

PHYSICS

Chairman: R. E. WINN, Purdue University

GEORGE D. VAN DYKE, Earlham College, was elected chairman for 1954

ABSTRACTS

What is the origin of induced electromotive force? FRANCIS E. THROW, Wabash College.—Is the fundamental cause of electromagnetic induction a cutting of lines of force, a change in B , or a change in the flux linkages? A demonstration is arranged to make the familiar appear strange, the true appear doubtful, and the false appear plausible.

Inelastic scattering of alphas by N^{14} .* BYRON M. CARMICHAEL, Indiana University.— N_2 gas at 0.075 atmos. pressure has been bombarded with 21.5 m.e.v. alpha particles from the cyclotron, and the alpha groups from the reaction $N^{14} (\alpha, \alpha') N^{14*}$ have been analyzed with the magnetic spectrometer at angles of 90° and 105.5° . Levels in N^{14} at 3.95, 5.09, 5.80, 6.46 and 7.02 m.e.v. are found from the Q values of the alpha groups. No alpha group leading to the 2.3 m.e.v. level established by other reactions was observed. It is estimated that a group of intensity 2% of the ground state intensity would have been detected. It has been predicted that this level should not be excited in the reactions $N^{14} (\alpha, \alpha') N^{14*}$, $(d, d') N^{14*}$, and $O^{16} (d, \alpha) N^{14*}$ since isotopic spin conservation would be violated.¹ The non-excitation of this level by the latter two reactions has been reported by other observers.^{2,3}

* Supported in part by the joint program of ONR and AEC.

1. R. K. ADAIR, Phys. Rev. **87**, 1041 (1952).

2. BROWNE, BOCKLEMAN, BEUCHNER and SPERDUTO, Bull. Am. Phys. Soc. **28**, No. 1, 11 (1953).

3. CRAIG, DONAHUE and JONES, Phys. Rev. **88**, 808 (1952).