necessary to crack the earth's shell into two halves three meters apart. Nuclear fission energies are approaching this critical output, and further experimenting with large nuclear fission bombs must be carried out with great precautions.

In particular this refers to the scheduled experiments to be carried out by the Navy in the mid-Pacific on a certain date in June. The author is afraid that there may be no survivors to report on the experiment if the bomb of Hiroshima-size is exploded on or under the ocean surface, and if the preceding months are below their normal seismic activity.

If a rupture in the ocean bed caused by the test is sufficiently deep and therefore hot, the flow of water into the crack and the steam formed therein will deepen and broaden the rupture. The bulge of steam may produce a siesmic tidal wave which may sweep away all ships—the targets and nontargets.

Furthermore, if the nuclear fission bomb in the planned experiment is larger than that released over Hiroshima, the "mushroom" of steam and dust from the bottom of the sea may surpass that of Krakatoa in the year 1883 by many times, both in volume of the erupted matter and in the height to which it is erupted.

The solar constant was slightly affected for several decades by the dust thrown out in the Krakatoa (C. G. Abbot and F. E. Fowle. *Volcanoes and climate.* Smithsonian Misc. Collection, 1913, Vol. 60, No. 29, 15). The climate of the earth may be affected unfavorably for many decades if the quantity of dust erupted as a result of the experiment is several times that resulting from the explosion of Krakatoa.

This consideration requires an extreme cautiousness in scheduling the experiment. The strain in the earth's crust must be estimated first, and the experiment performed at the time of a minimum strain.

If all precautions are taken, this test may be of considerable value to seismology and tectonophysics. With the exact time of explosion, its energy, and location of epicenter known, the time and the path of travel of different types of seismic waves can be studied with great precision. The experiment may be especially valuable for better study of surface and shallow waves, and waves going through the core of the earth. Records of seismographs in such an accurate seismological experiment may give a better understanding of the structure of the earth's crust and its depth, thus contributing to the science of tectonophysics.

The author is especially interested in observations on the direct transverse wave (S′) through the core and in the continued records for 14 days after the explosion. The absence of a focus of S′ wave at the antipode of the explosion spot would favor the writer's hypothesis of a heavy gaseous core of the earth, and occurrences of excessive earthquakes during the half-lunar period after the explosion would give valuable data for evaluation of the lagging coefficient of earthquakes after the maximum strain has been reached.

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