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NEW STRAWBERRY VARIETIES*By* George L. Slate and John Watson

The breeding of strawberries at Geneva is to produce better varieties for commercial and home garden plantings in New York State. Better varieties must be equal to existing varieties in important characteristics and distinctly superior in at least one characteristic. Tests at Geneva are necessarily limited and often may not reveal the full potentiality of a new variety. The faults of a variety also may not appear, or at least do not seem to be important to the breeder under the conditions of the test. The usefulness of a new variety and its place in the industry can be determined only by grower test under the varied conditions that the new variety will encounter after introduction.

Growing conditions are similar from year to year, but market requirements change. The increased emphasis on durability in the food industry extends to strawberries. On the auction block, or wherever berries are shipped, firmness is all important. The older varieties, some of which were soft, but otherwise very desirable, are being replaced by the newer and firmer varieties.

Frontenac and Fulton of the new varieties described here reflect the increased emphasis on firmness in the Station strawberry breeding program.

Strawberry varieties now being grown commercially in general are inferior in quality to the best flavored varieties that are in existence. The highest quality varieties usually are not productive enough for market berries. Yet a high quality strawberry, if it reaches the consumer in good condition, can do much to stimulate increased consumption of a deservedly popular fruit. In the Station strawberry breeding project much emphasis has been placed on the development of productive varieties that are also highly flavored. Fletcher and Fortune are productive and of superior quality.

The everbearing strawberries, commonly grown for many years, lack the high quality that a home garden variety should possess. Geneva combines high quality with productiveness, which makes it a very desirable home garden strawberry.

The new varieties described here have been introduced to find their place in the industry. They all deserve trial for the purposes indicated.

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FLETCHER

Fletcher was produced by crossing Midland with Suwannee in 1949. From a population of 892 seedlings Fletcher was selected in 1951, and in 1959 it was introduced through the New York State Fruit Testing Cooperative Association, Inc., Geneva, N.Y. A year earlier the Association distributed a few plants as N.Y. 423.

The name Fletcher is applied in honor of Dr. S. W. Fletcher, the author of two books and several papers on strawberries. Doctor Fletcher, for many years Professor of Horticulture and, later, Dean and Director of Research in the School of Agriculture at Pennsylvania State University, is now Dean Emeritus.



The plants of Fletcher are vigorous and make a full fruiting row each year. Crops have been equal to those of other standard varieties. The foliage has been free from leaf spot, scorch, and mildew. The berries are large at the start, but average medium size throughout the season, are conic to slightly wedge conic in shape, medium red in color, glossy, and attractive. The skin is about as firm as that of Sparkle, being much better in this respect than Catskill. The flavor is subacid and the quality very good, probably better than any other commonly grown variety. It ripens 2 or 3 days later than Sparkle.

Fletcher possesses the rare combination of characteristics, namely the productiveness and firmness to make it a market berry, and the

high quality for home use. High quality is, of course, a market asset, but most breeders, and certainly buyers and growers, have shoved it into the background. Fletcher is excellent for freezing, being slightly better frozen than Sparkle, Frontenac, or Eden, all of which are very good for freezing.

Plants numerous, vigorous, tall and productive; runners slender, internodes long; leaves medium size, medium green, slightly glossy, smooth; petioles long, medium thick, with wide-spreading pubescence.

Flowers perfect, large, with 5 petals; stamens numerous.

Fruit-stems medium in length and thickness, prostrate; pedicels of variable length, slender, with wide-spreading pubescence; calyx medium size, slightly raised, clasping, bright green, adhering firmly to fruit; sepals short, medium wide.

Fruit medium size, conic, regular, apex pointed, attractive, glossy, medium red, coloring evenly; skin bruises slightly; seeds numerous, slightly sunken; flesh red, juicy, medium firm, center solid, subacid, good, season late.

FRONTENAC

Frontenac originated from a cross made in 1945 between Erie (Sparkle x Howard) and a Station selection (Fairfax x Dresden). It was selected in 1947 from a population of 1,015 seedlings. The name Frontenac was applied in 1959, but as N.Y. 96 it had been disseminated



for trial by the New York State Fruit Testing Cooperative Association, Inc., Geneva, N. Y. since the spring of 1955.

The plants are unusually large, vigorous, produce fewer runners than most varieties, and are usually productive. The plants apparently suffer more from drought than some varieties, but with adequate moisture the crops are heavy. In a comparison of the hill system with the matted row, Frontenac, when irrigated, yielded at the rate of 18,000 quarts per acre. This variety, which produces fewer runners than most varieties, is very suitable for the hill system.

The berries are large, conic, medium red in color, and attractive in appearance. The skin is fairly tough and the flesh is firm. The flavor is moderately acid and the quality is good. Frontenac ripens a few days later than Sparkle. In freezing quality it is equal to Sparkle and Fletcher.

Frontenac is recommended for trial for commercial planting because of its heavy cropping, late ripening, firmness, and freezing quality. For the home garden it is superior in quality and firmness to Robinson and Howard (Premier) and it produces fewer runner plants, although it produces enough for a productive fruiting row.

Cyclamen mites have been troublesome on the plants first distributed, but this insect has now been eliminated with endrin and Thiodan, both of which are effective in controlling the mites.

Plants moderate in number, vigorous, unusually large, tall and productive, runners thick, internodes long; leaves medium size, medium green, slightly glossy, smooth; petioles long, medium thick with appressed pubescence.

Flowers perfect, large, with 5-7 petals; stamens numerous.

Fruit-stems medium long, variable in thickness, prostrate; pedicels medium in length and thickness, with appressed pubescence; calyx medium size, flat, clasping, bright green, adhering firmly to fruit; sepals medium in length and width.

Fruit large, uniform, primary berries often wedge-shaped, later berries slightly wedge-conic, regular, apex pointed, attractive, glossy medium red, becoming slightly dark, coloring evenly; skin medium tough; seeds numerous, slightly raised; flesh red, juicy, medium firm, center slightly hollow, moderately tart, good; season very late.

FULTON

The parents of Fulton are Starbright (Chesapeake x Fairfax), a very firm, unproductive U. S. Department of Agriculture variety, crossed with Pathfinder (Howard x Aberdeen), a soft, very productive variety from the New Jersey Agricultural Experiment Station. The cross was made in 1947, from which 103 seedlings were raised, and Fulton was

selected in 1949. It was introduced through the New York State Fruit Testing Cooperative Association, Inc., Geneva, N. Y. in the fall of 1959.

The plants are vigorous, productive, and free from leaf diseases. Runner production is adequate for a good fruiting row. The berries are mostly of medium size, conic, glossy, medium red, and attractive in appearance. The skin is tougher and the flesh firmer than that of the commonly grown varieties. The flavor is subacid and the quality fair. Fulton ripens shortly after Catskill. It is satisfactory for freezing, but not equal to Fletcher, Frontenac, and Sparkle for that purpose.



Fulton is being introduced for trial for commercial planting because of its unusual firmness. The premium that is being paid for firm berries on the auction markets in the State is the principal reason for introducing this variety, although it is otherwise satisfactory.

In a dry season fruit size is sometimes smaller than desirable, but with adequate rainfall, or supplementary irrigation, size is satisfactory. The berries have a slightly seedy appearance, but not objectionably so.

Plants numerous, vigorous, tall, productive; runners slender, internodes long; leave large, medium green, dull, smooth; petioles long, medium thick, pubescence wide-spreading.

Flowers perfect, medium size, usually with 5 petals; stamens numerous.

Fruit-stems long, thick, prostrate; pedicels long, of variable thickness with wide-spreading pubescence much longer and more conspicuous than on Catskill; calyx small, flat, clasping, bright green, adhering firmly; sepals short, medium wide.

Fruit medium size, uniform, short conic, regular, apex pointed, attractive, glossy, medium red, coloring evenly; skin tough; seeds numerous, raised, somewhat seedy in appearance; flesh red, juicy, medium firm, center solid, subacid, fair; midseason.

FORTUNE

Fortune originated from the self-pollination of U.S.D.A. 2827 (Dorsett x U.S.D.A. 367, a high quality selection from the United States Department of Agriculture. The cross was made in 1948 and from a population of 79 seedlings Fortune was selected in 1950. It was first offered for trial by the Fruit Testing Association in the 1956-57 catalogue as N. Y. 386. In 1961 it was named and formally introduced.



Fortune is one of the best-flavored strawberries growing in the Experiment Station plantings. It is also one of the most attractive berries, being light bright red in color. The berries are firmer than Catskill, but not as firm as the varieties that are now favored on the auction block for trucking to distant markets. For local markets Fortune is firm enough. It is not suitable for freezing being inferior to Fletcher, Frontenac, and Sparkle for that purpose.

Fortune is one of the most vigorous varieties, and the dark green foliage with a slightly bluish cast makes the plants stand out in a variety

collection. Runner plants are freely produced and a good fruiting row is made each year. The crops are heavy enough to make this variety useful for commercial planting where unusual firmness is not needed. It is also well worthy of trial for home use.

Plants numerous, vigorous, tall, productive; runners thick with long internodes; leaves medium size, dark green with a slight bluish cast, slightly dull, slightly rugose; petioles long, medium thick, with outstanding pubescence.

Flowers perfect, medium size, with 5 petals; stamens numerous.

Fruit-stems long, thick, prostrate; pedicels long, slender with wide-spreading pubescence; calyx medium size, slightly raised, variable in clasping, bright green, adhering firmly; sepals medium in length and width.

Fruit large, maintaining size fairly well through the season, a few of the largest primary berries are wedge-shaped, rest conic to slightly wedge-conic, regular, apex pointed, very attractive, glossy, medium red, coloring evenly; skin medium firm; seeds numerous, even to slightly raised; flesh red, juicy, tender, slightly hollow, subacid, very good quality; ripens in early mid-season.

GENEVA

GENEVA was produced by crossing N.Y. 316 (Streamliner x Fairfax) with Red Rich (Wayzata (Rockhill) x Fairfax). The cross was made in 1952, and Geneva was selected in 1954 from a population of



307 seedlings. A few plants were distributed by the Fruit Testing Association in the spring of 1961 as N.Y. 547. It was named and formally introduced in the 1961-62 catalogue of the Association.

Geneva is the first everbearing strawberry to be introduced by the Station. It is also the best everbearing variety that has been tested at Geneva. In quality, the most important attribute of a home garden strawberry, Geneva is excellent. The berries are large and attractive. The plants crop heavily for the June crop, as well as the later crop.

The principal fault of the variety is the tender skin and susceptibility of the berries to fruit rot when weather conditions favor that disease.

Everbearing strawberries are much more productive if grown in the hill system with all runner plants removed and mulched with sawdust, than if grown in the usual matted row. The plants are large when full-grown, and should be spaced about 18 inches apart to provide good air circulation around the plants, an important factor in reducing losses from fruit rot.

Plants numerous, vigorous, of medium height, productive; runners thick with long internodes; leaves medium size, medium green, slightly rugose, glossy; petioles medium in length and thickness, with outstanding pubescence.

Flowers perfect, medium size, with 7-8 petals; stamens numerous.

Fruit-stems medium in length and thickness, semi-erect to prostrate; pedicels medium in length and thickness, pubescence partly wide spreading; calyx medium size, slightly raised, dull, slightly reddish, adhering firmly; sepals medium in length and width.

Fruit large, somewhat variable in size and dropping in size as the season advances, primary berries short wedge-conic, later berries round conic, slightly irregular, apex obtuse to blunt-pointed, dark red, glossy, attractive, coloring evenly; skin as tender as Catskill, flesh red, juicy, medium firm, subacid, good; ripens late mid-season and continues until frost.

Family Tree of Strawberries Described in Bulletin



