

April 15, 1965

Dr. A. Kotzig
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University of Bratislava
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Dear Dr. Kotzig:

The volume "Theory of Graphs and its Applications" has just come to my attention and I was most interested to see your contribution in it. I would be most grateful for an exchange of publications (and especially for any English versions or abstracts you may have).

I have no pretensions as a mathematician, but you may be interested in some results of our computations of trivalent graphs in connection with applications to chemistry. These are being consolidated into a more coherent report.

My main aim is to challenge some graph specialists to make a more orderly analysis of this set of graphs. I am especially annoyed with the non-polygonal ones, which become rather intractable (though still manageable even in this clumsy system) at $n = 14$.

Is there a convex trivalent polyhedron of which just one edge may not be included in any Hamilton circuit? (The pentagonal prism is an example which has a pair of edges that are mutually exclusive, as exploited by Tutte for his famous example.

Sincerely yours,



Joshua Lederberg
Professor of Genetics

To be sent by separate mail:

1. DENDRAL-64 - Part I.
2. Topological Mapping of Organic Molecules. Proc. Nat. Acad. Sci. 53:134. 1965.
3. Tables of 10- and 12-vertex graphs and counts.
4. Note re Dr. Grace's enumeration.
5. Hamilton Circuits of Convex Trivalent Polyhedra (up to 18 vertices)

Kotzig