

# ❖ Odontoglossum Alliance ❖

Newsletter

November 1997

## Enigmatic Odontoglossums, Part 4 The *Odontoglossum cristatum* complex

Text and Photographs by Stig Dalström

In 1841, CARL THEODOR HARTWEG traveled through the mountains of southwestern Ecuador. Near the village of Paccha he discovered some orchid plants that John Lindley later described as *Odontoglossum cristatum* (1844)

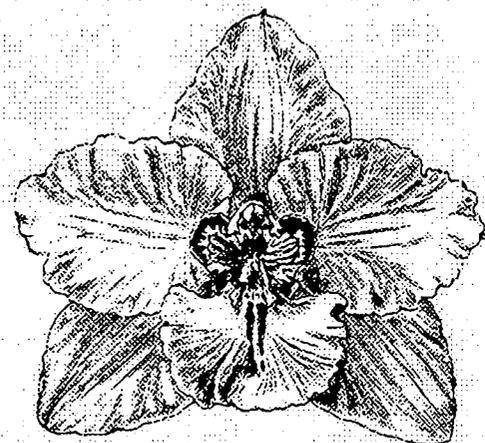
As the name *cristatum* indicates, this species is characterized by the prominent and radiating callus teeth on the lip, which also generally have bright colored streaks of yellow, red, or purple. This characteristic stands out as the most typical feature for all members of this species complex.

Today, *Odm. cristatum* is still fairly common. It occurs as an epiphyte on the lower hills around the city of Zaruma, at the amazingly low altitude of 3,940 to 4,920 feet (1200 to 1500 m).

The flowers of *Odm. cristatum* are quite constant morphologically, as long as plants from the type area are studied. They are of intermediate size for the genus, fairly slender and with developed column wings, frequently recurved as in the shape of a shark's fin, triangular or hook like. Furthermore, the plant is often "wobbly," giving the impression of having a broken rizome.

I am not aware of any collections of this species south of this area, possibly due to the dry and desert like habitat that extends from here. But it is not uncommon if we turn north from Zaruma, along the western slopes of the Andes. It is frequently encountered along the road from Santa Domingo de los Colorados toward Quito, at altitudes between 4,265 and 6,560 feet (1,300 to 2,000 m). However, in this area the flowers are somewhat different. They are generally larger (or much larger) and with a longer, thicker and straighter column. The wings of the column are also forked and forward projecting. It is a handsome orchid that deserves attention, especially because it is relatively warmth-tolerant and quite floriferous.

When comparing these two forms of this species, one cannot help wondering whether they really should be called by the same name. But as for many other closely related taxa, there are intermediate forms that seem to connect them. Personally, I would prefer treating them as different subspecies.



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In Bockemühl's treatment of the genus (1989), the illustrated plants on pages 56 and 58 represent the northern form, which we refer to here as "subsp. *furcatum*." The black and white photograph on page 59 shows a herbarium specimen that represents the southern "type" form and the hook like wings are evident.

In the same distribution area, but at quite higher elevations, it is possible to encounter one of the showiest species of the genus. Here, in the cool, extremely wet and stunted cloud forests, grows *Odontoglossum hallii* Lindl. It was first collected by Colonel Hall in 1837, in the valley of Lloa west of Quito and described later the same year. It is a most magnificent species that has been used in hybridization because of its large and colorful flowers.

Plants of this species look distinct and cannot be confused with anything else in the area. Still, when studying the morphology of the flowers in detail, we find that it comes very close to *Odm. cristatum* "subsp. *furcatum*." The column as well as most other features of these plants appear almost identical. The only significant differences are the shape of the lip and the altitude where they occur. Flowers of *Odm. hallii* always seem to have an extraordinary broad and fimbriate lip with extraordinary broad fimbriate lip with spreading front lobes. The surface is variably patterned with brown spots of different sizes, whereas for *Odm. cristatum* ("ssp. *furcatum*") the front lobe always seems to be more triangular or rounded acuminate with one large brown spot covering most of the area. Plants of *Odm. hallii* are generally found at altitudes above 8,200 feet (2,500 m) while *Odm. cristatum* occurs at much lower elevations, generally below 6,500 feet (2,000 m).

*Odontoglossum hallii* is also known for its variability. In the northern part of its distribution, west of Otavalo, the flowers can have huge dimensions, occasionally reaching 6 inches (15 cm) across. The lip is generally white with irregular brown spots, but in the southern part of the distribution, west of Cuenca, the lip has a yellow coloration. This color form (or variety) was described as var. *xanthoglossum* by Reichenbach (1879). Today, plants of this variety are sometimes called '*elegans*' by orchid growers in Ecuador. This is unfortunate because there is an *Odm. elegans* described by Reichenbach (1879), a supposed and rare natural hybrid between *Odm. cirrhosum* and presumably *Odm. hallii* or *Odm. cristatum*.

Another little curiosity has been observed in an area where *Odm. hallii* grows with a member of the *Oncidium cucullatum* complex. Several "typical" -looking plants of *Odm. hallii* have shown signs of carrying genes from the *Oncidium* plant. The flower has developed a column hood and the callosity of the lip has been shaped more like a tuft of hair rather than radiating keels. Plants that vegetatively appeared exactly in between these quite different looking orchids have also been brought into cultivation. Unfortunately, they never established enough to reveal their true identity, but soon perished and died.

Bockemühl claims that the nearest relative of *Odm. hallii* is *Odm. luteopurpureum* Lindl. I agree that they doubtlessly are closely related but when comparing the columns it is still easy to tell them apart. While *Odm. hallii* generally has a bifurcate wing construction with a couple of long and pointed projections (similar to *Odm. cristatum* "ssp. *furcatum*"), *Odm. luteopurpureum* always seems to have very broad and deeply lacerate wings. This latter species, which only occurs in Colombia, so far, is otherwise known for its impressive variability in terms of size, shape and coloration of most other parts of the flower.

Returning to Ecuador and the members of the *Odm. cristatum* complex, there is yet another species that we have to deal with. Reichenbach described this species as *Odontoglossum cristatellum* (1878), based on a shipment of flowers from Bull's firm in England. He had already seen some specimen of this taxon a few years earlier but considered them to be "varieties" (color forms) of *Odm. cristatum*. However when more material kept arriving, he decided that separate description was necessary. He still suspected it to be a natural hybrid, though.

Today we know *Odm. cristatellum* as one of the most widespread and variable species of the genus. It has been collected from the northern part of the Central Cordillera in Colombia along the Andes down through Ecuador as far south as to the border with Peru as well, although I am unfamiliar with any reported specimen. Throughout this large distribution it is inevitable to find a certain amount of variation.

Bockemühl claims (p. 54, 1989) that due to a morphological difference, one of these deviating forms may be treated as a subspecies. *Odontoglossum lehmannii* was described by Reichenbach (1878) as a distinct

species in the same year as he described *Odm. cristatellum*. The type plant of *Odm. lehmannii* had been collected by Lehmann on the slopes of Mount Tungurahua in central Ecuador the year before. A strong inflorescence is preserved in the Reichenbach herbarium in Vienna. From all I can see there is nothing that distinguishes these two entities from each other. Especially when the natural variability of these plants is taken into consideration. But according to Bockemühl (1989), *Odm. lehmannii* differs from *Odm. cristatellum* by having broader front lobes of the lip and a darker coloration (more brown).

Lehmann, who lived in South America at the time, was most likely unaware of the description of *Odm. cristatellum* (which was described more or less simultaneously with his own *Odm. lehmannii*). Since he had discovered a "new" species, which was named after him, he probably called other specimens of what he saw was the same taxon, by the same name. Thus we can find herbarium specimen here and there determined as *Odm. lehmannii* mixed with specimens determined as *Odm. cristatellum*. This difference is then due to who collected or determined them, rather than indicating that they represent different morphological taxa in any way.

Bockemühl claims that individual plants of this taxon throughout the entire distribution that have a somewhat broader front lobe and "more brown" on the segments, can be picked out and treated as a separate subspecies of *Odm. cristatellum*. In my opinion this is not right for several reasons. The fact that individual plants (clones) show a somewhat deviating shape of the lip is not an indication of a "subspecies" growing mixed with the "type" species. It is rather an example of natural variation within the entire species.

If, indeed, these two "different" taxa had occurred sympatrically, we could as well call them good species. (But it would take more distinct and consistent features to justify that.) Or if all plants from a certain area (like the slopes of Mount Tungurahua) had shared a similar combination of characteristics, differing from the "type" form of the species, then we could speak about a possible subspecies.

But this is not the case here. When examining the types concerned, as well as numerous other specimens from different locations, it becomes clear that it is meaningless to try to separate this species further. Since these two names, of what I consider to be the same taxon, are described the same year by the same author, the question is which name should have priority. The natural choice is *Odm. cristatellum* since it is commonly used and established. Thus *Odm. lehmannii* Reichb.f. should be regarded as a synonym and not a subspecies of *Odm. cristatellum* Reichb.f.

A more challenging question though, is what actually may separate *Odm. cristatellum* from *Odm. cristatum*. Since this is such a hopeless task, the question should be whether it even makes sense to try. The more material I see, the more convinced I am to treat them as subspecies of a wildly polymorphic and distributed "superspecies". It has not yet settled down into a taxonomically manageable status. When one has to use characteristics such as "a tendency to do this..., and is usually not..., etc.", it really feels quite useless in a botanical system.

Bockemühl (1989) is using characteristics to separate these two "species", that may work between two selected plants, but mean nothing in the field. The shape of the column wings as well as the callus teeth has proven notoriously variable. Bockemühl also mentions that plants of *Odm. cristatum* have much "smaller" leaves than *Odm. cristatellum*. "Smaller" in this case is a translation error and refers to the German word "schmal" which means "narrow". Compared leaves from plants in the wild as well as in cultivation has proven this characteristic unreliable as well.

Growing conditions for these plants are similar as for the *Odontoglossum epidendroides* complex, but the temperature should be adjusted to the species concerned. For instance, plants of *Odm. cristatum* can be grown in a warmer greenhouse than plants of *Odm. cristatellum* or *Odm. hallii*.

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## Toronto Odontoglossum Alliance Meeting 9 May 1998

The Odontoglossum Alliance annual meeting will be held Saturday, 9 May 1998 in Toronto, Canada. This will be held in conjunction with the Southern Ontario Orchid Show, 7-10 May 1998. This is the Mid-America Congress, Eastern Orchid Congress and the AOS Trustees meeting. The Odontoglossum Alliance program has been organized with the lectures beginning at 8:30 AM and continuing until noon. There are four lectures. Following the lectures will be a luncheon which will include a business meeting and an auction of fine and unusual Odontoglossum Alliance material. In addition we have arranged for an evening function at a Chinese restaurant in the local area. The menu looks excellent. During the dinner we will also conduct an auction of fine Odontoglossum Alliance material. We will have divided the auction contributions between the lunch and dinner functions. The addition of a dinner will be a time to socialize with your Odontoglossum Alliance friends in a relaxed and enjoyable atmosphere. Our thanks go to Marrio Ferrusi, who has made many of the arrangements. Also he is the contact person in the event you wish to send contributions to the auction. Please see the notice later in the newsletter for details. Marrio's address is:

1229 Cream St. RR 5  
Fenwick, Ontario  
Canada, L0S 1C0.

The registration material for this meeting will be sent out with the February Odontoglossum Alliance Newsletter, thus assuring that all our members receive the notice and the registration material.

### Program

**Session Chairman:** Dr. Sal Naqvi

Dr. Naqvi is a cardiologist at the University of Toronto. He bloomed his first *Odm. crispum* under lights in 1976 and has been pursuing growing this genus ever since, with as he says "limited success". At the present time he is growing his odonts in a cool greenhouse with other cold genera using perlite as a potting mix with a reservoir in the pots. (This follows the method as described by Dr. Wally Thomas and reported in a previous newsletter.) Despite the evaporative cooler, he finds the summer difficult in his part of the world. He has experimented with bark mixes and rockwool. At the present time the majority of the collection is in perlite while trying a few in coarse peat in fiber pots. He reports his seedlings do well up to about age two. He is attempting to achieve the size of bulbs or racemes seen on the West coast here in Ontario.

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**“Temperature Tolerant Oncidiinae Intergenerics”**

by Milton Carpenter

This presentation discusses the more prominent of the various intergeneric Oncidiinae combinations which have been found to tolerate wide temperature variations - ( - ) - at the speakers growing facility in South Florida. The talk, illustrated by slides, also focuses on the numerous characteristics contributed to their progeny by the species involved.

Everglades Orchids Oncidiinae hybridization program has as it's goal, the creation of “Temperature Tolerant “ Oncidiinae which have the beauty of modern Odontoglossum hybrids, but a much wider range of shapes, colors, and patterns, plus the ability to grow vigorously and bloom successfully in most climates of the world.

Milton Carpenter, a native of the Florida Everglades, attended schools in Palm Beach County, the University of Florida and the Massachusetts Trades School in Boston, Massachusetts. He has been growing orchids for 37 years and is the owner of Everglades Orchids in Belle Glade, Florida. He is a past president and life member of the Orchid Society of the Palm Beaches. He is also Executive Vice President and a life member of the American Orchid Society. He is an accredited Judge of the AOS.

**“Those Other Glossums”**

by Sue Golan

This is a discussion of the Rhyncosteles tribe, which formerly was the Lemboglossum tribe. Included in the class are biconiense and rossii, among the more well known. These plants are native to Mexico and other countries that are closer to the US than the Odontoglossums of South America. The talk will cover the plants within the Rhyncosteles group, illustrated by slides. It will cover the history of the group hybrids and the attributes they impart to hybrids.

Sue Golan lives in the Chicago, Illinois area and in the last five years of her amateur growing has become interested in growing the Odontoglossum Alliance material. She has two greenhouses, one cool and one intermediate. Sue is an Accredited AOS Judge.

**“A Greenhouse for Odontoglossums”**

by John E. Miller

The climate for growing cool Odontoglossums in New England is modestly acceptable. There are a number of features that can be included in a greenhouse to enhance growing. After building a number of greenhouses at various locations, the accumulated thoughts were incorporated into a new greenhouse specifically designed and constructed for growing the odontoglossum alliance. The greenhouse has been in operation now for ten years. The design success and failures are described and illustrated.

John Miller started growing orchids in Lexington, Massachusetts in 1951 in a window greenhouse. He was an early member of the Massachusetts Orchid Society. In 1953 the family moved to Dayton, Ohio where greenhouses were constructed at two homes. He joined the Miami Valley Orchid Society. In 1958 the family moved back to Massachusetts, first to Weston and later to Brookline where greenhouses were constructed at both houses. It was then the John started growing Odontoglossums. He built up a collection by buying community pot size plants from Charlesworth and CO until they were acquired by McBean's. In 1986 construction was started on a new home in Westport Point, Massachusetts where yet another greenhouse was designed and constructed. John is the editor of the Odontoglossum Alliance newsletter and secretary/treasurer of the Odontoglossum Alliance. He lives with his wife, Janice, at Westport Point, Massachusetts.

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**"Odontoglossum bictoniense to Odontocidium Cherry Fudge: Nature's pallet yields a masterpiece"**

by Doug Kennedy

Odontoglossum bictoniense has proven to be a prodigious parent within the Oncidium alliance. Starting with the first generation, we see an infusion of desirable traits; e.g. spike habit, warmth tolerance, and color. Subsequent generations continue to show this strong positive dominance. This is aptly reflected in the first recipient of the Robert Dugger AOS Award - Odontocidium Cherry Fudge 'Swiss Mocha' AM/AOS. A hybridizers dream come true!

Orchids in Our Tropics - a hobby gone wild! In Vandorf, Ontario, the greenhouse offers Doug Kennedy not only a respite from -30 Canadian winters, but affords him an opportunity to hybridize with his many award plants. From instantly falling love with Paph Winston Churchill 'Indomitable' FCC/AOS 25 years ago, Doug has progressed (or regressed) through all the alliances. A significant number of these are still represented in his greenhouse, but his present obsession is his Oncidium intergenerics with a splash of Lycastes. This obsession has recently (1996) been reinforced by winning the first Robert Dugger Award with Odontocidium Cherry Fudge 'Swiss Mocha' AM/AOS.

With his wife Terry, he has exhibited his orchids in numerous shows from coast to coast including the 11th World Orchid Conference in Miami in 1984. The 55 AOS show trophies and countless other awards document the success of these shows.

Doug is a past Vice President of the Mid America Orchid Congress. He has also served several terms as president and show chairman of the Southern Ontario Orchid Society and continues to act as a long term director. Having taken early retirement earlier this year, he can now devote full time to his family and vocation - orchids.

## Report on Membership

Since this was the time that I promised only paying members of the Odontoglossum Alliance would be sent the newsletter, I thought I would give a report of the membership.

We have 116 members subscribing to the quarterly Newsletter. Among these are 6 to whom the newsletter is sent without charge.

New Zealand Odontoglossum Alliance  
 British Odontoglossum Alliance  
 Australian Odontoglossum Alliance  
 Eric Young Orchid Foundation  
 American Orchid Society  
 Marie Selby Gardens, Library

Of the 110 paying members 66 also subscribe to the New Zealand Odontoglossum Alliance newsletter.

The membership breaks down as follows:

US	91
Canada	9
Mexico and Central and South America	2
Europe	2
Africa	1
Far East, Asia, Australia and New Zealand	5

We have asked and for the most part received the mailing address, phone and fax numbers and e-mail addresses, where they exist.

This year we have 39 people who were paying in 1996-97 and who have failed to pay for future membership. This is about 25% of last years mailing. This is consistent with previous years experience in that we have members drop out after the May dues announcement and then we get about the same number of new members when we have our annual meeting in the spring.

## The genus Solenidiopsis Senghas, in retrospect by Stig Dalström

In the July 1995 issue of the American Orchid Society Bulletin, page 768, was a short article about the genus Solenidiopsis by Eric A. Christenson. Since I knew very little about this uncommon genus myself at that time, I decided to look into the details a little bit further. After having studied the available literature I also had a chance to examine several herbarium specimens of this taxon, which were scattered over a number of herbaria in the United States. Gradually, my taxonomic picture of these orchids turned out slightly different from what I read in the article by Christenson. Therefor I would like to share my observations with a larger audience.

The first species of this taxon to be described was a peruvian plant, collected in Loreto near Moyobamba by Filomeno and named Solenidium peruvianum by Schlechter (Schlechter, 1921). The holotype was probably destroyed during the Second World War, but Schlechter made a drawing which was published separately (Schlechter, 1929) which presumably represented the type. The conclusion that this drawing is the type of this species was also made by Bennett and Christenson (Bennett and Christenson, 1994), and they transferred this species to Solenidiopsis.

The second species was described by Schweinfurth (Schweinfurth, 1945), as Odontoglossum tigroides and it was based on a collection by Macbride (Macbride 3840, AMES) from Huanuco, Yanano, Peru, in 1923. This description with accompanying illustration can also be seen in Orchids of Peru (Schweinfurth, 1961), as well. The author included Solenidium peruvian as a separate taxon in this treatment but mentioned that no material had been seen by him. However, in the first supplement (Schweinfurth, 1970), a collection of Solenidium peruvian is cited (Hutchison and Bennett 4663, UC).

Later, a peruvian orchid suddenly decided to bloom in one of the greenhouses of the Botanical Garden of Heidelberg, Germany. The plant had originally been collected by Rauh (Rauh 54142), in an area called Mendoza Valley in northern Peru, 1980, and labeled "Odontoglossum". Senghas had determined it as a Solenidium species but later changed it to Odontoglossum tigroides. At a later occasion he discovered that it had a divided stigma (Senghas, 1986).

Since a divided stigma is a feature not commonly found in the Odontoglossum alliance, and certainly not in Solenidium, Senghas decided to describe the genus Solenidiopsis based on this collection (Senghas, 1986). Senghas incorrectly mentioned that the only other member of the Oncidiineae with a divided stigma is Cochlioda Lindley, when in fact both Oliveriana Rchb.f., and Systeloglossum Schltr., have a similar morphological structure as well. Furthermore, the author mentioned that Cochlioda has a lip which is fused to the column while in Solenidiopsis the lip is free.

After having studied this particular feature, the column-lip adnation, in more detail I found that this difference is obvious only if we compare Solenidiopsis tigroides with Cochlioda vulcanica (Rchb.f.) Benth. When comparing the former series with Cochlioda rosea (Lindl.) Benth., we get a different picture. In this case the shapes of the column, lip and the adnation in between are so similar that it appears logical to me to treat them as belonging to the same genus.

Senghas then described Solenidiopsis flavobrunnea (Senghas, 1989), based on a plant collected by Würstle, near Huancabamba in northern Peru. The distinguishing features used by Senghas to separate this species from Solenidiopsis tigroides, were; a different pattern of coloration and less wavy margins of the sepals and petals. The callus is described different but it is not mentioned how.

Personally, I have difficulties in accepting these features as particularly distinguishing since I know, through experience with other plants in the Oncidiineae, that color and shape vary to a great degree. Senghas may well be right in his assumption that these plants represent two separate species but the features used by him are unsatisfactory. This is a common problem for taxonomists, when you have a very strong "feeling" that you

are dealing with a different taxa but cannot put it in convincing words. In the case of Solenidiopsis flavobrunnea, the difference in coloration is vague and uncertain as a feature and a "different callus" is even more so.

However, when comparing the morphology of Solenidiopsis flavobrunnea with the description and illustration of Solenidiopsis peruviana, I find them to be so similar that I conclude that they are the same species. Thus the last described name (flavobrunnea) would become a synonym to the first (peruviana).

Bennett and Christenson described a fourth species as Solenidiopsis rhombicalla (Bennett and Christenson, 1994), based on a collection by Bennett (Bennett 2066, AMES) from northern Peru, 1965. The characteristics used to separate this species from Solenidiopsis tigroides were; a smaller flower, a different callus and a bilobed labellum apex.

When comparing the measurements in the description of Solenidiopsis rhombicalla with the measurements shown in the accompanying illustration by Pastorelli, one finds several discrepancies. Additionally, when comparing these measurements with the original description of Solenidiopsis tigroides it becomes clear that they do not differ significantly, if at all. Using the size of the flower as a distinguishing feature between species in the Odontoglossum alliance is unfortunate to begin with, since they are notoriously variable. Even more so when only one specimen is cited. As for the different callosity I fail to see what way it really differs. It all boils down to how to interpret what the illustrator tries to show in the drawing.

To really be on the safe side, I rehydrated a flower of the type specimen of Solenidiopsis rhombicalla, (with permission from the herbarium curator) and I found that the overall morphology corresponded very nicely with the type of Solenidiopsis tigroides. The front lobe is actually acute (Triangular) and only superficially appears to be bilobed on the illustration since it is reflexed underneath the lamina of the lip. This can be seen when studying the lateral view of the lip on the drawing, but it is not very obvious.

My conclusion is that Solenidiopsis rhombicalla is a synonym of Solenidiopsis tigroides.

In Christenson's article in the AOS Bulletin (1995), a fifth undescribed species is mentioned but no further information is given.

So how many species of Solenidiopsis are there in reality? Well, of the four described so far, my conclusion, based on morphological studies, is that we can sink them into two without greater difficulties, Solenidiopsis peruviana and Solenidiopsis tigroides. But are these two species really distinct from each other?

When I rehydrated two flowers from the inflorescence of the type Solenidiopsis tigroides (with permission from the curator of the herbarium at AMES) one from the base and one from the top, I found that the lowermost flower was larger than the uppermost one. This may seem logical, but in addition to this the lowermost flower also had a much more developed callus on the lip. Indeed, they appeared like two different species. One corresponding to the description of Solenidiopsis tigroides and the other to Solenidiopsis peruviana. My first conclusion, then, was that all the plants I had been dealing with represented on single variable species.

However, when I discussed this phenomenon with Steve Beckendorff, of Oakland, California, he showed me some photographs taken in his greenhouse. He apparently had two different looking plant of Solenidiopsis in cultivation. Seeing the live plants and the photographs I realized that they indeed appeared distinct. I was also informed that they smelled differently as well. One plant (S. tigroides) had a very sweet and pleasant smell while the other (S. peruvian) had a much less appealing odor.

Vegetatively, plants of Solenidiopsis peruviana generally have unifoliate pseudobulbs while Solenidiopsis tigroides have bifoliate. However, smaller plants of the latter species are likely to unifoliate pseudobulbs as well, which is a common feature for plants in the Oncidiinae. Actually, the type of Solenidiopsis tigroides is described as having trifoliate pseudobulbs, which is incorrect. The type specimen clearly shows two leaf scars on top of the pseudobulbs. The third leaf belongs to one of the basal foliaceous bracts.

Based on Beckendorff's observations, who has great experience of growing plants in the Odontoglossum alliance, as well as my own conclusions, I assume that we indeed may be dealing with two different species of Solenidiopsis, despite the morphological similarities.

Regarding Bennett's and Christenson's treatment of Solenidiopsis peruviana and Solenidiopsis flavobrunnea as two separate species (Bennett and Christenson, 1993, 1995) I would like to point out a couple of

facts. Aside from growing together and being morphologically inseparable, they are also mixed determinationally. A particular specimen, collected by P.C. Hutchinson and J.K. Wright 5638 (UC), is cited as Solenidiopsis flavobrunnea in Icones Orchidacearum Peruvianum (Bennett and Christenson, 1993), although determined as Solenidiopsis peruvian in the herbarium, by Christenson. A plant from the exact same locality; Amazonas, Chachapoyas, Cordillera Callacalla, 18 km above Leimbamba along road to Balsa, 3100 m, P.C. Hutchinson and Bennett 4693 (UC) is later cited as Solenidiopsis peruviana in the same publication (Bennett and Christenson 1995).

Similar species can very well grow together without cross breeding. However, when plants look alike, grow together, behave and appear similarly, my conclusion is that they represent the same species, unless some strong evidence indicates a difference. In our case no such features have been mentioned by any author. Furthermore, when authors who treat them as different species in publications cannot separate them in reality, it makes me even more convinced that they truly are the same.

How some the different authors see so differently then? Well, part of the answer can probably be told only by a specialist in human behavior, but part of the reason is also the fact that different authors work differently. Some collect information already available in literature, without examining the type specimens, which is a quick way of producing a lot of publications but also involves certain risks. If a mistake has been made in past time, it will inevitably be repeated. Other authors spend more time specializing in a certain group of plants in order to really learn about them rather than spreading too thin. This is a time consuming and slow process, involving a lot of traveling and examination of critical type specimens, but it usually pays off by revealing a clearer picture.

As an example we can return to Solenidiopsis

Senghas meant that Solenidiopsis is a valid genus because the stigma is divided and the only other genus in the Odontoglossum alliance was Cochlioda (Senghas, 1986). He also mentioned that the flowers are non-resupinate (having the lip uppermost).

Using resupination as a distinguishing feature can be risky and lead to misunderstanding. According to Dressler (1981). -The term "resupinate" is used for any orchid flower that has the lip on the flower on the lower side.-Nothing is mentioned whether it really matters how the plant itself or the inflorescence grows, i.e., erect, horizontally or pendant.

It is very common in the Odontoglossum alliance that a plant cultivated in a pot will produce erect new growth with an erect inflorescence. As the spike gets longer it sometimes begins to arch, and if growing very long may turn in any possible direction. In nature where these plants often grow on vertical tree trunks, the inflorescence are often turned semipendant. At this stage the flowers start to open. If you collect such a plant with resupinate flowers and make a herbarium specimen, you might place the inflorescence upright, in a more "normal" position. Suddenly the flowers appear non-resupinate.

There is an example of this in Icones Orchidacearum Peruvian (Bennett and Christenson, 1993) On plate 137, Oliveriana brevilabia (C. Schweinf.) Dressler & N. Wms., is distinguished by the non-resupinate flowers/ In reality this is not true. Plants of this rather common species often grow on vertical tree trunks with their long and branched spikes hanging down arching to semipendant, and the flowers are generally resupinate.

When going through a pile of herbarium specimens of this species, as well as of Cochlioda vulcanica, about 50% of them show flowers in a resupinate position and the rest as non-resupinate to various degrees. It simply depends on how they grow in nature and how they are mounted in the case of Solenidiopsis, plants in cultivation, growing in pots, apparently have no-resupinate flowers. How they grow and behave in nature is unknown to me.

The stigma on flowers of Solenidiopsis is divided into two lobes by the rostellum. The division is not definite, it is still one sole surface, but it appears as if there were two distinct lobes. The morphological construction can be seen in Cochlioda, Oliveriana and Systeloglossum.

The lip of flowers belonging to Solenidiopsis and Cochlioda are fused rigidly at the very base of the col-

umn and, or through a central longitudinal keel. In flowers of *Oliveriana* and *Systeloglossum* the lip is fused rigidly at the base and along the edges, or lateral flanks, of the column.

To separate *Solenidiopsis* from *Cochlioda* based on the adnation of the lip to the column is questionable, since there seems to be a grading scale from one species to the next and from one genus into the next. Morphologically, I consider plants of *Solenidiopsis* to be an odd section of *Cochlioda*. However, if we add all features together into a profile, flowers seemingly non-resupinate (versus normally resupinate for *Cochlioda*), differently colored (tones of yellow, green and brown versus bright violet, orange-red or rose in *Cochlioda*) and with an odor (plants of *Cochlioda* are scentless to my knowledge), indicating a different pollination strategy based on scent rather than on color as an attractor, and with a slightly different morphology. I don't have a problem in accepting the genus as valid, although very closely related to, primarily, *Cochlioda*. Vegetatively, the plants are so similar, with glossy, slightly compressed pseudobulbs, that they can be confused when without flowers.

The cultivation for *Solenidiopsis* ought to be very similar to *Cochlioda* and other intermediate to cool growing *Oncidiinae* plants, since they grow under the same conditions.

#### Acknowledgment

I wish to thank all the authors who have contributed with information about plants in the *Odontoglossum* alliance. I also want to thank the herbarium curators of all the concerned herbaria in the United States, and elsewhere, as well as the staff at Selby Gardens and everybody else, who are most helpful in my struggle with researching the *Odontoglossum* alliance.

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## 1997 Robert Dugger Award

### Odm. Rawdon Jester 'San Damiano' FCC-CCM/AOS

The Committee on awards selected *Odontoglossum* Rawdon Jester 'San Damiano' FCC-CCM/AOS 91 points, 93 points as the recipient of the Robert Dugger *Odontoglossum* Alliance award for 1997. The committee made its selection at the Fall AOS trustees meeting in King of Prussia, PA. The cross is Odm grande X *Williamianum*. Botanically this is a *Rossioglossum* but still an *Odontoglossum* in the hybrid registry. This specimen plant joins a cultivar of its parent and grandparent species in having FCC recognition.

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The plant was exhibited by Joseph L. Walker, Ph.D., Cedar Crest, New Mexico at the Great Plains Monthly Judging, Oklahoma City, OK on 19 October 1996.

**The description is as follows:**

Thirty-one exceptionally striking, large flowers and 10 buds on six 30-cm-long inflorescences; sepals tan-brown, barred lemon yellow; petals lemon yellow distally and almost solid tan-brown near column; lip light creamy yellow with lemon-yellow striations and faint tan circular marks near column and along outer edge, keel deep yellow; foliage in excellent shape, well distributed around the plant; commended for unusual color, form and size; in addition to carrying exceptional flowers and spikes, plant held two turgid seed pods 9 cm wide by 10 cm long with remnants of flowers persisting on the end of the capsules showing same striations as on the open flowers. Natural spread 15.7 cm, 14.6 cm vertical, ds. 2.3 cm w, 8.7 cm l; pet 3.5 cm w, 8.1 cm l; ls 1.8 cm w, 8.4 cm l; lip 3.9 cm w, 4.9 cm l.

Congratulations to Dr. Joseph Walker.

## Report on Preparations for the Odontoglossum Alliance

Odontoglossum Alliance participation in the 1999 16th World Orchid Conference to be held in Vancouver, British Columbia, Canada; 23 April - 2 May 1999.

The WOC Chairman, Dr. Wally Thomas, has committed an entire day to the Odontoglossum Alliance. This is planned to be an International Odontoglossum Alliance Day. There is a three person committee preparing the program with the very excellent help from the general conference staff. We have been allocated Thursday, 29 April, 1999.

The day is planned to commence in the morning with five 30 minute talks and allowing 5 minutes for questions following each speaker. Following the morning session is an Odontoglossum Alliance lunch, during which time there will be a short business report. Also some of the auction material will be auctioned. As the beginning of the afternoon session will have three talks by another alliance, this will provide for a relaxed lunch period. The afternoon session, beginning after the afternoon break, will have two speakers with the same format. The evening will be a social function with a Chinese banquet at the Chinese Imperial Restaurant. During the dinner there will be an auction of the balance of the fine odontoglossum alliance material. In 1996 at the Odontoglossum Alliance meeting a dinner was held at the same restaurant and thoroughly enjoyed by all. The food was delicious, varied, many courses, and pleasantly and efficiently served. Service was outstanding with it being very prompt, but unhurried during each course. We received many compliments on the fine evening.

The general theme of the World Orchid Conference is conservation. In the spirit of this theme the Odontoglossum Alliance will have several talks dealing with the conditions of the alliance species in their native habitat. Then we will have some reports on interesting and new developments related to the alliance. This is a meeting that every Odontoglossum Alliance lover will want to attend- Great city, informative talks, and fun social events.

The program is being organized by a committee representing the alliances of New Zealand, Britain, and the American (north, central and south) groups. In addition W. Mark Elliot and Joan Walton of the Vancouver Orchid Society are part of the organizing team with their on-site presence. From time to time I will be reporting on the progress of organization of this day for all Odontoglossum Alliance lovers the world over. Of the seven lectures, five of the speakers have committed at the time of this writing. I expect that in the February newsletter will be a fairly complete program. I hope every odont lover will find this program to their liking.

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## Trekking - Part V

by Bob Hamilton

The road from Loja to Zamora is one of the most fascinating orchid areas of Ecuador. After leaving Loja, this road climbs to an altitude of 2500 meters and then descends to 940 meters by the time one arrives at the town of Zamora. Zamora is in the Oriente region of Southern Ecuador. The word oriente in Ecuador refers to the east. Although it is only 40 km from Loja to Zamora, the drive takes several hours. For anyone interested in orchids, this road is a full days trip. There are several rivers and streams along this road, most notable, the Rio Zamora which crosses under a bridge through a steep rock gorge at high velocity. Rivers which flows in this area is destined for the Amazon as they are beyond the Andean divide.

After climbing to the 2500 meter level after leaving Loja the road began a steep descent with lots of switch-backs. At one of the first stops Steve Beckendorf collected an interesting looking odontoglossum. Steve has a good eye for Odontoglossums. When this plant bloomed in his greenhouse it turned out to be a very nice Odontoglossum harryanum. The Ecuadorian form of this species is smaller than the Colombian form. It is a unique form with a very bright lip which begins near the crest purple and then dramatically changes to brilliant white. Harryanum is amongst the most spectacular Odontoglossums. It can be found in the Andes from Colombia to Peru. There seems to be a continuous integrate of form and color for this species along the Andes. Comparing Odontoglossum harryanum relatives such as nevadense from northeast area of Colombia and Odontoglossum wyattianum from Peru one sees a continuum in form and color.

Rivers are great areas to investigate orchids. The banks, which are often accessible grow bushes and trees which overhang so one has a view into the vegetation. Another advantage of rivers is people often live along or close to rivers. Where there are people, there are paths which can be hiked. Regrettable for the ecology of a country, where there are people, there are also cut and felled trees. Felled trees are a double edged sword for they give the orchid hunter a chance to investigate the highest branches. Collecting from felled trees is guiltless as the orchids on these trees are doomed to die. Collecting them is a salvage operation. The first river we came to was calm and quite in November. We parked at a switch-back in the road where the river passed under a bridge and began a hike up river. We ran into a family on a picnic who were there to enjoy the beauty of the area. Several trees had fallen into the river because of erosion and checking one over I immediately found a stunning Lepanthes. This pleurothallidinae had an bright yellow and red flower of incredible intricacy. The flower was no more than a centimeter long. I anxiously showed the plant to Moises Behar, who specializes in Lepanthes. Moises assumed it a gift and into his collection bag it went. I did not have the heart to ask for it back. Walter Teague advised us not to spend too much time in one area as there was more to explore further down the road and any given area can be monotypic, i.e. only a few orchid species for the whole area..

The next river we crossed over was the Rio Zamora. There was no point in stopping at this swift flowing, deep river. The banks of its gorge were vertical. We drove for another half-hour until Walter signaled to pull over. He had a trail he wanted us to hike. We hiked up a small valley until we came to an open meadow. There were signs this had been a forest only a short time ago. In this clearing were a few remaining, very straight trees. Walter had his binoculars trained on them and immediately spotted plants of Masdevallia persicina which is thought to be near extinction because of habitat destruction. The few plants we found growing in the area were in full sun. Their leaves a dark purple and very small for the species when grown in cultivation. Walter collected

one plan and placed it in water. Quickly, the leaves became extraordinarily thick and turgid. More turgid than I have ever seen a masdevallia leaf when grown in a greenhouse. Walter gathered us together and told us about the area. In the late 1970's Walter had written an AOS article on masdevallias discovered at a spot he identified only as "Kilometer X". The exact location of Kilometer X was never revealed in an attempt to protect its plants from wholesale collection. Kilometer X is the location where only two decades ago new Masdevallias were found — agaster, persicina, strobelli and urosalpinx. I had read Walter's article when it was published first published in the AOS intrigued by the mysterious location Kilometer X! Now I was standing at the very spot! There is no longer a need to protect Kilometer X; the plants of this area are now history.

Before returning to the car we stopped along a river bank and relaxed in the stream. One sees very different things when one relaxes. There were butterflies all along the bank drinking water and licking small amounts of salts which accumulate wherever pools of water evaporate. The variety of shape and colors were intriguing. Watching these magnificent insects brought back the observations of Ecuador's distinguished orchid collector Dr. Alex Hirtz. Hirtz has observed a significant drop in the insect population of Ecuador which he attributes to both habitat loss and the use of pesticides in agriculture. With insects a major pollinators of orchids one cannot escape a maxim, "as the insects go, so go the orchids". In this same area were magnificent, split-tailed humming birds.

By late afternoon we arrived in Zamora where, at 940 meters the climate was warm and tropical. This is a quaint town with a large square. Because of a boom in gold mining the town had grown to more than 6000 by 1991. Walter pointed out a convent where he and fellow orchid collectors had spent the night before hotels were available. After we chose one of the two hotels in Zamora I headed for a shower to cool off and clean up. Cool off turned out to be a very apt choice of words. As is often the case in rural areas in Ecuador, there was no hot water available. I was getting used to cold showers but somehow, when it is very hot outside, cold showers are VERY cold showers.

We explored the town. On a stone wall dividing two homes we came across one of Ecuador's snails. This creature was about the size of a hand and busy at work eating moss from a wall. The size of this mollusk was incredible.

We went to bed early because the next day we planned a long hike to a gold mine located at the top of a trail. Sleep would not be in the cards for this evening. Throughout the night some local, who had lost his love pined by drinking and playing a love ballad on his phonograph over and over and over. The volume and distortion were both at maximum. This went on for several hours. The tolerance Ecuadorian's have for each others behavior is extraordinary! Making it even harder to sleep was the song this chap had chosen. The melody was haunting. The next days hike would begin with tired travelers.

In the morning we headed south-east, again along a river. The banks were full of blooming white sobralias and epidendrums. The goal was to follow a purported road to its end and then begin hiking toward a gold mine which was at 2700 meters. For an odontoglossum grower altitude is everything. We were soon disappointed to find out the road had been damaged in a flood and was washed out at the same altitude as Zamora. Thus, we would begin a climb even further away from the gold mine than we planned. We would have to hike to gain altitude and there was no hope of climbing to an altitude high enough in one day for odontoglossum species. Even odontoglossum harryanum, which occurs at one of the lowest altitudes for Odontoglossums requires a minimum altitude of about 1700 meters.

The first part of our hiking trail required transgressing a large area of muck I named Lake Vaca because a dairy herd has excreted a pond of urine. Trying to exercise caution to cross such an area brings out the worst of my

coordination. True to form I stumbled in Lake Vaca. Not fun but good for a laugh amongst colleagues. We hiked for several hours. Walter was always ahead and often went up the side-walls of the trail to explore. This hike was majestic with lots of stops to photograph the area which included a valley with a river. As the trail steeped we ran into some loggers coming down the trail, their chain saws over their shoulders. Even in remote forests one hears chain saws. They warned us that some cows were being herded down the trail. Farmers had taken them to the high meadows to graze and after several months away from exposure to humans these cows had become aggressive. We were advised to scamper up the side-walls of the trail when we met the cows. After about fifteen minutes the cows were coming our way. I took no time to climb the dirt wall and gripped it to hold my place.

The trail was not only getting steep it was also narrow. I looked over the edge and on a mantle about 30 feet below was a pile of cow bones. If you slipped on this trail you were history. I took some delight seeing those bones. That was one cow that couldn't contribute to Lake Vaca.

After hiking most of the day I checked my altimeter. We had only climbed to 1700 meters an altitude too low for the plants we were interested in. I rested and it began to rain. Walter Teague, John Leathers and Steve Beckendorf, who had hiked ahead of Moises Behar and me were coming back down the trail. We knew that the rain would make the steep trail treacherous. Walter asked if I had found anything interesting. He really liked to ask this question because, invariably, even when I hadn't even seen an orchid he had found something interesting. I insisted there was not an orchid to be found in the area. As I finished my sentence Walter reached over my ear and pointed at a plant, "a Lankesterella", Walter declared. I looked at this knobby, small bromeliad like plant and he took out his camera to photograph it. The leaves were spiral and symmetrical. I had seen it but not paid attention to it. A Lankesterella is a very rare orchid and I had missed even recognizing it as an orchid. We organized and headed down the trail.

Before descending very far the rain picked up intensity. The trail was becoming a stream and on the steeper parts I slid down on my rump. There was no possibility of walking upright without a good chance of visiting the cow "boneyard". When we approached the lower altitudes where the trail flattened out we took more time to explore the plants at this warmer, lower elevations. Along a muddy banks were clumps of *Phragmapedium caudatum* growing. This was a unique form. No one in our group collected phrags but it was a pleasure to see them growing in their natural habitat. In the same area were a small but beautiful *ellianthus* and a miniature orange *sobralia*. Puddles were collecting in this area and I saw my first land crabs — a strange sight so far away from any ocean. There were also wonderful insects such as huge forms of "walking sticks".

After crossing back over Lake Vaca we stopped at a farmhouse which was also a "store". We bought a couple of bottles of warm soda pop and relaxed. We decided not to spend more time in Zamora. This would be our farthest excursion south. In the morning we would head north toward Cuenca, Ecuador's third largest city and the home of noted orchid growers Padre Andreeeta, Dr. Benigno Malo, Pepe Portilla and Dr. Eduardo Sanchez.

Editors Note: This is Part V of a continuing article by Robert Hamilton. The first IV portions have been published in earlier *Odontoglossum Alliance* Newsletters.



*Oncidium McBeanianum* (*superbiens* × *macranthum*).  
Exhibited at the Chelsea Show by Messrs. J. & A. McBean

### ONCIDIUM McBEANIANUM.

**A**LTHOUGH there are a few natural hybrids in the genus *Oncidium* very few indeed have been produced artificially, which is somewhat remarkable when the bright and rich colours of the majority of species are considered. This rareness will make the beautiful hybrid shown in the accompanying photograph all the more

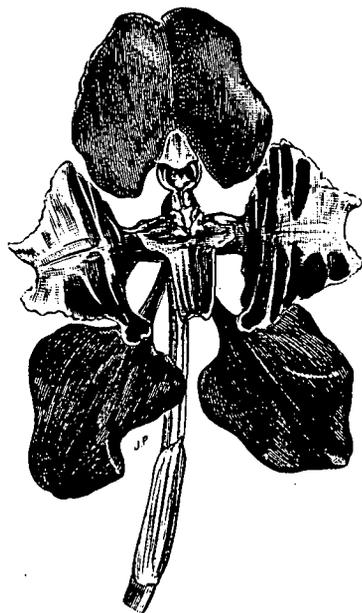
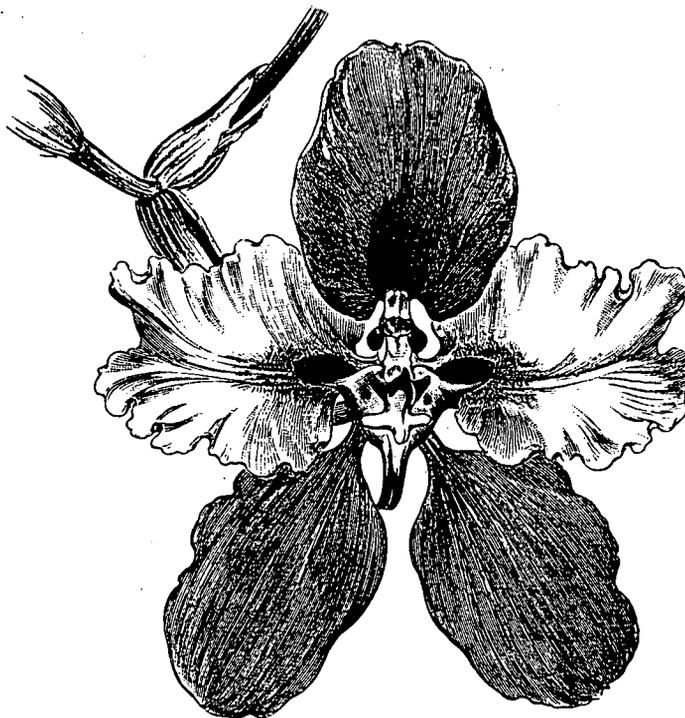
interesting, and perhaps lead others to take an interest in the genus.

*Oncidium McBeanianum*, which bears the raiser's name, was produced by crossing *superbiens* and *macranthum* var. *hastiferum*, both parents being well-known South American species. Like many other hybrids this plant grows with remarkable vigour, there being no sign of the deterioration frequently seen in the parents when under

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*Oncidium superbiens.**Oncidium macranthum.**The two parents of Oncidium McBeanianum.*

cultivation. It will therefore be of considerable service to all amateurs fond of cool house *Oncidiums*.

The inflorescence is many feet in length, and has the usual twining habit of *macranthum*. On fully grown plants at least thirty flowers are produced, each a little less than 3 inches across, the sepals olive-brown, the petals yellow with olive-brown spotting on their basal portion, while the labellum, with its strongly developed crest, and the column are of varying purple tints. The petals are arranged in the same plane as the sepals, and are not bent forward as in *superbiens*, yet they perpetuate the latter's spotting in an attractive manner.

*O. superbiens* is a native of Colombia, where it is found at an elevation of about 8,000 feet. It was first discovered by Purdie, about the year 1843, and was introduced to England in 1871, the first plant flowering in Messrs. Veitch's nursery at Chelsea in the spring of 1872.

## NEW HYBRIDS.

**ODONTOGLOSSUM BEATRICE.**—A charming addition to the cirrhosum hybrids, raised by Messrs. J. and A. McBean, Cooksbridge, the parentage being *cirrhosum* × *Lambeauianum*. The rich yellow on the labellum, the unusually dark chocolate-purple markings and the attenuated segments are the chief distinctive points.

**LÆLIO-CATTLEYA IVANHOE.**—An excellent flower of this hybrid between *L.-C. eximia* and *C. Dowiana* was shown by Baron Schröder at the R.H.S. meeting, April 27th, 1915. It was raised by Mr. Shill in The Dell collection, and gives every promise of making a handsome result.

**BRASSOCATTLÆLIA CONSTANCE.**—The result of crossing *B.-C.-L. Veitchii* (*L. purpurata* × *B.-C. Digbyano-Mossiae*) with *C. intertexta* (*Mossiae* × *Warneri*). Raised by Messrs. Flory and Black, Slough.



KARL SIEGLER

**Odontoglossum Rawdon-Jester 'San Damiano' FCC-CCM/AOS**

91 points, 93 points

(*grande* x *Williamsianum*)

Botanically a *Rossioglossum* but still an *Odontoglossum* in hybrid registry, this specimen joins a cultivar of its parent and grandparent species in having FCC recognition. Exhibited by Joseph L. Walker, PhD, Cedar Crest, New Mexico.



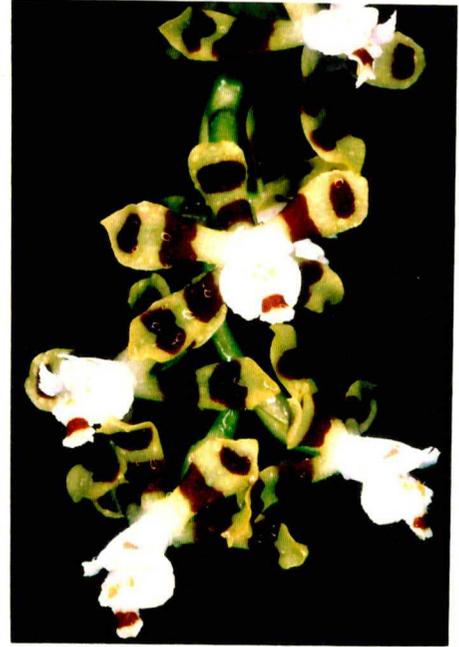
*Opposite:* This atypical form of *Odontoglossum hallii*, from west of Cuenca in Ecuador, has yellow flowers.

*Above:* *Odontoglossum hallii* in its native habitat, west of Otavalo, Ecuador.



Opposite: This close-up shot of *Odontoglossum hallii* shows the long and pointed column wings. Above: Furcate column wings are evident on this *Odontoglossum cristatum* "subsp. *furcatum*."

Above left: A specimen of *Odontoglossum cristatum* from near Zaruma, Ecuador. Above: This common form of *Odontoglossum cristatum* is from the eastern slopes of the Andes in Ecuador.



Photograph identification

clockwise upper left

(1) *oliveriana brevilabia*

(2) *solendiopsis tigroides*  
(photo S. Beckendorf)

(3) *solendiopsis tigroides*  
(photo S. Beckendorf)

(4) *cochlioda vulcanica*

(5) *solendiopsis peruviana*  
(photo S. Beckendorf)

(6) *oliveriana brivilabia*  
natural habitat

(7) *cochlioda rosea*

