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OKLAHOMA SPRING FLOWERS IN AUTUMN*

Milton Hopkins, *Norman, Oklahoma*

The exceptionally hot and arid summer in Oklahoma, followed by abnormally heavy rains and cool weather during late September and early October, has brought numerous plants which normally flower in the spring, into full bloom during October and November. On my weekly, and occasionally biweekly, field trips this fall I have found many interesting examples of this phenomenon. On October 10th, while botanizing around Crystal Lake, which is about 2 miles north of Norman, I was surprised to find *Sagittaria latifolia* in perfect flowering condition on the margin of the lake shore, together with several rushes and sedges which are common only during May and June. Then, in a field a few hundred feet from the shore line I found *Claytona virginica* (Spring Beauty); *Oxalis violacea* (Violet Wood Sorrel), and *Nothoscordum bivalve* (Flake Wild Onion). The latter plant was so prolific that I made an Exsiccatae set for the Gray Herbarium of Harvard University, and these specimens will be sent out from that institution as special duplicates to almost every botanical institution of importance throughout the world. In the same field near Crystal Lake were several species of *Panicum* (Panic Grass), which exhibited the vernal habit instead of the anticipated autumnal one. Some few weeks later (October 26th) I again took to the field and was pleased to collect *Viola Rafinesquii* and *Viola papilionacea* (Violets), both of which species normally flower only in the spring. And on another trip (November 6th) I ventured into the Arbuckle Mountains, although I well knew at that time that killing frosts had visited the region, but I obtained several exceedingly interesting plants, the most unusual being *Ceanothus ovatus* var. *pubescens* (Small N. J. Tea or Red Wood) whose creamy white corymbs of flowers made me think only of spring! This plant was found along the roadside on a sandstone bank and although only a few plants were seen, the record is nevertheless of importance, not so much for its occurrence there, for it is quite common, but for its time of flowering. Not content with my earlier collections I visited an old fallow field outside Norman on the 1st of December and hoped to find fruiting specimens of some common weeds, the records for which, in our herbarium at least, were absent from Cleveland County. I found those for which I was searching, and in addition obtained flowering specimens of *Taraxacum vulgare* (Dandelion), *Nepeta hederacea* (Gill-over-the-ground; Ground Ivy), *Capsella Bursa-Pastoris* (Shepherd's Purse), and *Oxalis corniculata* (Sheep Sorrel). These weeds are usually among the first to flower in the spring, although they are found blooming sporadically throughout nearly every month of the year, but one hardly expected to find them in such profusion and of such large

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size and full flower. Mr. Glenn Couch, of this department, has reported elsewhere in these pages of the occurrence of *Ophioglossum Englemanni*, which he found in mature fruiting condition just east of Norman, and I have no doubt that numerous other plants which bloom only in April and May, have been observed by other botanists and interested laymen, although I may not myself have seen them.

I might also add to the number of wild plants, several common cultivated shrubs and trees which were brought into flower by the climatic conditions of the past few months. Lilac, mock orange, Japanese quince and the cultivated plum tree were all observed in flower at various times during November.

My explanation of the conditions which brought about this interesting occurrence of autumnal flowering is briefly as follows. From June 5th, 1936, until the middle of September no rain fell in the vicinity of Norman, except for a five minute shower in mid-July, but during the last two weeks in September we had rain almost constantly every day for two weeks, and during the first part of October, although the days were clear and cool, there were numerous local showers. As is well known, the summer was exceptionally hot with the temperature often reaching 105° F. and higher, and botanizing during July and August yielded very poor results. Legumes, grasses, euphorbias and composites together with numerous other large groups of plants which are typical in the mid-summer prairie flora were either totally dead or in such feeble condition that specimens were not worth collecting. But the late appearance of the fall rains, together with the cool, spring-like weather brought out many common spring plants and made the autumnal collecting decidedly interesting, varied and profuse.

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