

# Ornamentals for Minimal Maintenance

Plants that are aesthetically pleasing yet sparing in their needs for water, nutrients, and maintenance were the goal of research in this area. New and introduced selections were tested for drought tolerance, environmental soundness, and resistance to pests and diseases.

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## New seasonal color perennials

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The major thrust of this project was to test and develop new kinds of perennial plants that would provide seasonal color and interest in minimum-maintenance landscape gardens. To this end, 33 little-known species and hybrids of South African bulbous and cormous plants were selected and tested under four different minimum-maintenance conditions. In addition, a series of perennial *Arctotis* hybrids developed at the University of California Arboretum, Irvine, were selected and tested. Finally, a hybridizing program using little-known African bulbous plants was initiated.

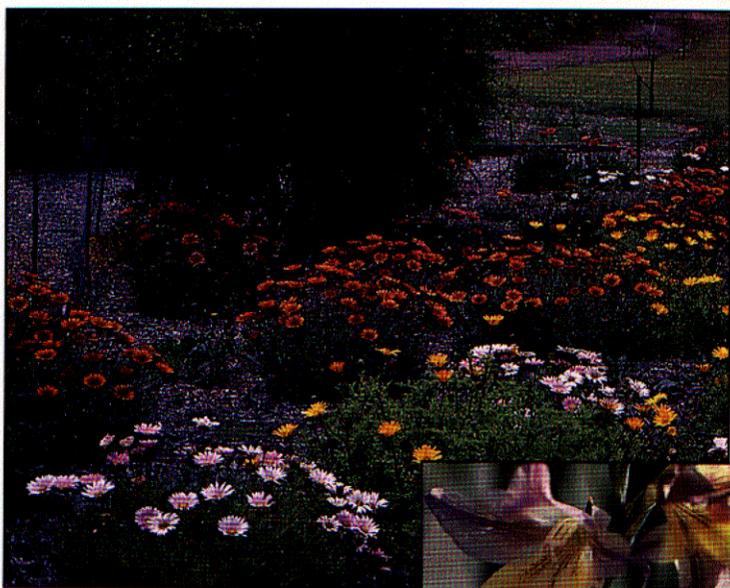
### African bulbous and cormous plants

Cultivars were tested for ability to increase and also produce colorful displays. Bulbs were planted and left for a three-year period. Under the test conditions, bulbs were planted in our natural clay/adobe soil and in this soil amended with the addition of "clean" construction sand. One from each pair of bulbs planted was irrigated year-round, and the other existed only on natural rainfall. Plantings were assessed each spring for the three-year period.

The following species and hybrids performed best under the minimum-maintenance test conditions.

In natural soil with no additional irrigation, *Homeria flaccida* performed consistently, producing nice clumps with yellow or apricot-orange flowers. This was the best of the six *Homeria* species tested. Other consistent species were *Sparaxis elegans*, *Sparaxis* x Irvine strain, *Romulea leopoldtii*, *Freesia muiirii*, *Babiana pulchra* and its hybrids.

In soil with sand amendments and no irrigation, the top performer was also *Homeria flaccida*. Other good performers



*Arctotis*, a large, colorful daisy developed from several wild African species, requires little upkeep and is free from most common California pests and ailments. Numerous hybrids of *Gladiolus*, such as that at right, have also been developed.



were *Ixia maculata* with yellow flowers, *Sparaxis elegans*, and *Sparaxis* x Irvine strain. *Gladiolus tristis* and a series of *G. tristis* hybrids performed well in only this plot.

Natural clay plots with year-round irrigation tested the dormant bulbs' ability to withstand wet summer conditions as might be encountered in the usual landscape with a sprinkler system. Under these conditions, *Homeria flaccida* still performed well, as did *Babiana pulchra* and its hybrids, *Freesia muiirii*, *Romulea leopoldtii*, *Sparaxis elegans*, and *Sparaxis* x Irvine strain.

Several summer-growing species were also tested in the irrigated plots; of these, *Cyrtanthus* x Orange Gem and *Nerine masonorum* were the best. Of the latter two, *Cyrtanthus* was an impressive future garden plant with several flushes of flowers during the year and the ability to tolerate a wide array of conditions. The *Nerine masonorum* is recommended as an edging plant. It clumps freely and produces a froth of pink flowers in August and September. Unlike other *Nerines*, *N. masonorum* is suited to a wide variety of cultural conditions.

The results of tests in soil with sand amendment and year-round irrigation were essentially the same as in the preceding. The only difference was that *Moraea loubseri* did better in this plot than any other.

The length of flowering varied among selections. The most color was obtained from *Cyrtanthus* x Orange Gem, which had flowers for an average of 121 days during each year. Most of the bulbs produced flowers only for 16 to 43 days during each season. Individual flowers do not last long on these plants, but they are rapidly replaced by buds. Selections such as *Homeria flaccida* produced flowers for 36 to 45 days, and *Sparaxis elegans* flowered for 28 to 39 days.

### *Arctotis* trials

*Arctotis* are large-flowered daisies developed from several wild African species. Both annual and perennial forms have

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been grown in the past. At UC Irvine, we developed a strain of very colorful perennial forms. Selections from this strain were grown in a test garden for three years to test for permanence and to assess the amount of maintenance required.

The selected cultivars have an exceptionally long flowering period from January through September. The plants require little upkeep and appear to be free from most common pests and ailments. They were shorn back to 6 inches in height each fall. Plants can be propagated readily from cuttings at nearly any time of the year. These *Arctotis* prefer full sun and occasional irrigation during the hot summer months. The plants appear able to withstand considerable neglect.

The best cultivars from the trials have been selected and will be tested as potential landscaping plants in the trade. Some cultivars will be bedded out at the San Diego Zoo.

### **Breeding new bulbous cultivars**

During this project, numerous crosses have been made between different species of African bulbous and cormous plants. Several have now flowered, and some initial selections have been made of new and novel hybrids. Among the best are a series from *Babiana villosa* and *Babiana pygmaea*. These offer an enormous advance in flower size over any *Babiana* hybrid currently in the trade.

More than 25 crosses utilizing various species of *Gladiolus* have been produced. Among the more useful are a series of hybrids with *Gladiolus tristis* in their background. *Gladiolus stefaniae* and *Gladiolus carmineus* have produced hybrids that flower in the fall from dormant flower bulbs.

Several *Geissorhiza*, *Moraea*, and *Sparaxis* hybrids have been selected but need further testing. An additional 12 crosses were also made during the last season.

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