

Botanical Notes

BRYOPHYTA EXSICCATA GENERIS PLAGIOCHILAE, A NEW EXSICCATA DISTRIBUTED BY THE UNIVERSITY OF GÖTTINGEN HERBARIUM

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In recent years considerable interest has been paid to the taxonomy and phytochemistry of *Plagiochila*, the largest genus of hepatics with more than 1600 published binomials worldwide (Inoue 1984), and perhaps the most difficult one (Schuster 1980).

Taxonomic views on the genus are changing rapidly and many taxa have been placed in synonymy recently (e.g., Grolle & So 1999; Heinrichs & Gradstein 2000). Information on secondary metabolites has been published for nearly 100 *Plagiochila* species (Asakawa 1995).

Bryophyta Exsiccata Generis Plagiochilae presents carefully identified species from various parts of the world, especially from the Neotropics, where many species are still known only from the type. Particular importance is attached to the distribution of specimens which have been used for chemical investigations.

Bryophyta Exsiccata Generis Plagiochilae is being issued in irregular intervals in fascicles of 50 each, with 21 duplicate sets, but many specimens are available in up to 60 duplicates. 17 sets are regularly distributed by the University of Göttingen Herbarium to the following recipients: B, BM, CBG, Herb. Drehwald (Göttingen), E, Herb. Frahm (Bonn), G, GOET, Herb. Heinrichs (Göttingen), JE, KRAM, MO, NICH, NY, S, Herb. Schäfer-Verwimp (Herdwangen-Schönach), and W. Further sets or specimens are available on an exchange basis. Curators of herbaria interested

in receiving the series should write to the first author.

The following list of specimens makes up Fascicle 1 of *Bryophyta Exsiccata Generis Plagiochilae*. Chemistry vouchers are annotated by numbers in square brackets:

- [1] Anton *et al.* (in press)
- [2] Heinrichs *et al.* (2000)
- [3] Heinrichs *et al.* (in press)
- [4] Rycroft *et al.* (in press)
- [5] under study by Anton *et al.* (Saarbrücken)
- [6] under study by Rycroft *et al.* (Glasgow).

1. *Plagiochila buchtiniana* Steph.: Bolivia, Heinrichs *et al.* 4128 [2]
2. *Plagiochila tabinensis* Steph.: Costa Rica, Heinrichs *et al.* 4156 [3]
3. *Plagiochila retrorsa* Gottsche: Costa Rica, Heinrichs *et al.* 4151 [4]
4. *Plagiochila longispina* Lindenb. & Gottsche: Costa Rica, Heinrichs *et al.* 4148 [5]
5. *Plagiochila ovata* Lindenb. & Gottsche: Bolivia, Müller 7272
6. *Plagiochila aerea* Taylor: Costa Rica, Heinrichs *et al.* 4157
7. *Plagiochila ovata* Lindenb. & Gottsche: Costa Rica, Heinrichs *et al.* 4158
8. *Plagiochila dusenii* Steph. Argentina, Drehwald & Mues 3249 [1]
9. *Plagiochila adiantoides* (Sw.) Lindenb.: Costa Rica, Heinrichs *et al.* 4159 [5]
10. *Plagiochila subtrinitensis* Herzog: Costa Rica, Heinrichs *et al.* 4160 [5]

11. *Plagiochila subtrinitensis* Herzog: Costa Rica, *Heinrichs et al.* 4161 [5]
12. *Plagiochila vincentina* Lindenb.: Costa Rica, *Heinrichs et al.* 4162 [5]
13. *Plagiochila asplenioides* (L.) Dumort.: Germany, *Heinrichs* 4094
14. *Plagiochila deflexirama* Taylor: Costa Rica, *Heinrichs et al.* 4163
15. *Plagiochila deflexirama* Taylor: Costa Rica, *Heinrichs* 4165
16. *Plagiochila ovata* Lindenb. & Gottsche: Costa Rica, *Heinrichs et al.* 4169
17. *Plagiochila subtrinitensis* Herzog: Costa Rica, *Heinrichs et al.* 4170 [5]
18. *Plagiochila retrorsa* Gottsche: Portugal, *Drehwald & Reiner-Drehwald* 2993 [4]
19. *Plagiochila bifaria* (Sw.) Lindenb. Portugal, *Drehwald & Reiner-Drehwald* 3010
20. *Plagiochila alternans* Lindenb. & Gottsche: Bolivia, *Müller* 7032
21. *Plagiochila ambronii* Steph.: Bolivia, *Heinrichs et al.* 4255 [5]
22. *Plagiochila superba* (Nees ex Sprengel) Mont. & Nees: Costa Rica, *Heinrichs et al.* 4175 [5]
23. *Plagiochila subplana* Lindenb. French Guyana, *Gradstein* 5821
24. *Plagiochila disticha* (Lehm. & Lindenb.) Lindenb. Venezuela, *Davidse & Gonzáles* 21905
25. *Plagiochila carringtonii* (Balf.) Grolle subsp. *lobuchensis* Grolle: India, *Long* 22576
26. *Plagiochila maxima* Steph.: Bolivia, *Heinrichs et al.* 4259 [5]
27. *Plagiochila alternans* Lindenb. & Gottsche: Bolivia, *Heinrichs et al.* 4178 [5]
28. *Plagiochila pachyloma* Taylor: Ecuador, *Anton ECU 1* [5]
29. *Plagiochila ovata* Lindenb. & Gottsche: Costa Rica, *Gradstein & Mues* 9718
30. *Plagiochila longiramea* Steph.: Bolivia, *Heinrichs et al.* 4179 [5]
31. *Plagiochila fuscolutea* Taylor: Bolivia, *Heinrichs et al.* 4180 [5]
32. *Plagiochila maxima* Steph.: Bolivia, *Anton et al. BOL 2* [5]
33. *Plagiochila rutilans* Lindenb.: Bolivia, *Heinrichs et al.* 4181 [6]
34. *Plagiochila longiramea* Steph.: Bolivia, *Heinrichs et al.* 4182 [5]
35. *Plagiochila maxima* Steph.: Bolivia, *Heinrichs et al.* 4257 [5]
36. *Plagiochila grandicrista* Steph.: Costa Rica, *Heinrichs et al.* 4183
37. *Plagiochila alternans* Lindenb. & Gottsche: Ecuador, *Mues* 6733
38. *Plagiochila diversifolia* Lindenb. & Gottsche: Bolivia, *Heinrichs et al.* 4184
39. *Plagiochila alternans* Lindenb. & Gottsche: Bolivia, *Heinrichs et al.* 4185 [5]
40. *Plagiochila alternans* Lindenb. & Gottsche: Bolivia, *Heinrichs et al.* 4186 [5]
41. *Plagiochila fuscolutea* Taylor: Bolivia, *Anton et al. BOL 1* [5]
42. *Plagiochila beskeana* Steph.: Bolivia, *Heinrichs* 4187
43. *Plagiochila aerea* Taylor: Bolivia, *Heinrichs et al.* 4188
44. *Plagiochila jamesonii* Taylor: Ecuador, *Anton ECU 4* [5]
45. *Plagiochila douinii* Steph.: Bolivia, *Heinrichs et al.* 4189 [5]
46. *Plagiochila filicina* Herzog: Bolivia, *Heinrichs et al.* 4190 [2]
47. *Plagiochila sciophila* Nees ex Lindenb.: Japan, *Hattori s.n.*
48. *Plagiochila fruticosa* Mitt.: India, *Long* 23002
49. *Plagiochila latissima* Steph.: Bolivia: *Heinrichs et al.* 4258 [5]
50. *Plagiochila cristata* (Sw.) Lindenb.: Costa Rica, *Heinrichs et al.* 4192

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REFERENCES

- ANTON H., HEINRICHS J., MUES R. & GRADSTEIN S. R. In press. Chemotaxonomical and morphological characterization of *Plagiochila dusenii* (Hepaticae), most closely related to *Plagiochila validissima*. *J. Hattori Bot. Lab.*
- ASAKAWA, Y. 1995. Chemical constituents of the bryophytes. – In: W. HERZ, E. W. KIRBY, R. E. MOORE, W. STEGLICH & C. TAMM (eds), *Progress in the chemistry of organic natural products*, 65: 1–618. Springer, Wien.

- GROLLE R. & SO M. L. 1999. Studies on *Plagiochila* sect. *Subtropicalae* in Asia. *Bryologist* **102**: 67–75.
- HEINRICHS J., ANTON H., GRADSTEIN S. R. & MUES R. 2000. Systematics of *Plagiochila* sect. *Glaucescentes* Carl (Hepaticae) from tropical America: a morphological and chemotaxonomical approach. *Pl. Syst. Evol.* **220**: 115–138.
- HEINRICHS J., ANTON H., GRADSTEIN S. R., MUES R. & HOLZ I. In press. Surface wax, a new taxonomic feature in Plagiochilaceae. *Pl. Syst. Evol.*
- HEINRICHS J. & GRADSTEIN S. R. 2000. A revision of *Plagiochila* sect. *Crispatae* and sect. *Hypnoides* (Hepaticae) in the Neotropics. I. *Plagiochila disticha*, *P. montagnei* and *P. raddiana*. *Nova Hedwigia* **70**: 161–184.
- INOUE, H. 1984. The genus *Plagiochila* (Dum.) Dum. in south-east Asia. Academic Scientific Book Inc., Tokyo.
- RYCROFT D. S., HEINRICHS J., COLE W. J. & ANTON H. In press. A phytochemical and morphological study of the liverwort *Plagiochila retrorsa* Gottsche new to Europe. *J. Bryol.*
- SCHUSTER R. M. 1980. The Hepaticae and Anthocerotae of North America, east of the hundredth meridian, 4. Columbia University Press, New York.

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