

History of marble mining in Mine, Yamaguchi Prefecture, Japan, and its use in historic buildings

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Mine District, Yamaguchi Prefecture, Japan, had been the largest marble mine in Japan for several decades until around 1970. Marble of Mine have been used in many buildings built during those period, also in Tokyo. However, import of inexpensive marble started to increase and soon overwhelmed the domestic marble. Most of the domestic marble mines have closed. It is important to remember the role of Japan's marble, one of our precious natural resources, in the developing industry of Japan during those times. The knowledge is also important to assess the building properly. The assessment may determine if the historic buildings should be conserved, renovated, or conversed. The aim of this study is to describe as many Mine marbles as possible for record, concerning e.g. its color, texture, how it was called, the locality of the quarry, during what period it was mined, or in what historic building it was used.

Keywords: marble, Mine district, Japan, stone industry, quarry, historic building

Review of self-experiments on the cooperative study between EPS and philosophy of science since 2008

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[**Decoding the Earth's evolution related to philosophy of science**] Motivation of the interdisciplinary works came up during the planning of the decoding research program (1995-1997) on the whole evolution history of the Earth from its birth at 4.6 billion years ago to the present time. In that program, the Earth history is described by a sequence of several time periods separated by the characteristic big events. We have assigned the present as the 7th big event in the Earth's history, with such a notion that Homo sapiens started science to try to understand everything; life, the Earth and the World. The present time is the boundary of the two different types of research; the past as a target of historical science and the future to predict and control even ourselves so as to fit with what we shall hope. We recognize that the World started self-reference and self-intervention in a way of coevolution between the life and the Earth environments by means of science and technology. The role of science has been evolving to have more influence to social and human subject, thereby more importance is placed on meta-science or philosophy of science.

Traditional philosophy of science with their classic discipline appears helpless, since it does not refer to newer experience and knowledge and deeper thinking having been accumulated lately by science method. This situation is making the philosophers difficult to digest science, a new comer. In addition, there are serious problems on science side; usually scientists do not pay much attention to meta-science; what the science is, why science works, how science contributes to people, etc., simply because most of them are slotted into the specific roles in a big science system. This situation appears serious for the modern society in respect to its survival on such a small friable Earth, as we geoscientists know well.

To face with this difficulty, we tried self-experiments of joint research by geoscientists with Todayama and his collaborators on the subject of common interests since 2009, and some of the results have been reported at JpGU meeting. Fortunately, Todayama School has been trying to open up a new trend, 'naturalized philosophy of science', so the collaboration was really welcome. This work was supported in 2011-2013 by JSPS Grant-in-Aid for Scientific Research (23320005) headed by Dr. Shigeyuki Aoki. The outcomes of research on the history of geoscience were published in Nagoya Journal of Philosophy, Vol.10 (2013), and the works on other topics will appear in the forthcoming volumes.

[**The problems recognized**] The collaboration between the scientists and philosophers of science was found still difficult due to the difference in languages, cultures and even in the way of discussions. Whereas it is difficult to review objectively in detail at this moment, we shall keep trying to find out the good ways of collaboration with meta-science for our survival succession. We have obtained a bright hope along this line in the present work.

In conclusion, we found an 'indispensable minimum recipe' of approaching the problem. It is the promotion of education policy for the graduate students to take double tracks striding the boundary between science and human studies to be seamless. We have to remind that the Japanese education system appears far behind the contemporary necessity.

[**The purpose of this poster presentation**] We believe that the straightforward discussions are really useful among the research workers of different disciplines for activating the intellectual potential, in particular. The purpose of this presentation is to invite those who are interested in the interdisciplinary communication between science and meta-science to have discussions in front of our poster. Note: Two authors of this presentation were the acting managers of the collaboration works between Geoscience and Todayama School of philosophy of science.

Keywords: Science of Science Phenomena, Meta-Science, Philosophy of Science, Normative Science