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Cover: The nine vultures of India, digital art made on Krita by Dupati Poojitha.



Recent additions and taxonomic changes in the liverwort and hornwort flora of India

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Singh et al. (2016) in their Checklist of Liverworts & Hornworts in India included 930 species, and infraspecific taxa. Later, Majumdar & Dey (2021) provided lists of taxa added to Indian bryoflora during 2016–2020 along with the list of taxa synonymized during this period. The updated list of taxa thus comprised 953 species and infraspecific taxa, belonging to 141 genera, 59 families, 17 orders, and four classes from two phyla. Of these, 854 species, 17 subspecies, 41 varieties, and two forma belonged to 135 genera in 56 families of liverworts and 39 species representing six genera in three families of hornworts.

However, just within a span of four years, 18 new species, one new subspecies have been described from India and 22 species have been newly reported from India. At the same time, three species and four varieties have been synonymized. Ali et al. (2024) while doing taxonomic studies on Indian Balantiopsidaceae, excluded the occurrence of *Isotachis armata* (Nees) Gottsche from India. According to Ali et al. (2024), *I. armata* was erroneously reported by Das & Singh (2007) from Arunachal Pradesh, India, as the specimens studied by them belongs to *Isotachis japonica* Steph. During this time, six genera, viz., *Barbilophozia* Loeske,

Dinckleria Trevis., *Diplasiolejeunea* (Spruce) Schiffn., *Gymnocolea* (Dumort.) Dumort., *Mesoptychia* (Lindb.) A.Evans, and *Saccogyna* Dumort. of liverworts and the genus *Phymatoceros* Stotler, W.T.Doyle & Crand.-Stotl. of hornworts have been added to the liverwort & hornwort flora of the country. Two families, one each from hornwort (*Phymatocerotaceae*), and liverwort (*Saccogynaceae*) were also recorded for the first time in India.

Presently, after all these changes, the number of taxa has soared to 986 species and infraspecific taxa belonging to 148 genera, 61 families, 17 orders, and four classes in two phyla. Of these, 890 species, 18 subspecies, 37 varieties, and two forma belongs to 141 genera in 57 families of liverworts, and 39 species representing six genera in four families of hornworts (See Tables 1, 2, & 3).

***Note:** Li et al. (2011) synonymised the genus *Hattorioceros* (J.Haseg.) J.Haseg. under *Phaeoceros* Prosk., but Majumdar & Dey (2021) missed out. So, presently in India there are six genera under Anthocerotophyta. Majumdar & Dey (2021) also missed out the occurrence of *Barbilophozia hatcheri* from India (Gupta et al. 2019). The same has been presently incorporated.

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Table 1. Alphabetic lists of taxa added to Indian bryoflora after publication of Majumdar & Dey (2021).

	Taxa	Family	Reference
1	<i>Acrolejeunea aulacophora</i> (Mont.) Steph.	Lejeuneaceae	Daniels 2021
2	<i>Barbilophozia barbata</i> (Schmidel ex Schreb.) Loeske	Anastrophyllaceae	Kour & Singh 2023
3	<i>*Barbilophozia hatcheri</i> (A.Evans) Loeske	Anastrophyllaceae	Gupta et al. 2019
4	<i>Barbilophozia lycopodioides</i> (Wallr.) Loeske	Anastrophyllaceae	Kour & Singh 2023
5	<i>Cheilelejeunea occlusa</i> (Herzog) T.Kodama & N.Kitag.	Lejeuneaceae	Kumar & Singh 2025a
6	<i>Cololejeunea devendrae</i> Shashi Kumar & D.Singh	Lejeuneaceae	Kumar & Singh 2025b
7	<i>Cylindrocolea devendrae</i> Manju & P.P.Nishida	Cephaloziellaceae	Manju et al. 2023
8	<i>Cylindrocolea mizoramensis</i> Sushil K.Singh	Cephaloziellaceae	Singh 2022
9	<i>Cyathodium udarii</i> D.Singh & D.K.Singh	Cyathodiaceae	Singh & Singh 2023a
10	<i>Dinckleria singularis</i> (Schiffn.) M.A.M. Renner, Schäfer-Verw. & Heinrichs	Plagiochilaceae	Singh Deo & Singh 2020
11	<i>Diplasiolejeunea cavifolia</i> Steph.	Lejeuneaceae	Chandini et al. 2021
12	<i>Diplasiolejeunea cobrensis</i> Gottsche ex Steph.	Lejeuneaceae	Chandini et al. 2021
13	<i>Frullania bolanderi</i> Austin	Frullaniaceae	Rawat et al. 2021
14	<i>Frullania sikkimensis</i> D.Singh & D.K.Singh	Frullaniaceae	Singh & Singh 2023a
15	<i>Gymnocolea inflata</i> (Huds.) Dumort.	Anastrophyllaceae	Arya et al. 2021
16	<i>Gymnomitrium udarii</i> D.Singh & D.K.Singh	Gymnomitriaceae	Singh & Singh 2023b
17	<i>Heteroscyphus planus</i> (Mitt.) Schiffn.	Lophocoleaceae	Zheng 2024
18	<i>Megaceros gracilis</i> (Reichardt) Steph.	Dendrocerotaceae	Majumdar & Singh 2025
19	<i>Mesoptychia morrisoncola</i> (Horik.) L.Söderstr. & Váňa	Jungermanniaceae	Singh & Singh 2021
20	<i>Phymatoceros binsarensis</i> A.K.Asthana, D.Shukla & Reesa Gupta	Phymatocerotaceae	Asthana et al. 2023
21	<i>Plagiochila dampensis</i> Sushil K.Singh & K.K.Rawat	Plagiochilaceae	Singh & Rawat 2020
22	<i>Plagiochila meagheriana</i> S.Majumdar & M.Dey	Plagiochilaceae	Majumdar & Dey 2025
23	<i>Plagiochila mizoramensis</i> Sushil K.Singh & K.K.Rawat	Plagiochilaceae	Singh & Rawat 2020
24	<i>Plagiochila ponmudiana</i> A.E.D.Daniels & S.R.Aishwarya	Plagiochilaceae	Daniels et al. 2024
25	<i>Plagiochila sirumalaiana</i> A.E.D.Daniels & Z.H.Williams	Plagiochilaceae	Daniels et al. 2024
26	<i>Plagiochila squamulosa</i> Mitt. subsp. <i>tamas-pocsii</i> Sajitha, Manju & Rawat	Plagiochilaceae	Sajitha et al. 2024
27	<i>Riccia atromarginata</i> Levier	Ricciaceae	Karadakatti & Betageri 2023
28	<i>Riccia boliviensis</i> Jovet-Ast	Ricciaceae	Asthana & Srivastava 2021
29	<i>Riccia junghuhniana</i> Nees & Lindenb.	Ricciaceae	Suresh & Cargill 2024
30	<i>Riccia keralensis</i> Manju, Chandini, Sushil K.Singh & K.P.Rajesh	Ricciaceae	Manju et al. 2021
31	<i>Riccia lamellosa</i> Raddi	Ricciaceae	
32	<i>Riccia okahandjana</i> S.W.Arnell	Ricciaceae	Suresh & Cargill 2022
33	<i>Riccia sarieae</i> A.E.D.Daniels & D.T.T.Daniels	Ricciaceae	Daniels & Daniel 2022
34	<i>Riccia stenophylla</i> Spruce	Ricciaceae	Athira & Daniels 2022
35	<i>Saccogyna darjeelingensis</i> M.Dey & S.Majumdar	Saccogynaceae	Dey & Majumdar 2022
36	<i>Scapania bhutanensis</i> Amak.	Scapaniaceae	Rawat et al. 2024; Zheng 2025
37	<i>Scapania karl-muelleri</i> Grolle	Scapaniaceae	Rawat et al. 2024
38	<i>Scapania lachungensis</i> D.Singh & D.K.Singh	Scapaniaceae	Singh & Singh 2023b
39	<i>Scapania spiniloba</i> Potemkin	Scapaniaceae	Singh & Singh 2023b
40	<i>Solenostoma vidyasagarianum</i> "vidyasagariensis" Sk. R.Islam, A.K.Mondal & D.Singh	Solenostomataceae	Islam et al. 2025
41	<i>Telaranea mizoramensis</i> Sushil K.Singh	Lepidoziaceae	Singh 2022

Table 2. Alphabetic lists of taxon synonymized.

	Taxa	Family	Reference
1	<i>Folioceros paliformis</i> D.K.Singh = <i>Folioceros kashyapii</i> S.C.Srivast. & A.K.Asthana	Anthocerotaceae	Singh Deo & Majumdar 2021
2	<i>Jubula hattorii</i> Udar & V.Nath = <i>Jubula hutchinsiae</i> (Hook.) Dumort. subsp. <i>javanica</i> (Steph.) Verd.	Jubulaceae	Singh & Singh 2023a
3	<i>Jubula hattorii</i> Udar & V.Nath var. <i>mutukuzhiana</i> A.E.D.Daniels & P.Daniel = <i>Jubula hutchinsiae</i> (Hook.) Dumort. subsp. <i>javanica</i> (Steph.) Verd.	Jubulaceae	Singh & Singh 2023a
4	<i>Lopholejeunea sikkimensis</i> var. <i>kumaunii</i> Kushwaha = <i>Lopholejeunea sikkimensis</i> Steph. var. <i>sikkimensis</i>	Lejeuneaceae	Priyanka et al. 2023
5	<i>Lopholejeunea sikkimensis</i> var. <i>tenuicostata</i> Sushil K.Singh & D.K.Singh = <i>Lopholejeunea sikkimensis</i> Steph. var. <i>sikkimensis</i>	Lejeuneaceae	Priyanka et al. 2023
6	<i>Metzgeria furcata</i> (L.) Corda var. <i>ulvula</i> Nees = <i>Metzgeria furcata</i> (L.) Corda var. <i>furcata</i>	Metzgeriaceae	Singh & Singh 2023a
7	<i>Metzgeria assamica</i> S.C.Srivast. = <i>Metzgeria macrocellulosa</i> Kuwah.	Metzgeriaceae	Singh & Singh 2023a

Table 3. Taxon excluded from India.

	Taxa	Family	Reference
1	<i>Isotachis armata</i> (Nees) Gottsche sensu Sudipa Das & D.K. Singh (2007)	Balantiopsidaceae	Ali et al. 2024

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