

Species of *Microlepia* Cultivated in California

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Some of the most beautiful and useful ornamental ferns in southern California are those belonging to the genus *Microlepia*. Members of this group, mainly a variety of *Microlepia strigosa*, cover most of the slopes in Fern Dell, Griffith Park and form the background foliage for many other areas of the Los Angeles City Park system. Although these ferns are familiar to many California gardeners, their scientific names are not well known. In Greek *Microlepia* means small scale and refers to the cover protecting the fruiting body.

Microlepia strigosa are vigorous ferns and adapted to a range of sun or shade, dryish or damp soil, clay or sandy soil. In the proper setting, the mass of lacy foliage imparts a cool fern woodland atmosphere to the scene. These ferns are especially suited for background, slope, border, or foundation planting. The compact clumps of rhizome are not apt to grow out of control as is true with the rhizomes of the wide creeping bracken. Singly, these ferns produce handsome accent plants with their clusters of large gracefully arching fronds. A fern in a gallon container may easily triple its size in one growing season. Ample water and fertilization produce a deeper green color and a firmer texture than ferns not so treated.

Most species of micropelias are limited to subtropical or warmer climates. *M. strigosa* has been reported to have survived temperatures as low as 18°F., the fronds were killed back and new growth appeared in spring. Experimental plots further north would be helpful in establishing the temperature limits of our other cultivated species.

In the eastern parts of United States small plants of *M. platyphylla* are offered in the trade as greenhouse subjects. Outdoors in southern California, they may easily reach a height of 6 ft. or more. The broad pinnules are a light blue-green or pale green color if planted in a sunnier site. In local gardens *M. platyphylla* is not as popular as the other microlepias because of its large size, coarser aspect and tendency to enter a longer winter rest period.

Commercially microlepias are propagated by spores, but they are also easily propagated by divisions. Divisions taken just before spring growth may produce a sizeable number of fronds by June. As in all fern divisions, each piece should have a "lead" or portion where new fronds are being formed.

The genus *Microlepia* may be distinguished from other genera by the following characteristics. The rhizome is creeping, and covered with fine hairs. The fronds are medium to large, one to three times pinnate or more. The ultimate pinnules are obliquely incised, and usually hairy or glabrous when old. The veins are free, simple or pinnately forked. The sori are slightly below the margin, terminal on the veins, and covered with a shallow hood-shaped indusium which is slightly broader than long. The indusium is attached by its rounded sides and base, the unattached side being directed toward, but not reaching the edge of the frond.

Of the thirty species only four are known to be cultivated in California, and these thrive outdoors in the southern part of the state. They may be identified by the following key.

- A. Fronds pinnate.....*M. marginata*
- AA. Fronds bipinnate or more divided
 - B. Fronds to 4 ft. or more long, 12 in. or more wide, the pinnae not fan-shaped segments



Microlepia indusium



Microlepia strigosa var. General habit of plants growing in Fern Dell, Griffiths Park, Los Angeles

- C. Fronds large, to 10 ft. or more long, the segments broad, coarsely toothed. *M. platyphylla*
- CC. Fronds medium, to 4 ft. long, the segments much incised, finely toothed.
 - D. Upper surface of rachis densely hairy, the lower pinnae usually 3 in. wide or more, broadly tapering. *M. firma*
 - DD. Upper surface of rachis essentially smooth, the lower pinnae usually 2 in. wide or less, narrow tapering
 - E. Fronds to about 1 ft. wide, usually widest at the middle, the pinnae usually not drooping at the ends, the lower pinnae gradually tapered. *M. strigosa*
 - EE. Fronds to about 2 ft. wide, usually widest at the base, the pinnae usually drooping at the ends, frequently with the lower pinnae having the basal pinnule pair much longer than adjacent pinnules. *M. strigosa* var.
- BB. Fronds not more than 1½ ft. long, mostly 2 in. or less broad, the pinnae condensed to fan-shaped segments. *M. strigosa* forma *MacFaddeniae*

Microlepia firma Mett. ex Kuhn (misapplied to *M. pilosula*). Fronds dull green, to 3 ft. long, triangular, mostly tripinnate, to tripinnate-pinnatifid at the base, the lower pinnae broad, 3 in. wide or more, the rachises and midribs densely hairy above, with hairs extending to the leaf surfaces. India. Semi-hardy, 2-3 ft. tall. Shade. Evergreen. General aspect more delicate than *M. strigosa*, the fronds more arching, dull green.

Microlepia marginata C. Chr. Fronds 1½ to 2 ft. long, to about 1 ft. broad, one pinnate; pinnae linear, cut down about halfway or less to the rachis into bluntish oblong lobes, the base above parallel with the stem, that of the lower side obliquely truncate, the rachises and under surfaces densely hairy. Ceylon, Himalayas, Japan, China. A recent introduction from Japan. Easily grown by spores. Young plants like Boston ferns in general aspect.

Microlepia platyphylla (D. Don) J. Smith (*Davallia platyphylla*). Large coarse fern, the fronds to 10 ft. long or more, pinnate-pinnatifid to bipinnate, the ultimate segments broad, tapering and coarsely toothed, bluish-green to yellow-green. Nepal, India. Semi-hardy. Semi-evergreen. To 15 ft. Shade.

Microlepia strigosa (Thunberg) Presl (misapplied to *M. speluncae*). Fronds erectish, to 3 ft. long, to 1 ft. wide, bipinnate to tripinnate at the base, the rachises and midribs essentially without hairs, the segments light green. Tropics. Semi-hardy. Evergreen. To 3 ft. Shade or sun tolerant. Erroneously passing as *M. speluncae* which is tripinnate to quadripinnate and not known in cultivation.

A cultivar with a crested apex is cultivated as well as the following:

M. strigosa, unnamed variant. Rhizome clumps less compact than the species, the fronds more arching, broader, to 2 ft. wide, usually widest at the base, the pinnae usually drooping at the ends, the lower pinnae usually having the basal pinnule pair much longer than the other pinnules. Evergreen. To 3 ft. tall. Shade or sun tolerant. More desirable than the species in being a fuller more graceful plant and entering active growth much earlier. Formerly identified as *M. substrigosa* which differs in



UPPER PICTURE: Left to right; Lower pinna of *Microlepia strigosa*, frond of *M. strigosa* forma *MacFaddeniae*, lower pinna of *M. strigosa*. LOWER PICTURE: Left to right; Young frond of *M. marginata*, lower pinna of *M. firma*, lower pinna of *M. platyphylla*.

having the indusia set back from the margin about 2 to 3 times the length of the indusium, the vein ends are also far from the margin.

M. strigosa forma *MacFaddeniae* Morton (sometimes misapplied to *Nephrolepis Duffi*, *Lindsaea cultrata*). A small fern with very narrow fronds, the pinnae so condensed as to have imbricated fan-shaped segments, the lower pinnae often less condensed and much longer than those above. Origin unknown. Semi-hardy. To 1 ft. tall. Evergreen. Shade.

Cultivated ferns superficially similar to microlepias include the dennstaedtiads, and possibly some of the athyriums or Lady ferns. Of these, microlepias are the commonest in southern California cultivation. Dennstaedtiads are sparingly cultivated and can be distinguished by the cup-like indusium borne at the very edge of the frond, while athyriums have chaffy or broad scales along their stipes and never any hairs.

REFERENCES:

Morton, C. V. 1957, Observations on Cultivated Ferns III. The Species of Microlepiea. American Fern Journal 47:3, p. 102

Tagawa, Motozi. 1959, Coloured Illustrations of Japanese Pteridophytes.

The Aesthetic and Recreational Values in Botanic Gardens

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A Thesis submitted in partial satisfaction of the requirements for the degree of Master of Landscape Architecture, College of Environmental Design, in the Graduate Division of the University of California. This is a young landscape architect's views on the values of botanic gardens (and could well have included arboreta) to modern day living. We felt that this thesis has much to offer the lay plantsman in history, development and uses of botanical institutions starting, as Miss Morel has, with the Royal Garden of Thotmes III in 1500 B.C. She has compiled her data from some 120 authors, bringing together, in a single paper, a rich source of information on a subject of interest to all of us. Because of the length of the paper, we shall print it in Lasca Leaves as a continuing feature for several issues. Ed.

CHAPTER I

PATTERN FOR A STUDY OF BOTANIC GARDENS

An investigation of botanic gardens and arboreta offers many areas for study, emphasis, and consideration. An adequate treatment of the comprehensive topic would require many volumes, and a much more extensive work than is undertaken here. In this necessarily brief study, attention is to be given to certain limited evolutions of purpose as these are identified and implemented in outstanding botanic gardens, over a period of many centuries, and across the continents of the earth.

PURPOSE OF THE INVESTIGATION

The purpose of this investigation is to identify and define the values available to mankind of botanic gardens, with emphasis being given to design evolution and to aesthetic considerations. In order to accomplish this purpose, an intensive study has been made of research material attesting to the occurrence and development of botanic gardens from as early as 1500 B.C., according to currently available records. The information encountered hereby, it is hoped, will have significance leading to a better understanding of today's botanic gardens as well as a more general realization of potential and challenge in the planning of botanic gardens for the future.

DEFINITIONS

For purposes of this investigation it is essential, although sometimes difficult, to draw a clear line between a garden, a park, and an arboretum or botanic garden. A garden is



Hoshizaki, Barbara Joe. 1962. "Species of *Microlepidia* cultivated in California." *Lasca leaves* 12(Winter 1962), 8–12.

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