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Dedication: Derek Jennings and Hugh A. Daubeny Berry Breeders Extraordinaire

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This volume of *Plant Breeding Reviews* is dedicated to two extraordinary breeders who, with a combination of enthusiasm and expertise, have done much to change the raspberry industry. Both led the way in widening the genetic base of *Rubus* breeding programs and have encouraged international exchange of plant material and information. Their outstanding cultivar releases have foreshadowed the recent successes of the industry and are highly valued by raspberry breeding and growing programs throughout the world. Their collaborations have inspired the next generation of breeders and researchers to share information for international mutual benefit.

I. DEREK JENNINGS

A. Early Years

Derek Jennings was born in 1929 and grew up in Cardiff, Wales. His association with the principality continued when he obtained his first degree from the University College of Wales in Aberystwyth, in 1950.

After graduating, Derek went abroad for his first job. He was appointed as plant breeder to the East African Agriculture and Forestry Research Organization, in which capacity he was posted to Tanganyika (now Tanzania). There he worked in the breeding of maize (*Zea mays*), groundnuts (*Arachis hypogaea*), and *Sorghum*, and in 1952 he was given responsibility for the cassava (*Manihot esculentum*) program. The program started in 1937, and aimed to transfer resistances to two viruses from several tree species into cassava, which has an important role as a staple food crop in eastern Africa. The work was pioneering at the time, and Derek was responsible for introducing the resistant selections, by this time third backcrosses, to native farmers. At this stage, the resistance failed in some parts, and Derek soon found the cause to be host-virus interactions. He also discovered the breeding combinations that restored the resistance. During this early period in his career, Derek traveled throughout Tanzania lecturing in Swahili. He is regarded as an authority on cassava to this day.

Unfortunately, changes in administrative affairs led to the discontinuation of the cassava breeding program in 1956, and Derek returned to the United Kingdom the following year. However, before doing so, Derek distributed the elite cassava germplasm he had generated in the breeding program to many African countries to ensure that others could benefit. This generosity of spirit led to Derek being invited, in 1975, to work for 6 months at the International Institute of Tropical Agriculture in Nigeria, using the germplasm he had distributed 20 years previously. In 2002 he contributed an invited chapter on cassava breeding for a Commonwealth Agricultural Bureaux International (CABI) reference book.

B. Early Career

Derek's moved back to the United Kingdom in 1957 to take up the post of raspberry breeder at the Scottish Horticultural Research Institute, later to become the Scottish Crop Research Institute (SCRI), in Dundee, Scotland. The institute opened in 1953, and the pomology department was under the leadership of Conway Wood when Derek joined. The department's work was aimed at addressing the decline in raspberry yields caused largely by viral infections in the Tayside area of Scotland. Conway Wood had previously bred raspberries as assistant to Norman Grubb at East Malling before moving to SHRI, and there were four assistants in the group, including Malcolm Anderson, who later became the blackcurrant breeder at SCRI.

C. Scientific Collaborations

Derek formed several key relationships within SCRI. Some of the most significant scientific ones were with the pathologists Brian Williamson and Teifion Jones, with whom he investigated some important interactions between *Rubus* germplasm and pathogenic fungi and viruses respectively. The development of cane resistance to *Botrytis cinerea* and identification of new sources of resistance for breeding was two results of these collaborations, together with progress in breeding for resistance to cane blight (*Leptosphaeria coniothyrium*) and spur blight (*Didymella applanata*) through the use of mycelial inoculation techniques developed at SCRI. Additionally, genetic control of resistance to raspberry yellow rust (*Phragmidium rubi-idaei*) depended on whether resistance was immune (major gene) or resistant with a slow-rusting response (minor genes), and the interaction of diseases such as yellow rust and cane spot (*Elsinoe veneta*) was investigated. Derek and collaborators also investigated the apparent association of gene *H*, controlling cane pubescence, with increased resistance to cane *Botrytis* and spur blight but increased susceptibility to cane spot, mildew, and yellow rust. Derek and his coworkers believed that the pubescent canes mature at a different rate from the smooth ones, thereby separating the susceptibilities and resistances to the various pathogens. The gene *H* region of the raspberry genome continues to be analyzed at the molecular level by Julie Graham's group at SCRI.

With Teifion Jones and entomologists at SCRI, Derek both identified and then introgressed several key aphid resistance genes into the SCRI raspberry breeding germplasm. Raspberry breeding was given great importance at SCRI at this time. The subsequent reduction in viral infections in U.K. raspberry plantations was a major boost to the industry; sadly, resistance-breaking strains within the U.K. aphid population have now largely overcome the existing resistance genes, and so the search has begun again for robust sources of resistance at both SCRI and East Malling Research.

Derek also worked extensively with fruit agronomists at SCRI, notably the late Murray Cormack. In this collaboration, they achieved significant progress in the development of cultivars amenable to mechanical harvesting. They also developed information about the dormancy cycle of raspberry that is still used today for fruit production outside the main cropping season. Derek was involved with Harry Lawson in work to determine the best means for cane vigor control. This work was the key to the acceptance of 'Glen Clova' as the first of

the new raspberry cultivars from SCRI that ultimately transformed the industry in Scotland.

Derek traveled widely in the course of his work at SCRI, particularly to visit collaborators in North America. On one occasion during the cold war, Derek traveled with Peter Waister, also of SCRI, on a private trip to the Soviet Union at their invitation—neither he or his family had any advance knowledge of his itinerary or destination, and the men's flight to Siberia incurred the displeasure of the U.K. Foreign Office.

Derek carried out original research in raspberry breeding and registered at the nearby University of St. Andrews. In 1964 he was awarded a Ph.D. for his thesis entitled ''Breeding and Genetical Analysis of Red Raspberry (*Rubus idaeus*),'' supervised by Conway Wood. His relationship with St. Andrews continued with his appointment first as honorary lecturer and later as honorary senior lecturer in the Department of Botany.

D. Career Successes

1. Raspberry. Derek's work at SCRI covered various aspects of *Rubus* improvement, but the development of new cultivars for the U.K. industry was his main objective and ultimate achievement. Taking on the breeding of raspberry from David Bird, Derek released his first cultivar, 'Glen Clova', in 1969, combining high yields with good processing quality, suiting the Scottish industry at the time. 'Glen Clova' rapidly became the standard cultivar grown in Scotland, and was also successful for early production in the rest of the United Kingdom. Its position as a standard cultivar for the United Kingdom continued to 2000, when the withdrawal of Dinoseb for primocane management led to its replacement by cultivars with less vigorous primocane growth.

The next cultivar release from Derek's program was 'Glen Isla', which had fruit firmness derived from the black raspberry *Rubus occidentalis* via an East Malling selection. Although not commercially successful in its own right, 'Glen Isla' was widely used both by Derek and other breeders as a source of fruit firmness. The next real commercial successes were 'Glen Prosen' and 'Glen Moy', released in 1982. These two cultivars represented real progress in terms of fruit quality, for both the fresh and processing markets. They were also the first spine-free cultivars in the United Kingdom. As a result, they quickly became the new benchmark for high-quality fruit and are still grown today, albeit on a greatly reduced scale. 'Glen Moy' was of particular interest, due to

its early ripening character, while 'Glen Prosen' produced firm fruit with good machine-harvesting ability. The latter cultivar was used widely in breeding and consequently has had a high impact beyond the SCRI program.

In his breeding work, a recurring theme is Derek's great willingness to share germplasm. This led to some important long-term collaborations with other breeders, notably Hugh Daubeny in Canada ('Glen Prosen' was used as parental material in the development of 'Tulameen'), Harvey Hall in New Zealand (SCRI breeding material has featured in the background of many cultivar releases from the Institute of Horticulture and Food of New Zealand Ltd., HortResearch), and the late Graeme McGregor in Australia. In 1985 Derek accepted an invitation to work for 6 months in Victoria, Australia, to study problems relating to raspberry production in a climate warmer than Scotland. During this time he made a major contribution to the breeding program there, particularly in gaining an understanding of the disorder known as blind bud, which is related to the plants' dormancy cycle in the Australian climate.

In 1985 Derek released the cultivars 'Glen Lyon' and 'Glen Garry' from the SCRI program. Although neither was as successful as his previous releases within the United Kingdom, 'Glen Lyon' has become the major cultivar in Spain. This is due largely to its ability to withstand markedly different climatic conditions, together with its firm fruit inherited from 'Glen Prosen' and other sources, which makes it ideal for shipping back to other markets, notably the United Kingdom during the period from January to April every year. 'Glen Lyon' was originally selected for moderate vigor due to the withdrawal of vigor control chemicals in the United Kingdom, and its success in Spain was not foreseen at the time of release. At this time, Derek's interaction with Hugh Daubeny in North America was continuing to give benefits to both parties, and 'Glen Lyon' has one of Hugh's cultivars, 'Haida', as a grandparent.

During his time at SCRI, Derek oversaw the growth of the fruit breeding group at SCRI, and by the time of his retirement in 1989, he was head of the Soft Fruit Genetics Department. In 1994 a group of four cultivars were released from the raspberry breeding program: 'Glen Magna', 'Glen Ample', 'Glen Rosa', and 'Glen Shee'. Clearly Derek had a pivotal role in their development. Of this group, the most successful cultivar has been 'Glen Ample', which in recent years has become the leading cultivar in the United Kingdom and one of only two-main season cultivars, along with 'Tulameen', that is accepted by U.K. multiple retailers at the present time. The release of 'Glen Ample'

coincided with a major change in emphasis for raspberry production in Scotland: The largely processing market was generally supplanted by production of high-quality fruit for fresh consumption. The 'Glen Ample' cultivar is strongly preferred for its flavor and agronomic traits.

After retiring from SCRI, Derek moved to southeastern England, where he formed a partnership with Simon Brice, a leading grower there, through the company Medway Fruits. This gave Derek the opportunity to continue his fruit breeding activities across a broader spectrum of fruits. He concentrated on primocane-fruiting raspberries, instead of the summer-fruiting types previously developed, trailing-type blackberries rather than European types, and strawberries. While each of the *Rubus* cultivars from SCRI are readily identifiable by the 'Glen' prefix, Derek's new position enabled him to acknowledge the support of his wife Joan and other female members of his family. In 1994, his first release, the raspberry 'Joan Squire', challenged the U.K. industry standard for primocane types, 'Autumn Bliss'. Further releases followed, such as 'Terri-Louise' in 1996, 'Joan J' in 1999, and 'Joan Irene' and 'Marcela', both in 2004. Of these, 'Joan J' has a significant following in the home garden market, while 'Terri-Louise' was for a time marketed as a premium cultivar by one of the main U.K. supermarket chains, due to its very large fruit size. Some of these more recent releases have proved to be popular outside of the United Kingdom; for example, 'Joan Irene' is grown commercially in Chile at the present time, and 'Marcela' is grown in both Chile and Mexico.

2. Blackberry. In 1988 Derek released the spine-free blackberry 'Loch Ness', which has had considerable commercial success worldwide and is still grown extensively in Europe. The semi-erect habit makes 'Loch Ness' relatively easy to manage, and the shelf life was also an improvement on existing types at the time of release. After leaving SCRI, Derek concentrated on trailing blackberries of the North American type, and from Medway Fruits he released 'Adrienne' in 1995 and 'Helen' in the following year. The latter proved the most successful, giving high yields of early fruit.

3. Hybrid Berries and Other *Rubus* Fruits. Derek's interest in the various sections of *Rubus* led him to experiment with hybrid berry production, and from a tetraploid raspberry crossed with 'Aurora' blackberry he selected the 'Tayberry', released from SCRI in 1979. With its aromatic qualities and unique flavor, 'Tayberry' was a big commercial success in both the United Kingdom and North America, particularly with home garden and self-pick growers. Even now, almost 30 years

after its release, it remains a readily identifiable SCRI product for the general public in the United Kingdom. From a cross between 'Tayberry' and a sister seedling, 'Tummelberry' was released in 1983 but never reached the popularity of 'Tayberry'. An improved spine-free 'Tayberry' was discovered by Derek in 1996 in a Buckinghamshire allotment, and this was released under the name 'Buckingham Tayberry'. The spineless purple raspberry, 'Glen Coe', a diploid from a cross between 'Glen Prosen' and a spineless black raspberry, was released in 1988 and attracted interest from the processing market due to its intense color. Derek developed the spineless black raspberry by introgressing spinelessness from the old raspberry cultivar 'Burnetholm' into black raspberry types through crossing, backcrossing, selfing, and sib crossing. Further progress has been made in developing spineless black raspberry types from this germplasm by HortResearch, which released the black raspberry 'Hortberry1' under the trademark name 'Ebony'.

4. Strawberry After leaving SCRI, Derek also brought his expertise to the breeding of strawberry for Medway Fruits, and a number of cultivars were released. 'Christine' was released in 2000, and crops earlier than the U.K. standard, 'Elsanta'; it also has fruit quality acceptable to the supermarkets. As a result, almost 500,000 plants were sold in the United Kingdom in 2007.

E. Cultivar Releases

1. Raspberry

'Glen Clova' 1969. The origin of this cultivar is complex. It was derived from 'Burnetholm', 'Lloyd George', 'Malling Exploit', 'Malling Jewel', 'Newburgh', and 'Preussen'. The cross was performed in 1960; it was selected in 1963 and tested as M9. It has an early and extended season. It produces medium-size conical fruit, of medium-light red color. It is dusty, with moderate firmness and vigorous spreading canes. It is productive and susceptible to leaf spot virus. When grown commercially 'Glen Clova' was very good for jam and canning but less popular for frozen or fresh, perhaps due to its slightly acid flavor.

'Glen Isla' 1974. The origin of this cultivar is complex. It was derived from 'Burnetholm', 'Cumberland' black raspberry, 'Lloyd George', 'Malling Jewel', 'Malling Landmark', and 'Norfolk Giant'. The cross was performed in 1960; it was selected in 1963 and tested as M14. It is a late season cultivar, with round-conical orange-red fruit with regular,

small, firm, and cohesive drupelets. It is moderately acid when fresh, but jam is good although slightly acid when grown in Scotland. Fruit acidity was markedly reduced in New Zealand and the Pacific Northwest of the United States and Canada. Cane growth was vigorous and plentiful but they spread into the alleyways early in the season.

'Glen Esk'. This cultivar was never formally released but trialed widely around the world. Its origin is complex. It was derived from 'Burnetholm', 'Cumberland' black raspberry, 'Lloyd George', 'Malling Exploit', 'Malling Jewel', and the gene L_1 mutant of 'Malling Jewel'. It was selected in 1969, evaluated in Scotland as M31 and internationally as 'Glen Esk'. It fruits in late midseason, with a very large long conical fruit with pale orange-red color, with large drupelets and seed and weak flavor. The appearance 'Glen Esk' fruit in a punnet was outstanding, but it was not suitable for processing. Canes elongated early, very erect, very vigorous, tall, thick at the base, and grew in adequate numbers.

'Glen Moy' 1981. The origin of this cultivar is complex. It was derived from 'Burnetholm', 'Cumberland' black raspberry, 'Glen Clova', 'Devon', 'Lloyd George', 'Malling Exploit', 'Malling Jewel', 'Malling Landmark', 'Newburgh', and 'Norfolk Giant'. The cross was made in 1972; it was selected in 1976 and tested as SCRI 7210/204. It is an early-season cultivar, with good-quality fruit, vigorous canes, spine free, erect, productive, moderately hardy. It contains A_1 resistance to *Amphorophora idaei* and is susceptible to midge blight, leaf spot virus, *Phytophthora* root rot, and *Rubus* bushy dwarf virus (RBDV). 'Glen Moy' has been widely used parent for earliness and for contribution to earliness in the development of primocane-fruiting cultivars.

'Glen Prosen' 1981. The origin of this cultivar is complex. It is derived from 'Burnetholm', 'Cumberland' black raspberry, 'Devon', 'Lloyd George', 'Malling Jewel', 'Malling Landmark', 'Newburgh', 'Norfolk Giant', and 'Preussen'. The cross was made in 1968; it was selected in 1976 and tested as SCRI 6820/54. It is a late-season, large round berry with very large chunky drupelets, spineless, with upright canes, moderate vigor, and is hardy for Scotland. It contains A_1 resistance to *Amphorophora idaei* and is susceptible *Phytophthora* root rot and RBDV. 'Glen Prosen' has gained most significance as the parent of the very successful fresh-market cultivar 'Tulameen'.

'Glen Yarra' 1995. This cultivar is a sister seedling of 'Glen Prosen'. The cross was made in 1968; it was selected in 1976 and tested as SCRI

6820/64. The cultivar was introduced by G. R. McGregor, of the Institute for Horticultural Development, Melbourne, Australia. It is a midseason, medium-large firm fruit of medium-red color. It is dusty, vigorous, with upright spineless canes, relatively few new primocanes, and relatively low chilling requirement. It is susceptible to *Phytophthora* root rot. 'Glen Yarra' performed well in trials in other parts of the world but was inferior to 'Glen Prosen' in most places so it was not released beyond Australia.

'Glen Garry' 1990. 'Malling Delight' × SCRI 7331/1 (SCRI 703/36 × 'Glen Prosen'), SCRI 703/36, is of complex origin, derived from 'Burnetholm', 'Cumberland' black raspberry, 'Devon', 'Lloyd George', 'Malling Jewel', 'Malling Landmark', 'Norfolk Giant', and 'Pyne's Royal'. SCRI 7331/1 contained gene L_1 from a mutant 'Malling Jewel' selection used in breeding at SCRI. The cross was made in 1975, and it was tested as 7518E6. The cultivar is early to midseason, spineless, very large fruit size due to the presence of the unstable gene L_1. Plants not containing gene L_1 could be identified in the vegetative stage by smaller stipules and less serrated leaves. The fruit is long-conic, firm, slightly pale in color, has excellent flavor, and is suited to niche fresh market and home garden use. Plants are high yielding with moderate vigor but with long, strong fruiting laterals. 'Glen Garry' carries gene A_1 conferring resistance to two strains of the large raspberry aphid but is susceptible to RBDV.

'Glen Lyon' 1991. SCRI 7331/1 × SCRI 7256–1 (SCRI 6820/35 [sib of 'Glen Prosen'] × 'Haida') is from a cross made in 1975, tested as SCRI 7515C5. It is early to midseason, spineless, with bright, glossy medium red color, medium-size fruit, firm, easily removed from the receptacle. It has low sugar content and high acidity in Scotland but good sugar/acid balance when produced in southern Spain and Portugal. It has good shelf life, limited use for processing but now is grown in significant plantings in southern Spain and Portugal. The plant establishes rapidly and produces medium to high yields. It has easily managed upright growth and moderate vigor and A_1 aphid resistance. It is resistant to spur blight and leaf spot virus but susceptible to RBDV.

'Glen Ample' 1994. The origin of this cultivar is complex. It is a derivative of 'Glen Prosen', 'Meeker', 'Rumiloba', 'Carnival', 'Malling Jewel', 'Burnetholm', 'Malling Landmark', 'Malling Exploit', 'Lloyd George', and 'Pyne's Royal'. The cross was made in 1978, and it was tested as 7815B8. It is a midseason cultivar, with spineless canes, is high

yielding, and is particularly well adapted to fresh-market production in southern Britain. It has medium to large fruit, bright red, round-conic shape, is firm, and tends to break at collar in wet and cool conditions. It is easily removed from the receptacle and can be machine harvested. Canes are upright and vigorous with long, upright laterals. The cultivar has A_1 aphid resistance. This cultivar was released from SCRI with Ronnie McNicol.

'Glen Magna' 1994. 'Meeker' × SC RI 7719B11. The origin of this cultivar is complex. It is derived from 'Rumiloba', 'Glen Isla', 'Malling Jewel', 'Malling Exploit', 'Burnetholm', 'Devon' and 'Malling Landmark', 'Cumberland' black raspberry, 'Lloyd George', 'Norfolk Giant', and 'Pyne's Royal'. The cross was made in 1980; it was tested as 8032A3. The cultivar is late season, very high yielding, with very large fruit, deep red color, long conic shape, and excellent uniform appearance. It is machine-harvestable in some environments. It has excellent flavor with similarities to 'Glen Moy' and 'Meeker'. It is suitable for the fresh market and processing, especially freezing. It has upright, vigorous canes with few spines. The cultivar has A_1 aphid resistance and is resistant to RBDV. This cultivar was released from SCRI with Ronnie McNicol.

'Glen Rosa' 1994. This cultivar is a sib of 'Glen Ample'. The cross was made in 1978; it was tested as SCRI 7815A12. It is a midseason, spineless cultivar, with fairly good flavor for processing. It is less suited for the fresh market. It has moderate vigor and production, is moderately upright, and it is adapted for machine harvest. It contains gene *H*, giving resistance to spur blight and cane *Botrytis*, and gene A_{10}, giving resistance to four strains of the large European aphid. It is resistant to RBDV. This cultivar was released from SCRI with Ronnie McNicol.

'Glen Shee' 1994. The origin of this cultivar is complex. It is derived from 'Rumiloba', 'Burnetholm', 'Glen Clova', 'Carnival', 'Cumberland' black raspberry, 'Devon', 'Lloyd George', 'Malling Exploit', 'Malling Jewel', 'Malling Landmark', 'Newburgh', 'Norfolk Giant', and 'Pyne's Royal'. The cross was made in 1980; it was tested as SCRI 8044C9. It is a midseason cultivar with moderate yield and is spineless. Fruit are slightly pale, firm, fleshy, slightly weak skin, prone to wind rub, have a moderate flavor, and are not adapted to machine harvest. Canes are vigorous and relatively upright. It contains A_1 aphid resistance and is susceptible to RBDV. This cultivar was released from SCRI with Ronnie McNicol.

'Joan Squire' 1995. SCRI 8216B6 × EMR primocane selection. Fruit ripens 2 weeks later than 'Autumn Bliss', 2 weeks before 'Heritage'. This cultivar has good shelf life, excellent flavor, attractive red color with some gloss, no tendency to get a purple-blue tinge. It yields firm, cohesive fruit with skin strength nearly as good as 'Heritage'. It is more productive than 'Autumn Bliss' or 'Heritage'. It has numerous spineless canes and a spreading growth habit that needs support as the fruit ripens.

'Terri-Louise' 1996. 'Glen Moy' × 'Autumn Bliss'. Primocane fruit begins to ripen in August in southern England and will crop until mid-December under plastic tunnels. A very early spring crop is produced on overwintered canes. Fruit are very large; they have an attractive red color that darkens when overripe. The flesh texture is very firm, skin strength is weak, and flavor is excellent. It is susceptible to RBDV.

'Joan J' 1999. 'Terri-Louise' × 'Joan Squire'. This cultivar produces high yields of large fruit, mean 5 g, ripening in early August. Fruit has fleshy texture and is quite dark, with good flavor. The cultivar has spine-free canes and an erect vigorous growth habit. The combination of weak fruit skin and tendency to darken requires picking daily rather than on alternate days. It is mainly of interest to home garden and self-pick growers.

'Joan Irene' 2004. 'Joan J' × (selection of complex origin which also has 'Dinkum' in its background). 'Joan Irene' produces medium-late primocane fruit that ripen in southern England in August through to November. Fruit is a bright, midred that darkens if not picked regularly. Fruit skin strength is good, as is the shelf life, and large fruit size is maintained late into the fruiting season. Plants are very vigorous with spine-free stout canes.

'Marcela' 2004. 'Autumn Bliss' × 'Joan Squire'. This is a primocane-fruiting cultivar with an early harvest season, up to 2 weeks earlier than 'Autumn Bliss' in some environments. Fruit are very firm, lighter red than 'Autumn Bliss', and have a strong gloss. Medium force is required for fruit removal, and shelf life and transportation ability are excellent. Growth is strong and is nearly upright.

2. Blackberry

'Loch Ness' 1988. This cultivar has a complex parentage, from tetraploid North American cultivars and SCRI breeding lines. It crops over a long period, ripening around 50% of its yield in August under

U.K. conditions. It has vigorous growth with spine-free semi-erect shoots. The fruiting laterals usually are about 30 cm long, strong but flexible and with white flowers. The cultivar produces high yields of large, glossy black blunt-conical fruit that are firm and with pleasantly sharp flavor. It has excellent storage capability.

'Adrienne' 1995. 'Silvan' × unnamed selection. This cultivar is selected for spine-free habit and high yield potential. Cropping season is earlier than 'Loch Ness' and other European blackberries, from early July onward, with firm, long fruits of around 6 g. Growth is vigorous, with a trailing habit.

'Helen' 1996. 'Silvan' × unnamed selection. This cultivar is early ripening, often the first of the U.K. season. Canes are spine-free, with moderate vigor and trailing habit. Fruits are similar in size to 'Adrienne', but skin strength is not as good.

3. Hybrid Berry

'Tayberry' 1979. This cultivar is from the tetraploid SCRI raspberry breeding line 626/67 × 'Aurora' blackberry. It has vigorous shoots produced in moderate to high numbers, spreading in young plants but becoming semi-erect later. It has long laterals, up to 30 cm, bearing very large conical purple berries with high drupelet number. Fruit is firm, slightly glossy, and highly flavored with aromatic quality. Plug remains with fruit when it is picked. It is early ripening, comparable to a midseason red raspberry.

'Buckingham Tayberry' 1997. This cultivar is a chimeral spineless sport of 'Tayberry', where the cell initial for the L1 layer of the growing apex mutated to produce spinelessness. Vegetative propagation produces more spineless plants, but the spinelessness cannot be used for breeding purposes as it is not in the cells that give rise to flowers or fruit.

'Tummelberry' 1983. This cultivar is from 'Tayberry' × SCRI 69102/18; the latter is a selection from the same family as 'Tayberry'. It has vigorous shoots produced in moderate to high numbers, spreading to slightly more erect than 'Tayberry'. It has long laterals, medium-large fruit, and red-purple color. The flavor is slightly acid without aromatic characteristics of 'Tayberry'. Its ripening season is later than 'Tayberry', with slightly greater hardiness. It is susceptible to raspberry leaf and bud mite (*Phyllocoptes gracilis*).

4. Purple Raspberry

'Glencoe' 1989. This cultivar is SCRI 7751C4 (spineless inbred derivative of 'Munger' black raspberry and spineless red raspberries from SCRI) × 'Glen Prosen'). It is a midseason, spine- less purple raspberry, with midsize round-conic fruit. It is dull, purple, very firm, with intense flavor, and is easy to pick with good shelf life. It is selected for specialized processing, fresh market, and home garden uses. Its canes are semi-erect, deep purple, and coated with a conspicuous waxy bloom. Yield is moderate to high. The fruiting laterals are medium length and stiff. It is resistant to *Verticillium* wilt and not adapted to cold spring weather.

5. Strawberry

'Claire Maree'. This cultivar is from Cross made in 1995 between unnamed selections, one from Italian and one from U.K. germplasm. The cultivar is notable for its large size, bright color, and excellent flavor but has insufficient shelf life for supermarket sales and was therefore marketed for amateurs. It is now unavailable.

'Christine'. This cultivar is from a cross made in 1994 between parents of complex origin involving U.K. and Italian germplasm. It crops 7 to 10 days earlier than 'Elsanta', the standard U.K. cultivar, and is widely grown for early production. It is vigorous with a tall leaf canopy, and the fruit is well displayed around the plant. It has high skin strength, which gives it a longer shelf-life than 'Elsanta'. The color is a bright orange and the flavor is good. 'Christine' is highly resistant to powdery mildew and *Verticillium* wilt but susceptible to *Phytophthora* root rot. Like most early cultivars, its yield is slightly less than that of 'Elsanta'.

'Nicola'. This cultivar is from a cross made in 1996 between 'Symphony' and a parent selected from Italian germplasm. It is a midseason cultivar, cropping 4 days before 'Elsanta'. It is notable for its long shelf life and is superior to 'Elsanta' for size and good light, bright color. Yields are also above 'Elsanta'. One of its main values is its high resistance to *Phytophthora* root rot. It is prone to powdery mildew when grown under plastic but not in the open field.

'Chelsea Pensioner'. This cultivar is from a cross made in 1998 between unnamed selections, one from U.K. and one from Italian germplasm. It ripens 6 days after 'Elsanta', giving a peak of production late in the season, similar in time to 'Florence', the standard late variety in the United

Kingdom. The fruits are notable for their very high flavor, deep red color, and slightly prominent achenes. These qualities are not suitable for supermarket sales, so the variety is being marketed for amateurs. Yields have been good, and no serious disease problems have been reported.

F. Current Activities

Medway Fruits ceased to operate in 2002, after Simon Brice's retirement, with a final release of the autumn-fruiting raspberry 'Brice' in 2007. However, unknot surprisingly, Derek continued to be in high demand as a breeder, and currently he is working for Redeva Ltd., a subsidiary of the Summer Fruits Company.

G. Awards and Honors

During his career, Derek has been the recipient of several highly prestigious awards, both in the United Kingdom and abroad. In 1979 he was awarded the Scottish Horticultural Medal by the Royal Caledonian Horticultural Society, in appreciation of outstanding services to Scottish horticulture. Internationally, in 1997 Derek was awarded the Wilder Medal by the American Pomological Society for ''excellence in *Rubus* breeding,'' and in 2000 he received the ''Horticologo de Honra: Associacao Portugesa de Horticultura,'' in Portugal, in recognition of his work as consultant to the Department of Horticulture in that country. In 2001 Derek received the award for Lifetime Achievement at the U.K. Grower of the Year Awards.

Derek is a widely published scientist, with almost 100 papers and numerous book chapters. In 1988 Academic Press published his book, *Raspberries and Blackberries: Their Breeding*, *Diseases and Growth*, and this volume has become a standard text across a very wide readership, from researchers to home gardeners—a true testament to Derek's ability to communicate his subject and expertise.

Derek has passed his boundless enthusiasm for his work and wide knowledge on to numerous young emerging fruit breeders, several of whom spent happy and productive sabbatical periods at SCRI. He remains one of the most respected figures in fruit breeding and is still active—his latest selection, as yet unnamed, was awarded joint first prize at the 2007 National Fruit Show. Looking back over the 50 years of Derek's career in fruit breeding and research, his work provides a benchmark for the successful application of scientific advances into the reality of commercial cultivars, many of which will be grown for some time to come.

II. SELECTED PUBLICATIONS OF DEREK JENNINGS

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III. HUGH A. DAUBENY

A. Early Years

Dr. Hugh A. Daubeny was born on December 6, 1931, in Nanaimo, British Columbia (BC) and attended primary school there and in Victoria, where he completed primary school and graduated from Mt. View High School.

Both his parents came from the United Kingdom. His father, Hugh C. C. Daubeny, came from England, where he served in the Royal Navy as a

midshipman during the latter days of the World War I. Between the wars he served in the BC Provincial Police and later in the Royal Canadian Mounted Police. At the beginning of the World War II, in 1939, he was called up to serve in the Royal Canadian Navy (RCN) and was commander of the corvette *Nanaimo*, part of the fleet of corvettes that escorted convoys in the North Atlantic. After the war he returned to Victoria to serve with the RCMP until his retirement. He died in 1969. Hugh's mother, Mary, came from Aberdeen in Scotland to visit relatives who had an orchard at Summerland in the Okanagan Valley of BC. There she met and married his father. They lived in the BC interior briefly and then moved to Nanaimo, where they stayed until the early years of the war. The main Pacific base of the RCN was located at Esquimalt, near Victoria and was the home base of the HMCS *Nanaimo*.

Hugh had one younger sister, who died in an air crash in northern British Columbia in the 1960s, while on her way to a teachers' convention. She taught school at Stewart, BC. at the head of the Portland Canal, on the Alaska border. Hugh's mother lived in the family home until 1988, when she decided to move to Vancouver to be closer to him and his family. She lived with them for 5 years, until ill health forced her into an extended care in a hospital nearby. She died in 2002, a few days short of her 98th birthday.

Both his parents were keen gardeners, similar to so many who came to British Columbia from the United Kingdom between the two world wars. In 1946, after the war, his parents had their first real garden and grew traditional British vegetables: marrow, broad beans, turnips, parsnips, and leeks. His mother never got used to tomatoes, a crop that was almost unheard of during her youth in Scotland. It was ironic that Hugh researched tomatoes as part of his Ph.D. degree program at Cornell University. His mothers loved flowers, especially roses and sweet peas. The family garden had an old patch of raspberries as well as loganberries and, for a few years, 'Youngberries', which died out after an unusually cold winter. There was a 'Bing' cherry and also a pear and plum tree. For several summers in the mid-1940s, Hugh picked black currants, then 'Loganberries' and raspberries at a berry farm in Gordon Head. Gordon Head was renowned for producing quality berries; now it is an upscale residential area. Hugh also picked strawberries, the legendary 'British Sovereign' cultivar, for 1 week but was glad when the black currants and cane berries started to ripen. He did not enjoy stooping, but overcame this once he became a strawberry breeder.

The family home was near a lovely Garry oak park (*Quercus garryana*)—relic species distributed from the California and Oregon

and Washington coasts into southwestern British Columbia). The oaks had a marvelous undergrowth of native plants, such as *Erthyronium*, *Camus*, *Trillium*, and *Dodecatheum.* Here Hugh had his first experiences with native plants. This was the foundation of Hugh's obsession with plant conservation in his later years. Unfortunately, only about 10% of the original Canadian Garry oak ecosystem remains: on Vancouver Island, on the Gulf Islands, and in a few sites in the lower mainland of British Columbia.

As an undergraduate at the University of British Columbia in the 1950s, Hugh spent one summer working on the vegetable cultivar trials that Agriculture Canada sponsored on the campus. Other summers were spent as a student assistant at Agriculture Canada's Saanich Experimental Station near his home. He worked with a research scientist who was screening herbicides. Hugh learned about preparing and applying the chemicals and experimental design. After that, though, he decided he was better suited for plant breeding.

In 1953 he received his BSA from UBC. His major professor at UBC, Cedric Hornby, had gone to Cornell University, and he persuaded Hugh to accept an assistantship there.

Hugh performed his doctoral research on the mechanisms of fruit set of tomatoes under-less-than optimum temperatures and his assistantship research on bacterial blight on dry beans. His major professor was Dr. Henry Munger, the world's premier vegetable breeder. Hugh obtained his Ph.D. from Cornell in 1958.

While at Cornell, he met his future wife, Marian Peterson, a technician in animal science. Marian had a B.S. degree in bacteriology from the University of Utah. They were married in 1959.

B. Early Career

Hugh was offered positions in the East but decided to accept an offer from Agriculture Canada to establish breeding programs for strawberries and raspberries in coastal British Columbia. The move was facilitated by Charlie J. Bishop, Agriculture Canada's Program Coordinator for Horticulture Crops. The establishment of field plots at the Pacific Agri-Food Research Center at Agassiz had some unique challenges; the region was reputed to have the highest population of black bears in the world, and they were a dangerous nuisance in his plots. A second problem was people related. As the plots were being planted, the adjacent bush land was being cleared by prisoners from a nearby correctional facility. This was an interesting situation, especially during the summer months, when the assistants, mostly

female students from UBC, were working. By the late 1960s, Hugh Daubeny was well recognized as an up-and-coming-raspberry and strawberry breeder by scientific community.

Hugh and Marian lived in Agassiz until 1973, when the breeding program was moved to the Vancouver Research Station near where Hugh's collaborators, the plant pathologists and virologists, were stationed. The field plots were relocated near Abbotsford. One plus of the move: There were no bears. Another was that the plots were located in the heart of the berry-growing country. This was in the days before urban encroachment. Unfortunately, recently berry area has diminished there despite an Agriculture Land Reserve designation.

C. Scientific Collaborations

Hugh's breeding program flourished in Vancouver under the encouragement of the director, Marvin Weintraub. Research progress was assisted with inputs from the outstanding plant pathologists Bert Pepin and later Andre Levesque; the virologists Dick Stace-Smith, Frances Mellor, and later Bob Martin; and a nematologist Thierry Vrain. Protocols were established for selecting resistance or tolerance to diseases. These included strawberry red stele root rot, fruit rots, and powdery mildew of both crops, raspberry root rot, raspberry spur blight and cane *Botrytis* and resistance to the North American aphid vector of the raspberry mosaic virus complex. Cooperative research helped to better understanding of raspberry bushy dwarf virus and meadow lesion nematode. The efforts of Dick Stace-Smith and Frances Mellor always assured virus-free planting stock for raspberry and strawberry genotypes, respectively. Inheritance patterns were established for reactions to aphids, powdery mildew, spur blight, and cane *Botrytis* in raspberry and virus tolerance in strawberry. Hugh also did lot of cooperative work with Jack Freeman from Agassiz on developing cultural and management procedures that enhanced the adaptation of newly developed cultivars.

The years at the Vancouver Research Station cemented the outstanding research team of berry crop researchers that flourished in the Pacific Northwest. In 1959 Hugh met two legendary berry crop breeders, Charles ''Chet'' Schwartz, at Washington State University in Puyallup, and George Waldo, United States Department of Agriculture (USDA) and Oregon State University in Corvallis. Other key breeders later became an integral part of the community: Bruce Barritt followed by Tom Sjulin and then Pat Moore in Washington, and Francis ''Whitey'' Lawrence and then Chad Finn in Oregon. Throughout the

Pacific Northwest there was excellent cooperative work among plant pathologists, entomologists, horticulturists, soil scientists, and agronomists such as Peter Bristow, Bob Norton, Perry Crandall, and Carl Shanks in Washington, and Dick Converse in Oregon, and, in later years, Bernadine Strik in Oregon and Jack Freeman, Matt John, and Bill Peters in British Columbia. Hugh's helpful technical and field crew included Henry Troelsen, Dana Stary, Angela Anderson, and Susan Wahlgren.

Hugh's success as a berry crop breeder was based on combining collaborative friendships and germplasm exchange from many breeding programs as well as from the wild. His well-documented use of the East Malling Research Station (EMRS) and Scottish Crop Research Institutes (SCRI) germplasm as parents, crossed with his own material, led to the development of a group of cultivars that are commercially important, widely adapted, and have large, high-quality fruit. Hugh has decried the decrease in exchange that has come with widespread patenting of cultivars. His open exchange approach laid the ground to the excellent relationships that exist between the three Pacific Northwest breeding programs today. Hugh's enthusiasm for cooperation and collaboration has not been limited to North America. He played a significant role in the establishment and development of breeding programs in Australia with Graeme McGregor and in New Zealand, first with Jim Porter and Norm Broadbent of the Ministry of Agriculture and Fisheries (MAF) in Levin, and later with Harvey Hall at the Department of Scientific and Industrial Research (DSIR) and then HortResearch, New Zealand (HRNZ). Hugh has visited these programs several times and kept in contact with each of the breeders until the time of Graeme McGregor's death in December 2005. Hugh generously supplied germplasm for each program and was active in encouraging publication from and with these breeders.

D. Career Successes

The greatest success from the strawberry breeding program was 'Totem,' the leading cultivar in the Pacific Northwest for more than 30 years. This is probably a record for longevity of any strawberry grown in the region. Only after 2005 did the cultivar begin to succumb to resistance-breaking races of the red stele root rot causal organism, *Phytophthora fragariae* var. *fragariae* and changes in the aphid-transmitted virus complex. 'Totem' has been used extensively in other breeding programs. Other strawberry cultivars from Hugh's program include the winter hardy 'Sumas' and 'Nanaimo,' named after town where he was born and his father's ship *Nanaimo* in World War II.

'Nanaimo' produces fruit with an exceptionally high soluble solids content and appealing fresh flavor. Unfortunately, size is not maintained through the season.

Hugh was willing to take chances in his breeding efforts. By using wide crosses and indigenous species, Hugh broadened the germplasm base of the strawberry and raspberry breeding programs. This resulted in added disease and insect resistances and improved fruit qualities.

Hugh's cultivar 'Tulameen' resulted from the 1980 cross of 'Nootka' 'Glen Prosen' made in the breeding program at Agriculture and Agri-Food Canada's Pacific Agriculture Research Centre. 'Nootka', an earlier release from the program, is noted for its high levels of soluble solids that are well balanced with acid levels. 'Glen Prosen' is an exceptionally firm, large-fruited cultivar from the Scottish Crop Research Institute's program. It owes its firmness to genes obtained from the eastern North America native black raspberry, *Rubus occidentalis.* These genes were brought into raspberry breeding through pioneering work at Horticulture Research International, at East Malling in England.

'Tulameen' was initially selected in the seedling stage for resistance to the common strain of the aphid vector (*Amphorophora agathonica*) of the raspberry mosaic virus complex. The selected seedling was placed into the field in 1982. As early as 1984, it was recognized for its outstanding qualities including large, relatively firm fruit with glossy medium-red color. Fruit was well displayed and easily removed from the receptacle. The color was more attractive than that of either parent. The flavor was especially appealing. Harvest began in late June and lasted for approximately 6 weeks, up to 2 weeks longer than that of most other cultivars. Such a long season is an especially desirable trait in fresh-market cultivars. The plant was vigorous but did not produce excessive primocanes. Hugh decided to fast-track the selection. Propagation of pathogen-free nuclear stock for production of certified plants began immediately. By 1987 there were plants in growers' trials, and it was named in 1989, a year before the Plant Royalty Act came into effect in Canada. Thus, unlike the situation with cultivars named since then, it was easy to distribute plants to production regions throughout the world. During the 1990s, favorable performance information was received from the United Kingdom; various western European countries, such as Spain, France, Belgium and the Netherlands; southeastern Australia, and Chile. 'Tulameen' canes have relatively low chilling requirement and can be manipulated quite easily and efficiently to flower and fruit out of season or to being forced in greenhouses.

Hugh's greatest success, 'Tulameen', has become the most widely grown fresh-market cultivar throughout the world. It is the world standard by which other fresh-market and potential fresh-market cultivars are judged. 'Tulameen' has been used extensively in breeding programs including those in the private sector. Many millions of new plants are added to growers fields each year. Until 10 years ago, in the Pacific Northwest, 'Tulameen' had very little impact on the processing market because 'Meeker' was the dominant cultivar. In the last few years, however, cultivar plantings have changed. Significant numbers of Hugh's raspberry cultivars are now planted in the Pacific Northwest too. In 2007, 28% of the plants sold there were from his program. In the last 7 years, 4.4 million plants of these cultivars were sold in the Pacific Northwest, which is 16.4% of the total plant sales.

E. Cultivar Releases

'Matsqui' 1961. The origin of this cultivar is a cross between 'Sumner' 'Carnival'. It was released because of its firm, bright-red fruit and relative ease of harvest and resistance to *Botrytis* fruit rot. This cultivar was never a commercial success but was a good breeding parent for fruit quality, color, and appearance in the New Zealand breeding program. The name is derived from the Halkomelen word meaning ''easy portage'' or ''easy traveling,'' referring to the ease of ascending creeks from the Fraser and dragging canoes over the height of land to the old Sumas Lake or to the tributaries of the Nooksack River.

'Haida' 1973. The origin of this cultivar is a cross between 'Malling Promise' × 'Creston'. This release is particularly winter hardy, probably has resistance to the resistance-breaking strain of RBDV, and is adapted to low-chill conditions and for upright cane growth. The cultivar was named for the Haida people, who live along the coastal bays and inlets of the Queen Charlotte Islands. The tribe is renowned for its carved totem poles and great war canoes.

'Chilcotin' 1978. The origin of this cultivar is a cross between 'Sumner' × 'Newburgh'. Credited with jump-starting the interest in fresh market in the Pacific Northwest in the early 1980s, 'Chilcotin'' is now being grown in niche markets in Ontario and New Zealand. It is a key breeding parent for fresh-market cultivars, giving RBDV resistance and light, nondarkening red color. The name refers to the Chilcotin tribe and country in the Cariboo. It specifically refers to the Chicotin River, which flows east into the Fraser. The name can be translated as

''ocher river people.'' ''Ocher'' here refers not to the color but to the mineral (usually red or yellow) much prized by the First Nations people used as a base for paint or dye.

'Skeena' 1977. The origin of this cultivar is a cross between 'Creston' SCRI 6010/52, a derivative of 'Burnetholm' and 'Malling Jewel'. Until recent HortResearch releases, 'Skeena' was a leading cultivar in New Zealand for the process market. The name is based on the Skeena River, which is derived from two Tsimshian First Nation words meaning ''water out of the clouds.''

'Nootka' 1978. The origin of this cultivar is a cross between 'Carnival' 'Willamette'. This cultivar is widely recognized as a donor of genes for harvest ease, lower susceptibility to both pre- and postharvest fruit rot, and high soluble solids content as well as some field resistance to root rot and meadow lesion nematode and escape and resistace to RBDV. The name refers to Nootka Sound on the west coast of Vancouver Island. The most likely explanation of the word ''nootka'' is that the first Europeans to go there heard the First Nations people say *noo-ka-eh*, the imperative of the local verb meaning ''go around.''

'Algonquin' 1984, 1991. The origin of this cultivar is a cross between 'Haida' × 'Canby'. This cultivar was originally released as germplasm for breeding in 1984 under the name BC 72–1–7. It showed potential as a breeding parent as it is homozygous for gene Ag_1, conferring dominant resistance to *Amphorophora agathonica*, the aphid vector of the raspberry mosaic virus complex. In 1991 it was named and released for its adaptation to conditions in Ontario and in Denmark. 'Algonquin' has been a good parent in breeding and has also shown good adaptation to low-chill conditions in New Zealand. The name refers to a group of community of First Nations people in western Ontario and adjacent Quebec, centering on the Ottawa River and its tributaries. The name is appropriate because the cultivar performs particularly well in Ontario and is winter hardy.

'Chilliwack' 1987. The origin of this cultivar is a cross between ('Sumner' × 'Carnival') × 'Skeena'. This high-quality fresh-market raspberry has been the leading cultivar the Santiago region of Chile for transhemispheric air freighting to North America and Europe during November and December for the last 15 years. It is important in the raspberry-growing regions of Victoria, Australia, for the fresh market. It has a relatively high level of root rot tolerance in the field. 'Chilliwack'

is very upright and is well adapted to the ''long cane'' production method for raspberries. The name refers to a local First Nations people and to various geographic features. The Tolkomelen word has the sense of ''quieter waters at the head'' or ''travel by way of a backwater or slough.'' The name is particularly appropriate since 'Chilliwack' produces firm fruit that travels well.

'Comox' 1987. The origin of this cultivar is a cross between BC 64–9–81 (Creston × Willamette) × Skeena. It is a medium-size fruited, high-yielding cultivar that has not become a commercial success in its own right. However, it has been a very useful breeding parent for both floricane raspberries (high yield) and primocane fruiting raspberries (lateral structure). The name refers to a Kwakwala First Nation word meaning ''place of plenty'' with reference to the abundant game and berries in the Comox Valley. The name is appropriate as 'Comox' is high yielding.

'Kitsilano' 1988. The origin of this cultivar are crosses between 'Comox' × EM 3909/4; it has a complex origin, with over 4 generations of numbered selections in its origin.

This release ripens late in the season and provides an effective overlap with some of the early-ripening primocane cultivars. The medium-size fruit is bright red. This cultivar was superseded at the time of its release by 'Cascade Delight' and 'Coho', but it has been a great breeding parent, contributing fruit quality and productivity to progenies. The name is derived from the name of Squamish First Nation settler who came from a village on the Squamish River and settled in Stanley Park circa 1860. The cultivar was released with Chaim Kempler.

'Qualicum' 1995. The origin of this cultivar is a cross between 'Glen Moy' × 'Chilliwack'. This cultivar is grown in British Columbia and transported to eastern North America. The large chunky fruit is extremely firm, well suited for transport; the plant is very vigorous. The name is derived from a Nanaimo First Nations term for ''place of the dog (chum) salmon.''

'Malahat' 1999. The origin of this cultivar is a cross between 'Meeker' × BC 7853/116 (SCRI 7269/67 × 'Nootka'). This is the leading early fresh-market cultivar in British Columbia. There is some debate on the origin of this Saanich First Nation name; some say it means ''infested with caterpillars'' (let us hope not!) and others say it means ''place where one gets bait.'' This cultivar was released with Chaim Kempler.

'Cowichan' 2005. The origin of this cultivar is a cross between 'Newburgh' × 'Qualicum'. This release has shown the most potential in England, where it appears to have resistance to strains of the root rot causal organism. The name is derived from a Halkomelem First Nation word meaning ''warm country'' or ''warmed by the sun.'' The name originated because of a large rock formation, on the side of Mount. Tzuhalem, supposedly resembling a frog basking in the sun. This cultivar was released with Chaim Kempler.

'Esquimalt' 2005. This cultivar has a complex origin: 'Comox' × SCRI 7815B8, derived in part from 'Rumiloba', 'Glen Prosen', 'Meeker', 'Burnetholm', 'Malling Jewel', 'Malling Exploit', and others. It is a summer-fruiting, high-yielding plant with large, firm fruit that ripen late and are well suited to fresh market. This cultivar was released with Chaim Kempler.

'Chemainus' 2006. The origin of this cultivar is a cross between BC 82–5–84 ('Algonquin' × 'Chilliwack')] × 'Tulameen'. It is a recent multipurpose type release being widely planted in the Pacific Northwest. This cultivar was released with Chaim Kempler.

'Saanich' 2006. The origin of this cultivar is a cross between BC 82–5–161 (Algonquin × Chilliwack) × B C 80–28–50 ('Nootka' × 'Glen Prosen'. It is a high-yielding newer release suited for machine harvest and a multipurpose type for both fresh and processing markets. This cultivar was released with Chaim Kempler.

'Nanoose' 2007. This cultivar has a complex parentage involving 'Skeena', 'Dalhousie Lake 4', 'Meeker', 'Comox', and *Rubus strigosus.* It is a recent release with compact, easily managed growth habit and large, firm fruit. It has genes derived from an entirely new and distinct source of *Rubus strigosus*, the North American red raspberry. This cultivar was released with Chaim Kempler.

F. Current Activities

Currently Hugh is an Emeritus Research Scientist with the Pacific Agricultural Research Centre of Agriculture and Agri-Food Canada. He resides in the Point Grey area of Vancouver close to the UBC. Hugh is active in Seeds of Diversity Canada, a nongovernment/nonprofit organization dedicated to the conservation of endangered or rare cultivars of vegetables, fruits, flowers, and grain crops. He regularly writes for the

magazine and each issue (three per year) he contributes ''News of Diversity'' with items summarized from the United Nations Food and Agriculture Organisation (FAO) *Plant Breeding News*, *The Garden* (from the Royal Horticultural Society), American Society for Horticultural Science publications, newspapers (particularly the *Weekly Guardian* from the United Kingdom), and various other sources. He completed a term as president of Seeds of Diversity Canada and after 9 years decided it was time to quit the board, although he still writes articles for the organization. He has specialized in articles that highlight the significant of major fruit cultivars: 'Lloyd George' raspberry, 'Willamette' raspberry, 'Heritage' raspberry, 'Tulameen' raspberry, 'Cox's Orange Pippin' apple, 'Granny Smith' apple, and 'Senga Sengana' strawberry.

He is an active Friend of the Garden at the University of British Columbia (UBC) Botanical Garden and is currently a member of the executive committee and program chair. He purchases native plants from specialty wholesale nurseries and does some propagation for the annual perennial and native plant sale and for the popular Plant Centre. He also has permission to propagate 'Totem' strawberry and 'Tulameen' raspberry for sale at the Botanical Garden Centre.

He is active in the Native Plant Society of British Columbia and is currently on its board. He regularly writes article for their thrice-yearly publication *Menziesia.* He also writes for the *Cider Press*, a publication of the nonprofessional BC Fruit Testers Association, and occasionally for *Davidsonia*, a publication of the UBC Botanical Garden, and *GardenWise*, a local gardening magazine.

Hugh and Marian have been active hikers and twice trekked in the Himalayas, the first time in the mountains in the North India in August when the alpine flora is at its peak and the second time in East India (Sikkim in April), primarily to look at rhododendrons. The second trek was marred, by eye problems for Hugh—a detached retina in an isolated site at a high altitude (about 4000m). His eye was badly damaged, and he could not receive medical attention until he returned to Vancouver 10 days later. Since then he has suffered a series of eye problems.

Hugh was an avid runner and did several marathons. He now has begun power walking with poles, an activity that gives great confidence to sight-impaired persons. He also does water exercises on a regular basis. He still is an enthusiastic gardener in Vancouver and at his cottage at Reider Lake.

Hugh and Marian have three grown children. Son Peter is a consulting geologist, currently working in Saskatchewan. Older daughter Jennifer is with Foreign Affairs in Ottawa and director of Canadian trade in Near Eastern and African countries. Younger

daughter Carolyn is a therapist at a clinic on the UBC campus. She is also a part-time track and field coach and travels both nationally and internationally as part of the support group of teams competing in various events. Jennifer and her husband, Dave, have two sons, Alex and Eric, whom the grandparents visit as much as possible.

G. Awards and Honors

Hugh is a fellow of the American Society for Horticultural Science (ASHS) and was president of the American Pomological Society (APS) in 1978–1979. He is recipient of the Wilder Medal (1986) from the APS. He received outstanding cultivar awards for 'Totem' from the Canadian Society for Horticultural Science (CSHS), and for 'Tulameen' from both the CSHS and ASHS. In 1994 he received an honorary D.Sc. from MacDonald College of McGill University, Montreal. Hugh has published more than 90 reviewed papers and several book chapters. He has innumerable miscellaneous papers and bulletins to his credit and has presented more than 500 reports to industry meetings over the years. He has spoken to industry groups in Australia, Chile, Argentina, Washington State, Oregon, Ontario, as well as locally. He participated in a program review in New Zealand and assisted in establishing a successful raspberry breeding program in Victoria, Australia. He was on the editorial board of the *Canadian Journal of Plant Science* for six years and editor of 2 volumes of *Acta Horticulturae*, based on *Rubus/Ribes* symposia in 1980 and 1989, respectively. He was assigned to Agricultural Canada's Expert Committee on Gene Resources for 6 years. This important post lead to his invitation to serve as executive and President of Seeds of Diversity of Canada, where he served for 9 years.

Hugh has been involved as a contributing author for the New Fruit and Nut Varieties list for raspberries and strawberries, since 1970. He became the author for the raspberries section from 1991 to present and in strawberries from 1994. For List 38, published in 1997, he prepared descriptions of blackberry and hybrid berries, currant, gooseberry, and strawberry as well as raspberry. He continues to prepare descriptions of raspberry cultivars for the HortScience listings.

Hugh has twice been chair of the *Rubus-Ribes* Working Group of the International Society for Horticultural Science and, as such, successfully organized 2 of the Group's symposia. For many years he was a director of the Lower Mainland Horticultural Improvement Association. For more than 30 years he presented talks at their annual meetings. He also participated in similar growers' organizations in Washington and Oregon, and was invited to talk to groups in Ontario

several times and to the North American Strawberry Growers Association and the North American Bramble Growers Association.

Hugh Daubeny, berry geneticist and breeder, collaborator, and friend, has had a distinguished career. He continues to motivate and educate the scientific community. His compassion for the environment and acute awareness of the need to conserve wild genetic resources provides a direct lesson for our time. He has brought us great riches in the form of his cultivars, which have become classic standards for raspberries and strawberries. His life and work is an inspiration for us now and for the future.

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