

has to face is low grade U.K. nursery stock which does nothing to establish customer confidence.

I have tried to show that this confidence and reliability is not dependent on one factor, but the inter-relationship of many factors, not the least of which is the nurseryman. Only he can weld together these very essential ingredients to make the whole operation successful. This requires skill and a great deal of business accumen. A fundamental principle of both fruit crops and ornamentals is the basic law of economics. Therefore, may I congratulate the organizers of this conference with their very appropriate title "Cost Effective Propagation" because as specialists you are well aware that much time and effort go into the techniques used in propagation. Equally, land, time, effort, and capital can be wasted unless at the outset the very best clones for propagation are selected, which are both healthy and true-to-type.

## **BRITISH STANDARDS FOR NURSERY STOCK**

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The establishment and maintenance of standards has long been a laudable objective of trade guilds and associations. It arises from a wish to standardize nomenclature and quality.

In 1927, at the request of the Empire Marketing Board, Hatton of East Malling wrote a paper entitled, "Standardization of horticultural material with special reference to rootstocks." There were requests for material of known status, and some fruit tree raisers set out to meet this demand.

The primary concern of any standards scheme is with trueness-to-name, as in the rootstock certification scheme introduced in 1946, and in the health schemes for bush and soft fruits, which are so important to the U.K. fruit industry.

In 1960 the Horticultural Trades Association, jointly with the National Farmers Union, published descriptive standards for nursery products. At the same time the Institute of Park Administration issued specifications for trees for roads and gardens, as did the Road Beautifying Association. A year later the H.T.A. and N.F.U. asked the British Standards Institution to consider standards for nursery stock. They convened a conference in 1962 and gathered representatives from a dozen organizations including the Horticultural Trades Association, the Horticultural Education Association, the Institute of Park and Recreation Administration, the Ministry of Agriculture,

the National Farmers' Union, the Royal Horticultural Society, and other bodies. By the end of 1963 four drafting sub-committees were set up: (1) Trees and Shrubs; (2) Roses; (3) Fruit; and (4) Forest Trees. Throughout the next two years there were frequent meetings and discussions and in 1965 the first British Standards Specifications for Nursery Stock were published. The best example of these and the most firmly based upon present knowledge and legislation is (3) Fruit.

This part of the standard specifies requirements for fruit trees, bushes, canes, and plants which are suitable to be transplanted and grown for food. It covers origin and marking, root system and rootstock, age, condition, packaging, and certification schemes operated by the Ministry of Agriculture and the Departments of Agriculture for Scotland and for Northern Ireland.

Whilst it is true that the use of a British Standard is a voluntary undertaking, once there is a declared adherence to it any departure therefrom invokes a ready means of redress. Against that, a clear declaration of intention to keep to a British Standard, by itself, invariably indicates reliability of the goods.

Put quite simply the goods must be labelled informatively and truthfully, in the same way as are proprietary medicines. If of certified material, the certificate number should be given. If of grafted material, the rootstock used must be stated. For example, not just 'Cox's Orange Pippin' but 'Cox's Orange Pippin' on 'M.9' or 'Cox's Orange Pippin' on seedling.

Any departure downwards from the British Standard Fruit (Bs. 3936: Part 3: 1965) is to be condemned. To quote a vital part of this: "Fruit trees shall be worked, or double-worked where necessary, on a fully compatible and approved rootstock for the type of tree. The rootstock used shall be declared. The height of working shall not be less than 5 in. (130 mm) above ground level, to avoid risk of scion rooting. To escape certain diseases, higher working is desirable for some cultivars of apples, plums, and cherries." Again, regarding the use of certified material: "Material and cultivar covered by one of the certification schemes of any of the U.K. Departments of Agriculture shall be of certified stock."

Any who take part in a standards scheme, whether plant raiser, merchant, retailer, or customer, must be able to rely on the quality of the product, its health and trueness-to-name and of a type and form suited to his own particular conditions. It is disastrous for him to plant his apple trees closely on a vigorous rootstock thinking they were on a dwarfing rootstock, such as 'M.9' or 'M.27', or similarly his pear on vigorous pear root-

stock instead of 'Quince C' and, likewise, myrobalan is no substitute for 'Pixie' when allocating space in the garden for a plum tree.

British Standards is, therefore, not merely an advertising scheme to trade doubtful material but, properly conducted, will build confidence in the trade. It is a skilled and highly complex trade. We must not try to run before we can walk. Let us begin first with the most clear-cut fruit plants, the most detailed, the most frequently inspected in regard to trueness-to-name and health. Then, when we have perfected these schemes we can adapt them to a wider range of trees and shrubs.

Remember, the British Standards Scheme is purely voluntary. If we wish to trade doubtful material we can still try to do so, but surely this is not in the long term interests of the industry.

## MY VIEWS ON NURSERY STANDARDS

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Not many years ago it would have been frowned upon to have a session such as this at an I.P.P.S. Conference. In fact, at the inaugural meeting at Syon Park I remember being worried as to whether I would be granted membership when our first president defined "propagators" as, "those who put roots on cuttings and grafted in a controlled environment" or some such words, as against "despised" field workers and growers. Being in the latter category, I never really forgave him and the hurt must have been deep for me to remember his words. Greenhouse propagation has always had a certain mystique, unwarranted in my opinion, about it and those engaged in it tend to consider themselves superior to the peasants who graft in the fields. However I rejoice in the words of John Steinbeck in his book, "The Grapes of Wrath". He says, "The men who graft the young trees, the little vines, are the cleverest of all, for their's is a surgeon's job, as tender and delicate, and these men must have surgeon's hands and surgeon's hearts to slit the bark, to place the grafts, to bind the wounds, and cover them from the air. These are the great men."

When I first agreed to take part in this session it was, I thought, to discuss with our second illustrious President, Robert Garner, the standards of nursery production today. That