REVIEWS

VOLCANIC ERUPTIONS IN THE PHILIPPINES IN RELATION TO EARTHQUAKES AND SUBTERRANEAN NOISES, TO RAINFALL AND ATMOSPHERIC PRESSURE. By REV. MIGUEL SADERRA MASO, S. J., Assistant Director of the Weather Bureau. *Bulletin of the Weather Bureau,* July 1911. (Philippine Weather Service.)

In introduction, reference is made to the eruptive behavior of Usu-San in Japan in July, 1910, which then had been dormant since 1853. On July 21, 1910, earthquakes began to be felt in the neighborhood of this volcano. By July 23rd these had become alarming in frequency and intensity. Some were strong enough to destroy a few weak wooden and brick buildings. These culminated at about 10 p.m. July 25th, in eruptive explosions from new craterlets on the northern flanks of the mountain. Thanks to these earthquakes and intelligent interpretation of them no lives were lost, the inhabitants fleeing, or being driven by the police, to safe distances many hours before the outbreak of actual eruption. Hence some eruptions can be foreseen.

This conclusion is borne out by interpretation of the phenomena of the eruption of Taal, January 30, 1911, and in sundry other instances.

A list of eruptions, with brief statements of attendant phenomena, of Taal, Mayon and Camiguin is given.

From these accounts it appears that the frequent eruptions of Mayon have sometimes been preceded by subterranean rumblings and occasionally accompanied by earthquakes, but reports of these are not found in all cases. The occurrence of earthquakes does not seem to afford a reliable index of outbreaking in the case of this volcano. However, other premonitory symptoms of eruptivity have usually been given. And in one instance, after a long inactive period, earthquakes heralded its outbreak.

The one chronicled eruption of Camiguin was preceded by a great many shocks of earthquake, increasing in strength and number daily from February 16, 1871, to a date early in May of that year, culminating April 30th in a terrific eruption. This eruption "showed special features proper to apparently extinct volcanoes, in which old outlets must have been blocked to great depths by solidified lava." These earthquakes ceased a day or two after this eruption.