

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 17<sup>th</sup> 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 20<sup>th</sup> century

1910



1944



1977



2000

1910

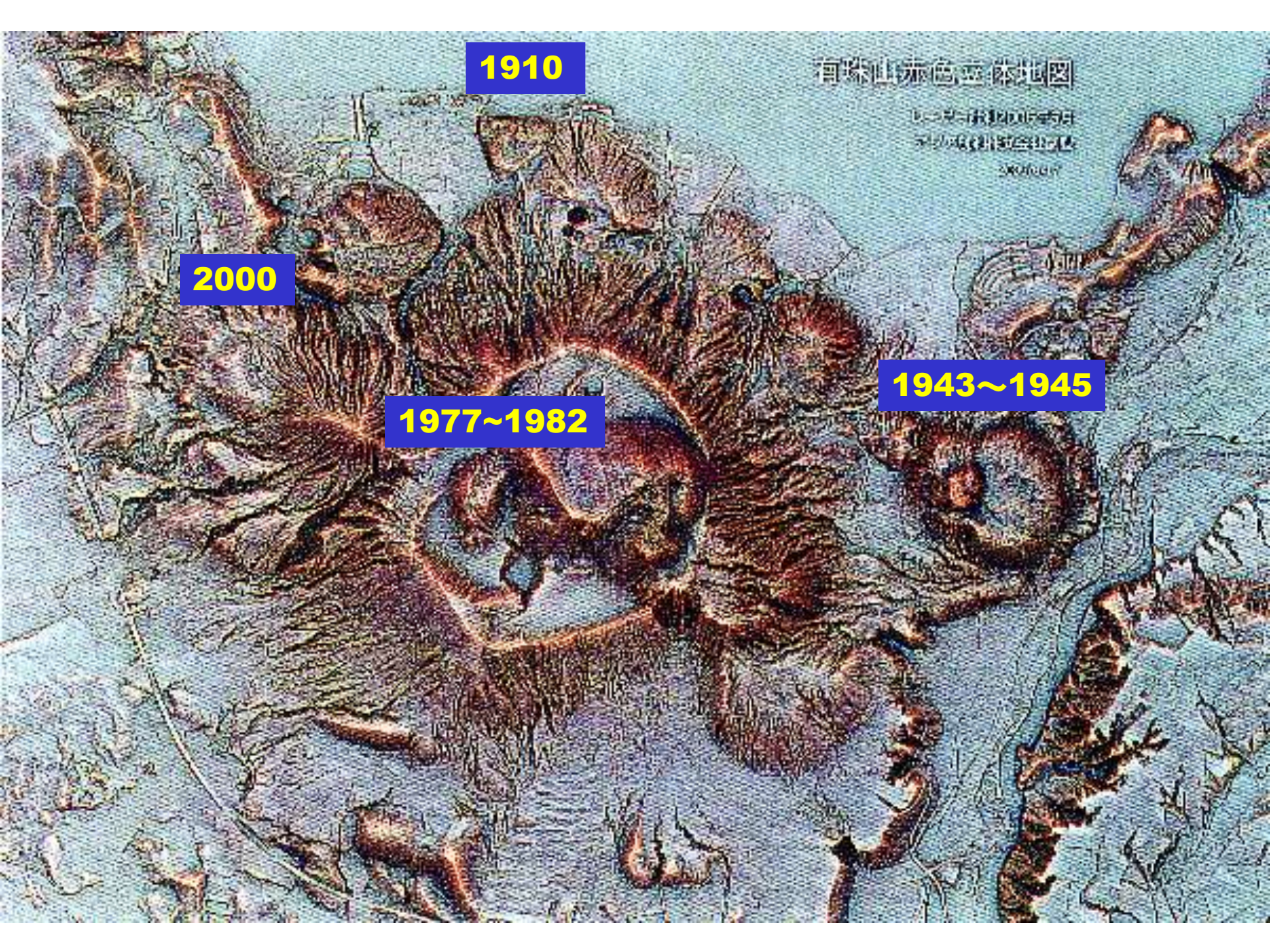
有珠山赤色立体地图

日本国土地院  
国土地院  
2000年

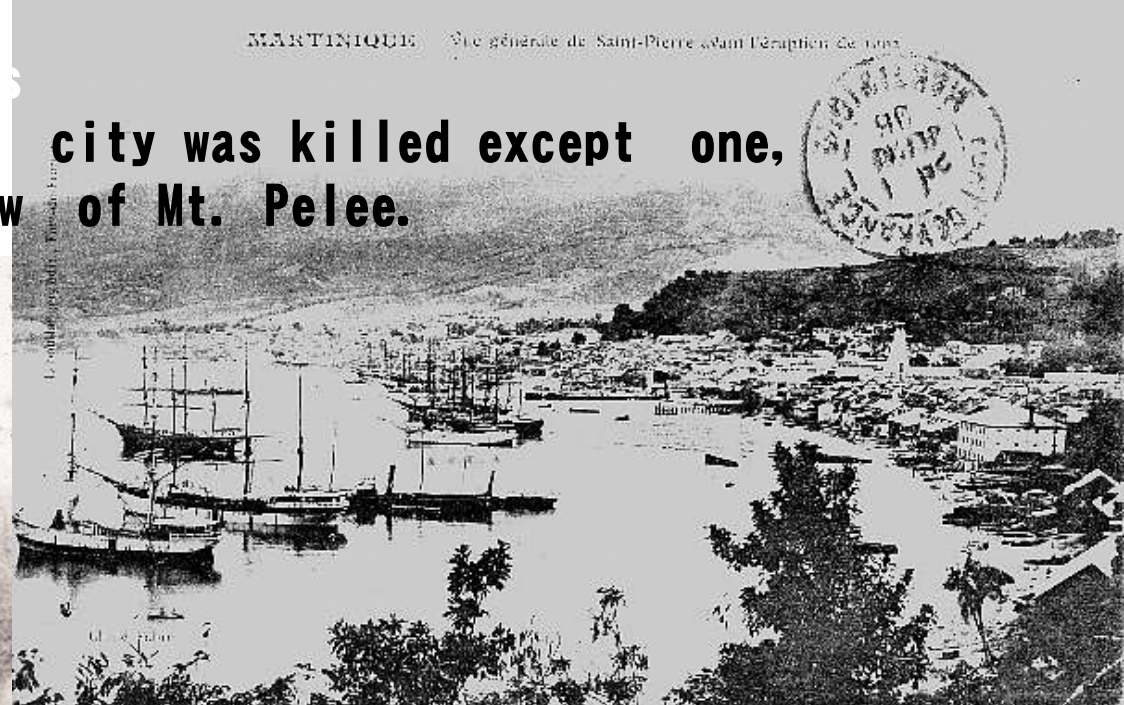
2000

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*



Izu Torishima Island, all islander except one was killed by major eruption.

# 東京日日新聞

明治三十三年九月一日

## 北島島噴火 符見録



北島島噴火の概況... 噴火の始り... 噴火の強さ... 噴火の方向... 噴火の時間... 噴火の回数... 噴火の場所... 噴火の結果... 噴火の被害... 噴火の救済... 噴火の注意... 噴火の対策... 噴火の歴史... 噴火の科学... 噴火の文化... 噴火の芸術... 噴火の教育... 噴火の産業... 噴火の政治... 噴火の外交... 噴火の国防... 噴火の民生... 噴火の健康... 噴火の安全... 噴火の幸福... 噴火の発展... 噴火の繁栄... 噴火の平和... 噴火の統一... 噴火の大同... 噴火の共進... 噴火の共存... 噴火の共生... 噴火の共榮... 噴火の共好... 噴火の共愛... 噴火の共敬... 噴火の共信... 噴火の共成... 噴火の共進... 噴火の共存... 噴火の共生... 噴火の共榮... 噴火の共好... 噴火の共愛... 噴火の共敬... 噴火の共信... 噴火の共成...

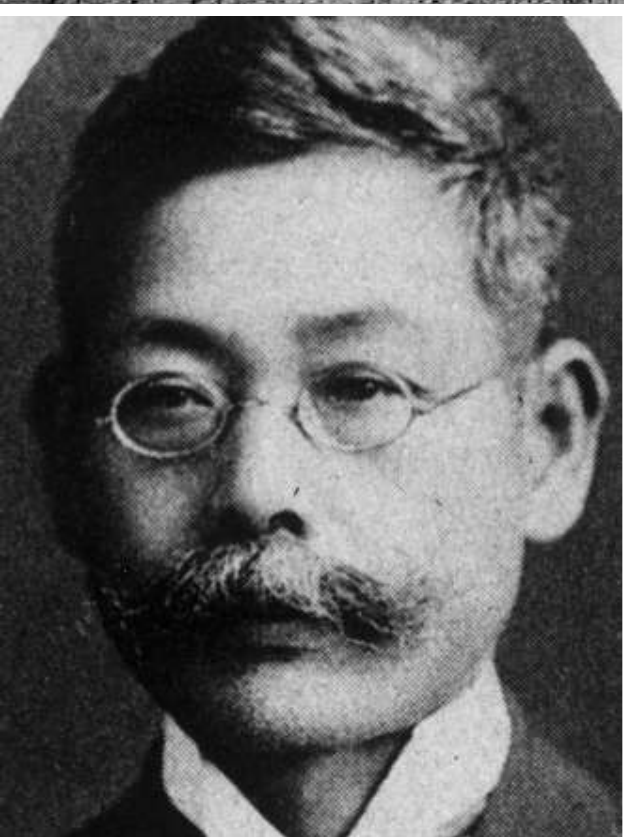
北島島噴火の概況... 噴火の始り... 噴火の強さ... 噴火の方向... 噴火の時間... 噴火の回数... 噴火の場所... 噴火の結果... 噴火の被害... 噴火の救済... 噴火の注意... 噴火の対策... 噴火の歴史... 噴火の科学... 噴火の文化... 噴火の芸術... 噴火の教育... 噴火の産業... 噴火の政治... 噴火の外交... 噴火の国防... 噴火の民生... 噴火の健康... 噴火の安全... 噴火の幸福... 噴火の発展... 噴火の繁栄... 噴火の平和... 噴火の統一... 噴火の大同... 噴火の共進... 噴火の共存... 噴火の共生... 噴火の共榮... 噴火の共好... 噴火の共愛... 噴火の共敬... 噴火の共信... 噴火の共成...



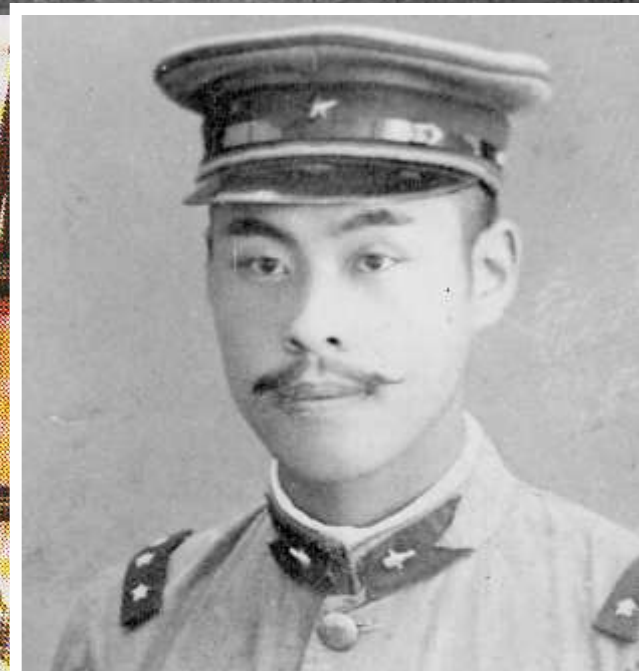
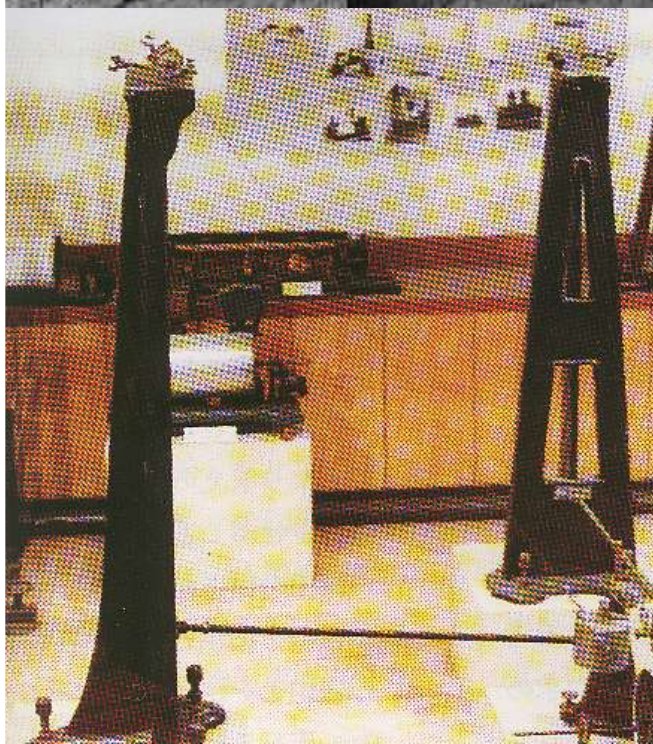
Initiation of modern volcanology by Prof. Oomori at this events.



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

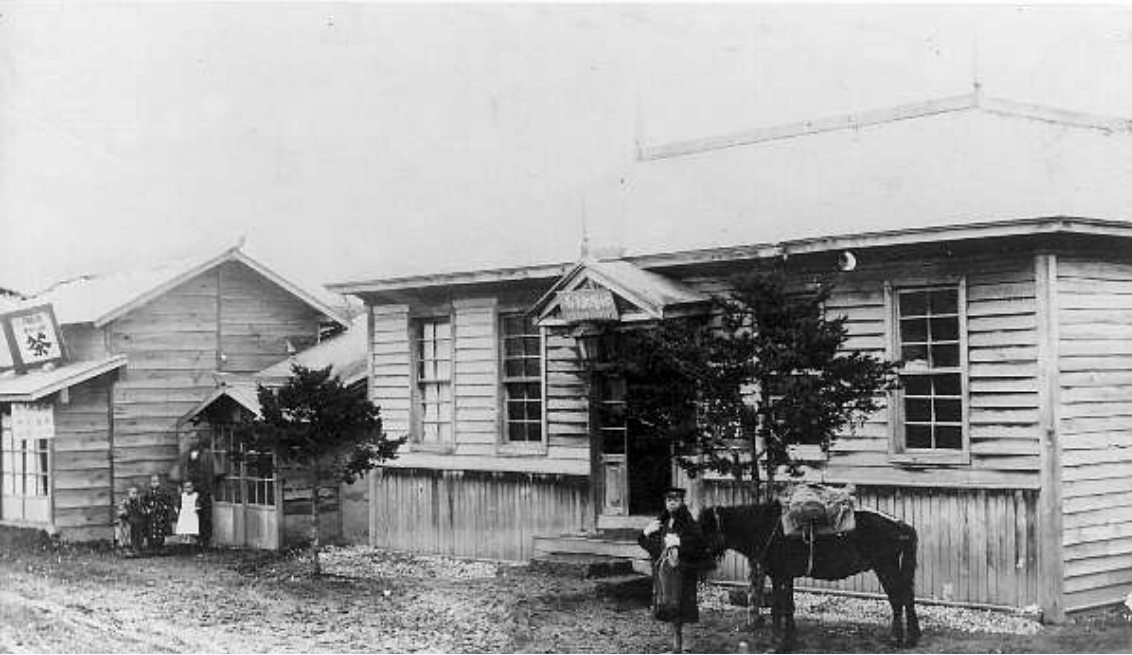


**Prof. Fusakichi OMORI  
of Tokyo Univ.**

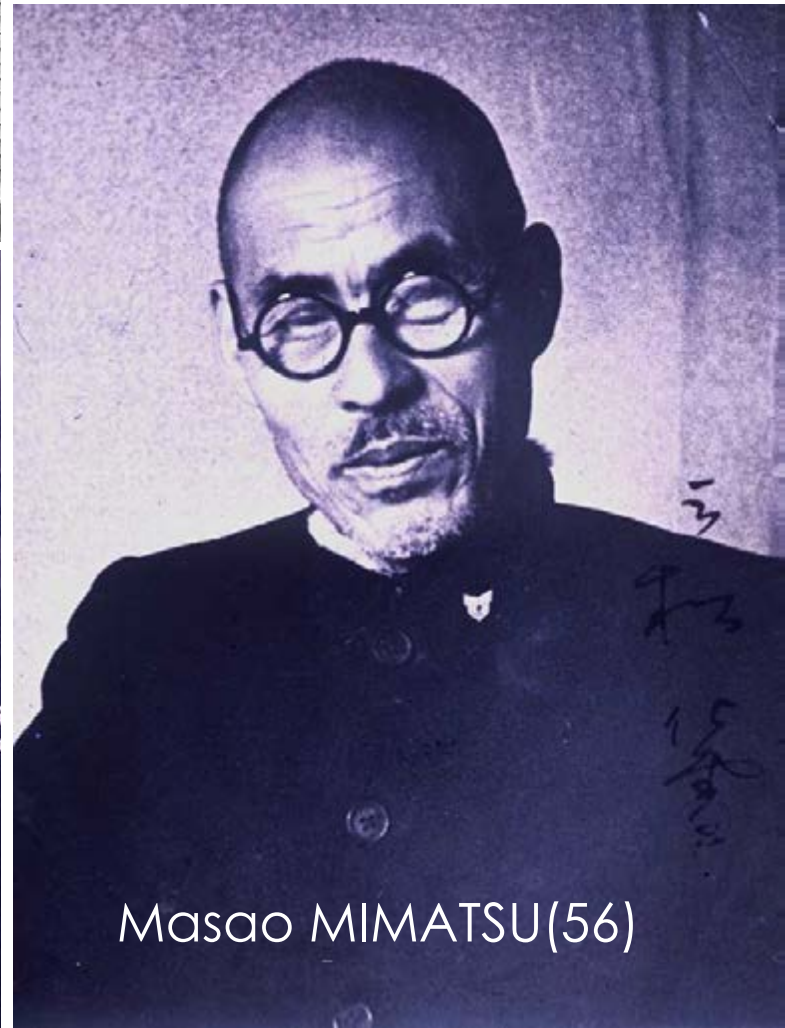


**Masao MIMATSU(22)**



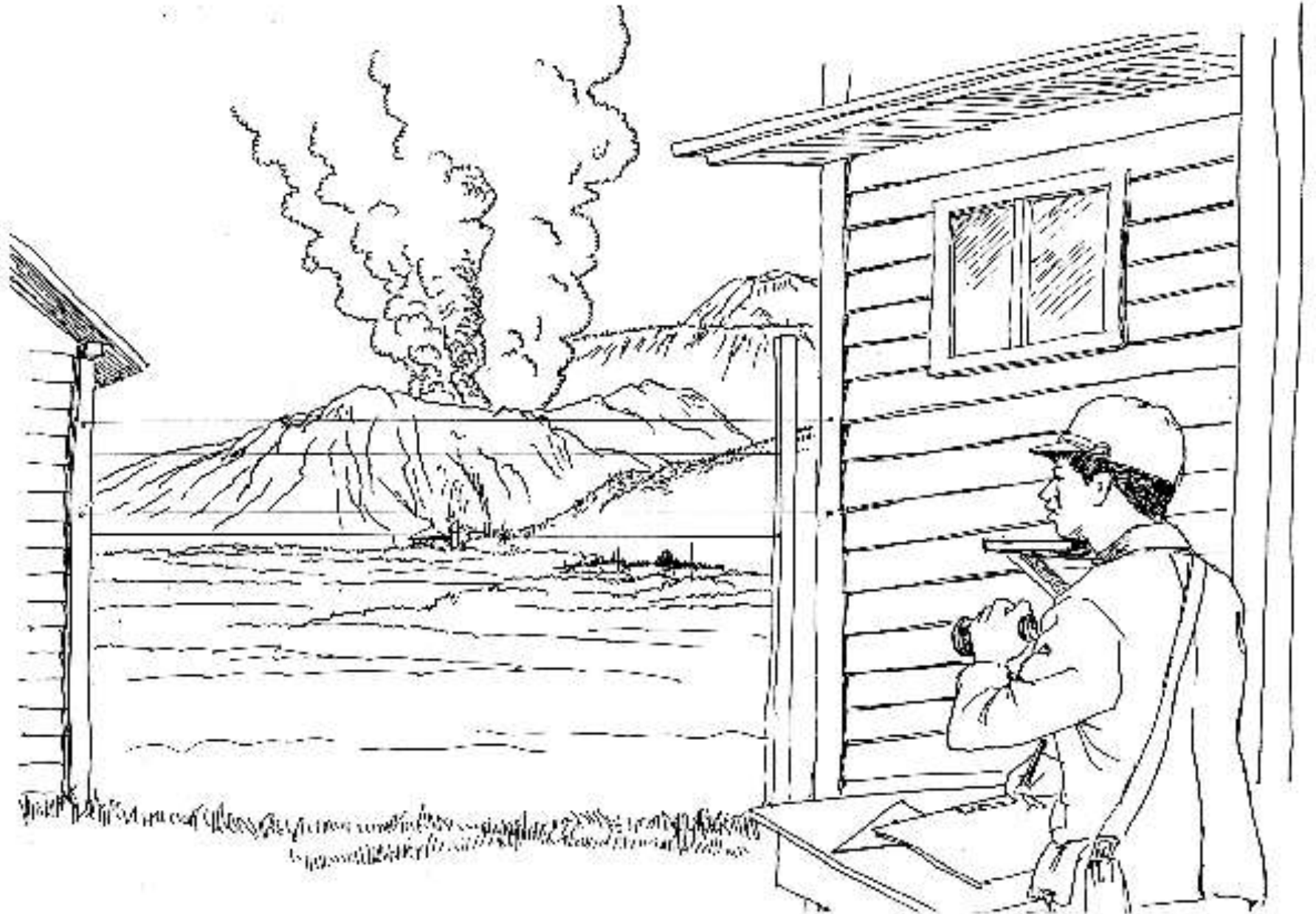


He spent his life as a normal postmaster until early evening of December 28, 1943



Masao MIMATSU(56)

# MIMATSU's Unique Method for “ the Sequential Sketches”



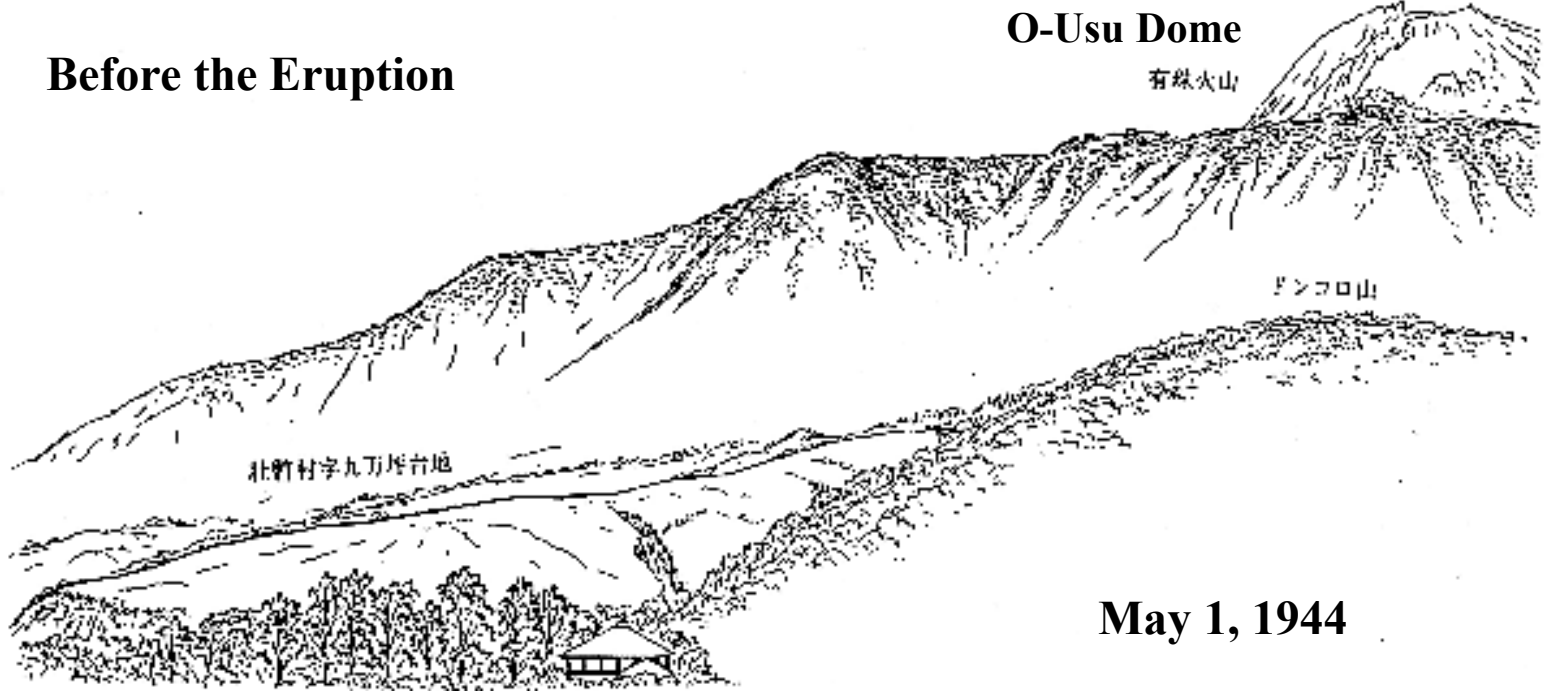
**Before the Eruption**

**O-Usu Dome**

有珠火山

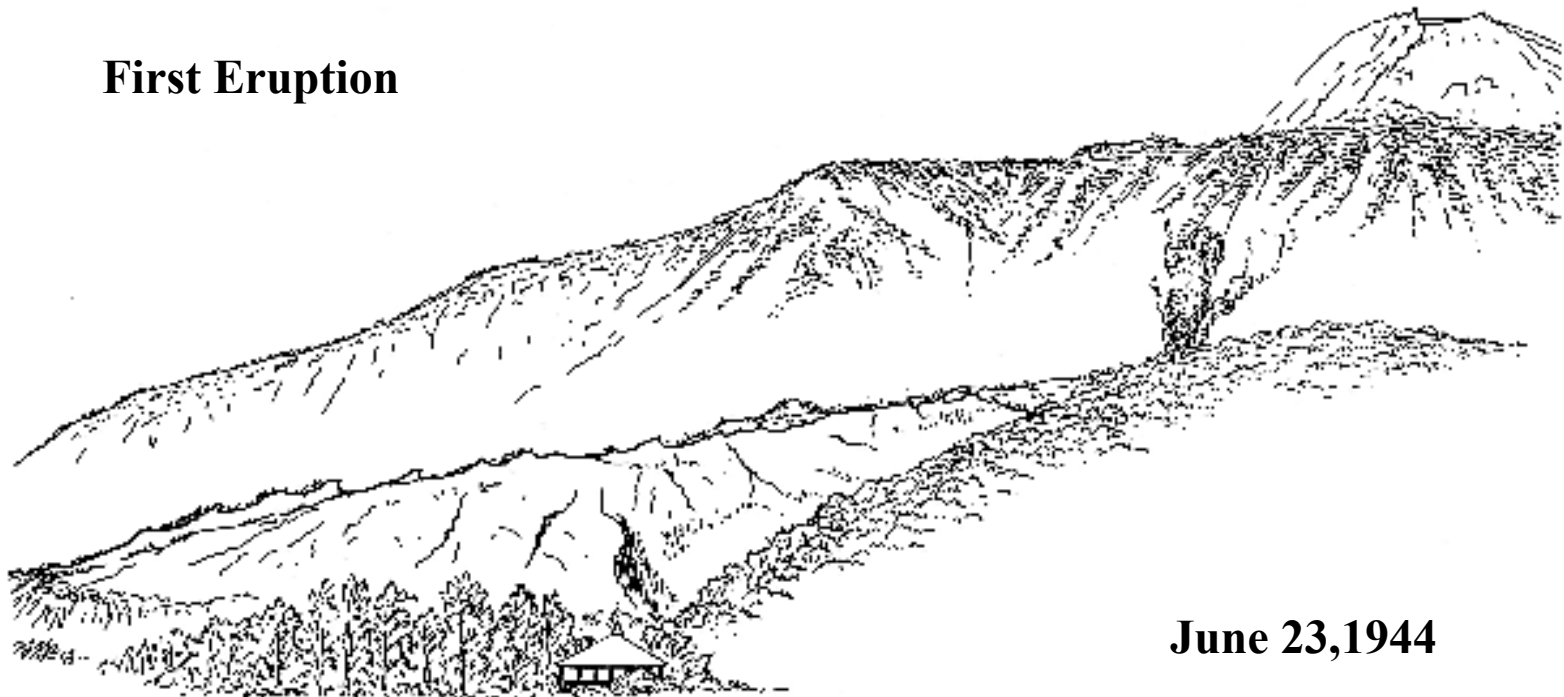
ドンコロ山

北野村字九万坪台地

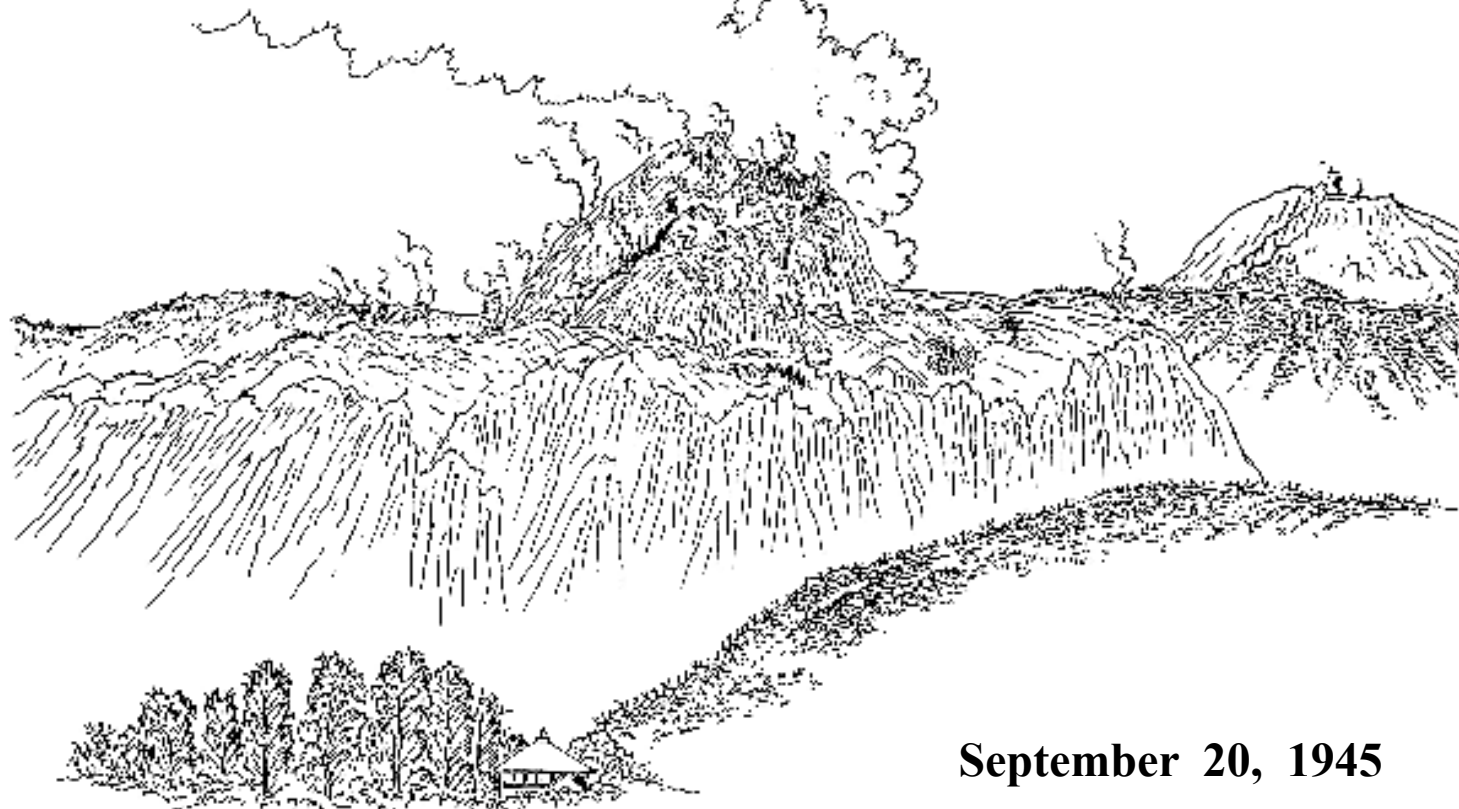


**May 1, 1944**

**First Eruption**

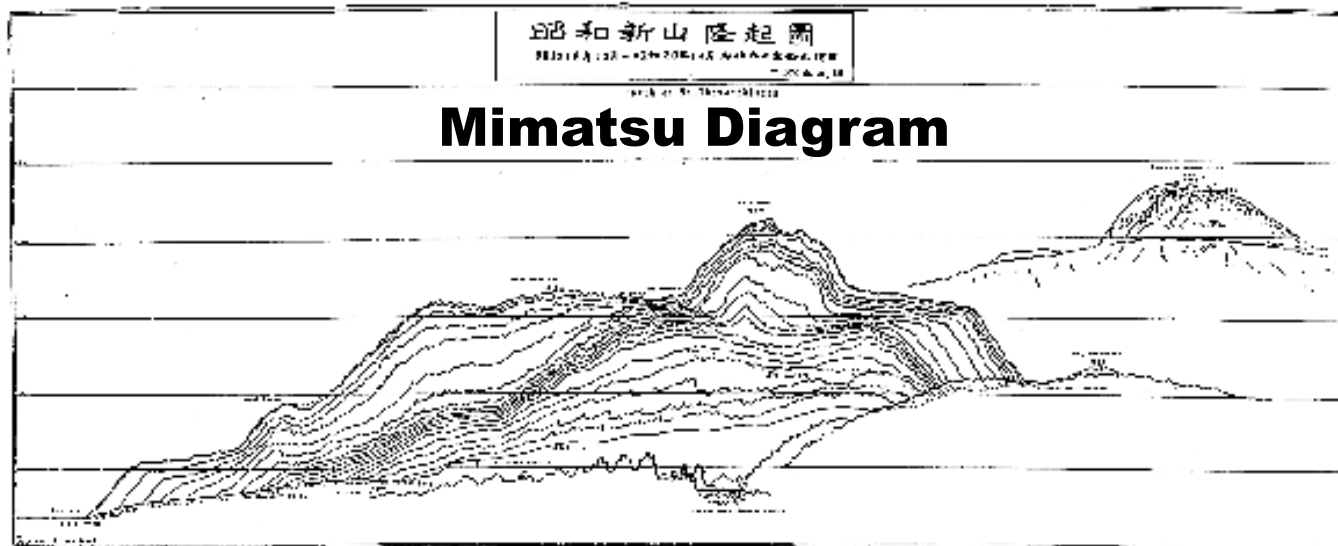


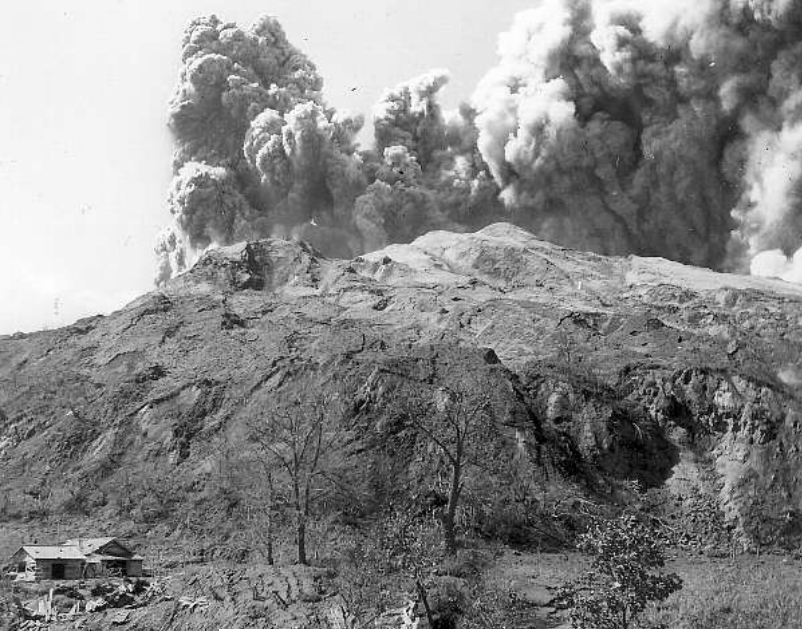
**June 23, 1944**



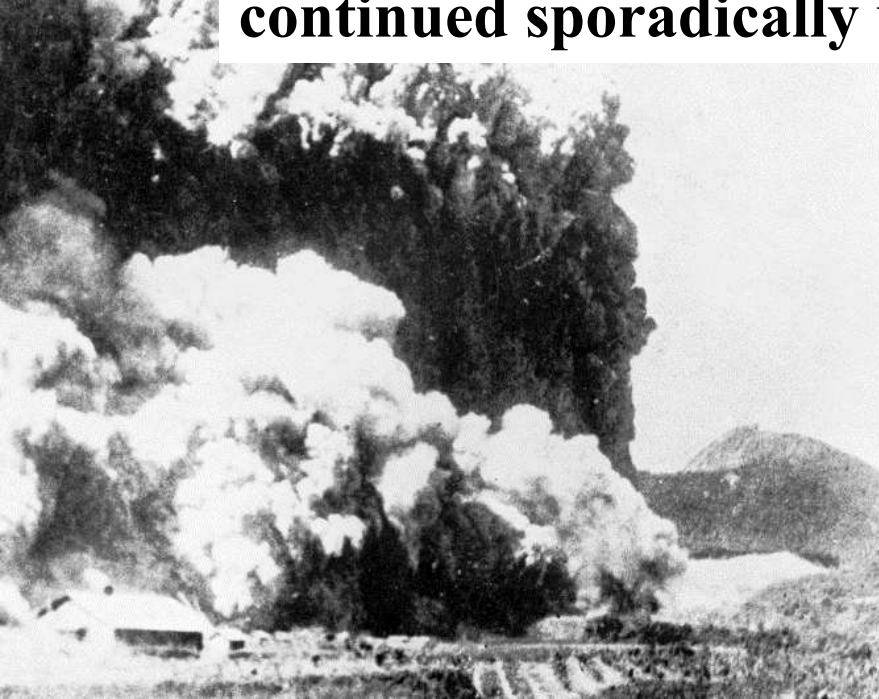
September 20, 1945

094

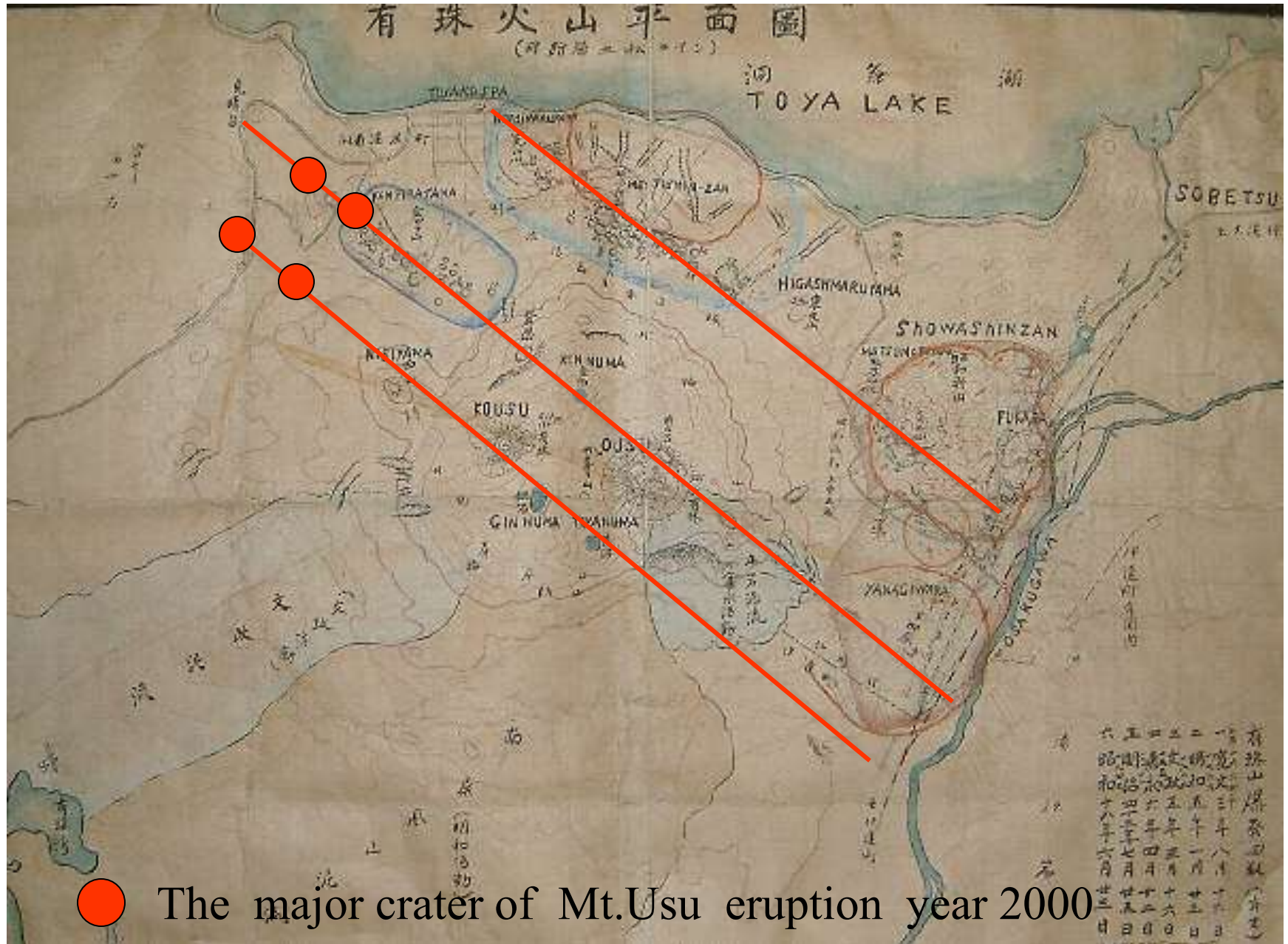




**The explosion occurred in a wheatfield on June 23, 1944, continued sporadically until the end of December .**



# Fault lines around Mt. Usu (Mimatsu Hypothesis 1948)



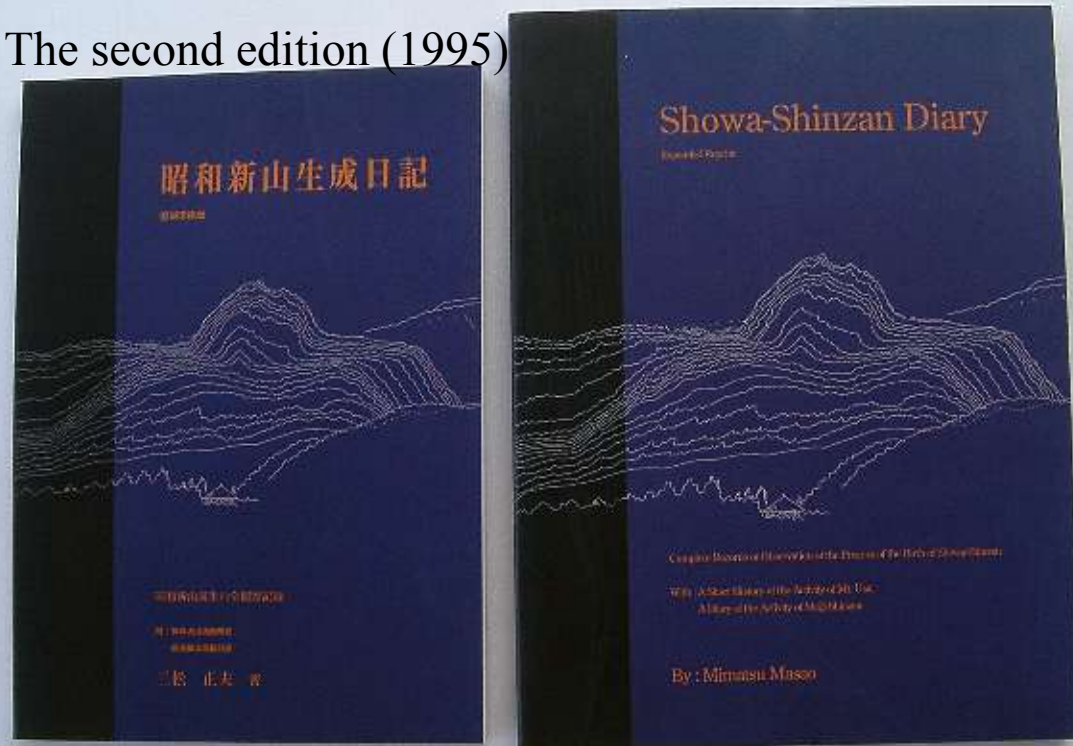


Full paper by Mimatsu, named “Diary of Mt. Showa Shinzan formation”, published 1962



**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**

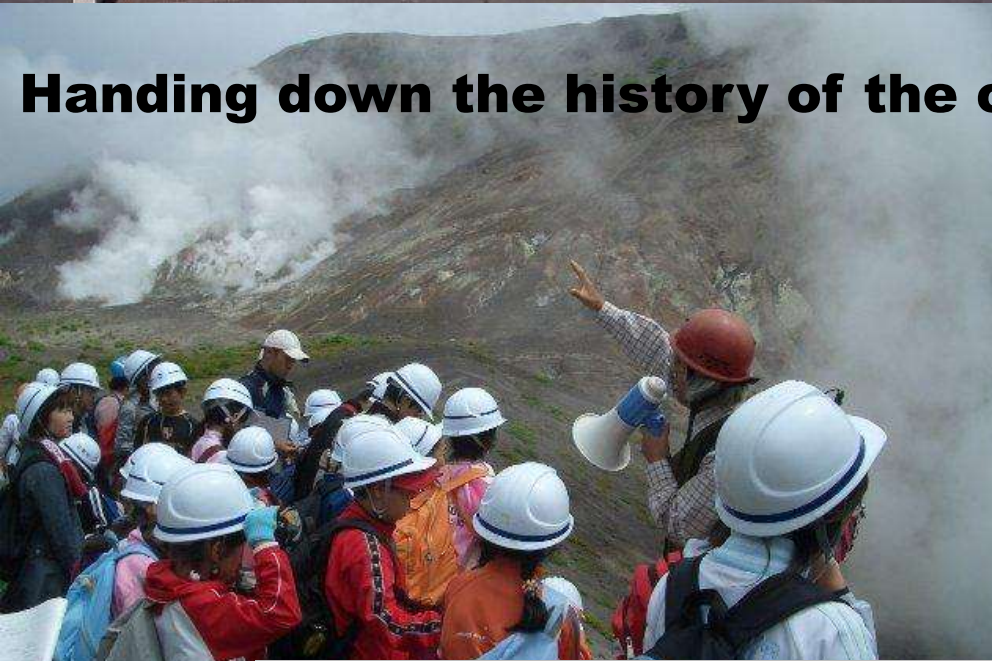


Promoted by Sobetsu Educational Boards  
Supported by Usu Volcano Observatory of Hokkaido University

**By reason of handing down the wisdom to the next generation**

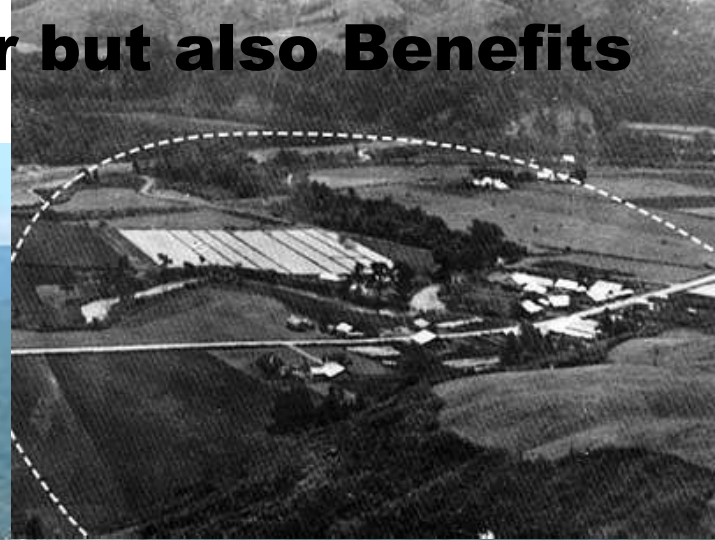


**Handing down the history of the coexistence with the volcano**



**The Field Learning Program for Kids Since 1983**

# The Eruption is not only Disaster but also Benefits



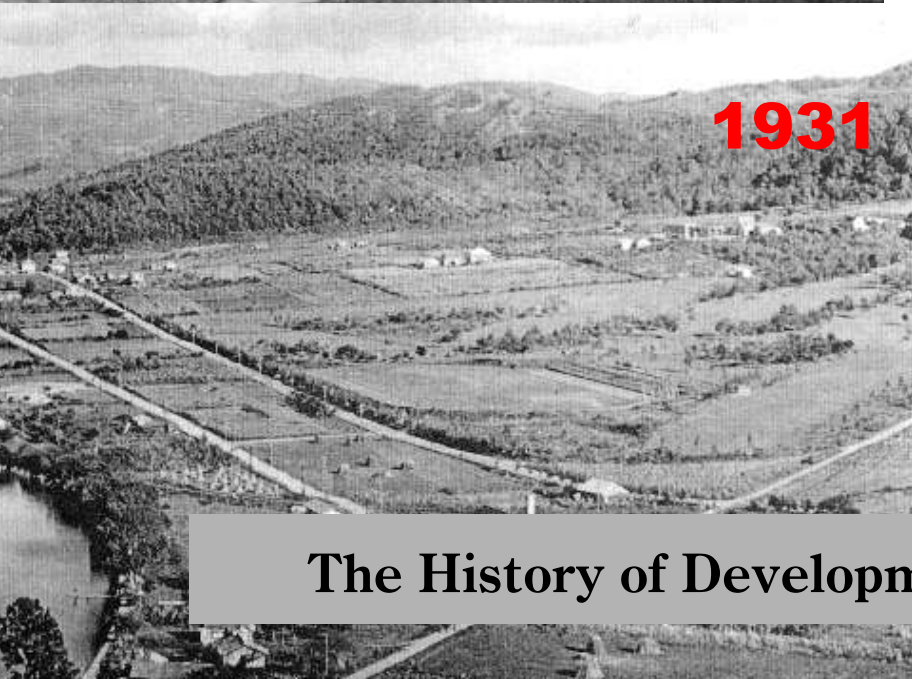
Destructive and regenerative  
power of the earth



**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



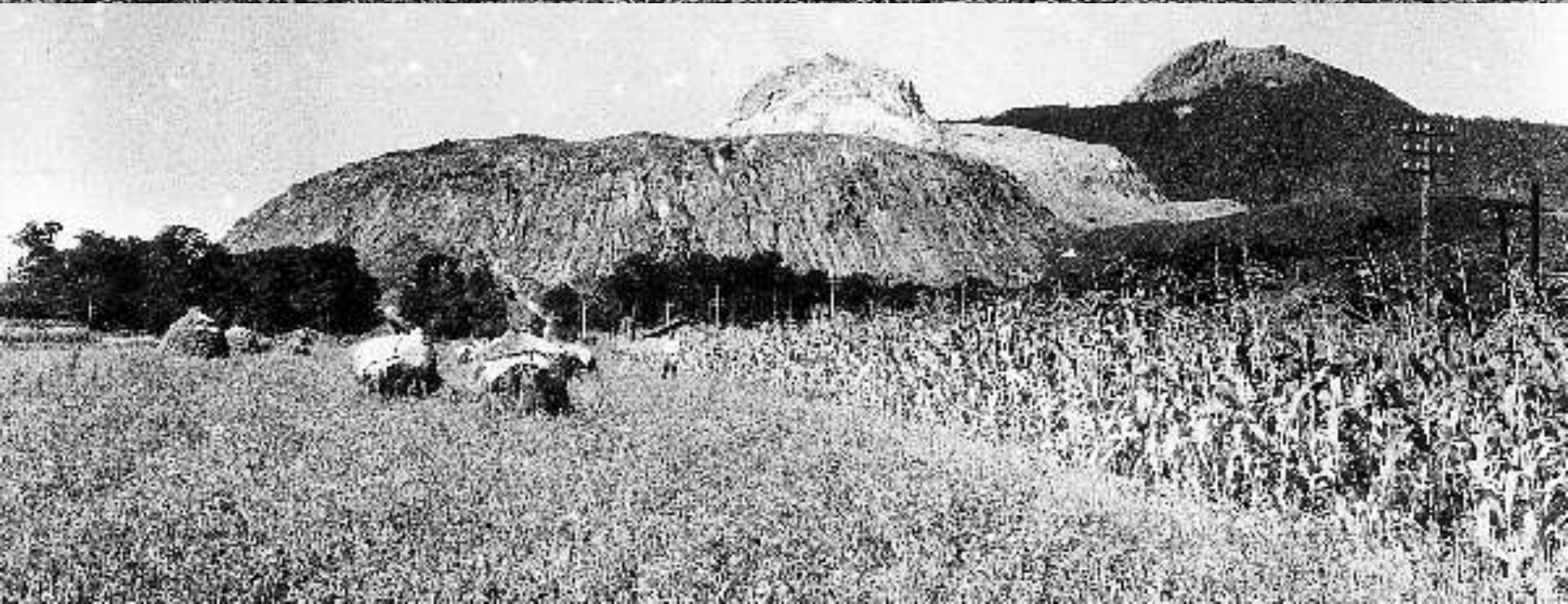
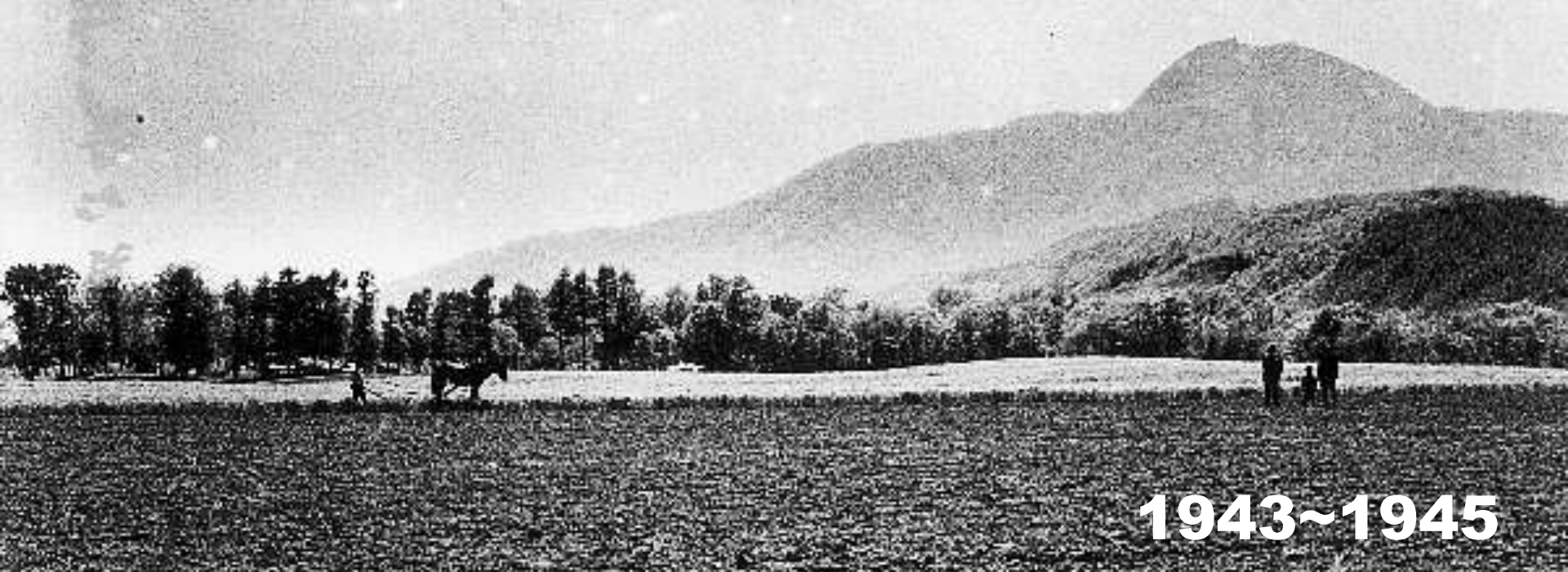


**On 22 August 2009,  
Toya Caldera and Usu Volcano  
Geopark was designated as the  
first Japanese Global Geopark**

**The concept of our Geopark**

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







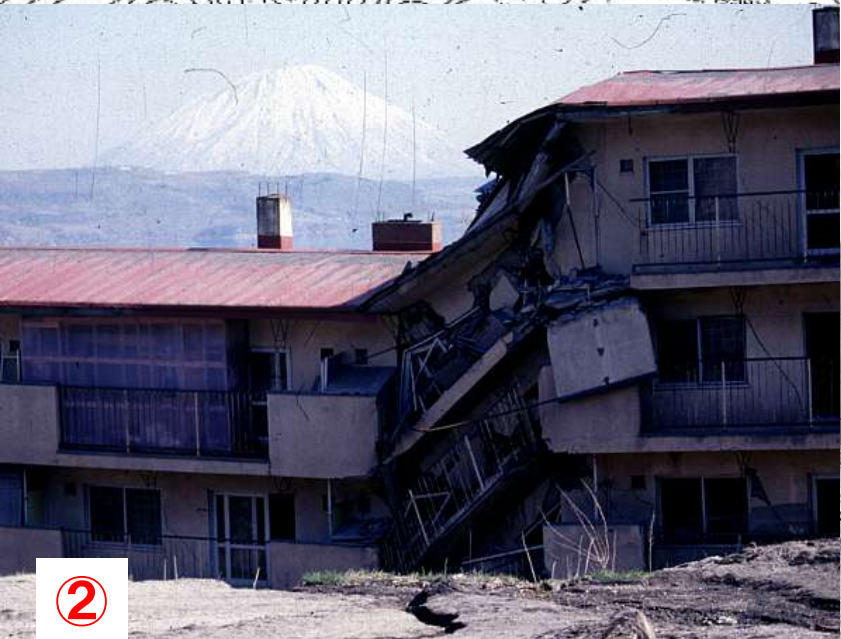
**1977~1982**



The map of the crustal movement in 1910 eruption.



Disaster Repeats!

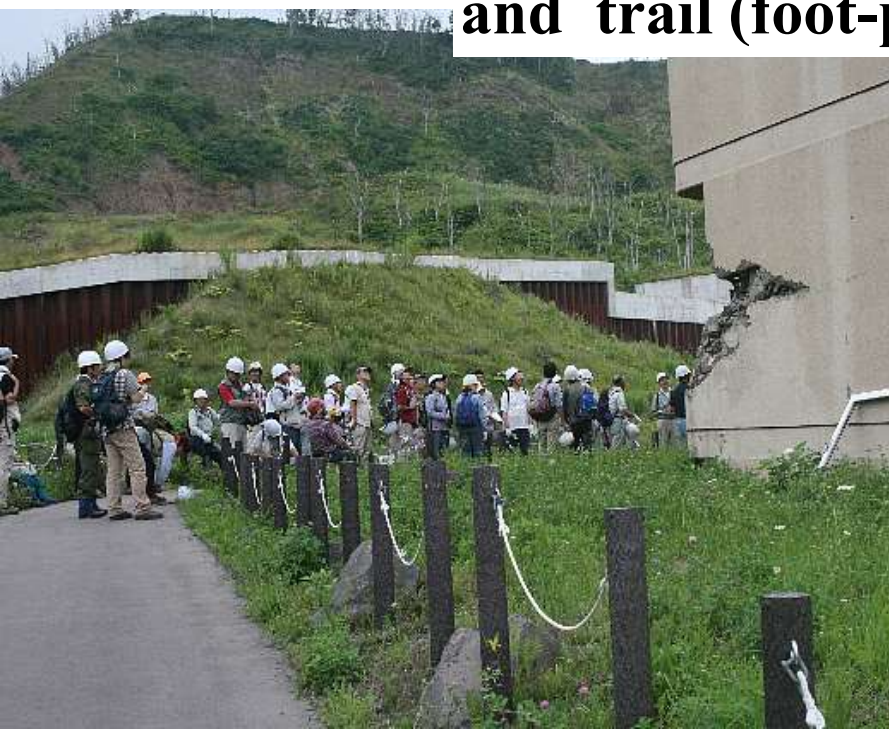


This big Hospital was crashed after crustal movement in 1977





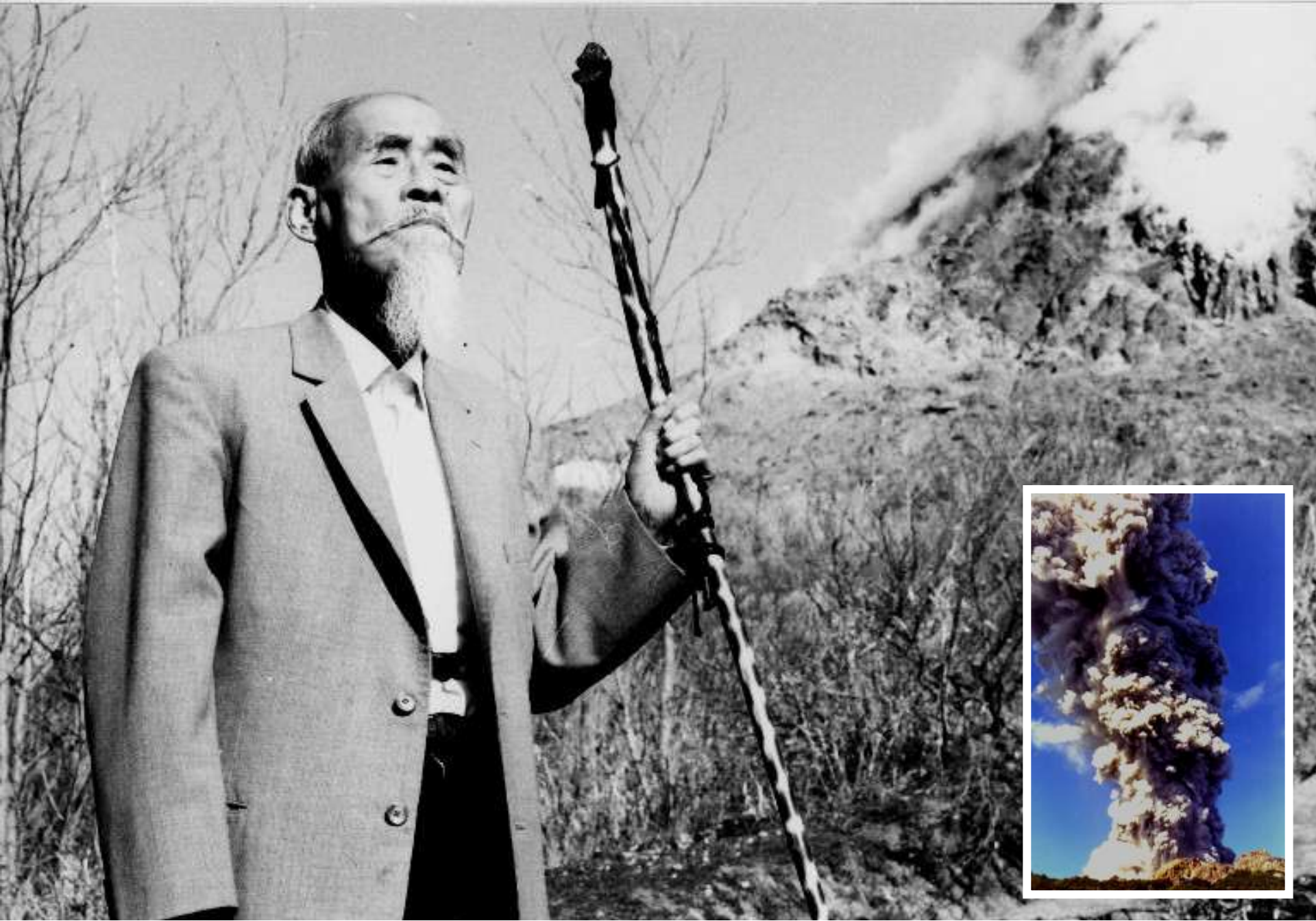
**The Geo-Heritage , 2000 eruption memorial park and trail (foot-path)**





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.**