A second coil of the same size carrying current of the same frequency may now be placed near the second loop. When the battery current is adjusted to balance the combined effects of the two currents, the ammeter reads their vector sum. By constructing the vector diagram, the phase difference may be measured. The angle thus measured is the complement of the angle whose cosine is the power factor of the oscillatory circuit.

By this means the relations of power factor to frequency, to coupling, and to resistance have been investigated.

UNIVERSITY OF MICHIGAN.

"J" RADIATION: A SUMMARY.

BY F. K. RICHTMYER.

THE frequent reference in the literature of X-rays to the existence of a "J" radiation, of shorter wave-length than the K radiation, seems to warrant a statement summarizing the evidence pro and con, particularly in view of a recent paper by Crowther (Phil. Mag. for November, 1921 (10)).

Previous to that of Crowther, the evidence in favor of the "J" radiation has been based almost entirely on apparent discontinuities in absorption as a function of wave-length. The present writer has shown (8, 9) that, when absorption measurements are made with monochromatic radiation and with a precision of the order of one per cent., these discontinuities disappear.

Crowther bases his evidence for the existence of "J" radiation on the decrease in "hardness" of scattered radiation as compared with the primary beam transmitted at 45° through a thin sheet of aluminum, the scattered beam being measured at 90° from the primary. Since Crowther did not use monochromatic radiation his results (his published data are very meager) can readily be explained by assuming that the scattering coefficient is a function of wave-length.

BIBLIOGRAPHY.

1. Barkla and White. Phil. Mag., 34, p. 270 (1917).
2. Williams. Proc. Roy. Soc., 94, p. 567 (1919).
3. Owen. Proc. Roy. Soc., 94, p. 339 (1919).
4. Houston. Proc. Roy. Soc. (Edinburgh), XL., p. 34 (1919).
5. Dauvillier. Ann. de Ph., XIV., p. 49 (1920).
6. Duane and Shimizu. Phys. Rev., XIII., p. 289 (1919).
7. Richtmyer and Grant. Phys. Rev., XV., p. 547 (1920).
8. Richtmyer. Phys. Rev., XVII., p. 433 (1921).
9. Richtmyer. Phys. Rev., XVIII., p. 13 (1921).
10. Crowther. Phil. Mag., 42, p. 719 (1921).

CORNELL UNIVERSITY,
December, 1921.