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## New Plants from Around the World®

### Dick Alderden

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### INTRODUCTION

My name is Dick Alderden; I come from Holland and have businesses in both Holland and Thailand. I am glad to tell you something about my job, because I absolutely love it.

I am scouting the world trying to find new or unknown plant species, which can be developed for the market. I want to provide innovation in the market by making new and previously unknown species available to consumers. My job is completely different from plant breeders who are busy trying to breed new colours from known species, like roses, chrysanthemum, and others. For example; with chrysanthemum, about 270 “new” yellow colours have been bred in Holland since after World War II. The fact is no consumer has any real interest in there being so many yellow colours in the market. However, new cultivars can make the production time shorter, optimize quality, and better the vase-life. There are a lot of worthwhile reasons to increase quality through breeding and selection.

But to the consumers yellow is yellow and red is red. In my mind, consumers want real innovation and something that is new and unknown will get their interest. Developing these new crops and marketing them is also exciting for the growers.

With this in mind, I sold my nursery in Holland and went to University again for about 1 year. I wanted to learn more about species, which are similar or comparable to species already in cultivation, but with different shapes or properties. I also wanted to learn which species could be used for crossing or selections with the known ones, to make novel cultivars.

Through the Internet I tried to contact plant hobbyists world wide, sometimes I was successful, sometimes not. I requested seeds of novel plants. I got many sent to me, which I sowed, grew on, and evaluated to see if they were worth developing or not. I also got seeds and cutting material from several universities worldwide.

Hobbyists and scientific people are always willing to exchange species, just to get the ones they do not have. In this way, it was not hard to find many of the species of interest that I was searching for. Most scientific people don't have any sense of commerce. Maybe this is the reason why there are still so many interesting species that have not been developed commercially.

Always it's the challenge to find rare plants that nobody else has. I have found some species which are endangered in their natural habitat. Protection orders may help to prevent against illegal hunting from the wild, but cannot prevent the species from becoming extinct. Many endangered species are conserved by Botanical Gardens, but those plants left in the wild may still die out after a while. Programs are needed to propagate these species and put them back into their natural habitat. This may make it possible for the species to survive and repopulate itself in nature.

These types of re-establishment projects cost a lot of money. That's why it would be nice if science and commerce could cooperate. If research and development can be done and the results commercialized, funds will be raised to undertake the conservation activities supervised by the scientists.

Once I wrote letters to the World Tree Fund and World Food Organisation. I asked them to think about the possibility of conserving endangered species through commercialisation. In this way, when consumers buy the plant a proportion of the cost is a fee that is paid to the World Tree Fund. This fund uses the money collected in its conservation activities for endangered species. I got back a positive response and both organisations wanted to talk about how to do it. A cooperative agreement was established with the International Union of Conservation of Nature (IUCN — The World Conservation Union). The World Tree Fund is a component of the IUCN.

### A SUCCESS STORY

We worked together on a plant species from Hawaii, which was endangered, *Brighamia insignis* (Fig. 1). This succulent is almost extinct; there are about 10 plants on one of the islands now. These plants would probably die out within 5 years under normal circumstances. The reason for this is that the moth responsible for pollination of the flowers is already extinct. Other predator insects destroyed it. Only this moth was capable of pollinating the flowers to make seed set possible for the propagation of the species. If nothing is done about this plant, it is obvious that it will become extinct too.

The IUCN was committed to conserving this species by any means. They even rented a helicopter so that a person could be lowered down over the remaining plants and hand pollinate the flowers to get some seeds to set.

I obtained two plants from the Botanical Garden at Bonn (Germany) and propagated the plants by seeds. I hand pollinated these myself over the last 5 years (Fig. 2). At the moment we have about 300,000 seeds. We offered the IUCN as many seeds as they wanted to propagate plants to put back in the natural habitat of Hawaii. Cooperation has started!

We also started selling the *Brighamia* in the market from January this year. A 10 Eurocent fee has been added to the selling price of each plant, which will be transferred to the IUCN to enable them to conserve this and other endangered species.

Figure 3 shows the extraction of seed from a seed pod. One seed pod can produce about 300 seeds. One (3-year-old) plant can produce about 20 seed pods. So if the harvest is optimal we can get about 6000 seeds from each plant. Seeds can be stored in the long term at -7 °C. Germination rate is about 90% if seeds are sown within 3 months after harvesting.

The first trial involves cooperation with the nursery that has been selected to test grow the species commercially. This nursery has signed an exclusive test-contract. A test for cultivation success is carried out. After the test, the grower can change the



**Figure 1.** *Brighamia insignis* with flowers at bud stage.

test-agreement to a growing-agreement for 5 years. During the test all necessary information is exchanged between the grower and us to optimize cultivation.

The 1<sup>st</sup> year of commercial production started in July 2003 with 150,000 plants produced in 12 months. After we compile the feedback from the multiplier, grower and retailer, we may adjust the production for next year.

During the test, PBR for the species in Europe was applied for, and also PPR for the U.S.A. As far as possible the species will be protected. All expertise developed



**Figure 2.** Hand pollinating the flowers, to get the seeds.



**Figure 3.** Harvesting the seeds of *Brighamia insignis*.

will be used to guide new growers in other countries. Marketing will be used to promote the new species, in exhibitions, magazines and advertisements. The IUCN is also willing to start promotion for "the species, which almost became extinct".

Many people are interested in knowing more about nature, especially if there are possibilities to help through donation to funds directly to organisations that are actively involved in plant conservation like IUCN.

Donations will be used to conserve endangered plants, only. So we can promote a win-win situation for commerce and for nature. More of these cooperative projects will start soon.

## THE NEXT STEPS

We see the development of *Brighamia* as a useful example to support our work with other endangered species in the future. In our small greenhouse in Holland we hold in stock about 70 species. We are doing research into these and plan to develop them over time. If we can, we protect the results by PBR and PPR.

I would like to tell you about some species that we have under development which are new or unknown to consumers. We are in the process of developing species that we expect will generate interest in the European market. However, some of these species you may know or have in production already.

- *Areca catechu*, a palm species from Thailand. There is a big difference between the sizes of the leaves in individuals from the wild, from 40 cm to 100 cm. We selected an individual with 40 cm leaves, suitable as an indoor potted plant or small tree in the garden.
- *Asparagus madagascariensis*, comes from Madagascar and is possibly the only asparagus that can be multiplied by cuttings. This asparagus is very strong growing and has beautiful glossy leaves.
- We have two *Begonia* cultivars already in the market. *Begonia rex* 'Escargot' was the first selection, introduced in 1997. *Begonia concifolia* 'Bulls Eyes', was introduced 1998.
- *Boophane disticha* is a very beautiful plant from South Africa (Fig. 4). There are only about 60 plants of this species in the wild. We are propagating by seed and have about 3000 bulbs in stock. This species may be introduced in 2005 as an indoor potted plant.
- Many new *Caladium* cultivars may be available soon from breeding work in Thailand. Figure 5 shows a small foliated plant with totally pink leaves.
- *Senecio confuses* is a beautiful flowering outdoor plant (scented flowers) found in Brazil.
- *Habenaria*, an orchid native to Thailand, which grows near water (low water-level lakes and brooks) clamped on organic material. The species is very rare and protected by the Thai government, even to export nursery-grown material there is a need to get a special permit. We have developed four colours, pink, deep orange, white, and yellow. We have several thousand at our nursery in Thailand and will release it for sale within 2 years.
- *Calathea musaica* is a beautiful foliage plant with glossy leaves with a mosaic pattern. Propagation is by rhizomes.
- *Euphorbia milii* from Thailand; large sized flowers (about 6–8 cm).



Figure 4. *Boophane disticha*.

- *Dichorisandra*, a native of Brazil, has brilliant blue, upright racemes of flowers. Normally this plant only flowers at about 1–1.5 m tall. We have reduced the flowering height through breeding and selection and now have 4<sup>th</sup> generation plants which flower at about 60 cm. The flowers are beautiful and last for about 10 weeks.
- *Sinningia leucotricha*, from the gesneriad family. Developed for the mass market, the grower can be provided with bulbs to grow to finished plants in about 6 weeks. More colours are in development.



**Figure 5.** *Caladium* selected for leaf size and colour.



**Figure 6.** *Freitchinetia*.

- *Freitchinetia*, native to Burma, has three star-shaped, orange bracts (Fig. 6). The real flower comes from the center.
- *Hoya multiflora* 'Arrows of Amour' is known but never developed for mass production.
- From the family Rubiaceae, *Rutidia* (from the Isle de la Reunion) has already completely disappeared from its native habitat. One plant was conserved at the Botanical Garden in Bonn (Germany). I

obtained seven cuttings and multiplied these to about 2000 plants at present. This species will be reintroduced to its native habitat in cooperation with IUCN.

- *Tarenna barbonica* is also a member of the Rubiaceae with flowers that look like *Ixora*. Two plants (trees) remain in the wild. Propagation by cuttings is almost impossible (we used rooting hormones without success). Now the *Tarenna* is growing in Thailand from seed production. We have found that *Tarenna* grows about 20 cm per year, not a commercial success due to the high production costs.

## SUMMARY

I have tried to explain some of the results of my hobby in this paper. Of course it is meant to be on a commercial basis, but the love for plants and flowers is a never-ending passion for me. It is nice that we can help nature by developing rare and endangered species for the market, as far as possible, supervised by science and internationally acknowledged conservation institutes. In this way we let our customers become more involved with conserving nature.

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## Clematis Propagation®

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## INTRODUCTION

Much valuable plant material is often wasted when clematis are propagated only in the early to mid season. Experiments were carried out and two methods have been adopted to utilize normally discarded material. It was found that flowering wood on compound dichasial cymes was almost as easy to strike as the earlier season's softwood, and useful struck cuttings, which grew away rapidly either in the current season, or the following spring were successfully produced.

In the second method described wood that would otherwise be pruned off and discarded in winter from potted stock plants is used in a modified repotting method to produce easily removed, layered plants in the stock plant pot. The stock plant is undamaged, and regenerates in spring from the base as usual for the material required for propagation in the normal method.

## PROPAGATION METHOD 1: CUTTINGS FROM COMPOUND DICHASIAL CYMES

Cuttings of *Clematis × durandii* were taken from compound dichasial cymes, as illustrated in Figures 1, 2, and 3.

The nodal cutting is trimmed and the stem slightly wounded for about 10 mm near the base. One leaf is removed and the other reduced.

The cuttings are dipped in a root promoting powder (Rootex P™, 3 g·kg<sup>-1</sup> IBA), then set in a mix of sharp washed river sand and perlite (1 : 1, v/v) in seedling trays. Trays are placed on the propagation bed under intermittent mist and at 25 °C.

**Results.** Eighty-five percent of cuttings had rooted and were ready for potting on to 50-mm tubes in 4 weeks. Unrooted cuttings were returned to the trays and re-