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The 'Elberta' Peach

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Introduction

It is noteworthy that 1989 marks the one hundredth anniversary of the American Pomological Society placing 'Elberta' peach on it's list of recommended fruit (9). For much of the 20th Century, 'Elberta' dominated the commercial peach industry in the United States (1, 5, 7, 9, 16). In the years from 1910-1930, when the Georgia peach industry peaked at 16 million trees, about 40 percent of the production was of 'Elberta.' At that time, 'Elberta' was the only yellow-fleshed peach in the top 8 cultivars (11). It started the shift from white to yellow-fleshed peaches. As late as 1965, 'Elberta' was still in the top 10 peach cultivars in Georgia. In 1950, 45 percent of South Carolina's 4.5 million peach trees were 'Elberta,' down from 60 percent 10 years earlier (18). A 1968 survey showed 'Elberta' in fifth place in Maryland (down from first in 1956), first in Pennsylvania, and first in Virginia (12).

Most people associated with stone fruit culture would agree that 'Elberta' has been replaced and surpassed by superior cultivars. However, few would question that 'Elberta' played a pivotal role in the development of contemporary peach and nectarine culture. In large part, the cultivar's shipping characteristics signaled the beginning of the modern peach shipping industry, creating new production areas in the early 1900's which, theretofore, had not been close enough to major markets to prosper. Concurrent advances in transportation, packaging and cooling complemented the cultivar (16) which moved from obscurity (8) to dominance (1, 5, 7, 9, 16) in a relatively short period of time.

The dominance of 'Elberta' also formed a lasting imprint in the public's mind. 'Elberta' (or mistakenly, 'Alberta') continues to have strong name recognition at the garden center and at the fruit stand. Few save 'Georgia Belle' or 'Redhaven' have such name recognition, particularly interesting in a fruit which, unlike apple, has few visible characteristics to distinguish cultivars.

Research with 'Elberta' has also left a lasting legacy on the body of knowledge which makes up our current understanding of peach growth and development. Scientific contributions utilizing 'Elberta' established important standards and principles still in use today (6, 22). Some of the more common include dormancy and rest requirements, critical temperatures for bud hardiness, influence of numerous cultural practices on fruit yield and quality as well as fundamental principles of fruit maturity. In many areas, maturity dates for cultivars are still commonly described in terms of maturity a certain number of days before or after 'Elberta' (6).

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The history of 'Elberta' was recorded in detail, due in part to documentation by the Georgia Horticultural Society, an organization of significant size and prominence around the time 'Elberta' was selected (9, 16, 19). Dr. P. J. A. Berckmans, noted pomologist (he collaborated with Charles Downing in preparing second and third editions of The Fruit and Fruit Trees of America), innovator in peach production and shipping, and founder of the Georgia Horticultural Society, was himself president of the American Pomological Society from 1887-1897.

The origin of 'Elberta' is fascinating and serendipitous (9,16). Robert Fortune, an English botanist who had been sent to China by the London Horticultural Society to collect plants, sent seeds and a potted tree of a delicious peach growing south of Shanghai to England in 1844 under the name of 'Shanghai.' This peach was probably the old cultivar now known in China as 'Shanghai Shuimi' (23). 'Chinese Cling' was imported in 1850 to the United States as potted trees labeled 'Chinese Cling' or 'Shanghai' by Charles Downing through a Mr. Winchester, British consul in Shanghai. The trees of the two cultivars were apparently identical. Downing sent one of the trees to Henry Lyons of Columbia, South Carolina with whom the cultivar first fruited in the United States in 1851.

During the mid-1850's, records show that a Mr. L. C. Plant, a progressive banker in Macon, Georgia, had a secondary interest in fruit growing. In 1857, a Delaware nursery salesman stopped by Mr. Plant's Macon bank and convinced him to try some budded peach trees. Prior to that time, most people in Georgia had been producing their trees from seed even though budded trees were available. Mr. Plant placed an order for a few trees of 'Chinese Cling,' 'Early Crawford,' 'Late Crawford,' 'Oldmixon Free,' and 'Stump-the-World.' Mr. Plant sent these budded trees to his good friend Colonel Lewis Rumph of Marshallville, Georgia, a small town thirty-five miles southwest of Macon. Colonel Rumph grew these trees in the family orchard and with time decided that fruit from 'Chinese Cling' were especially good. Being in such a family orchard, blooms of 'Chinese Cling' were subject to open pollination by other cultivars in the planting. Colonel Rumph's wife saved seeds from the 'Chinese Cling' tree and gave them to her grandson, Samuel H. Rumph. He planted the seeds out on the Rumph farm in 1870. Of the seedlings which developed in this planting, a number produced excellent fruit, one of which was Mr. Rumph's favorite and eventually came to be named 'Elberta.'

Samuel H. Rumph married Miss Clara Elberta Moore, a charming lady who entertained numerous friends. During one of Mrs. S. H. Rumph's "spend-the-day" parties, Samuel was showing the guests some of his choice peaches from seedlings along with others and announced each by cultivar name. He at last showed what he considered to be the best peach of all but gave no name. One of the guests, Mrs. L. E. Veal, inquired of the name. Mr. Rumph replied, "It is new, it has no name. You may name it." With that, Mrs. Veal replied, "Well, lets honor your wife and call it for her. She is perfect and so is the peach. You will never have anything on this continent to surpass it. 'Elberta' is it's name. Thanks for the honor."

At the time, Mr. Rumph speculated that the 'Chinese Cling' bloom that produced 'Elberta' had been fertilized by 'Early Crawford.' However, out of 2,200 open-pollinated and selfed seedlings of 'Elberta,' Palmer (13) found that none resembled 'Early Crawford.' He suggested that 'Elberta' was a natural selfed seedling of 'Chinese Cling,' with recessive yellow flesh breeding true for that color (7, 13).

Palmer's theory is unlikely in light of current knowledge of peach genetics. Although it is not possible to verify the characteristics of the 'Chinese Cling' tree grown by Colonel Rumph, later descriptions call it a white-fleshed clingstone with reniform leaf glands and showy, pollen-sterile flower. A genetic clingstone cannot produce a freestone seedling without cross-pollination. On the rare occasions when this sterile peach produced a self-pollinated fruit, the seedling would have showy, sterile blooms, in contrast to those of 'Elberta' or 'Georgia Belle.'

As Table 1 shows, 'Chinese Cling' could have crossed with 'Early Crawford' to produce 'Elberta' and with 'Oldmixon Free' to produce 'Georgia Belle,' if it was heterozygous for the gene for yellow flesh. However, 'Late Crawford' and 'Stump-the-World' would be listed just like 'Early Crawford' and 'Oldmixon Free,' respectively, and could be parents of either 'Elberta' or 'Georgia Belle.' The presence of the gene for pollen sterility carried by both 'Elberta' and 'Georgia Belle' reinforces their claim to being descendants of 'Chinese Cling,' since pollen sterility was undescribed before being noticed in seedlings of 'Georgia Belle' and later 'Elberta.' 'Chinese Cling' is probably the oldest American peach known to be pollen-sterile.

To test the claim that 'Chinese Cling' sired both 'Elberta' and 'Georgia Belle,' a small progeny of 'Chinese Cling' (this clone matches early published descriptions of the cultivar) was fruited at Byron in 1988. The seedlings included 11 white-fleshed clingstones, 10 white-fleshed freestones, 8 yellow-fleshed clingstones, and 7 yellow-fleshed freestones. 'Chinese Cling' must be carrying the recessive gene for yellow-flesh; otherwise, all offspring would have been white-fleshed. The clingstone seedlings probably resulted from outcrosses to adjacent 'Babygold 5' trees, which are clingstone.

Mr. Rumph felt that the new cultivar would withstand shipping, previously a limiting factor in commercial production. In a trial shipment of 'Elberta,' packed in one-third-bushel crates, fruit arrived at a distant market in good condition with no refrigeration. These peaches brought five dollars per crate or fifteen dollars per bushel. The first major commercial shipment of peaches out of Georgia were grown by Mr. Rumph at his Willow Lake Orchard and Nursery. He is also credited with development in 1875 of a peach shipping refrigerator and of the rigid mortised-end peach crate. Considered father of the Georgia commercial peach industry, his accomplishments are today noted by a historical marker at his home in Marshallville.

Mr. Lewis A. Rumph, son of Colonel Lewis Rumph, in 1870 planted some seeds from the same 'Chinese Cling' tree that produced 'Elberta.' From those seedlings, he selected and named 'Belle,' listed by the American Pomological Society in 1899 as 'Georgia' but changed to 'Belle' in 1909. Popularly, it came to be called 'Georgia Belle.' L. A. Rumph speculated that it was a cross of 'Chinese Cling' and 'Oldmixon Free.' The sites of the original 'Elberta' and 'Belle'

Table 1. Characteristics of 'Elberta' peach and its supposed relatives, with possible genotypes in parentheses.

Cultivar	Flesh color	Pit adherence	Flower type	Leaf gland	Pollen viability
Early Crawford	yellow (yy)	free (F_)	non-showy (ShSh)	globose (Ee)	fertile (PsPs)
Elberta	yellow (yy)	free (Ff)	non-showy (Shsh)	reniform (EE)	fertile (Psps)
Chinese Cling	white (Yy)	cling (ff)	showy (shsh)	reniform (EE)	sterile (psps)
Georgia Belle	white (Yy)	free (Ff)	non-showy (Shsh)	reniform (EE)	fertile (Psps)
Oldmixon Free	white (Y_)	free (F_)	non-showy (ShSh)	globose (Ee)	fertile (PsPs)

trees are marked at the Rumph farm by a Georgia historical marker.

At the time of its introduction, many attributes were listed for 'Elberta' (9). It's adaptability to a broad range of soil and climatic conditions resulted in its being "grown in every peach-growing state in the Union . . ." (9). Trees were cited to be long-lived and known for consistent annual production. Trees, described as large vigorous, produce an upright-spreading, dense-topped

Table 2. Cultivars containing 'Elberta' in their genetic background, assuming J. H. Hale as the progeny of unknown parents.

Adria	Fireprince	La Jewel	Springold
Amador[2]	Firered	La Premiere	Stark Compact[2]
Amrein[2]	Flamecrest	La Red	Stark Lateglo[2]
Anza	Flavorcrest	Loring	Stark Late Gold
Arp Beauty[2]	Frank[2]	Margaret Kane	Stark Saturn
Babdon	Frankie	Marglow	Starlite
Bicentennial	Fulmur[2]	Marigold	Sullivan Elberta[2]
Biscoe	Garden State[2]	Mark-Berta	Summergold
Blake	Gloribloom	Mark-Late	Summer Pearl
Bonette[2]	Goldcrest	May Crest	Sunbeam
Bonita	Golden Beauty	Maydon	Sungold
Bounty	Goldeneast[2]	Maywel	Sunprince
Brayberta[2]	Golden Flame	McNeely	Sunrich
Buttercup	Golden Globe	Missouri	Surecrop
Calred	Golden Jubilee	Norman	TAMU Denman
Camden	Golden State	Quachita Gold	Telford[2]
Canadian Harmony	Goldray	Ozark	Topaz
Canadian Queen[2]	Gurney's Dakota[2]	Pacemaker	Triogem
Carolina Belle	Harbrite	Poppy	Troy
Carrie	Harcrest	Prairie Dawn	Tulip
Casella Queen	Harken	Prairie Rambler[2]	Valiant[4]
Chadon	Harland	Prairie Schooner[2]	Vanderpoole[2]
Chaffey[3]	Harrow Beauty	Prairie Sunrise	Vanguard
Christensen Early Elberta[2]	Harrow Diamond	Primrose[3]	Vanity
Comanche	Harson	Redelberta[2]	Vedette[2]
Cullinan	Harvester	Redglobe	Vedoka
Derby	Hickman's Elberta[2]	Redqueen	Veefreeze
Donwel	Honeyberta[3]	Redskin[3]	Velvet
Early Fair Beauty	Howard Fisher	Roberta[2]	Vesper
Early Triogem	Jefferson	Romance	Vimy[2]
Elberta Queen[2]	Jerseyglo	Royal[3]	Welberta[3]
Emery	Jerseyqueen	Ruston Red	Weldon
Envoy	Jubilant	Salberta[3]	Wilma[2]
Erlyvee	Jun-Berta	Scott Elberta[2]	Winblo
Fair Beauty[2]	Ken Late Elberta[2]	Sentry	Yelo
Fayette	Kette[2]	Sessen Cling[2]	
Fireglow	La Gem	Springcrest	

[2]Elberta — female parent
[3]Elberta — male parent
[4]Elberta × Elberta cross

crown. Leaves are dark olive-green, margin fine to coarsely serrate with one to six reniform glands. Rest requirement for flower buds is 850 hours and for leaf buds 950 hours (21).

Fruit of 'Elberta' were described in 1917 as "large, handsome, well-flavored fruits which ship and keep remarkably well" (9). They had a thick skin and ripened more slowly than older cultivars (4). Fruit, which mature in mid-season with one-fourth to three-fourths surface red overcolor, are yellow-fleshed freestone with a sweet or subacid taste.

However, 'Elberta' has serious faults which may have limited its use had it not been such an excellent shipping peach, a quality superior to all others available at the time for the commercial trade (9, 16, 20). Even in early descriptions, 'Elberta' was described to "fall short in quality" (9). Fruit have a pronounced bitterness or astringency even when peaches are fully ripe. The astringency is particularly strong in cooler climates (20). Hedrick (9) wrote "Picked green and allowed to ripen in the markets, 'Elberta' is scarcely edible by those who know good peaches." By today's standards, 'Elberta' has an unattractive exterior, drops badly as it approaches maturity and is not resistant to flesh browning (15). In addition, the stone is large. Irrespective of these shortcomings, the positive attributes of 'Elberta,' particularly shipping characteristics, were great enough to ensure it utility as a commercial peach for some time (9).

As a parent, 'Elberta' transmitted large fruit size, thick skin, firmness, yellow flesh freestone character and a prolonged ripening period to offspring (2, 7). However, a shortcoming of 'Elberta' is that it is lacking in wood and bloom hardiness. Hedrick (9) noted that its "blossoms open rather too early in New York." The noted fruit breeder M. A. Blake (1883-1947) at New Jersey was aware of this characteristic in 'Elberta' and objected to 'Elberta' as a parent because it transmitted lack of hardiness (2, 7, 19). However, he did develop varieties with considerable hardiness by crossing 'Elberta' with more hardy varieties. J. H. Weinberger, a most successful peach, nectarine and grape breeder in Georgia and California, notes that as a parent 'Elberta' has "turned out very few good varieties" (20). Early on, he accepted the experience of breeders before him that 'Elberta' was not a good parent for breeding programs. Self-pollinated seedlings were found to show better quality than 'Elberta' itself (7). The late Stanley Johnston (1893-1963) noted breeder of the Haven series at the South Haven, Michigan, Experiment Station found that 'J. H. Hale' was a much better parent than 'Elberta.' However, it is noted that 'Elberta' is likely one of 'J. H. Hale's' parents (5, 9, 10, 16, 17). In part, this conclusion is made because of large numbers of similarities between 'Elberta' and 'J. H. Hale' (7). Also pollen sterility was unknown until noticed in progenies of 'Georgia Belle' and later of 'Elberta' (7).

'J. H. Hale' was discovered as a single tree in a lot of 'Early Rivers' peaches shipped by David Baird of Manalapan, New Jersey to J. H. Hale and planted on his farm at South Glastonbury, Connecticut. Trees propagated from this one performed well on Hale's farm in Fort Valley, Georgia. In 1912 Hale sold the rights to W. P. Stark Nursery who rapidly commercialized it (7). The popularity of 'Elberta' for canning resulted in a large quantity of seed being available, hence it was often used as a rootstock for budding. It is possible that 'J. H. Hale' was an unbudded 'Elberta' seedling that was not rogued from the nursery row and was sold as a budded tree. Interestingly, the senior author attained one source of this reported relation between 'Elberta' and 'J. H. Hale' from Dr. J. H. Weinberger (20) who

Table 3. Cultivars containing 'Elberta' in their genetic background, assuming 'Elberta' as parent of 'J. H. Hale,' and number of occurrences in their ancestry.

Adria	5	Derby	5	Fulmur	1
Afterglow	1	Desertgold	10	Gaiety	1
Albru	1	Dixiland	2	Garden State Nectarine	1
Allgold	2	Dixired	2	Garnet	1
Amador	1	Donwel	2	Garnet Beauty	2
Amrein	1	Earlired	4	Gemfree	1
Angelus	2	Early Amber	2	Glohaven	2
Anza	2	Early Coronet	2	Gloribloom	2
Arp Beauty	1	Early East	1	Goldcrest	3
Aurora	2	Early Fair Beauty	1	Golden Babcock	2
Autumn	1	Early Hale Haven	1	Golden Beauty	1
Babdon	2	Early Raven	1	Goldenest	2
Babygold 5	1	Early Redhaven	2	Golden Flame	2
Babygold 6	2	Earlytop	1	Golden Globe	2
Babygold 7	1	Early Triogem	2	Golden Glory	1
Bicentennial	4	Eden	1	Golden Jubilee	1
Biscoe	3	Elberta Queen	1	Golden Monarch	2
Blake	2	Ellerbe	5	Goldenred	1
Bonette	1	Emery	2	Golden State	1
Bonita	2	Empress	2	Golden Supreme	3
Bonjour	2	Envoy	2	Goldgem	1
Brandywine	1	Erlyvee	1	Goldilocks	2
Brayberta	1	Eve	2	Gold King Nectarine	1
Brighton	3	Fair Beauty	1	Goldray	1
Buttercup	1	Fairhaven	1	Gold Rush	1
Calred	2	Fairlane	2	Goodcheer	2
Camden	4	Fairway	2	Gurney's Dakota	1
Canadian Harmony	6	Fallate	1	Gypsy	1
Canadian Queen	1	Fantasia Nectarine	2	Halehaven	1
Candor	2	Fayette	4	Hamlet	5
Cardinal	2	Fertile Hale	1	Harbelle	8
Carrie	1	Fillette	1	Harbinger	2
Casella Queen	2	Fireglow	2	Harbrite	6
Catherina	5	Fireprince	7	Harcrest	4
Chadon	3	Firered	4	Harken	6
Chaffey	1	Flamecrest	7	Harland	6
Cherryred	1	Flavorcrest	4	Harmony	2
Christensen Early Elberta	1	Flordabeauty	5	Harrison	1
Clark	1	Flordabelle	2	Harrow Beauty	11
Clayton	5	Flordagold	2	Harrow Diamond	3
Collins	3	Flordaqueen	2	Harson	6
Columbina Nectarine	2	Flordared	2	Harvester	2
Comanche	2	Flordawon	2	Havis	4
Compact Redhaven	2	Fortyniner	1	Hermosa	1
Constitution	1	Franciscan	1	Hermosillo	1
Coronet	2	Frank	1	Hickman's Elberta	1
Correll	5	Frankie	1	Hiland	3
Cresthaven	5	Frostqueen	1	Home Canner	1
Cullinan	4	Fujihara Babcock	1	Honeyberta	1

Table 3. (Continued)

Honey Dew Hale	1	Maywel	2	Richhaven	4
Honeygem	1	McNeely	3	Rio Grande	2
Howard Fisher	2	McRed	3	Roberta	1
Improved Pacifica	1	Merrill Gem	1	Romance	2
Jefferson	3	Merrill Hale	1	Rosydawn	2
Jerseydawn	2	Merrill Prince	1	Royal	2
Jerseyglo	5	Merritt	1	Royal Gem	1
Jerseyland	1	Midway	1	Roza	1
Jerseyqueen	1	Milam	4	Rubired	4
J. H. Hale	1	Missouri	1	Ruston Red	5
Jubilant	1	Monroe	1	Salberta	1
July Lady	2	Mountaingold	1	Schooldays	1
Jun-Berta	1	Necta-Heath	1	Scott Elberta	1
June Bride	1	Newcheer	2	Sentinel	2
June Lady	2	Newday	1	Sentry	4
Juneprince	7	Norman	3	Sessen Cling	1
Kalhaven	1	Opedepe	3	Shepard's Beauty	2
Ken Late Elberta	1	Ouachita Gold	4	Shermans Red	3
Kette	1	Ozark	2	Shoji	2
Keystone	3	Pacemaker	2	Sixty-six	1
Kim Earling	1	Pacifica	1	Solo	1
Kim Nectarine	1	Pat's Redhaven	2	Somervee	1
Kirkman Gem	1	Pekin	3	Southland	2
La Gem	4	Piedmontgold	1	Sparkle	1
La Gold	2	Poppy	2	Splendor	1
La Premiere	3	Prairie Clipper	1	Springbrite	3
La Red	2	Prairie Dawn	3	Springcrest	4
Late Le Grand Nectarine	1	Prairie Daybreak	1	Springold	4
Laterose	1	Prairie Rambler	1	Starkcompact	1
Late Sunhaven	4	Prairie Rose	1	Stark Earliglo	2
Le Grand Nectarine	1	Prairie Schooner	1	Stark Encore	1
Loring	2	Prairie Sunrise	3	Stark Lateglo	1
Madison	2	Prenda	1	Stark Late Gold	1
Magnolia	2	Primrose	1	Stark Saturn	3
Mardigras	2	Ramsey	1	Starlite	4
Margaret Kane	1	Ranger	2	Sullivan Early Elberta	1
Marglow	2	Raritan Rose	1	Summercrest	1
Marhigh	1	Rayon	2	Summerglo	3
Marigold	1	Redcap	4	Summergold	2
Mark-Berta	1	Red Elberta	1	Summer Pearl	2
Mark-Late	2	Redglobe	2	Summerqueen	1
Marland	1	Red Gold	1	Summerrose	1
Marpride	1	Red Grand Nectarine	3	Summerset	1
Marqueen	1	Redhaven	2	Sunbeam	1
Marsun	1	Red King Nectarine	1	Sunbrite	8
Maybelle	2	Red Lady	1	Suncling	1
May Crest	3	Redqueen	3	Sunfre	2
Maydon	2	Redrose	1	Sungold	1
Maygold	3	Redskin	2	Sun Grand Nectarine	1
May Lady	1	Redtop	1	Sunhaven	4
Maytime	1	Regina	1	Sunhigh	1

Table 3. (Continued)

Sun Lady	1	Thomason Early Elberta	2	Velvet	4
Sunlite Nectarine	2	Topaz	4	Vesper	2
Sunnyside	10	Triogem	2	Vimy	2
Sunprince	3	Tropic Sweet	1	Washington	1
Sunrich	1	Troy	3	Welberta	3
Sunripe	2	Tulip	1	Welcome Hale	1
Sunrise	1	Tyler	1	Weldon	2
Sunshine	2	Valiant	2	White Hale	1
Superior	1	Vanderpoole	1	Wildrose	1
Surabian	1	Vanguard	2	Wilma	1
Surecrop	4	Vanity	3	Winblo	4
Suwanee	2	Vedette	1	Yellow King	1
Tamu	2	Vedoka	2	Yelo	3
Telford	1	Veefreeze	2	Zachary Taylor	1
		Veeglo	1		

in turn was told the story by a Mr. John H. Baird, owner of Georgia peach land leased to the USDA in the 1930's. Previously, Mr. Baird worked for and bought the land from Mr. J. H. Hale. Mr. Hale had tested the 'J. H. Hale' peach on that land in earlier times and conveyed directly to Mr. Baird his opinion that 'J. H. Hale' peach was a seedling of 'Elberta.' The connection between 'Elberta' and 'J. H. Hale' will remain speculative, an academic point that may one day be answered with the use of genetic mapping (14). In any event, over time both 'Elberta' and especially 'J. H. Hale' have been useful to breeders (5, 7, 17) in creating better varieties, and 'Elberta' is found in a large percentage of pedigrees of common cultivars (Table 2). The coefficients of coancestry of 'Elberta' crosses are generally high due to the presence of 'Elberta' in the ancestry of many cultivars (17). For example, first cousins have a coefficient of 0.063. The average coefficient of 'Elberta' crossed with 30 popular cultivars averaged 0.059. Both 'Elberta' and 'J. H. Hale' transmit a lack of cold hardiness to their progeny (2, 3, 7), probably because they both descend from the southern group of Chinese peaches (17). The majority of modern day peaches descend from a small group of ancestors, in fact a very narrow gene pool (17). If 'Elberta' is indeed 'J. H. Hale's' parent, it would influence the former's role in the ancestry of peach cultivars (Table 3). The average coefficient rises to 0.218 if 'J. H. Hale' is considered an 'Elberta' offspring (17).

It is fascinating today that a cultivar with so few noteworthy characteristics could have shaped an industry and left such an impact. However, in its day, 'Elberta' was simply, as Dr. Weinberger (20) notes, "way ahead of it's time." Most peaches available at the time, many from Europe, were developed for local consumption, possessed high quality white flesh but softened quickly and were not suitable for shipping. There was "nothing to compare with it at the time" (20). The times were right for the development of a shipping industry with recent advances in handling, cooling and transportation. 'Elberta' filled the niche as no other variety at the time could. The peach season in a given peach production area became a three-week " 'Elberta' season" (20). The " 'Elberta' season" moved up through the country from south to north. Brokers had no difficulty because they knew what to expect—more 'Elberta.' With the introduction of earlier varieties, this pattern of produc-

tion and marketing began to change (1, 7, 10). Likewise, introduction of superior quality cultivars, eventually spelled the demise of 'Elberta's' supremacy and importance as a commercial peach. However, 'Elberta's' contributions leave little doubt that it's place in the history of peach culture is well secured.

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Book Review

"The Apple Book" by prize winning botanical artist Rosanne Sanders is a delight to see and read. It is a beautiful book for home gardeners and apple enthusiasts. Some 134 apple varieties ranging from the old to the new are described, most with watercolors of bloom, a fruiting cluster, and singular fruits. The 122 full colored plates are exquisite in detail and color, but the fruits are not always representative of those in commercial orchards, e.g., finish and shape. The 144 pages primarily cover the descriptions and identification of apple varieties, as well as a section on apple growing with effective marginal line drawings. The text is slanted to British culture and conditions. Publication of the book was in association with the Royal Horticultural Society. "The Apple Book" will be a welcome addition to any apple lover's library. The publisher is Philosophical Library, Inc., 200 West 57th Street, New York, NY 10019. The price is $29.95 plus $2.50 for postage and handling within the U.S.

Reviewed by Dr. Loren D. Tukey, Professor of Pomology, Department of Horticulture, The Pennsylvania State University.