

Origin and Historical Aspects of *Cyclamen persicum* Mill.¹

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The genus *Cyclamen* is a member of the Primulaceae, yet speciation of individual members can be confusing. *Cyclamen* are very diverse, with several species widely distributed throughout the Mediterranean countries and others indigenous only to specific islands or mainland areas (2, 3). Their foliage is extremely variable. Within a single species leaves may range from orbicular to cordate with entire to dentate margins, and with or without gradations of silver-gray zonal patterns. Flowers may be scented or odorless and range in color from white to deep pink. They either precede or arise after the foliage and reach anthesis during autumn, winter or spring (3, 10). The species *persicum* is uniquely different in that its fruited peduncles haphazardly bend and twist instead of coiling back to the

crown. The coiling may facilitate seed dispersal by ants, but *C. persicum* has lost the coiling characteristic even though it shares this dispersal vector (5).

Nomenclature

Current nomenclature controversy stems from two main sources: 1) inaccuracies in the older literature (1, 3, 4) and 2) the use of cytological techniques yielding results that conflicted with those of floral and vegetative morphological studies (2). Dependent upon the citation, the genus is comprised of thirteen (14), seventeen (6) or twenty-four species (3). The taxonomic identity of *C. persicum*, from which modern cultivars were derived, appears to be precise. Still, several controversial synonyms have developed throughout botanical history. Doorenbos (4) noted that the following species names have been used in place of *persicum* in past citations: *C. europaeum* L., *C. vernale* Mill., *C. pyrolaeifolium* Sal., *C. latifolium* Sibth. and Sm., *C. aleppicum* Fisch., *C. antiochium* Duchesne, *C. punicum* Pomel, and *C. aleppicum* ssp. *puniceum* Glasau. Blasdale (1) reported that *C. antiochenum* Park. (Fig. 1), "*C. e. monte libano*" and *C. indicum* L. are also

synonyms. Before the genus name became the prevalent common name, "persian violet" (7) (presently used for *Exacum affine*) and "sowebread" or the Latin equivalent "*Panis porcinus*"



Fig. 1. An artist's rendition of *C. Antiochenum* flore amplo purpureo duplici appearing in Parkinson's 1629 *Paradisi in Sole Paradisus Terristris*.

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were often used (Fig. 2).

The cyclamen was a reputed healer of spleen ailments and was apparently used to prevent premature births. It was not one of the more reliable aphrodisiacs of its time (12).

C. persicum (Fig. 3) is a native perennial of Lebanon, Syria, the Sinai peninsula and Turkey. It grows actively during the cool, moist winters and dies back to its "corm-like" structure at the advent of the hot, dry summer. Contrary to the species name, *C. persicum* has never been found naturally in Persia (modern day Iran). Blasdale offered two explanations for the origin of this contradiction and the rationale of its use. "Persicum" may actually be a corrupted form of another species name, *puniceum*, a somewhat disputed name in itself. His second theory refers to one of the first descriptions of the species *persicum* (then referred to as *antiochenum*) which described the flower as "peach colored" (12). Blasdale proposed that the similarity of the flower color to that of the peach fruit (*Prunus persica*) led to the choice of the species name *persicum*. The first appearance of "*persicum*" in any literature was in the 1658 edition of Jonquet's catalogue of plants in the garden of the Abbey of St. Germaine (1). However, neither Jonquet nor Phillip Miller, the person ultimately given credit for the name, originated "*persicum*". Miller merely expounded on existing anonymous descriptions of the plant in his 1768 publication, "Garden Dictionary" (10).

C. persicum has been cultivated for well over 250 years, initially as an outdoor garden specimen. By the early eighteenth century it was available in the florist trade, but did not become popular until 1850 (Fig. 4). Individual plants often commanded high market prices owing to the length of time required for propagation and ultimate flowering. As early as 1826, the "rest-period" (analogous to the summer season in nature) was eliminated from the cultural procedures for seedlings. Even though this development shortened the growth cycle to 15 months, the practice did not gain acceptance until the late 1800's (15). Southron's (15) description of typical 1895 cultural practices can be related to current trends. A November sowing was recommended with a 55 to 60°F (12.8 – 15.6°C) germination temperature. At lower temperatures, earlier sowing was necessary, implying either germination

The likenesse of the flowers, and the spotting of the leaues of the *Dons Caninus*, with thefe of the *Cyclamen* or Sowebread, maketh mee ioyne it next therunto: as also that after the bulbous rooted plants I might begin with the tuberous that remaine, and make this plant the beginning of them. Of this kinde there are diuers forts, differing both in forme of leaues and time of flowring: for some doe flower in the Spring of the yeare, others afterwards in the beginning of Summer: but the most number in the end of Summer, or beginning of Autumne or Haruest, whereof some haue round leaues, others cornered like vnto Iuie, longer or shorter, greater or smaller. Of them all in order, and first of those that come in the Spring.



Fig. 2. Representative *Cyclamen* species, accompanied by Parkinson's 1629 description of the entire genus, taken from *Paradisi Sole Paradisus Terristris*.

1 *Cyclamen Verum flore purpureo*. Purple flowered Sowebread of the Spring. 2 *Cyclamen africanum*. Summer Sowebread. 3 *Folium Cyclaminis Cretici perualis flore candido*. A leafe of Candie Sowebread. 4 *Cyclamen Romanum Autumnale*. Romane Sowebread of the Autumne. 5 *Cyclamen hederifolium Autumnale*. Iuie leaved Autumne Sowebread. 6 *Folium Cyclaminis Autumnalis flore albo*. A leafe of the Autumne Sowebread with a white flower. 7 *Folium Cyclaminis angustifolij Autumnalis*. A leafe of the long leaved Sowebread. 8 *Cyclamen Antiochenum Autumnale flore albo purpureo duplici*. The double flowered Sowebread of Antioch. 9 *Cyclamen vulgare folio rotundo*. The common round leaved Sowebread.



Cyclamen persicum Mill. 1959 Koppel

Fig. 3. A 1959 drawing of the native *C. persicum* by Ruth Koppel published in the *Flora of the Land of Israel*.

inhibition or retarded seedling growth at the lower temperatures. These implications are now known facts (9). The importance of proper seed spacing was also stressed, although it was only one-half to two-thirds of the current recommendations (18). Of particular interest is Southron's mention of a 5 month period from seed sowing to "pricking-off." This span of time has remained relatively unaffected by the newest techniques, which facilitated a 7 month reduction in total production

time over 1895 schedules. One wonders how 6, 7 and 8 inch pot sizes became commonplace for cyclamen. Turn of the century one-year plants were flowered in 5 inch pots or smaller, with the larger pot sizes reserved for 2-year-old plants.

Flower size and color

By 1853, intensified efforts by the French resulted in the development of shades of lilac, rose, purple, and red-purple flowers from the original pink hues. The flower size remained small, similar to that of the native species, but corolla lobes were broader and less twisted (Fig. 5). The first large-flowered forms, much like present day cultivars, became available under the names 'Giganteum', 'Universum', 'Unicum' and 'Splendens' by 1870. 'Giganteum' created a sensation in England and was hailed as "a break from whence we may expect great things" (4, 8). The prediction neared reality when 'Giganteum compactum Magnificum', with habit superior to that of its predecessor, was released in 1877. Explanations of development of the original 'Giganteum' phenotypes are apparently not available. Genetic mutation or polyploidy is one possibility, yet lack of original plant materials prevents positive verification. At least one of the original 4 large-flowered forms, 'Splendens', was likely a tetraploid (8). Therefore, 'Giganteum' and 'Universum', which were later declared as synonyms of 'Splendens', may be tetraploids as well (8). An incredible chance duplication of events may explain the appearance of the first large-flowered type. The selfing of a collected *C. persicum*



Fig. 5. Breeding and selection practices modified the floral and vegetative attributes, evident in this print of an artist's painting (origin and painter unknown).

specimen, at the horticulture laboratory at Wageningen, produced offspring with flowers twice as large as the species (4).

By 1907, salmon (Fig. 6), true red, and bicolors, as well as crested, double, frilled and fringed petal types had been incorporated into the 'Giganteum' phenotype. In fact, numerous cultivars developed at the turn of the century (e.g., 'Rosa von Zehlendorf', 'Perle von Zehlendorf' and 'Rococo') are still popular. However, many of these cvs. have been significantly improved over the years by reselection.

Modern cultivars and trends

Like the native *C. persicum* species, modern cultivars often exhibit a non-coiling, fruited peduncle and an occasional petiole-peduncle fusion (1). Unfortunately, years of breeding and selection have apparently resulted in the loss of fragrance, common to the wild type. Cultivation and accompanying selection have also brought about chromosomal changes. Native *C. persicum* has 48 chromosomes in the diploid state, but both tetraploid ($2n=96$) and aneuploid ($2n=90, 92, 94, 95$) cultivars currently exist (2). According to de Haan, many cultivars containing a red flower pigment are tetraploids. The same conclusion has been made by Legro (8) concerning the modern fringed-flower types. Studies during the last few decades have clarified the diploid state of *C. persicum*, as it is known today. The $2n=48$ and 96 chromosome types actually represent polyploid levels derived from an extinct species, or form, with $2n=24$. The most recent study



A white Cyclamen.

Fig. 4. An exhibition quality cyclamen, described by Hill in 1893, typifying the desired flower and plant habit characteristics of the period.

GARDEN FLORA.

PLATE 1016.

CYCLAMEN PERSICUM.

(WITH A COLOURED PLATE OF *C. SALMON QUEEN*.*)



Fig. 6. A color plate of 'Salmon Queen' (Southron, 1895). 'Salmon Queen' was not a 'Giganteum' type, but the color was bred into the larger flower forms approximately 10 years later.

labels *C. persicum* as a probable allotetraploid and not a true diploid (2, 8). Current breeding has focused on the production of F_1 hybrids and the development of "miniature" selections. Advantages of the F_1 types are greater flower number and increased uniformity at anthesis (17). Further studies have shown that the naturally cross-pollinated cyclamen can exhibit inbreeding depression (16) and hybrid vigor (17).

Commercial production of cyclamen decreased during the 1960's in the U.S. and to a lesser extent in Europe, but their popularity is now increasing (19). The development of new cultivars more tolerant of home and office environments should encourage greater production of this attractive plant.

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Urban Tree Planting Programs: a Sociological Perspective¹

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Oakland, California has been pursuing an aggressive urban tree planting program since 1978. I have spent a year studying this program from the sociological perspective and believe that insights gained may be helpful to similar programs elsewhere.

The Oakland Tree Task Force (OTTF), through cooperation with a



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citizens group, obtained funds for an 8-month demonstration project to plant

trees in Oakland with citizen participation, emphasizing inner-city areas, from the Federal Comprehensive Employment and Training Act and from the California Department of Forestry. After grants covering the first 8 months expired, staff from OTTF incorporated in a new group, the Oakland Neighborhood Tree Organizing Program (ON TOP); both groups are still viable and have continued their tree planting activities.

Since community participation was to be a central feature of the Oakland experiment, the Urban Forestry Research Unit at the Pacific Southwest Forest and Range Experiment Station of the U. S. Forest Service engaged me, as a sociologist, to study and evaluate the social and community involvement aspects of the project. This report

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