greater absorption when its fibres were parallel than when they were perpendicular to the plane of the vibrations. That is, the wood is double refracting and transmits best when the plane of vibration is perpendicular to the direction of the fibres and absorbs most when they are parallel. In fact, to this absorption the author ascribes the reappearance of the sparks with the crossed sender and receiver, since the plates of wood were not thick enough to give a retardation of one ray behind the other equivalent to a half wave-length; in fact, the plates were only from $\frac{1}{6}$ to $\frac{1}{2}$ a wave-length thick. The phenomenon was observed with plates up to 35 cm. thick and of fir, oak and beech. Plates cut perpendicular to the fibre showed no double refraction as was anticipated. The author refers to the experiments of Starkl showing that the thermal conductivity of wood is different, parallel with and perpendicular to the fibre.

W. von Bezold calls attention to the experiments on thermal conductivity by Tyndall, which led him in 1871 to experiment upon the Lichtenberg figures formed upon wood. At that time von Bezold found that the Lichtenberg figures on plates of wood cut with the grain fibre were elliptical with the major axis at right angles to the fibre, while the ellipses obtained upon the same wood by Senarmont's methed of testing thermal conductivity were much more elongated and in the direction of the fibre. The author was able to give to a hard rubber plate an anisotropic character by pasting parallel strips of tinfoil upon the back, whereupon it gave Lichtenberg figures similar to those on a piece of wood cut with the grain. He suggests experiments with a dielectric in which are imbedded rods of a conductor or a dielectric of different inductive capacity.

A. Righi points out that he had presented a paper before the Academy of Sciences at Bologna, which Mr. Mack evidently had not seen, although it was read nearly six months before his article appeared. On that occasion Mr. Righi described experiments similar to those of Mack, wherein he obtained identical results, even identifying elliptical and circular polarization in wood.

In conclusion, I may state that I have recently examined thin films of wood between crossed Nicols, using sunlight, and found in all cases the behavior toward light the same as that described for electric waves, albeit, one sees that the double refraction is not shared equally by all the components of the wood.

WILLIAM HALLOCK.

Distribution of the Magnetic Declination in Alaska and Adjacent Waters for the Year 1895. Bull. No. 34, U. S. Coast and Geodetic Survey. 8°, 6 pp. and 1 chart.

The above is a brief abstract of a fuller report to be published later by C. A. Schott, Assistant. As the title indicates, the paper attempts to give the latest representation of the distribution of the magnetic declination for the region indicated. It hence replaces the earlier (1890) attempt and gives evidence of a decided improvement. On account of the wide extent of the region involved and the paucity and irregular distribution of the observations, the analytical method of representing the available declinations was adopted. The formula established gives a very satisfactory accord with the observations covering a territory from 47°.4 to 71°.3 N and from 122°.4 to 156°.5 W of Gr. The largest discrepancy between the observed and computed declination is but 0°.9; the probable error of a single representation, $\pm 19'$.

On the chart the isogonics or lines of equal magnetic declination, as obtained with the aid of the formula, are given at intervals of one degree for the region covered by the above title.

L. A. BAUER.