1087-05-136 **Michael D. Plummer*** (michael.d.plummer@vanderbilt.edu), Department of Mathematics, Vanderbilt University, Nashville, TN 37240, **Arthur S. Finbow**, , Canada, and **Bert L. Hartnell**, , Canada. *Well-covered planar quadrangulations.*

A graph is *well-covered* if every maximal independent set of vertices is also maximum. In other words, all maximal independent sets of vertices in the graph have the same cardinality. The recognition problem for well-covered graphs in general belongs to co-NP (in fact it is co-NP-complete), but it is unknown if the problem belongs to NP. Hence the following question is of interest. What interesting subclasses of well-covered graphs can be recognized in polynomial time?

In the present paper, we characterize those planar quadrangulations which are well-covered. This characterization leads to a polynomial algorithm for the corresponding recognition problem. (Received December 02, 2012)