



Before and after the Philippine earthquake 1990 by Takashi Nakata





Dunhuang in west China along the big active fault system



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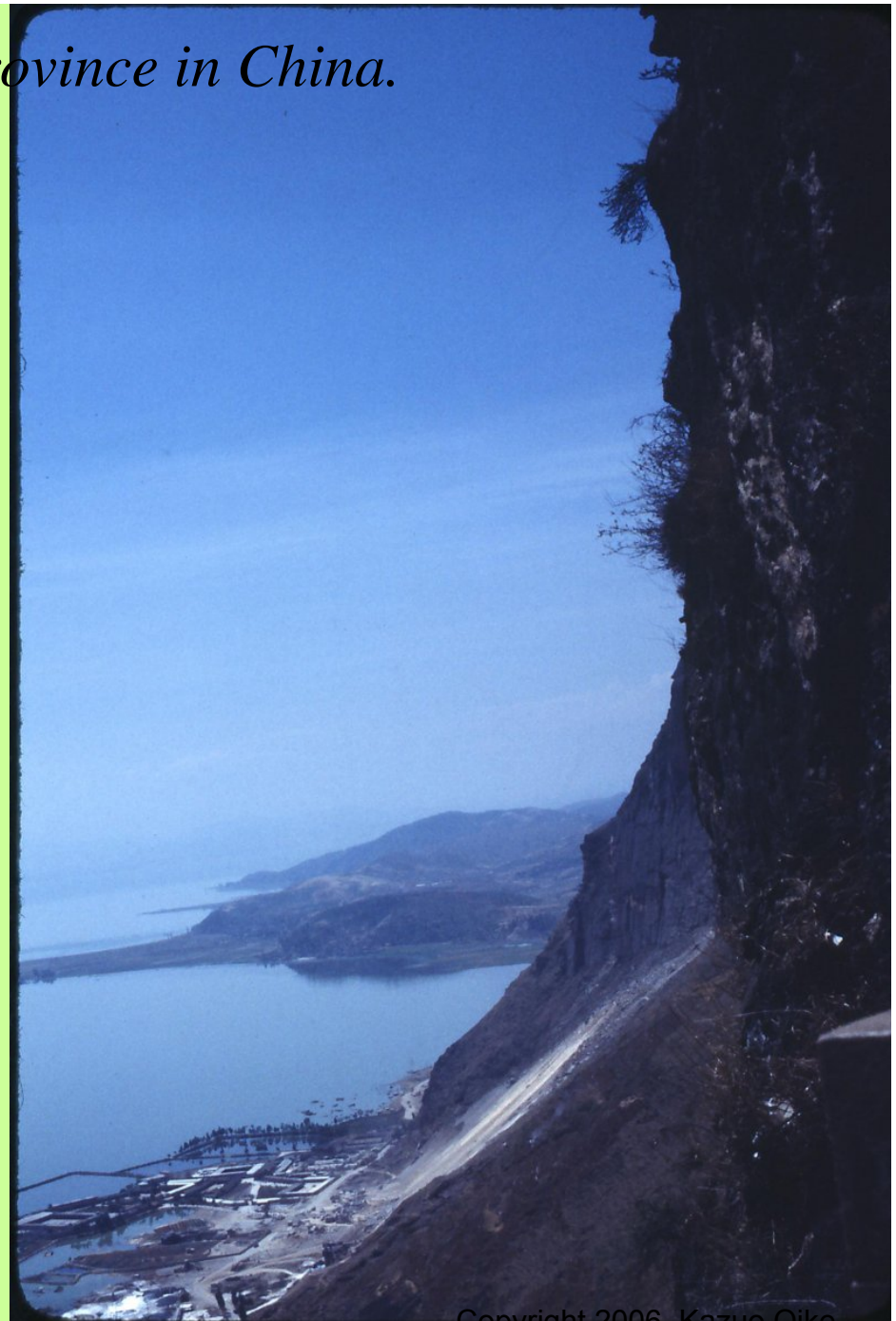


Ningxia in west China



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Yunnan is the most southwestern province in China.



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Great Tangshan earthquake in 1976



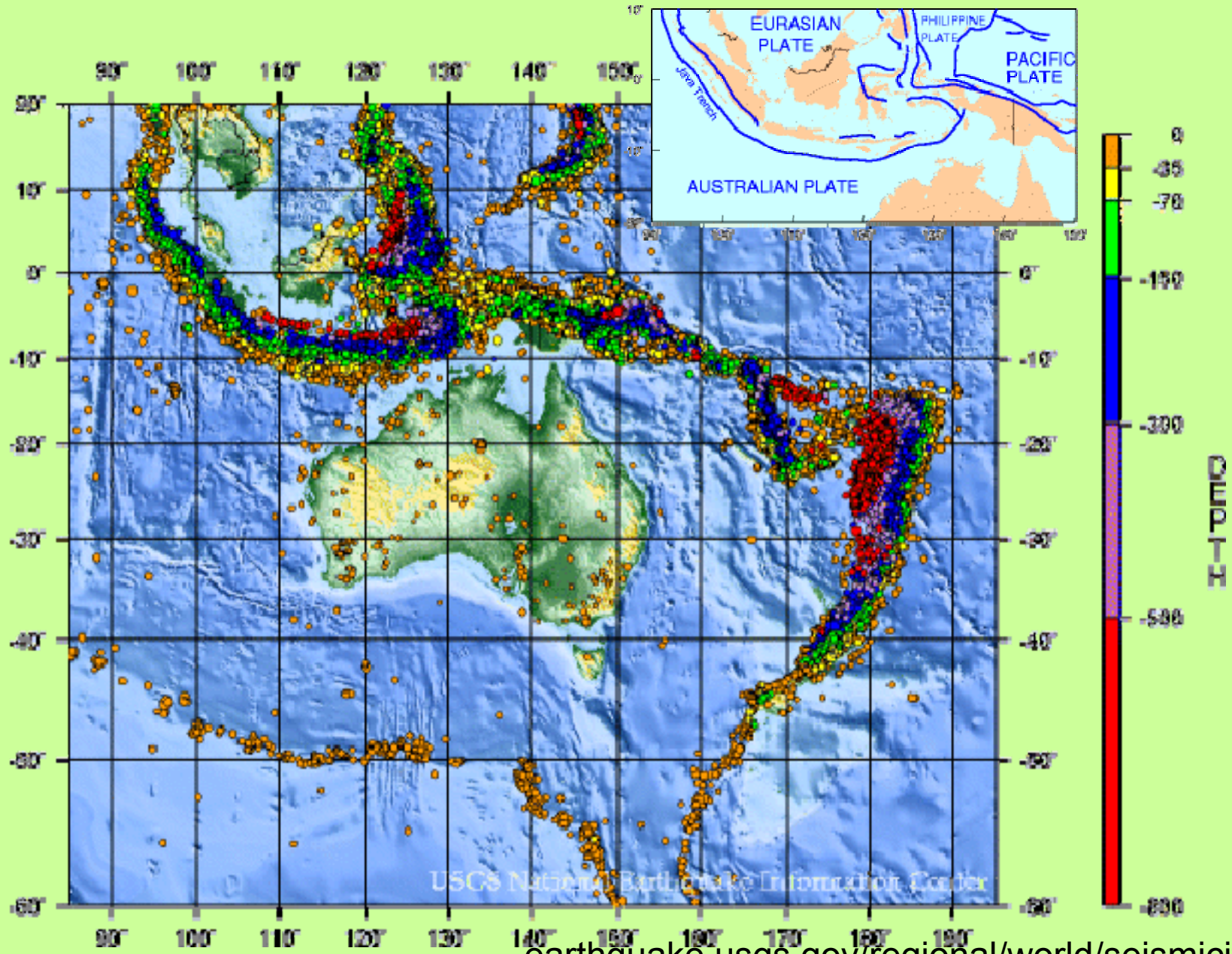


Hicheng earthquake in 1975



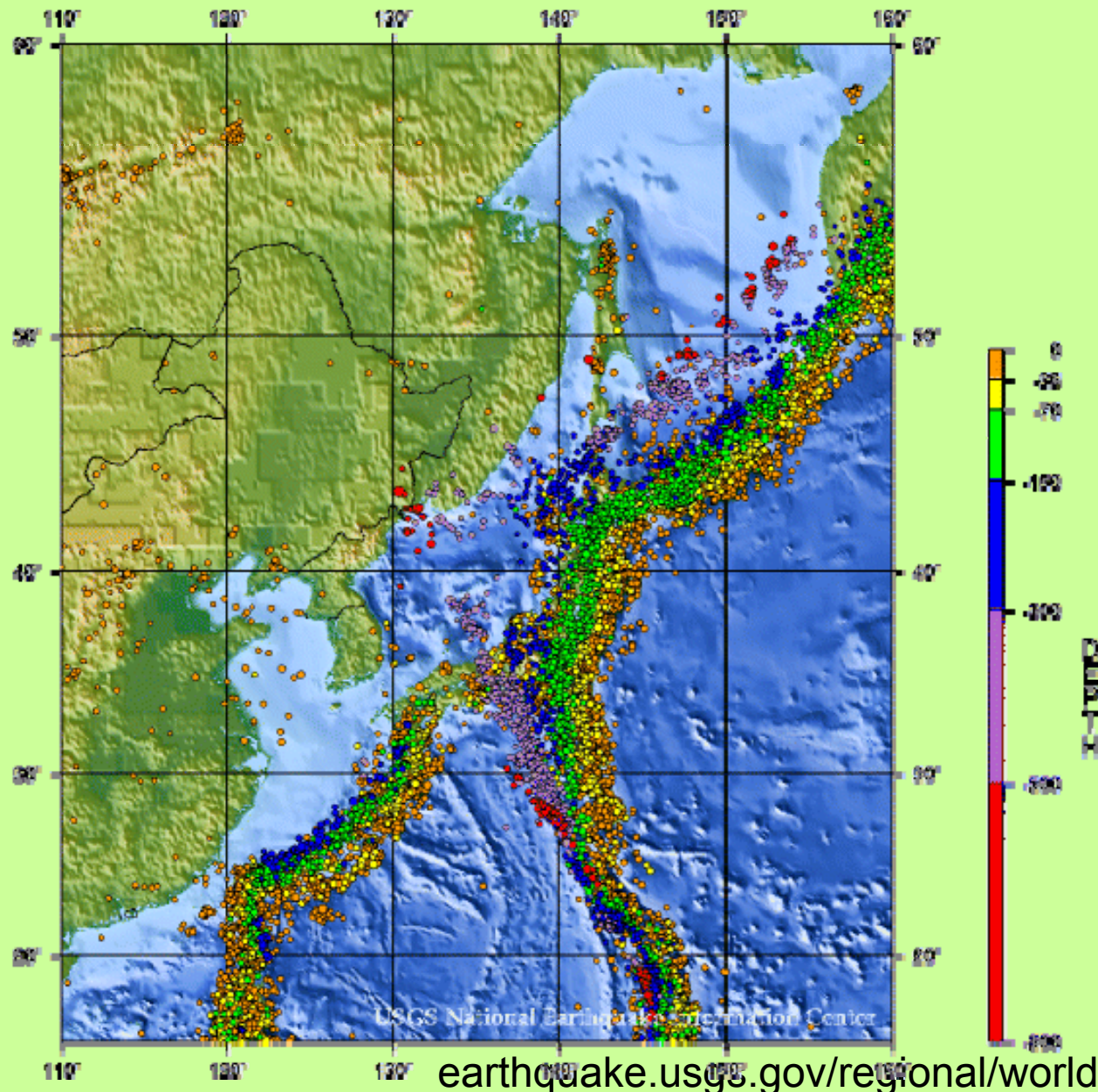
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Seismicity of Australia, Indonesia and New Zealand: 1990 - 2000



earthquake.usgs.gov/regional/world/seismicity/

Seismicity of Japan and Kuril Islands: 1990 - 2000



earthquake.usgs.gov/regional/world/seismicity/

Long history in Asia

- *We have long historical and seismological data in Asia.*
- *We can analyze long term seismic activity from data.*
- *We have information for earthquake activity in future.*

Oldest seismometer which was developed in Han dynasty.

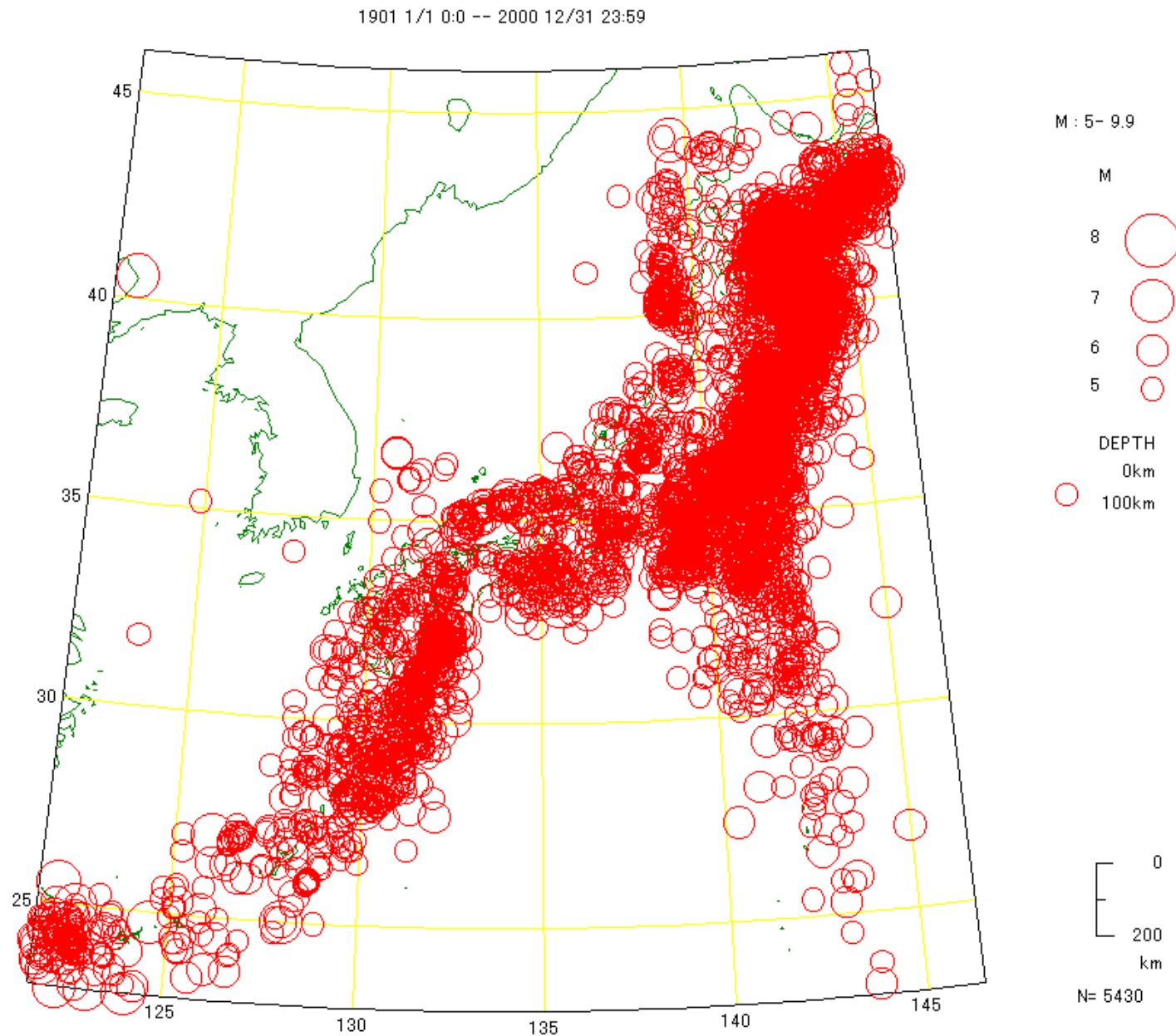


Kazuo Oike 2001

Japan is spread over island-arc system on a deformation belt



Shallow earthquakes with magnitude more than 5.0 during 20th century

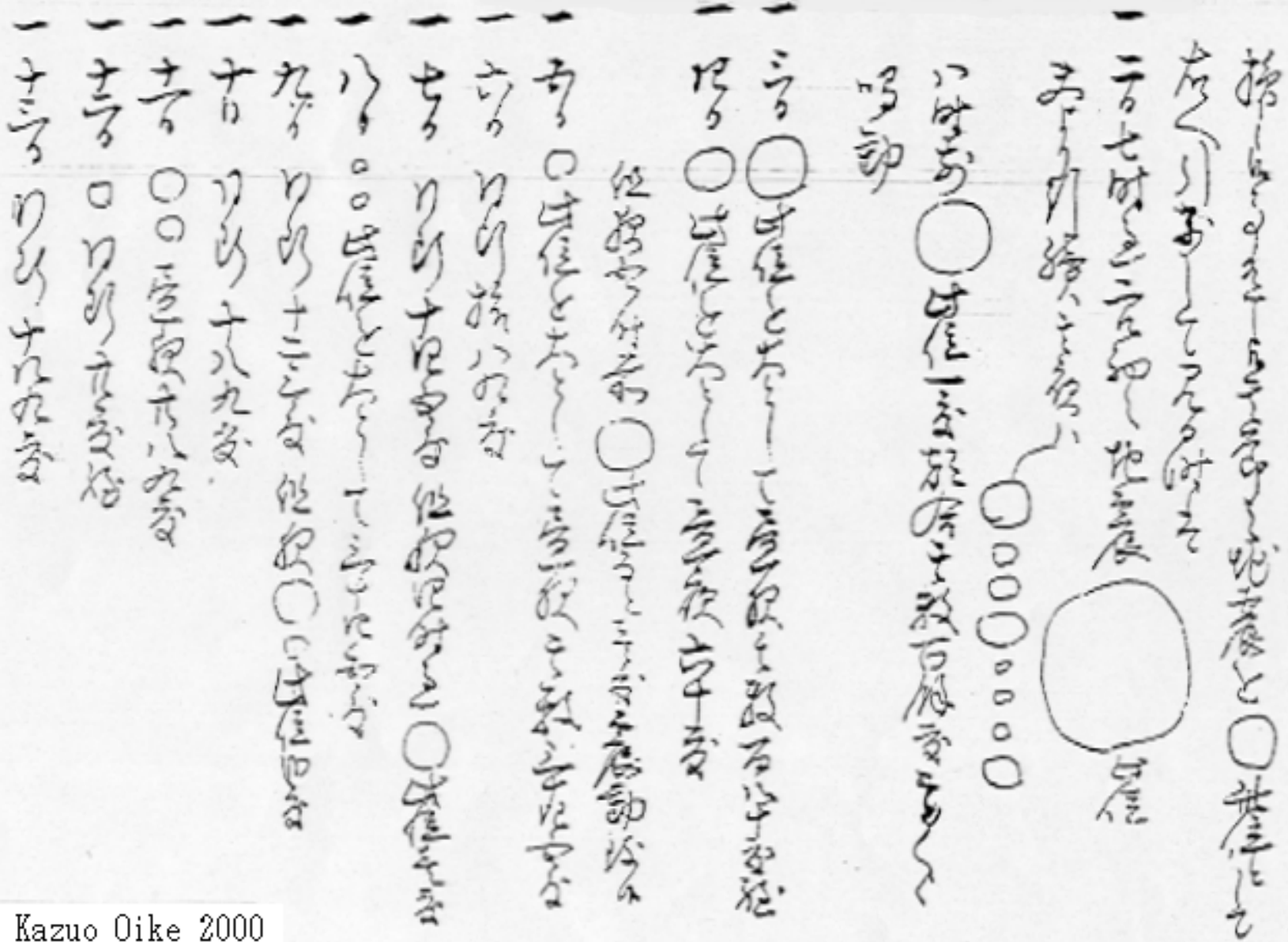


類聚國史卷第一百七十一
 災異部五
 地震
 允恭天皇五年秋七月丙子朔己丑地震
 推古天皇七年夏四月乙未朔辛酉地動舍屋悉破
 則令四方俾祭地震神
 皇極天皇元年冬十月癸未朔庚寅地震而雨
 辛卯地震是夜地震而風
 丙午夜中地震
 天智天皇三年春地震

*First catalog of
 earthquakes of Japan
 edited by Michizane
 Sugawara.*

図1. 日本最初の地震カタログ。菅原道真が編集した「類聚国史」の「災異部、
 地震」。(東京大学総合図書館蔵)

SEISMIC INTENSITY OF THE MAIN AND AFTER-SHOCKS
OF 1830 EARTHQUAKE IN KYOTO (京都) REGION



Catfish caused the earthquake



Carpenters and a plasterers entertain a catfish



Earthquake is stopped by the keystone



要石

神世の昔、香島の大神が座とされた万葉集にいう石の御座とも、或は古代における大神奉斎の座位として磐座とも伝えられる霊石である。

この石、地を掘るに従って大きさを加え、その極まる所しらずという水戸黄門仁徳録に、七日夜掘っても掘っても掘り切れずと書かれ、地震押えの伝説と相俟って著名である。

信仰上からは、伊勢の神宮の本殿床下の心の御柱的存在である。



To the lithosphere



To the atmosphere

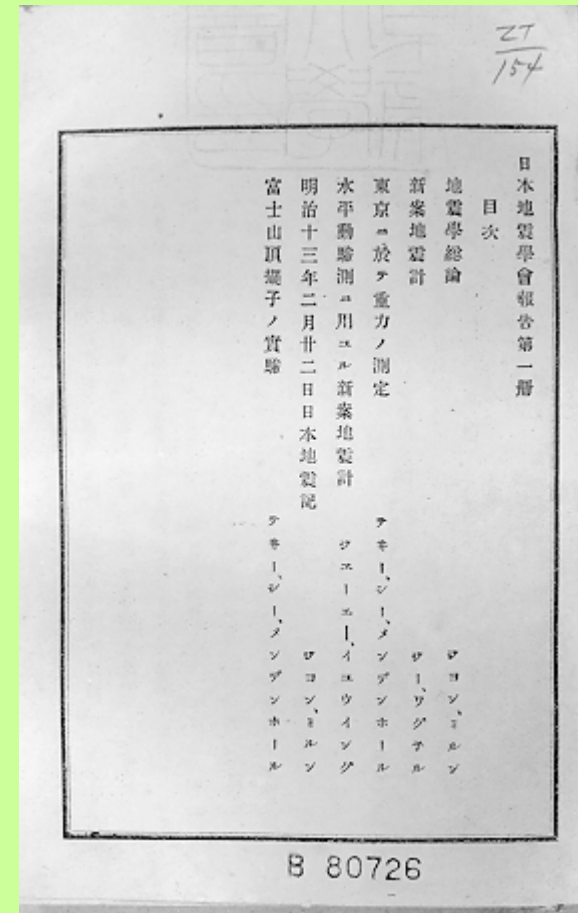
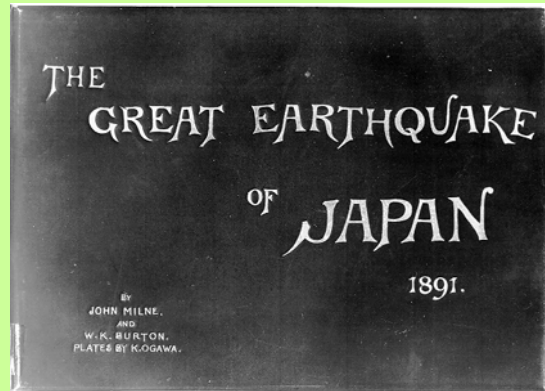


Deformation belts

- *Active fault movements*
- *Plate boundary large earthquakes*
- *Active volcanoes*
- *Active faults and large cities*
- *Seismology started from two earthquakes of Japan.*



John Milne (



The Seismological Society of Japan was established in 1880