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Finite simple groups, an introduction to their classification, by Daniel Gorenstein, Plenum Publishing Corporation, New York, 1982, x + 333 pp., $29.50.

After an effort of about 30 years involving more than a hundred mathematicians in several countries, the finite simple groups have apparently been classified. I use the work "apparently" because this achievement is a unique sociological phenomenon in the history of mathematics. Proofs of the many relevant results are scattered throughout the mathematical literature in 300–500 papers covering 5,000–10,000 pages. No individual has gone through the whole proof and checked all the details. This is not an entirely satisfactory situation. However most experts are convinced that the proof is essentially correct; any errors which occur are expected to be minor oversights or local errors which can be corrected by the methods that have been developed in the process of completing the classification. More importantly, no error is expected to change the end result, i.e. to lead to new simple groups.

Except at the level of foundations, mathematics is not a matter of faith, so it is not surprising that the announcement of the classification has been treated with some scepticism among mathematicians. Nevertheless it would be pointless (and probably impossible) for anyone at present to attempt to go through a complete proof and to check all the details, because the proof is continually being revised, simplified and shortened. This process has been dubbed revisionism. In part, such simplifications are due to the inevitable redundancy which occurs in an undertaking of this magnitude. However great successes have already been achieved for less obvious reasons. For example, the classification of simple groups with dihedral Sylow 2-groups originally took 221 journal pages [7, 8], there is now a proof in 29 pages [1, 2]. Such a simplification and others of a similar sort are due to the introduction of new ideas and to a deeper understanding of the structure of finite simple groups. In these circumstances brevity and clarity go hand in hand. It is not unreasonable to