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Evolution in the Semantics of the Term 'Climate'

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Introduction. Trying to find out what should be understood by 'climate', the inquisitive reader is surprised by the lack of sufficient clarity about the content of this concept even today, although the term was used in antiquity and literally translated from Greek means "slope" (of the Sun's rays relative to the Earth's surface). The purpose of the study is to trace the formation of the content included in the concept of climate from antiquity to the present day. Results. Concepts underlying the understanding of the concept of climate, such as a phenomenon, property, weather, regime, and their characteristics as an element, climatic norm, course of the element, state and statistical ensemble, are clarified. Examples are given from antiquity (staring with Hippocrates) to the present day (WMO, NASA, IPCC) of the content included in the concept of climate. The suitability of the examples is critically discussed in light of the previously clarified concepts. Conclusions. According to the author, the problem with the shortcomings of the notions of climate cited in the work is the lack of explicit clarification of the role of the observer. When 'climate' is considered a four-dimensional space-time phenomenon, an appropriate climate description is: "Multiannual weather regime". As the weather is a local phenomenon, it is understood that this description applies to local climates. The description does not imply the presence of an observer, i.e. it is suitable both for the Earth's climate – from the distant past, through the present to the distant future, and for those on other planets. If it is implied presence of an observer examining the environment by measurement, the climate is considered as a characteristic of the weather conditions, and in this case, an appropriate notion of climate as a characteristic may be proposed as "a set of climatic norms calculated over a multiannual interval, for example, 30 years, on the measured values of the elements characterizing the weather".

References

1. Hippocrates, On air, water, and places, written around 400 BC. http://classics.mit.edu/Hippocrates/airwatpl.mb.txt, visited May 2022
2. WMO, GLOBAL ATMOSPHERIC RESEARCH PROGRAMME (GARP), Publications Series No.16, 1975. Global Atmospheric Research Program, the Physical Basis of Climate and Climate Modeling, https://library.wmo.int/doc_num.php?explnu visited May 2022
3. IPCC, 2013: Annex III: Glossary [Planton, S. (ed.)]. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
4. NASA, https://www.nasa.gov/mission_pages/noaa-n/climate/climate_weather.html, visited May 2022

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