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Historical data in the light of modern ice cave research

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Ice caves are known as natural phenomena since the fifteenth century. The progress in understanding the related processes however was hindered by the difficult accessibility in mountainous regions and an inconsistency of the related nomenclature till the 19th century. Moreover numerous theories about the glaciation of caves evolved concurrently over the time, since ice caves were only characterized by single aspects. As a result the history of ice cave research didn't proceed consistently in one direction. Nevertheless a substantial, mainly descriptive, literature evolved including descriptions of ice caves worldwide, their geographical setting, ice morphology, size, dynamics of the ice body and cave climate. In the 20th century it was evident that ice caves are not a rare natural phenomenon but common in high and low altitudes in many mountain ranges. A number of detailed studies were conducted, but even today new ice caves are discovered by speleologists in many countries, and many of them are not yet looked at.

Starting in the 18th century, results from dedicated field campaigns studying temperature and ice level measurements in several caves were published. Several of these measurements were carried out by private people or speleological clubs, some of them are even covering long time spans. It needs to be emphasized that cave related sciences, especially cave climatology, lack in long time series. A small number of ice caves in Romania, Slovakia and Russia have been studied or described for several decades and a few in France even for some hundred years.

Modern ice cave research, on the basis of an integrated approach, can close the knowledge gap between the past and the actual studies by using this considerable amount of data as well as the information about the geographical distribution of ice caves, their dynamics and morphology, that was collected through the centuries. In some countries, historical documents are the main source to restart research on ice caves. Examples from Germany are presented. It will be shown that the knowledge about the historical development of the ice cave research and its related nomenclature are important for the understanding of today's research approaches and serve as a basis for future collaborations and interdisciplinary work.