ROYAL BOTANICAL GARDENS
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Taxonomy and Systematics

Broadly defined, systematic botany, or plant taxonomy, is the study of the kinds and diversity of plants, and their classification, identification and nomenclature.

What does a taxonomist do?

Taxonomists are botanical explorers who study the relationships among plants, seeing to group individual plants into species and then further organize species into higher categories that represent natural, or evolutionary, groups. These categories are based on similarities, and help taxonomists define theories as to the evolutionary relationships among the species.

Taxonomists also describe species new to science, and species already known are studied for further evidence as to how they arose and how their distinctness is maintained in nature. Such studies lead to refinements in classification.

Taxonomists also determine the correct botanical names for the species and higher-level units of classification. They bring the results of their research together in plant identification guides and in descriptive references on plants, including works on genera and families and on plants of geographic regions.

Most taxonomists become familiar with many plant species, and many also concentrate

a part of their studies on individual genera and families. Many become experts on a particular species. Because of their familiarity with many species, genera and families, and their experience in preparing plant descriptions and identification guides, taxonomists are the experts one turns to for plant identification when other available resources aren’t enough.

Also, although it's not strictly part of taxonomy, taxonomists are also generally interested in plant distribution and rare species.

Royal Botanical Gardens has a long history of leadership in plant taxonomy, both in natural plants and in horticultural science. Since the 1960s our scientists have studied a wide variety of plant species and have discovered and named many plants new to science.

Why is taxonomy important?

Communication about plants requires that individual plants be grouped into species, and in many diverse situations communication further requires the recognition of higher-level units of classification.

Communication also requires that plants have widely accepted and recognized scientific names that reflect their positions in the hierarchy of classification. Anyone with a special interest in a plant species for any reason must be assured of the identity of the plants in question.

And, of course, preservation of plant biodiversity depends on taxonomy, because measures cannot be taken to preserve a species until its existence is known, until it can be distinguished from other species, and until it can be referred to by name.