





Fig. 1. The infra-red spectra of the solid isomer of dimethyl-aminoethoxy-methyl-phosphoryl fluoride (1) and the iodides of methyl-fluoro-phosphorylcholine (2) and of ethoxy-methyl-phosphorylcholine (3).

spectra are probably caused by moisture, picked up during the preparation of the potassium bromide disks. The remaining absorption bands agree well with those usually obtained in the infra-red spectra of organic phosphorus compounds. The results obtained from the infra-red measurements are thus entirely in accordance with the structure that Tammelin has suggested for the solid isomer of dimethyl-aminoethoxy-methyl-phosphoryl fluoride, and they exclude structures like II and III.

It has been shown that thiosulphate ion reacts with ethylene-immonium ion<sup>5</sup>. From a study, performed in the same manner as described by Fukuto and Stafford<sup>2</sup>, it has been found that the solid isomer does not react with thiosulphate ion indicating that there is no immonium ion present in the solid isomer. This result is a further argument against structure II.

*Experimental.* The compounds studied were synthesized by Tammelin<sup>1,4</sup> at this institute. The infra-red spectra were recorded by means

of a Perkin-Elmer spectrometer, Model 21, equipped with a rock salt prism, and the following settings were used: Resolution 927; response 2:1170; gain 6; suppression 3; speed about 1  $\mu$ /min; scale 5 cm/ $\mu$ . The potassium bromide disk technique was employed, and 1 mg of sample was mechanically ground together with 300 mg of potassium bromide.

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