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Order from disorder in the molecular-based spin ladder $Cu(Qnx)Br_2$ CHRISTOPHER LANDEE, CHRIS SATALINE, BRIAN KEITH, IGOR PARTOLA, MARK TURNBULL, Clark University — Copper quinoxaline dibromide is a molecular-based antiferromagnetic spin ladder in which Cu_2Br_4 dimers are linked into ladders by the quinoxaline molecules. The rung exchange occurs through the bridging bromide ions while the rail exchange occurs through the organic molecules [1]. It is possible to introduce randomness into this ladder by replacing bromide ions by chlorides, by replacing the quinoxaline molecules by the structurally equivalent 2,3-dimethylpyrazine, or by substituting diamagnetic cadmium ions into the copper sites. In all cases, order occurs at low temperatures (4 to 6 K) as evidenced by FC/ZFC studies, hysteresis and remnant magnetizations, as well as sharp anomalies in the susceptibility. [1] C. P. Landee *et al*, *Polyhedron* **22**, 2325-2329 (2003).

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