



US00PP15058P2

(12) **United States Plant Patent**
Fear et al.

(10) **Patent No.: US PP15,058 P2**
(45) **Date of Patent: Aug. 3, 2004**

(54) **BLACKBERRY PLANT NAMED 'DRISCOLL CARMEL'**

(50) Latin Name: *Rubus L.*
Varietal Denomination: **Driscoll Carmel**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 74 days.

(21) Appl. No.: **10/306,454**

(22) Filed: **Nov. 27, 2002**

(51) **Int. Cl.⁷** **A01H 5/00**

(52) **U.S. Cl.** **Plt./203**

(58) **Field of Search** **Plt./203**

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(57) **ABSTRACT**

The present invention relates to a new and distinct cultivar of blackberry plant named Driscoll Carmel. The new cultivar is distinguished from other blackberry cultivars by its high productivity, early season, and low chill requirement. Driscoll Carmel produces fruit with improved quality and shipping characteristics over a long fruiting period. The new cultivar is distinguished from its seed parent by having better flavored fruit; it is distinguished from its pollen parent by its larger fruit.

2 Drawing Sheets

1

Latin name of the genus and species of the plant claimed: The variety is botanically identified as *Rubus L.* Subgenus *Rubus*.

1. BACKGROUND OF THE INVENTION

This invention relates to a new cultivar of blackberry called 'Driscoll Carmel'. The new cultivar was developed from hybridization of the unpatented female cultivar 'BY45.1' with the unpatented male selection 'BY63.2'. The parents were crossed in 1996, where after fruit and seed were collected to produce seedlings for field planting in Watsonville, Calif. in 1997. The new cultivar was selected in 1998 for its good flavor, fruit firmness and season of ripening. The cultivar has been asexually propagated in Watsonville, Calif., and reproduced true to type plants by in vitro shoot tip culture.

2. SUMMARY OF THE INVENTION

The present invention provides a new and distinct blackberry cultivar named 'Driscoll Carmel'. The variety is botanically identified as *Rubus L.* subgenus *Rubus*. The variety is a complex *Rubus* hybrid, which can be characterized as an erect tetraploid with considerable *R. allegheniensis* background with other species such as *R. trivialis*, *R. argutus*, *R. procerus*, and *R. ulmifolius* also appearing in its background. The new cultivar produces a florican crop which begins in late May and continues until mid-August. The new blackberry variety is distinguished from other varieties by a number of characteristics as set forth in Table 1. In particular, the new cultivar is distinguished by its low chill requirement, and its improved quality and shipping characteristics. Yield of the new cultivar is high when compared to many other varieties.

3. COMPARISON TO SIMILAR VARIETIES

The variety that we believe to be similar to 'Driscoll Carmel' from those known to us is 'Olallie', an unpatented variety. 'Driscoll Carmel' is particularly different from 'Ola-

2

lie' by being later ripening, having less postharvest color reversion, having less acidic flavor, and having better fruit firmness. Further detailed comparison of 'Driscoll Carmel' to 'Olallie' and 'Chester' is presented in Table 1.

4. BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying photographs show typical specimens of the fruit, leaves and shoot of the new cultivar, in color as nearly true as reasonably possible in color illustrations of this type.

FIG. 1. is a photograph of a 'Driscoll Carmel' fruiting lateral with fruit in various stages of development.

FIG. 2. is a photograph showing a close-up view of primocane leaves, mature leaf and stem of 'Driscoll Carmel'.

5. DESCRIPTION OF THE NEW VARIETY

The following detailed description of the new blackberry cultivar, 'Driscoll Carmel', is based upon recorded observations of 2–5 year old plants and fruit grown between 2000 and 2002 in Watsonville, Calif., and is believed to apply to plants of the 'Driscoll Carmel' cultivar grown in similar conditions of soil and climate elsewhere. Plants were planted in soil previously pre-plant fumigated and regularly fertilized and irrigated with drip irrigation. This description is in accordance with terminology used by the International Union for the Protection of New Varieties of Plants (UPOV). Throughout this specification, color names beginning with a small letter signify that the name of the color, as used in common speech, is aptly descriptive. Color data with a capital letter and an alphanumeric code indicate the most similar color designations as provided by The Royal Horticultural Society (R.H.S.) Colour Chart published by The Royal Horticultural Society of London, England. Color designations, color descriptions, and other phenotypical descriptions may deviate from the stated values and descriptions depending upon variation in environmental, seasonal, climatic and cultural conditions.

5.1 CHARACTERISTICS OF THE NEW VARIETY

Table 1 provides information on the plant and fruit characteristics of the new blackberry cultivar 'Driscoll Carmel' compared with characteristics of the unpatented blackberry cultivars 'Olallie' and 'Chester'. Both 'Olallie' and 'Chester' are currently important cultivars for fresh market shipping, and thus are comparable to the proposed use of the new invention, 'Driscoll Carmel'. Observations of 'Driscoll Carmel', 'Olallie', and 'Chester' were taken in side-by-side comparison between 2000 and in 2002.

Fruit of the new cultivar is particularly characterized and distinguished from other cultivars by its improved flavor and shipping characteristics. Drupelets of 'Driscoll Carmel' fruit show less postharvest color reversion compared to 'Olallie'.

'Driscoll Carmel' is highly productive and produces most of its crop in the middle part of the harvest season. Canes of 'Driscoll Carmel' are moderately vigorous, thorny and have buds with a low chill requirement. The average plant height is about 259 cm and the average plant spread is about 98 cm. The pigmentation of the young shoots is 146A. The sepals average about 9.5 mm in length and the average width of a sepal is about 5.3 mm. Sepal pigmentation color is 146B. The petiole pigmentation color on the upper surface is 146A.

The style pigmentation color is 143B, the average number of styles per flower is about 110, the anther pigmentation color is 155B, and the average number of anthers per flower is about 76. The number of petals per flower is five. The color of the seeds of 'Driscoll Carmel' is 152C and the average seed weight is 2.3 mg.

'Driscoll Carmel' is distinguished from its pollen parent, 'BY63.2' by having larger fruit and less postharvest color change. 'Driscoll Carmel' is distinguished from its seed parent, 'BY45.1', by having smaller, better flavored fruit and fewer thorns.

TABLE 1

<u>PLANT CHARACTERISTICS OF 'DRISCOLL CARMEL'</u>			
GENERAL	Driscoll Carmel	Chester	Olallie
Vigor	moderate	high	moderate-high
Growth habit	semi-erect	semi-erect	spreading
Productivity	high	high	high
Self fruitfulness	self-fruitful	self-fruitful	self-fruitful
Number of young shoots	medium	late	early
<u>CANES</u>			
Primocanes			
Young shoot pigmentation	medium	medium	weak
glucosity (waxy bloom)	absent or weak	medium	weak
cane cross section (from mid cane of primocane)	angular	angular to grooved	rounded to angular
dormant cane color	gray brown to purple	purple brown	brown to purple brown
Spines	present	absent	present
pigmentation	gray brown to purple	—	purple
color	184-A	—	187-A
density on young shoots	152-A	—	medium
attitude of tip	sparse	—	downward to horizontal
size: Length (base to tip) (mm)	4.3	—	3.0
texture	smooth	—	heavy

TABLE 1-continued

<u>PLANT CHARACTERISTICS OF 'DRISCOLL CARMEL'</u>			
GENERAL	Driscoll Carmel	Chester	Olallie
presence and distribution on petioles	present irregularly distributed	—	present irregularly distributed
Pubescence on canes	present	present	present
<u>LEAVES</u>			
Relief between veins	medium	weak	medium
Number of leaflets	usually 5	usually 5	sometimes 3, sometimes 5
Glossiness	medium	medium	medium
Leaf cross section	concave	concave to flat	concave
<u>Terminal leaflet</u>			
length (cm)	8.7	10.7	9.1
width (cm)	5.4	8.3	7.9
shape	ovate	ovate	ovate
tip	acuminate	acuminate	acuminate
base	acute-rounded	cordate	cordate
margin	doubly serrated	doubly serrated	doubly serrated
<u>Lateral leaflet</u>			
overlap of lateral leaflets	yes	yes	yes
length (cm)	7.9	9.2	8.4
width (cm)	4.5	6.4	6.3
shape	ovate	ovate	ovate
tip	acuminate	acuminate	acuminate
base	oblique-acute	rounded	rounded
margin	doubly serrated	doubly serrated	doubly serrated
Rachis length (between terminal leaflet adjacent lateral leaflets) (cm)	2.4	3.0	2.5
<u>Petiole</u>			
length (cm)	6.1	5.9	3.9
pigmentation of upper surface	red purple/maroon	red purple/maroon	green to slightly pink
pigmentation of underside	yellow green	yellow green	yellow green
Stipule orientation	erect to clasping	erect	clasping to erect
<u>Color</u>			
face	147-A	146-A	146-A
underside	146-A	146-A	146-A
<u>FLOWERS</u>			
Flowering period time of beginning of flowering	early	very late	early
Flower size	medium	medium	medium
Flower diameter (cm)	4.7	4.3	4.3
Flower number (at 3 rd node from tip of lateral, range and mean)	4 to 7, mean 5.0	2 to 12, mean 9.5	3 to 6, mean 4.2
<u>Petal</u>			
length (cm)	2.3	2.0	2.0
width (cm)	1.7	1.4	1.3
color	155D	N74D	
Pedicel coloration	absent	weak	very weak
<u>FRUIT</u>			
Fruit harvest season	early-mid	late	early
Color	black	black	black
immature	187-A	187-A	187-B
maturing	202-A	202-A	202-A
mature fruit	202-A	202-A	202-A
Glossiness	strong	medium	medium
Shape	ovate	round to ovate	narrow ovate

TABLE 1-continued

<u>PLANT CHARACTERISTICS OF 'DRISCOLL CARMEL'</u>			
<u>GENERAL</u>	Driscoll Carmel	Chester	Olallie
<u>Dimensions</u>			
fruit size	medium	small	medium
length (cm)	2.3	2.1	2.9
width (cm)	2.0	2.0	1.7
Weight (g/fruit)	6.2	3.6	4.7
Soluble solids (%)	11.9	9.6	10.4
Titrate acidity (% as citric acid) (ml of added .1 N NaOH to pH 8.1)	1.49	1.84	2.06
Number of drupelets per fruit	61	46	86
Firmness	firm	firm	soft

5.2 NUCLEIC ACID FINGERPRINTING

Distinctive patterns of polymorphism can be detected using a variety of nucleic acid analysis methods. In one non-limiting example, molecular genetic maps can be produced using random amplified polymorphic DNA (RAPD) (Williams et al., 1990, "DNA polymorphisms amplified by arbitrary primers are useful as genetic markers", *Nucleic Acids Res.* 18(22):6531-5). Using a variety of oligonucleotide primers, alone or in combination, RAPD analysis of 'Driscoll Carmel', 'Chester', and 'Olallie' yielded DNA fragment patterns that uniquely distinguish each of these genetically distinct genotypes.

We claim:

1. A new and distinctive cultivar of blackberry plant, substantially as shown and described.

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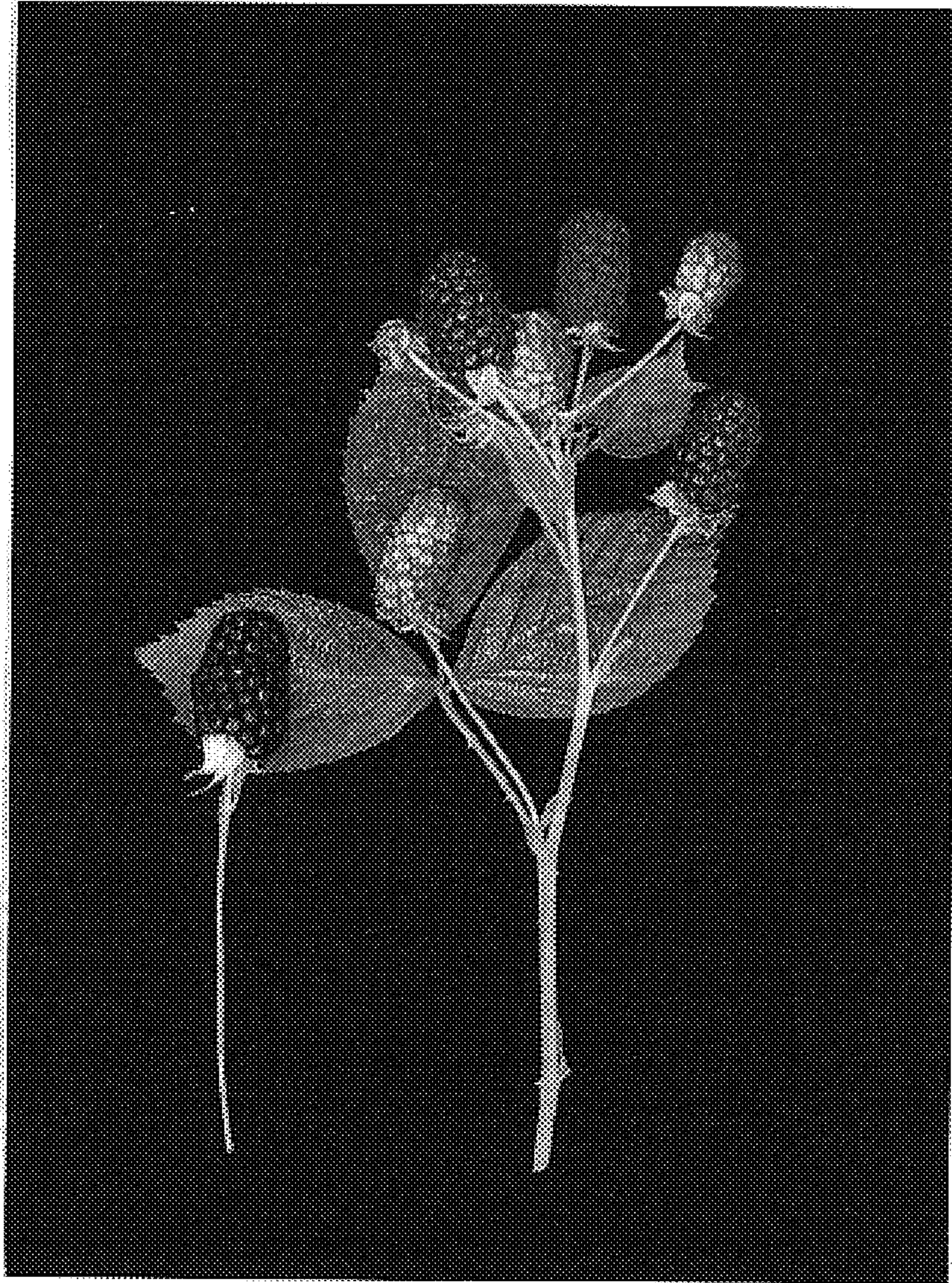


FIG. 1

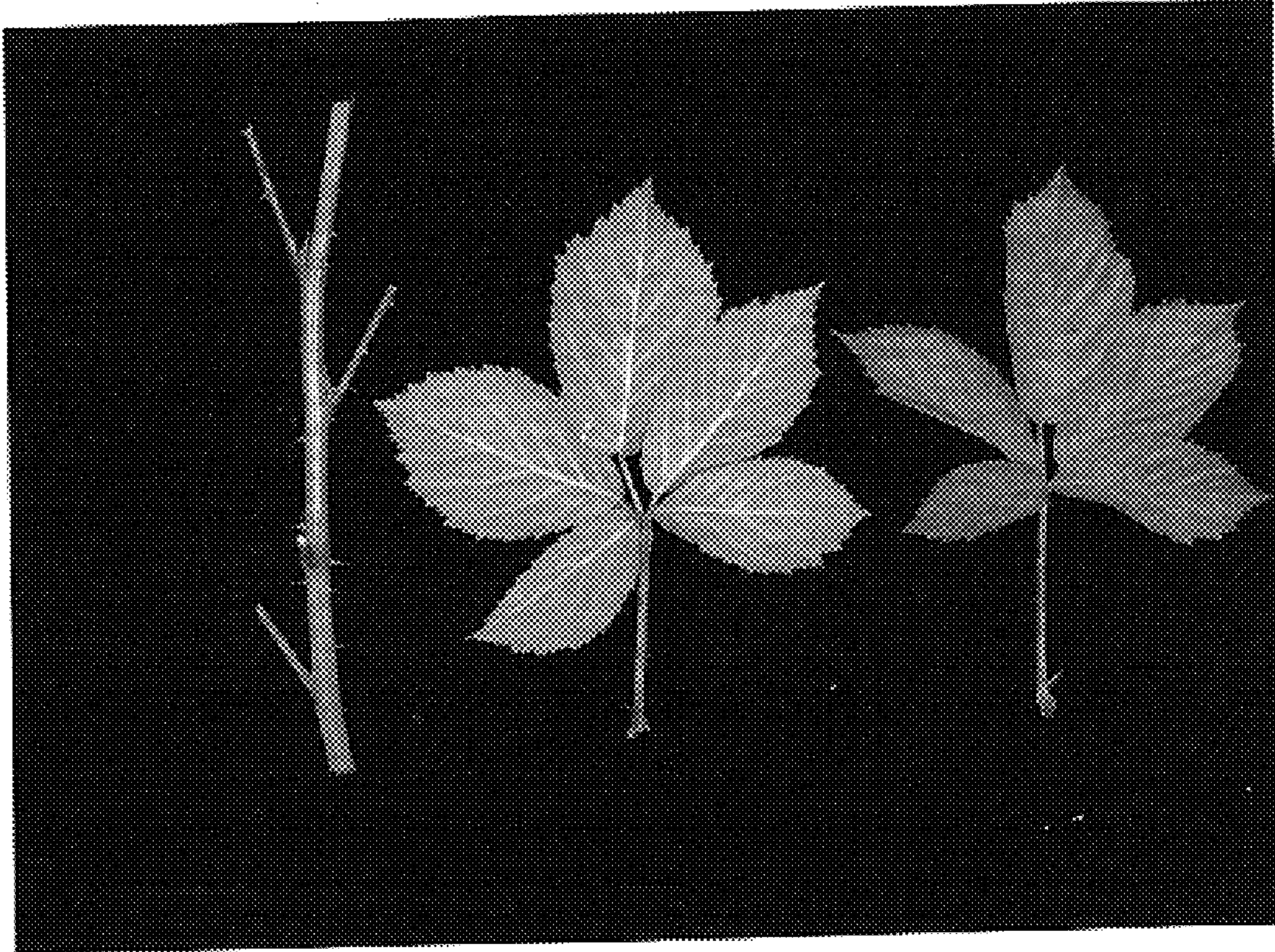


FIG. 2