

rather large chelation cavity for the metal ion. Further, it should be noted that typical octahedrally coordinated cobalt polypyrazolylborate complexes have, at 200 K, cobalt to nitrogen bond distances<sup>10-12</sup> which fall in the range from 2.05 to 2.21 Å. These values are 0.08–0.14 Å larger than the average cobalt to nitrogen bond distance found<sup>11</sup> in  $\text{Co}[\text{B}(3\text{-isopropylpyrazol-1-yl})_4]_2$ , and are of the same order of magnitude as the additional iron displacement calculated at 200 K; see Table II.

It is difficult to understand exactly why  $\text{Fe}[\text{B}(3\text{-isopropylpyrazol-1-yl})_4]_2$  should show both the normal Debye lattice vibrations and the additional iron displacement, but we believe this may be due to the strong ligand–ligand steric interactions in the coordination sphere of the iron(II) ion. The packing energy of the individual neutral  $\text{Fe}[\text{B}(3\text{-isopropylpyrazol-1-yl})_4]_2$  molecules in the extended lattice is controlled by the van der Waals potential between the peripheral portions of the ligands. It is this packing which results in the Debye model vibrational behavior at low temperature. However this packing does not necessarily yield the ideal binding of the iron atom into the lattice, especially

in view of the ligand steric interactions mentioned above and found<sup>11</sup> in  $\text{Co}[\text{B}(3\text{-isopropylpyrazol-1-yl})_4]_2$ . We believe it is this non-ideal binding of the iron nuclide in the lattice which yields, at higher temperature, the additional thermally activated displacement. This additional displacement produces destructive interference<sup>31</sup> between the absorbed Mössbauer  $\gamma$ -rays and, as a consequence, decreases the recoil free fraction, and hence, the observed Mössbauer spectral absorption area. It would be interesting to compare this behavior with that observed in the less sterically hindered five and six coordinate complexes.

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## Additions and Corrections

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**Eiichi Kimura,\* Hiromasa Kurosaki, Yasuhisa Kurogi, Mitsuhiro Shionoya, and Motoo Shiro:** pH-Dependent Coordination Mode of New Bleomycin Synthetic Analogues with Copper(II), Iron(II), and Zinc(II).

Pages 4314 and 4317. The interaxial angles,  $\alpha = 105.13 (1)^\circ$ ,  $\beta = 101.14 (1)^\circ$ , and  $\gamma = 98.84 (1)^\circ$ , should be added to the Abstract and Table I. The space group  $P1$  should be also corrected to  $P\bar{1}$ .—Eiichi Kimura

**Kattesh V. Katti,\* Prahlad R. Singh, and Charles L. Barnes:** Transition Metal Chemistry of Main Group Hydrazides. 1. Synthesis and Characterization of Cyclometallaphosphohydrazides of Cobalt(I), Copper(I), and Palladium(II). X-ray Structures of Cobalt(I) and Palladium(II) Representatives.

Page 4589. Table I should include the values  $\alpha = 86.318 (15)^\circ$  and  $\gamma = 72.183 (19)^\circ$  for the triclinic compound 7.—Kattesh V. Katti