

[54] FORSYTHIA CV. 'TINKLE BELLS'

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[57] ABSTRACT

A new cultivar of *Forsythia intermedia* named 'Tinkle Bells' characterized by its floriferousness, its semi-dwarf, upright character, its downwardly directed flowers, and its leaves which are serrated only at their upper ends.

3 Drawing Sheets

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This invention relates to a new cultivar of *Forsythia intermedia* named "Tinkle Bells", which is characterized especially by its semi-dwarf character, its upright growth habit, its pendulous flower buds and flowers, and the acute leaf tips on flowering wood foliage.

The new variety is a vegetative selection derived from a vegetative line of mutants, which had been produced in turn by subjected rooted cuttings of the parent *Forsythia intermedia* "Lynwood Gold" (*F. intermedia* "Spectabilis") to irradiation with 1,200 rad fast neutrons.

In 1968, three hundred cuttings of "Lynwood Gold" that had been potted and held in cold storage (38° F.) for six weeks and then returned to the greenhouse for two days were irradiated with 1200 rad fast neutrons. One of the plants of this group that broke dormancy formed a shoot with variegated foliage. This plant was cut back repeatedly to induce branching and eventually formed shoots that exhibited different characteristics. Each shoot was propagated by stem cuttings over 10 vegetative generations of selection and propagation. From this plant population two vegetatively selected types and three seedlings were selected. Further propagation and testing of these selections over several more years were shown to be the stable and new forsythia varieties that are the subject of this and four other co-pending plant patent applications; viz:

Ser. No.	Name	Type
272,063	"Lemon-Screen"	vegetative selection
273,489	"Tinkle Bells"	vegetative selection
271,919	"Minikin"	seedling
271,665	"Fairy Land"	seedling

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-continued

Ser. No.	Name	Type
271,666	"Pygmy-Red"	seedling

Each differs greatly from the parent "Lynwood Gold" and also from one another.

"Tinkle Bells" was selected from a group of vegetatively propagated shoots because it was very floriferous and attractive when in bloom. Cuttings from this plant have been rooted in soil and asexually propagated, and its progeny have displayed homogenous and stable characteristics.

Throughout this specification, color names beginning with a small letter signify that the name of the color as used in common speech are aptly descriptive. Color names beginning with a capital letter designate values based on the R.H.S. Colour Chart, published by The Royal Horticultural Society of London, England.

The accompanying drawings illustrate the new variety in color as grown in Knox County within the State of Tennessee.

FIG. 1 illustrates a five year old "Tinkle Bells" plant in spring bloom.

FIG. 2 shows flowered cut stems.

FIG. 3 is a close-up view of the flowers of FIG. 2.

FIG. 4 illustrates the "Tinkle Bells" plant in summer foliage.

FIG. 5 is a closer view of the foliage shown in FIG. 4.

The following characteristics distinguish "Tinkle Bells" from its parent and other *Forsythia* cultivars:

THE PLANT

Although "Tinkle Bells", like its parent "Lynwood Gold", exhibits an upright growth habit, the ultimate height of "Tinkle Bells" is 4 to 4½ ft. The plant exhibits medium vigor and is hardy in Zone 6b or lower. Because of its upright habit, "Tinkle Bells" tends not to self propagate by natural layerage, but the plant expands by stooling, i.e., shoots arise from the ground around the base of the plant, and the stooling can be controlled with post-emergence herbicides. Its upright growth habit and flowering at an early age make "Tinkle Bells" suitable for container growth and forcing. "Tinkle Bells" has a number of landscape applications, particularly for border and low screen plantings. The plant requires minimal pruning and has disease and insect-resistant foliage.

Its parent, "Lynwood Gold", by contrast is tall and slender—a straight upright variety with erect stems and which attains a height of 6 ft. to 7½ ft. at maturity.

SHOOTS

The stems of "Tinkle Bells" are yellow green when young and light brown when mature. The stems are rigid and the pith is sparsely lamellate between nodes.

The stems of the "Lynwood Gold" parent are green when young and brown when mature; they are a bit stiff; the pith at the nodes is lamellate, and on one year shoots, the stems between nodes are hollow.

FLOWER

"Tinkle Bells" flower early with bright yellow flowers (Yellow 7B) which generally have four, but occasionally five or six petals; the corolla is ½ inch long, opening up to approximately a 45 degree angle with a total spread of ½ in. to ¾ in. The pollen sacs of the stamen are located slightly below the stigmas of the short pistils. The plant generally produces two, but often four flowers per node on the flowering wood, which has internodes ½ to 1½ in. long. Both the buds and resultant flowers are pendulous on upright stems.

The "Lynwood Gold" parent is fertile and has pistils that extend well above its pollen sacs, is late flowering and its medium sized flowers (about 1" to 1½" in diameter) are almost evenly spaced on the stem. The flowers of "Lynwood Gold" are brilliant yellow (lighter than its parent, *F. spectabilis*). The corolla lobes of "Lynwood Gold" are reflexed and its petals are large, broad open and elliptic.

FOLIAGE

The "Tinkle Bells" leaves are medium green both in the young and mature stage. The leaves are simple elliptical, generally serrate, but only on the upper one-third, near the tip. The leaves are acute on flowering shoots and acuminate on vegetative shoots. The leaves are ½ in. wide and, including the petiole, are 2 in. to 3 in. long.

The leaves of the "Lynwood Gold" parent, on the other hand, are ovate lanceolate in shape and about 3" to 4½" long and about 1" to 1½" wide. Both young and old leaves are deep green in color.

To facilitate the comparison of the characteristics and features of "Tinkle Bells", the subject of this application, and its parent, "Lynwood Gold" and also with the four other new mutant offspring varieties of "Lynwood Gold" referred to above, there are attached hereto as Tables 1-5 comparative tabulations of the characteristics and properties of parent and its five offspring mu-

tants that were developed from a single irradiated plant of "Lynwood Gold." Table 1 compares "Tinkle Bells" and its parent "Lynwood Gold". Table 2 compares "Tinkle Bells" and "Pygmy-Red". Table 3 compares "Tinkle Bells" and "Lemon-Screen". Table 4 compares "Tinkle Bells" and "Minikin". Table 5 compares "Tinkle Bells" and "Fairy Land".

TABLE 1

	S/N 273,489 TINKLE BELLS	LYNWOOD GOLD
<u>Plant:</u>		
Habit	Semi-dwarf; Upright	Tall, slender-Upright straight & erect stems
Size, height	4'-4½'	6'-7½'
Size, width		
Vigor	Medium vigor	
Hardiness	Hardy Zone 6b (or lower)	
Productivity	Does not layer naturally (replicates from stools (no seed pods observed))	Fertile
<u>Stems:</u>		
Color (young)	Yellow Green	Green
Color (mature)	Light brown	Brown
Rigidity	Sparsely lamellate between nodes - Rigid	A bit stiff; pith nodes lamellate; hollow between nodes on one year shoots
<u>Leaves:</u>		
Type	Simple	
<u>Color:</u>		
(young)	Medium green	Deep Green
(mature)	Medium green	Deep Green
(fall)	Faded green to yellow	
Shape	Elliptical	ovate lanceolate
tip	Acute on flower shoots acuminate on vegetative shoots	
base margins	serrate on upper ½ near tip	
<u>Size:</u>		
length	2"-3" (with petiole)	3-4½"
width	½"	1-1½"
Venation	Pinnate	
<u>Flower:</u>		
Date of Flowering	Early	Late
Size: width	½"-¾" at 45° angle	1"-1½" (medium)
Color:	Bright Yellow (7 B)	Brilliant Yellow (Lighter than its parent Spectabilis)
<u>Corolla:</u>		
length	½" open to 45° angle	
lobes	not reflexed during prime	Reflexed
Petals: number	4; occasionally 5 or 6	Large, broad, open Elliptic
Pistils:	short: anthers slightly below stigma portion of pistil	Extend well above pollen sacs (anthers) of stamens
Number per node:	2; often 4 per node buds & flowers	
Insertion angle on upright stems:	pendulous	
Internodes:	½"-1½"	Flowers almost evenly spaced on stems
Stress Resistance:	Disease and insect	
Utility Aspects:	Can force flowering suitable for container culture	

TABLE 2

	S/N 273,489 TINKLE BELLS	S/N: 271,666 PYGMY RED
<u>Plant:</u>		
Habit	Semi-dwarf; Upright	Low, loose graceful arching to ground
Size, height	4'-4½'	3½'-4½'
Size, width		5'-6'
Vigor	Medium vigor	Good vigor
Hardiness	Hardy Zone 6b (or lower)	Hardy Zone 6b (or lower)
Productivity	Does not layer naturally (replicates from stools (no seed pods observed))	Readily roots where branches touch ground few seed pods
<u>Stems:</u>		
Color (young)	Yellow Green	High anthocyanin
Color (mature)	Light brown	Purple Red (59 A)
Rigidity	Sparsely lamellate between nodes - Rigid	Flexible lamellate between nodes
<u>Leaves:</u>		
Type	Simple	Simple
<u>Color:</u>		
(young)	Medium green	Dark Green
(mature)	Medium green	Dark Green
(fall)	Faded green to yellow	Anthocyanin (maroon) expressed in full sun
Shape	Elliptical	Lanceolate (few lobed leaves on vegetative shoots)
tip	Acute on flower shoots acuminate on vegetative shoots	Accuminate
base margins	serrate on upper ½ near tip	Attenuate Serrate
<u>Size:</u>		
length	2"-3" (with petiole)	2"-2½" on flowering wood; to 2½" on vegetative wood
width	½"	0.3"-0.4" on flowering wood; to 1" on vegetative wood
Venation	Pinnate	Pinnate
<u>Flower:</u>		
Date of Flowering	Early	Intermediate
Size: width	½"-¾" 45° angle	1¼"-1½"
Color:	Bright Yellow (7 B)	Yellow (7A)
<u>Corolla:</u>		
length lobes	½" open to 45° angle not reflexed during prime	Narrow
Petals: number	4; occasionally 5 or 6	4 - sometimes 5
Pistils:	short: anthers slightly below stigma portion of pistil	Extend 2/25"-3/25" above pollen sacs of stamens
Number per node:	2; often 4 per node	2
Insertion angle on upright stems:	buds & flowers pendulous	
Internodes:	½"-1½"	1"-1½" (1½" even on fast growing shoots)
Stress Resistance:	Disease and insect	disease and insect
Utility Aspects:	Can force flowering suitable for container culture	

TABLE 3

	S/N 273,489 TINKLE BELLS	S/N 272,063 LEMON SCREEN
<u>Plant:</u>		
Habit	Semi-dwarf; Upright	Tall, open and graceful; Upright, fan shape; vigorous; open foliage
Size, height	4'-4½'	Up to 10'
Size, width		Hardy Zone 6b (or lower)

TABLE 3-continued

	S/N 273,489 TINKLE BELLS	S/N 272,063 LEMON SCREEN
5 Vigor	Medium vigor	Vigorous
Hardiness	Hardy Zone 6b (or lower)	
Productivity	Does not layer naturally (replicates from stools (no seed pods observed))	Abundant Flowers/ highly sterile/pruned wood branches quickly
10 <u>Stems:</u>		
Color (young)	Yellow Green	
Color (mature)	Light brown	Yellow
Rigidity	Sparsely lamellate between nodes - Rigid	Slightly lamellate between nodes
15 <u>Leaves:</u>		
Type	Simple	Simple
<u>Color:</u>		
(young)	Medium green	Yellow green 151 B or Chartreuse (appear after flowering)
20 (mature)	Medium green	Normal green (Yellow-Green 144) whitish blotches
(fall)	Faded green to yellow	Greyed Purple 187 B
Shape	Elliptical	Accuminate
tip	Acute on flower shoots acuminate on vegetative shoots	Attenuate Serrate
base margins	serrate on upper ½ near tip	
<u>Size:</u>		
30 length	2"-3" (with petiole)	Not distinguishing
width	½"	Not distinguishing
Venation	Pinnate	Pinnate
<u>Flower:</u>		
Date of Flowering	Early	Early
35 Size: width	½"-¾" 45° angle	1¼"-1½"
Color:	Bright Yellow (7 B)	Yellow (6 C)
<u>Corolla:</u>		
length lobes	½" open to 45° angle not reflexed during prime	Somewhat reflexed
40 Petals: number	4; occasionally 5 or 6	4, sometimes fasciated
Pistils:	short: anthers slightly below stigma portion of pistil	aborted stamens &/or pistils
Number per node:	2; often 4 per node	4 to 8
Insertion angle on upright stems:	buds & flowers pendulous	
45 Internodes:	½"-1½"	1" 2" long on flowering wood
Stress Resistance:	Disease and insect	Summer foliage disease & insect resistant
50 Utility Aspects:	Can force flowering suitable for container culture	Summer pruning leads to shoot with chartreuse leaves (young)

TABLE 4

	S/N 273,489 TINKLE BELLS	S/N 271,919 MINIKIN
<u>Plant:</u>		
60 Habit	Semi-dwarf; Upright	Small stature, fine textured; small leaves and small stems; densely foliated
Size, height	4'-4½'	2'-2½'
Size, width		3'-4'
Vigor	Medium vigor	Good vigor but slow growth
65 Hardiness	Hardy Zone 6b (or lower)	Zone 6b (or lower)
Productivity	Does not layer naturally (replicates	Layers naturally Abundant seed pods

TABLE 4-continued

	S/N 273,489 TINKLE BELLS	S/N 271,919 MINIKIN
	from stools (no seed pods observed)	
<u>Stems:</u>		
Color (young)	Yellow Green	Light green
Color (mature)	Light brown	Brownish green
Rigidity	Sparsely lamellate between nodes - Rigid	Ascending strongly lamellate between nodes
<u>Leaves:</u>		
Type	Simple	Simple
<u>Color:</u>		
(young)	Medium green	Bright green to dark green
(mature)	Medium green	Bright green to dark green
(fall)	Faded green to yellow	Fading green until leaf drop
Shape tip	Elliptical Acute on flower shoots acuminate on vegetative shoots	Linear Accuminate
base margins	serrate on upper 1/3 near tip	Attenuate Lightly serrate
<u>Size:</u>		
length	2"-3" (with petiole)	On vegetative shoots- 1 1/2" attached to 1/2" long slender petiole; smaller on flowering shoots
width	1/2"	On vegetative shoots - 1/2"; Pinnate
<u>Venation Flower:</u>		
Date of Flowering	Early	Intermediate
Size: width	1/2"-3/4" 45° angle	1/2"-3/4" (cup shaped) fully reflexed
Color:	Bright Yellow (7 B)	Yellow (9 A)
<u>Corolla:</u>		
length lobes	1/2" open to 45° angle not reflexed during prime	strongly reflexed, very small
Petals: number	4; occasionally 5 or 6	4:- short and recurved
Pistils:	short: anthers slightly below stigma portion of pistil	Short; 1/25" below pollen sacs of stamens
Number per node:	2; often 4 per node	2-4
Insertion angle on upright stems:	buds & flowers pendulous	
Internodes:	1/2"-1 1/4"	Short (Flowering shoots 1/2"-3/4" Vegetative shoots up to 2")
Stress Resistance:	Disease and insect	Doesn't require same degree of winter protection as most container grown plants of genre
Utility Aspects:	Can force flowering suitable for container culture	Blooming can be forced. Especially suited for container culture.

TABLE 5

	S/N 273,489 TINKLE BELLS	S/N 271,665 FAIRY LAND
<u>Plant:</u>		
Habit	Semi-dwarf; Upright	Small overall & fine

TABLE 5-continued

	S/N 273,489 TINKLE BELLS	S/N 271,665 FAIRY LAND
		textured: Closely spaced flowers & leaves Dense (young) foliage
Size, height	4'-4 1/2'	3'-4'
Size, width		5'-6'
Vigor	Medium vigor	Good vigor for size
Hardiness	Hardy Zone 6b (or lower)	Zone 6b (or lower)
Productivity	Does not layer naturally (replicates from stools (no seed pods observed))	Few seed pods
<u>Stems:</u>		
Color (young)	Yellow Green	Light green
Color (mature)	Light brown	Brownish green
Rigidity	Sparsely lamellate between nodes - Rigid	Very flexible lamellate between nodes
<u>Leaves:</u>		
Type	Simple	Simple
<u>Color:</u>		
(young)	Medium green	Medium green (fairly light)
(mature)	Medium green	Medium green (fairly light)
(fall)	Faded green to yellow	Mostly faded yellow
Shape tip	Elliptical Acute on flower shoots acuminate on vegetative shoots	Lanceolate Accuminate
base margins	serrate on upper 1/3 near tip	Attenuate On flowering wood; entire On vegetative wood; serrate top 1/3
<u>Size:</u>		
length	2"-3" (with petiole)	On flowering wood: 1 1/2"-2 1/2" On vegetative shoots: about 3"
width	1/2"	On flowering wood: 0.2"-0.4" On vegetative shoots 0.5-0.6"
<u>Venation Flower:</u>		
Date of Flowering	Early	Intermediate
Size: width	1/2"-3/4" 45° angle	3/4"-1 1/4"
Color:	Bright Yellow (7 B)	Yellow (6 A)
<u>Corolla:</u>		
length lobes	1/2" open to 45° angle not reflexed during prime	Reflexed, small
Petals: number	4; occasionally 5 or 6	Generally 4-many have 5, 6, 7 and 8 on single corolla
Pistils:	short: anthers slightly below stigma portion of pistil	Extend 3/25" to 4/25" above pollen sacs (anthers) of the stamen
Number per node:	2; often 4 per node	2-4
Insertion angle on upright stems:	buds & flowers pendulous	
Internodes:	1/2"-1 1/4"	1/2" to about 1"
Stress Resistance:	Disease and insect	
Utility Aspects:	Can force flowering suitable for container culture	Very well suited for container culture

What is claimed is:

1. A new and distinct cultivar of *Forsythia intermedia* named 'Tinkle Bells', substantially as shown and described herein.

* * * * *



FIG. 1

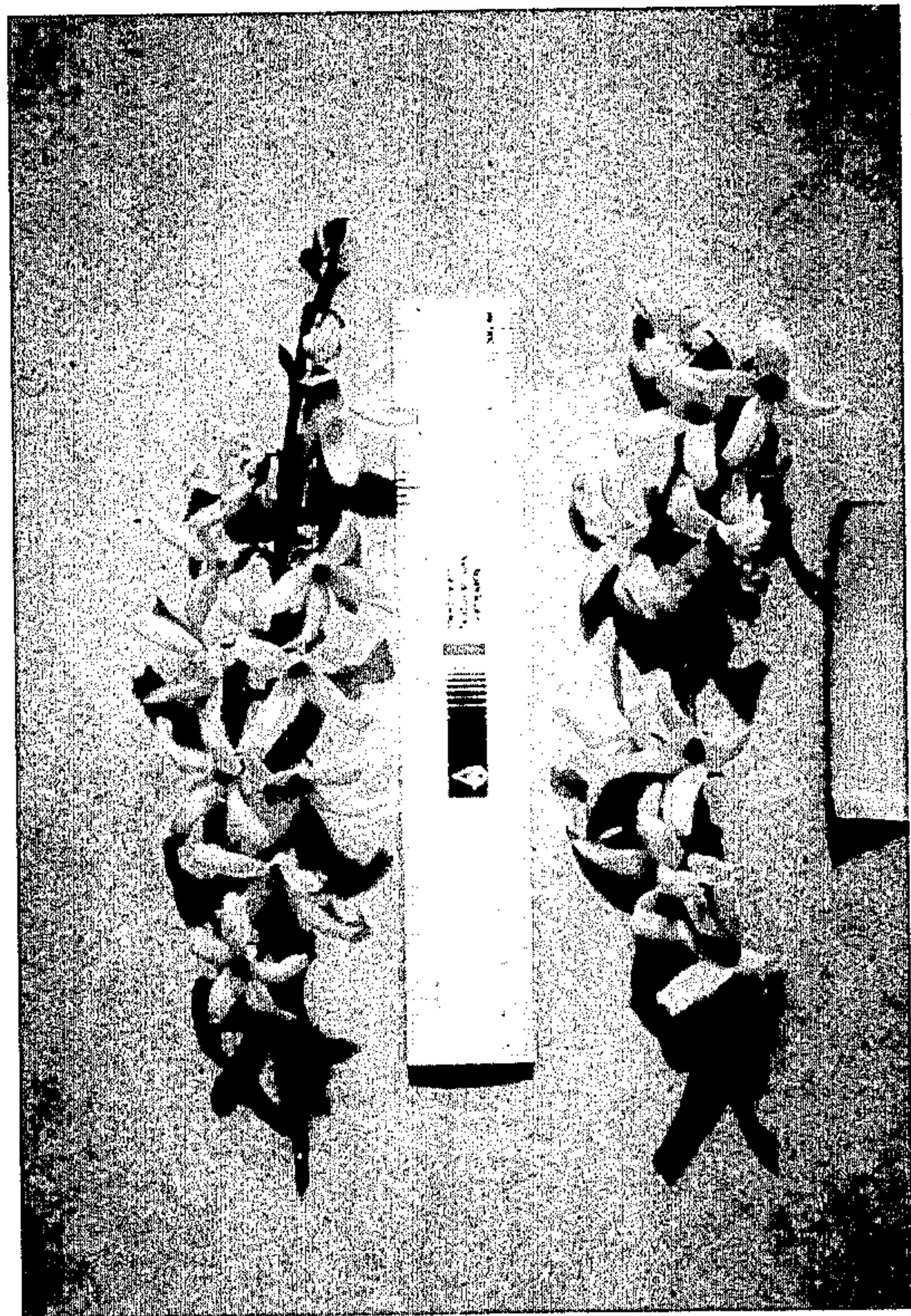


FIG 2

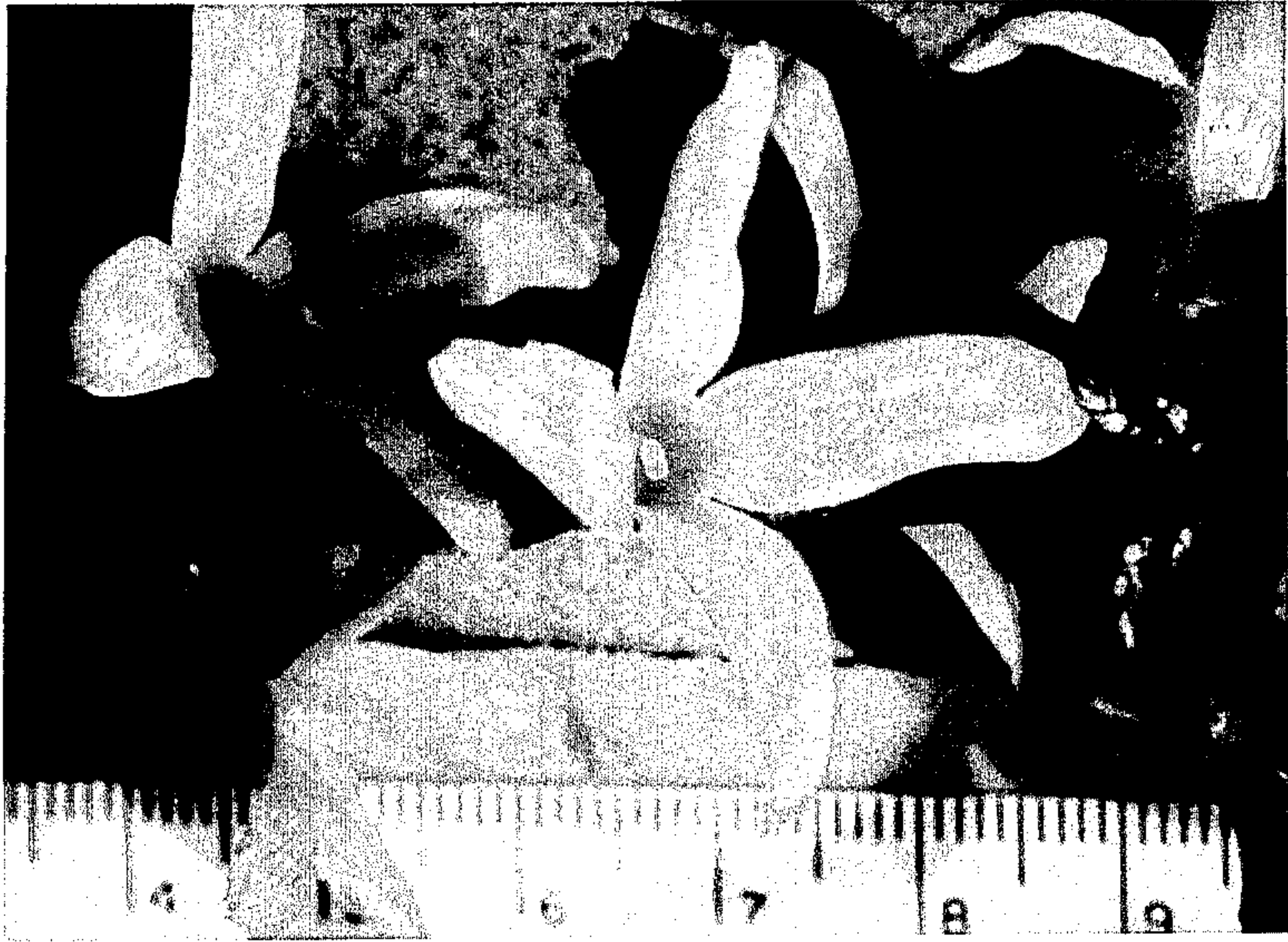


FIG. 3



FIG. 4

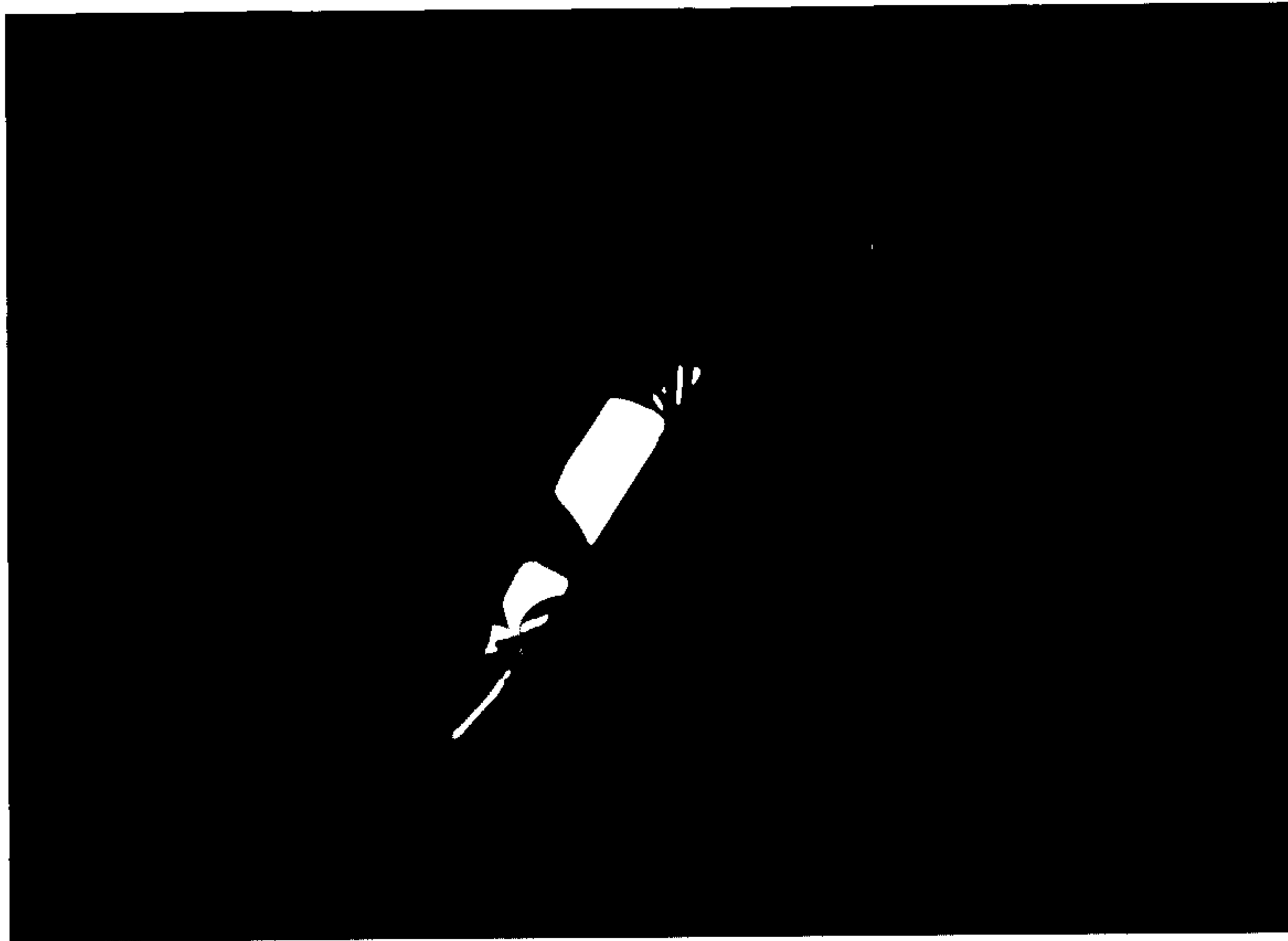


FIG. 5