

## ***Ginkgo*, Melody of Nature: A Photographic Journey to Origin of *Ginkgo*: How Male and Female *Ginkgos* Date<sup>1</sup>**

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Male and female ginkgos, *Ginkgo biloba* Linnaeus, 1771 are separate trees; they are dioecious. Because, as far as we know, there are no bees involved as go-betweens, or pollinators, how do male and female ginkgos “date”? In spring, pollen cones grow on male trees (Figure 1) while the ovule develops on the cones of female trees. Carried by the wind, pollen travels kilometers across hills and rivers, meanwhile the ovule sends out a drop of liquid on the top to catch pollen passing by (Figure 2). After meeting, the drop retreats and leads the way for pollen to settle down forming a growing pollen tube containing the motile sperm cells. Yes, some plants have moving sperm cells! Later in autumn, matured sperm cells leave the tube, swim to the ovule, fusing with it. The fusion of the male and female nuclei, or fertilization, actually begins the formation of a *Ginkgo* embryo.



Figures 1-2. *Ginkgo biloba* reproductive organs. 1. Male cones (arrow). 2. Female cones. Note the pollination droplet (arrow) over one of the cones.

As a living fossil, *Ginkgo* has been around since ancient times. China is home to primeval wild *Ginkgo* forests, which can be traced back hundreds of millions of years.

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<sup>2</sup> E-mail: [ideal\\_ideas\\_jimmy@outlook.com](mailto:ideal_ideas_jimmy@outlook.com). Jimmy Shen is a professional photographer based in the TianMu Mountains of eastern China. To share his decades' work with the world, he has created a picture book of wild ginkgos, nurtured by traditional Chinese paintings. He has received endorsements from notables, including curators from the Royal Botanic Garden Kew in the United Kingdom and from the Nova Scotia Museum in Canada. Jimmy has launched a crowd funding campaign on Indiegogo, *Ginkgo Picture Book*, <https://igg.me/at/ginkgo123>. A free, 2017 *Ginkgo* calendar can be found here: <https://igg.me/at/ginkgo123>