



Grower: Fred A. Stewart, Inc.

Sophrolaeliocattleya Falcon 'Westonbirt', FCC/RHS-AOS
(*Lc. Aureole* × *Soph. coccinea*)

One of the most famous red cattleya hybrids of all time. Unfortunately, it did not prove to be a good breeder.

CATTELEYA HYBRIDS AND HYBRIDIZERS

Red Sophros and Allied Genera

ERNEST HETHERINGTON¹

THE ORCHID COMMITTEE of the Royal Horticultural Society, in its meeting of March 14, 1922, granted a First Class Certificate to the red-flowered *Cattleya* hybrid exhibited by Sir George Holford. This was the now-famous *Sophrolaeliocattleya* Falcon 'Westonbirt', a cross of *Laeliocattleya* Aureole with *Sophrontis coccinea* (then known as *Soph. grandiflora*). The hybrid was made by the renowned H. G. Alexander, who worked for Holford from 1897 through 1926.

The April 1922 issue of *The Orchid Review* carried this description of the plant as it appeared at the time of judging: "A large plant carrying three spikes with a total of 10 flowers, of perfect formation and intense crimson-red colour. One of the brightest and most richly coloured *Sophrontis* hybrids."

Plants of *Slc. Falcon* 'Westonbirt' are still in cultivation throughout the world, and the cross is still well-known. For more than 50 years, this clone and a companion *Slc. Falcon* that received an FCC the year preceding were the standard of excellence in red *Cattleya* hybrids. Nothing equalled them. Hybridizers sought — without success — to obtain the same intense coloring.

In a letter dated December 13, 1962, Alexander reminisced about his famous red-flowered *Cattleya* hybrid:

I well remember the [*Lc. Aureole*] parent, with its rich golden-bronze coloring derived from crossing *C. Iris* with [*Lc.*] *Luminosa*. A fine variety of *Laelia tenebrosa* of the general type of this species, bronze-shaded, was used in the production of the latter, not the yellow-petaled 'Walton Grange' variety. This, together with the [*C.*] *bicolor* and twice [*C.*] *dowiana*

in the makeup of *Lc. Aureole* doubtless contributed largely to the intense coloring of [*Slc.*] Falcon. The *Sophrontis grandiflora* was a superb form of this species. I have no recollection of seeing one its equal, either in coloring of rich, dark red or in size and form. If my memory serves me correctly, this valuable stud plant was lost through carelessness of a member of the staff in those far-off days. The above variety of [*Slc.*] Falcon ['Westonbirt'] was definitely the better grower of the two FCC plants.

With a cultivar as magnificent as *Slc. Falcon* 'Westonbirt', you could well imagine that here was the key to breeding a whole generation of splendid red *Sophrolaeliocattleya* hybrids. Alas, such never came to pass. For more than a generation, hybridizers have used this cultivar and its FCC-awarded sibling with the hopes of obtaining magnificent hybrids. When *Slc. Falcon* produced seed — most often sparingly — the resultant seedlings — if they did flower — were quite poor and far off-target. In general, neither of these two cultivars have produced much seed. I cannot find any reference to their exact cytology, but we can suspect that they are both aneuploids with an uneven chromosome count.

It was not until the decade of the 1960s that some hybrids were registered from *Slc. Falcon*. It was crossed with *Slc. Anzac*, *Slc. Elegans*, *Slc. Persian Garden*, *Lc. Charlesworthii*, and *Lc. Puppet*. However, even though *Slc. Falcon* has proved such a disappointment as a parent, still it showed that *sophrolaeliocattleyas* of quality and brilliance could be bred.

In this article, we will examine only the red *sophrolaeliocattleyas*. These are of the red-orange coloration imparted primarily by *Sophrontis coccinea*. During the early history of hybridizing, this species was known as *Soph. grandiflora*. There are several other species in the genus *Sophrontis* that have been used to a lesser degree in hybridizing, including *Soph. brevipedunculata* and *Soph. mantiqueirae*. We also must consider *Soph. cernua*, although its flowers are very dwarfish. Still, we must look at all species to see what value or potential they have in breeding. In breeding for red *sophrolaeliocattleyas*, it has been almost a search for the fabled will-o-the-wisp, although, as we shall see, great progress now is being made. Efforts along these lines with *Soph. coccinea* have been made almost from the beginning of orchid hybridization. There have been a few notable hybrids in past years. However, these generally have passed out of cultivation quickly. We will look at some of these. Regrettably, what others have said about them in the literature will be our main reference.

In the past 15 years, more progress has been made in breeding this type of *Cattleya*

Grower: Mr. & Mrs. H. Phillips Jesup
Photographer: Charles Marden Fitch



Sophrontis coccinea
'Edelweiss', CCM/AOS (80 pts.)

This large-flowered miniature species from Brazil is responsible for most of the beautiful red cattleya hybrids we have today.

¹Fred A. Stewart, Inc., 1212 East Las Tunas Drive, San Gabriel, California 91778.

hybrid than in the preceding 75. A point of clarification is necessary. Our commentary will be primarily on hybrids with *Soph. coccinea* or other species of this genus in their breeding. The dark red-purple cattleyas with no *Sophronitis* in them stem primarily from crossing *Cattleya dowiana* with various purple cattleyas or with subsequent hybrids from this line of breeding. These often are called red cattleyas. Those with *C. dowiana* (but no *Sophronitis*) in their ancestry characteristically glow dark reddish purple under incandescent light.

In examining any line of breeding or color section, one of the things we must do is see what species we have as parental material. So much has been learned about breeding in this red color section that we can make some observations right at the start. The best results have been obtained where few, if any, of the purple *Cattleya* species were used. In speaking of hybridizing, we can talk of averages or general results but never in absolutes. There are always exceptions. But which have been, in the main, the building blocks of our red *sophrolaeliocattleyas*?

The primary species, of course, have been from the genus *Sophronitis*. Various cultivars of *Soph. coccinea* have been of most importance. Species of *Sophronitis* are quite variable, from those with small flowers to cultivars with large flowers of excellent shape and rich coloring. Within the species *Soph. coccinea*, the majority of clones are in the red or orange-red range. However, some rare cultivars are pink, and several are yellow. Besides *Soph. coccinea*, the related *Soph. mantiqueirae* and *Soph. brevipedunculata* have been used in breeding. *Cattleya dowiana* is the next most important species in breeding red *sophrolaeliocattleyas*. This species gives larger flowers and intensifies coloring in such lines of hybridization. As Alexander mentioned in his letter, *Laelia tenebrosa* also has been useful for its size, richness of coloration, and beautifully shaped and patterned lip. Many of the yellow and orange laelias also have been valuable in breeding reds. For instance, the yellow *L. flava* as well as the orange *L. cinnabarina* and *L. harpophylla* are in the ancestry of a number of good reds. The red *L. milleri* also have proved useful, as we shall see. The bronze and yellow bifoliate cattleyas, such as *C. guttata*, while not of primary value in this color section, have proved worthwhile in several cases. The Central American *C. aurantiaca* also has been more useful in breeding true color and quality into our modern *sophrolaeliocattleyas* than has been recognized. However, most of its contribution comes rather obliquely, chiefly through the use of various cultivars of *Slc. Jewel Box* (*Slc. Anzac* 'Orchidhurst' × *C. aurantiaca*). This grex will be covered in a later article dealing with hybrids stemming from *C. aurantiaca*.

Our best way of developing a perspective on the breeding of reds is to take the species and see what has been done with them. As we examine various groups of hybrids, we will find that golden door (in this case, it's red) through which we can pass to explore lines of breeding through a succession of fertile parents. Many doors, as in all hybridizing, will be closed because certain hybrids are sterile and, thus, are the end of the line.

In the primary hybrids of *Sophronitis coccinea* (*Soph. grandiflora*), we find this species was used 72 times up to 1945. It is interesting to note that a number of famous hybrids that in time gave rise to their own long line of breeding originated prior to 1945. *Sophracattleya Doris*, *Sophrolaelia Gratrixiae*, and *Sophrolaelia Psyche* all originally were registered around the turn of the century. We can call these some of the building-block hybrids. We wonder where we would be without them, especially *Sc. Doris* and *Sl. Psyche*. Understandably, a number of the early hybrids were crosses of *Soph. coccinea* with large-flowered purples. This was mere wishful thinking on the part of the breeders. However, it appears that early hybridizers also gave considerable thought to crossing with non-purple cattleyas. *Sophracattleya Cleopatra* (*Soph.*

coccinea × *C. guttata*) originally was registered by the firm of Messrs. Charlesworth & Co. in 1898. In some cultivars, the flowers are dark mahogany red with a *C. guttata*-type lip. This cross has been remade several times. In 1890, the firm of Messrs. J. Veitch & Sons registered a cross of *Sophronitis grandiflora* × *Epidendrum radicans* as *Epiphronitis Veitchii*. This is a pretty dwarfish reed-stem plant with brilliant reddish flowers. The purple and very flat *Laelia pumila* was crossed with *Soph. coccinea* to make *Sl. Orpetii*, first registered in 1901. This illustrates again that some of the old hybrids have been remade a number of times. Remakes of *Sl. Orpetii* are in common cultivation today. *Laelia tenebrosa* crossed with *Soph. coccinea* made *Sl. Gratrixiae*. A cultivar of this cross received an AM/RHS as early as 1901. *Sophrolaelia Gratrixiae* 'Rotors', HCC/AOS is perhaps the best-known. It has the very flat flower of *Soph. coccinea* in orange with the narrow *Soph. coccinea* lip. The *L. tenebrosa* parent imparted considerable vigor, which is certainly desirable in any *Sophronitis* hybrid.

Some hybrids are quite beautiful but spend their lives in relative obscurity and pass out of cultivation unrecognized. Sometimes, only one cultivar from a hybrid is beautiful and "right on." An illustration of this is *Potinara Ondine* (*Sc. Doris* 'Pamela' × *Pot. Medea*). *Potinara Medea* is a large, very shapely purple quadrigenic hybrid. To my knowledge, only one plant of *Potinara Ondine* was produced. This was everything that could be hoped for in a red. It had size, shape, substance, and brilliant coloring. But the plant did not grow. Additionally, as is typical of many *sophrolaeliocattleyas*, the color varied too much from one year to the next.

In 1971, Frank Fordyce of Dublin, California, made one of the most notable red *sophrolaeliocattleyas* in history when he registered *Slc. Madge Fordyce*, bred from *Sc. Doris* 'Pamela' by *Slc. Jewel Box* 'Scheherazade' and named for his wife. There have been many fine cultivars that have won high awards. I do not know the cytology of this grex, but many cultivars behave like triploids that produce seeds. However, they do not produce these seeds generously in most cases. We can ask a question about this clone that applies to most *sophrolaeliocattleyas* of this coloration: Where does the intense color come from? It is quite possible that the species *Cattleya aurantiaca* itself, through selected clones of *Slc. Jewel Box*, imparts the brilliance and clarity of coloring. *Cattleya aurantiaca* crossed with *Slc. Doris* made *Sc. Libby*, clones of which have been almost uniformly clear dark red. There are few purple genes in *Slc. Madge Fordyce*. These are only from the red-purple of *Slc. Anzac* in *Slc. Jewel Box*. Don Herman, in his excellent article entitled "Slc. Jewel Box — Sixteen Years Later" in the January-February 1979 issue of *The Orchid Digest*, writes about a number of *Slc. Jewel Box* hybrids. Of special interest is his mention that there were only 28 seedlings raised from the capsule of *Slc. Madge Fordyce*.

Sophrolaeliocattleya Rajah's Ruby (*Slc. Jewel Box* 'Fire Goddess' × *Sl. Gratrixiae*) has been outstanding. *Sophrolaeliocattleya Rajah's Ruby* 'Babe's Baby', AM/AOS has the vigor, floriferousness, and brilliance of red coloring to make it a truly notable red. Another cross by Don Herman is *Slc. Ten-E-Jewel*, a hybrid from *Slc. Jewel Box* by *L. tenebrosa* 'King's Ransom'. The latter is a very large, rich bronze cultivar of *L. tenebrosa*.

In recent years, as the parental material has become available and the pattern of what produced the better *sophrolaeliocattleya* reds could be seen, progress was assured and made quickly. To speak of reds without mentioning *Slc. Anzac* 'Orchidhurst', FCC/RHS would be to overlook one of the most notable and valuable of all cattleyas. Luckily for breeders, this clone is a tetraploid with 80 chromosomes. It was the first of the *sophrolaeliocattleya* reds to be used extensively for breeding and

for many years was *the* most valuable plant in this color section. In recent years, however, it has been replaced pretty much by hybrids and species with little, if any, purple genes in their makeup. Some of the early *Slc.* Anzac hybrids to 1945 were *Slc.* Meuzac, *Slc.* Lindores, and *Slc.* Lucifer. However, after World War II, *Slc.* Anzac really came into its own as a parent. From 1945 through 1960, it was crossed with *Slc.* Lindores to make the famous tetraploid *Slc.* Brandywine. Crossing *Slc.* Anzac with *C.* Golden Gate made the well-known and very dark red *Slc.* Vallezac. *Sophrolaeliocattleya* Anzac crossed with the tetraploid yellow *Lc.* Canberra made *Slc.* Canzac. Most of these were probably yellows or multicolors; however, one or two were beautiful reds.

One of the most famous post-World War II hybrids has been *Slc.* Paprika (*Slc.* Anzac 'Orchidhurst' × *Lc.* Orange Gem 'Delight'), registered by Fred A. Stewart, Inc. in 1960. Plants of this grex could be used to illustrate many hybrids of this type in that they varied from a high percentage of ordinary purples through to some oranges, an occasional clear yellow, and a few reds. *Sophrolaeliocattleya* Paprika 'Black Magic', HCC/AOS has been by far the best-known. When *Slc.* Paprika was crossed with the very red *Sl.* Jinn, the result was *Slc.* Wendy's Valentine.

All the way through 1975 and beyond, we find *Slc.* Anzac being used extensively. With purples, the results were, in the main, small purples. The red did not come through. With tetraploid yellows, some excellent art shades or multicolors in orange, salmon, coral, peach, apricot, and bronzes resulted. When crossed with other reds, such as *Slc.* Brandywine or the orange-red laelias, more of the red, which was so desired, was obtained. This is basically the breeding pattern for this type.

In 1975, an extraordinary hybrid was registered which was to startle the orchid world with the brilliance of its coloring and the number of cultivars which would receive recognition. This was *Slc.* Hazel Boyd, a hybrid made by Frank Fordyce and registered by the Rod McLellan Co. It is a cross of *Slc.* Jewel Box 'Beverly' by *Slc.* California Apricot. *Sophrolaeliocattleya* Jewel Box 'Beverly' is one of the reddish clones of that grex. It has a much larger growth habit than most of its siblings. What is interesting is that this near-triploid gave a substantial amount of seed. More than 30 awards have been granted to various cultivars of *Slc.* Hazel Boyd. The colors have ranged from rather clear yellow through to apricot, orange, and, in a number of cases, clear, brilliant red, as in *Slc.* Hazel Boyd 'Red Celeste', AM/AOS.

In the breeding of *Slc.* Hazel Boyd, we can understand much of the plant growth habit as well as flower shape and even color in many cultivars when we observe that the *Slc.* California Apricot parent is a hybrid of the yellow- or orange-flowered *Lc.* Pacific Sun by *Soph.* *coccinea*. In the *Slc.* Jewel Box parent, the *Soph.* *coccinea* is several generations removed, in the ancestry of the *Slc.* Anzac parent. Still, we always must remember when we look with puzzlement at some hybrids that the genes for certain characteristics are always present, even though they sometimes are not expressed fully.

Sophrolaeliocattleya Hazel Boyd 'Balinese Beauty', AM/AOS, a rich orange-yellow, was crossed with *Slc.* Brandywine 'Cherry Tart', HCC/AOS by Stewart's to make the strain of *Slc.* Memoria Beulah Harper from which came the cultivar illustrated on the front cover of this month's issue of the BULLETIN.

Sophrolaelia Jinn, bred from *Soph.* *coccinea* by *L.* *milleri*, is a hybrid worthy of mention because of its excellent, almost pure red gene pool and its great promise as a parent. Some excellent hybrids are flowering from it, which proves that it does give brilliance of coloring. *Sophrolaeliocattleya* Wendy's Valentine 'June' illustrates what can be done. Remember that *Slc.* Wendy's Valentine is *Sl.* Jinn by *Slc.* Paprika. *Sophrolaelia* Jinn was bred by the well-known *Cattleya* hybridizer Murray



Grower: William E. Farrell

ABOVE,
***Sophrocattleya* Doris 'Pamela', AM/AOS (80 pts.)**
(*Soph.* *coccinea* × *C.* *dowiana*)



BELOW,
***Sophrolaeliocattleya* Madge Fordyce**
'Red Orb', AM/AOS (82 pts.)
(*Slc.* *Doris* × *Slc.* *Jewel Box*)



Grower: Rudolf Pabst

Photographer: Beauford B. Fisher

ABOVE,
***Sophrolaeliocattleya* Jewel Box**
'Beverly', AM/AOS (81 pts.)
(*C.* *aurantiaca* × *Slc.* *Anzac*)

This clone is one of the parents of the original *Slc.* Hazel Boyd cross.



BELOW,
***Sophrolaeliocattleya* Hazel Boyd**
'Red Celeste', AM/AOS (84 pts.)
(*Slc.* *California Apricot* × *Slc.* *Jewel Box*)

This cross is today's most highly awarded *Sophrolaeliocattleya* hybrid.

Spencer of West Covina, California. The *Soph. coccinea* used to make *Sl. Jinn* was 'Militaris'. This plant had rather tall but very thin pseudobulbs and leaves and produced brilliant, dark red flowers of rather small size. The *L. milleri* was a selected red form of this Brazilian species.

A hybrid that could be classified as either a conventional red or a miniature is *Slc. Precious Stones*, which was bred from *Sl. Psyche* by *C. aelandiae* and registered by Stewart's in 1971. The orange or orange-red *Sl. Psyche* is an old hybrid bred from *L. cinnabarina* by *Soph. coccinea*. It has been used many times for breeding. The semi-dwarfish Brazilian bifoliate species *C. aelandiae* is a remarkable parent in that its color and spots appear to be recessive, except when used with similar species or hybrids. Most clones of *Slc. Precious Stones* were purple, yellow, or flame, with a few true reds, such as *Slc. Precious Stones 'True Beauty'*, AM/AOS. Interestingly, this cultivar is fertile as a pod parent but sterile as a pollen parent. Another cultivar, *Slc. Precious Stones 'Riverbend'*, received an HCC/AOS. Other cultivars from this grex are being used for breeding. Perhaps the cross is a diploid.

What recognition has been given in recent years to superior cultivars of the *Sophronitis* species themselves? *Sophronitis acuensis* 'Rudy' received a Certificate of Botanical Recognition. *Sophronitis brevipedunculata* received seven awards, including four Awards of Merit: 'Debra', 'Nancy', 'Red 'n' Round', and 'SanBar Imperial'. This species is very similar to *Soph. coccinea*. As its species name implies, the peduncle (stem that holds the flower) is especially short. The tiny-flowered and dwarfish *Soph. cernua* is very charming and most useful when breeding miniatures. For this reason, it will be discussed in the later article on miniature cattleyas. However, the list of A.O.S. awards shows that the majority of the awards to this species have been Certificates of Cultural Merit rather than recognition for the quality of the flowers. It has received eight CCMs as opposed to two HCCs and four AMs. *Sophronitis coccinea* has received six AMs, two HCCs, and a Certificate of Botanical Recognition to *Soph. coccinea* var. *pygmaea* 'Stella'. The latter must have been a very tiny charmer, even for a dwarf species. *Sophronitis coccinea* also won numerous earlier awards under its synonym *Soph. grandiflora*. Of the additional species in the genus, *Soph. mantiqueirae*, although similar to *Soph. coccinea*, is considered a valid species in its own right. The clone 'Cookie' received both an Award of Merit and a Certificate of Cultural Merit. The rose-colored "species" *Soph. rosea* received an AM for the clone 'Angel' and a CCM for the cultivar 'Joe Sackett'. This "species" also was awarded an HCC under its synonym *Soph. coccinea* var. *rosea*. However, most authorities now consider *Soph. rosea* to be a synonym of *Soph. wittigiana*, another segregate from *Soph. coccinea*. Under the name *Soph. wittigiana*, the species received a CCM for the cultivar 'Hot Pink'.

Sophrolaeliocattleya Ruth Liebman (*Soph. coccinea* 'Ichi Ban', AM/AOS × *Slc. Jewel Box*) has been a very good red. Raised mostly in England, it is seldom seen in the U.S. *Sophrolaeliocattleya* Riffe 'Burlingame', AM/AOS is well-known and extensively grown throughout America. It is a beautiful cultivar with flame red flowers.

Potinarina Scarlet Dynasty, bred from *Sc. Cleopatra* and *Pot. Gordon Siu* 'Red Radiance', AM/AOS by Dr. Howard Hill of Riverside, California, has had the highest average of good, brilliant red coloring of any *Sophrolaeliocattleya* or *Potinarina* that I have seen. It is of interest to look at its gene pool to detect the source of its intense coloration. *Sophrocattleya* Cleopatra, as you remember, is *C. guttata* (probably a bronze form) by the orange-red *Soph. coccinea*. *Potinarina* Gordon Siu is bred from *Slc. Radians* by the purple *Bc. Hartland*. *Sophrolaeliocattleya* Radians, in turn, is bred from *Slc. Isabella* by *C. Princess Royal* and was registered by Charlesworth in 1925. The cultivar used was a red-purple. Clones of *Pot. Scarlet Dynasty* appear to be

triploids because little, if anything, has been bred from them.

In the breeding of reds, there are several important cytogenetic principles to bear in mind for best results — or, shall we say, for a minimum percentage of failures. If a tetraploid red, such as *Slc. Anzac* (which has considerable purple in its gene pool), is crossed with a tetraploid semi-yellow, such as *Lc. Canberra*, the tetraploid semi-yellow will exert a strong influence toward its color. In other words, there will be a minimum of reds and a maximum of semi-yellows and bronze semi-yellows. A yellow diploid by a tetraploid *Sophrolaeliocattleya* or *Potinarina* red will be more recessive and permit more of the so-called reds to come through. A simpler gene pool, such as using straight *L. milleri* or the primary hybrid *Sl. Jinn* (with almost entirely red gene pools) will give a higher percentage of reds. In the diploid combination, whether it be red by red or red by a yellow diploid, there theoretically will be equal influence except if one or the other has a mixed gene pool of colors. In crossing a large, dark red-purple by a small *Sophrolaeliocattleya* red, the size of the *Sophrolaeliocattleya* will dominate, and the color of the purple will dominate. How many thousands of plants have been raised with the hope that the reverse would apply! In the main, it does not.

The orchid family is, by far, the most varied of all flowering plant families. We are fortunate that in the Laeliinae (of which our sophro hybrids are a group), many of the genera and species can be interbred in the wonderful array which we have and which will continue to expand. Most species are diploids. From an amateur standpoint, hybridizing can be exciting and rewarding. Amateur hybridizing, especially in the reds, can be a wonderful adventure, even if the cross which is made is a "marriage of convenience" where two plants coincidentally bloom at the same time. However, anyone who wishes to do some knowledgeable hybridizing will find a wonderful world of information available on genetics, cytogenetics, and plant breeding.

If these notes have created a desire to proceed further, my advice is this: find out what has been done with the parents you propose to use. Diagram the ancestry to see which species have entered into their gene pools. If possible, learn their cytology. Are they triploids, tetraploids, or diploids? With a little research beforehand, your chances of flowering the beautiful orchid you have dreamed about and nurtured for years will be fulfilled. Even as you work on your perfect orchid, there are others throughout the world making excellent progress in reds. This is heartening. I recently was asked by an enthusiastic and knowledgeable amateur who, on seeing an especially beautiful and varied display of cattleyas in bloom, said, "What else is there to breed?" The answer, of course, is that there is no perfection in any type of orchid. As lovely as the blooms may be, none has everything — vigor, reliability, freedom of bloom, flower quality, consistency of flower quality, resistance to disease, lasting quality, and ability to grow and flower well under varied conditions and in various areas. We also can add tolerance to either lower or higher temperatures. True, the orchids we have today are vastly improved over most of what was grown only a few years ago. As in all human endeavors where the creation of beauty is a conscious and ongoing effort, orchid hybridizing, too, is a skill, an art, and the ability to evaluate and appreciate.

