lower lip with two hairy ascending attenuate divisions, corolla about twice as long as the calyx, purplish, smooth within, slightly pubescent without, upper lip emarginate, lower spreading and three lobed, stamens slightly didynamous and exserted, stigma bifid; nutlets about 0.5 mm. in diameter, spheroidal and finely tuberculate. Odor agreeable, aromatic; taste aromatic and warming.

3. Ash not more than 10 percent.

X-RAYS SHOW ETHER WAVES.

Professor W. H. Bragg delivered at the British Royal Institution a lecture on X-Rays and crystalline structure. Two years, he said, had gone by since Dr. Laue made his surprising discovery of the interference effects accompanying the passage of X-Rays through crystals. The pioneer experiment had opened the way for many others, and a very large amount of work, practical and theoretical, had now been done. There was work enough in sight to absorb the energies of many experimenters, and there was sure to be far more than we could see. It would scarcely be an over-statement to say that Laue's experiment had led to the development of a new science. The experiment itself, which, to put it briefly, constituted a proof that X-Rays consisted of extremely short ether rays, had already been described and was well known. A fine pencil of X-Rays passed through a thin crystal slip and impressed itself on a photographic plate. Round the central spot were found a large number of other spots, arranged in a symmetrical fashion, their arrangement clearly depending on the crystal structure.

Mr. W. L. Bragg (the lecturer's son) had discovered the "reflection" method, and had shown that it was able to elucidate the position of all the spots on the Laue photograph. This conception led to the construction of the X-Ray spectrometer, which resembled an ordinary spectrometer in general form, except that the grating or prism was replaced by a crystal and the telescope by an ionisation chamber and an electroscope. In use a fine pencil of X-Rays was directed on the crystal, which was steadily turned until a reflection leaped out, and the angle of reflection was then measured. If we used different crystals or different faces of the same crystal, but kept the rays the same, we could compare the geometrical spacings of the various sets of planes. If we used the same crystal always, but varied the source of X-Rays, we could analyze the X-Rays, measuring the relative wave lengths of the various constituents of the radiation.

At this stage a critical point had been reached. If we knew the exact spacings of the planes of some one crystal we could by comparison find the spacings of all other crystals and measure the wave lengths of all X-radiations. Or if we knew the exact value of some one wave length we could find by comparison the values of all other wave lengths and determine the spacings of all crystals. But at this stage there was no absolute value either of wave length or spacings.

Mr. W. L. Bragg appeared to have overcome the difficulty by his comparison of the reflecting effect in the case of rock salt or sodium chloride and sylvine or potassium chloride, and the spectrometer had now become a means of measuring the length of waves of any X-radiation and the actual spacings of the atoms of any crystal.