Nonsense

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The Mathematical Intelligencer *encourages comments about the material in its issues. Letters to the editor should be sent to the editor-in-chief.*

As a former column editor of *The Mathematical Intelligencer*, I was embarrassed to see Yaroslav D. Sergeyev's paper "The Olympic Medals Ranks, Lexicographic Ordering, and Numerical Infinities" in the June 2015 issue. This paper starts with a remark that the lexicographic ordering on n -digit numbers coincides with the natural order on their numerical values, and that this observation can be extended to n -tuples of arbitrary natural numbers if we consider a positional number system with infinite base. This can be done in many different ways (say, with positional notation for ordinals, or using non-Archimedean fields and nonstandard models for reals), but the author claims that he invented a new way to perform computations with infinite numbers.

This does not seem to be the case. Casual readers may trust Elliot Mendelson's review of Sergeyev's book "Arithmetic of Infinity" (Zbl. 1076.03048): "The author attempts to introduce new kinds of number systems that he claims have

important applications. First, he reviews some facts about the ordinary number systems and set theory. (Here, there is some confusion about alephs and the continuum hypothesis. For example, he defines aleph-one to be the size of the power set of the set of natural numbers.) The systems he deals with consist of objects which are called extended real numbers, but the descriptions of these objects and their properties are not clear enough to permit any warranted judgments about the assertions made by the author about these systems." More diligent readers could check Sergeyev's publication, "A New Applied Approach for Executing Computations with Infinite and Infinitesimal Quantities" (Informatica, 2008, 19(4), 567–596), available from <http://www.grossone.com/arithmetic.html> or <http://arxiv.org/abs/1203.3132>. (For example, "Postulate 2" of this paper says, "We shall not tell what are the mathematical objects we deal with; we just shall construct more powerful tools that will allow us to improve our capacities to observe and to describe properties of mathematical objects.")

Every good journal should have some quota for nonsense papers (published, for example, as jokes—but it would be also nice to inform the readers later that it was a joke). The case of Sergeyev could be also a good starting point for a discussion about the merits of using bibliometry and awards (Sergeyev received a "Pythagoras Prize" in 2010).

Sincerely yours,

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