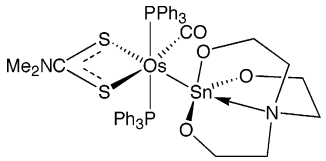
ORGANOMETALLICS

Volume 25, Number 20, September 25, 2006

Editor's Page

The review in this issue of *Organometallics* by Warren R. Roper and L. James Wright of the University of Auckland on "Similarities and Contrasts between Silyl and Stannyl Derivatives of Ruthenium and Osmium" represents only a very small portion of Professor Roper's outstandingly innovative development of the organometallic chemistry of the platinum-group metals during the past 40 years. The molecule on the cover is an osmium complex containing a σ-bonded stannatrane substituent, $Os[Sn(OC_2H_4)_3N)](\kappa_2\text{-}S_2CNMe_2)(CO)(PPh_3)_2$ (**1**). The



1

silatrane analogue is *similar* to **1** in structure but *contrasts* in that it does not contain a Si−N bond (structures published by Rickard, Roper, Woodman, and Wright: *Chem. Commun.* **1999**, 837).

The present review brings an excellent overview of the chemistry of the σ-bonded silyl and stannyl complexes of ruthenium and osmium: their preparation, considerations of structure and bonding, and their reactions, including those carried out at the silyl and stannyl substituents. (Thus, the cover molecule **1** was prepared by reaction of $Os(SnI_3)(\kappa^2\text{-}S_2CNMe_2)(CO)(PPh_3)_2$ with triethanolamine.) Comparison of the reactivities of the usually structurally similar silyl and stannyl complexes has in many cases revealed notable differences—which makes this review very interesting reading.

Professor Roper, a native of New Zealand, studied chemistry at the University of Canterbury in Christchurch, New Zealand, and stayed there for his doctoral studies, obtaining his Ph.D. in 1963. A postdoctoral stay at the University of North Carolina with J. P. Collman followed. In 1966, on his return to New Zealand, he was appointed Lecturer in Chemistry at the University of Auckland, where in 1984, he became Professor of Chemistry. James Wright, the coauthor of the present review, carried out his doctoral research under the guidance of Professor Roper and obtained his Ph.D. in 1980. He has been on the chemistry faculty of the University of Auckland since 1984, where he currently is Associate Professor.

Professor Roper's research has been focused generally on synthetic and structural organometallic and inorganic chemistry. The specific areas of his research have been quite varied: low-oxidation-state platinum-group-metal complexes, oxidative addition reactions, migratory insertion reactions, transition-metal complexes containing carbon−metal double and triple bonds, metallabenzenoids and metalated arenes, stabilization of reactive molecules by coordination to transition metals, and, more recently, compounds with bonds between platinum-group metals and main-group elements (B, Si, Sn). Of particular interest in Professor Roper's past research were metal complexes with simple divalent carbon ligands such as the long-sought dihalocarbene (CCl_2, CClF, CF_2) complexes, e.g., $IrCl_3(=CCl_2)(PPh_3)_2$, $OsCl_2(=CClF)(CO)(PPh_3)_2$ and $Ru(=CF_2)(CO)_2(PPh_3)_2$, and thiocarbonyl complexes, e.g., $Os(CO)(CS)(PPh_3)_3$. These divalent carbon−metal compounds, as well as the CH_2 complexes also prepared in Roper's group, e.g., $Os(=CH_2)Cl(NO)(PPh_3)_2$, were found to have a rich and varied chemistry involving transformations of the divalent carbon ligands.

Since 1999, Professor Roper has been Research Professor of Chemistry at the University of Auckland, where he continues to produce interesting new organometallic chemistry in collaboration with Professor Wright.

The cover molecule figure was kindly provided by Professor Arnold L. Rheingold.

Dietmar Seyferth
Editor

OM060688+

10.1021/om060688+ CCC: $33.50
Publication on Web 09/02/2006