In a further examination of this subject, we are employing phosphorus oxybromide, the uses of which, in organic chemistry, do not appear to have been investigated. This reagent in the presence of pyridine gave rise to 1-bromo-1-phenylethane with $\alpha_D^{17} + 125.2^\circ$ ($l = 1$), from ROH, $\alpha_D - 44.0^\circ$, and 1-bromo-1-phenylpropane with $\alpha_D^{16} + 174.2^\circ$ ($l = 1$), from ROH, $\alpha_D^{10} - 26.4^\circ$.

From the flattening of their rotation-reaction-temperature curves, Levene and Rothen⁶ conclude that the maximum values of the molecular rotations of these bromides are respectively $[M]_D$ 90° and $[M]_D$ 140° (in benzene). Since Arcus⁷ used these values to represent the experimental curves of Levene and Rothen in terms of percentage optical purity and the contributions of stated mechanisms to the rotation of the product obtained at the different temperatures, and since our values for $[M]$ (benzene) are nearly twice these, it follows that Arcus' curves and argument should be reconsidered.

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¹ *Rec. trav. chim.*, **65**, 799 (1946).

² Cf. Houssa, Kenyon and Phillips, *J. Chem. Soc.*, 1700 (1929). Cowdrey, Hughes, Ingold, Masterman and Scott, *J. Chem. Soc.*, 1252 (1937).

³ *J. Chem. Soc.*, 848 (1945).

⁴ McKenzie and Clough, *J. Chem. Soc.*, **103**, 687 (1913).

⁵ *J. Chem. Soc.*, 106, 848 (1945); 741 (1946).

⁶ *J. Biol. Chem.*, **127**, 237 (1939).

⁷ *J. Chem. Soc.*, 236 (1944).

Preparation of Colourless Carborundum

In a paper to Section I of the Eleventh International Congress of Pure and Applied Chemistry, J. T. Kendall and D. Yeo described the preparation of pure silicon carbide by passing the vapours of silicon-organic compounds over a heated carbon filament; the product they obtained was bright yellow in colour and it was not found possible to prepare colourless specimens by this method. On theoretical grounds it would be expected that pure silicon carbide should be colourless and, according to H. Moissan¹, carborundum free from traces of iron is without colour; he obtained almost colourless, prismatic needles of carbon silicide by allowing the vapours of carbon and silicon to react with one another. In view of current ideas on the part played by impurities in determining the electrical properties of semi-conductors, it is of interest to record another and simpler method by which colourless carborundum can be prepared.

The following observations were made during a study of the deposition of carbon from the gas phase on fused silica. The experiments were carried out in a long vitreousil tube 0.8 in. internal diameter, heated electrically. Inside this tube was another vitreousil tube, 6 in. long, 0.4 in. internal and 0.6 in. external diameter, provided with lugs so that an annulus was left between the two tubes. The temperature was measured by means of a Pt/PtRh thermocouple, surrounded by a vitreousil sheath, situated axially in the tube. Ethylene, saturated with water vapour, was passed through this apparatus heated to 1,200° C. at a constant rate of twenty-five litres (measured at room temperature) an hour. In one

experiment, which had lasted several hours, in addition to the carbon deposit there was formed on the centre part of the outer surface of the inner silica tube a white, fluffy, mould-like growth. An X-ray powder photograph showed this to be cubic carborundum; although only microcrystalline, the back reflexions in the powder photograph were sharp and resolved. In appearance it was quite unlike the greenish-yellow cubic variety formed when carbon reacts with silica at higher temperatures; it had a soft texture and readily gave an extruded rod for X-ray examination when mixed with a little dilute gum arabic solution. First attempts to repeat this preparation were unsuccessful, possibly because the surface of the silica tube must be in a specially active condition. At a somewhat higher temperature (1,300° C.), however, it was found possible to repeat the formation of this white form of cubic carborundum.

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¹ "Comprehensive Treatise on Inorganic and Theoretical Chemistry", Mellor, J. W., **5**, 879.

A Volatile Compound of Copper

Körösy¹ has recently reported that copper formate decomposes when heated, evolving a small amount of a volatile copper compound. I encountered a similar phenomenon when gently igniting a deposit from a copper rectifying column, the deposit containing cupric acetate. According to Angel and Harcourt² the formation of a white sublimate of cuprous acetate on heating cupric acetate was first observed so long ago as 1773 by Lassone³. The formation of such volatile compounds may result in low values for the copper content of such materials as vinegar when dry-ashing methods are used in their analysis.

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¹ Körösy, F., *Nature*, **160**, 21 (1947).

² Angel, A., and Harcourt, A. V., *J. Chem. Soc.*, **81**, 1385 (1902).

³ Lassone, "Histoire de l'Acad. Royale des Sciences", 26 (1773).

A Crystalline Principle from *Ammi majus* L.

Ammi majus L.¹ (Umbelliferae) is an annual herbaceous plant which is widely spread in the Nile delta region and closely resembles *Ammi visnaga* L. The fruits of *Ammi majus* are taken internally by the public to cure leukoderma.

The powdered fruits of *Ammi majus*, collected in May, were extracted by hot petroleum ether (b.p. 60–70°) and the extract kept in the ice chest overnight, when a crystalline greenish mass separated, from which a colourless crystalline principle m.p. 148° was isolated, and for which the name 'ammoidin' is proposed (I. R. F. and H. A.). The crystalline substance was investigated chemically (A. S. and A. S.). It is easily soluble in chloroform and benzol, and