



JUNGERMANNIA (SOLENOSTOMA) FAURIANA BEAUVD. FROM GAUMUKH

By: Dr. Panzy Singh

Jungermannia (Solenostoma) Fauriana was first time reported by Beauvd in the Year (1924) later reported by Stephen (1917) as Jungermannia decurrens. It has Rhizoids Purple/few, Short Scattered. Perianth pyriform, tetra-plicate, perigynium Underdeveloped. It belong to section fauriaceae of Jungermannia.

JUNGERMANNIA (SOLENOSTOMA) FAURIANA BEAUVD.

Jungermannia (Solenostoma) fauriana Beauvd. Steph. Spec. Hepat. 6: 571 (1924), non altern: Amakawa, Journ. Hatt. Bot. Lab. 22: 68 (1960): Srivastava and Singh, Lindbergia 14: 3 (1988).

Jungermannia decurrens Steph., Spec. Hepat. 6: 85 (1917).

Haplozia reniformia Horik., Jour. Sci. Hiroshima Univ. 2, 2: 143 (1934).

Jungermannia reniformia Horik., Jour. Sci Hiroshima Univ. 2, 2: 143 (1934).

Jungermannia reniformia (Horik.) Hatt., Bull. Tokyo Sci. Mus. 11: 32(1944).

Jungermannia decurrens (Steph.) Hatt., Jour. Hatt. Bot. Lab. 12: 88 (1954)

(Plate-1, Figs. 1-14)

Plants in tufts, 15-30 mm long, 1-2 mm wide, dark brown, Stem erect, simple, rigid, 0.2-0.3 mm or 16-17 cells across the diameter, outer most layer of the cortex thick walled, medullary cells thin walled, medullary cells thin walled. Subfloral innovations present. Rhizoids few, short, scattered (not forming fascicle), present at leaf bases, purple, Leaves succubous, distant to imbricate, inserted on an inverted 'U' shaped line, longly decurrent both dorsally and ventrally, concave, when dry appressed to the stem, orbicular-reniform, 1.3-2.0 mm long, 1.5-2.5 mm wide, cells 10.2-17.0 x 6.8-17.0 μm along the leaf margin, 20.4-34.0 x 23.8-27.2 μm

in the middle and 30.6-64.6 x 17.0-37.4 µm at base, walls thin, trigones large, acute towards the margin, slightly bulging in the middle, small or indistinct at base, cuticle smooth.

Dioecious. Male inflorescence terminal bracts 9-10 pairs, ventricose, 1-1.8 mm long, 1.2-2.2 mm wide. Perianth pyriform, 2/3 exerted, 2.5-4.8 mm long, 1-1.5 mm wide, 4-plicate, mouth crenulate, beak present, perigynium undeveloped. Apical cells of perianth 13.6-20.4 x 10.2-20.4 µm, cells in the middle 17.0-37.4 x 10.2-37.4 µm, at the base 51.0-95.2 x 13.6-34.0 µm. Female bracts in one pair similar to cauline leaves, 1.4-2.3 mm long, 1.6-2.8 mm wide, nature sporophyte not observed.

Habitat: Terrestrial.

Type locality: Japan.

Distribution in India: Western Himalayas: Uttar Pradesh – Gaumukh.

Range: Japan, Korea and India (Srivastava and Singh, 1988).

Characteristics of the species:

1. Plants in tufts, 15-30 mm long, 1-2 mm wide, dark brown.
2. The outer most layer of the stem cortex thick walled.
3. Rhizoids purple, few and short, present at leaf bases.
4. Leaves, orbicular- reniform, inserted on an inverted 'U' shaped line, appressed to the stem.
5. Leaf cells thin walled, trigones acute-slightly bulging.
6. Oil-bodies grape cluster type, 2-4 in each cell.
7. Dioecious, Male inflorescence terminal, bracts 9-10 pairs.
8. Perianth pyriforms, tetra-plicate, perigynium undeveloped.

Following specimens have been examined:

LWU 133, *Jungermannia (Solenostoma) fauriana* Beauvd., Loc.: Gaumukh, alt. ca. 3,636 m, Habitat: on soil, Leg.: S.K. Pande and R.N. Misra, Det.: S.C. Srivastava and P. Singh.

Following Specimens from foreign Herbarium have been examined:

NICH *Jungermannia (Solenostoma) fauriana* Beauvd., Loc.: Japan, KYUSHU; Kagoshima, alt. ca 1500-1700 m, Habitat: on rock, Leg.: F. Mizokuti, Date: 21.7.1970, No. 116212.

NICH *Jungermannia* (*Solenostoma*) *fauriana* Beauvd., Loc.: Japan, Ins. Yakushima: intermt, Miyanoura dake et Hananoego, Leg.: S. Hattori, Date: 27.9.1940. No. 81595.

Jungermannia (*Solenostoma*) *fauriana* Beauvd. belongs to the section *Faurianae* and was reported for the first time from India by Srivastava and Singh (1988). Earlier this species was known from Japan and Korea.

J. (Solenostoma) fauriana Beauvd. is closely related to *J. (Solenostoma) cyclops* Hatt. However, the latter differs from the former in having orbicular, relatively smaller leaves (0.9-1 mm long and 1.2-1.3 mm wide) not appressed to the stem, terminal male inflorescence with only 5-6 pairs of bracts and longly clavate perianth. It further differs in having only 2 oil-bodies which lie apart from each other near opposite corners of the narrow cell lumen (Hattori, 1950).

Plants of *J. (Solenostoma) fauriana* also resemble *J. appressifolia* Mitt. in external appearance but the latter is totally different from *J. fauriana*. The former is a member of section *Desmorhiza* in which the rhizoids are colourless to brown and decurrent along the stem forming a distinct fascicle and the perianth is clavate-pyriform and (3) 4-5 plicate.

The oil-bodies and the male plants could not be studied in the Indian population as fresh plants were not available. However, Amakawa (1960) has reported 2-4 oil bodies of the grape cluster type in each cell of Japanese *J. Fauriana*. Male plants with 9-10 pairs of bracts have been studied from the Japanese specimens.

PLATE -1**Jungermannia (Solenostoma) fauriana Beauvd.**

(Figs. 1-14)

Fig. 1. Female plant, lateral view.

Fig. 2. Female plant showing subfloral innovations.

Fig. 3. Perianth with subfloral innovation.

Fig. 4. Leaf.

Fig. 5. Cross section of stem.

Fig. 6. Marginal cells of leaf.

Fig. 7. Median cells of leaf.

Fig. 8. Basal cells of leaf.

Fig. 9. T.S. Perianth.

Fig. 10. L.S. Perianth.

Fig. 11. Archegonia.

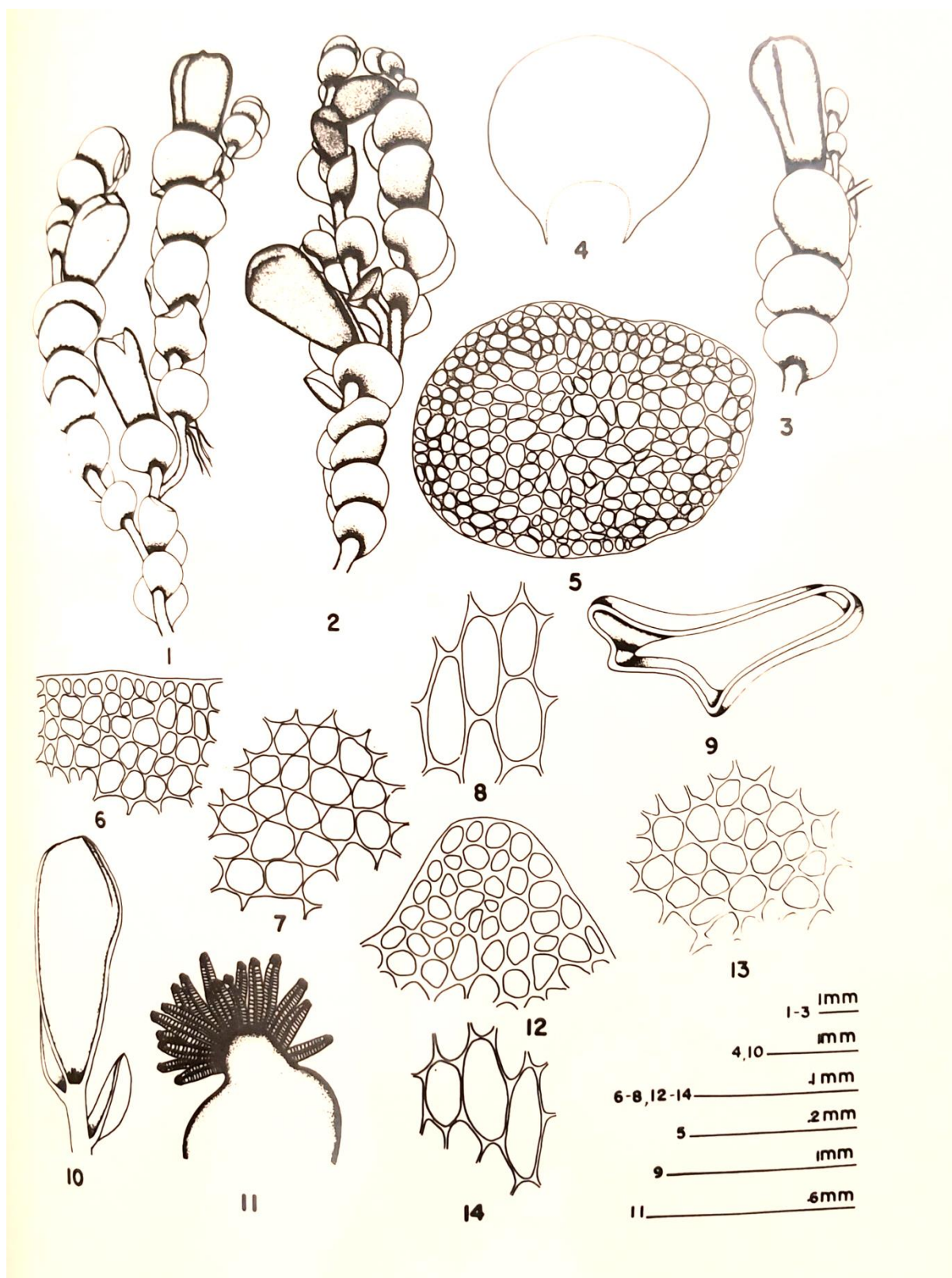
Fig. 12. Apical cells of perianth.

Fig. 13. Median cells of perianth.

Fig. 14. Basal cells of perianth.

All the figures are drawn from LWU 139.





References:

Amak (1960) Family Jungermanniaceae of Japan -11. Jour. Hattori Bot. Lab. 22: 1-90.

Stephani (1917) Species Hepaticarum VI. Geneve et Bale.

Horikawa (1934), Monographia hepaticarum australijaponicarum. Jour. Sci. Hiroshima Univ., Ser. B. Div. 2, 2(2): 101-325

Singh P. (1991) Studies in Indian Jungermannioideae with special reference to Jungermannia subg. Solenostoma Mitt Amak. Ph.D Thesis :(pgs. 74-80) ,Department of Botany, University of Lucknow, India.

