

## Taketoshi HINODE\*: The desmid-flora of Akai-yachi (2)

日出 武 敏\*: 赤井谷地のチリモ植物相 (2)

24. *Pleurotaenium Ehrenbergii* (Bréb.) De Bary—Length 450 $\mu$ ; breadth at the bases 26 $\mu$ ; at the apices 20 $\mu$ . (Pl. III, figs. 1-3)

25. *Pl. ovatum* Nordst. var. *inermius* Moebius—Length 365 $\mu$ ; breadth 130 $\mu$ ; breadth of isthmus 49 $\mu$ . (Pl. III, figs. 6, 7)

*Pl. ovatum* and var. *inermius* are not rare in Japan, and they are distributed in the considerably northern districts. I could find many specimens here.

26. *Pl. nodosum* (Bail.) Lund.—Length 214 $\mu$ ; breadth at the bases 46 $\mu$ ; at the apices 24 $\mu$ . (Pl. III, figs. 4, 5)

Several specimens were observed, being slightly broader and stouter.

27. *Triploceras gracile* Bail.—Length 388 $\mu$ ; breadth at the bases 27 $\mu$ , at the apices 24 $\mu$ . (Pl. III, fig. 8) Very rare.

28. *Tetmemorus Brébissonii* (Menegh.) Ralfs var. *minor* De Bary—Length 68 $\mu$ ; breadth 19 $\mu$ ; breadth of isthmus 16 $\mu$ . (Pl. III, figs. 9-10)

29. *T. granulatus* (Bréb.) Ralfs var. *attenuatus* West—Length 105 $\mu$ ; breadth 24 $\mu$ ; breadth of isthmus 20 $\mu$ . (Pl. III, figs. 11, 12)

30. *T. laevis* (Kütz.) Ralfs var. *minutus* (De Bary) Krieger—Length 57 $\mu$ ; breadth 17 $\mu$ . (Pl. III, figs. 13-14)

31. *Euastrum ampullaceum* Ralfs—Length 86-89 $\mu$ ; breadth 51-57 $\mu$ ; breadth of isthmus 14 $\mu$ ; breadth of polar lobes 25-27 $\mu$ . (Pl. III, fig. 15)

This desmid is very abundant in Japanese *Sphagnum*-bogs, usually associated with *E. humerosum* Ralfs, *E. cuneatum* Jenn., *E. pinnatum* Ralfs, *E. crassum* (Bréb.) Kütz. etc., but here these other species are not seen.

32. *E. anisatum* Ralfs—Length 88 $\mu$ ; breadth 41 $\mu$ ; breadth of isthmus 13 $\mu$ ; breadth of polar lobes 19 $\mu$ ; thickness 31 $\mu$ . (Pl. III, figs. 16-17)

33. *E. sinuosum* Lenorm.—Length 70 $\mu$ ; breadth 40 $\mu$ ; breadth of isthmus 11 $\mu$ ; breadth of polar lobes 20 $\mu$ ; thickness 25 $\mu$ . (Pl. III, figs. 18-20)

34. ***E. akaiense*** Hinode sp. nov. (Pl. IV, figs. 1-6)

*E. mediocre*, 2-2 $\frac{1}{3}$ -plo longius quam latum, profunde constrictum, sinu angusto lineari; senicellulae truncato-pyramidatae, angulis basalibus subrectangulari-

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bus, marginibus lateralibus biundulatis, elevatione mediana prominentibus, lobo polari subquadratis, angulis apicalibus quadrato-rotundatis, apicibus convexis incisula mediana profundissima, juxta supra isthmi cum tumore depresso singulo, in centro semicellularum scrobiculis triangulariter ordinatis dispositis; a vertice visae ellipticae polis rotundatis marginibus convexis; a latere visae subovato-oblongae apicibus rotundatis, marginibus ad parte inferiori subparallelibus; membrana minute punctata.

Long. 63-74  $\mu$ ; lat. 30-33  $\mu$ ; lat. isthm. 11-12  $\mu$ ; lat. lob. pol. 18-20  $\mu$ ; crass. 21  $\mu$ .

This new species shows close relation to *E. sinuosum* Lenorm. in its outline, but the lacking of the central and intralobular basal tumors is its conspicuous character; somewhat flat basal tumor above the isthmus is also characteristic.

35. *E. gnathophorum* West and G.S. West—Length 69  $\mu$ ; breadth 35  $\mu$ ; breadth of isthmus 10  $\mu$ . (Pl. III, figs. 21, 22)

This is a widely distributed species in Japan, and especially abundant in the peaty bogs.

36. *E. Lütkeülleri* Duc. var. *carniolicum* (Lütke.) Krieg.—Length 30-33  $\mu$ ; breadth 20-22  $\mu$ ; breadth of isthmus 7  $\mu$ ; breadth of polar lobes 14-15  $\mu$ ; thickness 14  $\mu$ . (Pl. IV, figs. 7-9)

The lateral lobes of this form are rounded and not undulated, its outline being rather near to *E. sublobatum* Bréb., but by the peculiar thickness of the membrane at the central part and the scrobicule immediately above it, I can identify the specimens with this species.

37. *E. insulare* (Wittr.) Roy—Length 25  $\mu$ ; breadth 17  $\mu$ ; breadth of isthmus 6  $\mu$ ; breadth of polar lobes 11  $\mu$ ; thickness 11  $\mu$ . (Pl. IV, figs. 10-12)

38. *E. pulchellum* Bréb.—Length 28  $\mu$ ; breadth 21  $\mu$ ; breadth of isthmus 7  $\mu$ . (Pl. IV, fig. 13)

39. *E. octogibbosum* Krieger forma. (Pl. IV, fig. 14)

This form is fairly larger, upper and lower lateral lobules having short conical spines; 4 verrucae of the semicell which are situated inside the polar and lateral lobes being rather smaller. It is near to *E. Turneri* West in appearance.

40. *E. ceylanicum* (West and G.S. West) Krieger var. **Ikagamii** Hinode var. nov. (Pl. IV, fig. 15-17)

Var. paulo major, 1•1/6-plo longior quam lata, incisuris lateralibus rectangularibus, lobis lateralibus subquadratis levissime emarginatis, lobis polari quadratis, angulis rectangulariter rotundatis, tumori centrali cum angulis granulorum duobus

et in centro granulo singulo (e vertice visae elongato conico), tumoribus lateralibus cum annulo granulorum 5 vel 6 et in centro singulo unoquoque (e vertice visae elongato-conico spiniformi); e latere visae semicellulae subrectangulariter ovatae; e vertice visae depresso-oblongae, lobo polari quadrati, marginibus emarginatis.

Long. 70–80  $\mu$ ; lat. 60–68  $\mu$ ; isthm. 13–16  $\mu$ ; lat. lob. polar. 28–31  $\mu$ ; crass. 38  $\mu$ .

41. *Microsterias pinnatifida* (Kütz.) Ralfs—Length 53  $\mu$ ; breadth 57  $\mu$ ; breadth of isthmus 10  $\mu$ . (Pl. IV, fig. 18) Very rare in this district.

42. *M. truncata* (Corda) Bréb.—Length 105  $\mu$ ; breadth 102  $\mu$ ; breadth of isthmus 21  $\mu$ ; breadth of polar lobes 67  $\mu$ ; thickness 46  $\mu$ . (Pl. IV, figs. 19, 20)

This is one of the bog-desmids and is frequently seen here.

43. *M. sol* (Ehrenb.) Kütz. var. *ornata* Nordst.—Length 135  $\mu$ ; breadth 117  $\mu$ ; breadth of isthmus 15  $\mu$ . (Pl. IV, fig. 21) Very rare.

44. *M. denticulata* Bréb. var. *angulosa* (Hantzsch) West and G. S. West (Pl. IV, fig. 22)

Only somewhat deformed semicell was observed, which has much shorter incision and cell-wall coarsely punctate. From its form of lobulets it is near to var. *angustosinuata* Gay which is not a distinct variety.

45. *Cosmarium Westii* Bernard in Krieger, Archiv. f. Hydrob. **11**: Suppl.: 190 t. 8, f. 6 (1932)—Length 76–78  $\mu$ ; breadth 42–46  $\mu$ ; breadth of isthmus 40–43  $\mu$ . (Pl. IV, fig. 23)

This species was recorded from Java by Bernard and Krieger. I could see a few specimens here.

46. *C. cucurbita* Bréb.—Length 37  $\mu$ ; breadth 21  $\mu$ ; breadth of isthmus 19  $\mu$ . (Pl. IV, fig. 24)

47. *C. parvulum* Bréb.—Length 39–44  $\mu$ ; breadth 17–19  $\mu$ ; breadth of isthmus 16–18  $\mu$ . (Pl. IV, figs. 26–27)

This is somewhat widely distributed in Japanese bogs. In general it is rather larger and the cell-wall is minutely punctate; smaller and smooth-membraned form is distinguished as forma *minor* West and G.S. West. (Trans. Linn. Soc. Bot. ser. 2, **6**: 168, 1902)

48. *C. globosum* Buluh.—Length 31  $\mu$ ; breadth 18  $\mu$ ; breadth of isthmus 16  $\mu$ . (Pl. IV, fig. 25).

49. *C. pachydermum* Lund.—Length 99  $\mu$ ; breadth 73  $\mu$ ; breadth of isthmus 26  $\mu$ ; thickness 46  $\mu$ . (Pl. V, figs. 4–6)

50. *C. pyramidatum* Bréb.—Length 103  $\mu$ ; breadth 60  $\mu$ ; breadth of isthmus

16  $\mu$ ; thickness 46  $\mu$ . (Pl. V, figs. 1-3)

51. *C. pseudopyramidatum* Lund.—Length 51  $\mu$ ; breadth 32  $\mu$ ; breadth of isthmus 10  $\mu$ . (Pl. V, figs. 11, 12)

52. *C. obsoletum* (Hantzsch) Reinsch—Length 48  $\mu$ ; breadth 55  $\mu$ ; breadth of isthmus 26  $\mu$ . (Pl. V, fig. 13)

— var. *stivense* Gutw.—Length 65  $\mu$ ; breadth 68  $\mu$ ; breadth of isthmus 31  $\mu$ . (Pl. V, fig. 14)

53. *C. auriculatum* Reinsch var. **reductum** Hinode var. nov. (Pl. V, fig. 7)

Var. *angulis basalibus semicellularum oblique truncatis, granulis conicis 2 vel 3 unoquoque*. Long. 46  $\mu$ ; lat. 49  $\mu$ ; lat. isthm. 24  $\mu$ ; crass. 24  $\mu$ .

This variety shows a much reduced form compared to the type; basal part of the semicell not being produced into spines, but being obliquely truncate and furnished with two or three conical granules; dorsal margins sometimes truncately rounded.

54. *C. ocellatum* Eichl. et Gutw. var. **glabrum** Hinode var. nov. (Pl. V, figs. 8-9)

Var. *ferè tam longior quam lata; semicellulis in centro glabris, dorso paulo truncato-rotundatis; membrana minute punctata*.

Long. 25-26  $\mu$ ; lat. 24-25  $\mu$ ; lat. isthm. 6-7  $\mu$ ; crass. 13-14  $\mu$ .

55. *C. granatum* Bréb.—Length 25  $\mu$ ; breadth 16  $\mu$ ; breadth of isthmus 6  $\mu$ . (Pl. IV, fig. 36)

56. *C. depressum* (Näg.) Lund. var. *granulatum* Turn.—Length 21  $\mu$ ; breadth 25  $\mu$ ; breadth of isthmus 7  $\mu$ . (Pl. IV, fig. 37)

57. *C. pseudoscenedesmus* West and G. S. West—Length 30  $\mu$ ; breadth 46  $\mu$ ; breadth of isthmus 11  $\mu$ ; thickness 19  $\mu$ . (Pl. V, fig. 15) Very rare.

58. *C. sublateriundatum* West and G. S. West—Length 42  $\mu$ ; breadth 34  $\mu$ ; breadth of isthm. 11  $\mu$ ; thickness 19  $\mu$ . (Pl. IV, figs. 38, 39) Very rare.

59. *C. subcucumis* Schmidle—Length 54  $\mu$ ; breadth 33  $\mu$ ; breadth of isthmus 15  $\mu$ . (Pl. IV, fig. 30)

Cell-wall is finely punctate. This is rather common in Japanese bogs.

60. *C. quadratum* Ralfs—Length 57  $\mu$ ; breadth 33  $\mu$ ; breadth of isthmus 14  $\mu$ . (Pl. V, fig. 10)

61. *C. exiguum* Arch.—Length 27  $\mu$ ; breadth 16  $\mu$ ; breadth of isthmus 7  $\mu$ ; thickness 9  $\mu$ . (Pl. IV, figs. 31, 32)

62. *C. contractum* Kirch. var. *ellipsoideum* (Elfv.) West and G. S. West—Length 35  $\mu$ ; breadth 28  $\mu$ ; breadth of isthmus 8  $\mu$ . (Pl. IV, fig. 29)

63. *C. impressulum* Efv.—Length 28 $\mu$ ; breadth 19 $\mu$ ; breadth of isthmus 6 $\mu$ . (Pl. IV, fig. 33)

64. *C. connatum* Bréb.—Length 68 $\mu$ ; breadth 50 $\mu$ ; breadth of isthmus 39 $\mu$ . (Pl. IV, fig. 28)

65. *C. Regnesi* Reinsch var. *tritum* West—Length 11 $\mu$ ; breadth 11 $\mu$ ; breadth of isthmus 6 $\mu$ ; thickness 6 $\mu$ . (Pl. IV, figs. 34, 35)

#### Explanation of plates III-IV

Plate III: 1-3. *Pleurotaenium Ehrenbergii* (Bréb) De Bary 1, 2,  $\times 225$ ; 3,  $\times 440$ . 4, 5. *P. nodosum* (Bail.) Lund. 4,  $\times 440$ ; 5, a monstrous form,  $\times 225$ . 6, 7. *P. ovatum* Nordst. var. *inermius* Moebius 6,  $\times 225$ ; 7,  $\times 440$ . 8. *Triploceras gracile* Bail.  $\times 440$ . 9, 10. *Tetmemorus Brébissonii* (Menegh.) Ralfs var. *minor* De Bary  $\times 440$ . 11, 12. *T. granulatus* (Bréb.) Ralfs var. *attenuatus* West  $\times 440$ . 13, 14. *T. laevis* (Kütz.) Ralfs var. *minutus* Krieg.  $\times 440$ . 15. *Euastrum ampullaceum* Ralfs  $\times 440$ . 16, 17. *E. anisatum* Ralfs  $\times 440$ . 18-20. *E. sinuosum* Lenorm.  $\times 440$ . 21, 22. *E. gnathophorum* West and G.S. West  $\times 440$ .

Plate IV: 1-6. *Euastrum akaiense* Hinode sp. nov.  $\times 440$ . 7-9. *E. Lütkenii*-*leri* Duc. var. *carniolicum* (Lütken.) Krieg.  $\times 440$ . 10-12. *E. insulare* (Wittr.) Roy.  $\times 440$ . 13. *Euastrum pulchellum* Bréb.  $\times 440$ . 14. *E. octogibbosum* Krieg. forma.  $\times 440$ . 15-17. *E. ceylanicum* (West and G. S. West) Krieg. var. *Ikegamii* Hinode var. nov.  $\times 440$ . 18. *Micrasterias pinnatifida* (Kütz.) Ralfs  $\times 440$ . 19, 20. *M. truncata* (Corda) Bréb.  $\times 440$ . 21. *M. sol* (Ehrenb.) Kütz. var. *ornata* Nordst.  $\times 440$ . 22. *M. denticulata* Bréb. var. *angulosa* (Hantzsch) West and G. S. West.  $\times 225$ , a much deformed form. 23. *Cosmarium Westii* Bernard  $\times 440$ . 24. *C. cucurbita* Bréb.  $\times 440$ . 25. *C. gloosum* Bulnh.  $\times 440$ . 26, 27. *C. parvulum* Bréb.  $\times 440$ . 28. *C. connatum* Bréb.  $\times 440$ . 29. *C. contractum* Kirchn. var. *ellipsoideum* (Efv.) West and G. S. West  $\times 440$ . 30. *C. subcucumis* Schmidle.  $\times 440$ . 31, 32. *C. exiguum* Arch.  $\times 440$ . 33. *C. impressulum* Efv.  $\times 440$ . 34, 35. *C. Regnesi* Reinsch var. *tritum* West  $\times 440$ . 36. *C. granatum* Bréb.  $\times 440$ . 37. *C. depressum* (Näg.) Lund. var. *granulatum* Turn.  $\times 440$ . 38, 39. *C. sublateriundatum* West and G. S. West  $\times 440$ .

□TANAKA, Tyôzaburô: **Species problem in Citrus.** 152 p., 3 pl. 昭和29年3月発行 丸善(発売所) ¥ 350.

A critical study of wild and cultivated units of *Citrus*, based upon field studies in their native homes という副題がある。著者が多年にわたつて世界中の柑橘類を研究した結論がまとめられていて、特に Swingle (1948) の分類に対する見解が明らかにされている。又柑橘類の分布を主として「28°N と 98°E の交叉点から南東に 19°N と 108°E の交叉点を結ぶ斜めの線」を Tanaka Line と名付け、これを植物分布上の重要な線であると考えている。(H. H.)

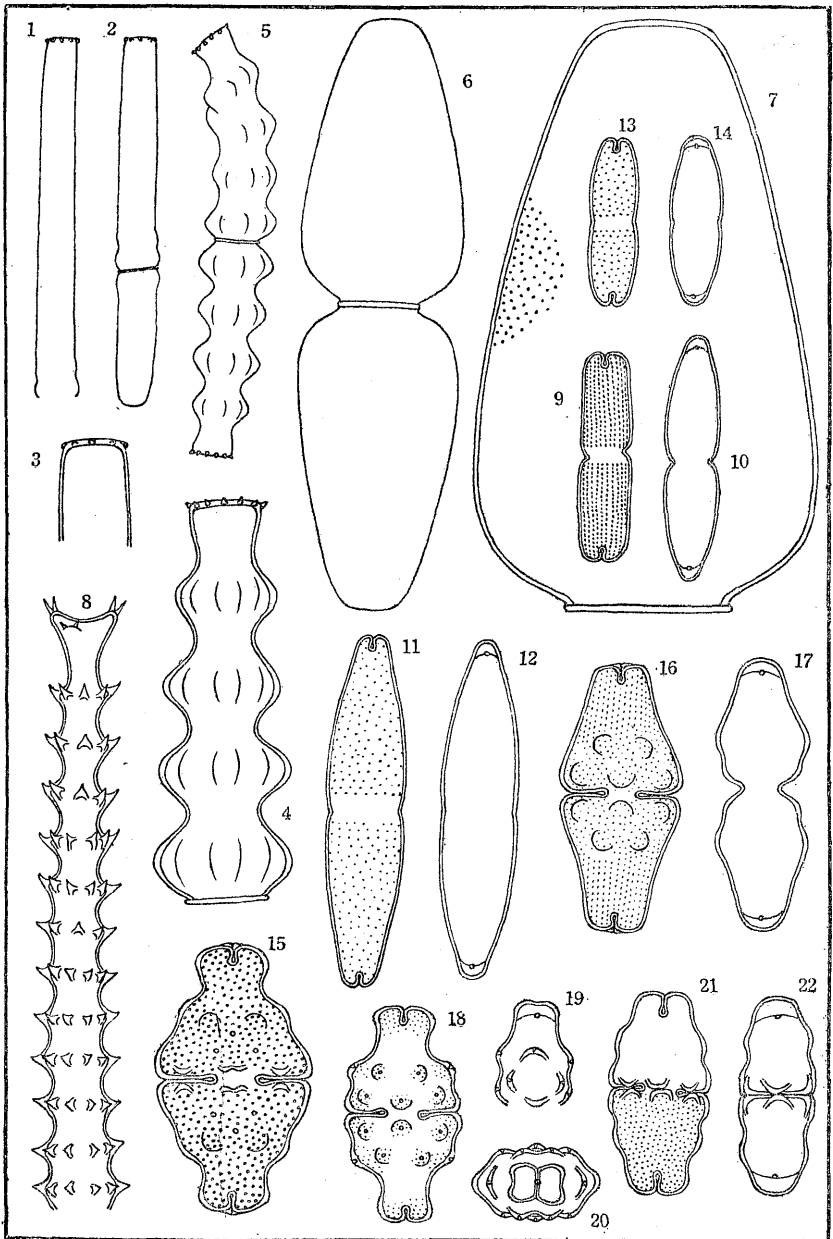


Plate III. Hinode, The desmid-flora of Akai-yachi

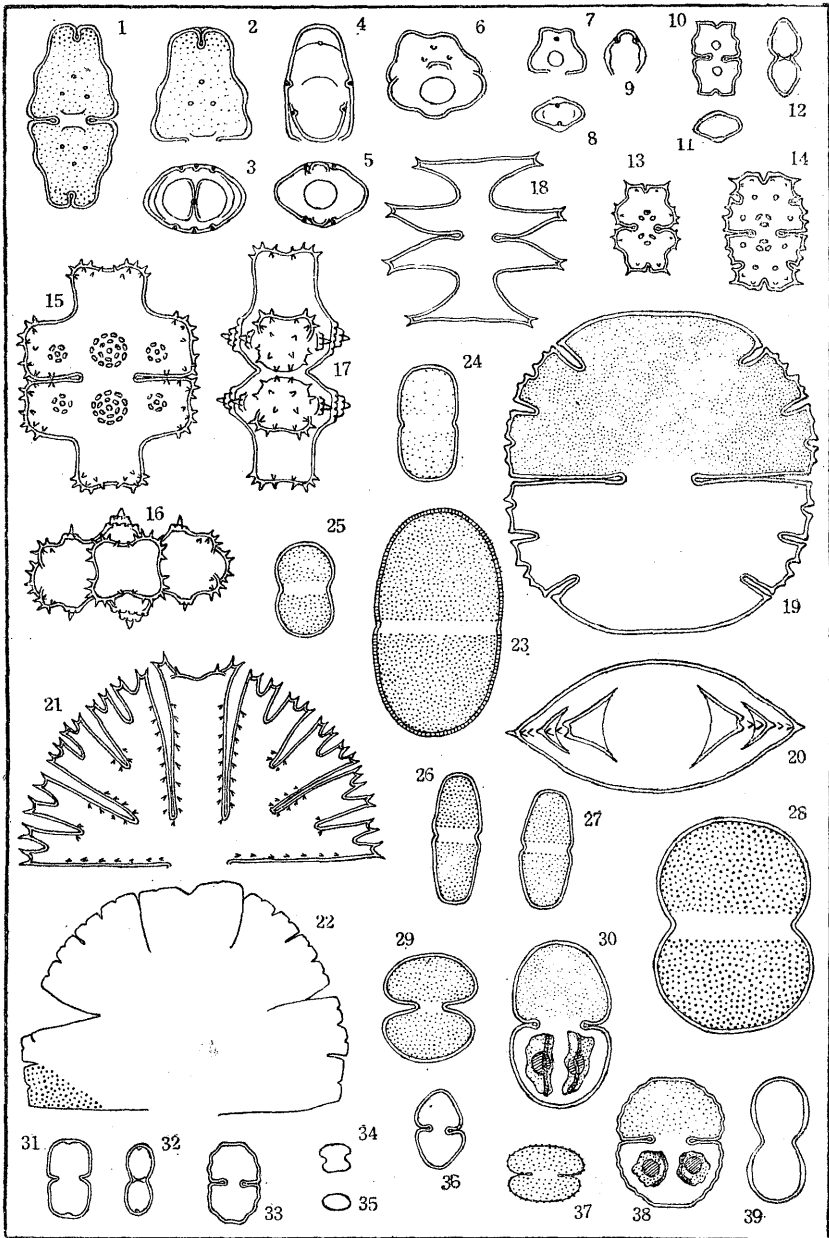


Plate IV. Hinode, The desmid-flora of Akai-yachi