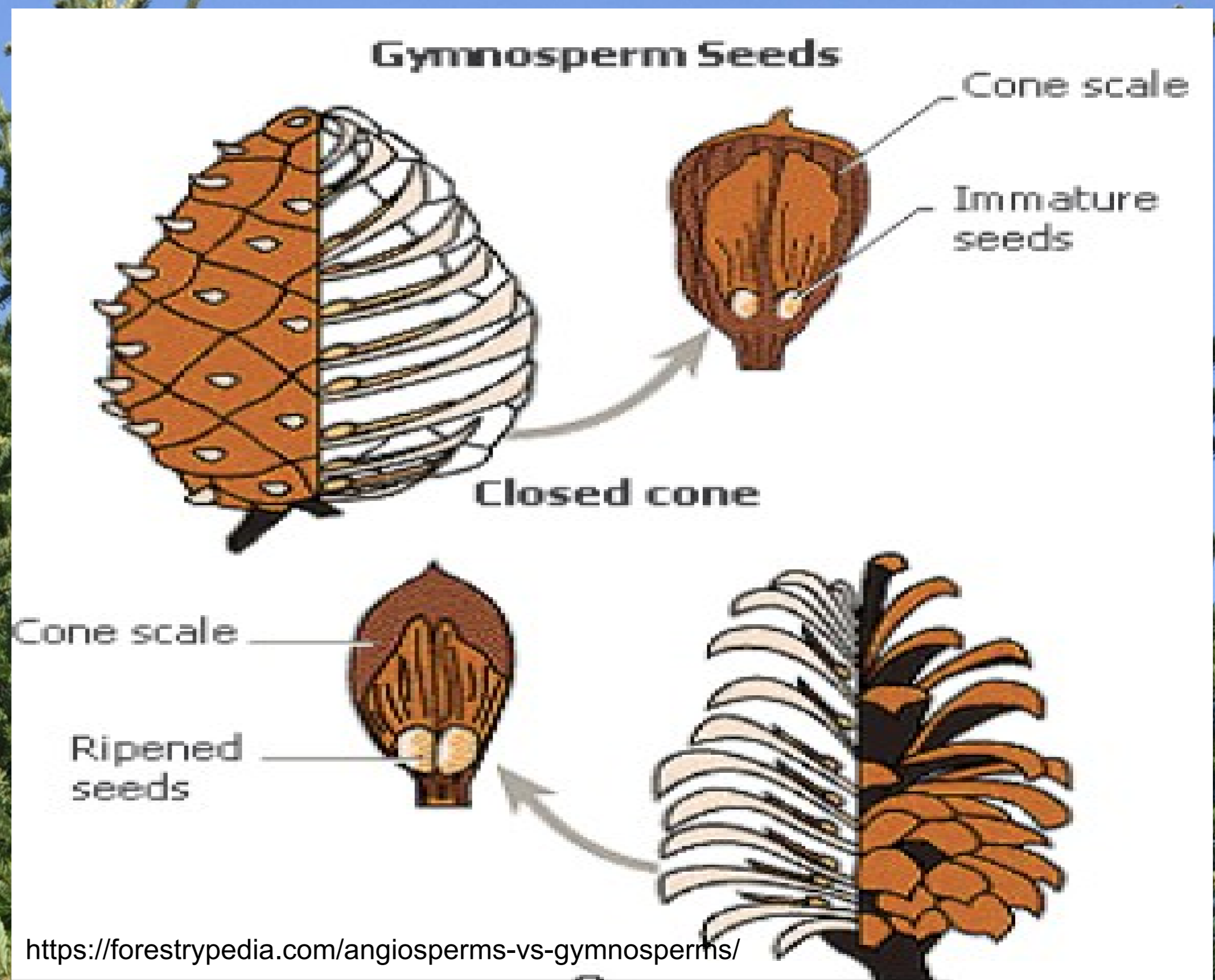


# La reproduction sexuée des résineux (gymnospermes)

## Definition:

(Latin gym-, "naked"; Greek sperma, "seed"), is the common name for any seed-bearing vascular plant without flowers. Gymnosperms are woody plants, either shrubs, trees, or, rarely, vines. They differ from the other phylum of seed plants, the flowering plants, in that the seeds are not enclosed in fruit but rather are borne upon seed scales arranged in cones



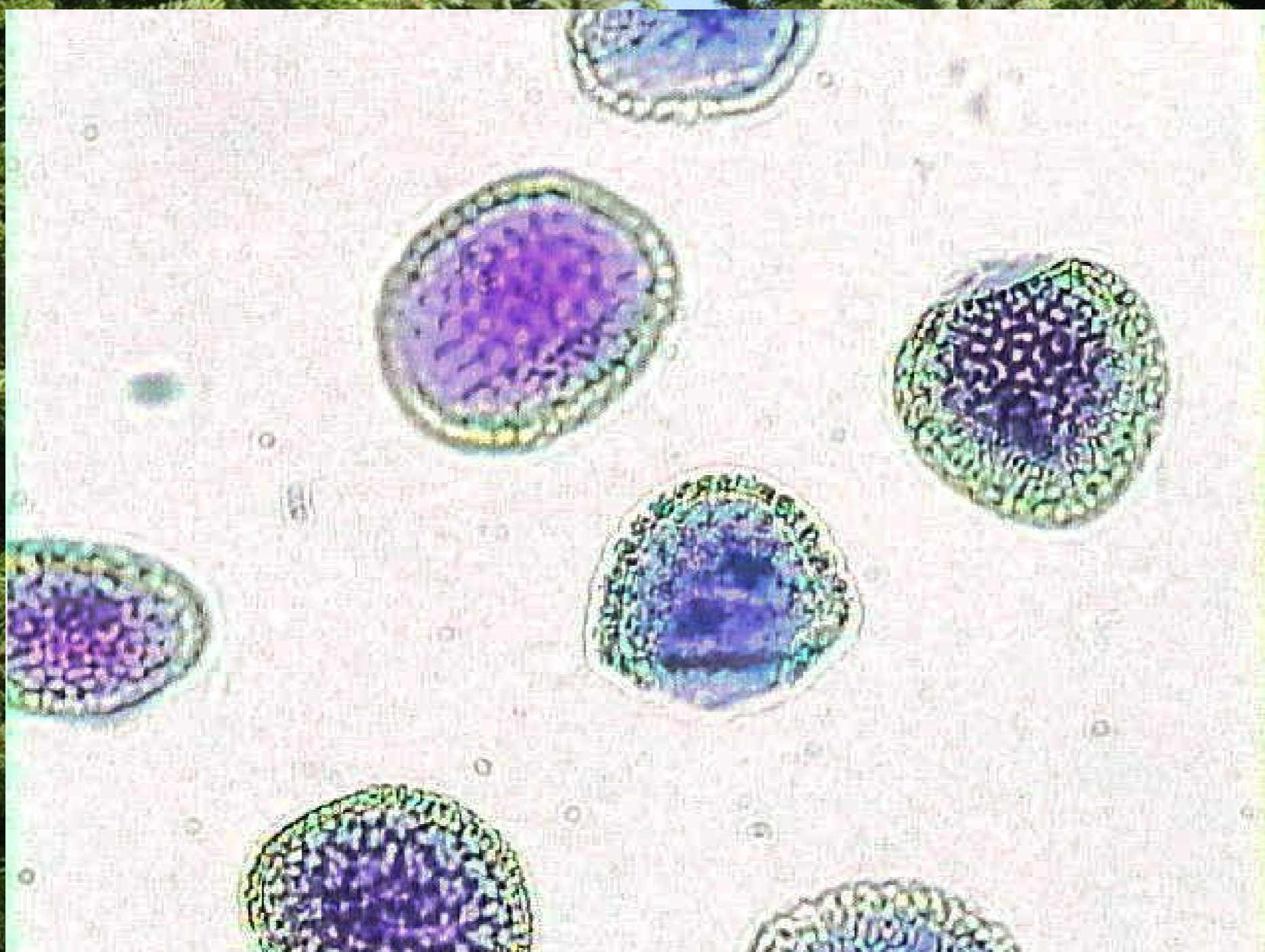
We will study the reproduction of gymnosperms through the example of the pine.

Pines have both female cones and male cones.

The female cones are made of scales on which the eggs differ.

The male cone consists of stamens. Each stamen has on its lower side two pollen sacs in which male gametophytes or pollen grains develop.

When ripe, the pollen grains are disseminated and carried by the wind.



In contact with the ovum, the pollen grain develops: there is formation of a pollen tube that transports the male gamete to the ovum. The female cone dries out and the scales open to allow the dissemination of the seeds. The embryo will develop when the external conditions are favorable



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