

In summary, we have demonstrated that carbon monoxide can be efficiently trapped by carbon radicals at reasonably low CO pressures, contrary to previous observations. The success of this *free-radical carbonylation* obviously provides a new method for the introduction of carbon monoxide into organic molecules.<sup>9,10</sup>

(9) For the preexisting methodologies for carbonylation with CO involving other acyl species (acylmetals, acyl anions, and acyl cations), see recent reviews: (a) Narayama, C.; Periasamy, M. *Synthesis* **1985**, 253. (b) Weil, T. A.; Casser, L.; Foa, M. In *Organic Synthesis via Metal Carbonyls*; Wender, I., Pino, P., Eds.; Wiley: New York, 1977; Vol. 2, p 517. (c) Bahrman, H.; Cornils, B.; Frohling, C. D.; Mullen, A. In *New Syntheses with Carbon Monoxide*; Falbe, J., Ed.; Springer: Berlin, 1980.

(10) The overall transformation as a method for aldehyde synthesis is noteworthy, since the carbonylation of aliphatic substrates is particularly difficult by transition-metal methods. In this context, the radical method reported here complements the method involving Pd catalysis by J. K. Stille; see: Baillargeon, V. P.; Stille, J. K. *J. Am. Chem. Soc.* **1983**, *105*, 7175.

Further studies on the scope and synthetic application are currently under investigation.

**Registry No.** 1, 111-83-1; 2, 124-19-6; 3, 111-65-9; Ph(CH<sub>2</sub>)<sub>3</sub>Br, 637-59-2; Ph(CH<sub>2</sub>)<sub>2</sub>Br, 103-63-9; PhCH<sub>2</sub>Br, 100-39-0; PhI, 591-50-4; *p*-MeOC<sub>6</sub>H<sub>4</sub>I, 696-62-8; *c*-C<sub>6</sub>H<sub>11</sub>Br, 108-85-0; (*E*)-EtCH=CH(CH<sub>2</sub>)<sub>2</sub>Br, 63281-96-9; (*Z*)-EtCH=CH(CH<sub>2</sub>)<sub>2</sub>Br, 5009-31-4; Ph(CH<sub>2</sub>)<sub>3</sub>CHO, 18328-11-5; Ph(CH<sub>2</sub>)<sub>2</sub>CHO, 104-53-0; PhCH<sub>2</sub>CHO, 108-88-3; PhCHO, 100-52-7; *p*-MeOC<sub>6</sub>H<sub>4</sub>CHO, 123-11-5; *c*-C<sub>6</sub>H<sub>11</sub>CHO, 2043-61-0; (*E*)-EtCH=CH(CH<sub>2</sub>)<sub>2</sub>CHO, 929-22-6; (*Z*)-EtCH=CH(CH<sub>2</sub>)<sub>2</sub>CHO, 6728-31-0; CO, 630-08-0; 1-adamantyl bromide, 768-90-1; 1-adamantanecarboxaldehyde, 2094-74-8.

**Supplementary Material Available:** <sup>1</sup>H and <sup>13</sup>C NMR, IR, and some mass spectral data for products listed in Table I (3 pages). Ordering information is given on any current masthead page.

## Additions and Corrections

**Thermal Encapsulation and Photochemical Deencapsulation of Ag(I) by [Ir<sub>2</sub>(dimen)<sub>4</sub>](PF<sub>6</sub>)<sub>2</sub> (dimen = 1,8-Diisocyanomethane). X-ray Crystal Structure of [AgIr<sub>2</sub>(dimen)<sub>4</sub>](PF<sub>6</sub>)<sub>3</sub>·2DMSO [J. Am. Chem. Soc. **1988**, *110*, 8252]. ANDREW SYKES and KENT R. MANN\***

Page 8253: In Figure 2, the formation constant for the thermal encapsulation of Ag<sup>+</sup> in DMSO is misstated as 1.5 × 10<sup>8</sup> M<sup>-1</sup>. The correct value is 1.5 × 10<sup>7</sup> M<sup>-1</sup>. The calculations in the text (page 8253) should be adjusted to give log *K* of 7.2 and the corresponding free energy change of -9.8 kcal/mol.

**Time-Resolved Raman Detection of ν(Fe-O) in an Early Intermediate in the Reduction of O<sub>2</sub> by Cytochrome Oxidase [J. Am. Chem. Soc. **1989**, *111*, 6439-6440]. CONSTANTINOS VAROTSIS, WILLIAM H. WOODRUFF, and GERALD T. BABCOCK\***

The spectrometer used in this characterization of the dioxygen adduct of cytochrome *a*<sub>3</sub><sup>2+</sup> in the reaction of fully reduced cytochrome oxidase with O<sub>2</sub> was miscalibrated in the 540-660 cm<sup>-1</sup> region. With proper calibration, the 589- and 565-cm<sup>-1</sup> lines occur at 571 and 546 cm<sup>-1</sup>, respectively. Therefore, we assign the ν(Fe<sup>2+</sup>-O) frequency at 571 cm<sup>-1</sup>. This value is very similar to that which we measured for the iron-oxygen stretching frequency in an imidazole-heme *a*<sup>2+</sup>-O<sub>2</sub> model compound (see ref 7 in the original publication) and identical with that which we measured in the reaction of mixed valence cytochrome oxidase with O<sub>2</sub>. (Varotsis, C.; Woodruff, W. H.; Babcock, G. T. *J. Biological Chem.* Submitted).

This indicates, contrary to our earlier conclusion, that the cytochrome *a*<sub>3</sub>-O<sub>2</sub> complex is unperturbed by distal effects in the cytochrome *a*<sub>3</sub>/Cu<sub>B</sub> binding pocket. Weakening and rupture of the O=O bond occurs subsequent to formation of the initial dioxygen-*a*<sub>3</sub><sup>2+</sup> adduct.

**Selenium Coronands: Synthesis and Conformational Analysis [J. Am. Chem. Soc. **1989**, *111*, 6582]. RAYMOND J. BATCHELOR, FREDERICK W. B. EINSTEIN, IAN D. GAY, JIAN-HUA GU, BLAIR D. JOHNSTON, and B. MARIO PINTO\***

Recent investigations in our laboratory show that the solid-state <sup>77</sup>Se chemical shifts reported in ref 1 are incorrect. This arises from an error in the referencing procedure. Our measurements were referred to a solution of aqueous H<sub>2</sub>SeO<sub>3</sub> and converted to the (CH<sub>3</sub>)<sub>2</sub>Se scale with use of the literature value<sup>2,3</sup> of 1282 ppm

for the shift of H<sub>2</sub>SeO<sub>3</sub>. Direct measurement shows this figure to be incorrect, and the shifts reported in Table XI of ref 1 should be corrected by +22 ppm to give shifts relative to (CH<sub>3</sub>)<sub>2</sub>Se in CDCl<sub>3</sub>.

Page 6584: In footnotes *i* and *j* to Table II *W* should be *w*.

Page 6588 first column, line 25: "clockwise" should be "counterclockwise".

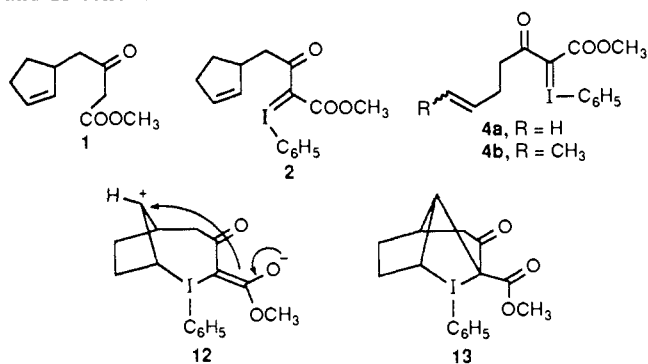
(1) Batchelor, R. J.; Einstein, F. W. B.; Gay, I. D.; Gu, J.-H.; Johnston, B. D.; Pinto, B. M. *J. Am. Chem. Soc.* **1989**, *111*, 6582.

(2) *NMR and the Periodic Table*; Harris, R. K., Mann, B. E., Eds.; Academic Press: New York, 1978.

(3) Lardon, M. *J. Am. Chem. Soc.* **1970**, *92*, 5063.

**A Novel Intramolecular Cyclopropanation Using Iodonium Ylides [J. Am. Chem. Soc. **1989**, *111*, 6443]. ROBERT M. MORIARTY,\* OM PRAKASH, RADHE K. VAID, and LEI ZHAO**

Pages 6443 and 6444: The correct structures for **1**, **2**, **4**, **12**, and **13** follow:



Page 6443: The following should be added to ref 10. **4a:** <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 2.50 (t, 2 H, CH<sub>2</sub>), 3.20 (m, 2 H, CH<sub>2</sub>), 3.75 (s, 3 H, COOCH<sub>3</sub>), 5.10 (m, 2 H, CH=CH<sub>2</sub>), 6.09 (m, 1 H, CH=CH<sub>2</sub>), 7.40-7.90 (m, 5 H, aromatic protons). **6:** <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 1.30-2.10 (m, 4 H, 2 × CH<sub>2</sub>), 2.85 (m, 1 H, CH), 3.20 (m, 1 H, CH), 3.70 (s, 3 H, COOCH<sub>3</sub>), 4.15 (m, 1 H, CH), 5.80 (m, 2 H, CH=CH), 6.20 (m, 1 H, CH=CH), 7.30-7.90 (m, 5 H, aromatic protons).