IUGS, Conventions, Symbols, Recommendations and Consensus

The International Union of Geological Sciences has always taken utmost care to comply with all fundamental procedures directed to achieve its statutory aims as an international scientific organization. It is to disappointing therefore to read statements that cast doubts on this stance and some brief clarifications on that issue are therefore in order. These lines are in no way directed to answer dissenting views on the recommendation of the IUGS-IUPAC Task Group on Isotopes in Geosciences (TGIG); it would impossible to devote adequate space to expose the opinion of every individual and inappropriate to answer on matters that should be discussed through the different IUGS bodies.

The issue on a possible single or dual system of notation for point in time and time duration has been analyzed by different bodies of the IUGS, and in 2009 one of those bodies, the IUGS-IUPAC joint Task Group on Isotopes in Geosciences (TGIG), was ready to publish a recommendation favoring a single notation. On October 2009 the TGIG complied with the usual procedure to request authorization of the IUGS Executive Committee (EC) to publish its recommendation. Immediately the IUGS-EC decided to request an additional opinion from another IUGS body, the International Commission on Stratigraphy (ICS). In October 2010 the ICS informed that the issue had been discussed at an ICS Workshop in Prague (30th May – 3rd June 2010), and that a first motion stating “We agree with the IUGS-IUPAC Task Group’s recommendation to apply Ma, generally, as the single unit of deep time, but recommend that authors be able to use myr in particular cases where clarity can be improved”, did not reach a majority, and that the second motion approved by ICS stated: “We neither accept nor reject the IUGS-IUPAC Task Group’s recommendation to apply Ma, generally, as the unit of deep time. We accept the argument for Ma as a single unit for time but would recommend flexibility, allowing for the retention of Ma as specific notation for points in time (i.e. dates) and myr as a unit of time denoting duration. We agree with the spirit of this statement”. No specific information on the arguments discussed and/or supporting evidences were included.

In analyzing the issue the IUGS Executive Committee took into consideration not only the standing on this issue of the TGIG and ICS but also the International Stratigraphic Guide (ISG), approved by ICS and IUGS. In the first ISG edition (1976) there is no mention of notation for points in time/time durations or reference to a single/dual notation. In the second ISG edition (1994) it is stated (p. 16, 123) that “The abbreviations ka for thousand (10^3), Ma for million

(10^4) and Ga for billion (milliard or thousand million, 10^9) years are now generally used to express the length of time before the present (years ago), not the duration of a past geological time interval”. There are not notations, however, mentioned for duration of time or time intervals, and when time spans are mentioned (p. 79, 81, 82), no abbreviations are used, e.g. “30 to 80 million years”. The same is indicated in the abridged version of the ISG published in 1999 (Episodes 22:55-271). In addition the IUGS-EC noted that the abbreviations Ma, Ga, (“a” for annus) are based on the Latin language, which corresponds to SI units and to existing usage by ISO, BIPM, IUPAP, IUPAC and IAU, and have, therefore, worldwide acceptance. The abbreviations “my, m.y or m.yr” are based on the English language, are not SI units and their inclusion in some regional stratigraphic codes (e.g. NACSN, 1983, AAPG Bulletin 67: 854; 2005, AAPG Bulletin 89:1564; where this notation was informally introduced) does not oblige worldwide acceptance. Moreover, even where a dual notation for points in time and duration of time is accepted by some National Stratigraphic Codes the alternative notation “m.a.” has also been used.

It was also considered that it was necessary to publish the full text of the IUGS-IUPAC Task Group proposal on an issue which had already been part of an open discussion in different fora and publications (e.g. Aubry et al., 2009, Stratigraphy 6:100-105).

From the facts exposed above, the publication of this recommendation was authorized and endorsed by the EC. It was published (Holden et al., 2011, Episodes 34: 43-44) under the same principles on which the ISG was published, i.e. “There is no intention that any individual, organization, or nation, should feel constrained to follow it, or any part of it, unless convinced of its logic and value”, and its purpose is “to inform, to suggest, and to recommend” (ISG, 1976: 4). Finally I must say that to ask IUGS for a “true consensus” is a request hard to qualify when coming from one or several individuals with no explicit representation, but their own, and when the IUGS working bodies are open to any interested geoscientist willing to participate and accept their rules and consensual decisions. The IUGS and its bodies are invested with the representation of the international geoscientific community and are committed to that.

Alberto C. Riccardi
President IUGS