

## Desmidiaceae in North Carolina, U.S.A. (1)

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### 美國 North Carolina州의 綠藻類 Desmidiaceae에 對하여 (1)

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#### 摘 要

美國 North Carolina州의 淡水産 綠藻植物 Desmid의 flora를 究明코져 1962년부터 1969년 사이에 200餘 個所에서 採集한 표본을 整理한 結果, 329種의 Desmidiaceae植物을 同定하였다. 本論文에서는 그中 21種 13變種 8亞種의 North Carolina州 未記錄種을 記載하였다.

Few studies on desmids had been done in the South-eastern United States until recently. Poteat (1888) was the first to report 81 taxa of desmids from Wake County, North Carolina. Brown(1930) added 3 species to Poteat's list. A listing of 40 desmids was made by Forest(1949) from Jackson and Macon Counties. Whitford, for the first time, made state-wide survey of fresh-water algae of North Carolina. He described 214 taxa of desmids from all sections of the state. Later, Whitford(1956). Phillips and Whitford(1958), Schumacher and Whitford(1959, 1961), and Schumacher *et al.*(1963) added 85 taxa to the previous list.

The writer had made extensive state wide collections of desmids beginning 1962 through 1966 and have identified 329 taxa. Among these, 129 taxa are new to the state.

This paper presents 42 taxa of unreported desmids including 4 genera, 21 species, 13 varieties and 8 forms.

Collections were made from more than 200 localities of North Carolina State. Squeezings of submerged higher plants and plankton tows were the most popular method. Materials were brought back to the laboratory and were observed in living condition. After taking a quick note of living

specimens, they were preserved in Transeau's solution for further study.

#### Description of species

Division Chlorophyta  
Class Chlorophyceae  
Order Zygnematales  
Family Desmidiaceae

*Penium exiguum* West

L. 35-81, W. 6-7, New Hanover Co.

*P. rufescens* Cleve

L. 46-62, W. 18-25, I. 16-22; several ponds in Mountain and Coastal Plain.

*P. spinospermum* Josh.

L. 28-34, W. 13-14, Henderson Co. Carteret Co.

*Closterium abruptum* var. *brevius* W. et G. S. West

L. 89, W. 16, Cliffside Lake, Jackson Co.

*C. archerianum* f. *major* Irene-Marie

L. 420-470, W. 35-41, Ap. 6-7, Pyr. 9-11, 130°-145°. 4-5 striae in 10  $\mu$ . S. Wake and Johnston Co.

*C. braunii* Reinsch

L. 625-850, W. 60, Pyr. 13-16, Tg. numerous, 5-6 striae visible across the cell, Allen's Pond, Wake Co.

- C. gracile* var. *elongatum* W. et G. S. West  
L. 310-340, W. 4-6, Ap. 2.5; several ponds in Coastal Plain.
- C. juncidum* var. *brevior* Roy  
L. 190, W. 11, Ap. 6, Tg. 1, 10 striae in 10  $\mu$ , Macon Co. Carteret Co.
- C. kuetzingii* f. *sigmoides* Irene-Marie  
L. 320, W. 18, Ap. 2.5-3.5; Olive pond, Wake Co.
- C. libellula* Focks  
L. 167-320, W. 22-41, Ap. 9-13; apparently widespread throughout North Carolina.
- C. libellula* var. *interruptum* (W. et W.) Donat  
L. 151-223, W. 25-45, Ap. 11-13, chloroplast deeply notched or separate at the middle of semicell, wall yellowish-brown, Wake Co. and Macon Co.
- C. lineatum* var. *costatum* Cushman  
L. 570-840, W. 25-30, 6-8 costae across the cell, wall punctate between costae, Macon Co.
- C. littorale* Gay  
L. 149-197, W. 20-23, Ap. 4.5-5, Pyr. 3-5, Tg. 1-4, 46°-57°; several ponds in Piedmont and Coastal Plain.
- C. lunula* f. *gracilis* Messik.  
L. 400-500, W. 80, Pyr. many, scattered, chloroplast notched at the edge like in *Netrium*; pond at Morehead City, Carteret Co.
- C. macilentum* Breb.  
L. 500-560, W. 18-22, Ap. 9, Pyr. 10-11, Tg. 1; from S. Wake Co.
- C. parvulum* var. *angustum* W. et G. S. West  
L. 93, W. 7, 119, Pyr. 3, Holt's Lake, Johnston Co.
- C. praelongum* f. *brevior* West  
L. 320-350, W. 16-19, Ap. 3-4, Pyr. 10-14, Tg. 1-2, Large; a ditch at Cary, Wake Co.
- C. pronum* Breb.  
L. 400-455, W. 7, Ap. 2, Pyr. 4-5, Tg. 2-7, Wake Co.
- Closterium pseudodiana* Roy  
L. 165-178, W. 11-13, Ap. 3, Pyr. 4-5, Tg. 8-9, 90°. Scotland Co.
- C. setaceum* f. *sigmoideum* Irene-Marie  
L. 420-440, W. 12, Pyr. 2-4, S. Wake Co.
- C. subulatum* (Kütz.) Breb.  
L. 192, W. 13, Pyr. 4, Tg. 1, 38°, Duplin Co.
- C. toxon* West  
L. 201-370, W. 7-11, Ap. 3, Pyr. 6-7, Tg. 6; widespread throughout North Carolina.
- C. turgidum* var. *giganteum* Ndt.  
L. 910-1490, W. 70-115, Ap. 21-30, Wake Co. Duplin and Scotland Co.
- C. venus* Kütz.  
L. 62-87, W. 7-13, Ap. 3, Pyr. 1-3, Tg. 1, 149°-179°; apparently widespread throughout North Carolina.
- Pleurotaenium constrictum* Bailey  
L. 540-585, B. 43-56, Ap. 30-36, I. 25-30, apical tubercles 4, visible across the semicell; from several ponds in the Coastal Plain.
- P. indicum* (Grun.) Lund.  
L. 340, W. 16, Holt's Lake, Johnston Co.
- P. ovatum* Nordst  
L. 430-500, W. 110-130, Ap. 34-38, I. 57-60, 5-6 apical tubercles visible across the semicell; rare, Harnett and New Hanover Co.
- P. tridentulum* (Wolle) West  
L. 224, W. 16, Green River, Polk Co.
- P. tridentulum* var. *fernaldii* Taylor  
L. 165, W. 5-6, B. 7, Ap. 7, Scotland Co.
- Euastrum abruptum* Nordst. f. *minor* W. et G. S. West  
L. 27, W. 20, I. 4, Bladen Co.
- E. ansatum* var. *dideltiforme* Ducellier  
L. 64-69, W. 36-39, I. 11, Wake Co.
- E. binale* f. *hians* West  
L. 29-32, W. 25, I. 4-5; the size is about twice as large as West described; Scotland Co.
- E. ciastonii* Racib.  
L. 37, W. 25-27, I. 5-6, Duplin Co.
- E. crassum* (Breb.) Kütz.  
L. 117-141, W. 60-72, I. 16-22, Bladen Co. (Schumacher and Whitford, 1959), Wake Co.
- E. crassum* var. *scrobiculatum* Lund.  
L. 137-162, W. 69-87, I. 19-22, Wake Co. Harnett Co.
- E. cuspidatum* Wolle  
L. 27, Lcsp. 33, W. 20, Wcsp. 25, I. 4, Brunswick Co.

*E. divaricatum* Lund.

L. 41—47, W. 34—40, I. 7—8, Wake Co. common in ponds of southeastern Coastal Plain.

*E. evolutum* var. *integrius* West et G. S. West

L. 50—57, W. 36—41, I. 7—9, Wake Co. and Duplin Co.

*E. insigne* var. *lobulatum* f. *acutilobum* Prescott et Scott

L. 100, W. 64, I. 11, Wp. 35, Brunswick and Scotland Co.

*E. insurale* Roy

L. 18—23, W. 12—16, I. 4; from several ponds in southeastern Coastal Plain.

*E. intermedium* var. *scrobiculatum* Schmidle

L. 73, W. 36, I. 9, Wp. 25, Brunswick Co.

*E. pinnatum* Ralfs f. *pinnatum* Prescott et Scott

L. 112—126, Wp. 25—28, B. 55—59, I. 16; the shape and size correspond to *E. pinnatum* f. *pinnatum* which Prescott and Scott (1945) described; Granville and Wake Co. Beaufort Co.

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## Explanation of Plates

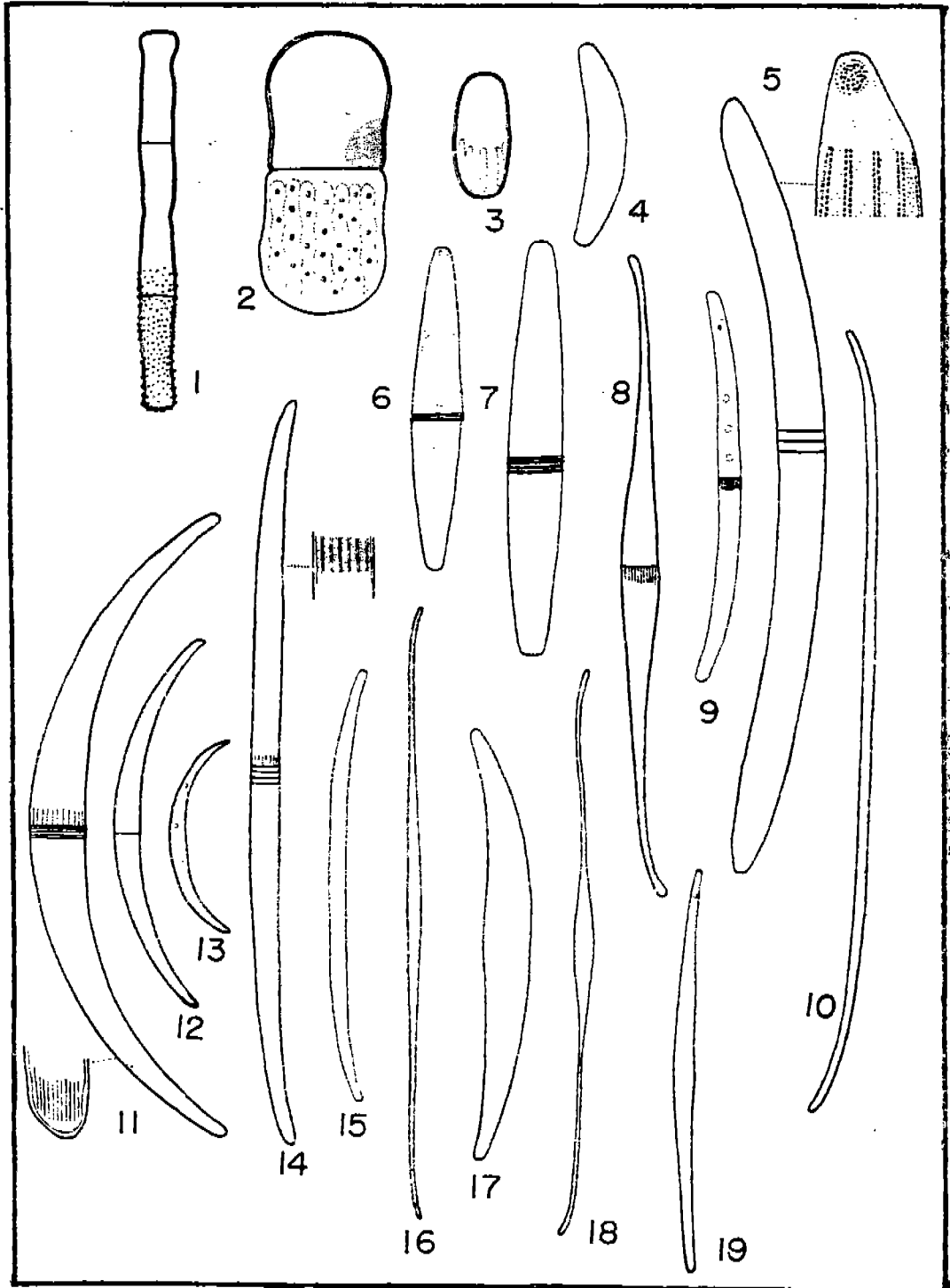
## Plate I

- Fig. 1. *Penium exiguum* West  
 Fig. 2. *P. rufescens* Cleve  
 Fig. 3. *P. spinospermum* Josh.  
 Fig. 4. *Closterium abruptum* var. *brevius* W. et G. S. West  
 Fig. 5. *C. brawni* Reinsch  
 Fig. 6. *C. libellula* var. *interruptum* (W. and W.) Donat  
 Fig. 7. *C. libellula* Focks  
 Fig. 8. *C. kützingii* f. *sigmoides* Irene-Marie  
 Fig. 9. *C. juncidum* var. *brevior* Roy  
 Fig. 10. *C. gracile* var. *elongatum* W. and G. S. West  
 Fig. 11. *C. archerianum* f. *major* Irene-Marie  
 Fig. 12. *C. pseudodiana* Roy  
 Fig. 13. *C. parvulum* var. *angustum* W. et G. S. West  
 Fig. 14. *C. lineatum* var. *costatum* Cush.  
 Fig. 15. *C. macilentum* Breb.  
 Fig. 16. *C. pronum* Breb.  
 Fig. 17. *C. littorale* Gay  
 Fig. 18. *C. setaceum* f. *sigmoideum* Irene-Marie  
 Fig. 19. *C. subulatum* (Kuetz.) Breb.

## Plate II

- Fig. 1. *Plurotaenium constrictum* Bailey  
 Fig. 2. *P. tridentulum* var. *fernaldii* Taylor  
 Fig. 3. *P. indicum* (Grun.) Lund.  
 Fig. 4. *P. tridentulum* (Wolle) West  
 Fig. 5. *Closterium lunula* f. *gracilis* Mesik.  
 Fig. 6. *C. praetongum* f. *brevior* West  
 Fig. 7. *C. toxon* West.  
 Fig. 8. *C. turgidum* var. *giganteum* Nordst  
 Fig. 9. *E. abruptum* f. *minor* W. et G. S. West.  
 Fig. 10. *P. ovatum* Nordst.  
 Fig. 11. *Eurastrum binale* f. *hinas* West  
 Fig. 12. *E. pinnatum* Ralfs f. *pinnatum* Prescott et Scott  
 Fig. 13. *C. venus* Kütz.  
 Fig. 14. *E. insulare* Roy  
 Fig. 15. *E. ansatum* var. *dideltiforme* Duce'llier  
 Fig. 16. *E. cuspidatum* Wolle  
 Fig. 17. *E. ciastonii* Racib.  
 Fig. 18. *E. intermedium* var. *scrobiculatum* Schmidle  
 Fig. 19. *E. crassum* (Breb.) Kütz.  
 Fig. 20. *E. crassum* var. *scrobiculatum* Lund.  
 Fig. 21. *E. divaricatum* Lund.  
 Fig. 22. *E. insigne* var. *lobulatum* f. *acutibum* Prescott et Scott  
 Fig. 23. *E. evolutum* var. *integrus* West et West

# PLATE I



# PLATE II

