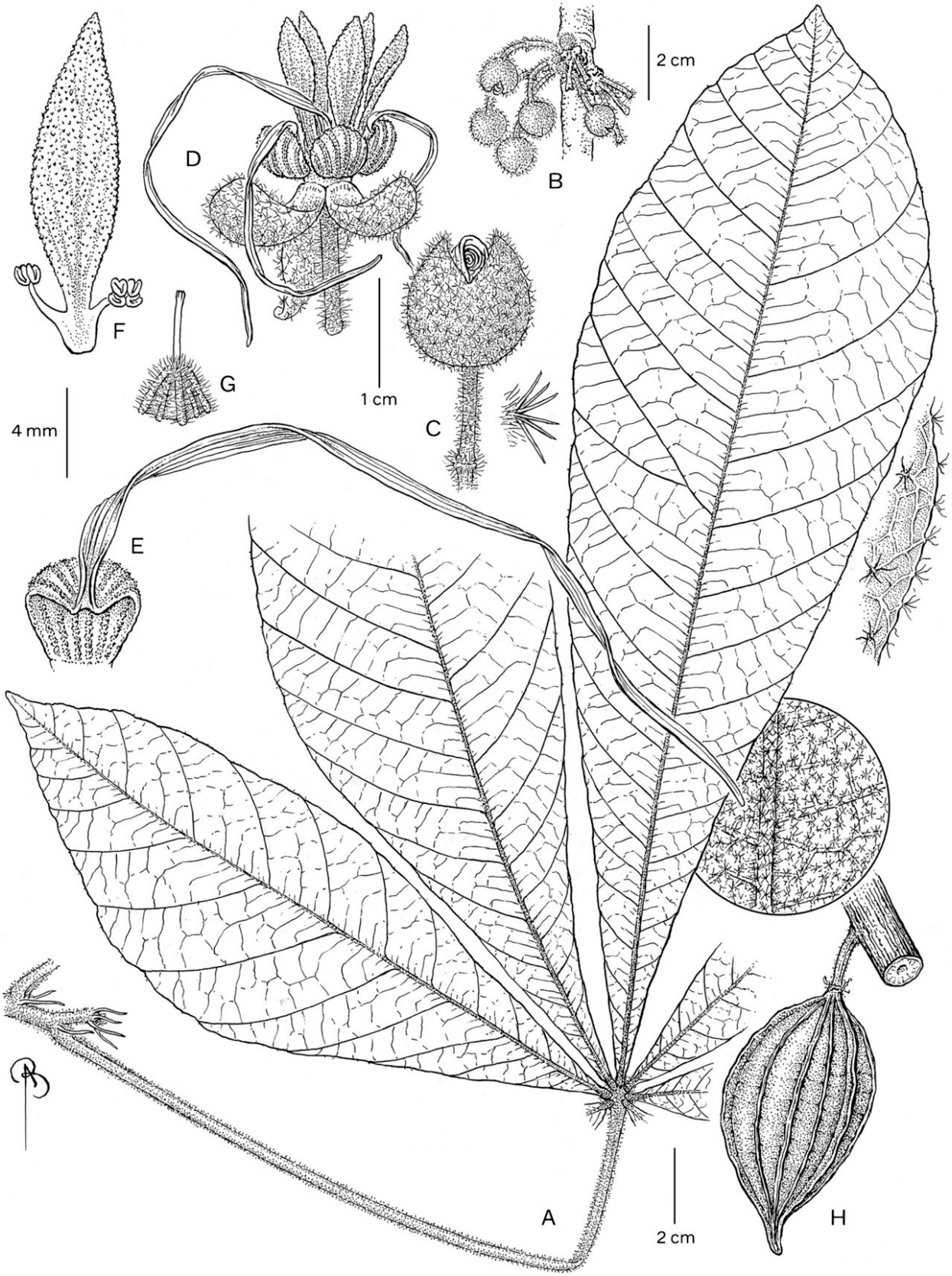
Scientists discover new plants that could lead to 'climate-proof' chocolate

July 4 2024


2 cm
B
D
F
G
1 cm
C
4 mm
E
A
2 cm
H

Theobroma globosum. A branchlet apex with a leaf showing linear stipules (general aspect); B cauliflorous inflorescence; C flower bud, highlighting the indumentum; D open flower; E petal; F staminodial unit, with a central staminode surrounded by two groups of fertile stamens, one with four and the other with two anthers; G gynoecium; H fruit. Drawn By Bobbi Angel. Credit: *Kew Bulletin* (2024). DOI: 10.1007/s12225-024-10171-x

Scientists have found three new species that are close relatives to the plant from which chocolate is produced—a discovery that could pave the way for climate-proof chocolate. The team's research has been published in the journal *Kew Bulletin*.

The new species, discovered in the rain forests of South America, are closely related to Theobroma cacao, the tree that bears cocoa beans which are of tremendous economic importance.

The research team comprising scientists from University College Cork (UCC), the University of São Paulo and New York Botanical Garden say their finding is significant as it indicates that there is much work still to be done in characterizing Earth's biodiversity.

The team, which includes Dr. James Richardson of UCC's School of Biological, Earth & Environmental Sciences (BEES) and the Environmental Research Institute, found three new species within the section Herrania: T. globosum, T. nervosum, and T. schultesii.

Dr. Richardson said, "These new species were discovered as a result of studying specimens in herbaria and demonstrate the importance of maintaining these natural history collections as many more species remain to be discovered within them.

"That there were recently unknown species closely related to Theobroma cacao, which is of huge importance for the production of chocolate and other products, shows how much more work there is to be done to catalog the vast amount of unknown biodiversity across our planet," he said.

Furthermore, Dr. Richardson said the team's discovery could lead to the development of more climate-resilient cacao trees, which in turn would help sustain the production of products derived from cacao such as chocolate.

"Cacao prices have trebled in recent months due to low production as a result of a prolonged period of drought in West Africa, which is the area of greatest production. The discovery of new species, in addition to those already known, expands the genetic resources that are available to us that might allow us to produce drought-tolerant or disease resistant cacao trees," he said.

The team conducted detailed examinations of leaves, flowers, and fruits, and collaborated with multiple botanical institutions to achieve their discovery.

More information: Matheus Colli-Silva et al, Expanding the cacao group: three new species of Theobroma sect. Herrania (Malvaceae: Byttnerioideae) from the Western Amazon Basin, *Kew Bulletin* (2024). DOI: 10.1007/s12225-024-10171-x

Provided by University College Cork

chocolate.html