



#### HOME COMFORTS IN ANCIENT EGYPT

*Spacious, well-planned, with plenty of rooms, this house of an Egyptian official of 3300 years ago had bathrooms and other modern conveniences.*

#### BOTANY

## Tree-Ring Evidence Sure as Fingerprints

CHARACTERISTIC as fingerprints, and as impossible to duplicate, are the tree-ring markings on which the State of New Jersey has placed much dependence in its effort to prove that essential parts of the fatal Lindbergh ladder were made of a piece of lumber taken from the attic in Bruno Richard Hauptmann's house. If the tree-rings match point for point in the cut ends of two pieces of wood there can be but one conclusion: the two pieces of wood were originally one piece.

Duplicating details of tree-rings can belong only to one piece of wood, and only to one place in that one piece, because tree rings record the whole life story of the tree. Each spring, when water is plentiful in the soil, the living cells beneath the tree's bark lay down a layer of large tubes (large in a microscopic sense, at least) to carry the rising sap. Each summer, when water becomes scarcer, or for other reasons the tree slows down its growth rate, a layer of smaller tubes is formed. The next spring's sudden beginning of a new cycle lays down another layer of large tubes appear as "grain"; their cut ends making a sharp contrast.

When the tree trunk is turned into finished lumber, the sides of these alternating bands of large and small sap

tubes appear as "grain"; their cut ends as "rings."

No tree ever produces a set of rings exactly like those of another tree, not even its nearest neighbor of the same species. There will be tiny differences in width here and there, according to the depth of the mass of tubes laid down in response to slight variations in water supply or other life-experiences of the tree. It is these slight variations in width and shape of rings that makes them as sure as means of identification of the particular piece of wood as are the ridges and grooves on the finger-ends of a man.

But the unique identity of each tree-ring group goes further than that. Just as the arrangement of pores, tiny hairs and other microscopic details among the ridges and grooves of a fingertip belong to exactly that ridge on that fingertip and to no other, so the minute pore-pattern on the end of a piece of wood belongs to just that spot on that ring and cannot be reproduced anywhere else in the universe. This is partly because the sap tubes in a tree are not evenly round like water-pipes, but crowded by the pressure of their neighbors into a somewhat irregular honeycomb pattern, which never repeats itself.

Thus it becomes possible to match

not only wood rings or parts of rings, but within any given ring to count numbers and compare shapes on the cut ends of the crowded sap tubes. An identification of a piece of wood reached by these means is as certain as anything that was ever done with human fingerprints.

*Science News Letter, February 2, 1935*

#### ANIMAL HUSBANDRY

## Soviets Start Chain of Arctic Reindeer Ranches

SOVIET authorities have taken steps to get more use out of the vast reaches of treeless tundra that slopes to the Arctic, across the whole of Eurasia, from the White Sea to Bering Straits and beyond to Kamchatka. Seventeen reindeer breeding ranches have been established, with a total of 167,000 head of stock.

Among the students at these ranch schools, there are many members of the hitherto backward northern peoples, including Evenkes or Tungus, Nentzi and Komi.

*Science News Letter, February 2, 1935*

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