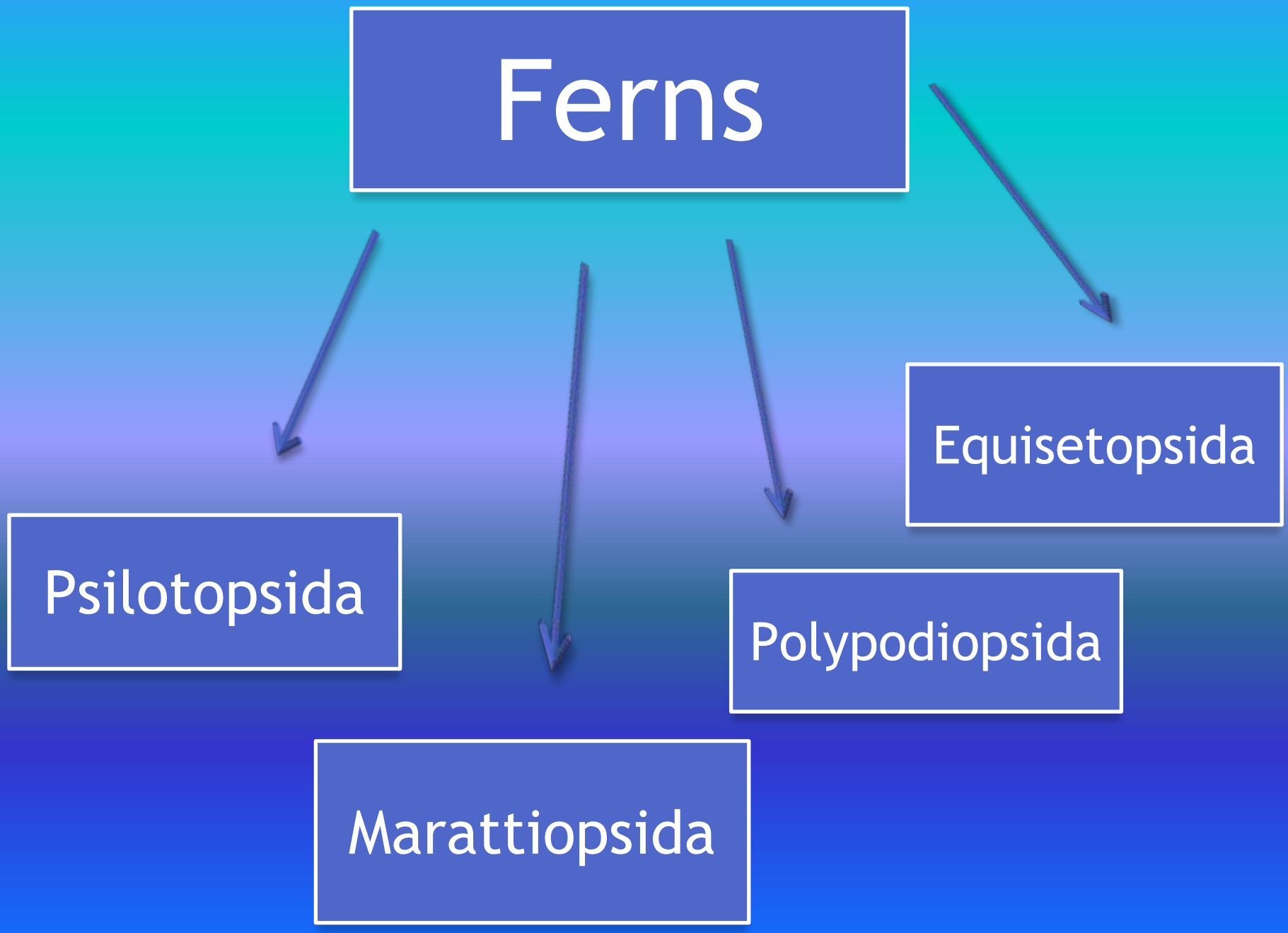
Aquatic ferns

Fern - any of numerous flowerless and seedless vascular plants having true roots from a rhizome and fronds that uncurl upward; reproduce by spores

Ferns evolved from moss.

Part of scientists believes that the horsetails, club mosses, mosses and the department evolved fron psilophytes.


Ferns
Psilotopsida
Marattiopsida
Polypodiopsida
Equisetopsida

Salviniales are all aquatic and differ from all other ferns in being heterosporous, meaning that they produce two different types of spores (megaspores and microspores) that develop into two different types of gametophytes (female and male gametophytes, respectively), and in that their gametophytes are endosporic, meaning that they never grow outside the spore wall and cannot become larger than the spores that produced them.

The ferns of this order vary radically in form from one another and do not look particularly fern-like. Species of the family Salviniaceae are natant (floating), while those of the family Marsileaceae are rooted. However, the natant species may temporarily grow on wet mud during times of low water, and the Marsileaceae may grow as emergent species, depending on species and location.


Salviniales
Marsileaceae
Salviniaceae
Marsilea
Pilularia
Regnellidium
Azolla
Salvinia

Marsilea

Marsilea is a genus of approximately 65 species of aquatic ferns of the family Marsileaceae. The name honours Italian naturalist Luigi Ferdinando Marsigli (1656–1730)

These small plants are of unusual appearance and do not resemble common ferns. Common names include water clover and four-leaf clover because the long-stalked leaves have four clover-like lobes and are either held above water or subm

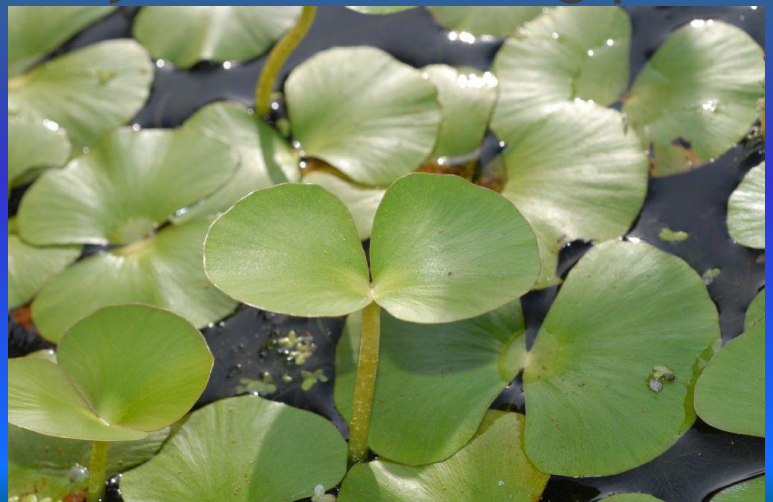
Pilularia

Depending on the taxonomic revisor, the genus contains between 3 and 6 species of small plants with thread-like leaves, and creeping rhizomes. The sporangia are borne in spherical sporocarps ("pills") which form in the axils of leaves. Pilularia minuta from SW Europe is one of the smallest of all ferns.

Regnellidium

Regnellidium is a monotypic genus of ferns of family Marsileaceae.

The single living species, Regnellidium diphyllum, Two-leaf Water Fern, is native to South Eastern Brazil and adjacent regions of Argentina. It resembles its relatives from the genus Marsilea, but has 2-lobed leaves (rather than 4). This fern is sometimes grown in aquaria. It is the only non-flowering plant that produces latex.



Azolla

Azolla (mosquito fern, duckweed fern, fairy moss, water fern) is a genus of seven species of aquatic ferns in the family Salviniaceae. They are extremely reduced in form and specialized, looking nothing like other typical ferns but more resembling duckweed or some mosses.

In addition to its traditional cultivation as a bio-fertilizer for wetland paddy (due to its ability to fix nitrogen), azolla is finding increasing use for sustainable production of livestock feed.Azolla is rich in proteins, essential amino acids, vitamins and minerals. describe feeding azolla to, chickens and egg production of layers, as compared to conventional feed. One FAO study describes how azolla integrates into a tropical biomass agricultural system, reducing the need for inputs.

Azolla has also been suggested as a food stuff for human consumption. However, no long term studies of the healthiness of eating Azolla have been made on humans and Azolla may contain BMAA, a substance that is a possible cause of neurodegenerative diseases.

Salvinia

Salvinia, a genus in the family Salviniaceae, is a floating fern named in honor of Anton Maria Salvini, a 17th-century Italian scientist.

Salvinia, like the other ferns in order Salviniales are heterosporous, producing spores of differing sizes. However, leaf development in Salvinia is unique. The upper side of the floating leaf, which appears to face the stem axis, is morphologically abaxial.

Giant salvinia (Salvinia molesta) is a commonly introduced invasive weed in warm climates.

It grows rapidly and forms dense mats over still waters. It is native to South America. A tiny weevil, Cyrtobagous salviniae, has been used successfully to control giant salvinia.