

RC2: Anonymous Referee #2, 08 Jan 20253

This paper presents a new dataset of semi-quantitative ozone concentrations in several locations of Iberia and western Africa for early periods. Despite ozone measurements made with test-paper has been regarded as “not recommended for quantitative use” because of the sensitivity of test-papers to relative humidity, I consider that the data presented are very interesting and they deserve publication. Besides, the authors present a complete discussion about the characteristics of the data and its limitations, so future users are aware of the problems.

The paper is clear, concise and well written. The presented data are accessible and can be useful for future users, so I recommend publication. I only have some minor comments, mostly formal, that in my opinion could help to improve the clarity of the paper and the interpretation of the data.

Line 74. Consider adding a reference to Figure 1 here.

Thanks, We have added it now.

Lines 109-110. Here it is established that the ozone concentration was originally quantified in a scale from 1 to 11 and then (line 118), it is said that this scale was later upgraded to one from 0 to 21. It is hard to know what system is used in the files and this is relevant for future users. Maybe labeling “[O3] Schönbein scale” or “[O3] Berigny scale” instead of “[O3] arbitrary units” in the data files would clarify the issue.

It is not that the original scale was upgraded, but that many other scientists and manufacturers of meteorological instrumentation made their own adaptations of the original Schönbein paper and scale. Even there were punctual scales going between 0 and 14 or 0 and 16. Bojkov (1986) provides information on it. However, by far, the two more popular were the ones by Schönbein and Bérigny. Actually, in the reports that we present here, the original values were measured in the Bérigny scale, and then divided by two, to make them closer to the Schönbein scale, we guess that trying to make them comparable to previous existing records in such scale. We have added a clarification with all this information in the “Comments” section of the data repositories in PANGAEA, and the headers of the published files, which now read: “*The semi-quantitative method for the ozone measurement is unitless. There were 2 main chromatic scales for the same range of color from the original color of the paper to different tonalities of purple. This range of tonalities (function of the Ozone concentration) was 0 to 10 in the Schönbein scale (Schönbein, 1850) and 0 to 21 in the Bérigny scale (Bérigny, 1858). In the case of the files reported here, the original measurements were done in the Bérigny scale; however, to annotate them in the logbooks, the original Bérigny values were divided by two to make them somehow coincident with the Schönbein scale as mentioned in the Infante Dom Luiz logbooks (e.g. Fradesso da Silveira, 1865, pages 13 and 63).*”

In addition, in the paper it is said that the Schönbein scale goes from 1 to 11 (line 109) and the Berigny scale goes from 0 to 21 (line 118). However in the files (at least in the ones I tested) it is said “This range of tonalities (function of the Ozone concentration) was 1 to 10 in the Schönbein scale and 1 to 21 in the Berigny scale”. Please clarify the discrepancies.

Thanks to the reviewer for detecting these incongruities. Actually, the issues with the

scales, as pointed in the previous comment, were more complex. We have now corrected them both in the manuscript and the repository, clarifying the issues with the different scales, and making the information more homogeneous.

Paragraph from line 145 to 158. Consider adding a reference to Figure 2 for clarity.

We include now a reference to Figure 2.

Line 240. Do the authors mean tables 4 and 5?

Yes, the reviewer is right. Many thanks for pointing it out. This mistake was caused by a correction requested by the editorial office of the journal before posting the manuscript in Discussions and after submitting it. The office requested to label the mentioned two tables as such instead of figures; that is what they are in the document. Therefore, this semantic issue made the mention in this line go unnoticed and wrong. We will work with the copy-editing service of the journal to get it right, as figures or tables, if the manuscript is accepted for publication.

Table 3. Please add grid lines for clarity.

Done.