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(12) **United States Plant Patent**
Hunter(10) **Patent No.:** US PP28,336 P3
(45) **Date of Patent:** Aug. 29, 2017(54) **PEAR TREE NAMED 'HW624'**(50) Latin Name: *Pyrus communis*
Varietal Denomination: HW624(71) Applicant: **Her Majesty the Queen in Right of Canada, as represented by the Minister of Agriculture & Agri-Food, Ottawa (CA)**(72) Inventor: **David M. Hunter, St. Catharines (CA)**(73) Assignee: **Agriculture and Agri-Food Canada, Ottawa (CA)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 283 days.

(21) Appl. No.: **14/545,134**(22) Filed: **Mar. 31, 2015**(65) **Prior Publication Data**

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(51) **Int. Cl.***A01H 5/08* (2006.01)(52) **U.S. Cl.**USPC **Plt./176**(58) **Field of Classification Search**USPC Plt./176
CPC A01H 5/0881
See application file for complete search history.(56) **References Cited****PUBLICATIONS**<http://www.virtualorchard.net/idfta/cft/1999/april/hunter/08%20Hunter.pdf>; Feb. 20-24, 1999; 6 pages.*
Canadian Plant Breeder's Rights Registration Certificate No. 4402 granted Sep. 6, 2012 for 'HW624' *Pyrus communis* variety.

* cited by examiner

Primary Examiner — Kent L Bell*(74) Attorney, Agent, or Firm* — Brunet & Co.; Hans Koenig(57) **ABSTRACT**

The invention is a new and distinct pear tree variety denominated 'HW624'. The new pear tree is characterized by producing heavy crops of medium-to large-sized fruit, picked about 2 weeks after 'Bartlett'. Fruits are green when harvested, turning yellow as fruits ripen, and there is a medium red blush where exposed to the sun. There were no natural fire blight infections on the seedling tree, and results from controlled inoculations indicate a high level of resistance to fire blight. The tree is also highly resistant to pear psylla.

2 Drawing Sheets**1**

Latin name of the genus and species of the plant claimed:
Pyrus communis.

Variety denomination: 'HW624'.

BACKGROUND OF THE INVENTION

The new and distinct pear tree described and claimed herein originated from a controlled cross between 'Harrow Sweet' and 'NY10353' made in 1988 in Harrow, Ontario. Pedigree of 'HW624' is shown in FIG. 1.

'HW624' was selected as a hybrid seedling ('H8806-1') in 1995 and propagated by budding on pear seedling rootstocks. Trees were planted in an evaluation orchard in 1999 in Jordan Station, Ontario. This selection was advanced and tested in regional trials beginning in 2000.

'HW624' is harvested two weeks after 'Bartlett', whereas 'Harrow Sweet' is harvested three and a half weeks after 'Bartlett' and 'NY10353' is harvested one week before 'Bartlett'. 'HW624' has medium to large size fruit, whereas 'Harrow Sweet' also has medium to large size fruit and 'NY10353' has small, plump spindle shaped fruit. 'HW624' fruit is yellow with a Red Blush at maturity, whereas 'Harrow Sweet' fruit is yellow at maturity. 'HW624' has a high level of resistance to fire blight and psylla, whereas 'Harrow Sweet' has good resistance to fire blight and 'NY10353' has good resistance to psylla and fire blight.

SUMMARY OF THE INVENTION

On the new pear tree 'HW624', the profile of the sides of the fruit of 'HW624' is straight whereas they are concave on

2

the reference varieties 'Bosc' (R1), 'Harrow Sweet' (R2), 'AC Harrow Crisp' (R3) and 'Bartlett' (R4). The ground colour of the skin of 'HW624' is yellow whereas it is yellow green on 'Bosc', 'Harrow Street' and 'Bartlett'. 'HW624' has a medium to large area of over colour of the skin whereas there is none on 'Bosc', small to medium area on 'Harrow Street' and very small on 'Bartlett'. The over colour of 'HW624' is dark red whereas it is orange red on 'Harrow Street', 'AC Harrow Crisp' and 'Bartlett'. 'HW624' has no russetting around the eye basin, on the cheeks or around the stalk attachment of the fruit whereas 'Bosc' has a large to very large area. The fruit stalk of 'HW624' is thin whereas it is medium thickness on 'Harrow Street' and 'AC Harrow Crisp' and thick on 'Bartlett'. 'HW624' has weak curvature of the fruit stalk whereas the curvature is medium to strong on 'Bosc', medium on 'AC Harrow Crisp' and absent on 'Bartlett'. The attitude of the sepals on the fruit of 'HW624' is spreading whereas it is erect on 'Bosc' and 'Harrow Street' and converging on 'AC Harrow Crisp' and 'Bartlett'. 'HW624' is resistant to moderately resistant to fireblight (*Erwinia amylovora*) whereas 'Bosc' is moderately susceptible and 'Bartlett' is susceptible. 'HW624' is resistant to moderately resistant to pear psylla (*Cacopsylla pyricola* Foerst) whereas the reference varieties are susceptible.

25 The following are major distinguishing characteristics. 'HW624' is a mid-late season pear cultivar for the fresh market. 'HW624' produces heavy crops of medium-to large-sized fruit, picked about 2 weeks after 'Bartlett'. Fruits are

green when harvested, turning yellow as fruits ripen, and there is a medium red blush where exposed to the sun. The tree has consistently produced heavy crops, with no evidence of biennial bearing. There were no natural fire blight infections on the seedling tree, and results from controlled inoculations indicate a high level of resistance to fire blight. The tree is also highly resistant to pear psylla (*Cacopsylla pyricola* Foerst). In years when orchard populations of psylla have been high, trees of 'HW624' have had no noticeable presence of this insect pest. 'HW624' is not graft-compatible with quince rootstocks. The characteristics most useful in distinguishing 'HW624' are fruit characteristics and resistance to fire blight and resistance to pear psylla.

BRIEF DESCRIPTION OF THE DRAWING

The accompanying photographic illustration illustrates in full color 'HW624'. The colors are as nearly true as reasonably possible in color representation of this type. Colors in the photographs may differ from the color values cited in the detailed botanical description below, which accurately describes the colors of the new pear tree.

FIG. 1 shows pedigree of 'HW624'.

FIG. 2 shows five examples of the fruit of 'HW624' compared to the fruit of 'Bosc' (R1), 'Harrow Sweet' (R2), 'AC Harrow Crisp' (R3) and 'Bartlett' (R4).

DETAILED BOTANICAL DESCRIPTION OF THE INVENTION

The 'HW624' variety is uniform and stable. Asexual propagation maintains uniformity and stability. No off-types, variants or mutations have been found to date. Virus-tested 'HW624' is maintained in North Saanich, British Columbia.

The R.H.S. Colour Chart of The Royal Horticultural Society 1966 version has been used for colour identification of fruit and shoot. The description is based on observation of four trees grafted on seedling rootstock originally established during the 1999 growing season. Comparisons were made with 'Bosc' (R1), 'Harrow Sweet' (R2), 'AC Harrow Crisp' (R3) and 'Bartlett' (R4). Four trees of each variety grafted on 'Bartlett' open pollinated seedling rootstock were spaced about 3 metres apart with about 4.5 metres between rows and were observed during the 2009-2010 growing seasons in Jordan Station, Ontario. Fire blight evaluations and observations were conducted in 1988-2000 in Harrow, Ontario. 'HW624' was observed to be able to survive winter conditions (-29° C.) in Southwestern Ontario, Canada, while still having a full crop the following season. The observed chilling range for 'HW624' is 800-1000 hours, measured during the dormant period temperature below 45° F.

	'HW624'	R1	R2	R3	R4
Tree:					
Vigor	medium to strong	very strong	medium to strong	strong	medium
Branching	strong	medium	strong	medium	medium
Habit	spreading to drooping	spreading	spreading	spreading	spreading

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	'HW624'	R1	R2	R3	R4
5	Mature height (ft.)	near 12			
	Mature spread (ft.)	near 10			
	Trunk diameter 30 cm above ground (mm)	near 130			
10	Trunk colour	197B			
	Branch length (cm)	near 50			
	Branch diameter near 8 (mm)				
	Branch crotch angle	near 35°			
15	Branch texture	smooth			
	Branch colour	177B			
20	'HW624'	R1	R2	R3	R4
Shoot—One-year-old:					
	Growth	wavy	wavy	wavy	wavy
	Length of internode (cm)				
25	Mean	3.42	4.28	3.02	
	Std. deviation	0.37	0.67	0.48	
	Length of shoot (cm)	near 15			
	Diameter of shoot (mm)	near 4			
30	Texture	smooth			
	Predominant colour on sunny side	brown purple (178A)	brown purple	orange brown	
	Number of lenticels	many (near 15 per cm ²)	many	medium to many	
	Shape of lenticels	oblong			
35	Height of lenticels (mm)	near 2.5			
	Diameter of lenticels (mm)	near 1			
	Colour of lenticels	156A			
	Shape of apex of vegetative bud	acute	acute	acute	
40	Position of vegetative bud in relation to shoot	slightly held out	slightly held out	slightly held out	
	Length of vegetative bud (mm)	near 15			
	Diameter of vegetative bud (mm)	near 2			
45	Colour of vegetative bud	143B			
	Size of bud support	medium	small to medium	small to medium	
Shoot—Young:					
50	Anthocyanin colouration of growing tip (during rapid growth)	very strong (180A)	strong to very strong	medium	
	Intensity of pubescence (upper third)	weak to medium	weak to medium	weak to medium	
55	R3	R4	R3	R4	R4
Shoot—One-year-old:					
	Growth		straight to wavy	straight to wavy	
	Length of internode (cm)				
60	Mean		3.26	3.55	
	Std. deviation		0.58	0.46	
	Length of shoot (cm)				
	Diameter of shoot (mm)				
	Texture				
65	Predominant colour on sunny side	medium brown	orange brown		

US PP28,336 P3

5

6

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Number of lenticels	medium to many	medium to many	
Shape of lenticels			5
Height of lenticels (mm)			
Diameter of lenticels (mm)			
Colour of lenticels			
Shape of apex of vegetative bud	acute	acute	
Position of vegetative bud in relation to shoot	slightly held out	adpressed	10
Length of vegetative bud (mm)			
Diameter of vegetative bud (mm)			
Colour of vegetative bud			
Size of bud support	medium	small to medium	
Shoot—Young:			
Anthocyanin colouration of growing tip (during rapid growth)	medium to strong	medium	15
Intensity of pubescence (upper third)	weak to medium		

‘HW624’	R1	R2
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Leaf—Blade:			
Attitude in relation to shoot	outwards	downwards	outwards
Length (cm)			

Mean	6.5	7.1	7.1
Std. deviation	1.0	1.3	1.2
Width (cm)			

Mean	4.3	4.3	3.8
Std. deviation	0.7	1.0	0.8
Length/Width ratio	small to medium	medium	medium to large
Leaf shape	elliptic		
Shape of base	right-angled	obtuse	right-angled
Shape of apex (excluding pointed tip)	obtuse	right-angled	right-angled
Length of pointed tip	short	short	short
Incisions of margins (upper half)	bluntly serrate	crenate	bluntly serrate
Depth of incisions of margin	shallow	shallow	shallow
Curvature of longitudinal axis	very weak	weak to medium	weak
Leaf texture—top	smooth		
Leaf texture—bottom	smooth		
Leaf colour—top	137B		
Leaf colour—bottom	147B		
Leaf—Petiole:			

Length (cm)			
Mean	2.7	2.2	2.4
Std. deviation	0.6	1.0	0.7
Diameter (mm)	near 1.2		
Colour	144C		
Presence of stipules	present	Absent or weakly present	present
Distance of stipules from basal attachment of petiole	medium to long	medium	short to medium

R3	R4
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Leaf—Blade:			
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Attitude in relation to shoot	outwards	outwards	
Length (cm)			

Mean	6.3	6.5	
Std. deviation	0.8	0.7	
Width (cm)			

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Mean	3.8	3.9
Std. deviation	0.7	0.6
Length/Width ratio	medium	medium
Leaf shape		
Shape of base	right-angled to obtuse	right-angled to obtuse
Shape of apex (excluding pointed tip)	right-angled	right-angled
Length of pointed tip	short to very short	short
Incisions of margins (upper half)	bluntly serrate	bluntly serrate
Depth of incisions of margin	shallow	shallow
Curvature of longitudinal axis	weak	very weak
Leaf texture—top		
Leaf texture—bottom		
Leaf colour—top		
Leaf colour—bottom		
Leaf—Petiole:		

Length (cm)

Mean	2.1	2.0
Std. deviation	0.7	0.8
Diameter (mm)		
Colour		
Presence of stipules	present	
Distance of stipules from basal attachment of petiole	short to medium	short

‘HW624’	R1	R2
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Flower:			
Time of beginning of flowering	Early (May)	medium to late	early to medium
Time of full bloom	May		
Location of flower bud on shoot	mainly on spurs	mainly on spurs	mainly on spurs
Length of flower bud (cm)			
Mean	5.4	5.9	5.5
Std. deviation	0.7	0.5	0.6
Shape of flower bud	obtuse		
Diameter of flower bud (mm)	near 5		
Colour of flower bud	49D		
Flower diameter (mm)	near 2		
Flower depth (mm)	near 1		
Flower fragrance	nutty/almond		
Number of flowers per cluster	7		
Sepal length (cm)			

Mean	5.9	8.3	6.7
Std. deviation	0.6	0.7	0.7
Attitude of sepals in relation to corolla	recurved	recurved	recurved
Sepal number	5		
Sepal shape	obtuse		
Sepal width (mm)	near 2		
Sepal apex and margin	reddish and pointed apex and margin		
Sepal texture—top	smooth		
Sepal texture—bottom	smooth		
Sepal colour—top	22A		
Sepal colour—bottom	35B		
Arrangement of petals	not touching to touching	not touching to overlapping	touching to overlapping
Petal number	5		
Petal shape	irregular		
Petal apex and margin	irregular		
Petal texture—top	smooth		
Petal texture—bottom	smooth		
Petal colour—top	NN155C		

US PP28,336 P3

7

8

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				'HW624'	R1	R2
Fruit:						
Petal colour—bottom	NN155C					
Position of stigma in relation to stamens	same level	same level	above			
Size of petal (length/width (mm))	small to medium (10/12)	medium	medium			
Shape of petal (excluding the claw)	circular to broad ovate	ovate	circular			
Shape of base of petal (excluding the claw)	cuneate to rounded	cuneate	rounded			
Length of claw of petal	short	medium	medium			
Anther number	12					
Anther length (mm)	near 3					
Pollen colour	N200A					
Stigma length (mm)	near 0.1					
Stigma colour	155B					
Ovary colour	192D					
	R3	R4				
Flower:						
Time of beginning of flowering	medium to late	medium				
Time of full bloom						
Location of flower bud on shoot	mainly on spurs	mainly on spurs				
Length of flower bud (cm)						
Mean	6.3	4.1				
Std. deviation	0.4	0.3				
Shape of flower bud						
Diameter of flower bud (mm)						
Colour of flower bud						
Flower diameter (mm)						
Flower depth (mm)						
Flower fragrance						
Number of flowers per cluster						
Sepal length (cm)						
Mean	7.9	7.0				
Std. deviation	1.1	1.2				
Attitude of sepals in relation to corolla	recurved	spreading to recurved				
Sepal number						
Sepal shape						
Sepal width						
Sepal apex and margin						
Sepal texture—top						
Sepal texture—bottom						
Sepal colour—top						
Sepal colour—bottom						
Arrangement of petals	touching	touching to overlapping				
Petal number						
Petal shape						
Petal apex and margin						
Petal texture—top						
Petal texture—bottom						
Petal colour—top						
Petal colour—bottom						
Position of stigma in relation to stamens	same level	same level				
Size of petal (length/width (mm))	small to medium	medium				
Shape of petal (excluding the claw)	circular	circular				
Shape of base of petal (excluding the claw)	rounded	Rounded				
Length of claw of petal	very short	short				
Anther number						
Anther length (mm)						
Pollen colour						
Stigma length (mm)						
Stigma colour						
Ovary colour						

US PP28,336 P3

9

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Seed shape	ovate	ovate	elliptic
Seed length (mm)	near 8		
Seed width (mm)	near 4		
Number of seeds per fruit	3 to 5		
Number of seeds per locule	1		
Seed colour	165B-C		
Time of maturity for consumption	Late (September)	very late	very late
Observed harvest dates of fruit	Sep. 18, 2013 Sep. 23, 2014 Sep. 19, 2015 Sep. 14, 2016		
Fruit production (lbs per tree per year)	120		

R3 R4

Fruit:

<u>Length (cm)</u>		
Mean	9.1	9.0
Std. deviation	0.8	0.9
Maximum diameter (cm)		

Mean	6.8	6.8
Std. deviation	0.6	0.6
Length/Diameter ratio	medium	small to medium
Position of maximum diameter	slightly towards calyx	in middle
Size	large	medium to large
Shape		
Symmetry (in longitudinal section)	slightly asymmetric	symmetric to slightly asymmetric
Profile of sides	concave	concave
Weight (g)—mean		
Ground colour of skin	yellow	yellow green
Relative area of over colour	medium	between very small and small
Hue of over colour	orange red	orange red
Relative area of russet around eye basin	absent or very small	absent or very small
Relative area of russet on cheeks	absent or very small	absent or very small
Relative area of russet around stalk attachment	small	very small to small
Length of stalk (mm)		
Mean	3.7	2.8
Std. deviation	0.9	0.6
Thickness of stalk	medium	thick
Curvature of stalk	medium	absent or very weak
Attitude of stalk in relation to axis of fruit	straight to oblique	straight to oblique
Depth of stalk cavity	medium	medium

10

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5	Diameter of stalk cavity		
	Attitude of sepals (at harvest)	converging	converging
	Eye basin (at harvest)	present	present
	Depth of eye basin (at harvest)	shallow to medium	deep
	Width of eye basin (at harvest)	medium	narrow
	Relief of area around eye (at harvest)	smooth	embossed
10	Texture of flesh	very very fine	very very fine
	Firmness of flesh	medium	medium to firm
	Juiciness of flesh	medium to juicy	juicy
	Flesh brix		
	Flesh colour		
	Fruit locule number per fruit		
15	Fruit locule length (mm)		
	Fruit locule width (mm)		
	Seed shape	elliptic	ovate
	Seed length (mm)		
	Seed width (mm)		
	Number of seeds per fruit		
20	Number of seeds per locule		
	Seed colour		
	Time of maturity for consumption	medium	medium to late
	Observed harvest dates of fruit		
	Fruit production (lbs per tree per year)		

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‘HW624’ R1 R2			
Disease/Pest Reactions:			
	Fire blight (<i>Erwinia amylovora</i>)	resistant to moderately resistant	moderately resistant to moderately susceptible
	Pear psylla (<i>Cacopsylla pyricola</i>)	resistant to moderately resistant	susceptible
R3 R4			
Disease/Pest Reactions:			
	Fire blight (<i>Erwinia amylovora</i>)	resistant to moderately resistant	susceptible
	Pear psylla (<i>Cacopsylla pyricola</i>)	susceptible	susceptible

The ‘HW624’ variety has not been observed under all possible environmental conditions to date. Accordingly, it is 45 possible that the phenotypic expression may vary somewhat with changes in light intensity and duration, cultural practices, and other environmental conditions.

What is claimed:

50 1. A new and distinct variety of pear tree substantially as herein illustrated and described.

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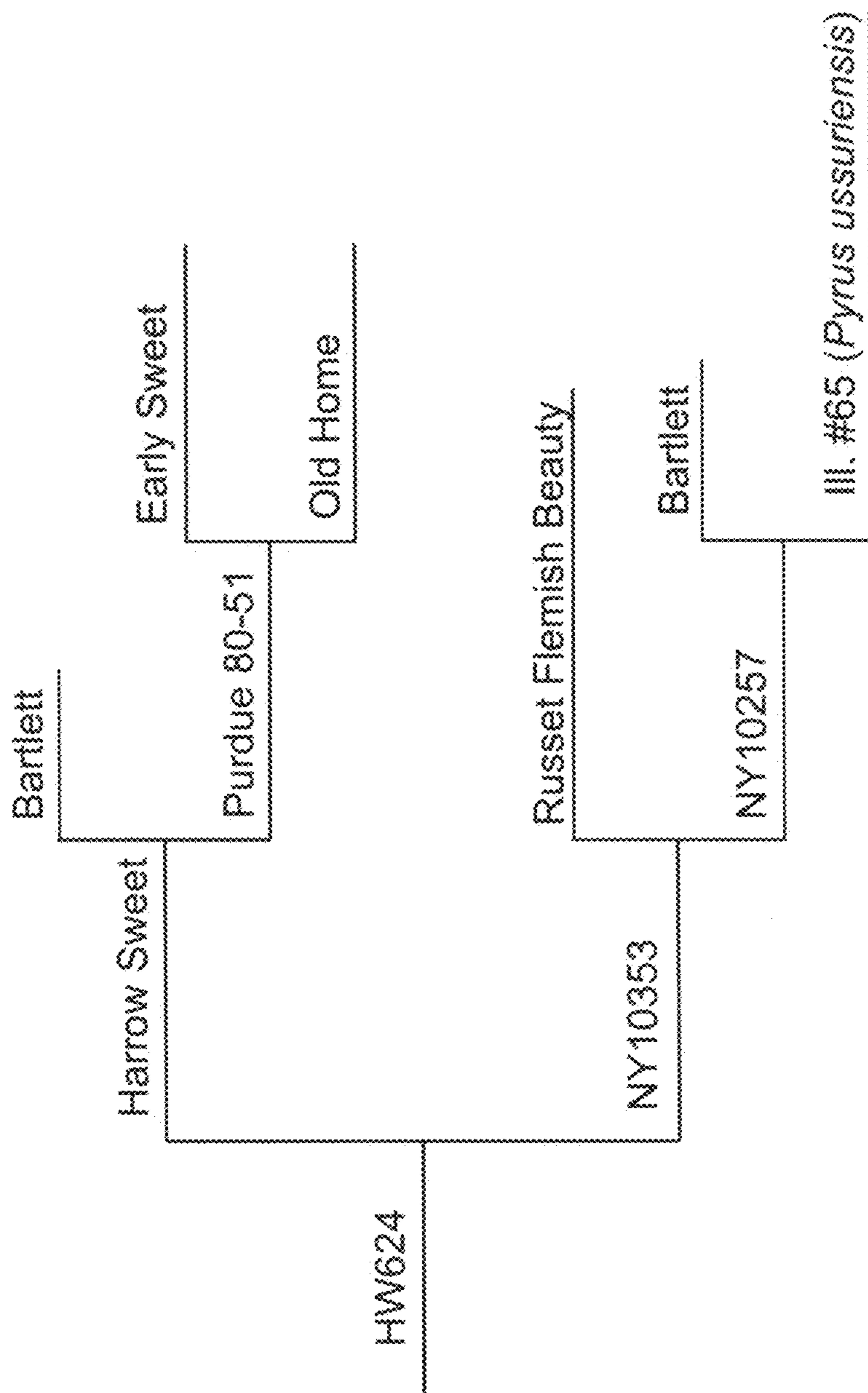


FIG. 1

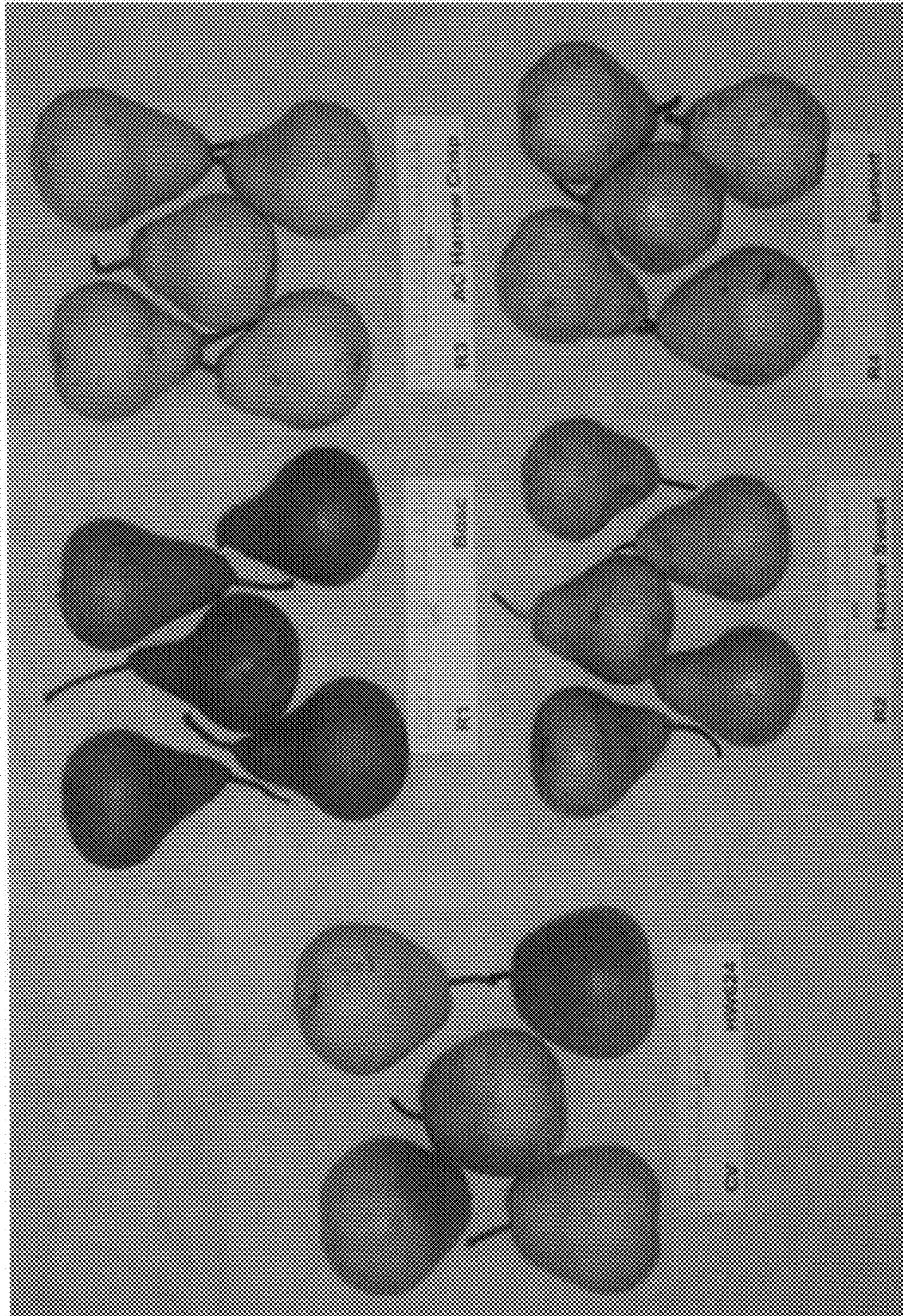


FIG. 2