

ABOUT NATIVE FERNS.

C. R. BRUCE FURNISHES AN INTERESTING PAPER ON THEM.

A List of the Ferns Found in San Diego County—Descriptions of the Varieties—February to March the Best Time to Collect Them—Valuable Hints to Collectors.

Southern California is especially rich in possessing a great variety of lovely ferns, many of them peculiar to her boundaries. A collection of our native ferns will compare favorably in point of beauty with those of any country, and to the owner will be found particularly interesting and attractive.

While appealing to man's aesthetic nature and gratifying his taste for the beautiful, they furnish a broad and inviting field for investigation with the microscope and add the culture of many a domestic circle as the dried fronds repose on the page of an album or serve as household decorations.

To those who desire to pursue the study, I would recommend an excellent work by Prof. L. M. Underwood, entitled, "Our Native Ferns and Their Allies" (Henry Holt & Co., N. Y.) which will prove a pleasant and reliable guide into the mysteries of their minute structures and relationship.

The following list of ferns in San Diego county may prove of assistance to the amateur, when taken in connection with the accompanying field operations:

1. Polypodium Californicum, Kaulf. Mossy banks and cliffs in rocks, in canyons among the foothills. Confined to California.

2. Gymnogramme triangularis, Kaulf. This is the well known Californian gold fern, so appropriately named by reason of the lower surface of the fronds being covered with a yellow powder. The dark green triangular fronds are very beautiful, and as it is easily grown it is naturally a favorite.

3. Notholaena Parryi, D. C. Eaton. This little woolly fern was discovered by Dr. C. C. Parry, for whom it has been named, and is known from Utah, Arizona, California and Lower California, restricted to the desert regions where it modestly hides away under the overhanging rocks or in slight crevices where the small ferns (two to four inches long) covered with dense white hairs, may be readily overlooked.

4. Notholaena Newberryi, D. C. Eaton. This fern slightly resembles the last, but is larger and more abundant, and familiar to everyone as the cotton fern. It is found among the rocks or nearly every warm hill or on the sides of canyons among the foothills. It needs to be put to press immediately on collecting to prevent its curling up into a small space.

5. Notholaena cretacea, Lieblin. For many years this fern has enjoyed the reputation of being the rarest of our San Diego ferns. It has been erroneously called N. candida (a Texas fern), and D. C. Eaton proposed to call it N. Californica—not knowing that it had previously been described in reality. It is not a rare fern (except in certain localities), being found abundantly in Southern and Lower California, and also in Arizona. It slightly resembles our Gymnogramme, but is easily distinguished by the lighter green and smaller stiff fronds.

6. Adiantum Capillus-Veneris, L. The Venus-hair fern is one of the most widely distributed of our native ferns, being found in Virginia, Kentucky and Florida to Utah and California. It is one of the most delicate and lovely of American ferns and very naturally it took up its residence in Southern California. It chooses moist, shady banks, and is to be found growing under the falls of the San Diego river, and was also collected in the Centellas canyon, Lower California, in a similarly pleasant situation.

7. Adiantum emarginatum, Hook. This is the commoner species on the coast, extending from Oregon to Lower California, usually on rich, shady banks in canyons near the coast. With the first rains it grows forth in its native haunts, and, like all of this genus, is well adapted for either greenhouse or outdoor cultivation.

8. Adiantum petiolatum, L. This is the true Maiden-hair fern of the New England woods. It is widely distributed and has been reported from San Diego county, but I am not sure of its occurrence here. It may be looked for in the San Jacinto mountains if anywhere. A variety is found in British Columbia.

9. Pteris aquilina, L. The trade is known everywhere in North America and needs no description. In San Diego county hundreds of acres on the San Jacinto, Smith, Cuyamaca and Laguna mountains are overgrown with the variety lanuginosa, that is peculiar to the Pacific Coast. It also extends into the mountains of Lower California.

10. Cheilanthes California, Nutt. This lace fern is peculiar to Southern and Lower California, where it is not rare among the rocky canyons near the coast. It is well worthy of its popular name and is a general favorite. It is believed to be easily and profitably cultivated.

11. Cheilanthes blanda, Davenport, another peculiar California species, characteristic of the western borders of the Colorado desert, where it is abundant among the rocks in the most inaccessible canyons. The fronds are three to five inches long, a dark green, and very viscid. Hence its specific name.

12. Cheilanthes Cooperi, D. C. Eaton. This exceedingly rare species (at least in this end of the State) is found at Colton, San Bernardino county, and may reasonably be looked for in this county. I have seen very beautiful fronds from the Yosemite valley, where it is probably not a very rare fern. This species was named in honor of Mrs. Elizabeth Cooper, of Santa Barbara, who had the pleasure of making the first discovery. It is much sought after for albums and the conservatory, but its shy habits will doubtless insure its preservation from extinction at the hand of the botanist.

13. Cheilanthes fibrillata, Davenport. This is a little brown species, collected by Messrs. Parth Brothers in the San Jacinto mountains.

14. Cheilanthes Parishii, Davenport. This is from near the same locality as the last, where it was discovered by the

same gentleman. It is only known from a very few specimens, and is a great collector's wish, besides, as well as fern collection generally.

15. Cheilanthes Clevelandi, D. E. Eaton. This is one of the most beautiful and characteristic of the ferns of San Diego county, and was first collected by Daniel Cleveland, our earliest resident botanist, in whose honor it was named. The dark brown fronds are densely covered with ciliate scales. It most nearly approaches the following in general appearance, with which it might be confounded by the novice. It is abundant on an elevation of 2,000 or 3,000 feet, often covering considerable areas among the bushes or under sheltering rocks. It is also abundant in Lower California. It is difficult to cultivate with success, like other members of this genus, but this fact only increases its value when successfully introduced to the conservatory. The fronds are in good demand for "fern work" and for albums.

16. Cheilanthes myriophylla, Deso. This fern was for many years known to Californian botanists as C. Fendleri, but is now correctly referred to by the above name. It is restricted to the mountains, usually found at an altitude of 4,000 to 6,000 feet through Southern and Lower California, eastward to Texas. It is of a retiring disposition, seeking the shelter of crevices under overhanging rocks, and hence more rarely collected and consequently more highly prized than some other commoner varieties. It must be successfully grown in conservatories since roots are in good demand in the trade.

17. Pellaea andromedaefolia, Fee. An easily cultivated and very desirable fern, peculiar to California. Fronds often a foot long, a delicate green, or in the common variety, of a dull brownish red. Not rare in the canyons near the coast, usually growing among a clump of bushes or a pile of rocks.

18. Pellaea orthotopus, Hook. The tea or wire fern is one of the most easily grown of our native species, and is a very desirable one for rock work. It is abundant through Southern and Lower California, growing in open ground in valleys or on the mesas—very unlike our other species in this respect.

19. Pellaea Wrightiana, Hook. This species is found from Colorado and Texas to California, but belongs to the desert flora more properly than to the coast region.

20. Pellaea Texana, Link. "Western Texas to California," credited to San Diego by Mr. Cleveland. I am unacquainted with the species, but may have it in my still unidentified collection from the Colorado desert region.

21. Woodwardia radicans, Sw. Southward from Lower California, eastward into Arizona. A most superb species, the immense fronds often seven or eight feet in height. It loves cool, shady canyons, where running water flows, hence mostly confined to the higher foothills and mountains.

22. Asplenium trichomanes, L. var. lacinum, Moore. This fern is found from Vermont to California—the variety first having been described from England. It selects cool, shady banks and steep slopes, where it flourishes in the crevices of the rocks. It is easily grown and being one of the most graceful and delicate species known, is highly valuable.

23. Asplenium multinum, Kaulf. A lovely evergreen species, abundant in the Cuyamaca and other mountains in the county. Easily grown and well adapted for fountains or margins of ponds.

24. Asplenium argutum, Kaulf. Oregon to Lower California; abundant near running water.

25. Cheilanthes fragilis, Bernh. The bladder-fern is another species found from New England to California, not rare in this country near Julian and the adjoining mountains, where it enjoys moist, shady banks like it is accustomed to in the Eastern States.

26. Woodsia Mexicana, Fee. This delicate fern is credited to the limited States from Arizona to New Mexico. I have also discovered it in the mountains of Lower California near the boundary, and do not doubt its occurrence in San Diego county, but others may possibly be recorded later from some of the unexplored and remote corners of our mountains or from the desert region.

The best season for collecting ferns in the vicinity of the coast or in the valleys among the foothills may be generally stated as being between the first of February and the last of March. Some of the finest specimens, however, can be best obtained just after the commencement of the winter rains, when the fully matured fronds of the last season are expanded by the moisture, and before they have time to become injured. In the mountains September will find the species requiring moisture throughout the year in the best condition for gathering. Good specimens should include the roots to show the method of growth, together with the whole frond, which may be bent into convenient shape. When dry they may be kept loosely in the herbarium sheets or mounted on the standard herbarium paper, which is sixteen and a half by eleven and a half inches in size. One's individual taste may be followed if intended only for an album or for house decoration.

To those contemplating a fernery we would suggest that the natural environments of each species be imitated as closely as possible, only discarding those features which would prove unfavorable. And at the best many disappointing experiences must be expected before attaining success. One can gather from the literature now extant very few hints regarding the management and cultivation of our native Californian ferns and experience alone can teach us the many secrets of success, the greatest of which is—success.

C. R. BRUCE.

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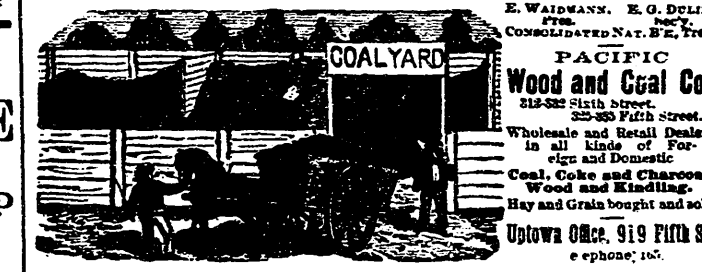
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