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Corrigendum and addendum to "Ascending derived series"

by

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Dr Graham Higman has pointed out to me that the construction of the example in § 9 is incorrect as it stands, because H_i'' is not, as claimed, a direct product with amalgamations of copies of H_{i-2}, but of copies of H_{i-1}' (p. 61, lines 12—11 from the bottom). I am indebted to Dr Higman for the following modification of the construction, to give an example with all the properties stated in the last 8 lines of § 9. The definition of the groups H_i remains unchanged, but we denote their inductive limit by H^*; we denote by L_{i-1} the group generated by all the isomorphic copies that arise from H_i by forming the successive direct products with amalgamated Z, for all positive i: Thus L_{2i-1} is what was denoted by G_{2i}; what was denoted by G_{2i-1} will again be denoted by G_{2i-1}. It follows from (8.3) that $L_i'' = L_{i-1}'$. Thus if we put $L_i' = G_i$ for all positive i, then $G_{i+1}' = G_i$, and

$$\{1\} = G_0 \subset G_1 \subset G_2 \subset \cdots$$

is an infinite ascending derived series, with $G_1 = Z$ of order 2. The inductive limit of this series is again denoted by G^*. The construction in § 10 requires no modification.

Dr Higman has also remarked that a consequence of Theorem 7.3 is the following Corollary: *A finitely generated group is isomorphic to a term of its derived series only if it coincides with it.*

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*) Compositio Math 13, 47—64 (1956).