

# **Artemisiella : a new genus of Compositae based on Artemisia stracheyii Hook. f. & Thoms. ex Clarke**

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# Artemisiella, a new genus of Compositae based on *Artemisia stracheyii* Hook. f. & Thoms. ex Clarke

ABDUL GHAFOR

## RÉSUMÉ

GHAFOR, A. (1992). *Artemisiella*, un genre nouveau pour les Composées, basé sur *Artemisia stracheyii* Hook. f. & Thoms. ex Clarke. *Candollea* 47: 635-643. En anglais, résumés français et anglais.

Un genre nouveau pour la science, *Artemisiella* (Composées-Anthemidées), de l'Himalaya, est décrit et une combinaison nouvelle, *Artemisiella stracheyii* (Hook. f. & Thoms. ex Clarke) A. Ghafoor est proposée.

## ABSTRACT

GHAFOR, A. (1992). *Artemisiella*, a new genus of Compositae based on *Artemisia stracheyii* Hook. f. & Thoms. ex Clarke. *Candollea* 47: 635-643. In English, French and English abstracts.

A new genus, *Artemisiella* (Compositae-Anthemideae) from Himalayas is described as new to science and a new combination i.e. *Artemisiella stracheyii* (Hook. f. & Thoms. ex Clarke) A. Ghafoor is proposed.

## Introduction

*Artemisia stracheyi* was described by Hook. f. and Thomson and validated by CLARKE in 1876 based on six specimens which were collected from Tibet and Ladakh by Thomas Thomson on 13th September 1847. These specimens were distributed to herbaria at Kew, British Museum (Natural History), Edinburgh, Calcutta and Rijksherbarium, Leiden. This species was again collected from Central Tibet in July-August 1895 by Littledale, and from Kala hills (Tibet) by Stewart in 1907. The plant is said to be good scented and common in Ladakh (KAUL & BAKSHI, 1984). CLARKE (1876) inadvertently ignoring its scaligerous receptacle had placed this species under section *Abrotanum* of *Artemisia* L. wherein the receptacle is naked. The comment "A very remarkable species with the heads of a *Tanacetum* but racemed like the Abrotanoid Absinthia" by HOOKER (1882) aroused interest to ascertain the status of the plant for the forthcoming volume of Compositae-Anthemideae of Flora of Pakistan. The holotype, isotypes and other specimens were borrowed from the above named herbaria and critically examined for various macro- and micromorphological characters. The author concluded that this species differs remarkably from and does not belong to the genus *Artemisia* L. A new genus, *Artemisiella* A. Ghafoor, is therefore proposed to accommodate it with a new combination i.e., *Artemisiella stracheyii* (Hook. f. & Thoms. ex Clarke) A. Ghafoor. A comparison with the genera *Artemisia* and *Tanacetum* to which *Artemisiella* is closely related is given in Table 1 (see also fig. 1-6).

<i>Characters</i>	<i>Artemisia</i>	<i>Artemisiella</i>	<i>Tanacetum</i>
Synflorescence ..	panicle, rarely reduced to raceme	raceme	often in sparse or in dense corymbs
Capitula.....	oblong-cylindrical to ovoid, mostly up to 1 cm in diam.	hemispherical to globose, more than 1 cm in diam.	hemispherical or campanulate, less than 1 cm in diam.
Corolla.....	glabrous or rarely sparsely hairy at apex but never scaly; corolla of marginal female fl. unequally 2-toothed, teeth sharp acute.	densely scaly in all florets; of marginal female florets unequally 4-lobed, lobes obtuse.	glabrous; of marginal female florets with 3-lobed, small ligule.
Stamens.....	partly protruding, apical appendages subulate or lanceolate	included, apical appendages triangular-ovate, obtuse.	apical appendages ovate, obtuse.
Ovary.....	glabrous.	densely scaly.	glabrous.
Achene.....	oblong-ellipsoid or ovoid to $\pm$ fusiform; epappose.	quadrangular-pyramidate, sparsely scaly; epappose.	cylindrical or $\pm$ clavate often glandular but otherwise glabrous, pappus present.

Table 1. — A comparison of some important characters in related genera.

**Artemisiella** A. Ghafour, **gen. nov.**

**Typus:** *Artemisiella stracheyii* (Hook. f. & Thoms. ex Clarke) A. Ghafour

Herba perennis. Radix lignosa. Rhizoma erectum, ramosum, ramis erectis, simplicibus. Folia dense villosa, radicalia et basalia longe petiolata, lamina oblonga, bi- vel tripinnatisecta, laciniis linearibus, folia caulina sessilia. Synflorescentia racemosa, calathidia longe pedunculata, magna, hemisphaerica vel globosa. Receptaculum  $\pm$  convexum, sparse scaligerum. Involucrum pateriforme, imbricatum, 3-4-seriatum; phyllaria elliptica, margine brunneo-scariosa. Flosculi numerosi (ultra 100), omnes fertiles, tubulosii, corollae dense longe scaligerae, radii feminei, uniseriati, corolla breviter quadriloba, lobis alternatim inaequalibus, obtusis, ovarium dense scaligerum, stylus exsertus; flosculi disci hermaphroditi, corolla tubulosa, in parte superiore inflatae, quinquelobae, lobis obtusis, stamina inclusa, antherae in tubulum connatae, appendicibus apicalibus triangulari-ovatis, obtusis, ovarium scaligerum. Achaenia  $\pm$  quadrangulari-pyramidata, sparse scaligera.

Ab *Artemisia* corolla et ovario dense scaligero, staminibus inclusis, appendicibus apicalibus antherarum triangulari-ovatis, obtusis, corolla flosculis femineis apice quadrilobis (nec oblique bidentatis), achaeniis  $\pm$  quadrangulari-pyramidatis sat differt.

Perennial herb. Root woody. Rhizome erect, branched, branches erect, simple. Leaves densely villose, radical and basal long petioled, lamina oblong, bi- to tripinnatisect, segments linear, cauline leaves sessile. Synflorescence a simple raceme. Capitula long peduncled, large, hemispherical to globose. Receptacle  $\pm$  convex, sparsely scaly. Involucre saucer-shaped, 3-4-seriate; phyllaries elliptic, brown scarious on margins. Flowers numerous (more than 100), all fertile, tubular, corolla densely scaly; marginal female, uniseriate, with shortly 4-lobed corolla, lobes alternately unequal, obtuse, ovary densely scaly, style exserted; disc flowers hermaphrodite, corolla tubular, inflated in upper part, 5-lobed, lobes obtuse, stamens included, anthers connate in a tube, apical appendages triangular-ovate, obtuse, ovary scaly. Achenes  $\pm$  quadrangular-pyramidate, sparsely scaly.

Differs from *Artemisia* in its corolla and ovary densely scaly, stamens included, apical anther appendages triangular-ovate, obtuse, corolla of female florets apically unequally 4-lobed (not obliquely 2-toothed), achenes  $\pm$  quadrangular-pyramidate.

A monotypic alpine genus distributed in Ladakh (N.W. Himalaya), Tibet, Nepal, Bhutan and S. China (Fig. 7).



Fig. 1-2. — Scanning electron micrographs of receptacle of *Artemisiella stracheyii*.  
1 & 2, receptacle showing scales.

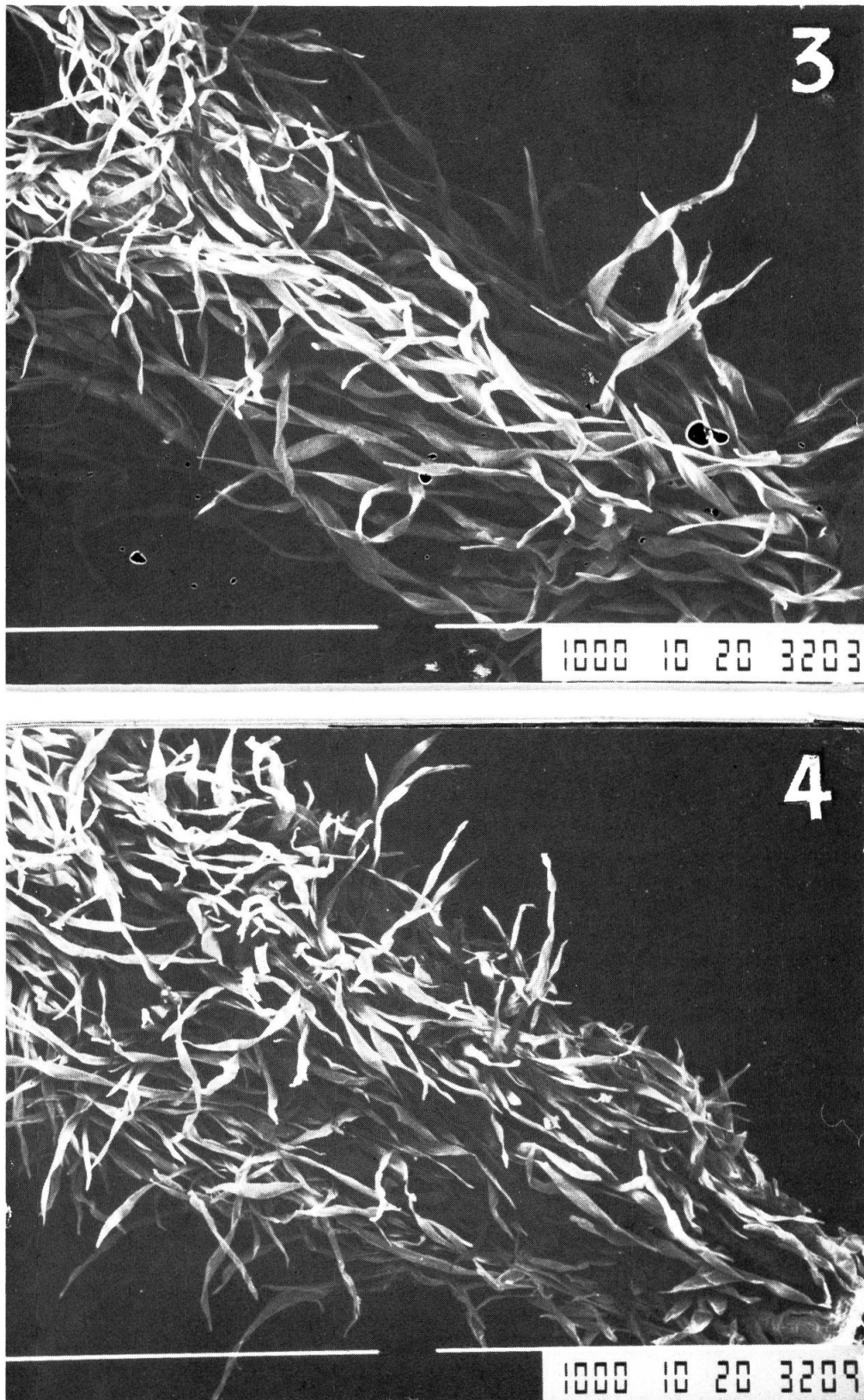


Fig. 3-4. — Scanning electron micrographs of corolla of *Artemisiella stracheyii*.  
3, corolla of pistillate-floret with dense cover of scales; 4 corolla of disc-florets with dense cover of scales.

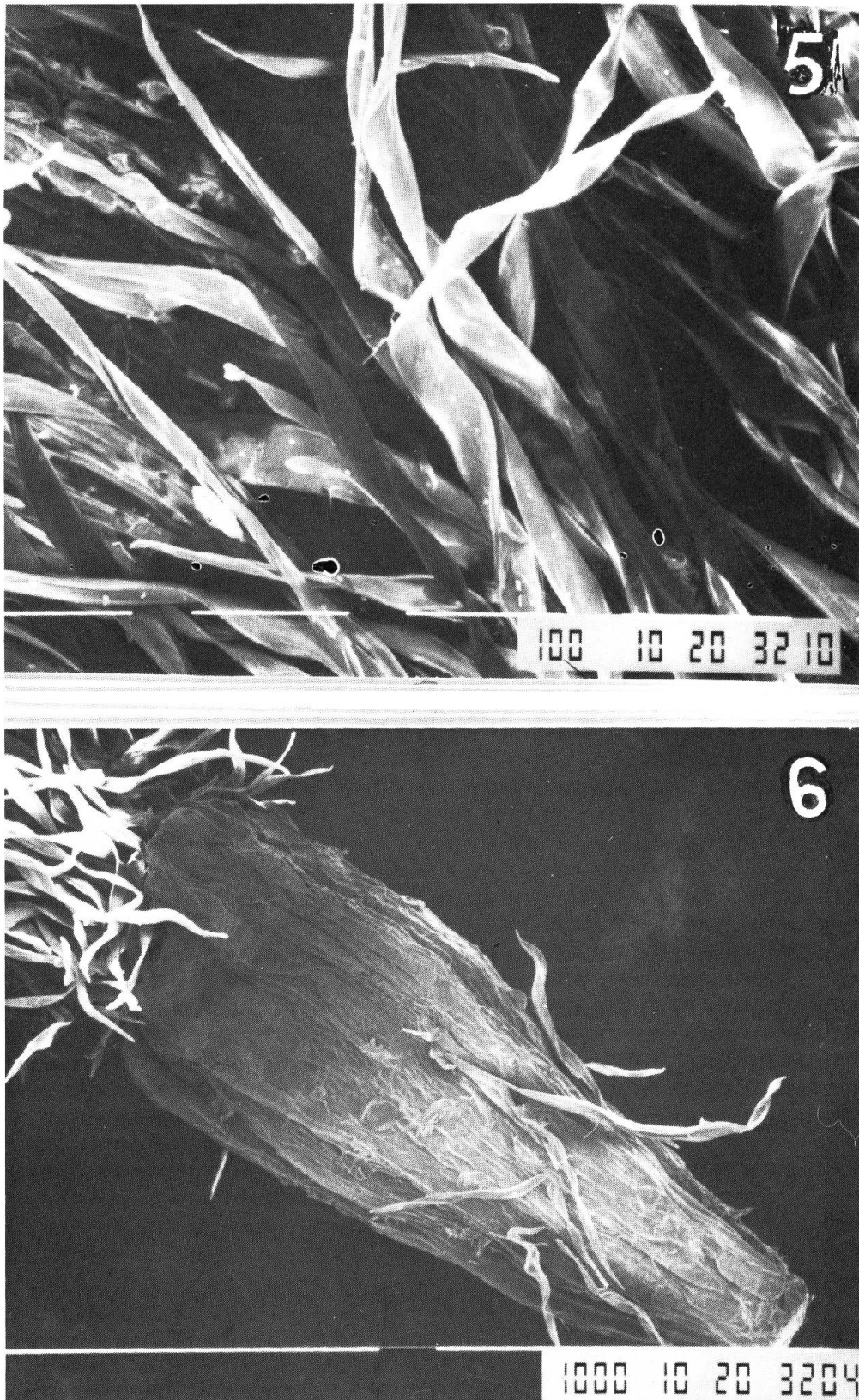


Fig. 5-6. — Scanning electron micrographs of corolla and achene of *Artemisiella stracheyii*.  
5, corolla of disc-florets with dense cover of scales; 6, sparsely scaly achene.

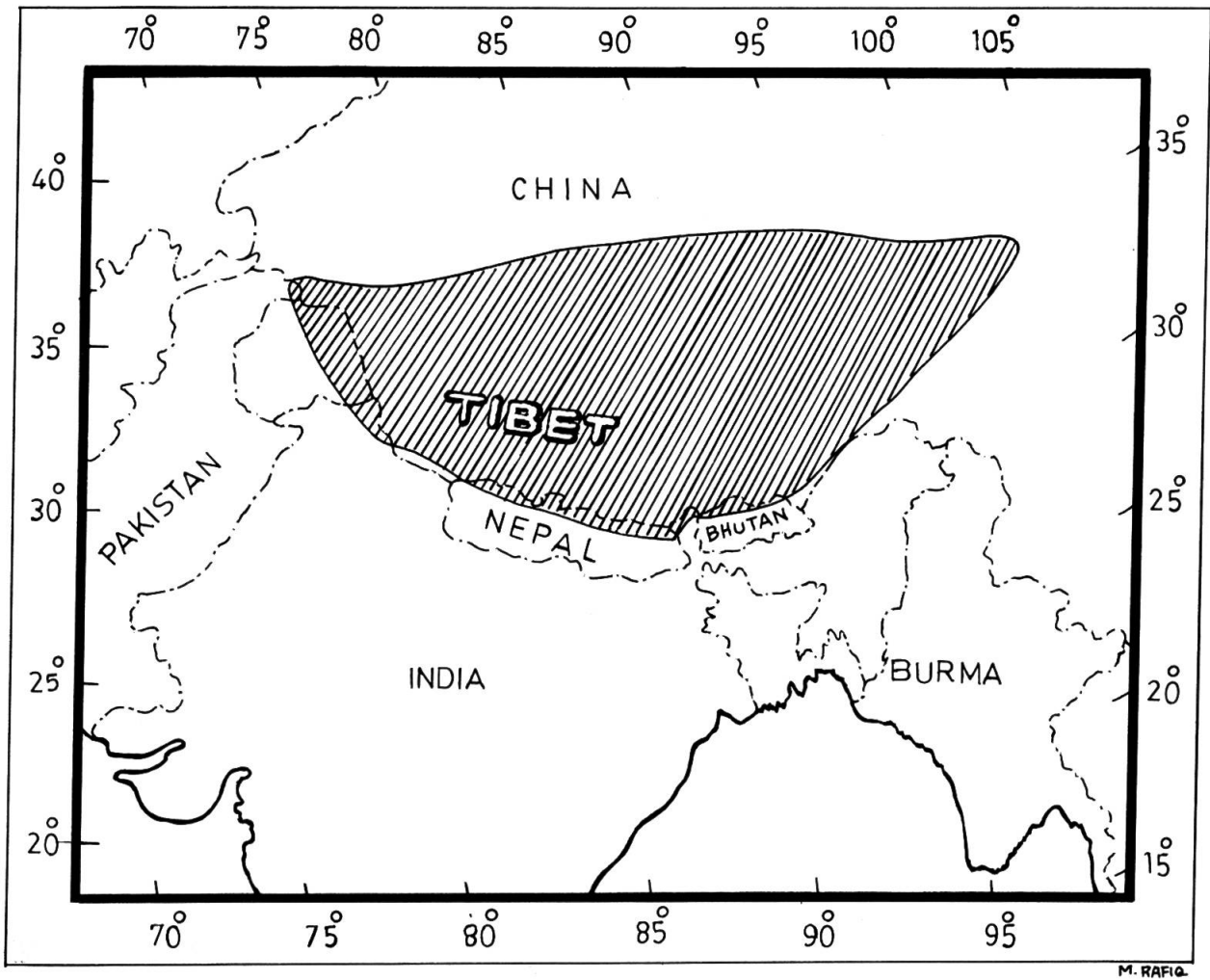


Fig. 7. — Range of distribution of *Artemisiella* in Himalayas.

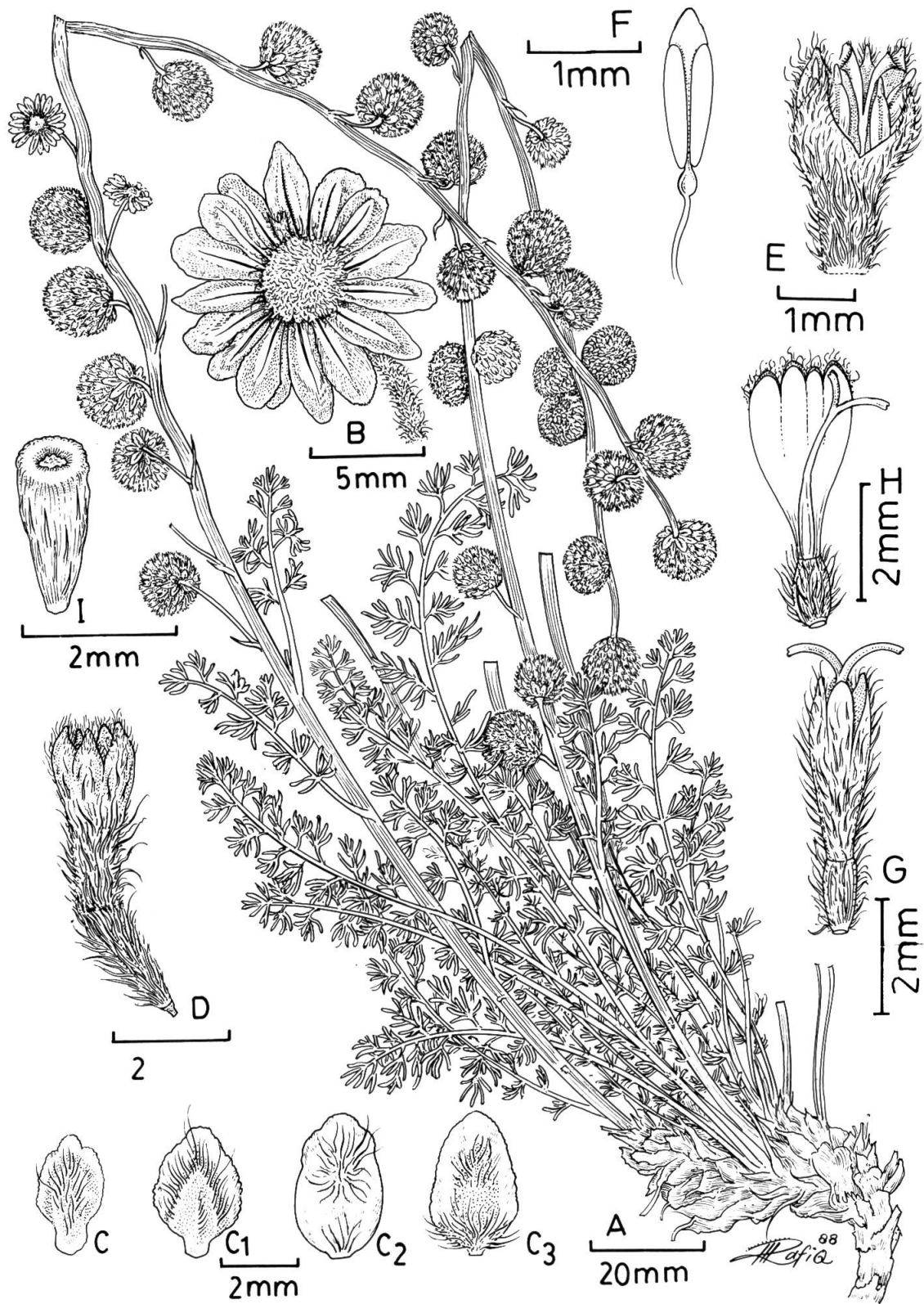


Fig. 8. — *Artemisiella stracheyii*.

A, habit; B, receptacle with scales; C-C 3, phyllaries; D, disc floret; E, disc floret corolla (dissected to show anthers); F, anther; G, marginal female floret; H, dissected female floret; I, achene.



**Artemisiella stracheyii** (Hook. f. & Thoms. ex Clarke) A. Ghafoor, **comb. nov.** (Fig. 8).

= *Artemisia stracheyi* Hook. f. & Thom. ex Clarke, Comp. Ind. 164. 1876; Hook. f., Fl. Brit. Ind. 3: 328. 1881; Kaul & Bakshi in Folia Geobot. Phytotax. Praha 19: 310. 1984.

**Type:** "In Tibet occidentalis ad 15000-17000 ft." *T. Thomson* (holo.: K!; Iso.: E, BM, L, CAL).

Perennial, silky villose alpine herb with a few strict, unbranched, 20-30 cm tall, pale-greenish, upright, sulcate stems from a very stout, 2.5-3.5 cm thick, branched, horizontal to suberect, woody rootstock, covered with old leaf sheaths. Basal and lower stem leaves with 3-5 cm long petiole, lamina narrow-oblong, 6-15 × 1.5-2 cm, bi- tripinnatisect with alternate primary lobes and linear-oblong, 2.5-5 × 0.5 mm, ± acute ultimate segments; upper in the floral region subtending the capitula simple, linear, apporximate, 1.5-3 × ca. 1 mm, acute. Capitulae heterogamous, approximate to remote, broadly hemispherical, 10-12 mm across, nodding on 1-1.5 cm long, slender-filiform peduncles, in a simple raceme. Involucre 3-4-seriate, phyllaries all ± flat, outer ovate-elliptic, ca. 3.5 × 2 mm, hairy outside, obtuse, with broad, ± brown scarious margins, inner elliptic, ca. 3 × ca. 2 mm, obtuse, scarious margined. Receptacle flat, ± densely to sparsely scaly. Florets numerous, all fertile, ± pale-brown, all densely appressed-antrorse scaly all over to glabrescent; ray-florets much fewer than the discs, with ca. 2 mm long, unequally 4-fid corolla beset with scales; ovary scaly, as long as corolla, style branches very short, flat; disc florets very many (more than 100), with ca. 3 mm long, densely scaly and glandular, 5-toothed corolla tube; ovary ca. 2 mm long, densely scaly, anther appendages short, triangular, style branched with penicillate stigma, included. Achenes ± pyramidate, ca. 2.25 mm long, sparsely scaly, brown, inconspicuously marginate.

*Specimens examined.* — Ladak, extreme S.E. part near Hanle, just S. of Indus, ascent to Lanek Pass, 13.9.1849, *T. Thomson* s.n. (K!); Tibet, Kala Hills, 13.8.1907, *H. M. Stewart* s.n. (K!); Rupshu, *Heyde* s.n. (K!); Central Tibet, Chiefly from Gooring valley, lat. 30°12'N, 90°25'E, about 16500 ft., July & August 1895, *Mr. St. George R. Littledale* s.n. (K!).

*Distribution.* — Endemic to Northern Himalayas above 15000 ft. (ca. 4500 m) (Pakistan, Nepal, India, S. China, Tibet, Bhutan).

Fl. Per.: July-September.

### Relationships with other genera

The distinctions and similarities between *Artemisia* and *Artemisiella* on the one hand and *Tanacetum* and *Artemisiella* on the other are grouped in Table 1. *Artemisiella* A. Ghafoor is closely related to *Tanacetum* in claiming several common features. Both are perennial, bearing hemispherical, large capitula and having ovate obtuse anthers tips. *Artemisiella* differs mainly in possessing racemose synflorescence, densely scaly corollas and ovaries, sparsely scaly epappose achenes which are often glandular and coronate in *Tanacetum*. In *Artemisia* the capitula are oblong-cylindric to ovoid, the corolla in both ray and disc florets is often glabrous (rarely sparsely hairy), in marginal pistillate flowers corolla possesses 2 unequal sharply acute lobes, subulate or lanceolate anthers tips partly protruding. The ovary is glabrous resulting in oblong-ellipsoid or oblong to ± fusiform, epappose achene.

Like most members of Anthemideae (Compositae), *Artemisiella* also bears 9 as its basic chromosome number ( $2n = 18$  in *Artemisia stracheyii* reported by BHAT & al., 1974).

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