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(54) **DOGWOOD TREE NAMED 'JEAN'S APPALACHIAN SNOW'**

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(51) **Int. Cl.**[7] **A01H 5/00**
(52) **U.S. Cl.** **Plt./220**
(58) **Field of Search** Plt./220

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(57) **ABSTRACT**

A new and distinct cultivar of Dogwood tree, *Cornus florida*, named 'Jean's Appalachian Snow', is provided. This cultivar is characterized by resistance to powdery mildew which is superior to any other white flowering dogwood.

4 Drawing Sheets

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CROSS-REFERENCE TO A RELATED APPLICATION

This application claims the benefit of U.S. Provisional Application No. 60/210,603, filed Jun. 9, 2000.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct cultivar of flowering dogwood which is resistant to powdery mildew.

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This dogwood is botanically known as *Cornus florida* and hereinafter is referred to by the cultivar name 'Jean's Appalachian Snow'.

This new dogwood cultivar was discovered in a field planting of approximately 1,100,000 *Cornus florida* seeds in Decherd, Tenn. in 1994. 'Jean's Appalachian Snow' is a white flowering dogwood which, to the knowledge of the inventors, is superior to any other white flowering dogwood cultivar with respect to powdery mildew resistance. Asexual

reproduction of 'Jean's Appalachian Snow' by terminal cuttings rooted at the Tennessee Agricultural Experiment Station in Knoxville, Tenn. has shown that the unique features of this new dogwood cultivar are stable and reproduced true to type in successive vegetative generations.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1**. Photograph of a typical flower specimen of 'Jean's Appalachian Snow'. This photograph is a closeup view of a typical flower of this cultivar.

FIG. **2**. A similarity index for various dogwoods.

FIG. **3**. Cluster analysis of various dogwoods.

FIG. **4**. Principal coordinate analysis of the relationships between the dogwoods.

Flower colors in the photographs may differ from the actual colors due to light reflectance.

DETAILED DESCRIPTION OF THE NEW VARIETY

The parental lineage of this cultivar is unknown. 'Jean's Appalachian Snow' is a white flowering dogwood cultivar isolated from a field planting of approximately 1,100,000 *Cornus florida* seeds in Decherd, Tenn. Seeds were bulked from collections of wild and landcape trees from Tennesee, North Carolina, Alabama, and Georgia. This cultivar may be reproduced asexually by rooting cuttings and by grafting.

'Jean's Appalachian Snow' has white bracts which are overlapping. The bracts are similar in size to the bracts of 'Cherokee Princess'. Upper pairs of bracts average about 15.8 cm long by about 11.2 cm wide in size (n=30). Clefts at the ends of the bracts are indented and have little pigmentation. Flower petals are yellow and flowers average 23 per inflorescence (n=15).

'Jean's Appalachian Snow' is, to the knowledge of the inventors, superior in resistance to powdery mildew to any other white flowering dogwood cultivar. This cultivar has been tested for four (4) years. Test plants were exposed to powdery mildew and assessed for resistance to powdery mildew. Mildew scores for 'Jean's Appalachian Snow', control plants, and 'Cherokee Brave' were obtained using the following scale: 0=healthy; 1=≦2% of foliage with signs or symptoms of powdery mildew; 2=≦10% of foliage with signs or symptoms of powdery mildew; 3=≦25% of foliage with signs or symptoms of powdery mildew; 4=≦50% of foliage with signs or symptoms of powdery mildew; 5=≦75% of foliage with signs or symptoms of powdery mildew; 6=≦100% of foliage with signs or symptoms of powdery mildew. Table 1 presents the data obtained over the last four years.

Year	'Jean's Appalachian Snow'	Control Score[1]	'Cherokee Brave'[2]
1995	0.0	5.0 (a)	—
1996	0.0	5.0 (b)	1.2
1997	0.0	4.6 (b)	2.3
1998	0.0	4.8 (c)	2.1

[1]Control plants were (a) *Cornus florida* seedlings, (b) 'Cherokee Sunset', or (c) 'Cherokee Daybreak' that were of similar age and size.
[2]'Cherokee Brave' is a pink flowering dogwood cultivar which is the only cultivar known to the inventors to possess partial resistance to powdery mildew.

DNA amplification fingerprinting was used to type 'Jean's Appalachian Snow', 'Kay's Appalachian Mist', and 'Karen's Appalachian Blush'. The methodology followed that of Trigiano and Caetano-Anollés (HortTechnology, 8:413–423 [1998]). Data, obtained from 235 loci generated from genomic DNA using seven (7) arbitrary octomeric primers, was used to compare the powdery mildew resistant dogwoods of the subject application to other dogwoods (including powdery mildew resistant lines and cultivars commonly found in nurseries). The sequences of the primers were as follows: 1) GAGCCTGT, 2) GTTACGCC, 3) CTGTGAG, 4) GTAACGCC, 5) GACGTAGG, 6) GATCGCAG, and 7) GTATCGCC. DNA amplification fingerprinting analysis as well as the cluster and principal coordinate analysis were completed using the NTSYS PROGRAM, pc version 2.2 (Exeter Software, 100 N. Country Road, Sedtauket, N.Y. 11733). A similarity index is provided in FIG. **2**. FIG. **3** depicts the resulting cluster analysis. FIG. **4** depicts the principal coordinate analysis of the relationships between the dogwoods.

The abbreviations found in the Figures are as follows: AS='Appalachian Spring', KAM='Kay's Appalachian Mist', JAS='Jean's Appalachian Snow', C9='Cloud Nine', KAB='Karen's Appalachian Blush', CP='Cherokee Princess', SPR='Springtime' and CB='Cherokee Brave'. All are white bract dogwoods except CB, which is red.

DETAILED BOTANICAL DESCRIPTION

The following observations, measurements, and comparisons describe the cultivar grown in Knoxville, Tenn. under container nursery conditions which approximate commercial production conditions. Dogwoods used for this description were about six (6) years old and were grown in twenty-five (25) gallon containers. Plant hardiness is expected to be zones 5–9.

The following description uses color references to The Royal Horticultural Society Colour Chart, except where general terms of ordinary dictionary significance are used. All color ratings were on adaxial surfaces. Color ratings for abaxial surfaces were not obtained because reflected/refracted light, due to the density of pubescence on abaxial surfaces, made accurate color determinations difficult or impossible. Measurements are provided as a range with the middle value providing the average (lower limit<average value<upper limit).

Botanical classification: *Cornus florida*, cultivar Jean's Appalachian Snow.
Parentage: Unknown.
Propagation:
Type.—Terminal softwood cuttings.
Time to initiate roots (*in June*).—About 3–4 weeks at about 25–30° C.
Rooting hormone.—5,000–10,000 ppm; Five (5) second quick dip in DIP 'N' GROW (1% IBA, 0.5% NAA), (Dip 'N' Grow, Inc., Clackamas, Oreg.).
Intermittent mist.—Six (6) seconds every six (6) minutes; light: 30–50% shade over propagation bench.
Media.—Peat-perlite.
Rooting habit.—Profuse from base of cutting.
Plant description:
Plant form and growth habit.—Perennial deciduous tree, mostly upright with horizontal branching.
Plant size.—A six (6) year old tree will attain a height of about 200 cm and a width of about 130 cm.
Vigor.—Similar to other *Cornus florida* cultivars.

Branching habit.—Moderate, branch crotch angles of about 30–45° to main trunk.

Main stem/trunk description.—Diameter: About 3.1 cm; bark texture: smooth; bark color: gray 201C.

Lateral branch description.—Branch angle of about 50° with a range of 47°–55°.

Foliage description:

Arrangement.—Simple, opposite; leaves mostly crowded towards branch apices.

Leaf blade length (*cm*).—About 12.8<13.8<15.5 (n=5).

Leaf blade width (*cm*).—About 7.0<8.4<9.0 cm (n=5).

Petiole length (*cm*).—About 1.1<1.24<1.5 (n=5).

Petiole diameter (*mm*).—About 1.23<1.29<1.37 (n=5).

Shape.—Broadly ovate.

Apex.—Acuminate, leaf tip with 90° twist.

Base.—Mostly acute, about 10% are unequal.

Margin.—Entire, slightly undulate.

Leaf vein pairs.—5.5–6, opposite to alternate. Petiole reflexed 80–90% from plane of leaf blade.

Bipolar trichomes.—Upper surface (*μ*) — sparse; 6<6.9<12. Lower surface (*μ*) — dense; 8<11.9<16.

Texture.—Upper surface: Nearly glabrous. Lower surface: Leaf hairs — on veins, and vein axils (*μ*), 16<22.1<38.

Color.—Yellow green 144B.

Flower description:

Fragrance.—None observed.

Flower bud size.—Width: 8.2 mm (widest diameter). Length: 6.5 mm (base to tip).

Shape of involucral bracts.—Obovate.

Apex shape of involucral bracts.—Emarginate.

Base shape of involucral bracts.—Cuneate.

Number of bracts.—4 (in two pairs).

Natural flowering season.—1999: about 15 days (April 12 through April 27). 2000: about 19 days (April 6 though April 25). 2001: about 14 days (April 14 through April 27).

Inflorescence arrangement.—Typical for species, large bracts overlap.

Inflorescence diameter.—About 32 cm wide.

Bract dimensions.—Upper bracts 15.8 cm long by about 11.2 cm wide (n=30). Inflorescence is 6.8 mm wide; anther length is 1.4 mm. Floral development is asynchronous among inflorescence.

Color (*abaxial and adaxial surfaces*).—White bracts (155D); bract clefts have, either no pigmentation or little pigmentation of yellow green (150B) color.

Sepals.—Typically 4.

Stamens.—Typically 4.

Pistil.—Typically 1.

Petal color (*abaxial and adaxial surfaces*).—Yellow green 151B.

Flower number.—22.

Ovary.—Bilocular with each locule having 1 ovule.

Fruit description:

Berry type.—Drupe (about 14 mm by 7 mm) aggregated in one mass.

Color.—5R(5/10) using Munsell Color Chart for Plant Tissues (Munsell Color, Baltimore, Md. 21218).

Seed.—Typical for species.

Disease resistance: this cultivar demonstrated outstanding resistance to powdery mildew superior to that of any other white flowering dogwood cultivar known to the inventors. No susceptibility to other diseases or arthropod pests was observed.

What is claimed is:

1. A new and distinct cultivar of Dogwood tree, *Cornus florida*, named 'Jean's Appalachian Snow', as illustrated and described.

* * * * *

	AS	KAM	JAS	C9	KAB	CP	SPR	CB
AS	1.00							
KAM	0.80	1.00						
JAS	0.76	0.76	1.00					
C9	0.75	0.70	0.77	1.00				
KAB	0.79	0.79	0.78	0.75	1.00			
CP	0.78	0.84	0.82	0.78	0.85	1.00		
SPR	0.78	0.82	0.76	0.77	0.82	0.86	1.00	
CB	0.79	0.77	0.73	0.72	0.78	0.79	0.82	1.00

LEGEND: AS = 'Appalachian Spring', KAM = 'Kay's Appalachian Mist', JAS = 'Jean's Appalachian Snow', C9 = 'Cloud Nine', KAB = "Karen's Appalachian Blush', CP = 'Cherokee Princess', SPR = ' Springtime' and CB = 'Cherokee Brave'. All are white bract dogwoods except CB, which is red.

FIG. 2

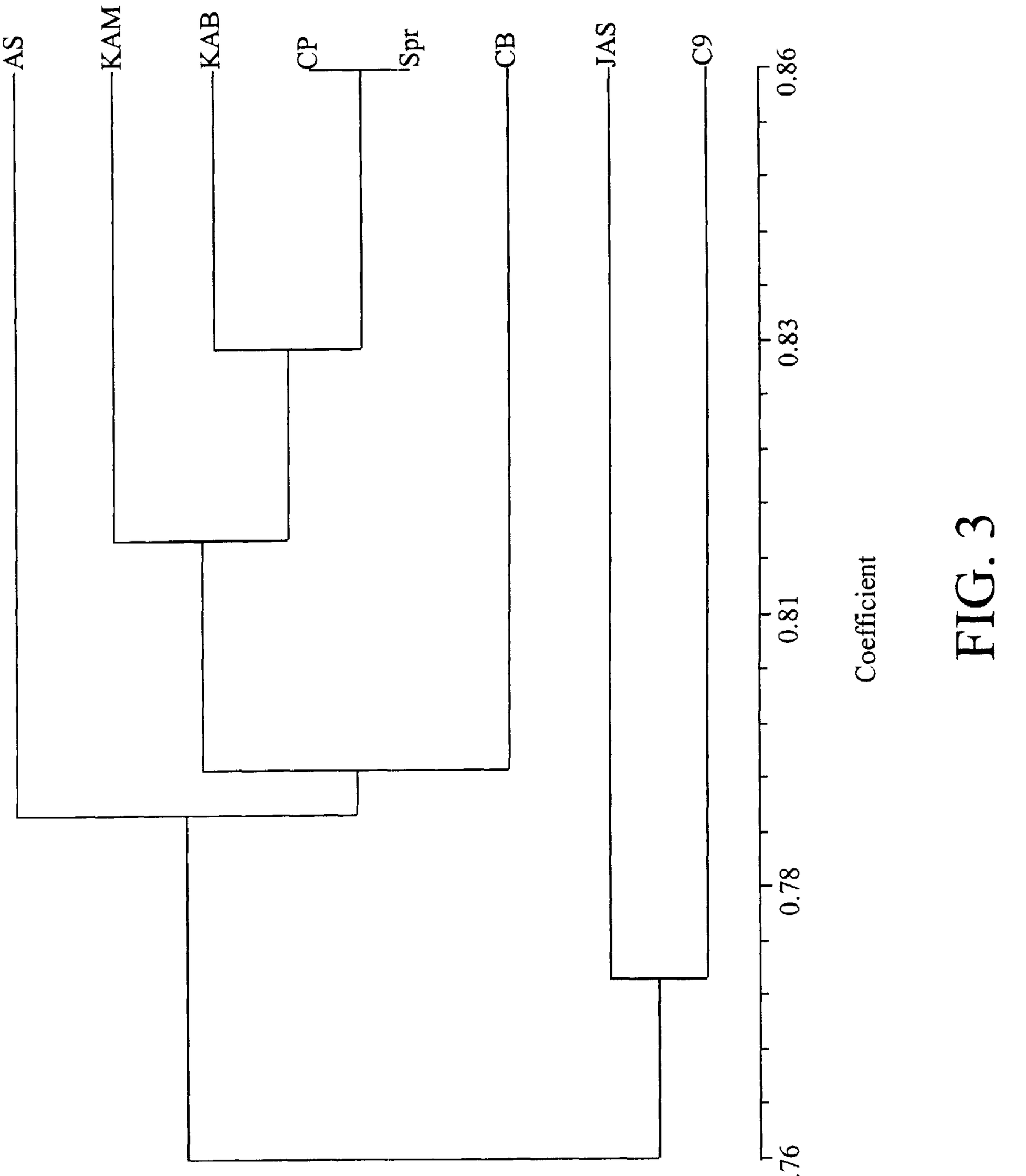

FIG. 3

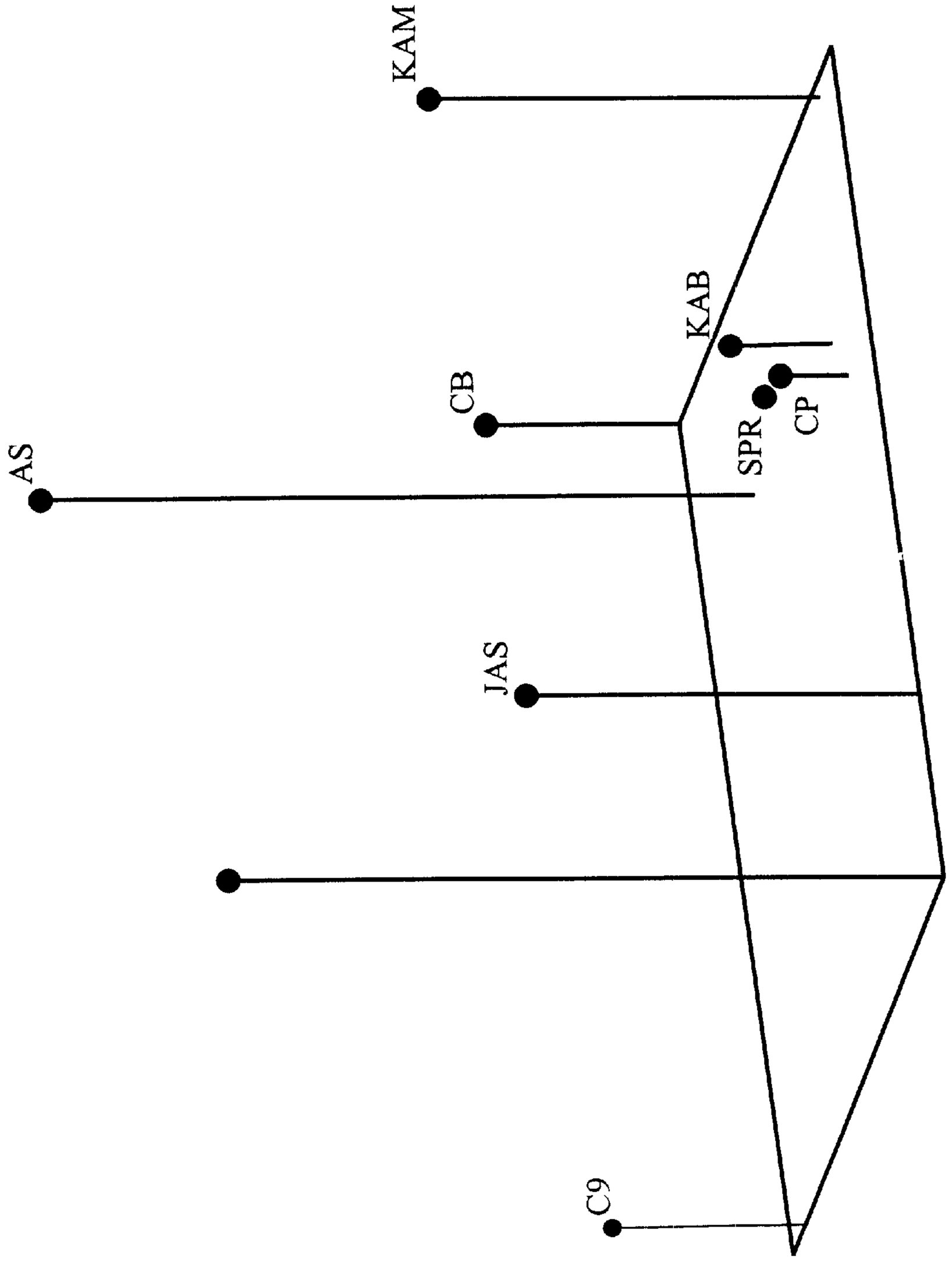

FIG. 4