

A NOVEL METHOD OF MAKING RELIEF MAPS.

Relief maps are so frequently seen in the museums and expositions, particularly in the government exhibits of all countries, that few people realize the labor, patience, attention to detail, and skill necessary in performing the best work of this character. In the scientific, educational, and war departments of the civilized nations the importance of this branch of the topographer's art is fully recognized, and constant development and improvement are being sought after. The work in this direction that Mr. Matausch is doing at the Museum of Natural History, New York, is not yet generally known.

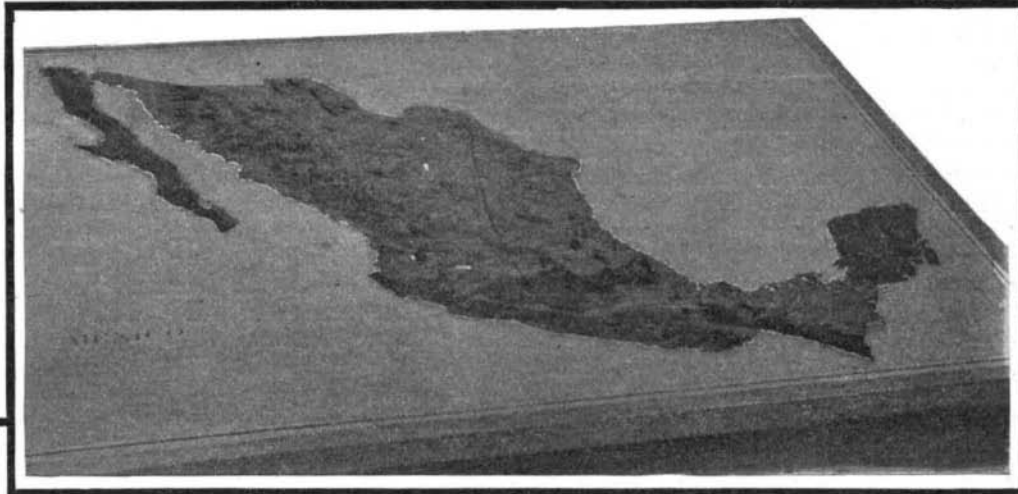
The first difficulty encountered is in the choice of a suitable scale of elevation. This scale must be such that even topographical features of minor importance are plainly discernible, while at the same time there is apparent no unnatural distortion. This scale will probably be different for almost all countries, and the success attending the construction of the

of the country. The following strata become smaller and smaller till the highest elevations are reached, and the mountain peaks are indicated by pegs of the proper height. A layer of clay or wax is now placed upon the strata mentioned above, and the modeling begins. Great care must be exercised in building up the gradual rise from one elevation to another, in forming the mountains and in tracing the water lines and river courses. At this stage everything depends

ed for exhibition or other purposes are turned out. In making the map of Mexico, shown in the photographs, great difficulty was encountered because there are no accurate or large scale maps available of considerable portions of that country. These difficulties, however, were largely overcome by using the reports, sketches, and photographs of Banelier and Saville, both of whom led exploring expeditions into the lesser-known parts of Mexico. As soon as the work in hand

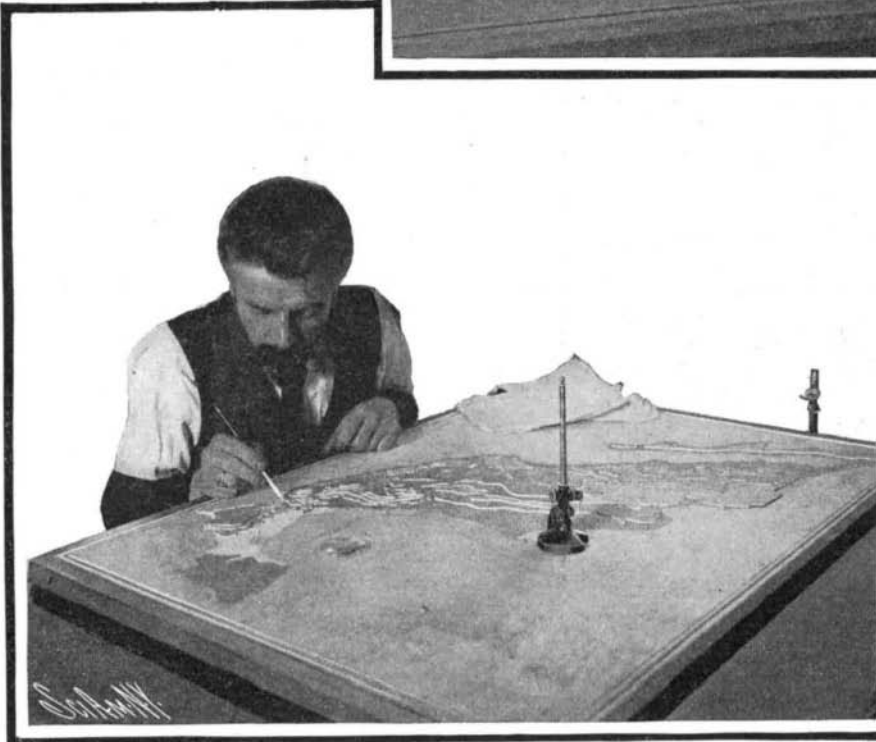
is completed, Mr. Matausch will begin a large size map of Mont Peleé and its immediate vicinity, working from data and photographs obtained from the various scientific expeditions sent to that ill-fated locality.

Ready for Varnishing and Making the Plaster Impression or Mold.



A STRANGE RAILWAY ACCIDENT.

A railroad accident attended by some very curious results recently occurred on a branch of the Philadelphia, Baltimore & Washington division of the Pennsylvania system, extending through the town of Laurel, Del. At this place the railway crosses a navigable stream



Smoothing off the Rise from Stratum to Stratum Before Putting on the Layer of Clay on which the Surface Modeling is Done.



Tracing the Watercourses. The Surface Modeling is Practically Completed with This.

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map will depend largely upon the skill and judgment of the designer.

After the scale has been determined upon, a large detailed map of the country in question is smoothly glued to a level wooden surface, and layers or strata of wood or cardboard—the thickness depending upon the scale chosen—placed upon it. These strata correspond to the different elevations shown on the maps. The first or lowest, corresponding to an elevation of a few hundred feet, usually follows the coast line closely. The next is somewhat smaller in area as the elevation increases, and the outline varies with the peculiarities

upon the accuracy and skill of the worker alone. Mr. Matausch works from the most detailed maps obtainable, from sketches and descriptions of explorers, and where possible, from photographs. The delicacy of operation and the patience necessary in this work may be understood if we consider that the conformation, peaks, ridges and comparative size of a mountain actually 19,000 or 20,000 feet high must be shown upon a model possibly half an inch in height.

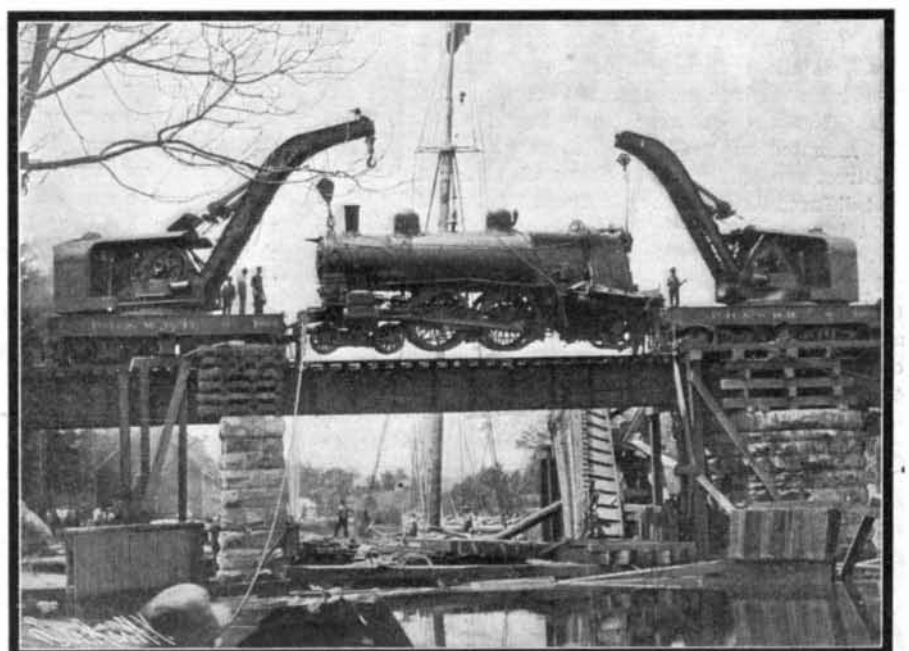
After the modeling is completed the map is varnished, and a plaster impression of it is made. By means of this plaster mold the maps which are intend-

ed on a bridge, the track being about 25 feet above the water. The bridge consists of three spans and is of the ordinary steel-girder type, the center one being the draw span. Through a misunderstanding of signals, the engineer of a passenger train ran on to the bridge before he perceived the draw was open. The locomotive fell through the draw, but fortunately the coupling between it and the tender broke under the strain, leaving the balance of the train on the bridge and the embankment forming the approach, although the tender hung over the brink.

The schooner "Golden Gate" was passing through



The Open Draw and the Wreck of the Schooner and Engine.



Two Wrecking Cranes Lifting Up the Locomotive.

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