

contend with, making the risks when crossing much less than in nature.

There is a big variation in flowering habit and the seed is collected and sown in the beginning of July from the same year's harvest of seed plants; this is very important in breeding. Pollen is stored at  $-18^{\circ}\text{C}$  and seeded at  $-1^{\circ}\text{C}$  to  $2^{\circ}\text{C}$ .

## ONE YEAR OF PLANT PROPAGATION

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I have been associated with the Riverside Group in Guernsey for 4 years — first as a States Horticultural Adviser and more recently as their Technical Director. They are the second largest horticultural company in Guernsey — with 20 acres under glass, 130 employees, and 70 years of history.

Being principally tomato and cut flower growers, they began to examine the possibility of nursery stock production under glass in Guernsey two years ago and also out-of-doors in County Kerry.

We entered the field without any preconceived ideas as to how to grow nursery stock but with a long experience in problems of management and of plantsmanship. I want to explain how we have tackled things so far and brought this experience to develop what I believe to be a unique system of production. To avoid any difficulties within the company we had to apply our existing system of labour management to our plant propagation work. I shall try to outline this system.

We do not have foremen. Our tomato and flower growers are directly responsible to the Managing Director. I am available to give technical advice. We have a supervisor who has to ensure that each man has the necessary equipment, facilities and training to grow a crop. We have just appointed a sales/production coordinator.

Each grower on the staff has his own batch of glass to look after, be it tomatoes, roses or carnations. He gets bonuses according to his production and the profit of his batch with due reference to its potential. He is therefore very largely his own boss — he can work as an individual. In this way we feel that he can develop and achieve his own potential. He can earn a good wage ac-

ording to his own efforts — in fact our men can earn as much as in other industries. We find the system gives us enthusiastic workers who take a pride in their work and see a just reward for their efforts. We never have labour problems but, if we had, we would not have a Personnel Manager to solve them — the Managing Director knows all his men. We also offer them a good pension scheme and they can retire on half earnings after 40 years service.

Before seeing how we apply this to plant propagation, I would like to comment on one important fact which our individual accounting system has shown. All things being equal there is a tremendous difference in ability among men. Training can be given but it cannot give to a man an ability he does not have — it can only develop what is there. As an example, we have a two-acre block of tomatoes and the heating, venting and drip feed is automated. The men have only to spray, deleaf, trim and pick. Last year net company profits varied between 4000 per acre and £750 per acre depending on the man. You will appreciate that we cost each one individually. The inference is that different men have different innate abilities — our job is to develop them to the full. We feel that every man has something to contribute to the company.

When we started to develop our nursery stock work we took these experiences and philosophies with us. We felt that we could not operate a system of master propagator and attendant minions who did all his bidding. We decided to set up a number of individual propagating units where one man or a group of 2 or 3 co-workers would see a crop through from cutting to sale. Our camellia unit was the prototype for our other units and I will describe its organisation and method in some detail.

Our camellia unit is run by a husband and wife team who get casual help as needed. They learnt by trial and error under some guidance. Now, 2 years later, they have a broad framework in which they work and they discuss problems as they arise with the Managing Director or myself. They have almost complete autonomy. They can order pots, composts, etc. They make all cultural decisions, they can discuss packaging and even sales. They can establish trial propagating methods — and we are finding this freedom invaluable in improving techniques.

We work a two tier bonus system. We pay a bonus when they have produced a pre-arranged number of saleable plants. The bonus paid per plant varies from, at present, 1p for better camellias to 0.25p for a cheap plant like a hebe in another unit. A second bonus is paid according to the overall profit of the unit. Company charges at so much per ft<sup>2</sup> glass are fixed, but our Mr. and Mrs. Camellia have control over all other costs — heat, composts, extra

labour, packaging, etc., etc. They should be able to earn up to £ 500 p.a. between them as bonuses. This type of independence makes them intensely keen and interested in their work. Such is our confidence in them that they have the sole keys of their unit. Because of this independence and its flexibility they have rapidly improved techniques. They keep accurate records of all their batches and we have a complete history of every batch struck. Only our management system could have allowed this.

The first camellia plant was struck as a single leaf cutting in 1972. They are now producing thousands which are similar. Until that year Mr. Camellia was a fitter for a heating company and Mrs. packed tomatoes. Obviously they had innate plantsmanship and a free and easy system allowed it to develop. Like most places we started with mist, but now their trials have led them to a closed case system — it roots some cultivars in 3 weeks.

Such is our camellia unit which is to produce several tens of thousands of plants this year. It is a prototype for our others and we have 7 of these in various stages of formation. Our rhododendron unit started last autumn. The man running it was a tomato man, but had a superb understanding of plants. After a few disasters he is now producing excellent plants started from a cutting taken last autumn — his first batch of plants. A basic ability to read plants is far more important than all the textbook knowledge in the world.

Our company has no problem in attracting school leavers — in fact, we have too many applying. We believe in starting them on serious work straight away and training them as we go along. Nothing is more calculated to recruit the lowest calibre people to horticulture than setting youngsters on menial tasks such as pot scrubbing, nor might I add, an unwillingness to offer a realistic wage and prospects. One young lad propagated over 180,000 commercial tomato plants last November and December. Now at 16 years of age he runs our hedging unit. He has turned out excellent *Senecio greyi* plants by July from a January cutting. Another lad joined us at the end of March straight from school at 15. He struck a batch of *Olearia x. scillonensis* in his first week at work and also some *Colquhounia cocurea* with excellent results.

We have a staff training programme. We have a number of trained instructors on the staff — the States Horticultural Advisory Service trains them — and we give all our new nursery stock workers two hours formal, but practical, training each week. They also work from time to time on established units. To prevent insularity we try to get all key personnel out of the Island from time to time. I am taking two youngsters with me when I visit Angers next time. If our plants are our most important items, then our staff must respect them. To achieve this we must respect our staff, treat them as individuals and develop their full potential. Indi-

vidual production units achieve this. They may not appear economic — but the expertise which they develop surely is a good investment — as is a loyal enthusiastic staff.

May I say a little now about our development of propagation methods? We feel that they develop best under this flexible system with its considerable specialisation. We give guidelines on a crop card which also has room for notes, and a side to keep running totals of all stages of the crop. Orders are also entered on it for the grower to see. We arrive at our guidelines after reading as much as we can about the crop, its habitat, and its recommended method. We pay special attention to the work of Dr. Lamb and Jim Kelly at Kinsealy. We group together into a unit plants with similar techniques and cultural requirements — for example, magnolias, ceanothus and azaras go together. We aim at simplicity of method and are becoming more and more suspicious of modern gadgetry, which can kill if a fuse blows or we have a bit of dirt in a contact.

At the same time we are trying to develop a system whereby the growing crop provides much of its cutting material. We would like to see stock plants as reserve material. Where one person grows a crop through they can take cuttings as they trim at the time for optimal rooting. Once again the individual system pays.

Before concluding, I would like to comment on our choice of plants. We are not influenced by profit on individual plants since the production costs are only marginally different for a wide range of plants. We are looking for plants which the public ought to have rather than those they are demanding. In fact I feel that the trade has a duty to promote better plants rather than sponging off a public by selling a few mass produced popular lines.

I have tried to outline our first year's experience in nursery stock production. *I have described methods we have arrived at by our reasoning rather than by tradition, showing how we have adapted commercial tomato and cut flower methods.* Perhaps the No. 1 lesson is that plantsmanship is inborn and to achieve its potential one must treat employees as individuals who each have a contribution to make to a company.