

Book review

Extended linear chain compounds, Volume 3; edited by J.S. Miller, Plenum, New York, 1983, xviii + 561 pp., \$55.00.

Although it may seem rather singular to review a book dealing with extended linear chain compounds in *J. Organomet. Chem.*, this volume deals with a number of areas of more than passing interest to the active organometallic and coordination chemist. There are ten chapters in this admirable compilation, dealing with $\text{Hg}_{3-8} \text{AsF}_6$ and $\text{Hg}_{3-8} \text{SbF}_6$ (I.D. Brown, W.R. Daters and R.J. Gillespie), first-row transition metal compounds (principally halide complexes) with chain structures (W.E. Hatfield, W.E. Estes, W.E. Marsh, M.W. Pickens, L.W. ter Haar and R.R. Weller), ferromagnetism in linear chains (R.D. Willett, R.M. Gaura and C.P. Landee), magnetic resonance in ion-radical organic solids (Z.G. Soos and S.R. Bondeson) salts of TCNQ (H. Endres), 1,2-dithiolene complexes (L. Alcácer and H. Novais), the Spin—Peierls transition (J.W. Bray, L.V. Interrante, I.S. Jacobs and J.C. Bonner), polypyrrole (A.F. Diaz and K.K. Kanazawa), a (short) compendium of synthetic procedures for 1-D substances (P.J. Nigrey), and stacked metal chelate complexes (B.M. Hoffman, J. Martinsen, L.J. Pace and J.A. Ibers). This volume is an invaluable collection of definitive reviews at a reasonable price and should be available in every chemistry library. Of particular interest to the inorganic/organometallic chemist are the chapters (8 and 9) dealing with the fascinating conducting polymers, polypyrrole, polyacetylene and poly(sulphurnitride), Jim Ibers' review (Chapter 10) of stacked complexes, featuring (inter alia) porphyrin, phthalocyanin and oximate complexes, and the interesting story (Chapter 6) of the wide variety of dithiolene complexes of the transition metals. These chapters, alone, will probably trigger an avalanche of synthetic ideas in the mind of any organometallic chemist who takes the trouble to read them. In the preface, Dr. Miller comments that linear chain compounds blend constructively the "traditionally segregated disciplines such as synthetic and physical organic, inorganic and polymer chemistry, crystallography, and theoretical and experimental solid state physics"; he might have added that there is also a challenge here to the organometallic chemist.

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