# Air Layering: old practice with new system for Tropical Fruits and Native Plant Preservation

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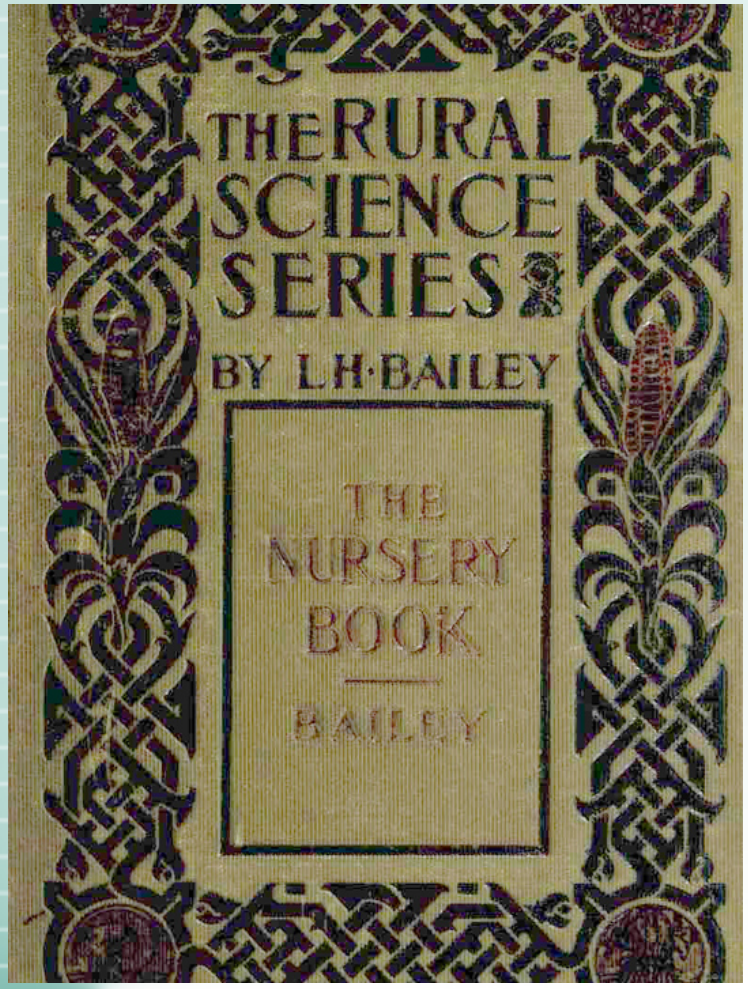
Tropical Plant and Soil Science

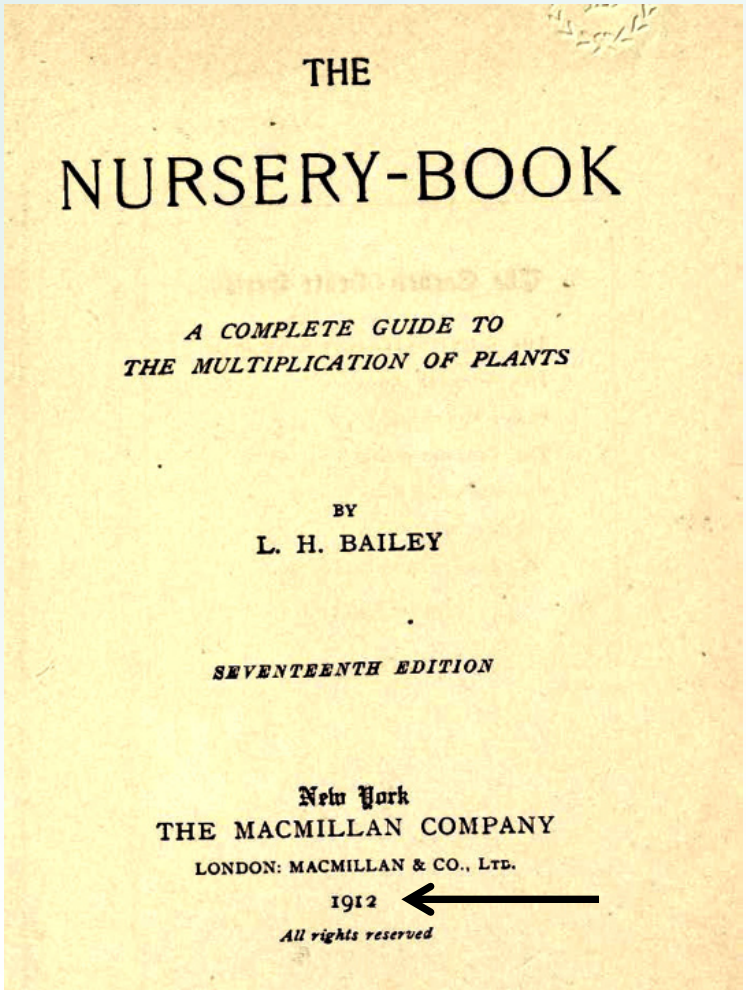
# Topics Covered

- What is air-layering
- Review of air layer art in patent records
- Study species for improved air layer method
- Air layering for international fruit breeding exchanges and native plant preservation

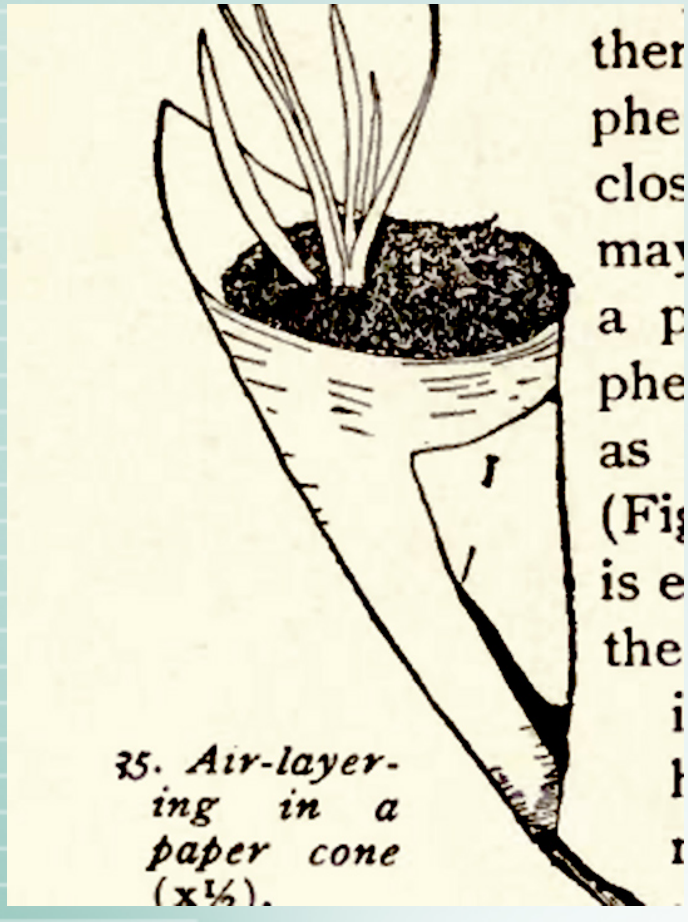
# What is Air-layering

## Liberty Hyde Bailey – 1858 - 1954



# What is Air-layering



35. Air-layering in a paper cone (x½).

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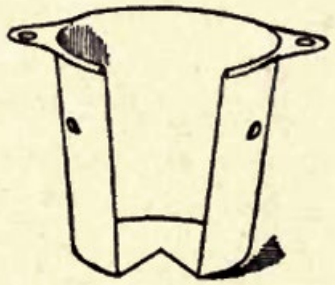
34. Pot-layerage.



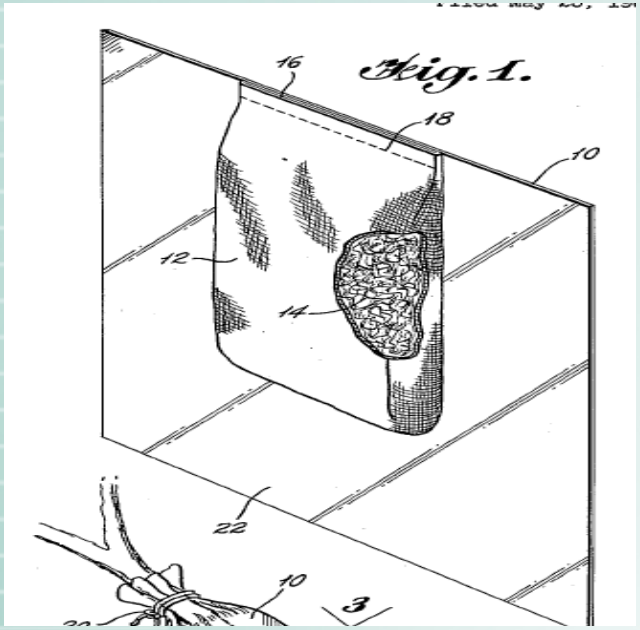
38. Layering-cup.

pot, provided with
ide to receive the

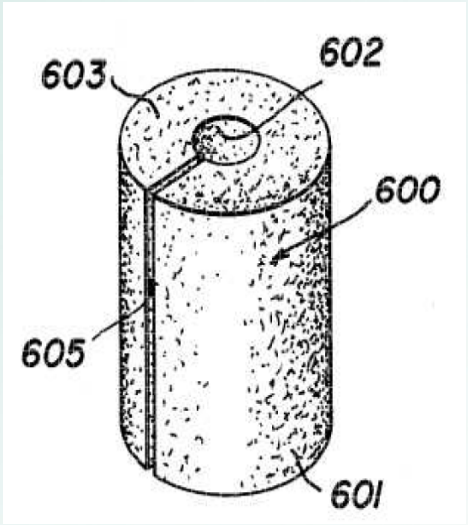
39. Layering-cup.

# Review of air layer arts

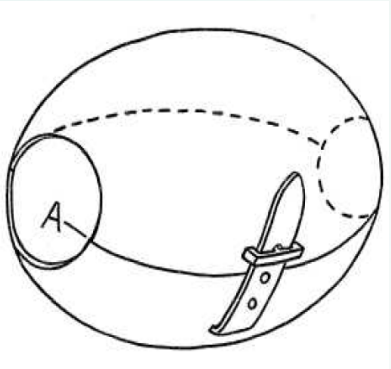
**Cotton gauze bag attached to clear plastic sheet**

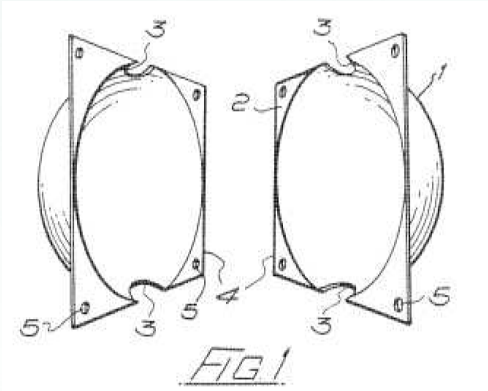



**Slit tube of hydrophilic polymer as growth media**




**Plastic shell w/clasp filled with growth media**



# Standard view of air layering

1. Time consuming to prepare moss on film strips
2. Sealing ends w/string caused inconsistent results
3. Ants invaded moss and caused rots
4. Opaque film = Uncertainty of root formation
5. Working off the ground, hard to apply film wraps

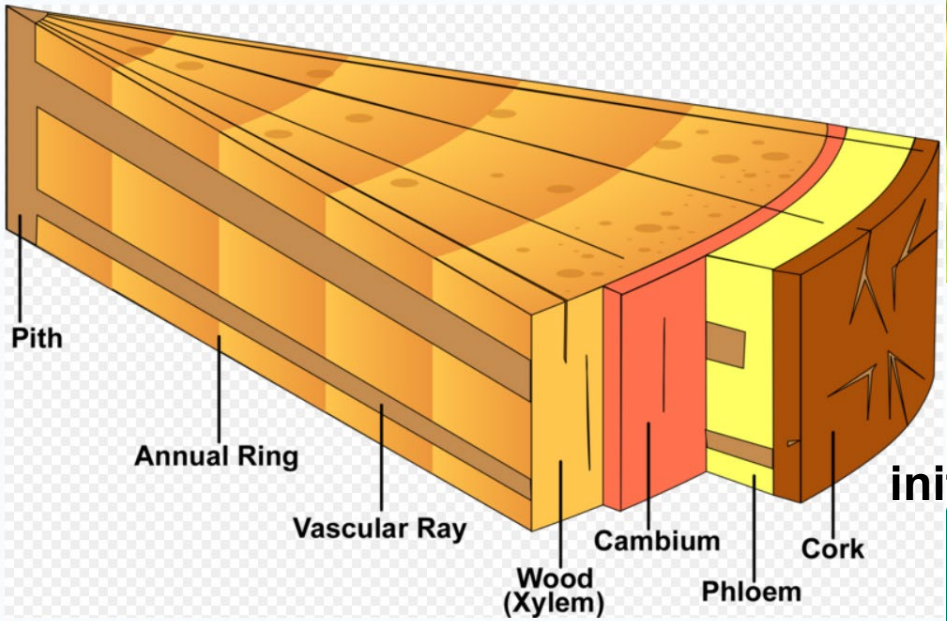
## Woody stem is ready to air layer ?

## Insure active growth and barks slips easily

**Fruits and flowers = not optimum growth stage for air layering**

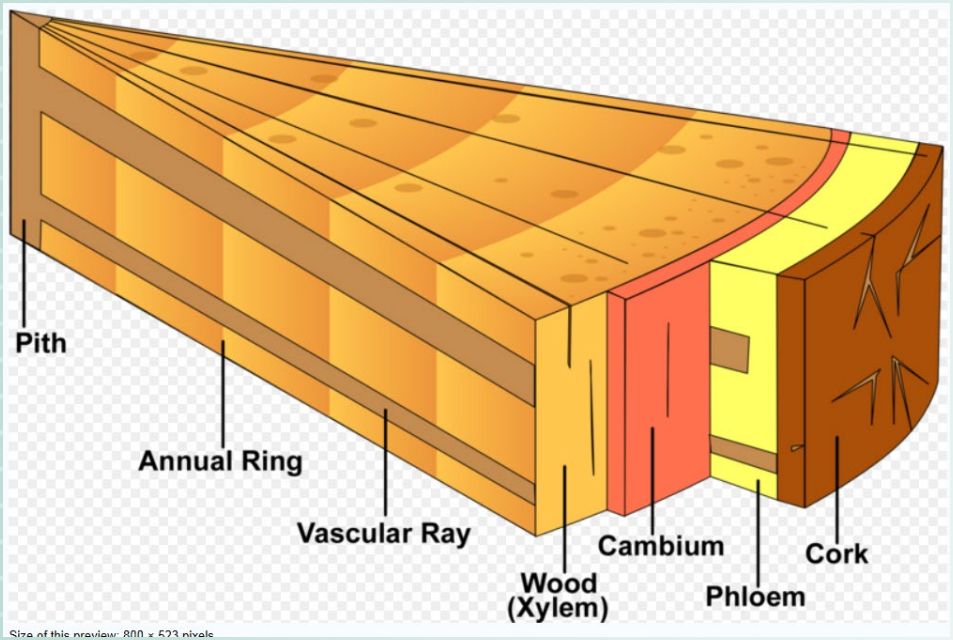
## Woody stem is ready to air layer ?

## Insure active growth and barks slips easily




**Remove cambium layer to prevent reconnection of phloem. Block need to retain hormones and nutrients at root initiation zone. Need to expose woody stem**

## Groves increase surface area for hormone action




- Cut through cork (bark) and cambium layers at a angle with serrated knife
- Angled cut insures exposure of proper stem layer for hormone induction of root growth.
- Serrated knife provides maximum hormone surface area with groves from knife

Use a brush to apply hormone powder to groves in stem at the root initiation zone

0.8% Indol -3- butyric acid (Hormodin 3)

Fill net sack with sphagnum moss, for hands free film application

Set size known stem diameter

Long media sack for branches of various size

Increase root volume with multiple wrappings around the stem.

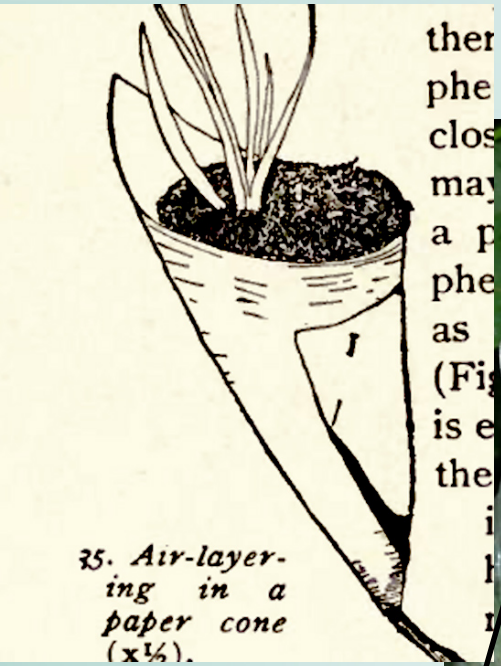
# Sevin 5% Dust applied to sphagnum moss rooting media to prevent ant invasion which reduce air layer success



## ORNAMENTAL SHRUBS AND FLOWERS

For outdoor use only. To kill bagworm, blister beetles, boxelder bug, boxwood leafminer, flea beetles, Japaneese beetle, lacebugs, leafhoppers, leafrollers, periodical cicada, plant bugs, psyllids, rose aphid, rose slug, scale insects in the crawler stage, tent catepillars and exposed thrips, apply thoroughly to the infested plants at the first sign of damage. Do not repeat application more than once weekly or more than 6 times per year. For best results on scale, apply in spring and early summer when scale crawlers are present.


Shrink wrap secures media for strong root growth, chop stick inserted into the net sack provides a path for water drainage




**Opening at top side accommodates stem swelling during root formation requires ant control and drainage**

## Removed from mango 03/18/11

## Estb. 07/07/11

## Estb. 07/07/11

**Prolific root growth and flower production allows for Bench-top pollination & breeding exchanges**

Air layering to recover elite Koa/Ohia germplasm to establish accessible seed nurseries

## Koa root sucker

## Koa layer w/roots

Koa Layer in ground

# For more information on topics covered

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