

Two records of observation in Fushimi, Kyoto and change of feeling of night sky

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On 1770 Sep 17, low-latitude aurora was observed in Japan, and recorded in various area of Japan. In the diary of Higashihakura family worked as Goten-azukari (Administrator) of Fushimi-inari shrine in Yamashiro-no-kuni (present Fushimi in Kyoto), that aurora was recorded in detail with the term "sekki" (which means red vapor, express red (low latitude) aurora). Various records of this aurora shows people caught magical meaning of a convulsion of nature, "fear".

In Fushimi, Kyoto, on 1793 Aug 26, first "kanbounai" (night sky watching with the telescope) was held in Japan. Nankei Tachibana, the sponsor of this star party, and his friends, who were intellectual, caught scientific meaning of night sky, and therefore they enjoyed that party. These two records of observation were written by intellectuals of those days, however one gave the phenomena in night sky magical meaning, and the other used night sky as content of amusement with the telescope, which is scientific tool. In twenty years between two events, there is a large change of sentence, and various reasons exist, including scientific understanding of astronomy. In this presentation, we discuss how people's sentence of sky change, with various background; geophysical feature, innovation of telescope of Japan, and so on.

Keywords: History of astronomy, Telescope, Perspective of science

The origin of Japanese word for the wooden thermometer screen: "*hyakuyo-so*"

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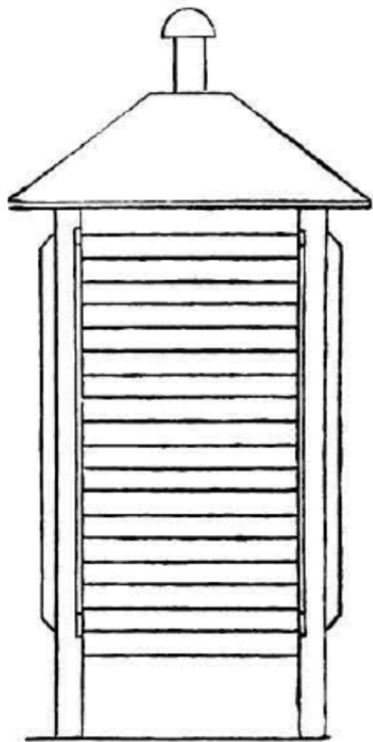
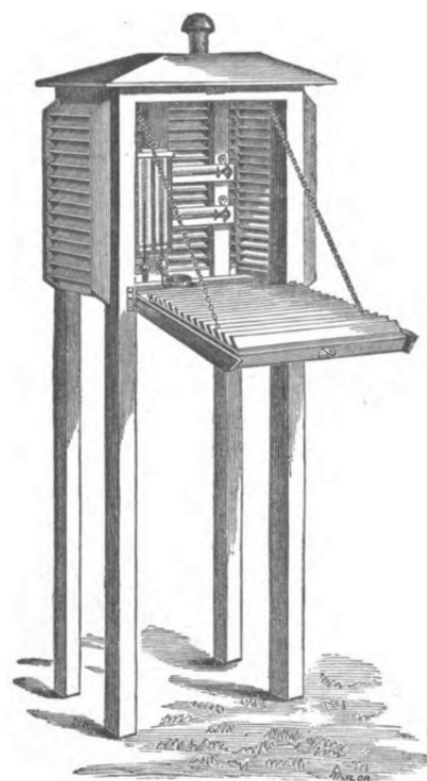
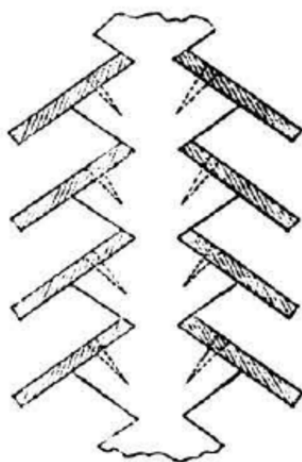
The origin of Japanese word for wooden thermometer screen: "*Hyakuyo-so*" (meaning 'hundred-leaves-box') is discussed. It is speculate that a Japanese phrase of meaning "double louvre boarded box" which depicts the aspect of "Stevenson's Box for thermometer" (Figure) was abbreviated based on the literatures of meteorological authorities at that time. The process of thermometer screens' introduction into Japan also be discussed.

Figure

(Left) Illustrations in the report of Thomas Stevenson for the new type of a box for holding thermometers characterized by double row of louvre boards.

(Right) An illustration of "Stevenson's Thermometer Stand" in one of a magazine series of articles that introduced more than ten kinds of thermometer stands. The illustration was widely used including a first official manual for meteorological observation edited by Japanese Meteorological Authority (1886).

Keywords: thermometer screen, meteorological observation, history of meteorology

Fig. 1.*Fig. 2.*

STEVENSON'S THERMOMETER STAND.
[See page 2.]

Symons's Monthly Meteorological
Magazine (1869)

Journal of Scottish Meteorological
Society (1864)

Edmund Naumann (1854- 1927) and Ogai Mori (1862-1922): geologist vs writer

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A German geologist Edmund Naumann came to Japan in 1875. He was the first professor of geology in the University of Tokyo and founded the Geological Survey Japan. When he went back to Germany in 1885, German, Austrian, and British Geological Society invited Naumann to have a talk on geology, nature, culture, and people in Japan. In 1886, in Dresden in Germany, one Japanese student of medicine attended one of the meeting that Naumann talked and he offered objection to Naumann's speech. The Japanese was Ogai Mori, studied medicine in Germany at that time and became the famous writer. Mori continued controversy with Naumann in the German Newspaper. Mori was wrong in the contents, but the detail was not known in Japan and Mori was applauded among Japanese people because at the end of 19th century, Japan was suffered the unequal treaty. This case is one of the by-product of modernization of Japan, and the reputation of Naumann is wrong still now.

Keywords: Naumann, Ogai, controversy

A Comparative Study of Research Methodology of Geology and Geophysics(or Seismology)

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Jiro Tomari (2008), describing the process of acceptance of the plate tectonics theory into the Japanese circles of earth science, concluded that its acceptance in geology had delayed by 10 years compared to that in (solid-earth) geophysics and seismology. As one of the grounds for the conclusion, he pointed out that an increase in the frequency of use of “plate terms” in the presentations on the Meeting of *the Geological Society of Japan* had occurred 10 years after that in *the Seismological Society of Japan*. On the other hand, Miyoko Shibazaki (2011), citing the concept of “field” proposed by Pierre Bourdieu, criticized that the frequency of use of “plate terms” might differ between the two journals because the “field” differs between geology and (solid-earth) geophysics/seismology, and that the delay of an increase in the frequency of use of “plate terms” could not justify the delay of acceptance of the plate tectonics theory in geology.

In this study, the author discusses what differences in terminology may occur between geology and (solid-earth) geophysics/seismology by comparing methods in geology and those in geophysics/seismology, and explores ways to overcome “incommensurability” lying between researchers in both fields by comparing differences anew between geology and (solid-earth) geophysics/seismology, both studying the same object: the solid earth.

Keywords: Research Methodology, Geology and Geophysics, Plate Tectonics theory

"Restrain" Over Critical Thinking Involving Geoscience

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To deal with nature and understand people that have been altering the nature to continue evolutionary adaptation, as well as their efforts, it is necessary to comprehend the target of their action, the natural environment. The comprehension of the natural environment can demonstrate the limits of the people and their efforts (positively speaking, the goals), and contradictions. Many times, geoscientists are on the top of these efforts. They can see quickly the limits and contradictions.

The role of scientists, who conduct studies as representatives of the society, is to share with other organizers (citizens) that compose civil society. However, the critical thinking and knowledge proceeding from Geoscience are often "restrained" and not adopted. The situation in which studies are disregarded or distorted has continued for so long. These factors have been the main causes of natural catastrophes and nuclear plant disasters.

The science literacy that leads to the so called "scholars beholden to the government", "restrain" of critical thinking and a way to overcome these issues will be analyzed based on "empathy" featured in cognitive science and "ethical" perspective that derives from metacognitive ability to deal with rationality.

Keywords: The Role of Scientists, Scholars Beholden to The Government, Science Literacy

Whewell's anti-pluralism of worlds

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Is the earth we know the only world in which the intelligent being lives, or, are there plural worlds other than our earth? This has long been questioned since antiquity and is still now being debated (Crowe 1999; 2008). Throughout this long debate, William Whewell (1794-1866)'s *Of the Plurality of Worlds* (1853) and *A Dialogue on the Plurality of Worlds* (1854) in response to many of his critics are noteworthy since they first sparked the hot debates among his contemporaries. This talk focuses on his scientific and philosophical arguments in line with his apologetic anti-pluralism and describes the characteristics of the plural-world debate in the 19th England when the concept "scientist" was recently coined.

Keywords: History of Science, Philosophy of Science