

The First Asia Parks Congress, Nov. 2013, Sendai-city
Working Group 1 14 November

The Role of Those Living at the Foot of the Volcano

Handing Down the Wisdom to the Next Generation

Curator of MIMATSU MASAO MEMORIAL MUSEUM
Adviser to the Toya-Utsu Global Geopark Council
Saburo MIMATSU

Shikotsu-Toya National Park Designated on May 16, 1949

Lake Toya & Mt. Usu Area



*March 21, 2009
Doshin Heli, 2009*

The Historical Sketch of Mt. Usu Volcanic Activities

- ☆ About 110,000 Years Ago : Formation of Toya Caldera
- ☆ About 50,000 Years Ago : Formation of Nakazima island(domes)
- ☆ About 20,000 Years Ago : Birth of Mt. Usu stratovolcano
- ☆ 7,000~8,000 Years Ago : Collapse forming debris avalanche deposit
(Mt. Usu lost its summit and entered into a period of dormancy)

- ★ **1663** Reawakening & large eruption. (The birth of Ko-Usu lava dome . Some casualties.)
- ★ **Around the end of 17th Century** (No written records, but volcanic deposits found.)
- ★ **1769** Pyroclastic flow eruption (Some houses burned.)
- ★ **1822** Major pyroclastic flow eruption. (The birth of Ogariyama cryptdome. 103 casualties, settlement relocated.)
- ★ **1853** Pyroclastic flow eruption . (The birth of O-Usu lava dome. Residents evacuated.)
- ★ **1910** Eruption at the northwestern flank. (The birth of Meiji-Shinzan cryptdome.
Successful evacuation, initiation of modern volcanology by Prof. Oomori.
1 casualty from hot lahar.)
- ★ **1943~1945** Eruption at the eastern flank. (The birth of Showa-Shinzan lava dome.
Mimatsu Diagram, National Monument, 1 casualty from ash fall.)
- ★ **1977~1978** Eruption at summit. (Birth of Usu-Shinzan cryptdome. 3 casualties from lahar)
- ★ **2000** Eruption at the western flank. (The birth of 2000 Shinzan.
No injuries or casualties due to successful evacuation.)

Mt. Usu had erupted four times in the 20th century

1910



1944



1977



2000

1910

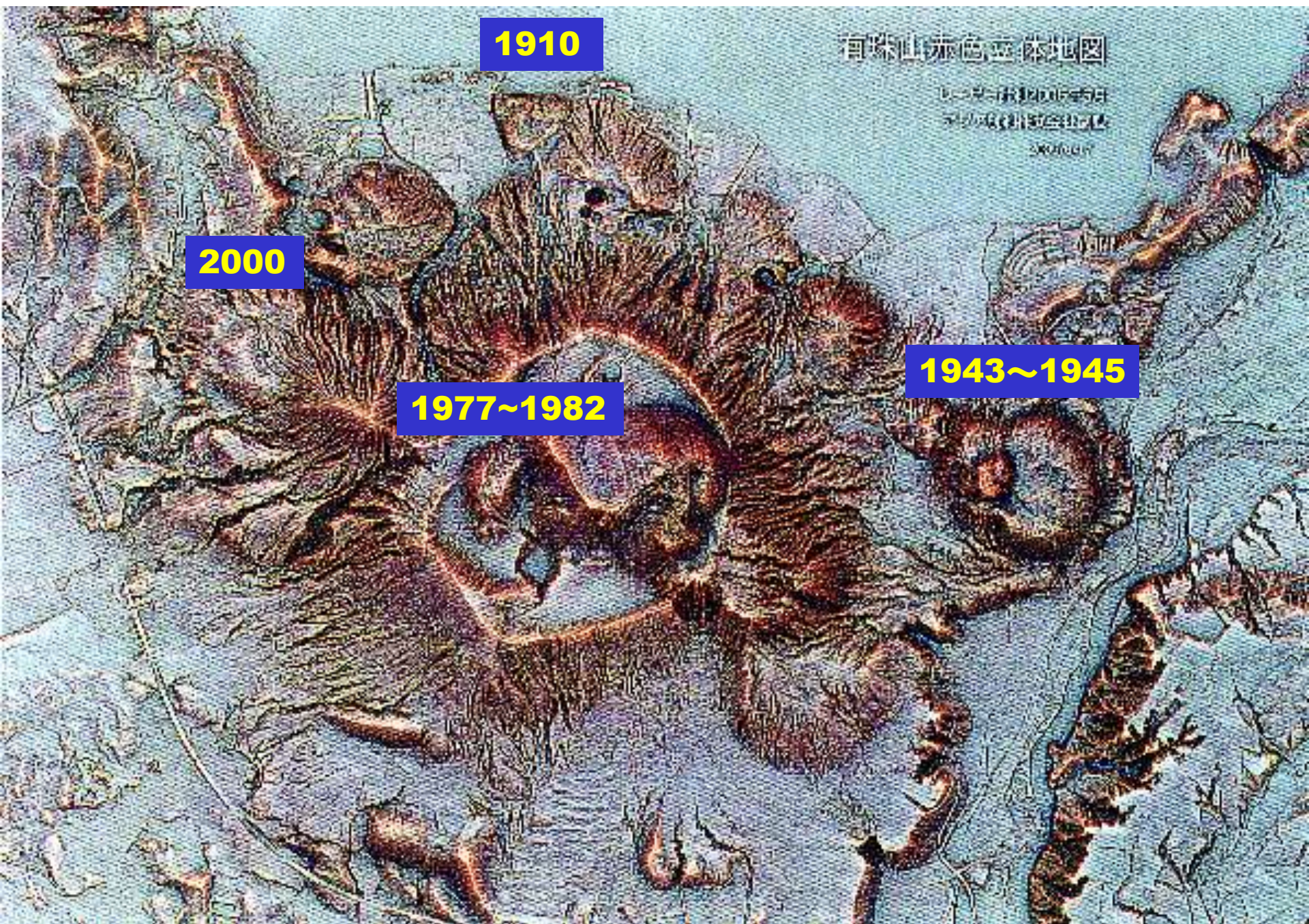
有珠山赤色立体地图

日本国土地院
国土地院
2000年

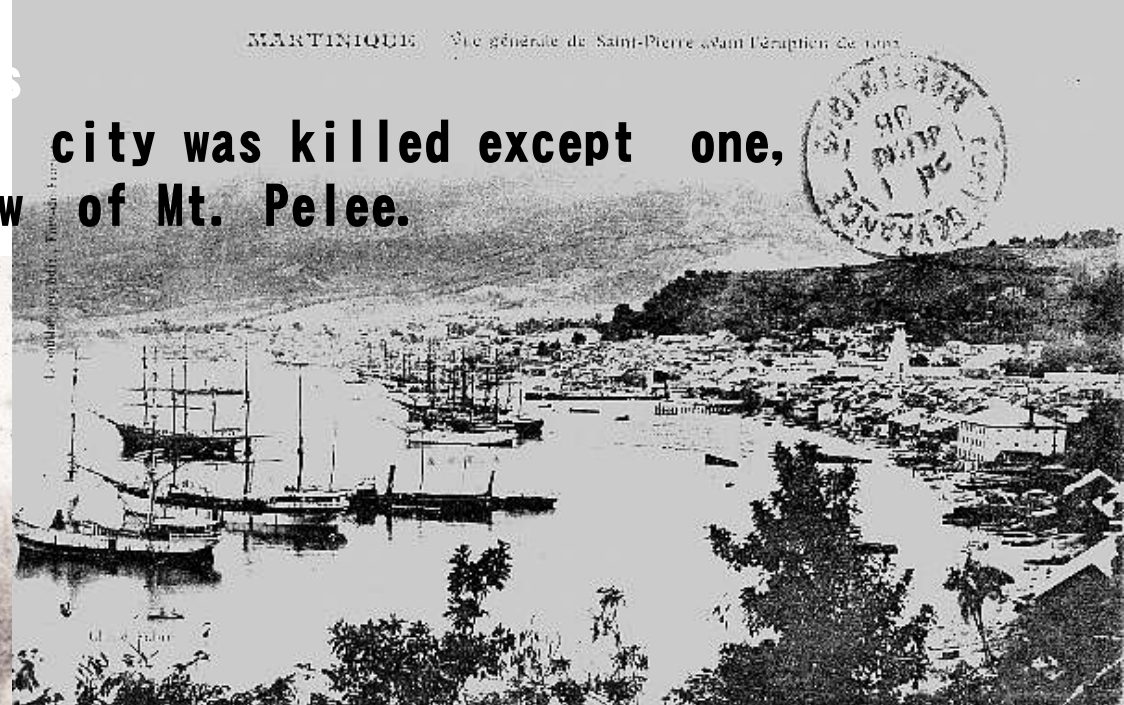
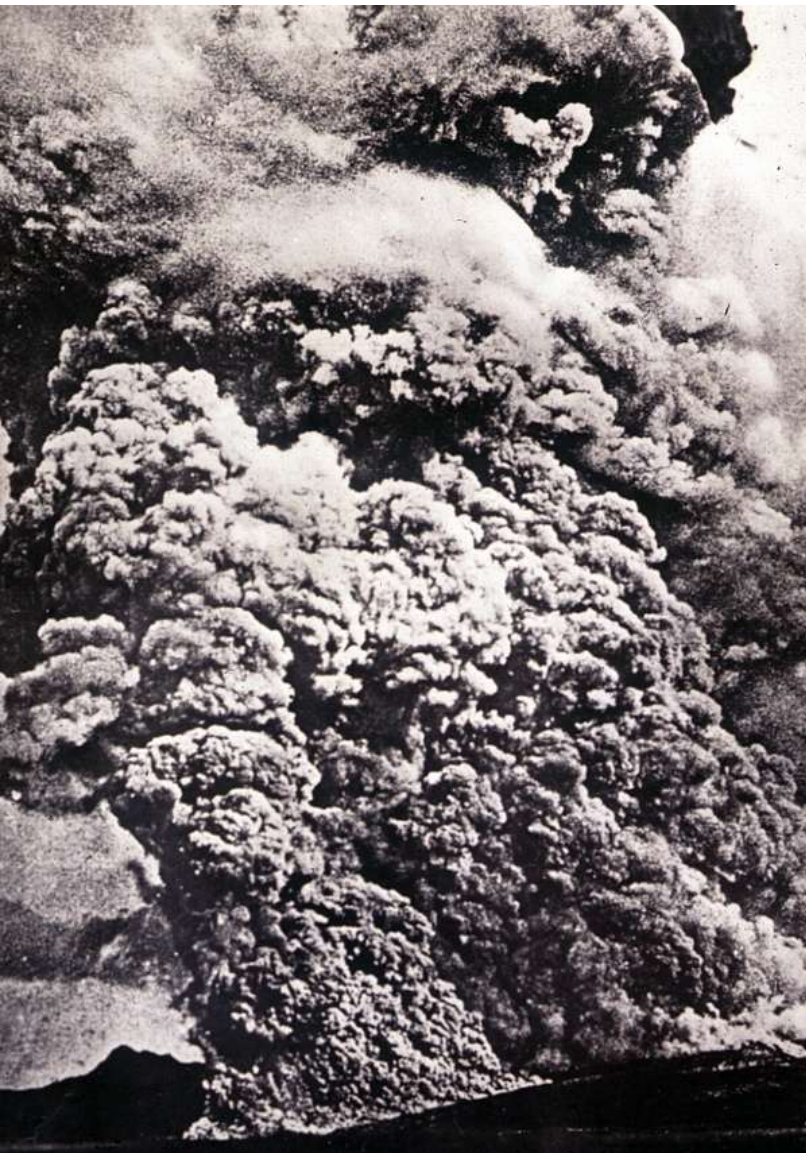
2000

1977~1982

1943~1945



29,000 peoples of St. Pierre city was killed except one, owing to the pyroclastic flow of Mt. Pelee.



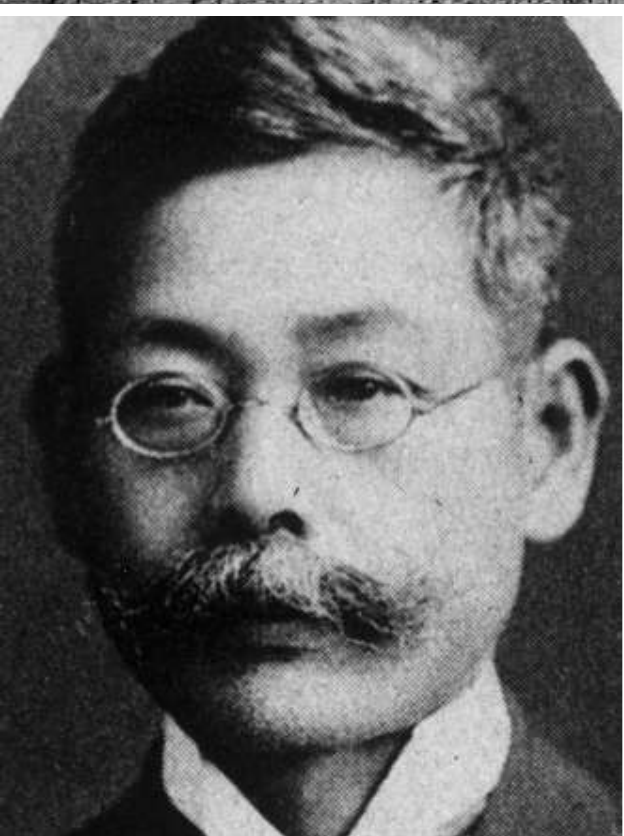
MARTINIQUE St PIERRE *Vue prise de la Rue Victor-Hugo près la Place du Mouillage*



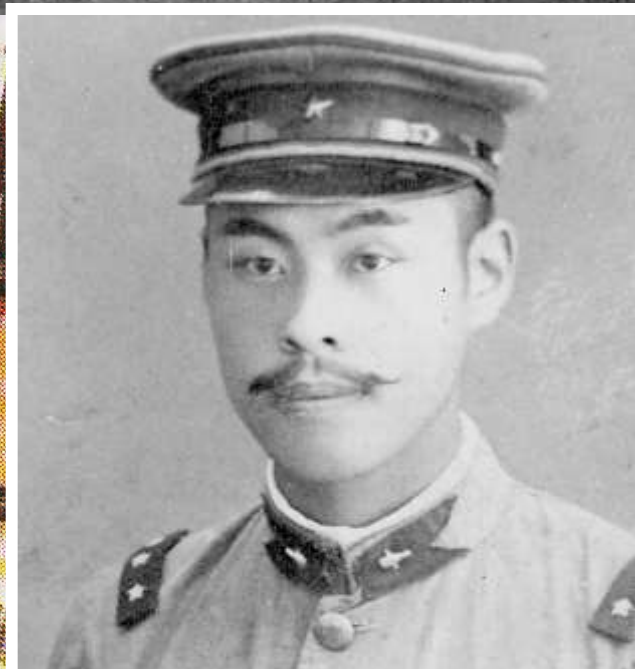
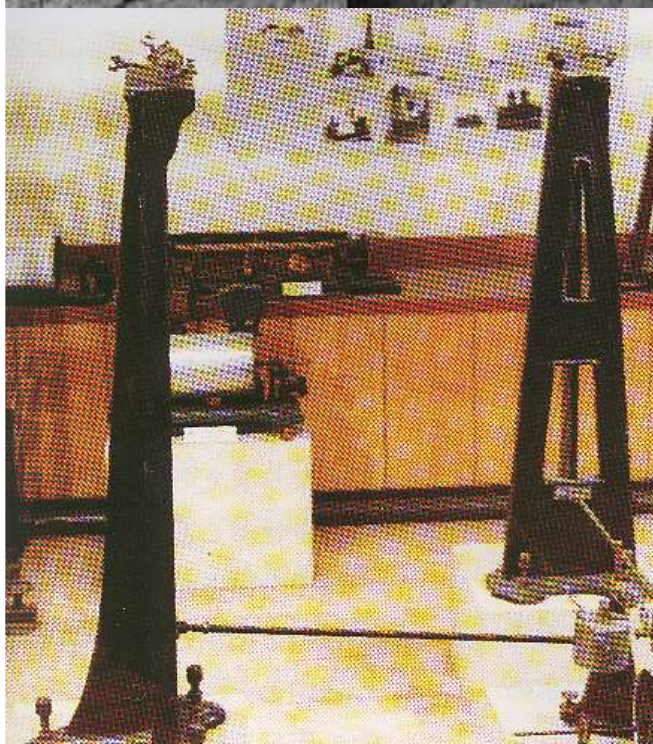
Initiation of modern volcanology by Prof. Oomori at this events.



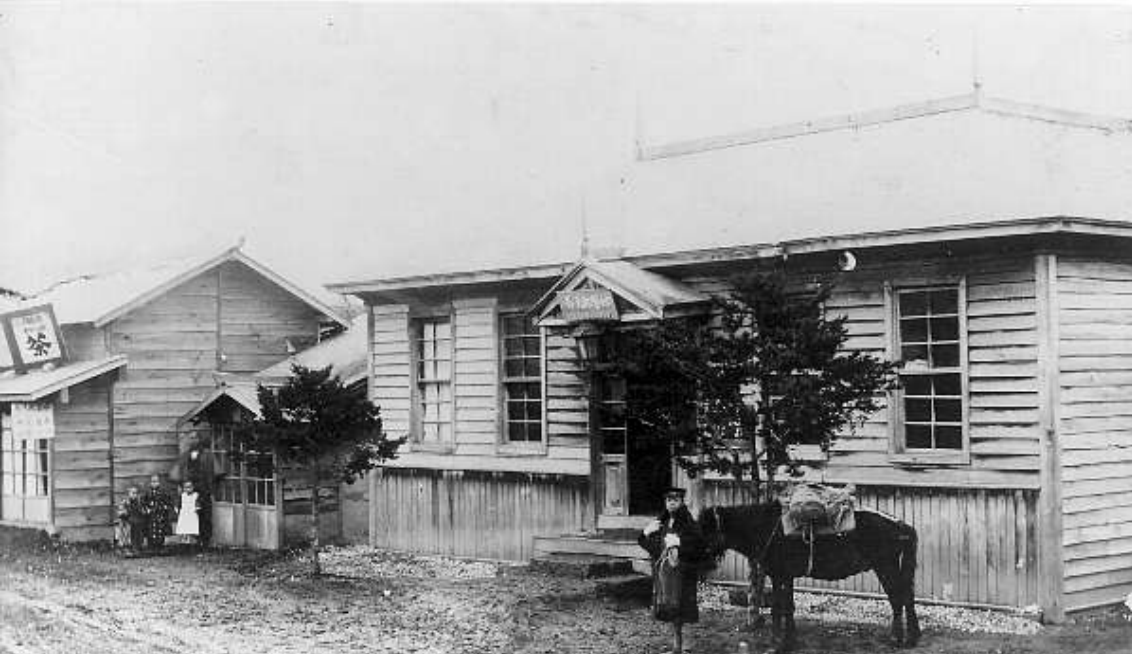
In 1910 eruption, new cryptodome named Meiji-shinzan was born.



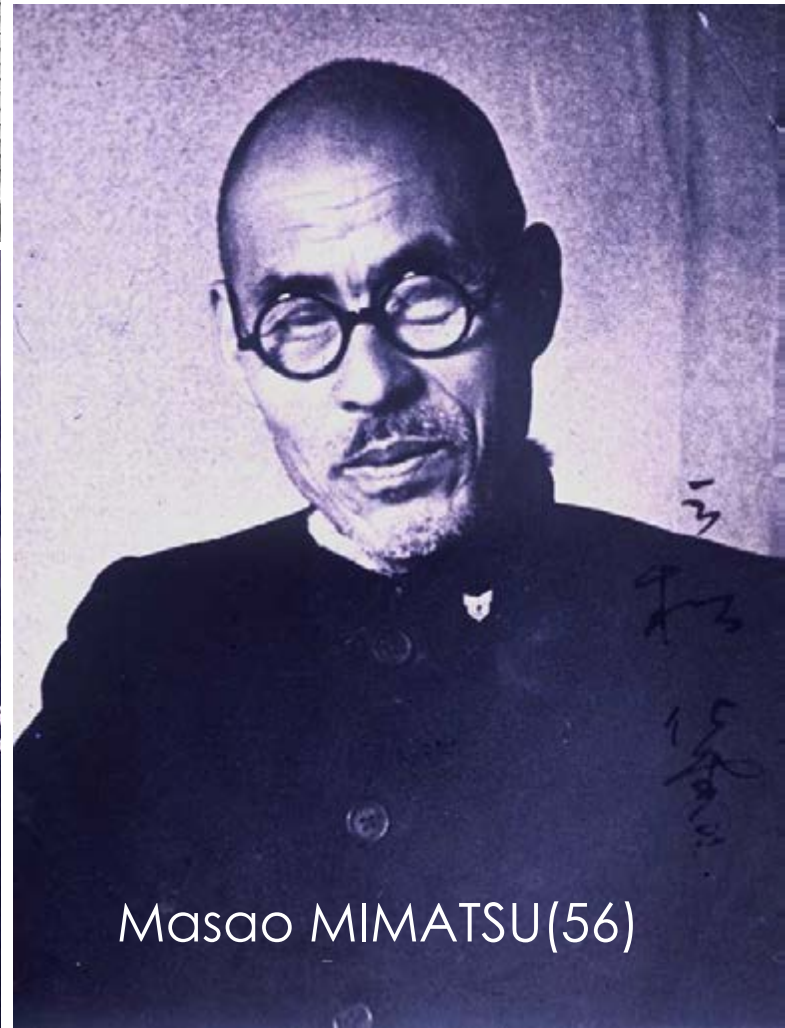
**Prof. Fusakichi OMORI
of Tokyo Univ.**



Masao MIMATSU(22)

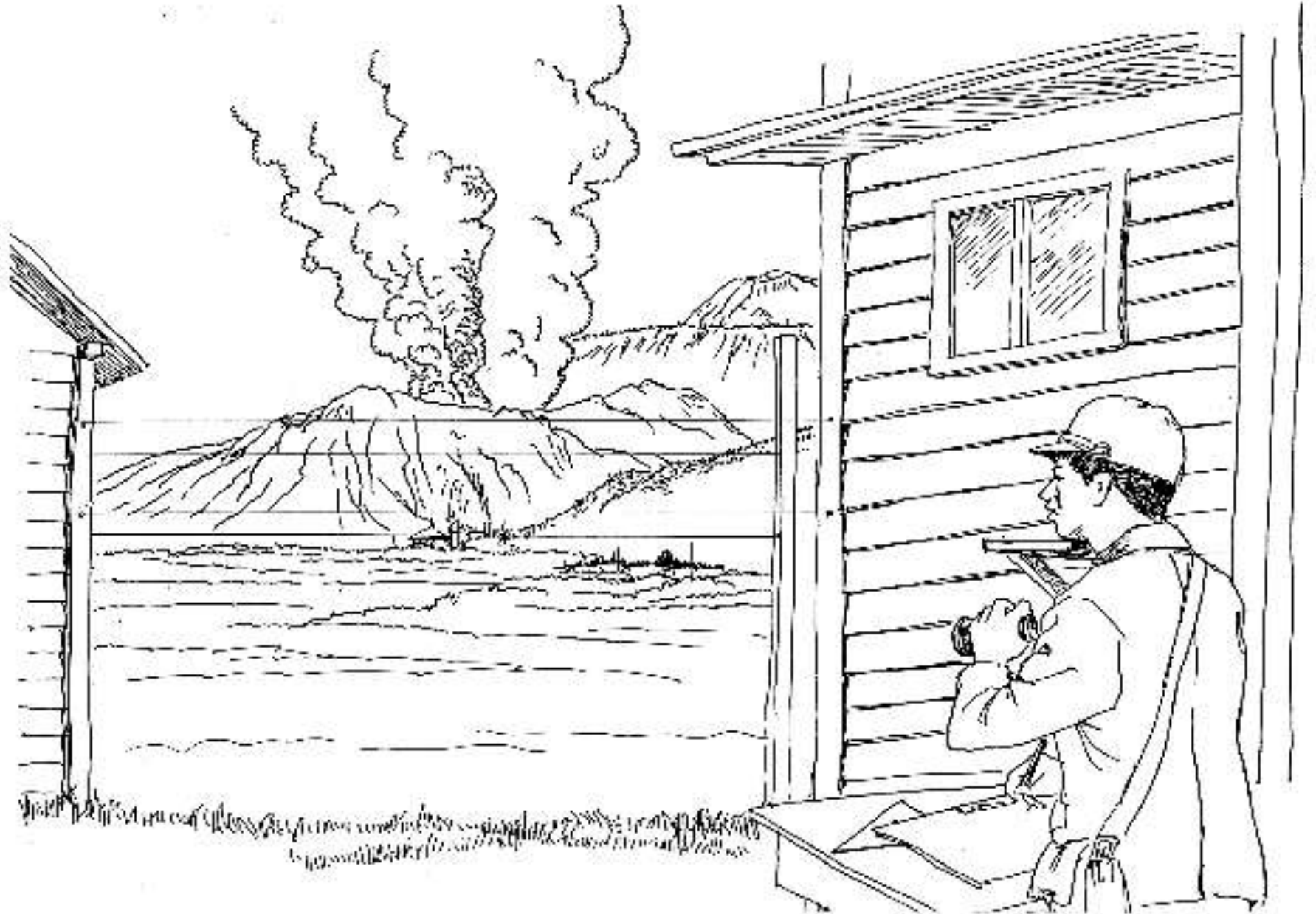


He spent his life as a normal postmaster until early evening of December 28, 1943



Masao MIMATSU(56)

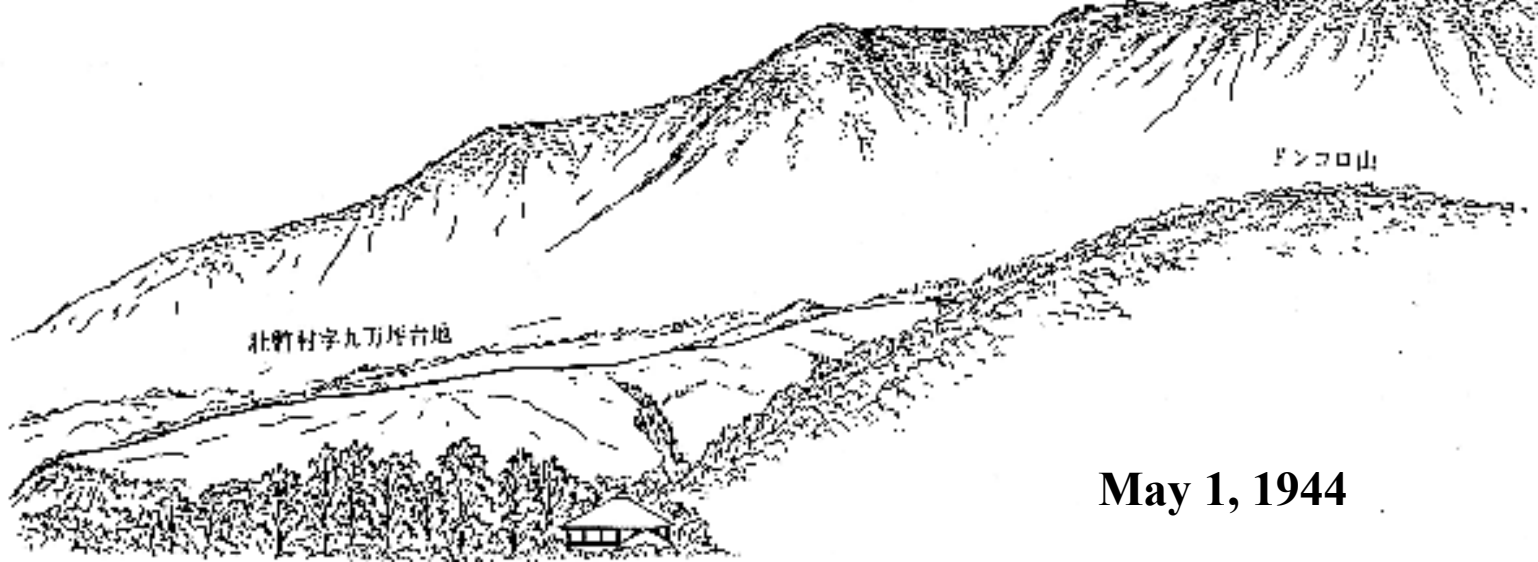
MIMATSU's Unique Method for “ the Sequential Sketches”



Before the Eruption

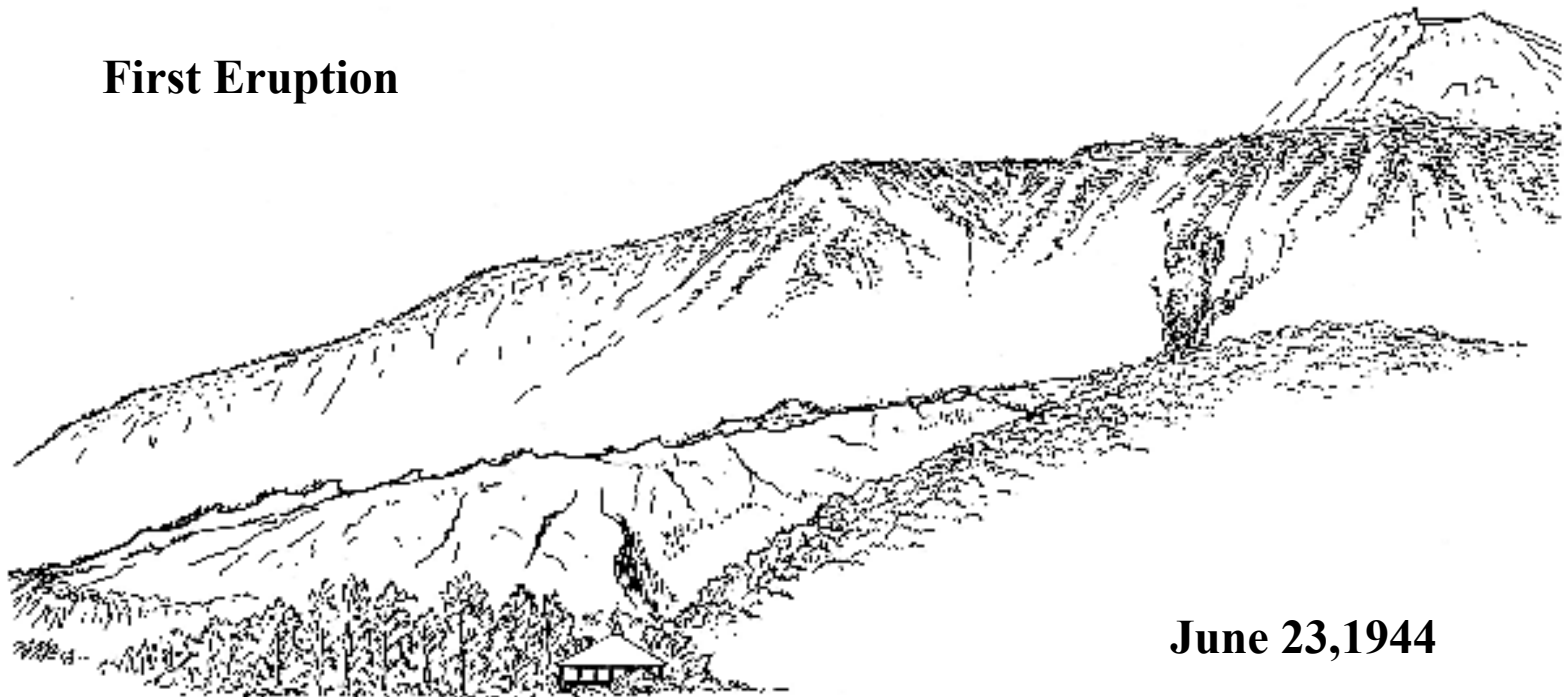
O-Usu Dome

有珠火山

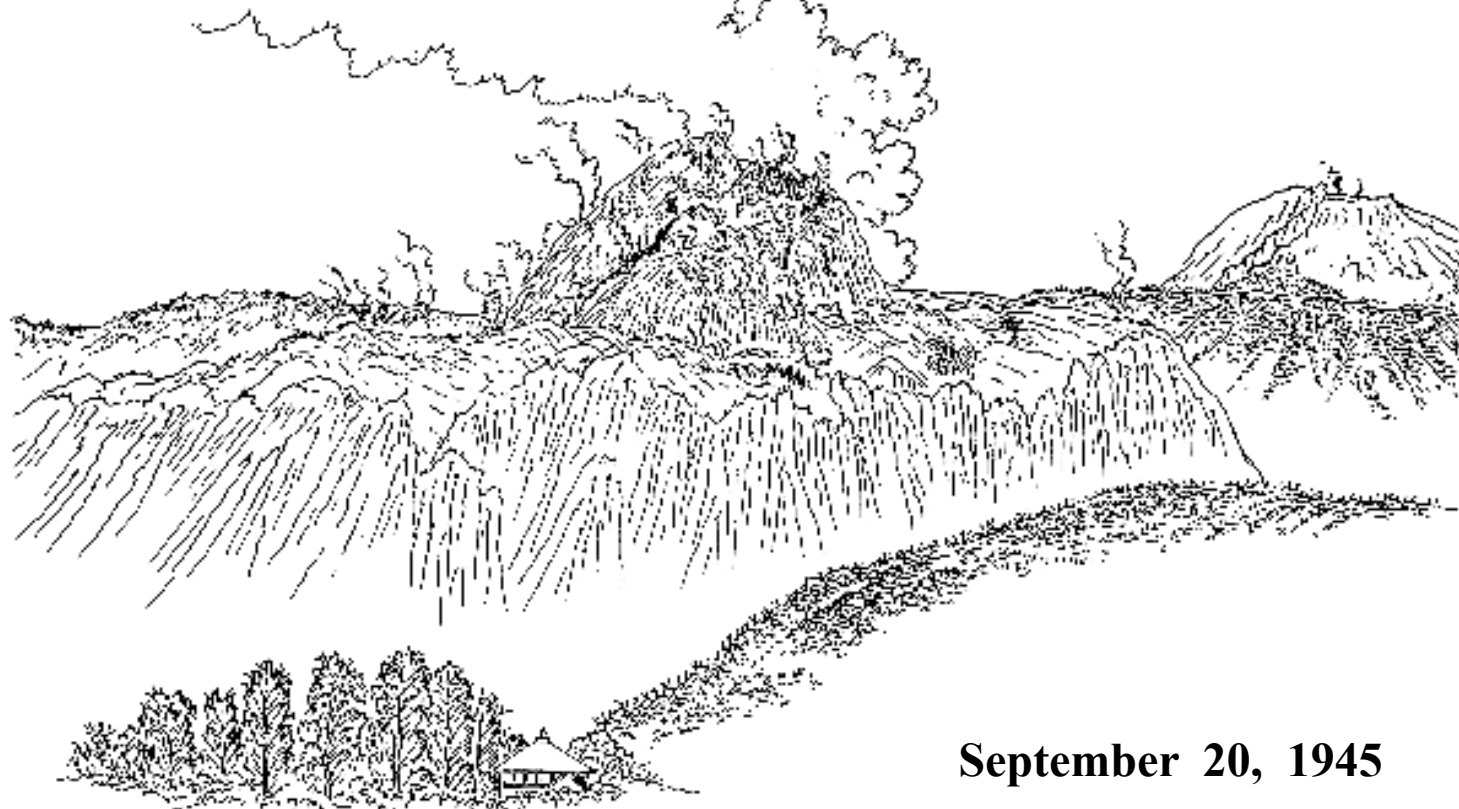


May 1, 1944

First Eruption

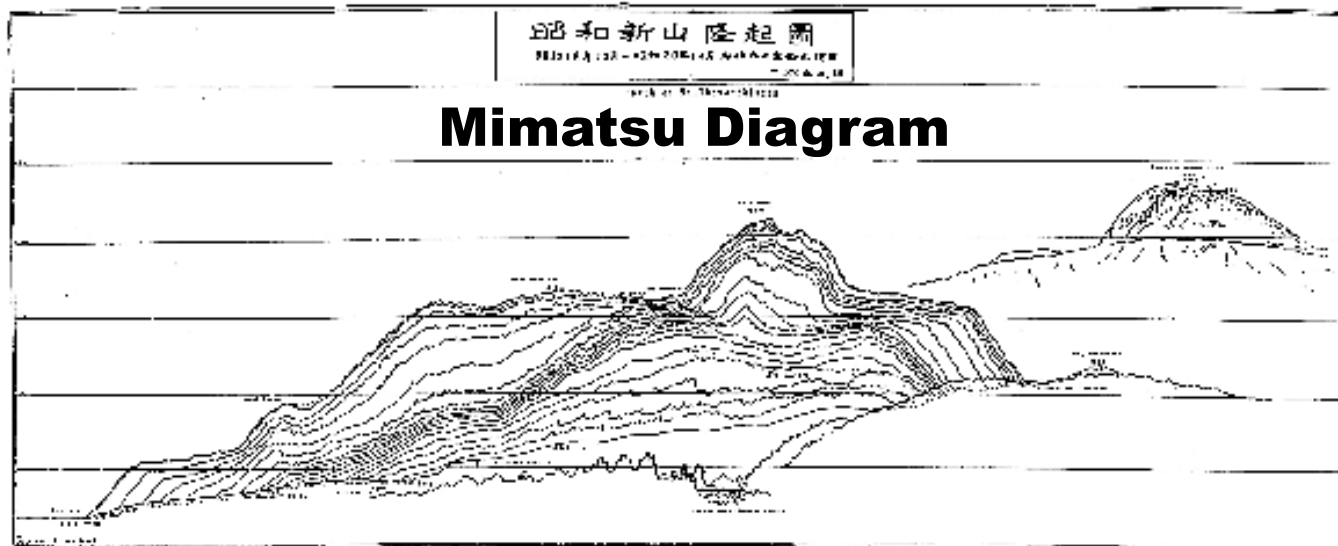


June 23, 1944



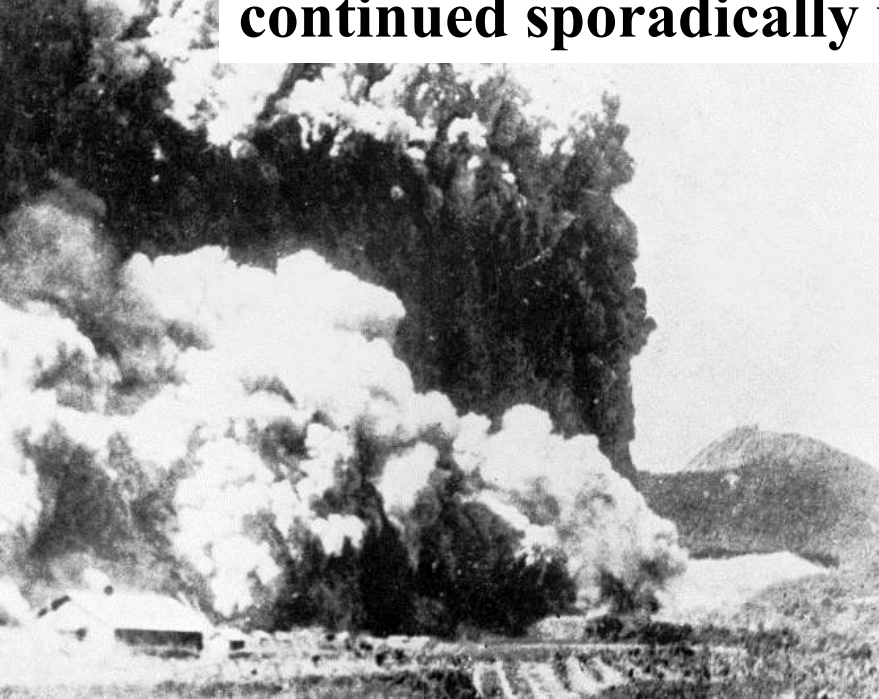
September 20, 1945

094

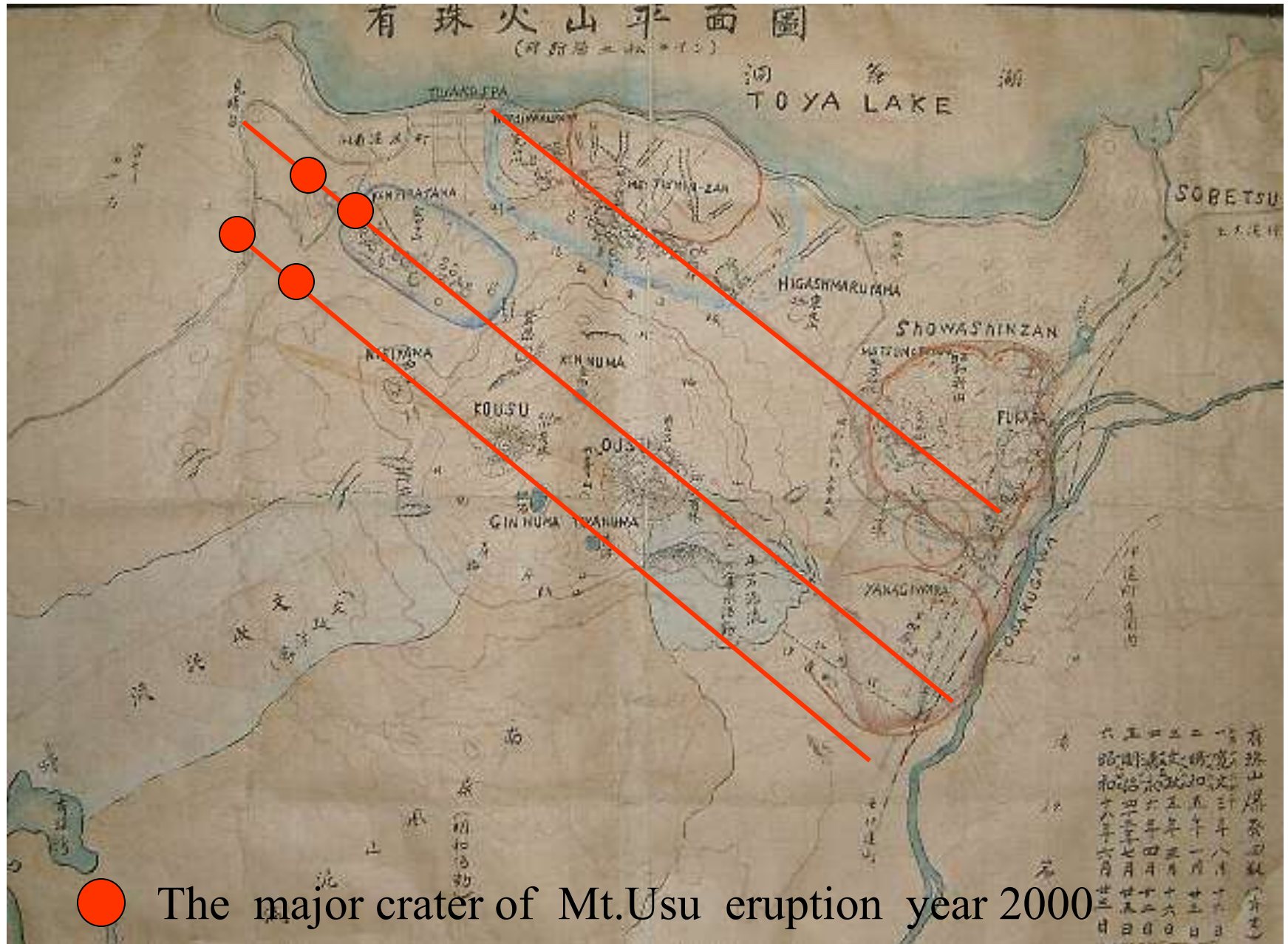




The explosion occurred in a wheatfield on June 23, 1944, continued sporadically until the end of December .

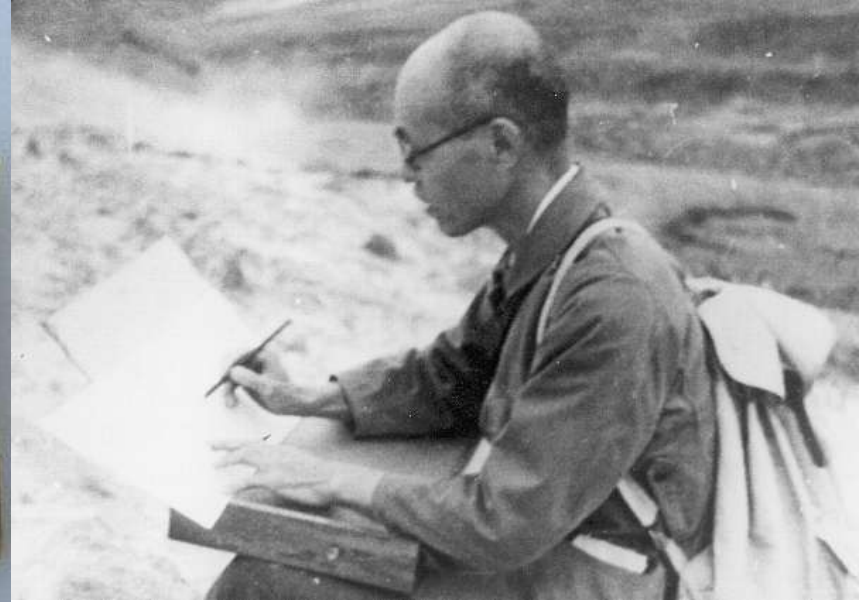


Fault lines around Mt. Usu (Mimatsu Hypothesis 1948)



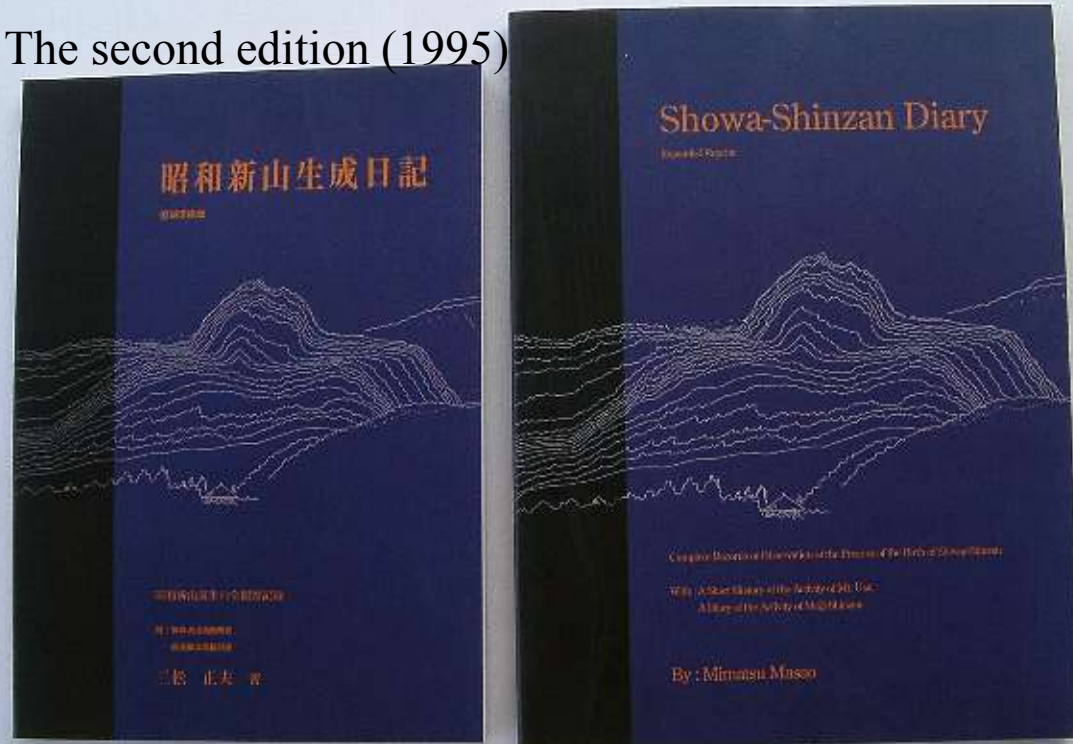


Full paper by Mimatsu, named “Diary of Mt. Showa Shinzan formation”, published 1962



Mimatsu's field notes

The second edition (1995)



Aug 6, 1977 20:00



Fire Works Festival

Aug 7, 1977 9:12



Oct 24, 1982 ~ Feb 28, 1983 (8 lectures and 1 field excursion)
Volcano Learning Program for Adults

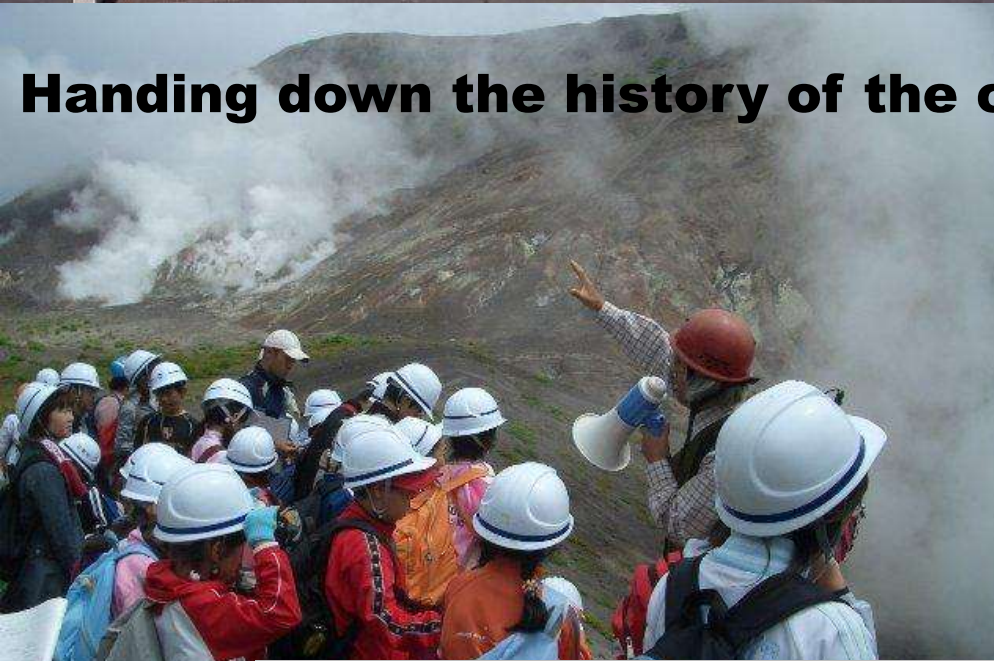


Promoted by Sobetsu Educational Boards
Supported by Usu Volcano Observatory of Hokkaido University

By reason of handing down the wisdom to the next generation

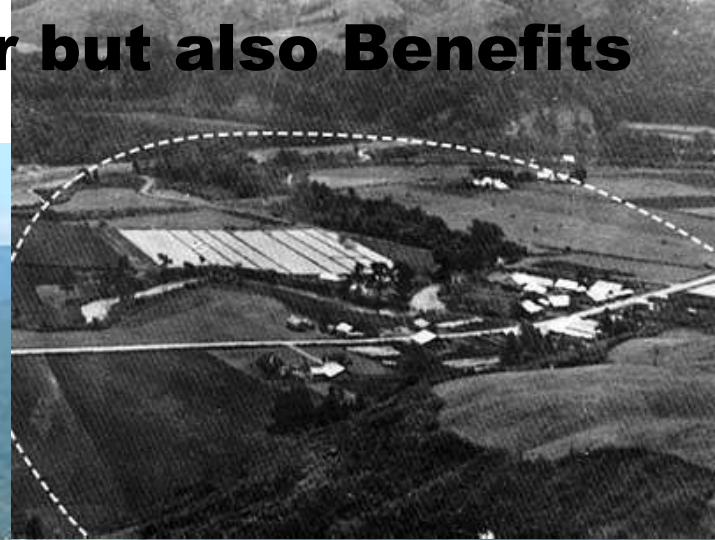


Handing down the history of the coexistence with the volcano



The Field Learning Program for Kids Since 1983

The Eruption is not only Disaster but also Benefits



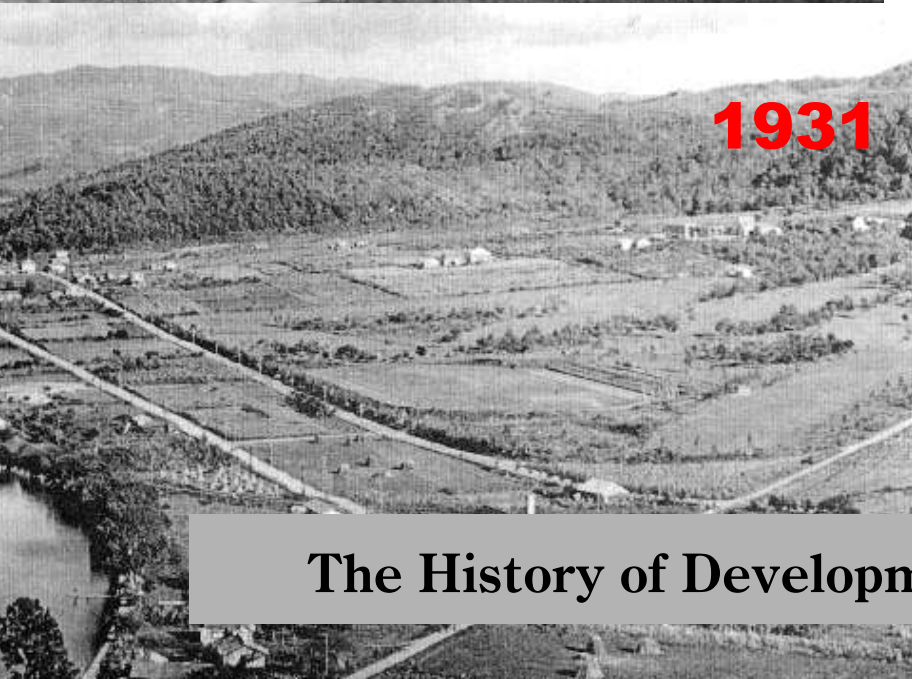
Destructive and regenerative
power of the earth



1910



1920



1931



1995

The History of Development on Toya-ko Hot Spa. Area

K-a crater(left) and K-b crater (right) was opened near the town



June, 2000

Usu 2000 Eruption



Extensive Rock/Mud-ball Fall
2000 Eruption of Mt. Usu
Apr 15, 2000 by H. Okada
Usu Volc. Obs., Hokkaido Univ



Eruption in 2000, with no casualties

Invading Hot Mudflow
2000 Eruption of Mt. Usu
Apr 9, 2000 by H. Okada
Usu Volc. Obs., Hokkaido Univ

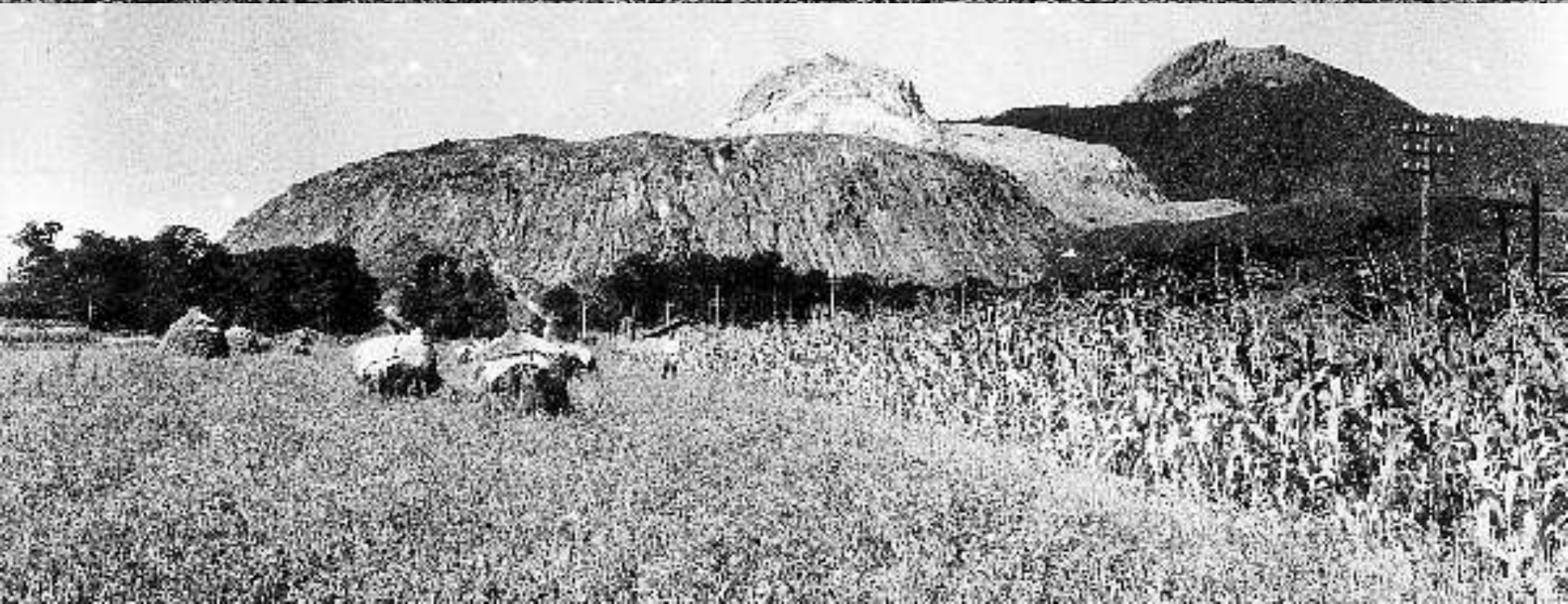
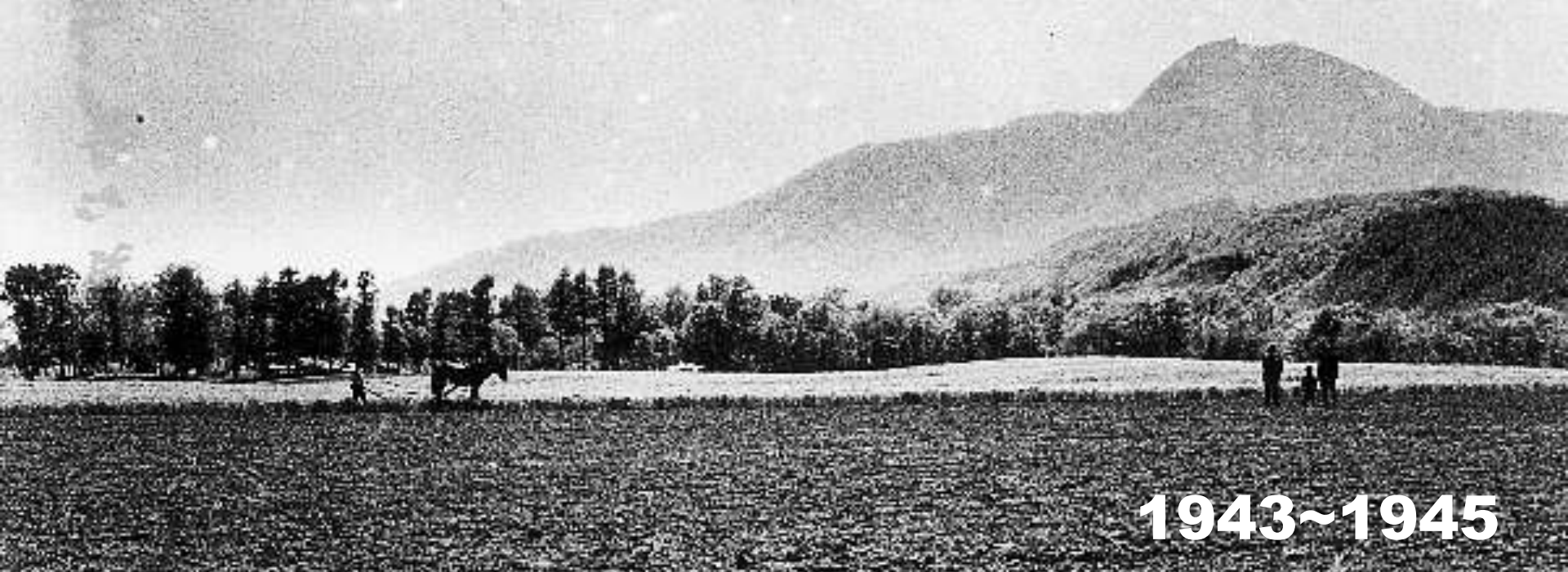




**On 22 August 2009,
Toya Caldera and Usu Volcano
Geopark was designated as the
first Japanese Global Geopark**

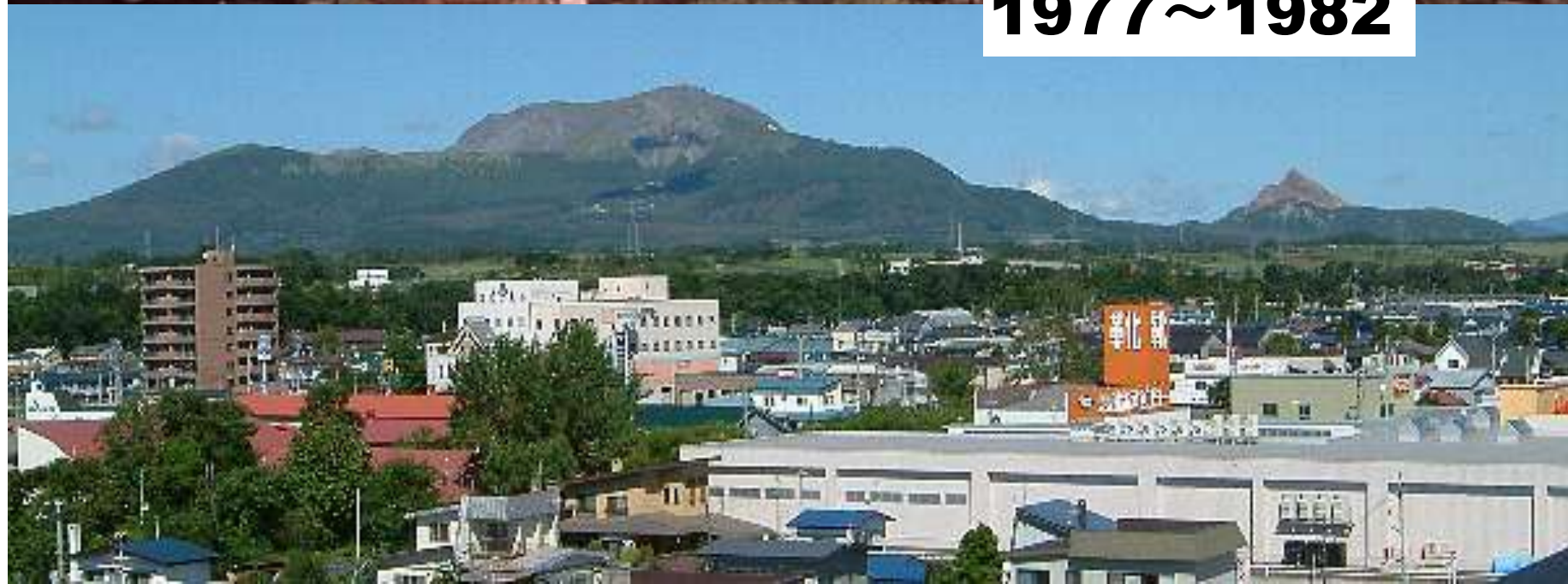
The concept of our Geopark

- The Ever-Changing Earth**
- Coexistence with the Volcano**





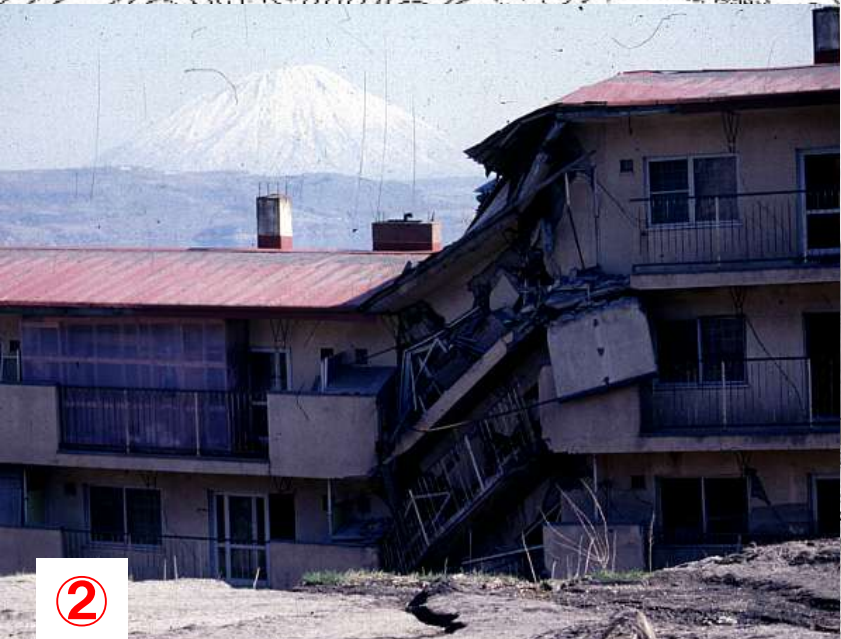
1977~1982



The map of the crustal movement in 1910 eruption.



Disaster Repeats!



This big Hospital was crashed after crustal movement in 1977





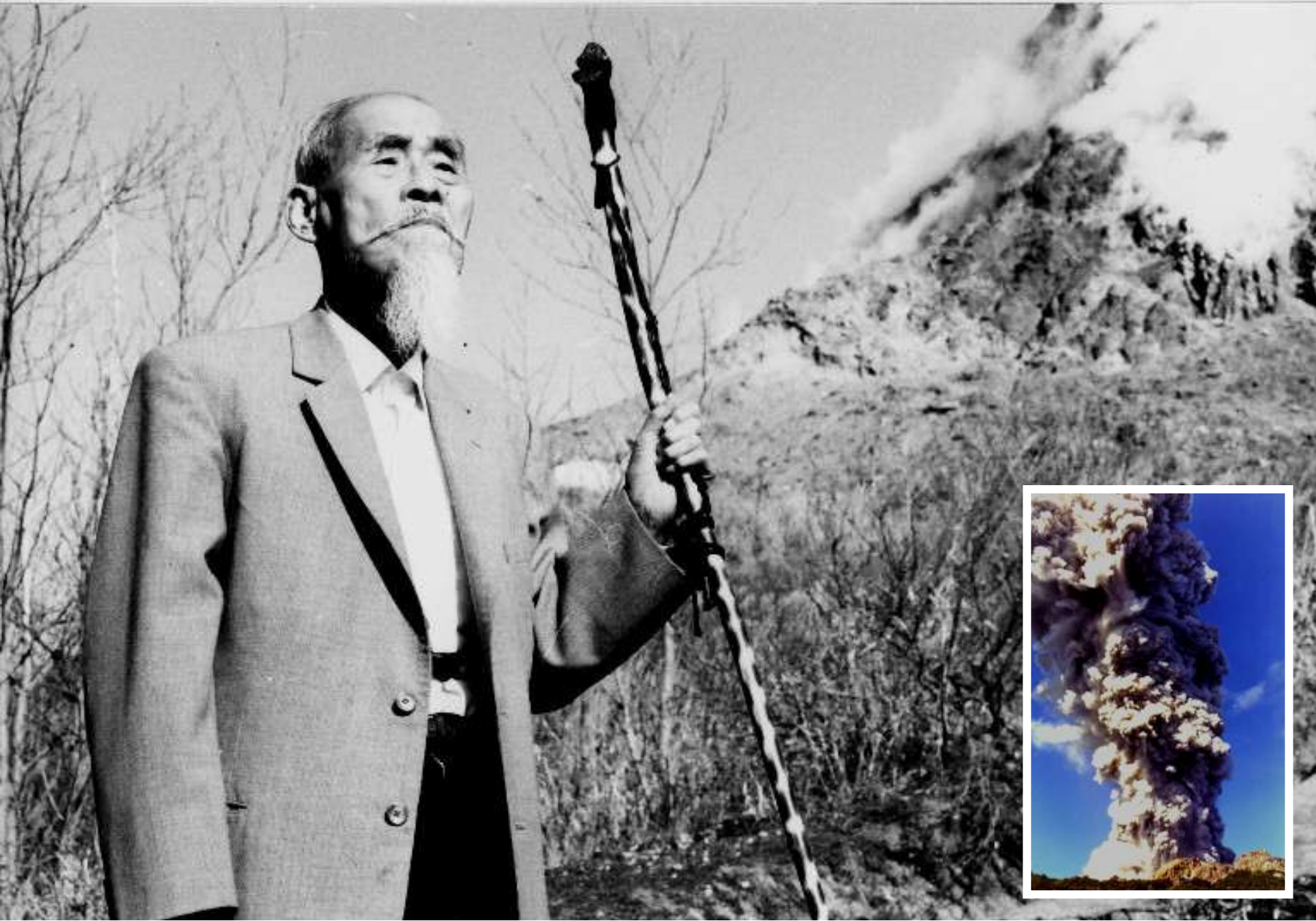
The Geo-Heritage , 2000 eruption memorial park and trail (foot-path)





The pier of National Railway was raised up about 30m high.





Masao MIMATSU lived to see the 3rd time Usu eruption in his life. 89 years old



The “Toya-Usu Volcano Meisters” system began in 2008 for grooming of new leaders in the next generation for disaster prevention in Toya-Usu area. As of Oct. 2013, 23 Meisters were certified.



What is need, for handing down?

Should we only tell about the terror and the tragedy?

Earthquake and Eruption = Natural Phenomenon

Natural Disaster = Social Phenomenon

**Volcanic Eruptions and earthquakes are inevitable on the
active Planet Earth**

Earthquakes and eruption scale \neq Disaster scale

◆ The main character is the earth. Human beings are only supporting character. Recognizing that humans are but a small part of Earth's nature.

◆ The most important thing is we recognize that we can not stop the natural disaster. → Build a culture of disaster prevention by learning from past disasters.