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Sandler-Ziv et al.

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(54) ***HIPPEASTRUM* PLANT NAMED 'OPAL STAR'**

(50) Latin Name: ***Hippeastrum Herb.***
Varietal Denomination: **Opal Star**

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A01H 5/00 (2006.01)

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(58) **Field of Classification Search** Plt./402
See application file for complete search history.

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(57) **ABSTRACT**

A new and distinct *Hippeastrum* interspecific hybrid plant named 'OPAL STAR' particularly characterized by star-shaped flower, measuring 16 to 18 cm in length and about 12 to 16 cm in diameter, and with a unique color pattern of red (RHS 42 B) with yellow-greenish (RHS 146 D) stripes, and dark red (RHS 46 A) veining.

5 Drawing Sheets

Botanical name of the genus of the interspecific cross of the plant claimed: *Hippeastrum Herb.,* syn. *Amaryllis*

Variety denomination: 'OPAL STAR'.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct interspecific hybrid variety of *Hippeastrum,* botanically known as *Hippeastrum Herb.,* syn. *Amaryllis,* of the Amaryllidaceae family, and hereinafter referred to by the name 'OPAL STAR'.

The *Hippeastrum* genus is native to tropical and subtropical regions of South America and the Caribbean, and includes more than 80 different species and several hundred hybrids.

The new *Hippeastrum* 'OPAL STAR' is a product of a controlled breeding program conducted by the inventors, Dorit Sandler-Ziv, Corneliu Fintea, Aurel Ion, Avner Cohen, Marina Baizerman and Ahuva Daous, in Bet-Dagan, Israel. The objective of the breeding program was to develop a new *Hippeastrum* variety with excellent ornamental characteristics, adapted to bulb production under Israeli climatic conditions and suitable for both cut flower and pot production worldwide.

The new *Hippeastrum* 'OPAL STAR' originated from a cross made by the inventors in 2000 in Bet-Dagan, Israel. The female or seed parent is the unpatented, wild-type *Hippeastrum papillio* designated WT30. The male or pollen parent is the unpatented, interspecific *Hippeastrum* hybrid designated 97/4 (*H. vittatum* 'WHITE'×wild-type *H. cybister* designated WT40). The new *Hippeastrum* 'OPAL STAR' was selected

by the inventors as a single flowering plant from the progeny of the stated cross in a controlled environment in 2003 in Bet-Dagan, Israel.

Asexual propagation of the new *Hippeastrum* 'OPAL STAR' using the "twin-scaling" method (division of the mother bulb into about 12 vertical segments which are subsequently subdivided into 5 to 6 twin-scale units was first performed in September, 2004, in Bet-Dagan, Israel. The twin-scale units are dipped for 15 minutes in 0.2% BENLATE and 0.5% MARPAN to prevent fungal infection, then the segments are air dried for 3 to 4 hours and placed in moist Vermiculite no. 2 (8% to 10% moisture) and incubated at 22° C. to 24° C. for 3 to 4 months. The resulting bulblets are planted in coco-peat and Tuff 0.8 (80:20%) and grown for 2 years until they flower for the first time. Of the twin scales first propagated in September, 2004, the resulting bulbs first flowered in the winter of 2007, and demonstrated that the combination of characteristics as herein disclosed for the new variety, is firmly fixed and retained through successive generations of asexual propagation. The new variety propagates true-to-type.

BRIEF DESCRIPTION OF THE INVENTION

The following traits have been repeatedly observed and are determined to be characteristics of 'OPAL STAR', which in combination, distinguish this *Hippeastrum* as a new, unique and distinct variety:

1. star-shaped flower, measuring about 16 to 18 cm in length and about 12 to 16 cm in diameter, and with a

unique, color pattern of red (RHS 42 A) with yellow-greenish (RHS 146 D) stripes and dark red (RHS 46 A) veining.

Plants of the new *Hippeastrum* 'OPAL STAR' differ from plants of the female or seed parent, the unpatented, wild-type *Hippeastrum papillio* designated WT30 , in the following characteristics described in Table 1.

TABLE 1

Characteristic	New variety 'OPAL STAR'	Female parent *H. papillio* WT30 (unpatented)
Plant height	60 to 80 cm	18 to 24 cm
Number of flowers per inflorescence	4 or 5	2 or 3
Outer tepal shape	elliptic	oblanceolate
Outer tepal, upper side main color	red	whitish
Outer tepal, upper side veins	dark red	maroon red

Of the many commercial cultivars known to the present inventor, the most similar to the new *Hippeastrum* 'OPAL STAR' is the *Hippeastrum* hybrid (leopoldii-type) 'Red Lion' (unpatented), and differs from the new *Hippeastrum* 'OPAL STAR' in the following characteristics described in Table 2:

TABLE 2

Characteristic	New variety 'OPAL STAR'	Comparison variety 'Red Lion' (unpatented)
Plant height	60 to 80 cm	38 to 60 cm
Number of scapes per bulb per year	1 to 3	2 to 3
Scape length	55 to 70 cm	38 to 50 cm
Number of flowers per inflorescence	4 or 5	2, 3 or 4
Flower shape	star shape	rounded
Flower throat	covered with numerous white and red hairs	covered with numerous white and yellowish hairs
Outer tepal, upper side, main color	red, RHS 42 A	red, RHS 43 A
outer tepal, lower side, main color	dark red with thin light-yellow stripes	glossy red with short greenish veins
Filament, color of upper part	yellow	red
Filament, color of lower part	yellow-green	red
anther color	greenish	light yellow
Fruit/Seed	none	present

BRIEF DESCRIPTION OF THE PHOTOGRAPHS

The accompanying photographs illustrate the overall appearance of the new *Hippeastrum* variety 'OPAL STAR' showing the colors as true as is reasonably possible with colored reproductions of this type. Colors in the photographs may differ slightly from the color values cited in the detailed botanical description, which accurately describe the color of 'OPAL STAR'.

FIG. **1** shows a close-up side view of a typical fully open flower of 'OPAL STAR'.

FIG. **2** shows a close-up side view comparison of (1) a typical fully open flower of 'OPAL STAR' (top) to (2) a typical fully open flower of the female parent, the unpatented, wild-type *Hippeastrum papillio* designated WT30.

FIG. **3** shows a close-up side view comparison of (1) a typical fully open flower of 'OPAL STAR' (top) to (2) a typical fully open flower of the male or pollen parent, the unpatented interspecific *Hippeastrum* hybrid designated 97/4 (*H. vittatum* 'WHITE'×wild-type *H. cybister* designated WT40).

FIG. **4** shows a close-up side view comparison of (1) a typical fully open flower of 'OPAL STAR' (top) to (2) a typical fully open flower of the unpatented, wild-type *Hippeastrum cybister* (WT40) (one of the cultivars crossed to produce the male or pollen parent, the unpatented interspecific *Hippeastrum* hybrid designated 97/4.)

FIG. **5** shows a close-up side view comparison of (1) a typical fully open flower of 'OPAL STAR' (top) to (2) a typical fully open flower of the commercial cultivar *Hippeastrum* hybrid (leopoldii-type) 'Red Lion'.

DETAILED BOTANICAL DESCRIPTION

The new *Hippeastrum* 'OPAL STAR' has not been observed under all possible environmental conditions. The phenotype of the new variety may vary with variations in environment such as temperature, light intensity, and day length, without any change in the genotype of the plant.

The aforementioned photographs, together with the following observations, measurements and values describe plants of 'OPAL STAR' as grown in a greenhouse in Bet-Dagan, Israel, under conditions which closely approximate those generally used in commercial practice.

Mother bulbs of 'OPAL STAR' (about 28 to 30 cm in circumference) are cut into 12 vertical segments which are subsequently subdivided into 5 to 6 twin-scale units. The twin-scale units are dipped for 15 minutes in 0.2% BENLATE and 0.5% MARPAN to prevent fungal infection, then the twin-scale units are air dried for 3-4 hours and placed in moist Vermiculite no. 2 (8% to 10% moisture) and incubated at 22° C. to 24° C. for 3 to 4 months. The resulting bulblets are planted and grown in raised, heated soil beds (soil temperature maintained at an average temperature of about 20° C. to 22° C.) in coco-peat and Tuff 0.8 (80:20%) and grown for 2 years until they flower for the first time.

Plants of 'OPAL STAR' have been grown in an insect-proof greenhouse, covered with a permanent polycarbonate roof with movable polyethylene curtains, and under 50% shading. Drip irrigation is administered at 80-100 m3/ha and a liquid fertilizer is applied of (NPK 5:3:8) 50 ppm. Plants of 'OPAL STAR' are grown with an average winter air temperature of about 12° C. to 25° C. during the day and about 6° C. to 12° C. during the evening and an average summer air temperature of about 22° C. to 38° C. during the day and about 18° C. to 22° C. during the evening. Plants of 'OPAL STAR' reach full growth about 6 to 10 weeks after planting cured bulbs.

Quantified measurements are expressed as an average or a range of measurements taken from a number of plants of 'OPAL STAR'. The measurements of any individual plant, or any group of plants, of the new variety may vary from the stated average or range.

Color references are made to The Royal Horticultural Society Colour Chart (R.H.S.), 1986 edition, except where general colors of ordinary significance are used. Color values were taken under daylight conditions at approximately noon in full sunlight in Bet Dagan, Israel.

All of the plants of 'OPAL STAR', insofar as they have been observed, have been consistent in all the characteristics described below.

The age of the 'OPAL STAR' plants described is about 6 to 10 weeks after planting cured bulbs.

Classification:

Botanical: *Hippeastrum Herb.*

Parentage:

Female or seed parent.—unpatented, wild-type *Hippeastrum papillio* designated WT30.

Male or pollen parent.—unpatented, interspecific *Hippeastrum* hybrid designated 97/4 (*H. vittatum* 'WHITE'×wild-type *H. cybister* designated WT40).

Propagation:

Type.—"Twin-scaling" method (division of the mother bulb into vertical segments and twin-scale units).

Roots:

Habit and description.—fleshy; inserted around basal plate of bulb.

Length.—Up to 20 cm.

Diameter.—2 to 4 mm.

Color.—off-white, RHS 158 C.

Plant:

Appearance.—perennial, herbaceous; 1-3 scapes developing sequentially with a complement of 5 to 8 leaves.

Growth habit.—erect.

Habit.—leaves are slightly arching and scapes vertical.

Vigor.—strong.

Growth time.—Following asexual propagation, 2 years of growing time are required to produce a flowering plant. Plants of 'OPAL STAR' reach full growth about 6 to 10 weeks after planting of cured bulbs in late autumn.

Size at maturity.—Height: 60 to 80 cm. Spread: 50 to 60 cm.

Bulb (described after harvest and curing, before planting):

Overall shape.—spherical.

Shape in cross section.—rounded.

Shape in longitudinal section.—elliptical to oblate.

Length.—7.5 to 9.5 cm.

Diameter.—9.5 to 10.2 cm.

Surface.—irregular.

Color of flesh.—yellow-white, closest to RHS 158 C.

Color of dry scale.—greyed-orange, RHS 165 B.

Harvest time of bulbs.—beginning of August in Bet-Dagan, Israel. Lifted bulbs are dipped for 15-20 minutes in 0.2% BENLATE and 0.5% MARPAN solution and then air dried for 10 days.

Storage time.—Stored in 9° C. from mid August until mid November (10-12 weeks) in Bet-Dagan, Israel.

Leaves:

Arrangement and attachment.—basal from scale; single.

Number per plant.—typically 5 to 8.

Overall shape of leaf.—linear.

Apex shape.—acute.

Base shape.—parallel.

Shape of cross-section.—V-shape.

Margin.—entire.

Margin undulation.—none.

Upper surface.—smooth, medium glossiness.

Lower surface.—glabrous, very strong glossiness.

Pubescence.—None.

Mature leaf length.—65 to 85 cm.

Mature leaf width.—65 to 80 mm.

Mature leaf color of upper Surface: dark green, RHS 137 A.

Mature leaf color of lower Surface: dark green, RHS 137 C.

Venation.—Pattern: parallel, inconspicuous venation.

Inflorescence description:

Appearance.—one umbel per scape with 4 or 5 single, star-shaped flowers that open sequentially.

Natural blooming period.—in spring in Bet-Dagan, Israel.

Flowering response time.—after planting cured bulbs, plants typically flower within about 6 to 10 weeks.

Flowering longevity.—on the plant: 7 to 10 days, depending on temperature.

Flowering longevity as cut flower.—5 to 8 days.

Inflorescence fragrance.—none.

Inflorescence type.—umbel.

Umbel.—Height: 20 to 25 cm. Diameter: 15 to 20 cm.

Number of flower buds and flowers per umbel.—4 or 5.

Flower bud:

Shape.—broad elliptic.

Length.—9 to 11 cm.

Width.—2.5 to 3 cm.

Surface.—smooth.

Color.—ground color, medium yellow-green, RHS 146 D, with greyed-purple veins, RHS 183 A.

Scape:

Appearance.—erect, leafless, hollow.

Twisting.—slightly twisted towards umbel.

Shape in cross-section.—elliptical.

Length.—About 55 to 70 cm.

Maxium thickness of upper part.—23 to 26 mm.

Maxium thickness of middle part.—26 to 32 mm.

Maxium thickness of basal part—30 to 32 mm.

Surface.—glabrous.

Glaucosity.—strong.

Color.—dark green, RHS 137 C.

Intensity of anthocyanin coloration at base.—Medium.

Flower:

Arrangement.—an outer whorl of 3 tepals and an inner whorl of 3 tepals.

Rate of opening.—flowers fully opened about 2 to 3 days after beginning of tepal separation; all flowers, per umbel, open in about 8 to 14 days.

Attitude.—outwards.

Shape.—star-shaped.

Length.—16 to 18 cm.

Diameter.—12 to 16 cm.

Throat.—covered with numerous white and red hairs.

Tepals: Number and arrangement: slightly overlapping and arranged in an outer whorl of 3 tepals and an inner whorl of 3 tepals. Outer tepal: Shape: elliptic. Apex: obtuse with slight twisting of tip. Base: obtuse. Margin: entire with medium strong undulation. Length: 10 to 11 cm. Width: 50 to 52 mm. Upper surface: smooth. Lower surface: smooth. Main color of upper surface: red, RHS 42 A. Color of middle zone of upper surface: light yellow-green, RHS 146 D. Color of veins of upper surface: dark red, RHS 46 A. Main color of lower surface: dark red, RHS 46 A, with thin yellow-green stripes, RHS 145 A. Color of middle zone of lower surface: dark red, RHS 46 A, with thin yellow-green stripes, RHS 145 A. Inner tepals: Arrangement: one central lower tepal and two lateral tepals. Central tepal: Shape: spatulate. Apex: acute. Base: acute. Margin: entire with weak undulation. Length: 9.5 to 10 cm. Width: 32 to 35

mm. Upper surface: smooth. Lower surface: smooth. Main color of upper surface: red, RHS 46 C. Color of middle zone of upper surface: light yellow-green, RHS 145 B. Color of veins of upper surface: red, RHS 46 C. Main color of lower surface: light yellow-green RHS 145 D. Color of middle zone of lower surface: greyed-purple, RHS 183 C. Color of veins of lower surface: red, RHS 46 C. Lateral tepals: Number: 2. Shape: ovate. Apex: obtuse with slight twisting of tip. Base: obtuse. Margin: entire with strong undulation. Length: 9 to 11 cm. Width: 40 to 45 mm. Upper surface: smooth. Lower surface: smooth. Main color of upper surface: red, RHS 42 A. Color of middle zone of upper surface: light yellow-green, RHS 146 D. Color of veins of upper surface: dark red, RHS 46 A. Main color of lower surface: dark red, RHS 46 A, with thin yellow-green stripes, RHS 145 C. Color of middle zone of lower surface: dark red, RHS 46 A, with thin yellow-green stripes, RHS 145 C. Color of veins of lower surface: not visible.

Pedicel.—Strength: strong. Attitude of flower: semi upright. Length: 50 to 80 mm. Thickness: 5 to 7 mm. Surface: smooth. Color: medium green, with strong anthocyanin coloration.

Reproductive organs:

Androecium.—Stamen: Number: 6. Arrangement: adpressed to lowest tepal, distal ends upwardly curved. Anthers: Color: yellowish-green in unripe stage, RHS 145 C. Shape: elongated. Length: 8 to 10 mm. Filaments: Length: 95 to 105 mm. Thickness: 2 to 3 mm. Color of upper part: yellow, RHS 2 D. Color of lower part: yellow-green, RHS 145 B. Pollen: Amount: abundant. Color: aellow-green, RHS 150 B.

Gynoecium.—One pistil, 10 to 13 mm in length. Stigma: Shape: three-lobed. Color: white. Style: Length: 10 to 13 mm. Thickness: about 2 mm. Color of upper part: yellow, RHS 2 D. Color of lower part: Very light yellow-green RHS 145 C. Ovary: Color: green, with medium anthocyanin coloration.

Fruit/seed: none.

Disease/pest resistance: None tested or observed.

What is claimed is:

1. A new and distinct *Hippeastrum* interspecific hybrid plant named 'OPAL STAR', as illustrated and described herein.

* * * * *

FIG. 1

FIG. 2

FIG. 3

FIG. 4

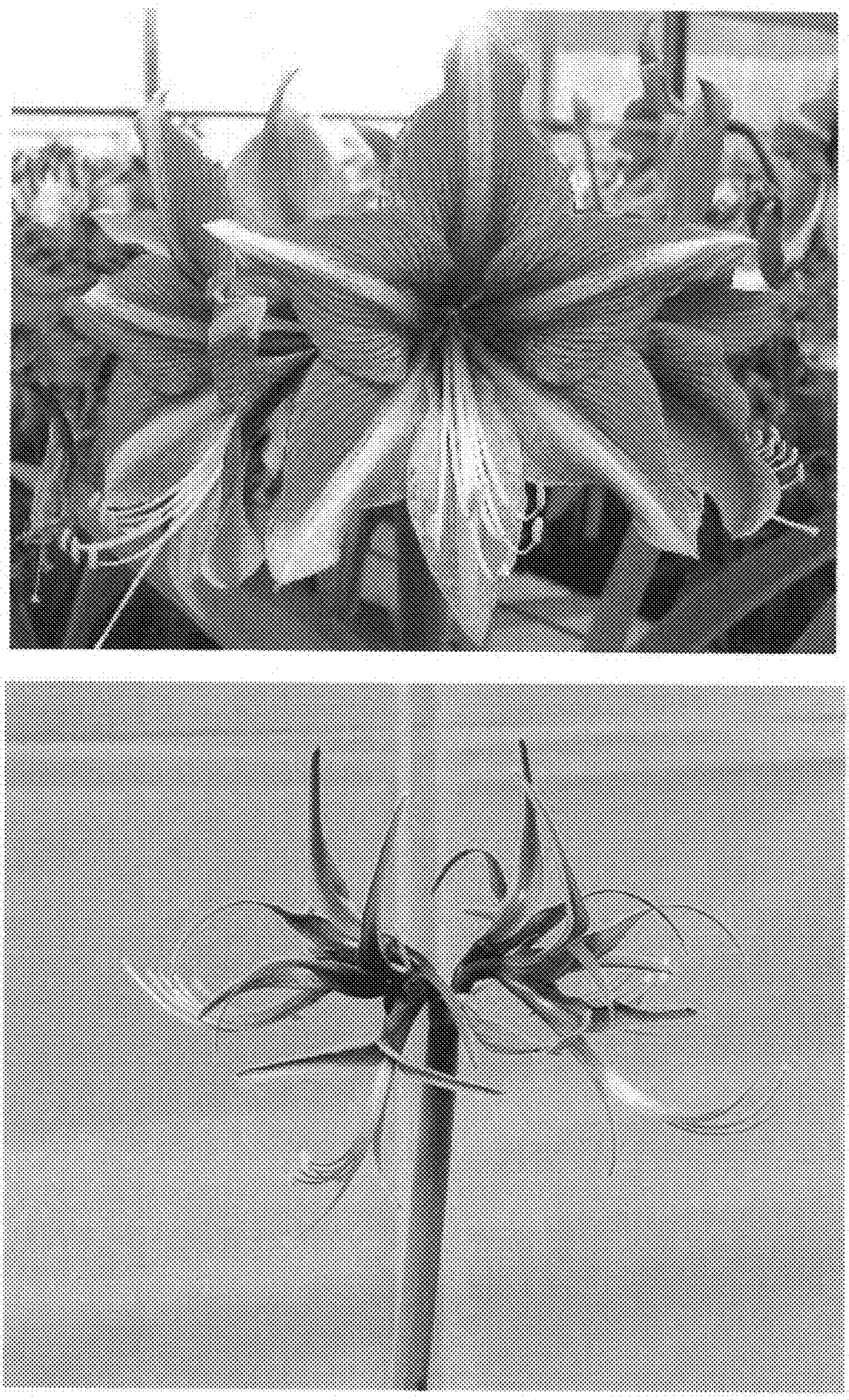

FIG. 5