



US00PP09059P

# United States Patent [19]

Tachibana et al.

[11] Patent Number: Plant 9,059

[45] Date of Patent: Feb. 14, 1995

[54] VERBENA PLANT — 'SUNMAREF TP-W'

[75] Inventors: Ryuichi Tachibana, Yamato; Yuji Tamura, Kofu; Ushio Sakazaki, Hikone, all of Japan

[73] Assignee: Suntory Limited, Osaka, Japan

[21] Appl. No.: 225,080

[22] Filed: Apr. 8, 1994

## Related U.S. Application Data

[63] Continuation of Ser. No. 100,146, Aug. 2, 1993, abandoned.

[51] Int. Cl.<sup>6</sup> ..... A01H 5/00

[52] U.S. Cl. .... Plt./87

[58] Field of Search ..... Plt. 87

Primary Examiner—James R. Feyrer

Attorney, Agent, or Firm—Burns, Doane, Swecker & Mathis

## [57] ABSTRACT

Disclosed herein is a spreading growth habit verbena plant having long stems. The plant has abundant branching and each node of the branches that contacts the ground commonly forms deep-spreading roots. The plant forms numerous flowers ascending spikes with a great profusion of blooms. The flowers exhibit petals having a very pale purple coloration. The plant is highly resistant to heat, cold, rain, diseases, and pests.

4 Drawing Sheets

## 1

This application is a continuation of application Ser. No. 08/100,146, filed Aug. 2, 1993, now abandoned.

### BACKGROUND OF THE VARIETY

The present invention relates to a new and distinct variety of verbena plant obtained from crossing 'Rainbowcarpet White' (♀) and a wild type of verbena plant (♂) native to Brazil. The 'Rainbowcarpet White' parent is botanically known as *Verbena × hybrida* Voss.

Verbena of presently commercialized 'Rainbowcarpet' series is a semi-erect growth habit having medium stems and medium branching, and a scant number of flowers, and moderate tolerance to heat and cold. Accordingly, this invention was aimed at obtaining a new variety having a spreading growth habit, much branching, numerous flowers, high tolerance to heat and cold, and resistance to diseases and pests superior to those of said 'Rainbowcarpet' series, and having white flower color.

The new variety of verbena plant according to this invention originated from a crossing of 'Rainbowcarpet White' as the female parent and a wild type of verbena plant native to Brazil as the pollen parent, in 1988, at the Plant Biotechnology Laboratory, Institute for Fundamental Research of SUNTORY Ltd., residing at 2913-1 Torihara, Hakushu-cho, Kitakoma-gun, Yamanashi-ken, Japan. From this crossing 60 seedlings were obtained in 1988, from which 4 seedlings were selected, propagated by cuttings, and then grown as a trial by flower bedding and potting from the spring of 1989. Only one of the 4 resulting plants was selected. The botanical characteristics of the finally-selected plant were then examined, using a similar varieties, 'Rainbowcarpet White', and 'Rainbowcarpet Rose' for comparison, from the spring of 1990. As a result, it was concluded that this verbena plant is distinguishable from any other variety, whose existence is known to us, and this new variety of verbena plant was named 'Sunmaref TP-W' (Tapien-Purplishwhite®).

In the following description, the color-coding is in accordance with the Horticultural Color Chart of The Royal Horticultural Society, London, England (R.H.S. Color Chart), and the Inter-Society Color Council-Nation Bureau of Standards Color Name (ISCC-NBS Color Name). A color chart based on The Japan Color

## 2

Standard for Horticultural Plants (J.H.S. Color Chart) is also added for reference.

'Rainbowcarpet White' used as the female parent in the breeding of this new variety 'Sunmaref TP-W', is one of the 'Rainbowcarpet' series bred by the TAKII SEED & SEEDLING Corp., Japan. The 'Rainbowcarpet' series includes 'Rainbowcarpet Rose', 'Rainbowcarpet Brightpurple', and the like. The main botanical characteristics of 'Rainbowcarpet White' are as follow.

### Plant:

*Growth habit.*—Semi-erect.

*Plant height.*—25–30 cm.

*Plant extension.*—35–40 cm.

*Blooming period.*—Late April to November.

### Stem:

*Diameter.*—Less than 2 mm.

*Anthocyanin pigmentation.*—Absent.

*Branching.*—Medium.

*Pubescence.*—Some pubescence commonly is present.

*Length of internode.*—35–45 mm.

### Leaf:

*Phyllotaxis.*—Opposite.

*Shape of blade.*—Ovate.

*Length.*—20–25 mm.

*Width.*—20–25 mm.

*Depth of incision.*—Deep.

*Color.*—Deep yellow green (R.H.S. 141A, J.H.S. 3706).

*Pubescence.*—Some pubescence commonly is present.

### Flower:

*Direction.*—Ascending.

*Outward curvature of petal.*—Slightly curved.

*Diameter.*—12–17 mm.

*Length.*—13–15 mm.

*Color.*—White (J.H.S. 01).

*Color intensity.*—Absent.

*Overlapping of petals.*—Separate.

*Spike.*—30–40 mm in length, and 35–40 mm in diameter.

*Calyx.*—0.5–1.0 cm in length.

*Anthocyanin pigmentation of calyx limb.*—Absent.



*Peduncle*.—Less than 2 mm in thickness, and 8.0–10.0 cm in length.

*Number of flowers*.—Medium ( $10 \pm 2$ ).

*Reproductive organs*.—1 pistil and 5 stamens.

*Physiological and ecological characteristics*.—Moderate resistances to diseases and pests, and moderate tolerances to cold and heat.

The pollen parent used in the breeding of 'Sunmaref TP-W' is a wild type of verbena plant native to South Brazil and this wild type of plant is presently maintained at the Plant Biotechnology Laboratory of SUNTORY Ltd. The main botanical characteristics of the pollen parent are as follows.

**Plant:**

*Growth habit*.—Spreading.

*Plant height*.—10–15 cm.

*Plant extension*.—80–100 cm.

*Blooming period*.—Late April to November.

**Stem:**

*Extending*.—40–50 cm.

*Diameter*.—2–3 mm.

*Anthocyanin pigmentation*.—Absent.

*Branching*.—Abundant.

*Pubescence*.—Medium.

*Length of internode*.—20–30 mm.

**Leaf:**

*Phyllotaxis*.—Opposite.

*Shape of blade*.—Ovate.

*Length*.—15–20 mm.

*Width*.—10–15 mm.

*Depth of incision*.—Deep.

*Color*.—Deep yellow green (R.H.S. 141A, J.H.S. 3706).

*Pubescence*.—Medium.

**Flower:**

*Direction*.—Ascending.

*Outward curvature of petal*.—Slightly curved.

*Diameter*.—10–15 mm.

*Length*.—12–15 mm.

*Color*.—Brilliant purple (R.H.S. 86C, J.H.S. 8604).

*Color intensity*.—Absent.

*Overlapping of petals*.—Separate.

*Spike*.—30–40 mm in length, and 35–40 mm in diameter.

*Calyx*.—0.5–1.0 cm in length.

*Anthocyanin pigmentation of calyx limb*.—Absent.

*Peduncle*.—1–2 mm in thickness, and 30–50 mm in length.

*Number of flowers*.—Medium ( $10 \pm 2$ ).

*Reproductive organs*.—1 pistil and 5 stamens.

*Physiological and ecological characteristics*.—High resistance to diseases and pests, and high tolerance to heat and cold.

This new variety of verbena plant, 'Sunmaref TP-W' was asexually reproduced by cuttings at the aforementioned the Plant Biotechnology Laboratory, Institute for Fundamental Research of SUNTORY Ltd., residing at 2931-1 Torihara, Hakushu-cho, Kitakoma-gun, Yamanashi-ken, Japan, and the homogeneity and stability thereof were confirmed.

### SUMMARY OF THE VARIETY

The new variety of verbena plant has a spreading growth habit with very long stems and a very low height wherein the spreading area of the plant is broad

and thus is very different from the similar varieties, 'Rainbowcarpet White', and 'Rainbowcarpet Rose'. The plant has abundant branching, forms many flowers in ascending spikes with a great profusion of blooms which are clearly distinguishable from the similar varieties, 'Rainbowcarpet White', and 'Rainbowcarpet Rose', and the whole bush remains in bloom for a considerable period of time that is longer than the blooming period of 'Rainbowcarpet Rose'. The length of internode of the new variety is longer than that of similar varieties with each node that contacts the ground commonly forming deep-spreading roots, that attach the plant well to the ground. The flowers exhibit petals having a very pale purple color. The plant is highly resistant to cold, heat, diseases, and pests.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a photograph of flowers of the new variety of verbena plant;

FIG. 2 is a photograph giving a partial view of the new variety of verbena plant planted in a flower bed;

FIG. 3 is a photograph showing, in numerical order, a cluster (1), a flower (2), a bud (3), a surface view of the flower (4), a rear view of the flower (5), a cross-section view of the flower (6), and a branch (7), of the new variety of verbena plant; and

FIG. 4 is a photograph showing, in numerical order, a cluster (1), a flower (2), a bud (3), and a branch (4) of a similar variety 'Rainbowcarpet White', in comparison with corresponding items (5–8) of the new variety of verbena plant.

### DESCRIPTION OF THE VARIETY

The botanical characteristics of the new and distinct variety of verbena plant, 'Sunmaref TP-W' are as follows.

**Plant:**

*Growth habit*.—Spreading.

*Plant height*.—15–20 cm.

*Spreading area of plant*.—The stem extends to a length of 50–75 cm, and thus the spreading area of the plant is 100–150 cm.

*Growth*.—Very vigorous with abundant branching and a great profusion of blooms; the whole bush remaining in bloom for a considerable period of time.

*Blooming period*.—Late April to November, in all areas of Japan.

*Ploidy*.—Normal.

**Stem:**

*Diameter*.—2–3 mm.

*Anthocyanin pigmentation*.—Absent.

*Branching*.—Abundant; each node contacting the ground takes deep-spreading roots.

*Length of internode*.—50–70 mm.

*Pubescence*.—Medium.

**Leaf:**

*Phyllotaxis*.—Opposite.

*Shape of blade*.—Progressively cut deeply into the branches in 2 to 3, or more, stages.

*Length*.—25–30 mm.

*Width*.—25–30 mm.

*Depth of incision*.—Deep.

*Color*.—Moderate yellow green (R.H.S. 137C-D, J.H.S. 3712).

*Pubescence*.—Few.

*Stipules*.—Absent.



Flower:

*Direction.*—Upward.  
*Outward curvature of petal.*—Slightly curved.  
*Diameter.*—10–15 mm.  
*Length.*—12–15 mm.  
*Cluster.*—Umbel; commonly formed from 12 flowers.  
*Color.*—Very pale purple (R.H.S. 91A, J.H.S. 8302).  
*Color intensity.*—Present.  
*Overlapping of petals.*—Separate.  
*Spike.*—40–50 mm in length, and 50–60 mm in diameter.  
*Calyx.*—0.5–1.0 cm in length. It is typical for the genus.  
*Anthocyanin pigmentation of calyx end.*—Absent.  
*Peduncle.*—2–3 mm in thickness, and 8.0–10.0 cm in length.  
*Number of flowers.*—Abundant (12±2).  
*Reproductive organs.*—1 pistil and 5 stamens. Seeds commonly are formed in a very low frequency.

Physiological and ecological characteristics: High tolerance to cold and heat. The new variety is a perennial and has satisfactorily withstood temperatures as low as 0° C. and as high as 35° C. when grown in the field at Osaka, Japan. Also strong resistance to pests and diseases, particularly powdery mildew. The pinching of spent spikes commonly is necessary for a

continuation of blossom production. Thinning is not required to maintain the new variety.

This new variety of verbena plant is most suitable for flower bedding and potting, particularly in planters, and is further well suited for use as a ground cover. The new variety grows well in full sun, and has no particular fertilizer requirement for good performance. The plant also grows well in the shade, but commonly does not bloom well in the absence of sunlight. A very strong resistance to mildew is exhibited by the new variety.

The plant of this new variety, ‘Sunmaref TP-W’ is presently planted and maintained at the Plant Biotechnology Laboratory, Institute for Fundamental Research of SUNTORY Ltd., residing at 2913-1 Torihara, Haku-shu-cho, Kitakoma-gun, Yamanashi-ken, Japan.

We claim:

1. A new distinct variety of verbena plant, substantially as herein illustrated and described, characterized particularly as to novelty by (A) a spreading growth habit with long stems, (B) the formation of abundant branching with each node of said spreading branches that contacts the ground commonly forming deep-spreading roots, (C) the formation of many flowers in ascending spikes with a great profusion of blooms, (D) the formation of flowers that exhibit petals having a very pale purple coloration, and (E) a high resistance to heat, cold, rain, diseases, and pests.

\* \* \* \* \*

30

35

40

45

50

55

60

65

Fig. 1

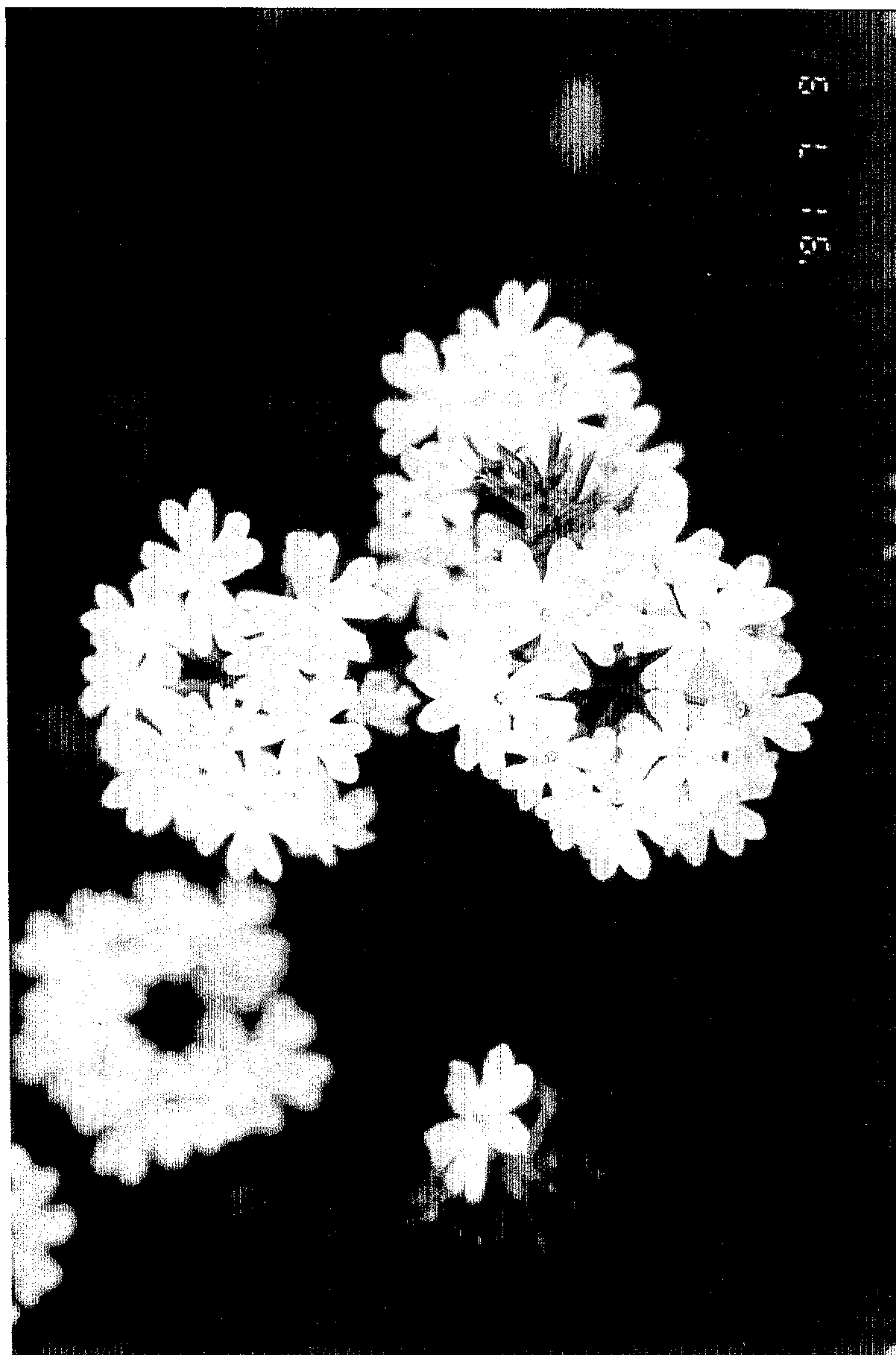




Fig. 2





Fig. 3

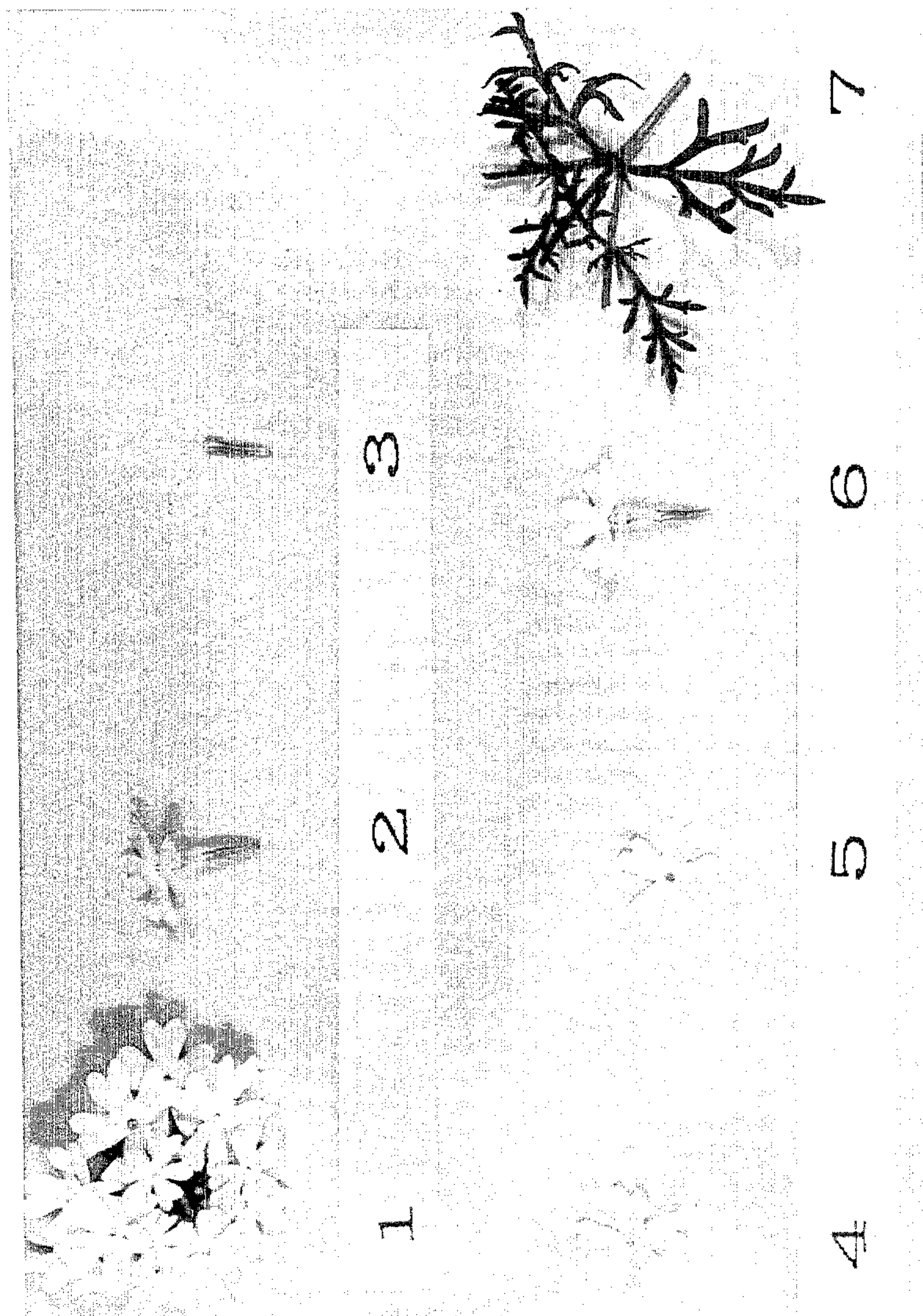


Fig. 4

