



# Meinecke's dilemma!



CA Pest Council I & D tour, 18<sup>th</sup> July 2023



Photo  
B. Estes

The stump cambium is alive. Thus; **"This Stump is a logging wound on that Red Fir!"**



**Who was Meinecke ?**

**What was his dilemma ?**

**Emilio Pepe Michael Meinecke**, the first director of the Division of Forest Pathology in the Bureau of Plant Industry (later the division was transferred to USDA FS). Meinecke studied under **Robert Hartig** (The father of Forest Pathology).

*Spiniger meineckellus*

*Son of the German Consul General San Fran*

*5 languages*

***Emilio Pepe Meinecke 1869 - 1957***

Issued February 14, 1914.

U. S. DEPARTMENT OF AGRICULTURE,  
FOREST SERVICE,  
HENRY S. GRAVES, FORESTER.

FOREST TREE DISEASES COMMON  
IN CALIFORNIA AND NEVADA.

A MANUAL FOR FIELD USE.

BY

E. P. MEINECKE,

*Forest Pathologist, Bureau of Plant Industry.*



WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1914.

## Meinecke's diellema!

“*Fomes annosus* (pronounced fomeez) is considered in Europe one of the most dangerous forest fungi, and it is also destructive in the Eastern United states. Although at present apparently somewhat rare in California.”

1914

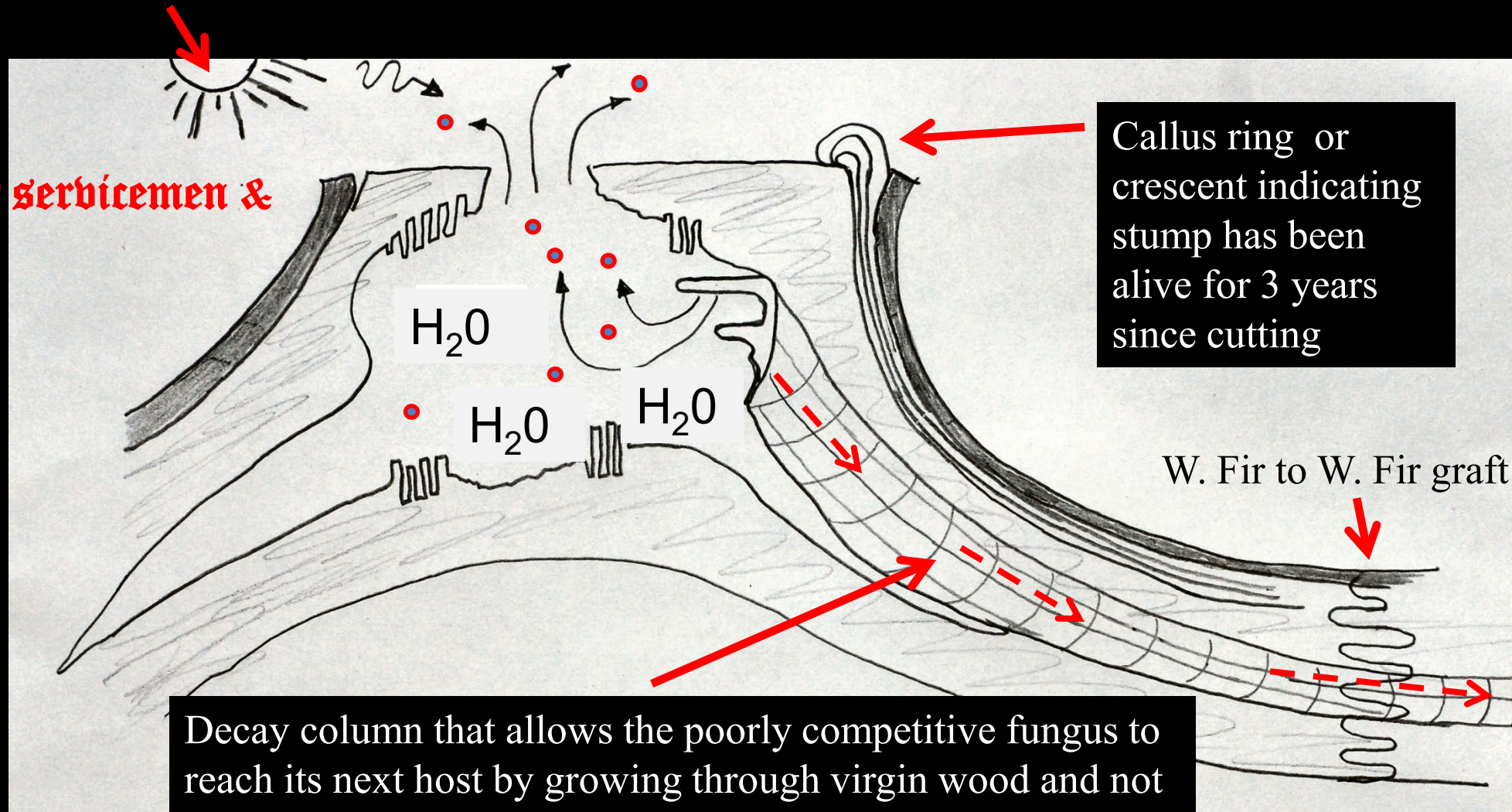
## *Emilio Pepe Michael Meinecke 1869 - 1957*

- **1909.** *Fomes annosus* was identified in the West for the first time 1909.  
Sat in a Gov't file until 1914.
- 1914.** The earliest field guide for foresters Meinecke's "*Forest Tree diseases common in California and Nevada.*" In 67 pages has one mention of Annosus.  
"*Although present apparently somewhat rare in California*".
- 1916.** "*Fomes annosus is not yet reported on white fir to the writer's knowledge*".
- **1946.** *Fomes annosus* a problem but extent not yet known (Wagener & Cave, 1946)

**What Changed in the true fir, post WWII ?**

(1) Sun warms the moist air in the decay chamber and the rising warm air carries the spores out, to be transported in the breeze to the next freshly cut stump.

Returning serbicemen &  
women  
Stumps!



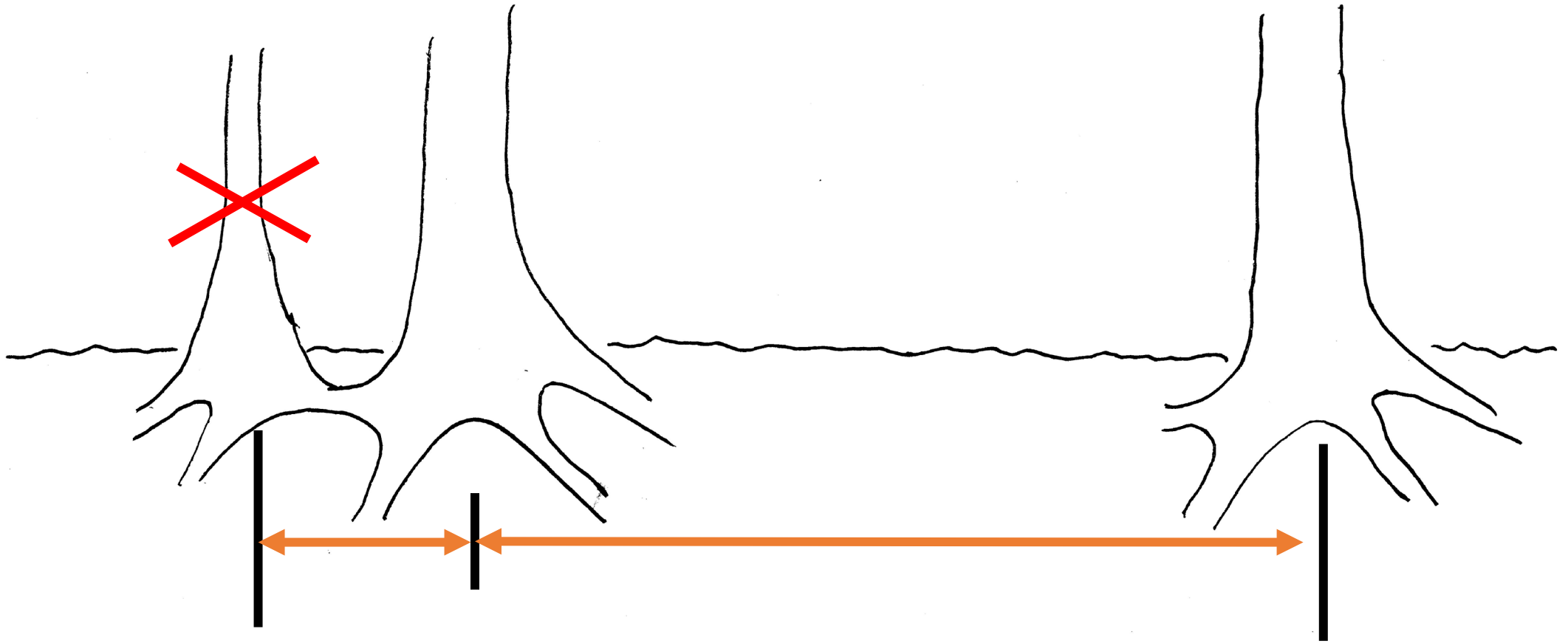
Callus ring or  
crescent indicating  
stump has been  
alive for 3 years  
since cutting

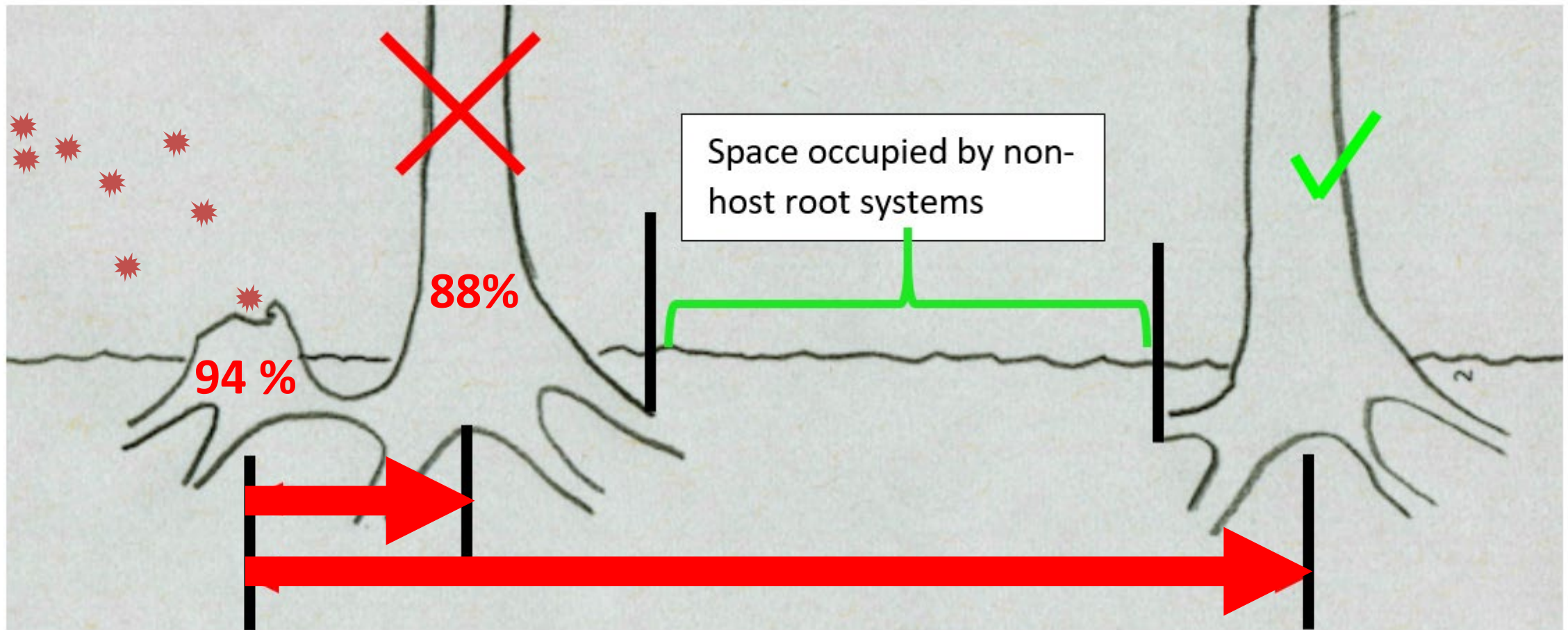
W. Fir to W. Fir graft

Decay column that allows the poorly competitive fungus to reach its next host by growing through virgin wood and not have to encounter antagonistic organisms.

*H. occidentale* on true fir

# Thinning a fir stand.





**Stump to closest Dead white fir tree.**

Average distance 2 ¼ ft  
Range 0- 8 ft

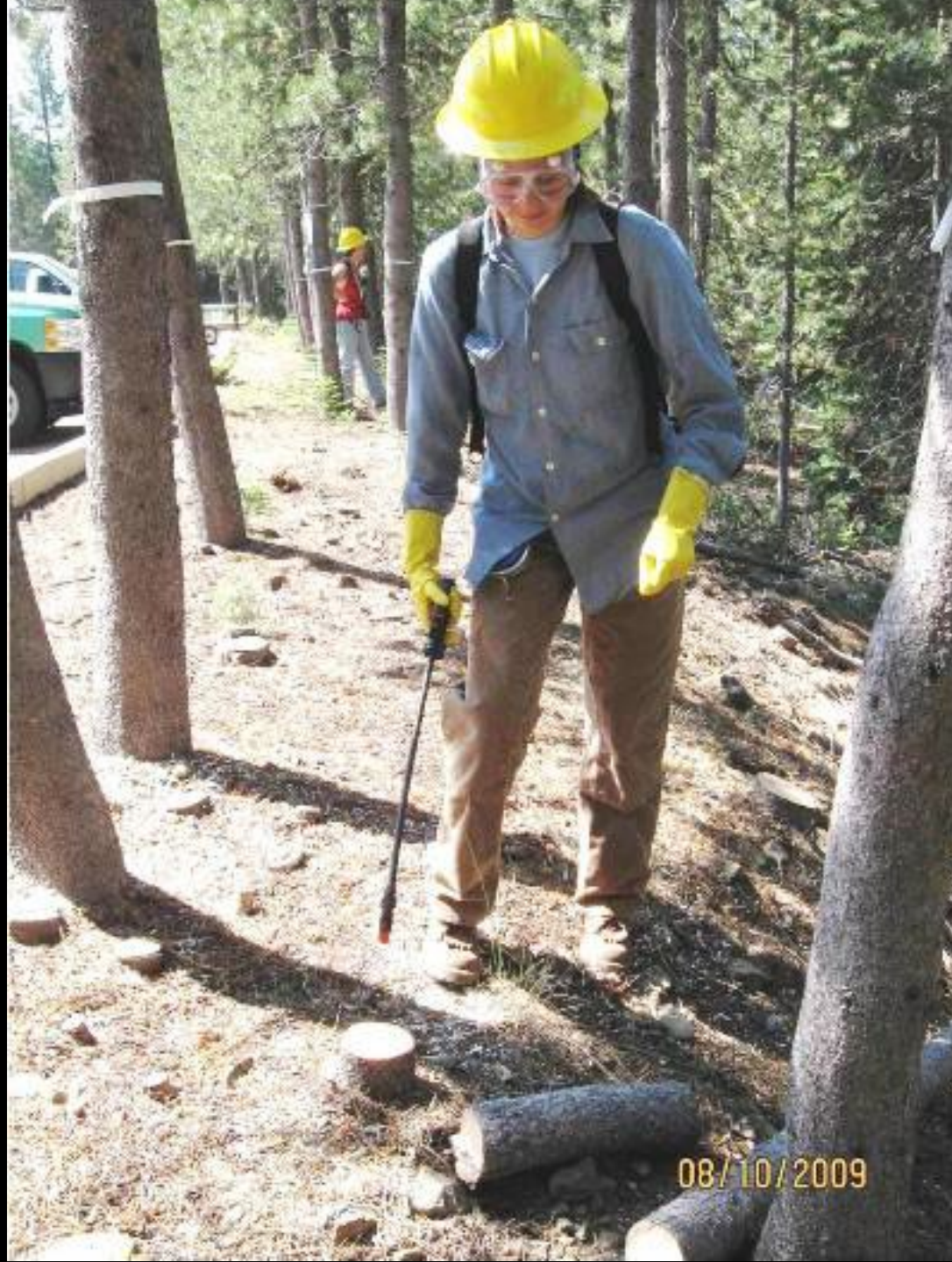
**Stump to the closest Living white fir tree.**

Average distance 32 ft  
Range 13 - >50 ft

Figure 1 Depiction of the results of surveying white fir stumps in the Cold Spring Project.



Cellu-Treat  
application on  
Plumas NF using  
back-pack sprayer



5% a.i. solution  
1 lb in 2 gals + dye  
Covers 400 sq ft  
= 500 x 12 inch  
stumps

## Summary of the *Meinecke Dilemma*

1. Fir Annosus (caused by *H. occidentale*) was rare at the end of WWI
2. Fir Annosus was common soon after the end of WWII  
Fir Annosus became more common as WF stumps became more common.
- 3 Today Fir Annosus is in outbreak in the white fir resource of the South Sierras
4. Today Fir Annosus is still uncommon in the Red Fir resource

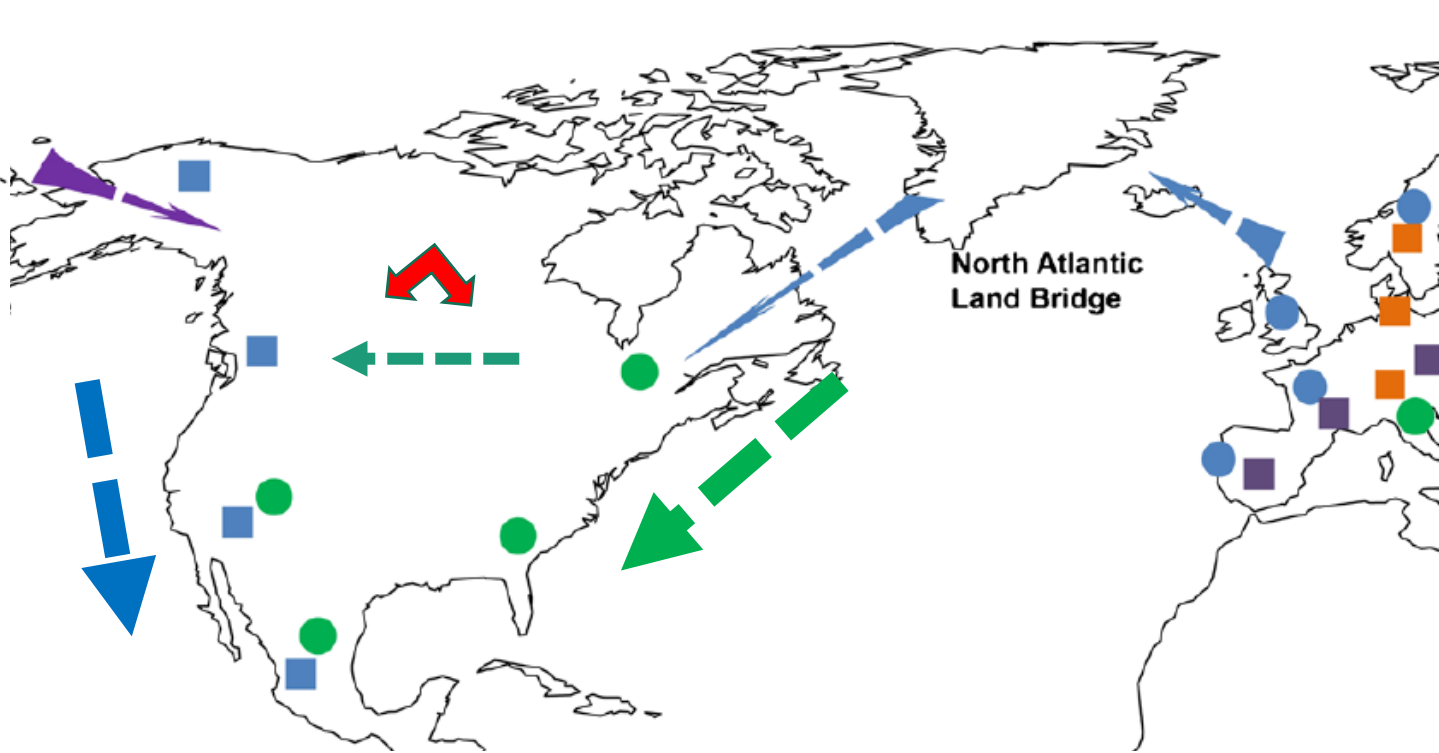
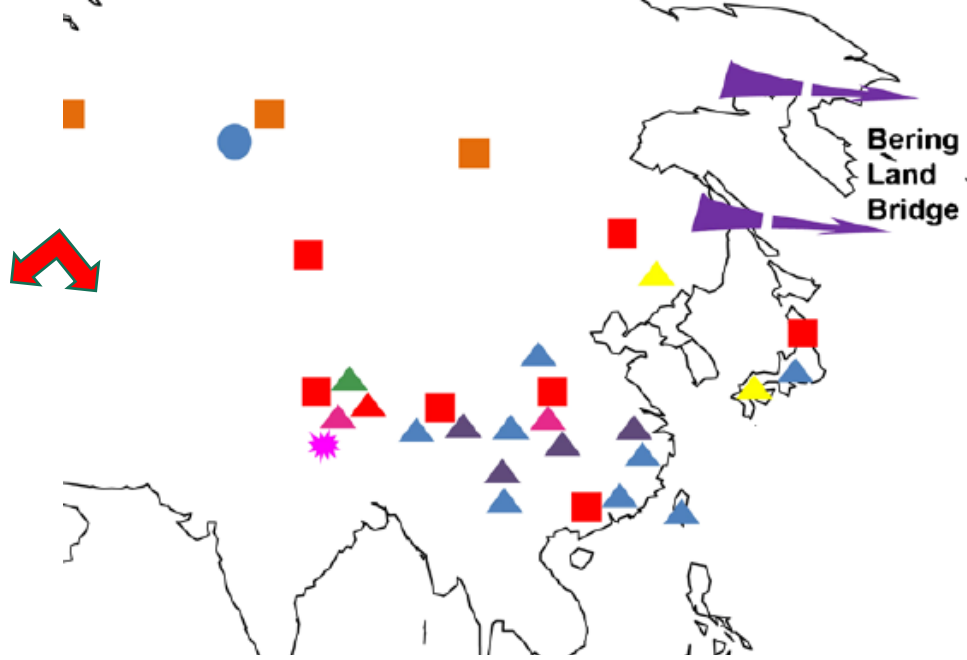
**To prevent this disease going into outbreak in the red fir resource we must; use stump dressings of either biocontrol agents or borates !**



Photo  
B. Estes

**"This Stump is a logging wound on that Red Fir!"**

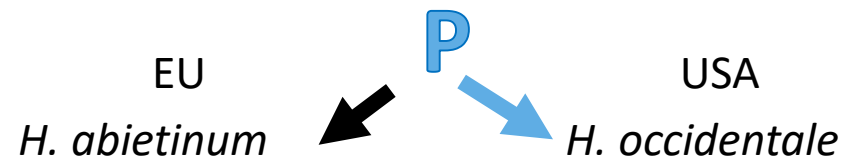




***Heterobasidion occidentale***

via the Eastern land bridge ■

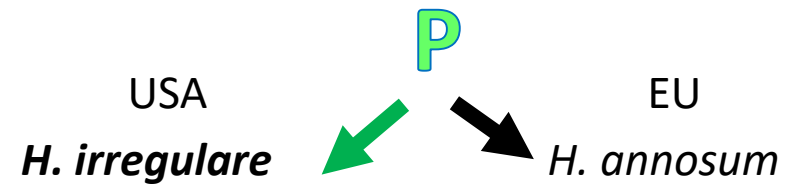
12 million yrs ago



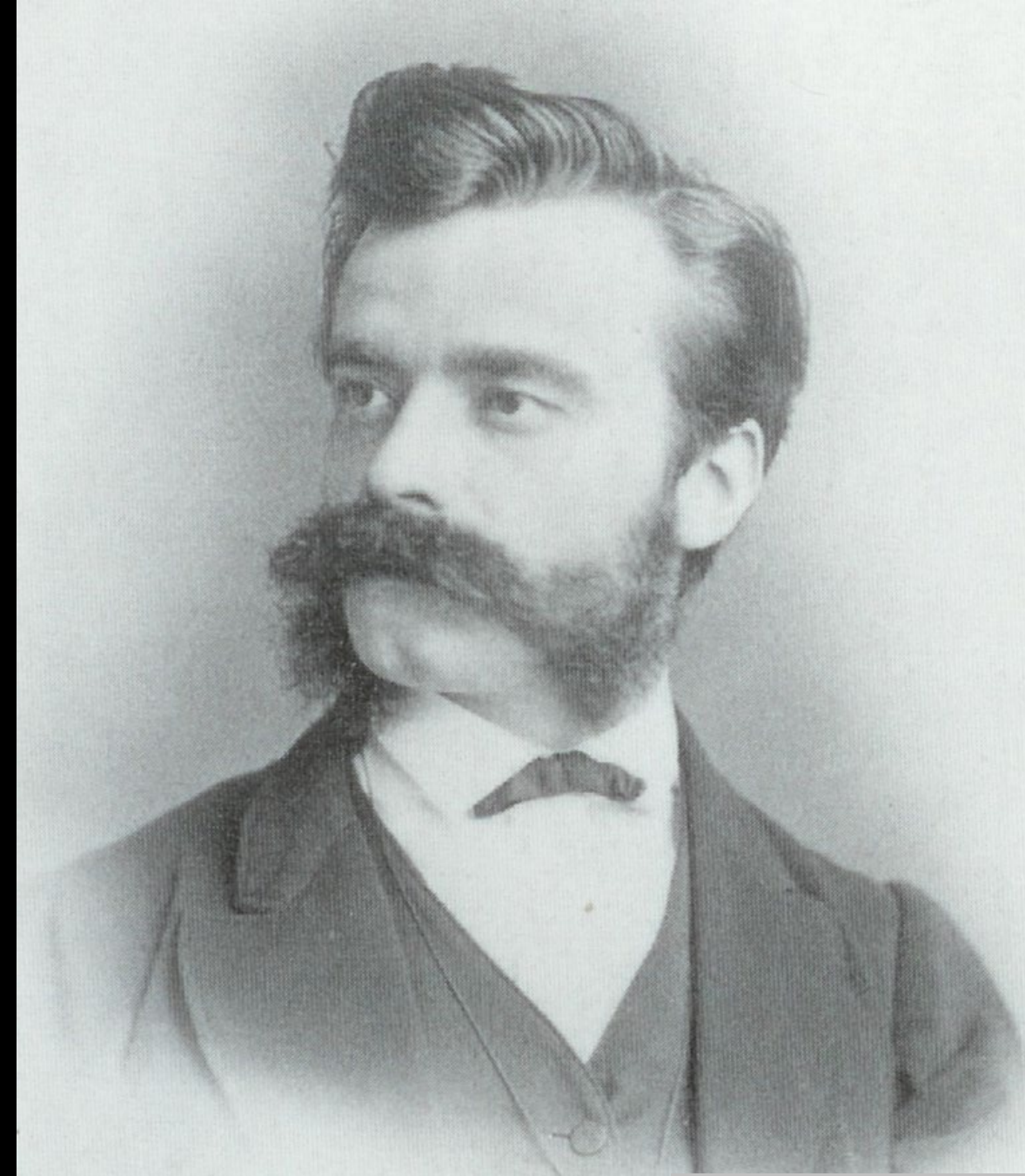
***Heterobasidion irregulare***

via the Western land bridge ●

35 million yrs ago







**Robert Hartig 1839 - 1901**



Major General Mark W. Clark commanded the 85<sup>th</sup> (Custer) Division of the 5<sup>th</sup> US Army captured the walled Presidential Estate at Castelporziano, Italy in June 1944.

The Custers had trained in MS, LA, & AL They left for Europe from Fort Dix in NJ. And took *H. irregulare* along with them, in their packing materials.





## Background

Emilio Pepe Michael Meinecke was born on July 26, 1869 in Alameda, California. The son of Charles Meinecke, the German Consul General in San Francisco, Emilio Meinecke returned to Germany and attended the Universities of Freiburg, Leipzig, and Bonn. In 1893, he completed a Ph.D. degree at Heidelberg with a dissertation on aerial roots in the Orchid family. In 1893, Dr. Meinecke remained an assistant in the Botanical Institute at Heidelberg. While at Heidelberg, Dr. Meinecke became interested in wine yeast and moved to Hansen's Laboratory in Copenhagen in 1895. In 1907, he accepted the position of Assistant Professor of Botany at the University de La Plata in Argentina until his return to California in 1909. In 1910 he was appointed to the Division of Forest Pathology Bureau of Plant Industry at the U.S. Department of Agriculture and was assigned as consulting pathologist for District 5 of the U.S. Forest Service, with headquarters in San Francisco. In 1928 he became consulting Pathologist for the National Park Service. He became member to the California Academy of Sciences in 1913 and Fellow in 1929. He served as the Academy's Corresponding Secretary from 1932 to 1937. From 1937 to 1944 he served as the Academy's second Vice President and from 1945 to 1946, he served as its First Vice President. Amongst his writings: Forest Tree Diseases Common in California and Nevada, a field manual published in 1914; Forest Pathology in Forest Regulation, a bulletin that appeared in 1916; Die Hefe, a manual about wine yeast was written by Dr. Meinecke along with Edmond Kayser in 1898. Dr. Meinecke, a leading authority on plant disease and forestry, died on February 10, 1957 at Notre Dame Hospital. In addition to his scientific talents, Dr. Meinecke was said to be an excellent cook, gardener, painter, figure skater and skier. He also had an excellent command of English, German, French, Spanish, and Danish.