

The melon and the dahlia

Bill Barclay¹

The late Japanese Emperor Hirohito is not normally associated with horticulture, but when in 1922 he visited Europe over a period of six months as Crown Prince, he observed many of the fashions, styles and behaviours of the English aristocracy, including the arcane practices of great landowners' intent on cultivating plants to the edge of perfection.

The ultimate test of capability occurred each year at the Chelsea Flower Show where Victorian followed by Edwardian landed dynasties, together with their highly valued head gardeners, rubbed shoulders in horticultural combat.

Some of the most extreme practices were reserved for the little known but highly regarded musk melon (*Cucumis melo*) which along with many other flowers and fruits, had arrived in Europe in the eighteenth century from Persia (now Iran) following the opening of trade routes to India and beyond.

The musk melon fruit was cultivated year round within artificial environments quite removed from nature, and perfection achieved only with the application of copious quantities of compost and fuel, mainly coal, within glass-walled orangeries and glasshouses built alongside the great houses as exemplified by wondrous examples created at Kew Gardens under Royal patronage. Crystal Palace, created at the time of the Great Exhibition by the renowned architect and horticulturist Sir John Paxton, whose patrons included the Dukes of Devonshire and Bedford, the wealthiest of the wealthy, represented the ultimate expression of a protected growing environment.

Rivalry amongst head and under gardeners was intense, with a highly structured level of responsibility for each type of fruit or flower. It was often the responsibility of the head

gardener to ensure that the musk melon entry was ready in time for showing, along with, perhaps, the perfect peach. The two had one characteristic in common, in that the prize exhibits were often restricted to one or two fruit per plant, or tree.

Apart from its delicious taste, subtle perfume and smooth green texture, there was something ephemeral, perhaps even frivolous about the musk melon that appealed to the young Prince from Japan. It joined a list that included top hats and frock coats as items to be followed up for introduction to Showa Japan² by delegations of 'experts' despatched the following year from Tokyo for the purpose of acquiring the necessary techniques. Two such were horticulturists Katsuichi Ota and Hachizaemon Goshima, designated to study the methods used to cultivate the musk melon that had so captivated the Crown Prince (Hammett, 1998, p. 88).

Two years later, in 1925, they returned to Japan with foundation seed comprising mainly the then popular 'Earl's Favourite' cultivar that had been raised by H. W. Ward (Fig. 1), the head gardener to the Earl of Radnor during the 1890s, and author of several horticultural books. The Royal Horticultural Society awarded the cultivar a First Class Certificate in 1895, an honour Carter's 1900 nursery catalogue (Fig. 2) describes as "the highest the Society could bestow" (Hammett, 1998, p. 89).

This was the mother stock that was to form the basis of the Shizuoka musk melon industry and evolve over fifty years to a new level of perfection (Fig. 3). By 1977 however, seed vigour had become a major issue as many of the usual characteristics associated with extended inbreeding were emerging.

Back crossing using the original strains was considered an urgent necessity if the multi-million-dollar industry was to continue to prosper, let alone survive.



Fig. 1 Henry William Ward (1840–1916), gardener to Lord Radnor at Longford Castle, Wiltshire, England. Henry bred *Cucumis melo* 'Earl's Favourite' upon which the Japanese melon industry is based. Image reproduced from the *Gardeners' Chronicle*, February 19, 1916, p. 97.



Fig. 2 *Cucumis melo* 'Earl's Favourite', as photographed in Carter's 1903 nursery catalogue.



Fig. 3 Precision growing of musk melon in Japan. Only a master grower can attain this level of uniformity in a crop.

¹ 734a Tararu Road, Thames 3500, New Zealand; billbarc@slingshot.co.nz.

² The name Showa can be translated as "the era of enlightened peace" and "the era of Japanese glory." This 62-year period corresponds with the reign of Emperor Hirohito, the country's longest-ruling emperor in history, whose posthumous name is the Showa Emperor.

The members of the Shizuokaken Muskmelon Grower Cooperative Association and their long time advisor, the venerated professor of horticulture, Professor Eijiro Suzuki (Fig. 4–5), decided that he should make a visit to England in an attempt to locate sources of the original 1925 seed strains in order to reinvigorate the industry.



Fig. 4 Professor Eijiro Suzuki among a young crop of musk melons growing in a Japanese glasshouse, 1st October 1980. Photo: Keith Hammett.



Fig. 5 Professor Eijiro Suzuki inspecting a crop of musk melons growing in a Japanese glasshouse, 1st October 1980. Photo: Keith Hammett.

In 1977 Professor Suzuki stared through the fogged up British Rail window as the train pulled into Reading station. It was nothing like the rural scene he was expecting following his discussions at the Embassy in Piccadilly. To his consternation, suburban housing and factories extended in all directions, with not a glasshouse to be seen, let alone any facility remotely resembling a seed bank. There was no sign of the famed Suttons or Carters facilities.

As London suburbia had extended inexorably along the Thames Valley during the post-war years, both had in fact relocated to Wales and Devon.

An aspect of English horticulture once universally admired was the manner in which seed merchants and institutes maintained seed banks in the most advantageous locations. Stock regeneration was achieved through well-established growing cycles appropriate to each genus. With the notable exception of the Kew Gardens and Wisley facilities of the Royal Horticulture Society, many of these operations were adversely affected by the 1939/45 World War, and through pressure brought about by amalgamations and the need to demonstrate short-term 'bottom line' commercial advantage.

To be judged perfect, a musk melon must comprise a spherical 1.2 kg green fleshed fruit with the characteristic crusty crackled patterned netting achieved through rubbing with special gloves, and is often compared with a fine Shoji Hamada crackled glaze ceramic, a far cry from the melon cultivars generally available in New Zealand.

The fruit is hung from a wire on a soft strap to protect its appearance and harvested 94 days from pollination when, given optimum conditions, the necessary sugar level will have been achieved.

Each Shizuoka grower would generally have up to eight crops at various stages growing in individual 100 m² houses, each utilising slightly different seed varieties, and designed to cope with differing light and heat conditions. These growers generally relied on Professor Suzuki to provide the strains necessary to grow the fruit in all its subtle variations for all climatic seasons, and he and his team were revered in return for their skills.

Such are the exacting cultivation requirements that carelessness can instantly ruin an entire crop or reduce its value from the equivalent of \$NZ150 a piece in today's prices to the point where it would normally be destroyed rather than permitted to go to market. The effort and expense required to produce the \$NZ150 melon remains unique and explains why it has been an object of awe and envy ever since its introduction to Japan as a fruit of singular prestige in 1924.

It is often said by Japanese that, as a gift, a first grade Shizuoka musk melon equates with that of a bottle of Johnny Walker Black Label whisky. But for prestige nothing equates with a Shizuoka Crown musk melon. Such a gift may remain prominently on display in a place of honour within traditional Japanese homes for up to five days before reaching optimum condition, then ceremonially sliced and offered as a freshener between courses. Occasionally, it may even be incorporated into the tea ceremony.

Generations of travellers have brought back tales of having observed the willingness of Japanese to pay seemingly extravagant prices for fruit in Tokyo department stores. As a result, the potential to export these crops to Japan has often been exaggerated due to innate ignorance of the cultural, let alone horticultural, context – none more so than that surrounding the fabled Shizuoka musk melon. These may often be observed lying resplendent in fine tissue within exquisite gift boxes (Fig. 6), discreetly priced as high as ¥12,000 (\$NZ165) on dedicated stands in the basement food halls of the Tokyu or Takashimaya department stores in Shibuya-ku.

Attention in post-1973 Japan had been diverted from other problems by the Middle East oil embargo. Three-quarters of Japan's energy needs were met by imported fuel, and the quadrupling of oil prices was a severe shock to the country, which rapidly introduced measures to tackle inflation, reduce energy consumption and stem growth. An immediate 10% cut in oil consumption was imposed on Shizuoka musk melon growers along with others regarded as profligate energy users.

Growers had long had access to cheap and plentiful oil supplies to fuel the boilers that maintained the 22°C ambient temperatures required to ensure uninterrupted growth and continuity of supply, even during the rigours of a Shizuoka winter.

Urgent meetings of co-operative members were called, and alternatives canvassed (Fig. 7). One unpalatable solution was to eliminate the most fuel wasteful mid-winter crops, and given the perceived importance of maintaining continuity



Fig. 6 Musk melon carefully selected for their lack of imperfections, intended as a gift in the Japanese custom of gift-giving. 10,000 Japanese yen equals to \$NZ137. Photo: Bobak Ha'Eri (CC-BY-SA-3.0), via Wikimedia.



Fig. 7 The use of alternative fuels (coal and wood) in Japan during the 1970s oil crisis. Photo: Keith Hammett.



Fig. 8 Japanese visitors to Bill Barclay's facility in New Zealand, 4th December 1978. From left to right: Mr Tominaga (musk melon Market Manager of Tokyo Seika Co, Ltd), Professor Eijiro Suzuki, Bill Barclay, and wife Barbara. Photo: Keith Hammett.



Fig. 9 A Japanese delegation, including Mr Matsuura (left) and Mr Tominaga (right) from Tokyo Seika Co, Ltd, inspecting Bill Barclay's hydroponic plants growing in New Zealand, 4th December 1978. Photo: Keith Hammett.

of musk melon supply, source a replacement from elsewhere. One of the largest fruit wholesalers on the vast Tsukiji (Tokyo) market subsequently began talks with its long time New Zealand counterpart Turners & Growers Ltd (the originators of the name kiwifruit), to establish whether a replacement crop could be grown during the New Zealand summer/autumn.

With knowledge that up to half the Shizuoka crop may be at risk, Japanese growers remained ambivalent or deeply fearful of their hard-won knowledge being made available to growers in another country from whence future crops could be sourced. It was indeed a dilemma, but one that had to be faced if government impositions were to be followed. Turners & Growers arranged for a grower trial to be undertaken using seed that was required to be sourced in person from Shizuoka.

Having been invited by Turners & Growers to become the designated New Zealand grower to undertake

the trial, I left for Tokyo in mid-1978, with Donald Turner, export manager of the then family owned company. The visit was structured in such a way as to enable the Shizuoka growers to gain confidence in the New Zealand partners, and transmit limited 'knowledge', but it was significant that we were expected to extract and dry the seed in our hotel room from presentation grade fruit. It was explained at the time that this was necessary in order to deflect anticipated disapproval of many co-operative members who remained unconvinced as to the need to reveal hard won skills.

The attempts to replicate the Shizuoka growing conditions in New Zealand (Fig. 8–9) is another story in itself and the resulting product was judged to have "not quite" reached the standard required to achieve premium prices at the Tsukiji market. However, in any case, the gradual diminution of the effects of the oil 'shock' led to the cessation of the trial after two seasons. It was furthermore deemed uneconomic to

grow just one 94-day crop within a dedicated environment – a conclusion that other experienced growers had reached at the outset.

On one level this may be regarded as just another failed horticulture venture, but there was a sidebar of far greater importance to the horticulture industry of both countries. This was the relationship that evolved between Professor Suzuki and Dr Keith Hammett, then a senior scientist with New Zealand's Department of Scientific and Industrial Research who he met during a visit to New Zealand in late 1978 to assess progress.

Dr Hammett, originally from England, has a worldwide reputation as a plant breeder and judge in several floriferous genera, but particularly *Dahlia*, *Dianthus* and *Lathyrus* (sweet peas). More recently he has led the way internationally in the development of exotic *Clivia*. Dr Hammett was a government horticultural scientist, and a valued advisor to the melon growing operation at the time.

It was while discussing the finer points of *Cucumis melo* production at our facilities in Ararimu, near Drury, that the two scientists recognised their common interest in *Dahlia* breeding. Professor Suzuki was visibly moved when it suddenly dawned on him that Dr Hammett was the noted international *Dahlia* judge, but equally important, a Fellow of the Royal Horticultural Society (UK) – a rare breed indeed, and one who may just provide the necessary entree to enable him to access the long sought ‘Earl’s Favourite’ cultivar.

Although Professor Suzuki had been able to access a number of commercial varieties on his 1977 pilgrimage that were of limited genetic value in his breeding program, he knew there were physiological constraints that could only be overcome through access to the original ‘Earl’s Favourite’, and other similar but lesser cultivars. English reticence and suspicion as to his motives, if not his inability to adequately communicate in English may have conspired to prevent access to the prized seed.

Although language prevented either from communicating directly, and even allowing for a 35-year age difference, the two scientists established a rapport that led to the exchange of information and hybridisation of ideas through the 1980s (Fig. 10) and until Professor Suzuki’s retirement. Interest in the cultivation of the musk melon in England had diminished between the Wars along with the decline of the great estates, but with Dr Hammett’s assistance the late Professor Suzuki was able to secure supplies of treasured seed varieties that by then had little or no commercial value in England, but which was of inestimable value to the Shizuoka breeding program.

Without question, the present-day vigour and immense value of the famous Shizuoka musk melon is due in no small way to the relationship

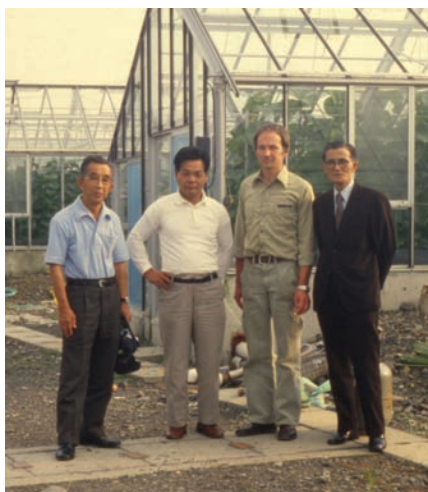


Fig. 10 Dr Keith Hammett, 30th September 1980, being hosted by representatives from Tokyo Seika Co, Ltd, during his visit to Japan. From left to right: Professor Suzuki, Mr Ito (owner of the property and Managing Director of the Shizuokaken Muskmelon Grower Cooperative Association), Dr Hammett, and Mr Tominaga.

that commenced and matured as the result of the lifelong mutual interest of these two world renowned scientists in the *Dahlia* genus. It is noteworthy that the Shizuokaken Co-operative presented fruit in 1979 to Margaret Thatcher, the then British Prime Minister to acknowledge the British contribution to the establishment of the Shizuoka musk melon industry.

Dr Hammett highlighted in his 1998 article “Improving on Excellence,” that the development of the musk melon (Fig. 11) is simply an extreme example of the continuum of development of plant material down through the centuries. What may well have originated in Central Asia, travelled through Persia, thence England and quite possibly other areas of Europe, developed in Japan in a different form, with the same or even greater attention to detail that had always contributed to the fruit’s prestige.

There are of course many other examples that illustrate Hammett’s analogy of a relay race where both scientists and amateurs have improved a particular genus and passed it on. In some cases, the baton is dropped, but international



Fig. 11 High quality musk melon fruit flown from Japan to England, as photographed in the February 1998 edition of *The Garden* (*Journal of the Royal Horticultural Society*).

cooperation within the world of plant science often transcends commercial rivalry and brings about unexpected benefits.

Acknowledgement

I thank Dr Keith Hammett for revising drafts of this article and for providing many of the illustrations used.

Bill Barclay is a freelance writer who has had a long career as a chief executive in government and NGO’s in Papua New Guinea, New Zealand and Australia, interrupted by a 12-year long horticultural sojourn in the 1970s and 1980s pioneering the introduction of NFT (“Nutrient Film Technique”) hydroponics to New Zealand in 1976, along with musk melon growing in 1977 and large scale *Paphiopedilum* orchid production for the European market in 1985. His website is at <http://billbarc.squarespace.com/>.

Reference

Hammett, K. (1998). Improving on excellence. *The Garden (Journal of the Royal Horticultural Society)* 123(2): 86–89.