# Arsenic(III), Antimony(III) and Bismuth(III) Thiobenzoates: Crystal and Molecular Structures of $M(SOCR)_3$ and $PhSb(SOCPh)_2$

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Tris-thiobenzoates of arsenic, antimony and bismuth, $M(SOCR)_3$ have been obtained from their oxides and characterized. In the X-ray crystal structure determinations of these, the group 15 atom and the three covalently bonded sulfur atoms are found to constitute a trigonal pyramid, the central atoms lie at a $C_3$ axis. In the bismuth complex the thiobenzoate ligand tends to chelate. However, three comparatively short intermolecular M---S interactions are significant features for these molecules resulting in stacking of trigonal prisms providing an essentially six coordinate environment around arsenic and antimony and a nine-coordinate one for bismuth. The structure of $PhSb(SOCPh)_2$ can be considered to be distorted trigonal bipyramidal.

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