

*Presented to the Lyceum by (3)*

**SPECIMEN**

*J. E. Kay*

**FLORAE AMERICAE SEPTENTRIONALIS  
CRYPTOGAMICAE;**

SISTENS :

**MUSCOS HEPATICOS**

*Huc usque in Am. Sept. observatos.*

OR :

**SPECIMEN OF A SYSTEMATIC ARRANGEMENT AND  
DESCRIPTION OF THE**

**CRYPTOGAMOUS PLANTS**

**OF NORTH-AMERICA :**

COMPRISING A DIAGNOSTIC DESCRIPTION OF ALL THE

**HEPATIC MOSSES**

*Hitherto observed in North-America ; with ampler descriptions of a  
number of new species.*



**BY LEWIS D. DE SCHWEINIZ, D. P.**



**RALEIGH:**

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**1821.**

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RECEIVED

MAILED AT 11 O'CLOCK

1881

## PREFACE.

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THE AUTHOR of this little Work has, for a number of years, made the study of the Cryptogamous Plants of America the assiduous object of his leisure hours. He has succeeded in collecting a very considerable number in every division of these interesting, but generally minute plants, almost exclusively from the vicinity of his residence ; but has not hitherto, with a very few exceptions, been able to elicit from other friends of the science any considerable number of contributions. This is entirely owing, as he feels assured, to the circumstance, that, excepting the late Dr. Muhlenberg, no American Botanist appears to have devoted much of his attention to this branch of the Science ; while the want of a Systematic Synopsis of what has hitherto been observed and published, proves a great impediment and discouragement in taking it up, as a variety of expensive works must be procured, in order even to make the attempt. Conceiving it might facilitate the execution of a plan he has for some time entertained, of at length effecting the publication of a systematic arrangement of the Cryptogamous Plants of North-America, in the manner of Pursh's Flora of the Phanerogamous ones, he has determined to give to the public the present sheet, as a specimen of such a Work ; and has selected the smallest among its divisions for the purpose, in order, at the same time, to render this specimen useful, by its comprising a whole order or class of Cryptogamous Plants.

His intention chiefly is, thereby to make known his Plan, and to solicit all those who feel an interest in the success thereof, to furnish him with specimens of every kind from their respective vicinities. Such is the number of plants of this description, which he has individually met with, in his confined situation, that there can be no doubt of a much greater number still unobserved, in the immense extent of our country, and its variety of climates. Although true of every class of Cryptogamous vegetation, this is peculiarly the case with respect to the Fungi, which have been a particular object of the Author's attention. The number of these, already observed by him, in the western part of North-Carolina, approaches very near 1600 species, comprising more than 400 species not before known. Next to the Fungi, the Lichens appear numerous, and least known ; as he has determined a good number not heretofore described at all, and a very considerable number not before observed in America. The Mosses, both frondose and hepatic, seem to have been a little more attended to ; but, notwithstanding, there is every reason to believe, that our northern and southern mountains, and probably our southern swamps, still contain a great number of non-descripts. Before even

a Prodrômus of an American Cryptogamous Flora can be attempted, it will therefore be necessary to ascertain from the different regions of our continent, what are the treasures it contains—and the Author most earnestly and respectfully requests to be favoured with information and specimens from every quarter, in order to effect that object. A considerable collection of European specimens, determined by the best German Cryptogamists, an adequate collection of Books on most of the classes, and a pretty intimate acquaintance, especially with the Fungi of Europe, together with excellent instruments, have greatly assisted him in the exertions he has hitherto made—and he flatters himself, that those botanical friends, who have applied to him for communication of specimens, have been in some degree satisfied, by what he has been enabled to send them. The present work is destined to call the attention of Botanists to the subject; and if this should be effected, the Author will, with pleasure, from a consciousness of its unavoidable imperfections, consign it to oblivion. He has, however, been fortunate enough, to obtain specimens of almost every single hepatic moss hitherto noticed as indigenous to America, and to augment the number considerably, so that he entertains a hope, that the present sheet may prove useful, as far as it goes, in the determination of this class of Cryptogamous vegetables.

It only remains for him to state, that the Musci Hepatici are arranged according to *Dr. F. Weber's Historia Muscorum Hepaticorum, Kiel 1815*; that he has carefully compared them with European specimens, of which his collection contains the greater part; and that he has not ventured to establish a new species, unless absolutely convinced of its specific difference. The explanation of the signs and abbreviations made use of, will enable the Botanist to judge, what degree of confidence is due to the Author's determinations.

Besides the Work of *Dr. Weber* just cited, reference has been had throughout to *Dr. Schwagerichen's Prodrôm. Hist. Musc. Hepatic*; to *Michaux Flora Am. Borealis*; to *Dr. Muhlenberg's Catalogue*; to the Catalogue of New-York Plants, published by *Dr. Torrey*; and, in some instances, to *Dr. Roth's Flora Germanica*, the descriptions of the latter being particularly ample. Unfortunately, the Author has not been able to procure *Hooker's Monography of the Jungermannias*; nor *English Botany of Sowerby*; so that he was under the necessity of contenting himself with *Weber's* citations from these.

Ardently hoping that his attempt will be acceptable to American Botanists, notwithstanding its manifest imperfections; and that it may prove the means of doing them away in a future more comprehensive work, by eliciting the necessary corrections and information, the Author respectfully subscribes himself,

LEWIS D. DE SCHWEINITZ.

*Salem, Stokes County, North-Carolina.*

## EXPLANATION OF MARKS, &c.

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**v. v.** Signifies that American specimens have been examined by the Author in a fresh state.

**v. s.** That they have been examined in a dry state, or only revived.

**Coll. Europ.** That the American specimens have been compared with European ones.

**\*** An astericus signifies that the species has not before been observed in America.

† That the species is exclusively American.

‡ That the species has been named by the Author as a new one.

§ Before the number of the species, signifies that it is found about Salem.

# ESSENTIAL CHARACTERS

OF

## THE GENERA OF MUSCI HEPATICI.



1. JUNGERMANNIA. THECA quadrivalvis, nuda, setae imposita. SEMINUM elateres lineares.

2. MARCHANTIA. THECAE membranaceae, apice dethiscentes, reconditae in receptaculo comuni pedunculato. SEMINUM elateres capillares.

3. TARGIONIA. THECA subunivalvis. CALYX bivalvis. SEMINUM elateres nulli.

4. SPHAEROCARPUS. THECA globosa. CALYX magnus univalvis, apice perforatus.

5. ANTHOCEROS. THECA bivalvis linearis. SEMINUM elateres compressi. CALYX vaginalis.

6. BLASIA. THECA univalvis. SEMINUM elateres nulli. THECA tubo extrorsum coronata apice hiante.

7. RICCIA. THECA frondi immersa, univalvis.



### *This Work contains:*

58 species of JUNGERMANNIA,	* 30,	† 5,	‡ 9
6 " of MARCHANTIA,	* 1,	† 3	
1 " of TARGIONIA,	* 1,	† 1,	‡ 1
1 " of SPHAEROCARPUS,	* 1,		
5 " of ANTHOCEROS,	* 2,	† 2,	‡ 2
1 " of BLASIA,	* 1,		
4 " of RICCIA,	* 1,	† 1,	

76 species of Hepatics, of whom

\* 37, † 9, ‡ 15

The great number of species of *Jungermannias*, will render a conspectus of the subdivisions useful for the purposes of examination. They are divided into,

## JUNGERMANNIAE :

### I. CAULESCENTES.

#### † *Stipulatae* :

a. tripliciter :

b. simpliciter :

\* Foliis auriculatis :

\*\* Foliis non-auriculatis :

A. INTEGRIS :

1. *Stipulis bifidis v. bilobis* :

2. *Stipulis integris*.

B. DIVISIS :

1. *Emarginato-bidentatis*.

2. *Tri-quadridenticulatis* :

3. *Stipulis bipartitis* (no Am. species.)

#### ‡ *Non-Stipulatae* :

a. Foliis auriculatis :

b. Foliis non-auriculatis :

\* INTEGRIS :

A. *Integerrimis* :

B. *Dentatis* :

\*\* DIVISIS :

A. *Bilobis bifidisve* :

1. *Integerrimis* :

2. *Margine dentatis serratis* :

B. *Inaequaliter tridentalis vel apice, tri-quadri-vel quinque fidis*.

### II. ACAULES.

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

LABORATORY REPORT

- 1. Preparation of the compound
- 2. Purification of the compound
- 3. Identification of the compound
- 4. Physical constants of the compound
- 5. Chemical reactions of the compound
- 6. Spectroscopic analysis of the compound
- 7. Crystallographic data of the compound
- 8. Thermodynamic data of the compound
- 9. Kinetic data of the compound
- 10. Electrochemical data of the compound

CONCLUSION



# MUSCI HEPATICI.

## 1. JUNGERMANNIA (Rupp) Linn.

### I. CAULESCENTES :

#### † STIPULATAE :

##### a. STIPULIS ORDINE triplici :

- § 1. I. CAULE PROCUMBENTE BIPINNATO. FOLIIS DIS-<sup>Platyphylla</sup>  
TICHIS, IMBRICATIS, SUBROTUNDIS, OBTUSIS, STIPU-<sup>Lin.</sup>  
LIS INTEGERRIMIS, TERNIS. v. v. coll. *Europ. Schwg.*  
*p. 13. Weber. p. 15. N. York Cat. p. 84. Muhl. Cat.*  
*u. 20. Mx. p. 279.*

Common on the bark of living trees, especially *Carpinus*, in bottoms.

- § 2. I. CAULE PROCUMBENTE, BI-VEL TRIPINNATO; FO-<sup>Platyphylla-</sup>  
LIIS IMBRICATIS, FORNICATIS, SUBROTUNDO-QUADRA-<sup>dea.</sup>  
TIS. STIPULIS TERNIS, SUBAEQUALIBUS, INTEGERRI-<sup>Nobis.</sup>  
MIS. v. v. \* † An *Lichenastrum* Dill. p. 495, ap.  
Web. p. 118.

The distinguishing characteristics of this species are so constant, that I can entertain no doubt of its specific difference from the former. It is larger in all its parts, and of a yellowish green color, tinged with brown; almost always found on rocks; the BRANCHES are very often tripinnate, almost at right angles, and not so much inclined to curl upwards; towards the ends, they are always incassate and fornicate. The LEAVES almost quadrate, with their margins inflexed in a dry state. The ternate STIPULAE are nearly equal and obliquely imbricate, concave when dry, with the margins bent in. The CALYX is large, somewhat bullate, trifid, the laciniae ovate entire, or with few teeth. The SETA much longer than in the former.

This is frequent here, and has been sent to me besides from New-York by Dr. Torrey.

- § 3. I. CAULE DIFFUSO, RAMOSO, SIMPLICITER PINNATO, <sup>Distans.</sup>  
PINNIS LAXIS, FOLIIS NON IMBRICATIS, SUBDISTANTI-<sup>Nobis.</sup>  
BUS, ALTERNANTIBUS, STIPULIS MINUTIS, ROTUNDIS,  
INTEGRIS, DISTANTIBUS. v. v. \* †

Although this handsome species is something allied to *PORELLA*, it cannot be confounded with it. It is of a re-

markably thin texture, often three inches long, spreading its mostly simply pivate branches diffusely, occurring near the roots of trees, that are often under water and on wet rocks, in dense tufts. The LEAVES are never imbricate, often a little distant, and generally alternate, obliquely ovate, (resembling in shape an ear,) undulated slightly in the margin, and, when dry, much inflected. The STIPULAE are small, roundish, the middle one much larger than the two lateral ones; obliquely arranged, and so distant, that the naked caulis appears between the pairs or threes. CALYX distichous, imbricate, stipitate, compressedly cylindrical.

The color is generally a dark green.

§ 4. I. CAULE FLUITANTE, IRREGULARITER RAMOSO PINNATO. FOLIIS SUBIMBRICATIS, MAJUSCULIS, OVALIBUS OBTUSIS. STIPULIS INTEGERRIMIS. v. v. † coll. *Specim. a Dr. Schwagerichen, Weber, p. 17. Schwg. p. 32. Porella pinnata, Muhl. Cat. n. 2.*

Common here, particularly in the ripples of brooks, floating. The color of the broad leaves is a blackish blue: they are thin and flat. Dr. Torrey has sent me specimens, although it is not in New-York catalogue.

The calyx and seta are said by Dickson to be as in the former ones. No botanist, except he and Dillenius, has however seen them. With us it is always sterile.

#### b. STIPULIS ORDINE SIMPLICI.

##### \* FOLIIS INFERNE AURICULATIS.

§ 5. I. CAULE REPENTE PINNATO. FOLIIS DISTICHS OBTUSIS INTEGERRIMIS; AURICULIS FORNICATIS; STIPULIS MINUTIS INTEGERRIMIS BIFIDIS, CALYX TRIGONUS, TRIFIDUS PAPILLOSUS. v. v. Coll. *Europ. Weber, p. 20. Schwg. p. 14. Dilatata of many, for instance Hooker, Fasc. I. t. 5. Muhl. Cat. n. 16. New-York Cat. n. 7.*

On trees and rocks, often of a dark brown purple.

N. B. Between this and the next, there exists an almost inexplicable confusion among authors. A great number call them vice versa. I have adopted Weber's distinctions.

*Porella.*  
Dicks.

*Tamariscifolia.*  
Schmidel.

- § 6. I. CAULE IMPLEDE REPENTE, SUBPINNATO. FOLIIS *Dilatata*  
DISTICHIS, OBTUSIS, INTEGRIS, AURICULAE LOBO AL- *Weber*  
TERO CLAVATO, ALTERO MINIMO AUT NULLO. STIPU-  
LIS MAJORIBUS, BIFIDIS, SERRATIS, PRAESERTIM CA-  
LICINIS. CALYX TRIGONUS, TRIFIDUS, LAEVIS. v. v.  
*Coll. Europ. Weber, p. 21. Schwg. p. 14. Tamarisci*  
of many, for instance Hooker Fasc. I. t. 6. *Muhl. Cat.*  
n. 15? N. York Cat. n. 10?

More common on trees. A very handsome elegantly green variety occurs in large tufts on rocks. Michaux *Tamarisci*, p. 279. The color varies much; often almost black.

- § 7. I. CAULIBUS REPENTIBUS, FILIFORMIBUS, VAGE *Serpillifolia.*  
PINNATIS, BREVIUSCULIS. FOLIIS IMBRICATIS, AU- *Dicks.*  
RICULATIS, LOBIS INAEQUALIBUS; SUPERIORIBUS MA-  
JORIBUS, BASI SUBTUS VENTRICOSIS; INFERIORIBUS  
MINUTIS. STIPULIS ROTUNDATIS, ACUTE ET PRO-  
FUNDE BIFIDIS. v. v. *Coll. Europ. \* Dicks. Fasc. IV.*  
p. 19. *Hooker, Fasc. XI. t. 52. Weber. p. 121.*

Common among mosses on wet rocks—very elegantly, but irregularly pinnate, brittle, and of a beautiful green color. I have not found it in fructification.

## B. FOLIIS NON AURICULATIS.

### A. INTEGRIS:

#### 1. STIPULIS BIFIDIS VEL BILOBIS.

- § 8. I. CAULE ASCENDENTE, SUBRAMOSO. FOLIIS SU- *Palescens*  
BROTUNDIS, INTEGERRIMIS OBTUSIS STIPULIS OBTUSIS, *Ehrhart.*  
BIFIDIS, LACINIIS ACUTIS, EVANIDIS. v. v. *Coll. Eu-*  
*rop. \* Weber. p. 28. Schwg. p. 16.*

In wet sphagrous places, creeping about; sometimes floating in the water.

My Salem specimens have been pronounced to belong to this species by several excellent European botanists; and agree perfectly with European specimens received from Dr. Sprengel; but the stipules are so indistinct, that I should otherwise have hesitated, and conceived this to belong to another subdivision of the genus.

9. I. FOLIIS IMBRICATIS, SUBBROTUNDIS, INTEGERRI- *Trichomanes*  
MIS; STIPULIS SUBBROTUNDIS BILOBIS, LOBIS OBTU- *Dicks.*  
SIS. v. s. fr. Pennsylvania. *Coll. Europ. Weber. p. 28.*  
*Schwgr. p. 16. Muhl. Cat. n. 6.*

On moist earth in woods. I have not yet found this species here at Salem. It keeps close to the earth.

## 2. STIPULIS INTEGRIS.

*Transversalis.*  
*Swartz.* § 10. I, CAULE REPENTE, SUBRAMOSO. FOLIIS IMBRICATIS, OBLIQUE OVATIS, OBTUSIS, BASI SUBTUS COMPLICATIS. STIPULIS RENIFORMI-SUBROTUNDIS, MARGINE INFLEXIS, INTEGERRIMIS. v. v. \* † *Weber. p. 34. Schwg. p. 16. Swartz. Fl. Ind. occid. p. 144.*

Not uncommon here, on the perpendicular walls of rocks—rarer on trees. It is distinguished by a yellow color, few branches, often none, and its peculiar habit, of always growing transversely. The surculi are from half an inch to two inches long, closely adpressed.

*Clypeata.*  
*Nobis.*

§ 11. I, CAULE REPENTE SUBPINNATO, MULTIS IMPLEXIS. FOLIIS IMBRICATIS, FORNICATIS, (ITA UT SURCULI SEMICYLINDRACEI EVADUNT) DISTICHIS, OBLIQUE OVATIS, ROTUNDATIS, BASI SUBTUS COMPLICATIS. STIPULIS ORBICULATIS, MEDIO AFFIXIS QUASI SCUTATIS. v. v. \* †

A very distinct species, growing downwards on trees and rocks among and over other *Jungermannia* in considerable tufts. Color whitish yellow. The orbicular and scutate stipulae distinguish it immediately. The single surculi are not often more than half an inch long, but the tufts frequently as large as the palm of the hand. The fructification lateral. The stipules are elegantly imbricate in one series.

## B. DIVISIS.

## 1. EMARGINATO—bidentatis.

*Bidentata.*  
*Linn.*

§ 12. I, CAULE DECUMBENTE, APICE ADSCENDENTE SUBRAMOSO. FOLIIS BIDENTATIS, DENTIBUS ACUMINATIS. STIPULIS OVATIS QUADRIFIDIS. v. v. *Coll. Europ. Weber. p. 40. Schwg. p. 18. Muhl. Cat. n. 8.*

*Dr. Torrey* sent it from New-York. Creeping on the earth frequently, at the root of trees, and rarely in tufts.

## 2. TRI-QUADRIDENTICULATIS.

*Trilobata.*  
*Web.*

13. I, FOLIIS OBLIQUE OVATIS, RETUSIS, APICE INAEQUALITER TRIDENTATIS, CAETERUM INTEGERRIMIS. STIPULIS BI-QUADRIFIDIS. FLAGELLA EX AXILLIS STIPULARUM. v. s. *Coll. Europ.* from Pennsylvania and Canada. *Weber. p. 42. Schwg. p. 19. I. radicans pl. Muhl. Cat. radicans, n. 11.*

The Pennsylvanian and Canadian specimens of this, agreeing in every respect with the European, prove that

the next species is really distinct. That grows in our bogs, but the *TRILOBATA* appears attached to a more northern climate.

- § 14. *I. CAULE PROCUMBENTE-REPENTE, MULTIS AGGREGATIS. FOLIIS COMPLANATO DISTICHIS, MAJUSCULIS, APICE TRIDENTICULATIS, SUBOVALIBUS. STIPULIS LATIS, ROTUNDIS, CIRCUMCIRCA DENTICULATIS. FLAGELLA EX AXILLIS. v. r. † Michaux. p. 278. N. York Cat. n. 5. Weber. p. 126. Schwg. p. 20.* *Tridenticulata. Michaux.*

Not uncommon here in bogs, and sent me by Dr. Torrey. It grows in large sods—has a yellow color, is much more branching and shorter than the former, but is chiefly to be distinguished by the stipules.

A variety, dark brown color, and almost always dichotomous, and of much smaller growth, I have found on trees.

15. *I. FOLIIS REMOTIUSEULIS, SUBQUADRATIS, SUBAEQUALITER TRIQUADRIFIDIS APICE; STIPULIS FOLIIS SIMILIBUS, QUADRIFIDIS. Weber. p. 44. Schwg. p. 20.* *Reptans. Linn.*

Both authors state, that they possess this species from Carolina. I have not yet met with it, although it is so distinct that it cannot be mistaken.

The caulis is pinnate.

16. *I. REPENS, CAPILLARIS. FOLIIS SETACEOBIPARTITIS, SETIS ARTICULATIS. CALYCIS DENTIBUS SETULIFERIS. v. s. † from New-York. Weber. p. 128. Michaux. p. 278.* *Sertularoides. Michaux.*

Dr. Torrey sent it to me sub. nom. *I. NODIFOLIA*. The leaves are triangular, and many cleft into setaceous lacinae, bent inwards, and these handsomely articulate. The Calyx is very conspicuous. There is some affinity to *I. TOMENTELLA*.

17. *I. REPENS, RAMOSISSIMA, FOLIIS BIFIDIS, FIMBRIATOLACINIOSIS; CALYCIBUS LATERALIBUS, ORLONGIS, GLABELLIS. SETA BREVI. v. s. † Michaux. p. 279. Weber. p. 128. Schwg. p. 21.* *Incisiosa. Michaux.*

I have specimens sent by Doctor Torrey from Cedar Swamp, N. Durham, and others found in Canada by Rev. C. F. Denke.

Both these last species are certainly stipulate; the stipules much like the leaves.

18. *I. CAULE ERECTO, BIPINNATO, RAMIS APICE FORNICATIS, INCRASSATIS. FOLIIS TRIFIDIS; STIPULIS BIFIDIS, LONGIS-SIME CILIATIS. v. s. from Labrador. Coll. Europ. \*—publ. Schwg. p. 21. n. 44.* *Pulcherrima. Linn & Web*

Weber unites this species with the following; but I think they are manifestly distinct. The *PULCHERRIMA* is much larger and broader leaved, of a shining chesnut brown, and erect. My American specimens are from Labrador. On the earth.

*Ciliaris.*  
Linn.

19. I. CAULE SUBPINNATO, DECUMBENTE, RAMIS ATTENUATIS: STIPULIS ET FOLIIS FISSIS, LONGIVSCULE CILIATIS. v. s. *Coll. Europ. Weber, p. 48. Schwg. n. 45. Muhl. Cat. n. 18. pulcherrima. secd. specim.*

I have American specimens from Pennsylvania and from Canada. Here I have not met with it.

Much smaller and lighter colored than the former. On rotten logs.

*Tomentella.*  
Ehrhart.

§ 20. I. CAULE ASCENDENTE, BIPINNATO; SUPRA TOMENTOSO; FOLIIS ANTI STIPULIS QUADRIpartitis, LONGISSIME CILIATIS, ALBESCENTIBUS. v. v. *Coll. Weber, p. 49. Schwg. p. 21. Mx. p. 279. Muhl. Cat. n. 17. Torrey Cat. n. 11.*

A large and distinct species found creeping among Sphagnum, sometimes in tufts.

*Pauciflora.*  
Dicks.

21. I. CAULE REPENTE RAMOSO. FOLIIS ET STIPULIS SIMILIBUS ERECTO PATENTIBUS, AD BASIN USQUE TRIPARTITIS, LACINIIS ADUNCIS. v. s. from Labrador. \* *Weber, p. 47. Dicks. Fasc. I. and 5. f. 9.*

The color resembles *pulcherrima*; but it is very small. Good fructifer. specimens from Labrador.

‡ NON STIPULATAE.

a. FOLIIS AURICULATIS.

*Complanata.*  
Linn.

§ 22. I. CAULE REPENTE RAMOSO; FOLIIS SUBROTUNDIS, INTEGRIS, AURICULA SUBOVATA, PLANIUSCULA. v. v. *Coll. Europ. Weber, p. 58. Schwg. p. 22. Muhl. Cat. n. 14. N. York Cat. n. 8.*

Very common on the smooth bark of *Fagus* and other trees. Very rarely on rocks.

b. FOLIIS NON AURICULATIS.

\* INTEGRIS.

A. INTEGRIS.

*Viticulosa.*  
Linn.

§ 23. I. CAULE NUDO (s. absque radice) ASCENDENTE; FOLIIS DISTANTIBUS, SUBVERTICALIBUS, CONVEXIUSCULIS, SUBROTUNDIS, LAETE VIRIDIBUS. v. v. *Coll. Europ. Weber, p. 30. Schwg. p. 25. Mx. p. 277. Muhl. Cat. n. 1. Torrey sent it to me from New-York.*

Distinguished by its light green color and naked caulis. Not uncommon on rotten logs—often among *I. SCALARIS.*

- § 24. I. CAULE REPENTE, DORSO RADICULOSO; FOLIIS SUBIMBRICATIS, SUBVERTICILLATIS, CONVEXIS, SUBROTUNDIS, PALLIDIS; CALYCE BREVIORE SETA, DIMIDIATO. *v. v.* *Polyanthoc. Linn.*  
*Coll. Europ. Weber, p. 61. Schwg. p. 25. Muhl. Cat. n. 3. Torrey sent it to me.*

Common here on moist ground and among Sphagnum. Often very full of fructifications.

- § 25. I. CAULE REPENTE. DORSO RADICULOSO; FOLIIS IMBRICATIS, SEMIVERTICALIBUS, SUBCONVEXIS, OVATO-SUBROTUNDIS. *Lanceolata Linn.*  
*v. v. Coll. Europ. Weber, p. 62. Schwg. p. 25. Muhl. Cat. n. 7.*

Common on rocks and on earth in woods. It is often reddish, as indeed most of this subdivision.

- § 26. I. CAULE REPENTE RADICULOSO; FOLIIS SUBIMBRICATIS, SEMIVERTICALIBUS, CONVEXIS, SUBROTUNDIS, ANTRORSUM SUBCONVEXIS. *Scularis Schmidel.*  
*v. v. Coll. Europ. Weber, p. 63. Schwgr. p. 24. Muhl. Cat. n. 4.*

On old logs, especially pine; very handsomely twisted—often mixed with VITICULOSA. It occurs both light green and purplish.

- § 27. I. CAULE REPENTE, DORSO RADICULOSO; FOLIIS IMBRICATIS, SUBVERTICALIBUS, CONCAVIS SUBROTUNDIS, ANTRORSUM CONVEXIS. *Sphagni Dicks.*  
*v. v. Coll. Europ. \* Weber, p. 64. Schwg. p. 24. Dicks. t. 1. f. 10.*

As common here, among Sphagnum and on moist earth, as in Europe. It has likewise been sent to me by Dr. Torrey.

- § 28. I. PUSILLA REPENTE CAULE; FOLIIS ORBICULATIS, INTERMIXTIS; DUPLICI SERIE VERTICALITER ASSURGENTIBUS. *Orbicularis Michaux.*  
*v. v. † Michaux. p. 277.*

The plant I take for the orbicularis of *Ma.* is common here on dry hill sides; with remarkably long cauline setae. The specimens communicated to me by Dr. Torrey, as the ORBICULARIS of *Mx.* clearly belonged to the DILATATA. Mine is generally red.

### B. DENTATIS.

- § 29. I. FOLIIS SUBIMBRICATIS, SEMIVERTICALIBUS, OBLIQUIS, ASPLENIODES OVATIS, ROTUNDATIS, DENTICULATIS. *Asplenioides Linn.*  
*Weber, p. 65. Schwgr. p. 25.*

My plant is generally smaller than the European specimens; but otherwise exactly the same. It is frequently found here, among rocks in declivities, on the ground.

## B. DIVISIS.

## A. FOLIIS EMARGINATIS, BILOBIS VEL BIFIDIS.

## 1. INTEGERRIMIS :

*Emarginata.* § 30. I. CAULE ERECTO, SUBRAMOSO; FOLIIS APPROXIMATIS, PATENTIDIVERGENTIBUS, OBCORDATIS, OBTUSE EMARGINATIS, ANGULIS OBTUSIS. *v. v. Coll. Europ. \* Weber, p. 73. Schwg. p. 27.*

Occurs rather rarely on shaded shelving rocks with us, where they are very moist.

*Functii.* § 31. I. FOLIIS SUBIMBRICATIS, PATENTIBUS, SUBHORIZONTALIBUS, EMARGINATIS, ANGULIS OBTUSIUSCULIS. CAULE ASCENDENTE, SUBSIMPLICI. *v. v. Coll. Europ. \* Weber, p. 74. Schw. p. 27.*

Not uncommon on arid lichenose spots in the woods: generally of a deep red color.

*Inflata.* § 32. I. CAULE PROCUMBENTE, SUBSIMPLICI; FOLIIS REMOTIUSCULIS, PATENTIDIVERGENTIBUS, SUBHORIZONTALIBUS, CONCAVIS, ACUTE EMARGINATIS, ANGULIS ACUTIS. *v. v. Coll. Europ. \* Weber, p. 75. Schwg. p. 29. Bicornata plur.*

Occurs in similar places with the former.

*Curvifolia.* § 33. I. FOLIIS SUBIMBRICATIS, ERECTIUSCULIS, BIFIDIS, LACINIS ATTENUATIS, INCURVIS. CAULE PROCUMBENTE RAMOSO. *v. v. Coll. Europ. \* Weber, p. 76. Schwg. p. 28.*

I found this very distinct species on rotten pine logs on Newhope, Orange county.

*Michauxii.* § 34. I. SURCULIS ERECTIUSCULIS: FOLIIS BIFIDIS APPROXIMATIS, SUBIMBRICATIS, PATENTIDIVERGENTIBUS, INTEGERRIMIS, ACUTE EMARGINATIS, ANGULIS ACUTIS. FRUCTIFICATIO TERMINALIS. CALYX TUBULOSUS, APICE Plicatus.— *v. v. † Michaux. varia, p. 278. See Weber, p. 76.*

I have some doubts concerning the identity of this species; as mine by no means resembles the BICORNIS, (See Weber's remark,) but a good deal the ASPLENIODES. It occurs on shady moist rocks along mountain brooks.

*Bicornis.* § 35. I. CAULE REPENTE, SUBRAMOSO: FOLIIS, REMOTIS, PATENTIBUS, SEMIVERTICALIBUS, CONCAVIS, EMARGINATO-BIDENTATIS, DENTIBUS ACUMINATIS, ACUTISSIMIS, CONNIVENTIBUS. *v. v. Coll. Europ. \* Weber, p. 77. Schwg. p. 27.*

A very good species, not uncommon here with the rest.

*Mueller.*



- § 36. I. CAULE FLEXUOSO, SUBRAMOSO, REPENTE; FOLIIS REMOTIS, PATENTI-DIVERGENTIBUS, SEMI-VERTICALIBUS, PLANIUSCULIS. ACUTE EMARGINATO-BIDENTATIS; DENTIBUS DIVERGENTIBUS. v. v. *Coll. Europ.* \* *Weber*, p. 78. *Schweg.* p. 23. *Muhl. Cat. Sphaerocephala*, n. 5 and n. 9.

Sent from New-York by Dr. Torrey. Common here, and easily distinguished by its diverging teeth.

- § 37. I. SURCULIS REPENTIBUS, RAMOSIS SIMPLICITER PINNATIS; FOLIIS OVATIS EMARGINATO-BIFIDIS; DENTIBUS ACUTIS CONNIVENTIBUS. v. v. *Sed. non. Coll. Europ.* *Weber*, p. 135. *Dicks. fasc. IV. t. 11. f. 15.* *Muhl. Cat.* n. 10.

A small, but distinct, species—not uncommon here.

- § 38. I. CAULE BREVI, DECUMBENTE, DORSO RADICULOSO. FOLIIS IMBRICATIS, SUBPATENTIBUS, CONCAVIS, OB- TUSE EMARGINATIS, ANGULIS ACUTIUSCULIS. v. v. *Sed. non. Coll. Europ.* \* *Weber*, p. 81. *Ehrh. bicuspidata.*

Though I am not acquainted with the Swedish plant described by Weber, his description suits perfectly this distinct species of our vicinity.

## 2. MARGINE DENTATIS, SERRATIS.

### VEL CRENULATIS.

- § 39. I. CAULE ERECTO SIMPLICI. FOLIIS SUBROTUN- DIS, OBTUSIS, SUBDENTICULATIS, UNDULATIS, LOBIS OBTUSIS, ANTICO MINORE CONCAVO, POSTICO CONVEXO. v. v. *Coll. Europ.* \* *Weber*, p. 84. *Schweg.* p. 23.

Not uncommon in bogs; and distinguishable from the next chiefly by the leaves not being so strongly ciliate.

- § 40. I. CAULE ERECTO, SUBRAMOSO. FOLIIS LOBIS SUB- ROTUNDIS, DENTATO CILIATIS. v. v. *Coll. Europ.* *Weber*, p. 85. *Schweg.* p. 23. *Muhl. Cat.* n. 13. *N. Fork Cat.* n. 9.

A common and large species, of a whitish green color; immediately distinguishable by the ciliate leaves. A variety, almost white, and still more ciliate, occurs, with nearly sessile fructifications, which possibly may be specifically distinct.

- § 41. I. RESUPINATIS FOLIIS, IN CAULE ERECTIUSCULO, SUBRAMOSO. LOBIS FOLIORUM SUBOVATIS, VIX ACUTIS, DENTICULATIS. v. v. *Coll. Europ.* \* *Weber*, p. 84. *Dillen. tab.* 71. f. 19.

This and the next (together with *I. compacta*, not yet found by me) are very nearly allied, but Weber has well distinguished them. They are mostly reddish. The *resup.* is the largest of them, and not unfrequent here on the earth in arid spots—leaves obtuse.

*Umbrosa.*  
Schrader.

§ 42. *I. FOLII LOBIS SUBOVATIS, ACUTIS VEL ACUMINULATIS SERRATIS.* v. v. \* *Coll. Europ. Weber, p. 85. Hooker, Tab. 6. f. 24.*

In similar spots, with acute leaves.

*Albicans.*  
Linn.

§ 43. *I. CAULE ERECTO, SUBDIVISO. LOBIS FOLII OB-  
LONGIS, ACUTIUSCULIS, NERVO INSTRUCTIS, APICE  
SERRATIS.* v. v. *Coll. Europ. \* Weber, p. 86. Schwg.  
p. 23.*

A very distinct species, growing in considerable tufts, of a whitish yellow color, on the earth, or at the foot of trees and stumps.

**B. INAEQUALITER TRIDENTATIS VEL APICE TRI-QUAD-  
RI-QUINQUEFIDIS.**

*Pusilla.*  
Linn.

§ 44. *I. PUSILLA REPENS. FOLIIS SUBQUADRATIS, PLI-  
CATIS, MARGINE ANTICO OBTUSO, CRENATIS, CETERUM  
INTEGERRIMIS.* v. v. *Coll. Europ. Weber, p. 87.  
Schwg. p. 29. Muhl. Cat. n. 19. N. York Cat. n. 4.*

Very distinct—a light green. The surculi short, but broad. On loamy ground.

*Quinqueden-  
tata.*  
Linn.

§ 45. *I. CAULE ERECTIUSCULO, DORSO RADICULOSO: FO-  
LIIS PLICATIS, QUADRATIS IMMO QUERCIFORMIBUS,  
APICE DENTIBUS ACUTIS INTEGERRIMIS 3 VEL 5 DEN-  
TATIS.* v. v. *Coll. Europ. \* Weber, p. 88. Schwgr.  
p. 29.*

The leaves of this species are often confluent, and much like oak leaves. It occurs among *Sphagnum* not rarely, and I possess some uncommonly handsome specimens from LABRADOR, which cleaved closely to a parcel of Lichens from thence.

*Exsecta.*  
Schmidel.

§ 46. *I. CAULE REPENTE: FOLIIS CONCAVIS, INAEQUALI-  
TER TRIDENTATIS, DENTIBUS ACUTIUSCULIS, INTE-  
GERRIMIS.* v. v. \* *Weber, p. 87. Schwg. p. 29.—  
Hooker Fasc. V. t. 19. Roth. Fl. Germ. III. p. 379.  
GLOBULIFERA.*

I have not seen the European species, but meet with one here in moist woods, on the ground, which agrees well.

- § 47. I. CAULE RADICULOSO, SIMPLICIUSCULO: FOLIIS *Incisa.*  
 INAEQUALITER TRIFIDIS, LACINIIS DORSO CANALICU- *Schrad.*  
 LATA, DENTATA. v. v. \* *Weber*, p. 89. *Schw.* p.  
 29. *Hooker Fasc. III.* t. 10.

A very distinct species on our moist rocks; and pretty large. I have not seen the European species.

- § 48. I. CAULE ERECTO, FLEXUOSO. SUBSIMPLICI: FO- *Decipier.*  
 LIIS INFERIORIBUS MINORIBUS INTEGERRIMIS, SUPE- *Hook*  
 RIORIBUS SUBQUADRATIS, UNO ALTEROVE DENTE  
 SPARSO, SPINIFORMI. v. v. \* *Weber*, p. 140. *Hooker*  
*Fasc. XIII.* t. 50.

This is a very distinct species. The teeth very small. The plant itself by no means so. Rare.

## II. ACAULES.

- § 49. I. SUBACAULIS, FRONDE SUBDICHOTOMA, PLANA, *Sinuata.*  
 NERVOSA, MARGINE INTEGRA VEL PINNATIFIDO-SINU- *Swartz*  
 ATA, INTEGERRIMA GLABRA. v. v. \* † *Weber*, p. 89.  
*Swarz. Fl. Ind. occid.* p. 145.

A very large species—often found among *Sphagnum* in our bogs in bodies together. The fructification breaks forth from the nerve on the middle of the frons—with a calyx very much lacinated. I have never found the seta protruded as yet.

N. B. This must not be confounded with *Dickson's SINUATA*: a variety of *MULTIFIDA* to which it bears no resemblance.

- § 50. I. FRONDE OBOVATA, LOBATA, SUBENERVI, LOBIS *Epiphylla.*  
 SINUATIS, MARGINE UNDULATIS, SUPERNE FRUCTI- *Linn.*  
 FERA. v. v. *Coll. Europ.* *Weber*, p. 90. *Schw.* p.  
 32. *Muhl. Cat. n.* 21. *N. York Cat. n.* 1.

A well known plant. The seta sometimes grows two or three inches long. Common on the banks of woody brooks.

- § 51. I. FRONDE OBOVATA, LOBATA, ENERVI, GLABRA, *Pingu.*  
 CARNOSA, LOBIS SINUATIS: INFERNE FRUCTITERA.— *Linn.*  
 v. v. *Coll. Europ.* *Weber*, p. 93. *Schw.* p. 31. *Muhl.*  
*Cat. n.* 22. *N. York Cat. n.* 2.

I never found it in fructification. It is not common here, but occurs among *Sphagnum*, especially in the water. All the specimens I have found are smaller than the common European ones.

*Multifida.*  
Linn.

§ 52. I. FRONDE REPENTE, BIPINNATIFIDA ENERVI, LACINIIS ANGSTIS, APICE LATIORIBUS. v. v. *Coll. Europ.* \* *Weber*, p. 94. *Schw.* p. 31.

Dr. Torrey sent specimens from Cedar Swamp.

Very common here among leaves in springs, especially the variety *SINUATA* Dickson, which sometimes grows very large and beautifully multifid. It is of a brittle substance, and fine blue green.

*Palmata.*  
Hedwig.

§ 53. I. FRONDE BREVI, SUBADSCENDENTE, DIGITATO PALMATA, ENERVI. v. v. *Coll. Europ.* *Weber*, p. 95. *Schw.* p. 30. *Muhl. Cat.* 24.

Occurs on rotten wood in very moist places, or that is often inundated. The frons at most three lines long; but a large patch is often together. Very dark green.

*Bipinnata.*  
Swartz.

§ 54. I. FRONDE PROCUMBENTE, BIPINNATA, ENERVI, LACINIIS VERSUS APICEM ATTENUATIS. v. v. \* †—  
*Weber*, p. 95. *Schw.* p. 30. *Swartz.* p. 145.

A small, but neat species, perfectly agreeing with Swartz. Among mosses on shelving shaded rocks.

*Furcata.*  
Linn.

§ 55. I. FRONDE LINEARI, DECUMBENTE, RAMOSA, EXTREMITATIBUS FURCATIS, NERVOSA, MARGINE INFERNE ET DORSO NERVI PUBESCENTE, LUTEO-VIRIDI. v. v. *Coll. Europ.* *Weber*, p. 97. *Schw.* p. 31. *Max.* p. 280. *Muhl. Cat. n.* 22. *N. York Cat. n.* 3.

A very common moss on the sides of rocks and stones, varying in color and pubescence of the margin, sometimes almost smooth.

*Pubescens.*  
Schränk.

§ 56. I. FRONDE LINEARI, RAMOSA, EXTREMITATIBUS FURCATIS, NERVOSA, TOTA SUPERFICIE UTRINQUE PUBESCENTE. v. v. *Coll. Europ.* \* *Weber*, p. 99. *Schw.* p. 31.

This is found rarely with us, on mountains, and differs by being altogether strongly pubescent: it is always of a very yellow color.

*Ciliifera.*  
Nobis.

§ 57. I. FRONDE LINEARI ANGSTISSIMA, RAMOSA, EXTREMITATIBUS NON FURCATIS SED SUBBIFIDIS, LACINIIS ATTENUATIS, SUBENERVI, MARGINE FRONDIS, LOBIS SPATHULATIS, CLAVATIS ET DIFFORMIBUS, INTERDUM STOLONIFORMIBUS, INTERMIXTIS CILIIS, ORNATO. v. v. \* †

A new species, forming dense tufts along rocks and earth, from which it is easily separated. Though allied to the two former, it is manifestly distinct by the curious margin of the very narrow and tender frons.

The fructification has not hitherto been observed by me. It is smaller, and of a more delicate construction than the rest. The color green or yellow—no pubescence except the interspersed ciliac of the margin.

58. I. FRONDE SIMPLICI LATA, NON LOBATA, OBLONGA, SUB ACUMINATA; MARGINE UNULATO AUT VERSUS NERVUM CRASSUM, PLICATO, CETERUM INTEGERRIMO. APICE INTERDUM IN LONGUM LINEARE ACUMEN PRODUCTUM. v. v. \* † *Oblonga*. Nobis.

This highly remarkable moss comes nearest I. SINUATA, but is so different in many respects, that I cannot omit it as a new species, although it has been but imperfectly observed. I accidentally drew a patch of it out of the water and mud of a pond near Little River, Cumberland county, with Utriculariae.

The frons is about one-eighth of an inch in breadth.

*Remark.* Most of the Jungermanniae are in fructification in advanced spring: many are so already in winter. A number are very rarely found in fructification, especially of the last division, and, generally, those which grow in water. Such individuals of these as are left dry, are the most likely to fructify.

## 2. MARCHANTIA. Linn.

*Remark.* The specific differences of the Marchantiae are mostly taken from the form and manner of the female parts of fructification, and of the common receptacle. But the frons appears to me, in many instances, to deserve equal attention.

1. M. RECEPTACULO FEMINEO RADIATO, MASCULO PEDUNCULATO PELTATO. FRONDIS CONGESTIS. LOBATIS, NERVOSIS ET VENULIS DECUSSATIS ORNATIS. v. s. *Coll. Europ. Weber*, p. 101. *Schw.* p. 52. *Roth. Fl. G.* 417, 420. *Muhl. Cat.* p. 100. n. 2. *N. Fork Cat.* n. 1. *Mx.* p. 277. *Polymorpha*. Linn.

My American specimens are from Pennsylvania, not having found it here as yet. It cannot be confounded with any other species, on account of the remarkable radii and very long peduncle of the female receptacle. The nerv of the frons is generally brown.

- § 2. M. RECEPTACULO FEMINEO HEMISPHAERICO, SUBINTERCRO, MARGINE HIRSUTO; MASCULUM SESSILE. SUBROTUNDUM, PLANO-CONVEXUM. FRONDE LATISSIMA. FRAGILI, SIMPLICI AUT APICE DICHOTOMA. MARGINE UNULATA. v. v. \* † *Weber*, p. 103. *Swartz. Fl. Ind. occid.* p. 1879. *Hirsuta*. Swartz

This is by far the largest and most elegant Hepatic I have ever seen, and agrees so well with Swartz's descrip-

tion of the *HIRSUTA* observed in Jamaica, that I cannot doubt their identity. Ours grows exclusively in the cavities formed by Shistose rocks along the banks of rivulets, *v. c.* LITTLE YADKIN; but there to an immense extent, covering their sides for many yards. The general breadth of the frons is half an inch—the length of a single one two or three inches. Its texture is extremely brittle—the color a pure dark green. A very strong middle rib runs on the under surface, which alone puts forth roots. The frons is generally elegantly dichotomous, and lobed, the lobes rounded, undulate, and often crenate. The female receptacle is on a short peduncle, and extremely hirsute below, rather subconical, and appears entire. I found it not yet perfectly in fructification beginning of November.

*Hemisphaerica.*  
Linn.

§ 3. *M. RECEPTACULO FEMINEO SUBHEMISPHERICO, SUBINTEGRO, SUBQUADRANGULATO, CALICIS PROPRII LACINIIS OB-  
TUSIS. FRONDIBUS MINORIBUS. CRENATIS SUBTUS ATRORUBENTIBUS, SUPRA LAETE VIRIDIBUS. v. v. Coll. Europ. Weber, p. 104. Schwg. p. 33. Muhl. Cat. n. 1. New-York Cat. n. 2.*

Not uncommon on rocky ground here.

*Conica.*  
Linn.

§ 4. *M. RECEPTACULO FEMINEO OVATOCONICO, SUBANGULATO, MASCULO SESSILI. FRONDIBUS LONGE REPENTIBUS, VERRUCOSIS, SINUATIS. v. v. Coll. Europ. Weber, p. 106.—Schwg. p. 34. Muhl. Cat. n. 3. New-York Cat. n. 3.*

This is the most common here, though very rarely found in fructification. It creeps about the banks of springs and walls, and on moist stones; and the frons is generally not so complicated as that of *polymorpha*, nor so brownish.

*Crinita.*  
Michaux.

§ 5. *M. PUSILLA: FRONDE MARGINE COLORATO EROSA-CRENATO. LOBIS ROTUNDATIS. RECEPTACULO FEMINEO SUBGLOBOSO, QUINQUELOBO. EX INCISURIS PROLIXE FILAMENTOSO. v. v. † Weber, p. 143. Schwg. p. 33. Mx. p. 276. Muhl. Cat. n. 5. cruciata? N. York, n. 4. cruciat?*

I apprehend that the *CRUCIATA* of Muhl. is this species. The frons very much resembles that of *CRUCIATA*. The fructification is very beautiful. The peduncle of the female about four lines high, the receptacle nearly globular, four or five cleft below, with numerous hairs or filaments from the divisions. The resemblance to *HEMISPHERICA* is not very striking. The frons is small, less lobed than in *cruciata*, but more rounded and broader than in the next. The lower surface and margin purple. On flat rocks. Fr. in summer.

6. *M. pusilla*: FRONDE DICOTOMO-FURCATA, ANGUSTA. *Tenella*  
 RECEPTACULO FOEMINEO CONOIDEO: INFERNE MEMBRANA-  
 Linn  
 CEO-MULTIFIDO: FIMBRIIS LIGULATO-LINEARIBUS. PEDUN-  
 CULO LONGIUSCULO TENERO. v. v. † *Weber*, p. 143. *Schwag.*  
*p. 35. Michaux. p. 276. Muhl. Cat. n. 4. New-York*  
*C. n. 5.*

An elegant and distinct moss. The FIMBRIAE are by no means, as Schwagerichen presumes, the laciniae of the receptacle. This is only three cleft—the divisions rounded. The fimbriae, on the contrary, are long linear lanceolate snow white organs, of a very different kind, and in great number, flexuosity proceeding from a white margin of the receptacle, and sometimes even from the peduncle. The frons is very narrow, green, underneath purple and veined, turning up the margin when dry.

*Remark.* Imperfect specimens of other hepatics prognosticating some new species have been observed by me. Among the rest, Mr. Le Conte found one, probably a very distinct *Marchantia*, in the mountains. It is however necessary to wait till these are found in fructification before they can be determined.

### 3. TARGIONIA. (Mich.) Linn.

CAPSULA SUBGLOBOSA, CALYCI BIVALVI INSIDENS APICE DEHISCENS, DENTATA, UNILOCULARIS, POLYSPERMA SEMINA AFFIXA FILO TORTO. *Roth. Fl Germ. III. p 423.*

This generic description of Roth suits exactly the character of the hepatic below described; so that it must be considered as belonging to the Genus. But it is certainly a different species, as the Thallus is so greatly different, and from its not agreeing at all with the European specimens of *T. hypophylla* in my collection.

Both Weber and Schwaegerichen cite the *T. HYPOPHYLLA* as found in Carolina. I have not met with it, but almost suspect that they have seen imperfect frondes of *MARCHANTIA HIRSUTA*, and taken them for the *Targionia*. Weber, p. 108. Schwagerichen, p. 35. I have not adopted it as an American species on that account, especially as Muhlenberg does not mention it.

§ 1. *T. Capsula* OBLONGA COMPRESSA SUBGLOBOSA, CALYCI *Orbicularis*  
 MAGNO BIVALVI INSIDENS, DEMUM EJECTA, APICE RIMA *Nobis.*  
 DEHISCENTE, UNILOCULARIS, POLYSPERMA. SEMINA FILO  
 TORTO AFFIXA. FRONS ORBICULARIS LOBATA PLICATA IN  
 CENTRUM, SAEPE CONFLUENS, SED NON IN CAESPITEM AG-  
 GREGATA. v. v. \* †

A most distinct plant, hitherto found by me only in my own bottom garden, in fructification, December and Janu-

ary, but in great quantities on the moist earth of the beds. It forms orbicular frondes, like the *Anthoceros*, much lobed and crenate in the margin, and plicated towards the centre. The CALICES proceed from the plicae, are large, sometimes much crowded, twovalved, and containing a large oblong capsule, yellowish color, which in time falls out, and leaves a hollow. The capsule is a little compressed, and has a rim on the top—probably the opening, although I have not seen any open—it is filled by small globular yellow seeds. The diameter of a single frons is often one inch—many are confluent. The color sometimes green—generally a dark brown, and only greenish in the margin.

#### 4. SPHAEROCARPUS. (Mich.)

CALYX MAGNUS GLOBO-O-TURBINATUS APICE PERFORATUS; MULTIS AGGREGATIS IN FRONDE MINUTO. CAPSULA IN FUNDO CALYCIS. SESSILIS

This very remarkable plant I can hardly doubt is the one Dickson describes, Fasc. I. p. 8. But I have not succeeded in observing the Capsules. I shall, therefore, describe my hepatic at length, and continue to observe it. It was found in immense quantities on the ground in a cornfield in December.

*Terrestriis.*  
Mich.

§ 1. *S. TERRESTRIS MINIMA.* FRONDE VIRIDISSIMA TENUISSIMA JUNGERMANNIOIDEA RETICULATA, VARIE LOBATA, LOBIS ASCENDENTIBUS ACUMINATO-OVATIS. CALYCIUS (STRUCTURA FOLIORUM JUNGERMANNIARUM RETICULATA) GLOBOSE TURBINATIS. CENTRO FORAMINE ROTUNDO. ARCTE IN FRONDE AGGREGATIS. ITA UT FRONS VIX CONSPICITUR, MAJUSCULIS (*seminis papaveris*) VIRIDISSIMIS AETATE SUBPURPURASCENTIBUS APICE.

In cavitate calycis observavi (ut Weber) aliquid stylis muscorum simile—sed capsulam seminibus repletam nonnum inveniri. v. v.\*

I am inclined to suppose that my plant is in a young state, and hope to find the capsule in time. One frons is at most one quarter of an inch in diameter. But a great many are contiguous. The SPHAEROCARPUS is a genus very little known as yet in general.

#### 5. ANTHOCEROS. (Mich.) Linn.

*Laevis.*  
Linn.

§ 1. A FRONDE PLANA CRENATA SINUATA IMPUNCTATA. v. v. Coll. Europ, Weber, p. 111. Schwg. p. 35. Muhl. Cat. n. 1.

On moist earth—certainly different from the next, which is much larger, and not by any means flat. Common.



- § 2. A. FRONDIS ORBICULARITER SUPERIMPOSITIS ROTUN- *Carolinianus*.  
 DATO LOBATIS, MARGINE SUBINTEGRIS, NON PUNCTULATIS. *Michaux*.  
 CORNICULIS CREBRIS UNCIALIBUS. v. v. *Weber*, p. 111.  
*Schwgr.* p. 35. *Michaux*, p. 280.

Very common here in the fall, on the sides of ditches. The frons often two inches in diameter, and very full of fructifications, exceeding an inch in height. Frons much like *I. epiphylla*.

- § 3. A. FRONDE TURBINATA, LACINIATA PUNCTATA. VAGI- *Punctatus*.  
 NULA, UT IN PRIORIBUS TRUNCATA. v. v. *Coll. Europ.* *Linn.*  
*Weber*, p. 112. *Schwgr.* p. 35. *Muhl. Cat.* n. 2.

Occurs frequently on the earth; especially on lichenose spots in the woods—in gardens. Not half as large as the former.

- § 4. A. FRONDE RAMOSISSIMA PLANA LOBIS MULTIFORMIBUS *Laciniatus*.  
 LACINIATA, ALIIS LINEARI OBLONGIS, ALIIS LATIS ROTUN- *Nobis*.  
 Datis MARGINE PLICATIS CRENATIS ET LACINIATIS; OM-  
 NINO ENERVI, MAXIMA. CORNICULIS SPARSIS RARIS MAX-  
 IMIS EX VAGINULA LONGA BIFIDA, IN MEDIA FRONDE. v. v.  
 \* †

This large and remarkable species was found by me in great abundance in a swampy gravelly spot, occasioned by a large spring, forming beautiful green patches more than a foot in diameter. The color is a dark green—the substance very brittle. The pericarpium splits twistingly, and is upwards of one and a half inches long, with a calyx or vagina one-eighth of an inch high. The surface of the frons quite smooth.

- § 5. A? FRONDE JUNGERMANNOIDEA ELONGATA SIMPLICI, *Jungerman-*  
 NERVO MEDIUM PERCURRENTE. FRUCTIFICATIONE TERMI- *nioides*.  
 NALI, (GLOBOSA VAGINA,) LONGIUSCULA, BIVALVI, LINEARI. *Nobis*.  
 v. v. \* †

Found among *Sphagnum*, in bogs, rarely. I am doubtful whether it belongs to the Genus, from the different habit of the simple frons. It is small, and, at first sight, appears a single shoot of *JUNG. QUINQUEFIDA*. From the middle rib, on both sides, a thin greenish purple frons extends in various shaped lobes, obtusely pointed, so as almost to approach the shape of leaves with plicate lobes. At the end a pericarpium, as long as the frons, perfectly like that of an *Anthoceros*, rises perpendicular from a very small globular vagina. The frons is undivided, (in one instance I found it dichotomous,) and not above half an inch long—one line broad, or two at most.

## 6. BLASIA. (Mich.) Linn.

*Pusilla.*  
Linn.

- § 1. B. CAPSULA NUDA FRONDE IMMERSA, OVATO-OBLIQUA, TERMINATA TUBO HIANTE, PERSISTENTE. FRONDIBUS ORBICULARIBUS, AUT CONGESTIS LAETE, IMMO SPLENDENTER, VIRIDIBUS; VENOSO-RETICULATIS, DI-VEL TRICHOTOMIS, APICE CAPSULIFERIS. v. v. \* *Coll. Europ. Weber, p. 114. Schwgr. p. 36. Dr. Torrey sent it. Roth. Fl. Germ. III. p. 426, 428.*

On exsiccated spots of mill-dams. My specimens agree so perfectly with European ones, that I have no doubts. When not in full fructification, it may be recognised by the black male spots on the under side. A very handsome figure of it in HOFFMAN'S Flora Deutschlands. 2 part.

## 7. RICCIA. (Mich.) Linn.

N. B. The fructifications of this genus are but little understood; but the species can be readily distinguished notwithstanding.

*Glaucia.*  
Linn.

- § 1. R. TERRESTRIS, FRONDE PUNCTATA, LACINIIS LATIORIBUS. v. v. *Coll. Europ. Weber, p. 115. Schwgr. p. 37.—Muhl. Cat. n. 1.*

Occasionally occurs on clay and earth.

*Lutescens.*  
Nobis.

- § 2. R. TERRESTRIS, MAJUSCULA, ORBICULATA AC CONFLUENS. FRONDIBUS DI-VEL TRICHOTOMIS APICE TURGIDIS, INFLEXIS EMARGINATO BIFIDIS. LOBIS MARGINE LIBERIS, MEDIO NERVO, SUPERNE IMPRESSO, INFERNE CONVEXO, RADICULOSO: SUBSTANTIA POROSA, CONSTANS EX TUBERCULIS INTUS GRANULIS MINUTIS REPLETIS. v. v. \* †

Found in abundance in an exsiccated swamp on the ground, forming large yellow patches of two inches in diameter. The lower surface puts forth numerous radicles, besides those on the middle nerv. In Spring.

*Nalans.*  
Linn.

3. R. FLUITANS; FRONDE DICHOTOMA, OBCORDATA, RADICULIS SERRATIS. *Weber, p. 117. Schwgr. p. 38. Muhl. Cat. n. 2. New-York Cat. n. 2.*

I have seen no American specimen.

*Fluitans.*  
Linn.

4. R. FLUITANS, FRONDE DICHOTOMA, LACINIIS LINEARIBUS, ELONGATIS. v. s. *Coll. Europ. Weber, p. 117. Schwgr. p. 38. Muhl. Cat. n. 3.*

Sent me from Cherokee Country. Not found here.

## ADDENDA.

Since these sheets were written, the following additional observations have occurred to the author :

Page 19, n. 51. *I. Pinguis*.

This species has been found by me this year in elegant fructifications, and as large as any European specimens. The setae proceed from the lower surface, and are upwards of an inch long, and very thick.

Page 21. n. 2. *Marchantia polymorpha*.

Found here on Muddy Creek in plenty.

REMARK.—Two new species of *Marchantia* have been discovered by me this year, of which the description however cannot be inserted.

Page 23. *Targionia*.

I have found the *TARGIONIA HYPOPHYLLA* in an excavated spring-house, in great perfection and full fructification in February, 1821, so that this species must now be inserted.

§ 2. *T. CAPSULA GLOBOSA, CALYCI BIVALVI INSIDENS, Hypophylla.*  
*POLYSPERMA. FRONDIBUS SIMILIBUS MARCHANTIIS.* Linn.  
*MAGNIS, IN CAESPITEM COLLECTIS, SUPRA LAETE VIRIDIBUS, VERRUCIS ALBIDIS MINIMIS ADSPERSIS, SUBTUS NIGRICANTIBUS, VILLIS RADICULOSIS TERRAE AFFIXIS.* Roth. p. 425. Schwg. p. 35. Web. p. 108. v. v. Coll. Europ. \*

It grows in large tufts, like the *Marchant. hemisphaerica*, on the excavated rock.

Page 24. *SPHAEROCARPUS*.

Having continued my observations on this remarkable moss, I had the pleasure, in March, 1821, of finding it with complete capsules, perfectly answering the description. The Capsule is globose, filled with minute seeds, at first green, then blackish, at the bottom of the Calyx, and about half as large. It soon vanishes, and then the frons expands considerably.

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