and spent several hours watching the bees. The woods were full of Dicentras this spring. He could not find a spike of any species on which there were not one or more punctured flowers. He saw several humble-bees performing this labor, and many honey-bees sucking the honey, but in no instance did he see the honey-bee make the incision." N. L. BRITTON.

Teratology.—A head of the ox-eye daisy (*Chrysanthemum leucanthemum*, L.) has just been brought to me by a lady (Mrs. Cowles) living in Hamden which has the rays replaced by white tubular corollas one-quarter of an inch long, gradually ampliated outwards, and irregularly 5-lobed. Most of these corollas are somewhat bilabiate, with three parts in the lower lip, and two, a little smaller, in the upper. The veins of the lobes are submarginal and unite below the sinuses, as in the normal disc-flowers of the order. These ray-flowers have both stamens and a short, included style, like that of the disc-flowers. The ray-flowers are in general structure comparable to those of *Chænactis*, but there are no gradations from them to the disc-flowers in this specimen. Is this condition to be explained by a simple reversion of the usual rays to a form more like that of the disc-flowers, or by supposing the ray-flowers to be deficient, and the exterior disc-flowers to be enlarged so as to replace the rays? One of these exterior flowers, which I dissected, had the ovule well developed, and it is probable that all would have been fertile.

Mrs. Cowles tells me that the plant bore six heads like the one sent to me.

New Haven, June, 1884. DANIEL C. EATON.

Another Florida Fern has been lately discovered by Miss Mary C. Reynolds, viz., *Phegopteris tetragona*, Mett. This is one of the species which has sometimes the faintest rudiment of an indusium, and so has been referred to *Aspidium* in Mettenius's later writings. It has a creeping rhizoma, and rather thin herbaceous and finely pubescent fronds one or two feet high. These are pinnate with a gradually decreasing apex and several pairs of long and not very deeply pinnatifid pinnæ. The veins are simple, and the 2–3 basal ones are connivent as in *Aspidium molle*. It is common in the West Indies, and on the continent from Panama to Brazil. Miss Reynolds "found it a year ago in a live-oak hummock in Marion County, well established there, and a very pretty fern it is, too." "When growing, there is a metallic lustre about it that to me is very pleasing."

New Haven, June, 1884. DANIEL C. EATON.

Albinism.—During the winter and spring I have found, usually single plants only, sometimes several clusters, of the following species with pure white blossoms. The whole plant was of a lighter green than usual, no other color being present: *Delphinium decorum*, F.&M. (one specimen); *Sidalcea humilis*, Gray (two specimens); *Erythræa venusta*, Gray (several clusters); *Gilia dianthoides*, Endl. (common in places); *Linaria Canadensis*, Dum. (one case); *Orthocarpus purpurascens*, Benth. (often nearly white); *Mirabilis Californica*, Gray

(not rare); *Brodiæa capitata*, Benth. (three specimens). *Phacelia Parryi* and *P. grandiflora* are found nearly white occasionally, very rarely pure white.

A bud on a branch of *Mimulus glutinosus*, v. *puniceus*, upon developing in a vase, was identical in color with the typical form of *M. glutinosus*, Wendl.

San Diego, Cal. CHARLES R. ORCUTT.

Absorption in partially severed Branches.—In the recent experiments reported by Francis Darwin (*Nature*, Vol. xxx., p. 9) upon the absorption of water by plants, he alludes with surprise to the fact that "cuts to the depth of half or more than half the diameter of the branch produce practically no diminution in the rate of absorption."

Remarkable instances of a similar, if not identical, phenomenon often come to the notice of the arboriculturist, and the following illustration of the ability of a greatly reduced cellular area to supply moisture, etc., occurred in our garden last year. A large apple-tree, with a spread of branches almost circular, twenty feet in diameter, with four main limbs, twenty-five secondary limbs, and a numerous growth of twigs and final ramifications on the outskirts and summit of the tree, had suffered from being too deeply covered with earth around the trunk, and the epidermal layers sickened and died, contracting the available area by which sap passed to and fro in the general circulation of the tree to a strip of bark less than two inches in width. The trunk at this point was three feet in circumference, and above the zone of dead tissue, which was removed, the bark retained its healthy and normal condition.

The tree put out leaves in great abundance, and blossomed luxuriantly. The disproportion between the area supplied with nutriment from the roots, and the size of the bark connective, seems very remarkable, and may be considered analogous to the conditions in Dr. Darwin's experiment, where the rate of transmission of moisture was unchanged in a half-severed twig. As the season advanced and became drier and hotter, the tree became sickly. It was deprived of the use of a large portion of its roots and could not, with the limited resources furnished it, feed itself with sufficient moisture; but the capacity of a very restricted line of cells to sustain, at least temporarily and under favorable conditions, a perfect union between the body of the tree and its roots was demonstrated.

L. P. GRATACAP.

Botanical Notes.

Palms.—Some interesting details respecting these princes of the vegetable kingdom, as Linnæus called them, are to be found in Sir Joseph Hooker's last report on the progress and condition of the Royal gardens at Kew. The extent to which they have recently been brought into cultivation is noteworthy.

Miller in his Gardener's Dictionary, edition of 1731, knew of seven species; but only two were generally known in conservatories, the dwarf fan-palm of the south of Europe, and the date. Aiton's