

K. R. RAJBHANDARI* : **The genus *Agrostis* in Nepal (1)****

K. R. ラジバンドリ* : ネパール産ヌカボ属 (1)**

The Himalayan *Agrostis* has been studied by Bor (1954a, b, 1960), and 12 species are recorded in "An Enumeration of the Flowering Plants of Nepal Vol. 1" (Hara et al. 1978). However, no revision of Nepalese *Agrostis* with description, synonyms and distribution, has been published. This paper aims to give descriptions for Nepalese species based on the morphological studies, particularly the micro-structure of the lemma surface using a scanning electron microscope, and a key to the species is prepared. For comparison of the spikelet structure the specimens from the adjacent regions of Nepal are also examined.

This study has been conducted under the supervision of Dr. Hideaki Ohba of University Museum, University of Tokyo, to whom the author is grateful for the kind and valuable guidance throughout the investigation. Thanks are due to the Directors of the Herbaria of the Department of Medicinal Plants, Nepal (KATH), University of Tokyo (TI) and National Science Museum, Tokyo (TNS) for allowing to check the specimens. The author expresses his gratitude to Miss Masae Toyama for necessary help in taking photographs by scanning electron microscope.

Structure of the surface of lemma The surface of lemma of some species of *Agrostis* shows the network character which is due to the thicker reinforcement ribbons on the inner surfaces of the outer cell walls of the epidermal cells (Widén 1971). The term "trichodium net" is applied for the character (Bjorkman 1960). Bjorkman studied the trichodium nets in 118 species of *Agrostis* and showed that the occurrence or absence of a trichodium net on the outer surface of lemma seemed to be an important character in the sectional subdivision. The species with short paleas generally referred to sect. *Trichodium* (Michx.) Trin. had well developed trichodium nets, while the species usually referred to sect. *Vilfa* (Adans.) Roem. & Shult. with paleas measuring 1/3 the length of lemmas or more lacked or had fragmentary trichodium nets. Widén

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Tab. 1. The trichodium net and the length ratio between palea and lemma in Nepalese *Agrostis*.

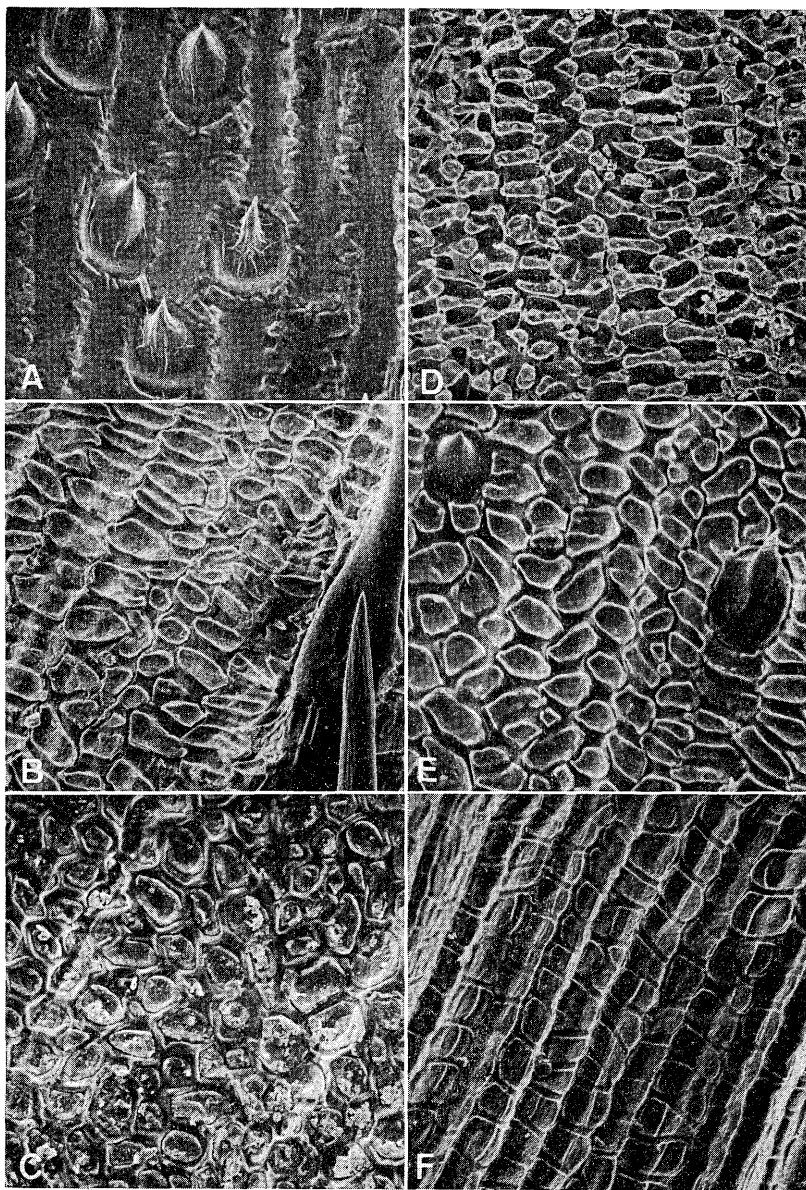
Species	Locality	Length of palea/ Length of lemma	Trichodium net on the outer surface of lemma	Reference
<i>A. inaequiglumis</i> (Malla & Kanai 674863)	Nepal	Palea absent	Present	
<i>A. inaequiglumis</i> (Hooker s. n.)	Sikkim	1/8	Present	Bjorkman (1960)
<i>A. gigantea</i> (Samuelsson)	Sweden	5/8	Tendency towards trichodium net	Bjorkman (1960)
<i>A. micrantha</i> (Polunin 755)	Nepal	1/3	Present	Bjorkman (1960)
<i>A. micrantha</i> (Kanai et al. 674604)	Nepal	1/3	Prominently present	
<i>A. munroana</i> (Kanai et al. 772994)	Nepal	1/3	Prominently present	
<i>A. myriantha</i> (Hara et al. s. n.)	Nepal	1/3	Present	
<i>A. nervosa</i> (Stainton et al. 4412)	Nepal	1/3	Present	
<i>A. pilosula</i> var. <i>pilosula</i> (Kanai et al. 6302069)	Nepal	1/3	Prominently present	
<i>A. pilosula</i> var. <i>wallichiana</i> (Stainton, et al. 3586)	Nepal	1/3	Prominently present	
<i>A. stolonifera</i> (Samuelsson)	Sweden	7/10	Fragmentarily developed	Bjorkman (1960)
<i>A. zenkeri</i> (Numata 1600)	Nepal	5/8	Absent	

(1971) also found the same relationships in the eastern Fennoscandian *Agrostis* species and he emphasized the lemma surface structure as the most useful character. But Bjorkman studied only a few Nepalese *Agrostis*. So, the feature of the lemma surface and the correlation between the size of palea and the presence of trichodium net is not certain in the Nepalese species. In the present study the author has done for the first time the seven species of Nepalese *Agrostis* using scanning electron microscope (Tab. 1). Except *A.*

zenkeri, which has larger palea, other species have small paleas and show well-developed trichodium nets on their outer surfaces (Fig. 1).

Key to the Nepalese species of *Agrostis*

- 1 a. Lemmas hairy on the back 2
 b. Lemmas glabrous 4
- 2 a. Lemmas not awned or awn, if present, very short, or hardly visible
 beyond the glumes 3) *A. munroana*
 b. Lemmas awned, awn always exserted 3
- 3 a. Panicle very effuse; branches 6-10 cm long, bare in the lower half;
 spikelets greenish or greenish-yellow 6a) *A. pilosula* var. *pilosula*
 b. Panicle contracted; branches shorter, spikelets greenish or purplish ..
 6b) *A. pilosula* var. *wallichiana*
- 4 a. Lemmas awned 5
 b. Lemmas not awned 6
- 5 a. Two lateral nerves of the lemma produced into long awns, rhachilla
 produced penicillate 8) *A. triaristata*
 b. The lateral nerves of the lemma are not produced into long awns,
 rhachilla not produced 9) *A. hookeriana*
- 6 a. Palea half as long as the lemma or longer 7
 b. Palea absent, or less than half the length of the lemma 9
- 7 a. Callus hairy 7) *A. zenkeri*
 b. Callus glabrous 8
- 8 a. Rhizomes present, panicle very effuse in fruit 11) *A. gigantea*
 b. Rhizomes absent, panicle closed in fruit 12) *A. stolonifera*
- 9 a. Leaves more than 5 mm broad 4) *A. myriantha*
 b. Leaves less than 4 mm broad 10
- 10 a. Panicle dense, contracted, not more than 0.6 cm broad
 1) *A. inaequiglumis*
 b. Panicle effuse, spreading, at least more than 0.6 cm broad 11
- 11 a. Leaves capillary, slender dwarf plants 10) *A. sikkimensis*
 b. Leaves not capillary, up to 4 mm broad, not dwarf plants 12
- 12 a. Glumes 2.5 mm long or more, lemma more than 1.5 mm long
 5) *A. nervosa*
 b. Glumes 2 mm long or less, lemma 1.5 mm long or less ..2) *A. micrantha*



Systematic treatment

1) ***Agrostis inaequiglumis*** Griseb. in Nachr. Ges. Wiss. Göttingen 1868: 80 (1868); Bor, Grass. Ind. 387 (1960); Hara et al., Enum. Fl. Pl. Nepal 1: 120 (1978). [Figs. 1F, 2(5)]

A dense caespitose annual grass. Culms up to 20 cm long, erect or slightly geniculate below, usually with 2 brown nodes. Leaf-sheaths split to near the base, terete, striate, smooth or rough, close fitting, green. Ligule 1.2 mm long, membranous. Blade up to 3.5 cm long and 1.5 mm broad, broadest above the base, green, lower usually convolute, upper flat, apex acuminate, surface and margin scabrid. Panicle up to 4.5 cm long and 0.5 cm wide, speciform, dense flowered, branches up to 1.5 cm long, flowering to the base, pedicels 0.6-1.6 mm long, smooth. Spikelets 2-2.3 mm long, 0.5 mm broad, lanceolate, green, or dark purple. Lower glume 2-2.3 mm long and 0.75 mm broad when flattened, ovate-lanceolate, acute, 1-nerved, scabrous on the upper half of the keel. Upper glume 1.6-2 mm long and 0.65 mm broad when flattened, ovate-lanceolate, acute, 1-nerved, scabrid on the upper half of the nerve. Lemma 1.2-1.4 mm long and 1 mm broad when flattened, broadly ovate, membranous, 5-nerved, apex truncate, lacerate, trichodium net present, prickle hairs invisible. Calls naked. Palea absent. Anthers 0.5 mm long. Fruit 1 mm long.

Habitat: On open grassland of subalpine and alpine regions.

Distribution: E. Himalaya (Nepal, Sikkim).

Specimens examined: C. Nepal. Gadge-Surja Kunda, alt. 4000 m (Malla & Kanai 674863, τ_1); south-west on the Dhaulagiri Range and east of the main trail from Dhorpatan to Tarakot via Jangla Banjyang (Fox 4A, τ_1).

A. inaequiglumis is commonly found growing gregariously in the alpine regions and is the only species in Nepal with densely contracted panicles. This species is similar to *A. mackliniae* Bor of Burma in having glabrous awnless lemmas, insignificant palea and dense and contracted panicle but the glumes and anther size are larger in the latter species.

2) ***Agrostis micrantha*** Steudel, Syn. Pl. Glum. 1: 170 (1854); Bor, Grass. Ind. 388 (1960); Hara et al., Enum. Fl. Pl. Nepal 1: 120 (1978).

[Figs. 1D, 2 (1, 2)]

Fig. 1. The lemma surface of *Agrostis*. A. *Agrostis zenkeri* (Numata 1600). B. *A. munita* (Kanai et al. 672994). C. *A. myriantha* (Hara et al. s.n.). D. *A. micrantha* (Kanai et al. 674604). E. *A. nervosa* (Stainton, Sykes & Williams 4412). F. *A. inaequiglumis* (Malla & Kanai 674863). All \times ca 1200.

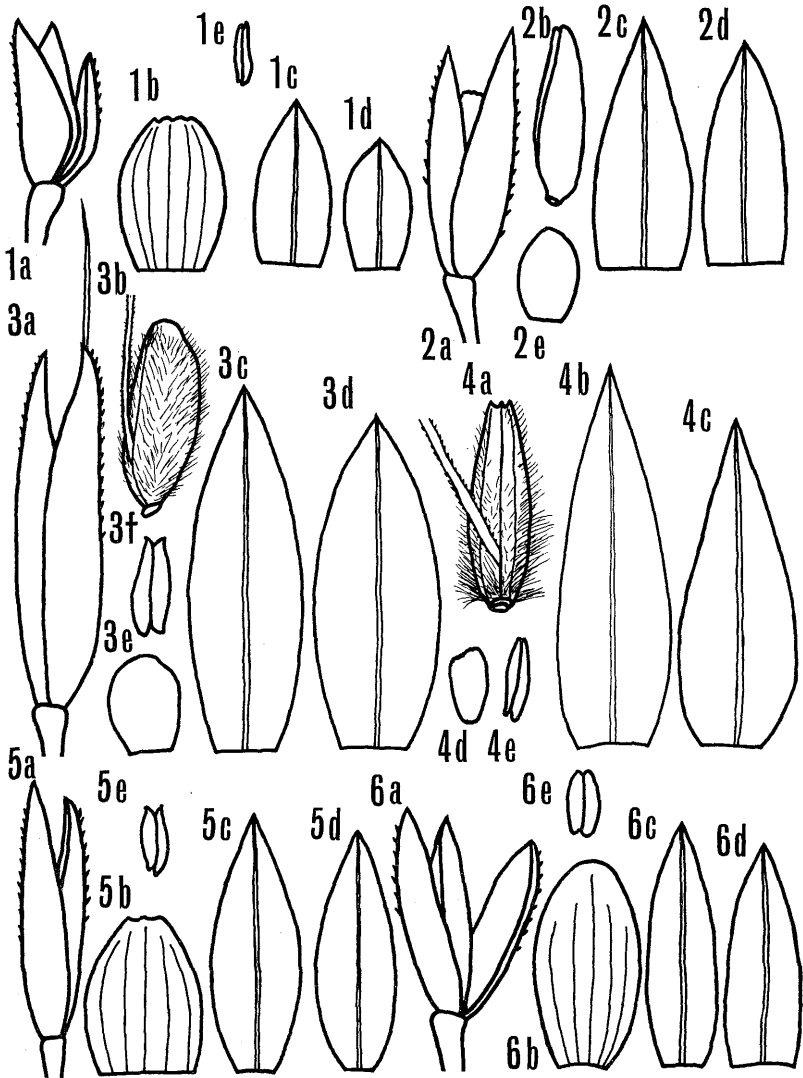


Fig. 2. Spikelet, bracts and anther of *Agrostis*. 1. *Agrostis micrantha* (Kanai et al. 674604). 2. *A. micrantha* (Tateoka 296). 3. *A. pilosula* var. *wallichiana* (Stainton, Sykes & Williams 3586). 4. *A. pilosula* var. *pilosula* (Kanai et al. 6302069). 5. *A. inaequiglumis* (Malla & Kanai 674863). 6. *A. myriantha* (Hara et al. s.n.). a. Spikelet. b. Lemma. c. Lower glume. d. Upper glume. e in 1, 4, 5, 6. Anther. e in 2, 3. Palea. f. Anther. All $\times 30$.

An annual tufted grass. Culms 12-50 cm long, erect or geniculate below, green, usually with 3-4 brown internodes. Leaf-sheaths split to near the base, terete, striate, rough, close-fitting, green. Ligule 1.5-2 mm long, membranous, oblong, truncate, crenate. Blade 4-20 mm long, and 3-4 mm broad, flat, apex acuminate, surface and margin scabrid. Panicle 4-20 cm long and 2-10 cm wide, erect or nodding, ovoid or pyramidal, diffuse, branches capillary, smooth or rough, top clavate. Spikelets 1.4-1.8 mm long, lanceolate, green. Lower glume 1.4-1.8 mm long, 0.6-0.7 mm broad when flattened, oblong-lanceolate, acute, 1-nerved, keel scabrid. Upper glume 1.15-1.5 mm long, and 0.6 mm broad when flattened, oblong-lanceolate, acute, 1-nerved, scabrid on the upper half of the nerve. Lemma 1.35-1.5 mm long and 1-1.1 mm broad when flattened, broadly ovate, membranous, faintly 5-nerved, apex truncate, crenate, surface with prominent trichodium net, prickle hairs scatteredly present. Callus naked. Palea absent or 0.5 mm long, membranous, nerveless. Anther 0.5 mm long. Fruit 0.8-1 mm long, linear-oblong.

Habitat: In subalpine regions.

Distribution: E. Himalaya (Nepal, Sikkim), Assam (Khasia) and Burma.

Specimens examined: Nepal. C. Nepal, Thulo Thinsang, alt. 3200 m (Kanai, Shrestha & Adhikari 674604, T1); E. Nepal, Selap-Walunchung Gola (Murata 6302060, T1). India. Darjeeling (Tateoka 296, TNS).

The nearest related species of *A. micrantha* in the Himalaya is *A. nervosa* Nees ex Trin., but the larger size of the glumes and lemmas of the latter are distinguishing characters from the former.

3) ***Agrostis munroana*** Aitch. & Hemsley in J. Linn. Soc. Bot. 19: 192 (1882); Bor, Grass. Ind. 388 (1960); Hara et al., Enum. Fl. Pl. Nepal 1: 120 (1978). [Figs. 1B, 3(3)]

Calamagrostis munroana Boiss., Fl. Orient. 5: 523 (1884).

An annual caespitose grass. Culm 12 cm long, erect, slender, glabrous or scaberulous, green, with 1 or 2 nodes, leaves mostly crowded at the basal part. Leaf-sheath split to the base, terete, striate, smooth, green. Ligule 1 mm long, oblong, membranous. Blade 2 cm long and 1 mm broad, flat, linear, acuminate, glabrous. Panicle effuse, oblong or pyramidal, 5 cm long and 2 cm broad, branches capillary. Spikelets 2.1-2.4 mm long, lanceolate, green or purplish. Lower glume 2.1-2.4 mm long, 1 mm broad when flattened, oblong-lanceolate, acute, 1-nerved, scabrid on the upper half of the keel. Upper glume

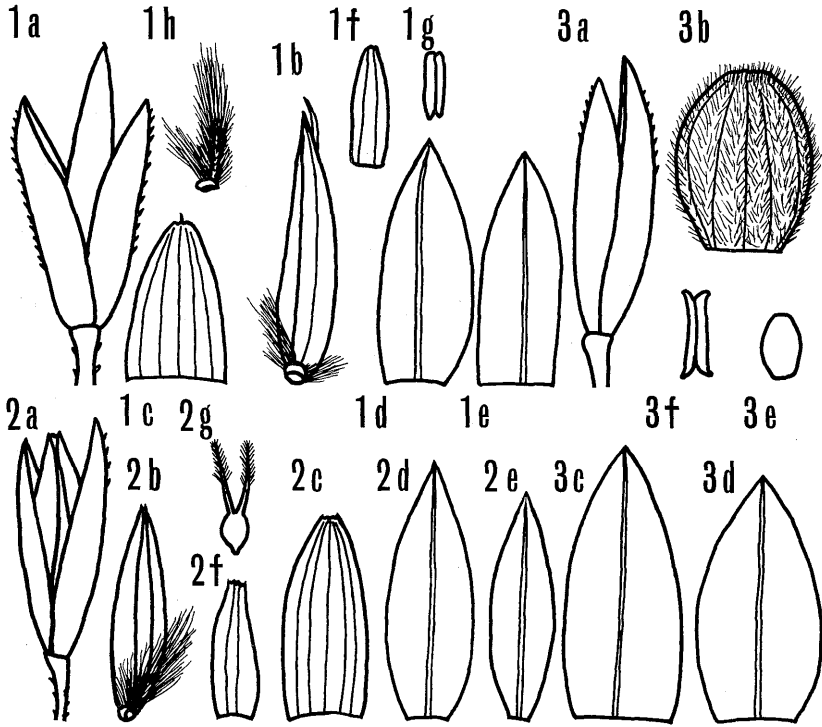


Fig. 3. Spikelet, bracts, anther and carpel of *Agrostis*. 1. *Agrostis zenkeri* (Numata 1600). 2. *A. zenkeri* (Kanai et al. 6302070). 3. *A. munroana* (Kanai et al. 672994). a. Spikelet. 1b, 2b. Lateral view of lemma. 1c, 2c, 3b. Lemma. 1d, 2d, 3c. Lower glume. 1e, 2e, 3d. Upper glume. 1f, 2f, 3e. Palea. 1g, 3f. Anther. 2g. Carpel. h. Rhachilla. All $\times 30$.

2-2.1 mm long, 1 mm broad when flattened, ovate-lanceolate, acute, 1-nerved, scabrid on the upper part of the nerve. Lemma 1.5-1.6 mm long and 1.15 mm broad, broad ovate, truncate, crenate, 5-nerved, hairy all over on the back, trichodium net prominently present on the surface, very few prickly hairs present. Callus shortly hairy. Palea 0.5-0.6 mm long, membranous, nerveless. Anther 0.7 mm long.

Habitat: In the subalpine and alpine grasslands.

Distribution: Iran, Afghanistan and Himalaya (Kashmir to Nepal).

Specimen examined: C. Nepal, Magarcheko Danda, alt. 3400 m (Kanai, Shrestha & Adhikari 672994. T1).

Both hairy surface of lemma and absence or insignificantly presence of awn distinguish this species from others. Hooker (1896) and Bor (1920) described the palea nearly as long as the lemma or at least longer than half the lemma but in our case the palea is only one-third of the lemma. The length of palea seems to be rather variable.

4) **Agrostis myriantha** Hook. f., Fl. Brit. Ind. 7: 257 (1896); Bor, Grass. Ind. 388 (1960); Hara et al., Enum. Fl. Pl. Nepal 1: 120 (1978).

[Figs. 1C, 2(6)]

An annual grass. Culms suberect or geniculate below, 30-60 cm long, green usually with 2-4 brown nodes. Leaf-sheaths split to the base, terete, striate, close-fitting, green, smooth. Ligule 4-5 cm long, membranous, oblong, truncate, lacerate, scaberulous. Blade 4-12 cm long and 0.5-1.2 cm broad, broadly linear-lanceolate, acuminate, margin scaberulous. Panicle 8-25 cm long and 1.5-4 cm broad, elliptic or cylindrical, erect, dense-flowered, rachis somewhat stout, branches many in many fascicles, often flowering to the base, sometimes naked for half their length. Pedicel 0.5-2.2 mm long, scaberulous. Spikelets 1.5-2 mm long, lanceolate, green. Lower glume 1.5-2 mm long, 1.3 mm broad when flattened, oblong, subacute, 1-nerved, scaberulous on the keel. Upper glume 1.4-1.8 mm long, 1.3 mm broad when flattened, oblong, subacute, 1-nerved, scaberulous on the keel. Lemma 1.3-1.7 mm long, 1 mm broad when flattened, broadly ovate, glabrous, 5-nerved, trichodium net present on the surface, prickle hair invisible. Callus naked. Palea 0.5 mm long, membranous, nerveless. Anther 0.3-0.4 mm long.

Habitat: On the temperate regions.

Distribution: E. Himalaya (Nepal, Sikkim) and Assam (Naga, Khasia Hills).

Specimens examined: C. Nepal, Godavari-Phulchauki, alt. 2700-3000 m (Hara, Kurosawa & Ohashi s.n., τ_1). India. Darjeeling-Kalimpong, alt. 2150-1300 m (Murata, Ohashi, Tanaka & Yamazaki 2818, τ_1).

A. myriantha is related to *A. nervosa* Nees ex Trin. and *A. micrantha* Steudel, but is readily distinguishable from those with robust and broader leaves reaching more than 5 mm broad.

5) **Agrostis nervosa** Nees ex Trin. in Mém. Acad. Sci. St.-Pétersb. ser. 6, 6: 328 (1841); Bor, Grass. Ind. 388 (1960); Hara et al., Enum. Fl. Pl. Nepal 1: 120 (1978).

[Figs. 1E, 4]

Agrostis clarkei Hook. f., Fl. Brit. Ind. 7: 257 (1896).

An annual grass. Culms up to 45 cm long, slender, erect or geniculate below, with 2-3 brown nodes. Leaf-sheaths split to near the base, terete, green, smooth. Ligule 1-2 mm long, membranous, smooth. Blade 6-8 cm long and up to 2 mm wide, lower filiform, upper flat, linear, acuminate, scaberulous, green. Panicle 3-12 cm long, 0.5-6 cm broad, cylindrical or pyramidal, branches capillary, spreading in fruit, smooth or scaberulous, lower in whorls. Pedicel up to 3 mm long, smooth or scaberulous. Spikelets 2.7-3.5 mm long, lanceolate, green or dark purple. Lower glume 2.7-3.5 mm long, and 0.75-1.3 mm broad when flattened, oblong- or elliptic-lanceolate, acute or acuminate, 1-nerved, keel scabrid. Upper glume 2.6-3.15 mm long, elliptic-lanceolate, acute, 1-nerved, scabrid on the upper part of the nerve. Lemma 1.5-2.4 mm long, ovate-oblong, truncate, crenate, hyaline, 5-nerved, trichodium net prominently present on the surface, prickle hairs scattered. Callus glabrous or slightly hairy. Palea 0.5-0.8 mm long, membranous, nerveless. Anther 0.5 mm long.

Habitat: In temperate to alpine regions; on moist places.

Distribution: Pakistan and E. Himalaya (Nepal, Sikkim).

Specimens examined: Nepal. Above Sauwala Khola, alt. 14000 ft. (Stainton, Sykes & Williams 4412, TNS); C. Nepal, south-west on the Dhaulagiri Range and east of the main trail from Dhorpatan to Tarakot via Jangla Banjyang, alt. 14500 ft. (Fox 11A TI). Bhutan. Cheka, alt. 3900 m (Nishioka s.n., TI).

The apex of the lower glume in the specimens examined is acute and not acuminate as described by Hooker (1896) and Bor (1960), but the size of the glumes, lemmas and others fit to this species. The nearest related species is apparently *A. micrantha*. The surface structure of the lemmas of these two species is indistinguishable from each other. Both species have prominent trichodium nets and scattered prickle hairs (Fig. 1D, E) and their vegetative characters are almost similar to each other. There are some variations in the spikelet structure among specimens examined. One specimen collected in Bhutan (Nishioka s.n.) has more acute apex of the lower glume, tendency to become acuminate (Fig. 4).

6) ***Agrostis pilosula*** Trin. in Mém. Acad. Sci. St.-Petersb. ser. 6, 6: 372 (1841); Bor, Grass. Ind. 388 (1960); Hara et al., Enum. Fl. Pl. Nepal 1: 120 (1978). [Fig. 2(3, 4)]

Calamagrostis pilosula (Trin.) Hook. f., Fl. Brit. Ind. 7: 265 (1896).

Calamagrostis jacquemontii Hook. f., Fl. Brit. Ind. 7: 265 (1896).

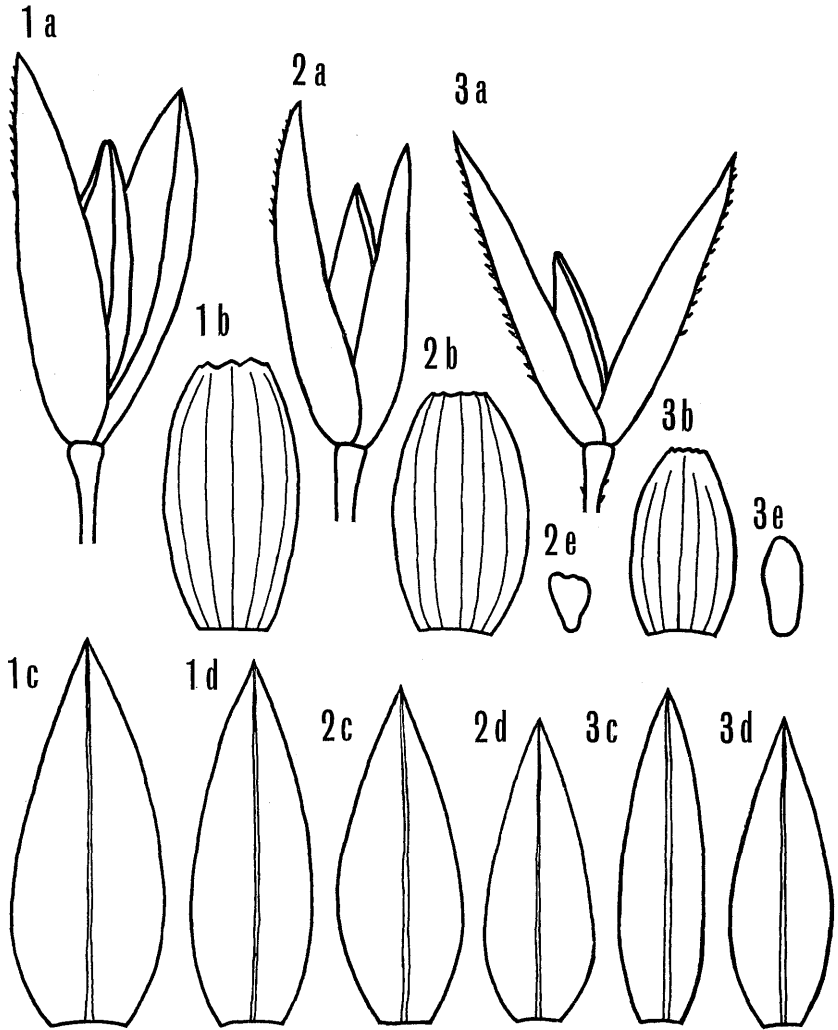


Fig. 4. Spikelet and bracts of *Agrostis nervosa*. a. Spikelet. b. Lemma. c. Lower glume. d. Upper glume. e. Palea. 1. Fox 11A. 2. Stainton, Sykes & Williams 4412. 3. Nishioka s.n. All $\times 30$.

6a) var. **pilosula**

[Fig. 2(4)]

An annual grass. Culms up to 1 m long, slender, erect or geniculate below, smooth, green, with 2-3 brown nodes. Leaf-sheaths split to the base, terete, striate, smooth. Ligule 1-2 mm long, oblong, obtuse, membranous. Blade up to 25 cm long, and 3 mm broad, linear-acuminate, flat, scaberulous, green. Panicle effuse or contracted, up to 25 cm long and 8 cm broad, lower branches 4-5-nately whorled, upper 2-nately, naked below and with loosely crowded spikelets above. Pedicel 1.6-4.6 mm long, scabrid. Spikelets 3-3.6 mm long, lanceolate, green. Lower glume 3-3.6 mm long, and 1 mm broad, when flattened, ovate- or elliptic-lanceolate, acute, 1-nerved, keel scabrid. Upper glume 2.8-3.2 mm long, elliptic-lanceolate, acute, 1-nerved, scabrid on the upper part of the nerve. Lemma 1.8-2 mm long, oblong truncate, erose, hairy all over on the back, awned from sub-basal part of the mid-vein, awn 4-4.3 mm long, scabrid, trichodium net prominently present, prickle hairs commonly present. Callus hairy. Palea 0.5-0.65 mm long, membranous, nerveless. Anther 0.7-1 mm long. Styles 2. Stigmas plumose.

Habitat: In temperate to alpine slopes.

Distribution: Himalaya (Kashmir to Sikkim) and India.

Specimens examined: C. Nepal, south-west on the Dhaulagiri Range and east of the main trail from Dhorpatan to Tarakot via Jangla Banjyang (Fox 11B, TI); E. Nepal, Helok-Baroya Khimty (Kanai, Murata & Togashi 6302069, TI); E. Nepal, Sinduwa, Dhankuta Distr., alt. 1100 m (Hara, Kanai, Kurosawa & Murata 6302063, TI).

6b) var. **wallichiana** (Hook. f.) Bor in Kew Bull. 1954: 459 (1954); Hara et al., Enum. Fl. Pl. Nepal 1: 120 (1978). [Fig. 2(3)]

Calamagrostis pilosula var. *wallichiana* Hook. f., Fl. Brit. Ind. 7: 264 (1896).

This variety has contracted panicles, 0.5-1.5 cm broad and spikelets green as well as dark purple.

Habitat: In subalpine and alpine grasslands.

Distribution: E. Himalaya (Nepal, Sikkim).

Specimens examined: Nepal, above Sauwala Khola, alt. 12500 ft. (Stainton, Sykes & Williams 3586, TNS).

A. pilosula can be distinguished from all other species in the Himalaya by the hairy lemma, a stout awn about 4 mm long coming out from the sub-basal part of the mid-vein and minute palea. There is a wide range of variations,

so that, Bor (1969) has recognized five varieties. In the specimens examined var. *wallichiana* has contracted panicles and most of the spikelets are dark purple, otherwise all the other characters are similar to var. *pilosula*.

7) ***Agrostis zenkeri*** Trin. in Mém. Acad. Sci. St.-Pétersb. ser. 6, 6:363 (1841); Bor, Grass. Ind. 392 (1960); Hara et al., Enum. Fl. Pl. Nepal 1: 121 (1978).

[Figs. 1A, 3(1, 2)]

Deyeuxia abnormis Hook. f., Fl. Brit. Ind. 7: 258 (1896).

An annual grass. Culms up to 70 cm long, suberect or geniculate below, terete, smooth, pale green, with 2 to more than 5 nodes. Leaf-sheaths splitting to the base, terete, striate, scaberulous, green. Ligule 1-2 mm long, oblong, membranous, rough. Blade linear-acuminate, up to 11 cm long and 4 mm broad, flat, scabrid, green. Panicle up to 20 cm long and 8 cm wide, effuse, branches 3-4-nate, capillary, smooth. Pedicels up to 7 mm long, dilated at the apex, scaberous. Spikelets 2.25 mm long, green or purplish. Lower glume 2.25 mm long and 0.65 mm broad when flattened, oblong- or elliptic-lanceolate, acute, 1-nerved, keel scabrid. Upper glume 1.9-2 mm long, 0.5 mm broad when flattened, oblong- or elliptic-lanceolate, acute, 1-nerved. Lemma 1.7-1.9 mm long, ovate, truncate, crenulate, 5-nerved, unawned or with a very short awn just below the tip, awn 0.4 mm long, trichodium net not present on the surface, prickle hairs commonly present. Callus hairy, hairs 1 mm long, rhachilla produced, penicillate, 0.4 mm long. Palea 1.1 mm long, truncate, 2-nerved, 2-keeled, hyaline. Anthers 0.5 mm long. Styles 2. Stigmas plumose.

Habitat: On open grassland of subtropical and temperate regions.

Distribution: E. Himalaya (Nepal, Sikkim) and Assam.

Specimens examined: Jiri (Numata 1600, TNS); E. Nepal, Zongi-Iladanda (Kanai, Murata & Togashi 6302070, TI).

The nearest related species of *A. zenkeri* is *A. nagensis* Bor of Naga Hills (Assam). Both species have larger palea, and rhachilla produced but Bor (1969) described the upper glume of the latter as acuminate whereas *A. zenkeri* has acute upper glume. The two-nerved and two-keeled palea and penicillate rhachilla distinguish *A. zenkeri* from other species in Nepal.

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Bjorkman (1960) や Widén (1971) はヌカボ属では短かい内穎を有する種は護穎外皮に顕著な網目構造 (trichodium net という) ができることを明らかにした。しかし、

ヒマラヤ産種については、その構造や内穎の長さとの関係は不明であった。今回、走査型電子顕微鏡により 7 種のネパール産種について検討を行ったところ、これまでの分類と一致する結果が得られた。さらに小穂、葉舌などの形態について比較を行い、ネパール産種の分類について検討を行った。検索表に示すように、ネパールのヌカボ属は Hara et al. (1978) が行ったように 12 種 1 変種に分類される。各種について記載を行うが、本編ではそのうち 7 種を扱った。

○高等植物分布資料 (112) Materials for the distribution of vascular plants in Japan (112)

○サツマハギ *Lespedeza satsumensis* Nakai 北緯 32°, 東経 128° 21' に位置する男女群島 (長崎県) は日本列島の生物地理に関連して興味ある小群島である。その植物相と植生は竹内 (1936), 外山ら (1968), 植松ら (1973), 伊藤・中西 (1984) などによって報告されている。

1984 年 10 月に日本野生生物研究センターの斉藤秀生氏が女島の高岳 (海拔約 280 m) でサツマハギ (*Lespedeza satsumensis* Nakai) を採集した。本種はすでに竹内が本群島から記録していたが、疑問視されていた。国内の主要標本庫にもその証拠となる標本は蔵されていない。

女島では、サツマハギの基準産地である薩摩磯間山のような、凝灰岩質の基岩の露出した瘦せた稜線部に生育していたとのことで、採集された個体は形のうえで基準標本とよく合致するものであった。ただ、茎と花序軸の毛は伏毛型で、葉の表面の毛は薩摩半島の個体に較べて少ない。本誌 58 巻で述べたように (Akiyama & Ohba 1983), サツマハギは本州中部以西、九州北西部、朝鮮半島に分布するビッチェウヤマハギ (*Lespedeza kiusiana* Nakai) と形態的には大きな違いは見い出されない。従って、男女群島でのサツマハギの再発見は、今後の両種の分類学的考察に大きな意義をもつと思われる。

同群島で昆虫相調査のかたわら、植物資料を収集し提供くださった、斉藤秀生氏にお礼申し上げます。
(東京大学 総合研究資料館 大場秀章 Hideaki OHBA)

□平田正一：宮崎県植物誌 377pp. 1984. 宮崎日日新聞社, 宮崎, ¥8000. 宮崎県植物研究の長老 平田氏の長年にわたる調査の集大成である。目録は紙数の関係から産地記録は簡略化されている。その他に文献目録, 植物方言, 地名索引などが付けくわえられている。
(金井弘夫)