There is a great difference among condensers as to power factor and temperature coefficient, and a condenser should never be purchased without a knowledge of these constants as well as a knowledge of its capacity.

The Diffraction of Electric Waves of Short Wave-length: A. D. COLE, Ohio State University.

Peculiarities observed in a quantitative study of the reflection of electric waves seemed to be due to diffraction and led to this study. These peculiarities were: (1) A sudden increase in the amount of energy passing through a slit of increasing width when it becomes more than a quarter wave wide, (2) the amount of energy reflected from a narrow mirror was found to be greater than that passing through a slit of the same width provided each is but a small fraction of a wave-length wide, (3) irregularities noticed when screens were introduced to cut off direct radiation.

The earlier investigations of Trouton, Zehnder and Righi were carried out with apparatus which did not give quantitative results. A modified form of Klemenčič thermo-receiver made it possible to study the distribution of refracted energy quantitatively. A Righi exciter, actuated by an induction coil and Wehnelt interrupter, was used for generating the waves.

The lateral distribution was studied and the result exhibited by curves for the following cases: (1) A slit about three fourths of a wave-length wide showed a broad spreading of energy, with a central 'bright band' having a dark band and weaker bright band at each side. Their locations agreed with the optical formula, $\lambda = a \sin \theta$. (2) A wider slit showed interference bands nearer together. (3) Case of energy distribution behind a thin metallic edge placed on the axis of a plane wave front. (4) Similar with the edge displaced laterally.

Trouton's discovery that the system of nodes and loops formed by reflection at perpendicular incidence from a small plane mirror is shifted outward if the mirror is made with dimensions of a wave-length or less was verified and the amount of the shifting measured for several cases.

The study of diffraction is being continued.

Final Report on Ether-drift Experiments: EDWARD W. MORLEY and DAYTON C. MILLER.

At the Philadelphia meeting an account was given of experiments to detect ether drift. These observations gave no indications of a drift of the ether. It has been suggested that the negative results are due to the influence of the heavy stone walls of the building within which the apparatus was mounted. The interferometer has, therefore, been mounted on high ground near Cleveland, and covered in such a manner that there is nothing but glass in the direction of the expected drift. It was much more difficult to make observations in this location than in the building; satisfactory observations could only be made on a cloudy evening following a cloudy day, when the temperature changed very slowly. The temperature effects could never be entirely eliminated. The conclusion from many observations is that there was no indication of a drift of the ether through the interferometer. The expected drift would produce a displacement of the interference fringes of 1.53 wave-lengths; the above result is probably certain to one eightieth part of the whole.

The Optical Analogue of Certain Electrical Experiments: WILLIAM B. CARTMEL, Harvard University.

The recent experiments of Messrs. Blake and Fountain show that the amount of electric radiation transmitted by sheets of glass, may be increased by covering the