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## On the denominations of early seismographs in Japan

Masahiro Osako1\*

<sup>1</sup>National museum of nature and science

James Alfred Ewing (1855-1935) invented the disk-recording horizontal seismograph that in 1880 first recorded an earthquake. On the other hand, John Milne (1850-1913) tested his seismograph recording horizontal ground motions linearly on a glass plate. These instruments were improved into three-component seismographs by combining vertical motion pendulums. Afterwards, Japanese scientists called together these instruments "Ewing-Gray-Milne seismograph". However, this name should be used for the dram-recording one by Milne, which were widely used in meteorological observatories in Japan. Milne could not have improved the Ewing's disk-recording seismograph, but Seikei Sekiya (1854-1896) probably developed this instrument toward a complete machine, however, of which name has not been fixed so far. Although Sekiya was a keyperson of the early history of seismology in Japan, his early career sometimes tended to be hidden by brilliant foreign scientists in Japan, such as Ewing, Milne and Gray (1850-1908). This may cause difficulties in investigating the early history of seismological instruments.

Keywords: James. A. Ewing, John Milne, Seikei Sekiya, seismograph