be found that the two maps will foul each other, and only the one in front be visible.

The one-inch overlap of the first map allows the bottom edges of the sections of the second map to be inserted from behind just far enough to guide it and ensure its sections appearing through the correct slits in the map in front; but the second map remains out of sight until the vertical strips are pulled from below, when it at once fills the whole field.

Other modifications will readily be thought of. Attempts to superimpose three such maps have been tried with circumpolar projections, cut in segments of a circle. But as was clear from examples shown to the Society, such triple maps become complicated and cumbersome. In any case, the main service of such maps lies in the first attack upon the imagination, which attains its purpose if it comes with sufficient suddenness and surprise to make the conceptions of a changed continent a reality.