In this way the following additional isotopes of elements can safely be predicted to occur: A 38; Ca 42; K 43; Ti 44, 46 and 52; Sc 47; Cr 48 or 56; Fe 56, 60, 57 and 58; Ni 56 or 64, 61 and 62; As 77; Se 79 and 81; Sr 84, 87 and 89; Kr 85; Zr 88, 91 and 93; Y 91; Nb 95; Ma 99; Rh 103; Pd 100, 102, 104, 106, 108 and 110; Cd 108 and 120; Te 116, 120, 122 and 124; Ba 128, 132, 134 and 140; Ce 132, 136, 138, 141 and 144; Nd 136, 140 and 148; La 137; W 188; Pt 190 or 198, 192, 194 and 196; Pb 204 and Hg 208.

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TETRAARYLARSONIUM HALIDES

Sir:

Alkyltriarylarsonium compounds have been prepared in considerable number but it seems that the tetraarylarsonium type has not been described hitherto.

It has been found that tetraarylarsonium halides can be obtained readily by interaction of an arylmagnesium halide with a triarylarsine oxide and subsequent treatment of the reaction mixture with a halogen acid: for example, addition of hydrochloric acid to the product formed from phenylmagnesium bromide and triphenylarsine oxide yields tetraphenylarsonium chloride (m. p. 272–274°); by the use of hydrobromic or hydriodic acid the corresponding bromide (m. p. 273–275°) and iodide (m. p. 292–293°) are obtained.

These halides are beautifully crystalline compounds and the halogen is not removed by brief treatment with alcoholic sodium hydroxide or molecular silver.

An extensive investigation of these compounds is in progress.

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HIGHER VALENCE STATES OF SILVER

Sir:

Recently considerable attention has been given to the higher valence states of silver, but no reports have appeared on bivalent silver in the form of anhydrous fluoride, although as early as 1891 Moissan stated that silver is attacked by fluorine at 100°, and at red heat the two elements combine with incandescence.