

MAPPING MOUNT RAINIER NATIONAL PARK.

F. E. MATTHES.

[The mapping is being conducted by F. E. Matthes, who has made a specialty of high-mountain surveying in various parts of the West for the last twelve years. He finds Mount Rainier by all odds the most interesting and also the most difficult problem he has attempted.

A committee appointed by the Mountaineers is now in consultation with Mr. Matthes as to the naming of the various peaks, glaciers, parks and other points of interest on the mountain. This committee will spend three years threshing out the name question, seeking out the source of the original names and preparing a complete report as to each name.

Recommendations will then be made to the national geographical board. The committee has been chosen from among members of the Mountaineers and outsiders whose knowledge of the mountain and position enables them to act as competent judges.

The members of the committee are: Prof. E. S. Meany, University of Washington; J. B. Flett, Asahel Curtis, E. S. Ingraham and L. A. Nelson. Others assisting are John H. Williams, P. B. Van Trump and Eugene Ricksecker.]

The party of surveyors which the United States geological survey sent out last summer to map the Mount Rainier National Park, has just concluded its labors for the season, and has returned from the mountain. Continued fog and rain rendered further stay unprofitable. The map is to be something more than a superficial reconnaissance. It is intended to become the basis for all future engineering projects in the park, and is consequently elaborate and refined in character. It will rank with the new detail maps which the geological survey has recently published of the Grand Canyon of the Colorado, the Yosemite Valley, Crater Lake and several other national parks.

Such a map requires a very large number of locations and elevations. Many thousands of points were determined this season, although only a small portion of the park on the south side of the mountain was covered.

The work was executed almost wholly by means of the "plane table" method. That is to say, the map was made on the ground, being carried on a drafting board mounted on a

tripod. A system of triangulation executed with theodolites constitutes the basis of the entire survey, while lines of precise levels connecting with sea level furnish the basis for the elevations.

Last summer a line of levels was run into the park over the new government road via Ashford and carried up to McClure rock, which is one of the important points of the triangulation system. From it vertical angles were taken with great care to the peaks of the Tatoosh range and many other important eminences and their elevations computed trigonometrically. The exact altitude of Mount Rainier itself is ultimately to be determined in a similar manner, only, in view of its importance, the measurements are to be taken with high-power instruments and the most approved triangulation methods. It is desired to make the determination of the altitude of the mountain beyond question as regards accuracy, and considerable extra work has been undertaken merely for the sake of accomplishing this end.

Unfortunately a heavy snow fall early in October covered up the tall stone cairn which was built on the rim of the south crater for a triangulation signal, and thus this work had to be abandoned for the season without the height of the mountain being definitely worked out. It is hoped, however, that the final figure will be announced early next summer when the work will have been resumed.

The detailed mapping of a huge glacier-covered peak like Rainier calls for no little mountain climbing. The surveyors made daily climbs with their instruments on their backs, that is to say, with a fragile load, that a single misstep might ruin.

The peaks of the Tatoosh range were climbed repeatedly and treated as so many hills. Eagle peak was climbed three days in succession and Pinnacle peak four times, the work on those points being so extensive as to require several long days for its completion.

Mount Rainier itself was ascended twice, the first time in order to build the cairn referred to, and the second time in order to take the necessary measurements. In both cases the party encountered violent gales on the summit; on the second occasion the wind literally swept them off their feet at times, and the work had to be executed from the lee of the cairn.