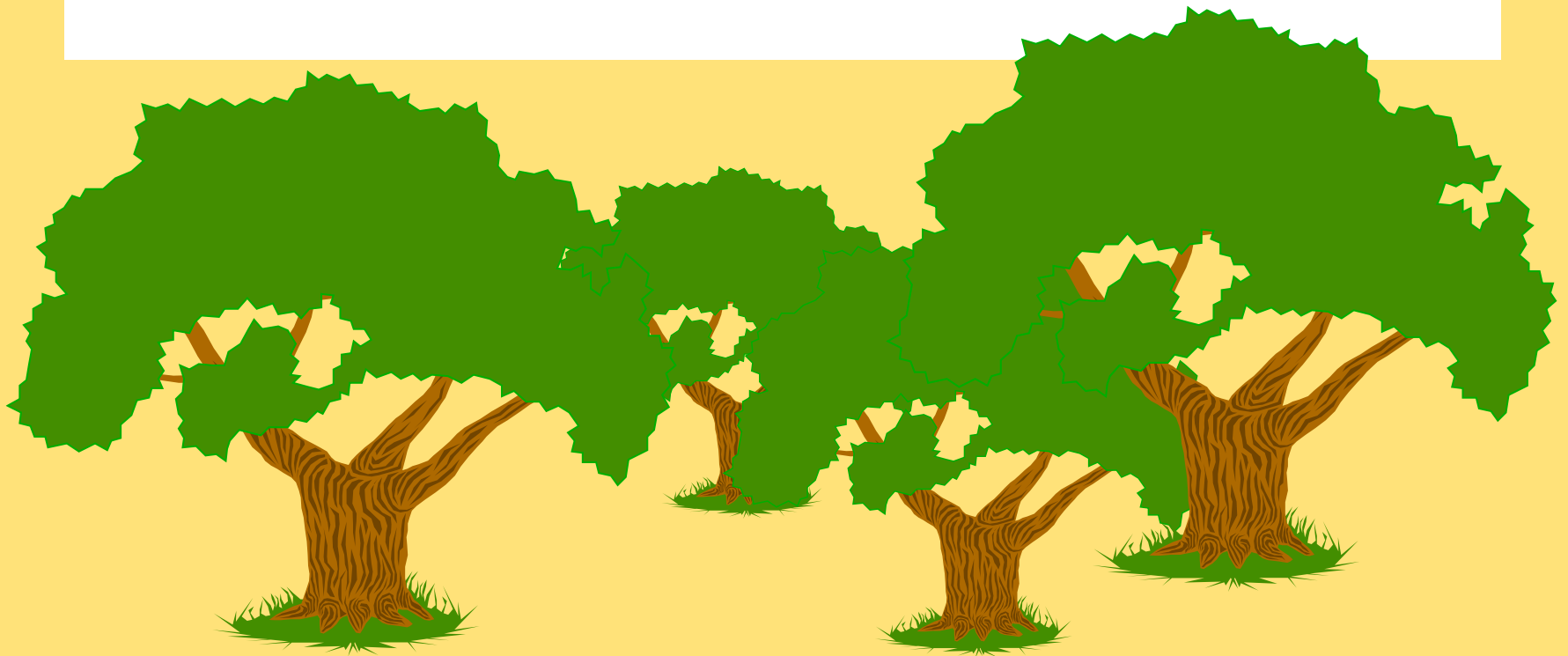


# **Specificity of the cork oak system in PORTUGAL**



# Specificity of the cork oak system

- ✘ **Cork oak stands are a very peculiar forestry system:**
  - the stands have a relatively small number of trees per ha (sparse forest)

<b>Strata</b>	<b>Area (10<sup>3</sup>ha)</b>	<b>N trees ha<sup>-1</sup></b>	<b>G (m<sup>2</sup>ha<sup>-1</sup>)</b>	<b>Crown cover</b>
<b>Pure</b>	<b>580</b>	<b>67</b>	<b>5.89</b>	<b>24</b>
<b>Mixed</b>				
<b>dominant</b>	<b>90</b>	<b>46</b>	<b>3.75</b>	<b>15</b>
<b>non-dominant</b>	<b>104</b>	<b>49</b>	<b>3.90</b>	<b>16</b>

# Specificity of the cork oak system

✘ **Cork oak stands are a very peculiar forestry system:**



# Specificity of the cork oak system

✘ **Cork oak stands are a very peculiar forestry system:**





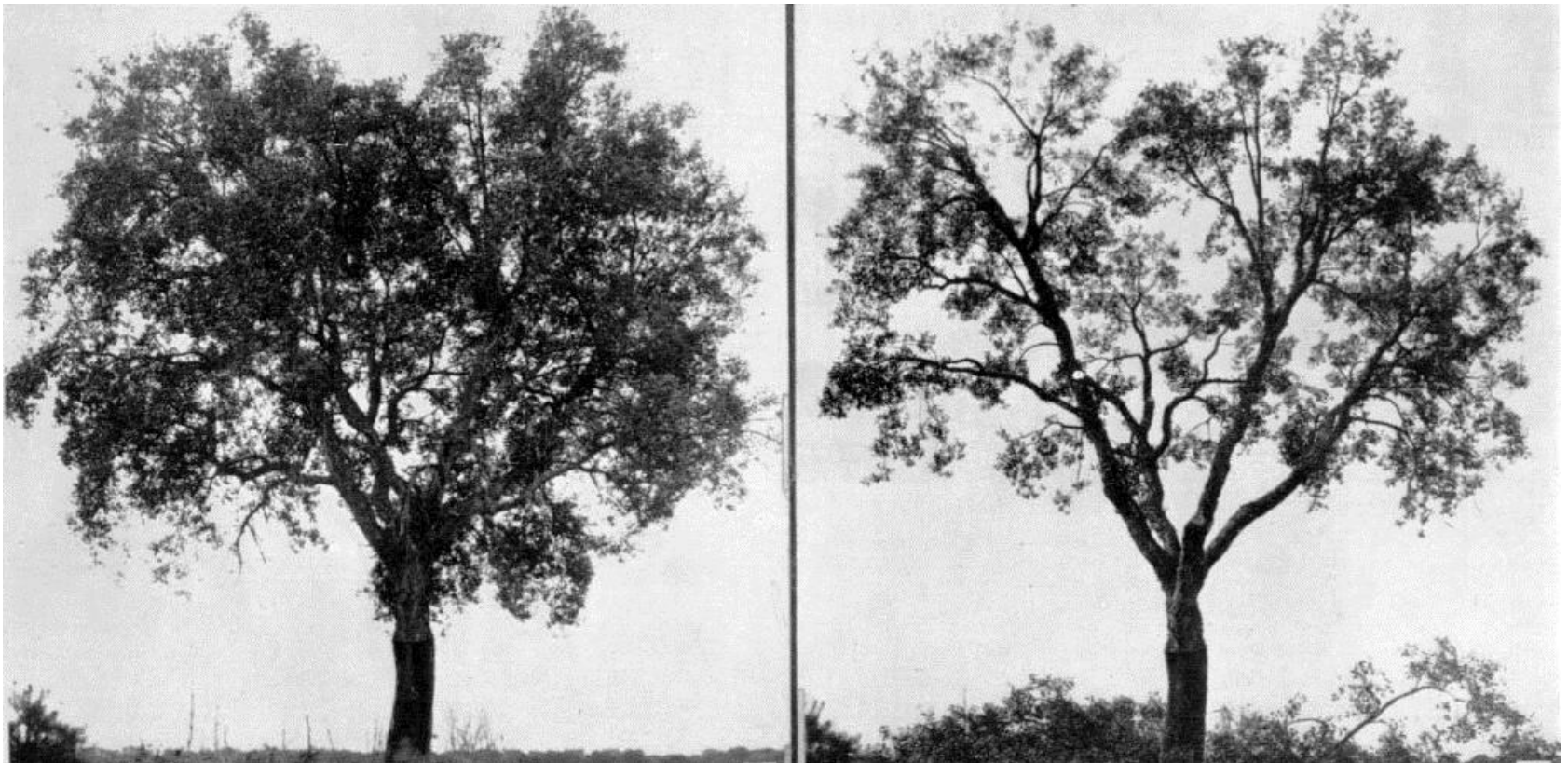
# Specificity of the cork oak system

✘ **Cork oak stands are a very peculiar forestry system:**



# Specificity of the cork oak system

✘ **Cork oak stands are a very peculiar forestry system:**





# Specificity of the cork oak system

✘ **Cork oak stands are a very peculiar forestry system:**



# Some information about cork

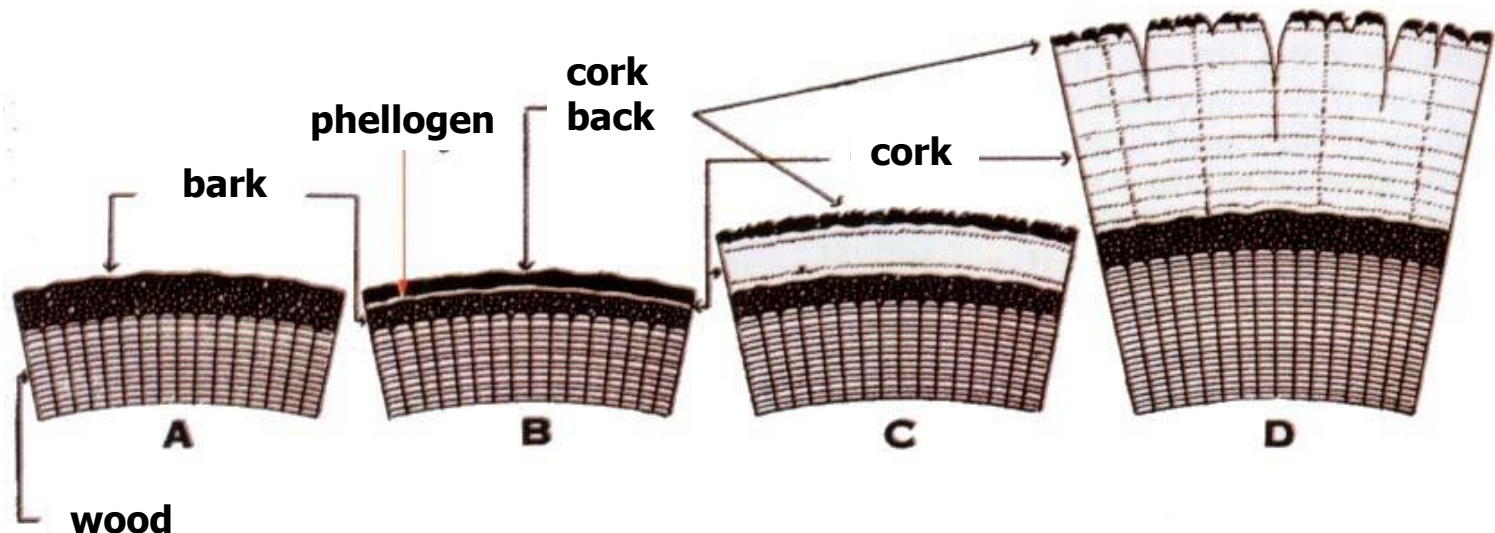
- ✘ **Cork is a thick and continuous layer of suberised cells, produced by the meristematic cork cambium (phellogen), which makes up the external envelope of stem and branches**
- ✘ **Usually the first cork layer is removed when the tree attains an over bark perimeter at breast height of 70 cm (between 20-40 years of age) – “virgin cork”**
- ✘ **At that time the maximum legal height for debarking is 2 times the perimeter at breast height (debarking coefficient = 2)**





# Some information about cork

- ✘ The cork cambium is destroyed during the cork stripping process but the sustainability of production is ensured because the species has the ability of regenerating a new cambium in the inner part of the bark



# Some information about cork

- ✘ After the first debarking the new phellogen starts producing new layers of cork cells, originating the “second cork”, being cork cells production higher in the years immediately after debarking
- ✘ In most regions, 9 years of cork growth allow to obtain a thickness suitable for the production of cork wine stoppers
- ✘ The maximum legal height for second cork debarking is 2.5 times the perimeter at breast height (debarking coefficient = 2.5)





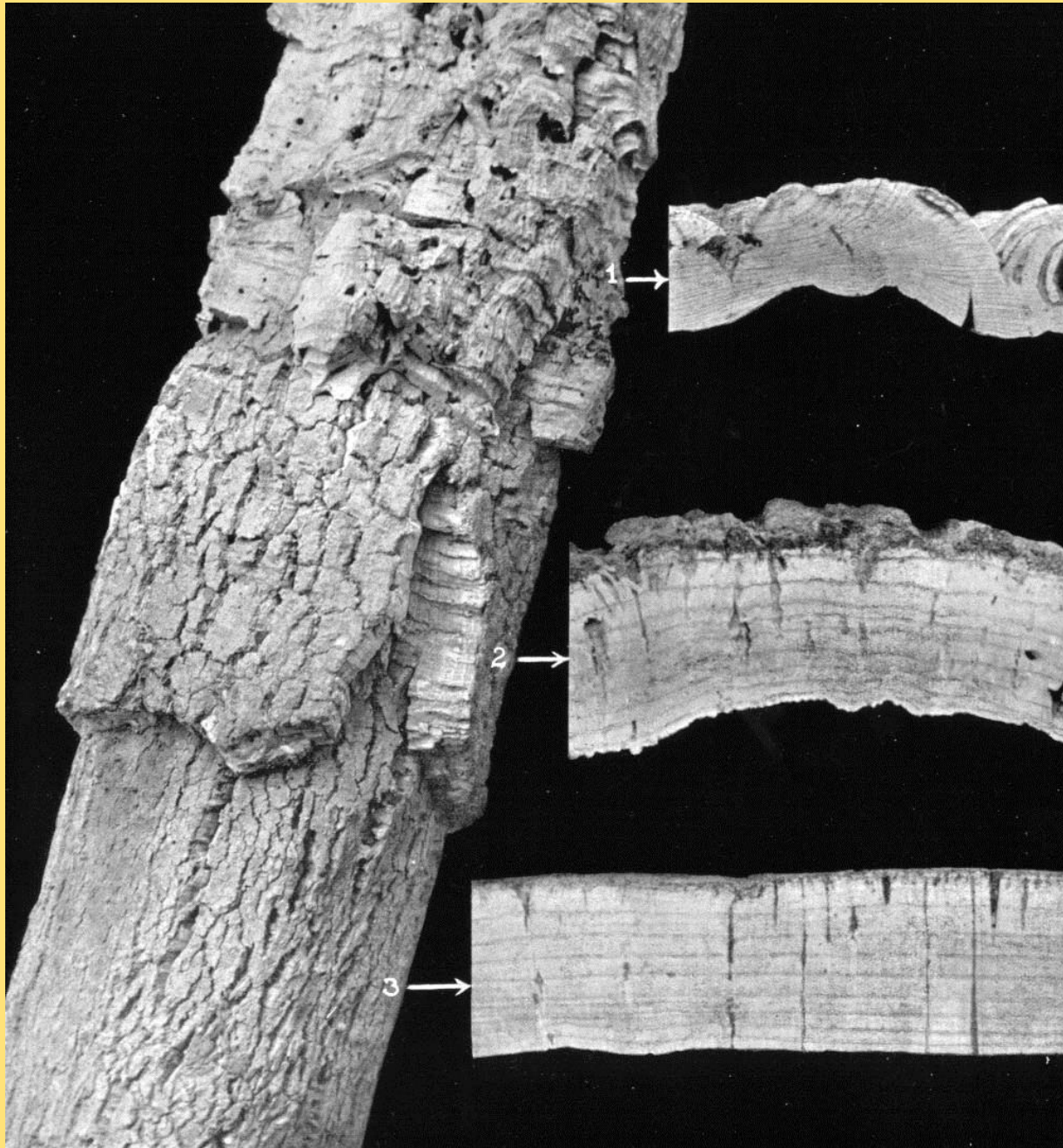
**Virgin cork**

**Second cork**



# Some information about cork

- ✘ After the extraction of the second cork, a new phellogen is again regenerated, cork properties stabilise in the following extractions – “mature cork”
- ✘ Maximum legal height for mature cork debarking is 3 times the perimeter at breast height (debarking coefficient = 3)
- ✘ Mature cork is extracted periodically (9 years is the most common rotation period) and the process can be sustained until the tree is quite old, sometimes 150-200 years



**Virgin cork**

**Second cork**

**Mature cork**









**Range of tree production per harvest**

**7 - 11 kg / m<sup>2</sup> debarked area**

**Up to 150 kg per tree in one harvest**





**After extraction, the cork is usually stored in the farm in large stacks**



- ✘ **The raw cork is then transported to the mill where it will be processed**
- ✘ **Time between harvest and processing is about 6-8 months**
- ✘ **Before processing cork is treated with boiling water in autoclaves at ambient pressure during 1 hour**



