

**DESMIDS FROM SOME SELECTED AREAS OF BANGLADESH: 3.
GENUS *STAUSTRUM* MEYEN (2)**

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Abstract

The paper deals with 13 taxa belonging to Desmid genus *Staurastrum* Meyen from some selected areas of Bangladesh. Of these, eight taxa are new records for Bangladesh and two taxa are new to science.

Introduction

This is in continuation of the previous work on desmids collected from some selected areas of Bangladesh and published under the same title in the same journal (Islam and Akter 2004). The latter paper dealt with the genus *Staurastrum* Meyen, in which 30 taxa belonging to it have been described. In the present instalment further addition of 13 taxa belonging to the same genus, not included in the previous paper, have been made. Of these taxa included here, eight taxa are new records for Bangladesh and two taxa are new to science. The new taxa and new records are marked by the asterisk (*) in the text.

Materials and Methods

For details see Islam and Akter (2004).

Taxonomy

Class: Chlorophyceae; Order: Desmiales; Family: Desmidiaceae

Genus: *Staurastrum* Meyen

1. ****Staurastrum excavatum*** West & West var. ***spinosum*** Islam and Akter var. nov.

(Pl. 1, Figs. 14-15)

Cell medium-small, with distinct notch-like median constriction; broader than long; cell length without process 11.5 μm ; mid-diam. without processes 10.3 μm , with processes 37-54 μm ; isthmus 5.2 μm ; differs from the typical by its shorter length and greater breadth, and with one large spine at the basal angles of each semicell; additional spines are present on the cell wall and the processes are relatively longer; top view is somewhat twisted; apex with distinct depression.

Specimen studied: Collection No. KG₂, Collected from a ditch near the Kaliganj Railway station, Gazipur district, on 12 September 1989.

1. ***Staurastrum excavatum** West & West var. **spinosum** Islam and Akter var. nov. (Pl. 1, Figs. 14-15)
Cellulis medio-parvus, cum mediano incisura distinctus; aspectus apicalis aliquantum tortus; membrana cellulis spinosus; apicalis cum dipressio distinctus; cellulis sine processibus 11.5 μm longis; medio-diam. sine processibus 10.3 μm , cum processibus 37-54 μm ; isthmus 5.2 μm ; varieties a typo divergens a longitudo brevis; diametro latus, et unus spina ad angulis basalis et semicellulis; membrana cellulis spinosus.
Typus: Pl. 1 Figs. 14-15; Type locality: a ditch near the Kaliganj Railway station, Gazipur district. on 12 September 1989.
2. ***St. indentatum** West and west fa. **minus** Scott & Prescott (Pl. 1, Figs. 5-6)
 (Scott & Prescott 1961, 96, Pl. 50, Figs. 8,9)
 In cell shape and ornament this form is similar to the typical form, but is much smaller and with shorter processes; cell length 34-37 μm ; mid-diam at base without processes 17.1 μm ; with processes 59-62.5 μm ; isthmus 5.7-7.1 μm ; a form with two large spines at the apex of the semicell; arms more or less horizontal.
Specimens studied: Collection No.KG₃, from a rice-field near the Kaliganj Railway station, district Gazipur; collected on 4 November, 1989; common in the collection.
3. **St. leptocladum** var. **cornutum** West & West
 (Islam and Haroon 1980, Pl. 17: 243)
 Cell L. without spines 36.9 μm ; L. with processes 38.8 μm ; mid-diam without processes 17.1 μm , with processes 82.4 μm ; isthmus 7.1 μm ; the process are horizontally elongated; dentatum at the base of each semicell present.
Specimen studied: Collection No. KG₂, from a rice-field near the Kaliganj Railway station, Gazipur district, on 12 September 1989.
4. ***St. leptocladum** Nordst., var. **smithii** Grönblad (Pl. 1, Figs. 7-9)
 (Förster 1969, Pl. 38: 1; 1974, 179, Pl. 24: 1-4)
 In shape and size it fits well with this variety as shown by Förster (1969, Pl. 38: 1) from Brazil. His illustrations of the same taxon in 1974 are little different; cell length without spine 39.8 μm ; mid diam. without processes 17.1 μm , and with processes 85.2 μm ; isthmus 5.7 μm broad.
Specimen studied: Collection No. KG₃, from a rice-field near Kaliganj Railway station on 4 November, 1989.
5. ***St. leptocladum** var. **subinsigne** Scott & Grönblad (Pl. 1, Figs. 10-11)
 (Scott and Grönblad 1957, Pl. 22: 8)

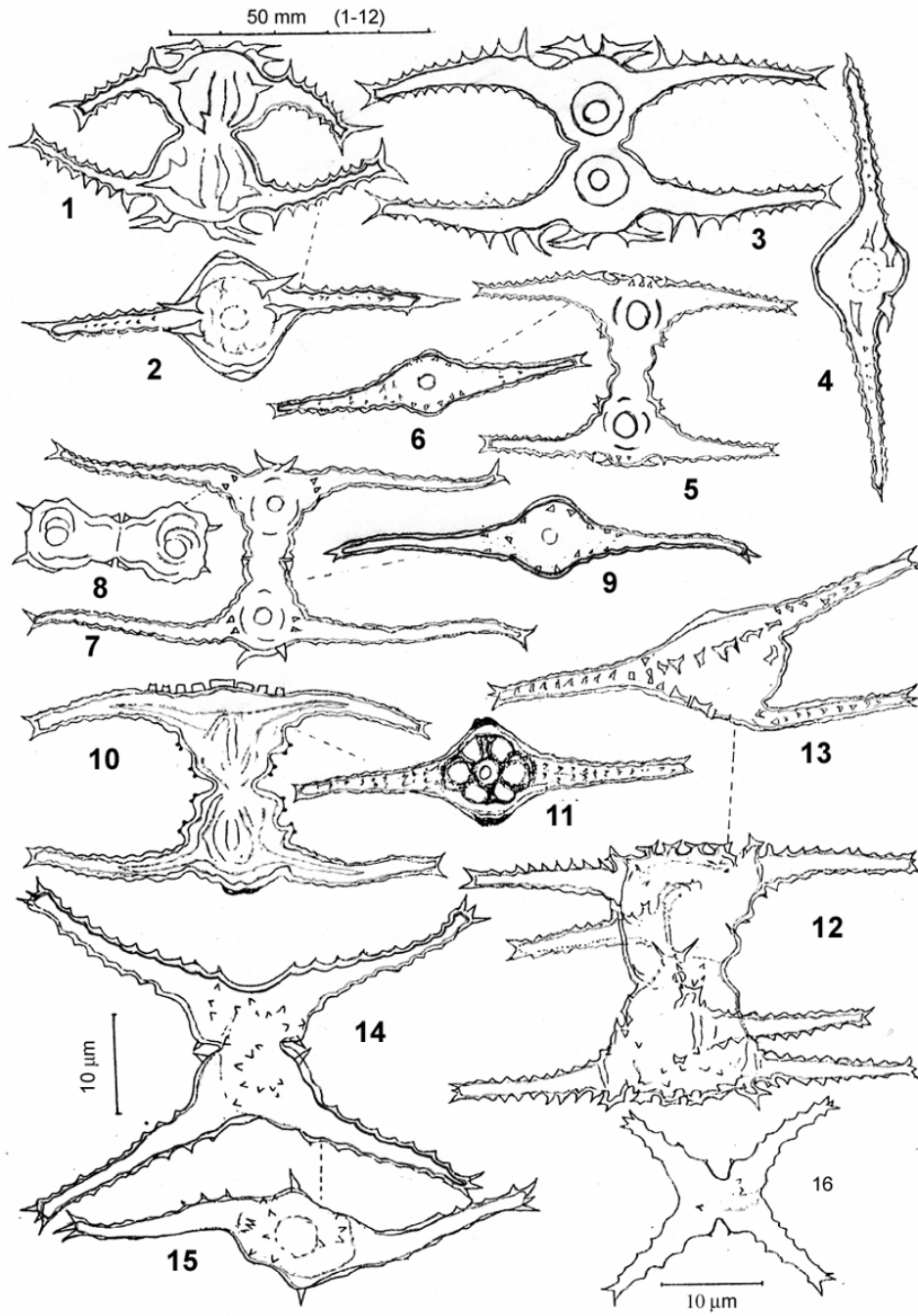


Plate 1 (Figs. 1-16)

Figs. 1-2. *Staurastrum saltans* var. *javanicum*; 3-4. *St. saltans* var. *sumatranum*; 5-6. *St. indentatum* fa. *minus*; 7-9. *St. leptocladum* var. *smithii*; 10-11. *St. leptocladum* var. *subinsigne*; 12-13. *St. subjavanicum* sp.nov.; 14-15. *St. excavatum* var. *spinosum* var. nov. 16. *St. tetracerum*.

Cell length with spines 37 μm ; mid-diam. at base without processes 20 μm , with processes 75.3 μm ; isthmus 8.5 μm ;

Note: Slightly smaller than the typical.

Specimen studied: Collection No. KG₁, from a ditch near Kaliganj Railway station, on 14 August, 1989.

6. ***St. pinnatum** Turner var. **hydra** Krieger fa. (Pl. 2, Figs. 19-20)
(Grönblad *et al.* 1968, 24, Fig. 138).

Cell small, length without spines 25.6 μm ; mid-diam. without process 15.4 μm , with process 36 μm ; isthmus 9 μm broad; each semicell with 5 arms or processes at top view; 2 additional processes at the base of each arm/process; main process/arm is not bifurcated, spines absent on cell wall; it slightly differs from the African specimens shown by Grönblad *et al.* (1968).

Specimen studied: Collection from a ditch near Kaliganj railway station, district Gazipur, on 14 August 1981 and also from a pond at Cox's Bazar by squeezing *Utricularia* sp.; common in all collections.

7. ***St. pinnatum** Turner var. **hydra** Krieger fa. **supernumerarium** Scott & Prescott
(Scott and Prescott 1961, 101, Pl. 46, Fig. 7) (Pl. 2, Figs. 17-18)

The cell is similar in shape, size and ornamentation to the variety, but with an extra small quadrid frid verruca on the left side of each of the principal processes; cell with processes 24.5 μm long; mid-diam. without process 14.1 μm ;; with processes 34.4 μm ; isthmus 7.7 μm broad; cell wall with small spines.

Note: Almost similar structure, but poorly drawn, was shown by Turner (1892, Pl. 13, fig. 28) as *St. ornatum* (Boldt) Turner (L. 38 μm ; Br. 42 μm ; isth. 12 μm ; process 11 μm). The above forma of Scott and Prescott (l.c.) is almost similar in size and most likely the same taxon as that of Turner (L. 30 μm ; Br. 44 μm with processes, Isthmus 12 μm)

Specimen studied: Collected from a ditch near Kaliganj railway station, Gazipur district, on 12 September 1989.

8. ***St. pinnatum** Turner var. **simplex** Turner (Pl. 2, Figs. 21-22)
(Turner 1892, Pl. 13, fig. 29)

Cell small, broader than long; cell length with spines 30 μm ; mid-diam. without process 20.5 μm , with process 47.5 μm ; isthmus 11.5 μm ; it is somewhat smaller than the typical.

Specimen studied: Collected from a ditch near Kaliganj Railway station, Gazipur district, on 14 August 1989; common in the collection.

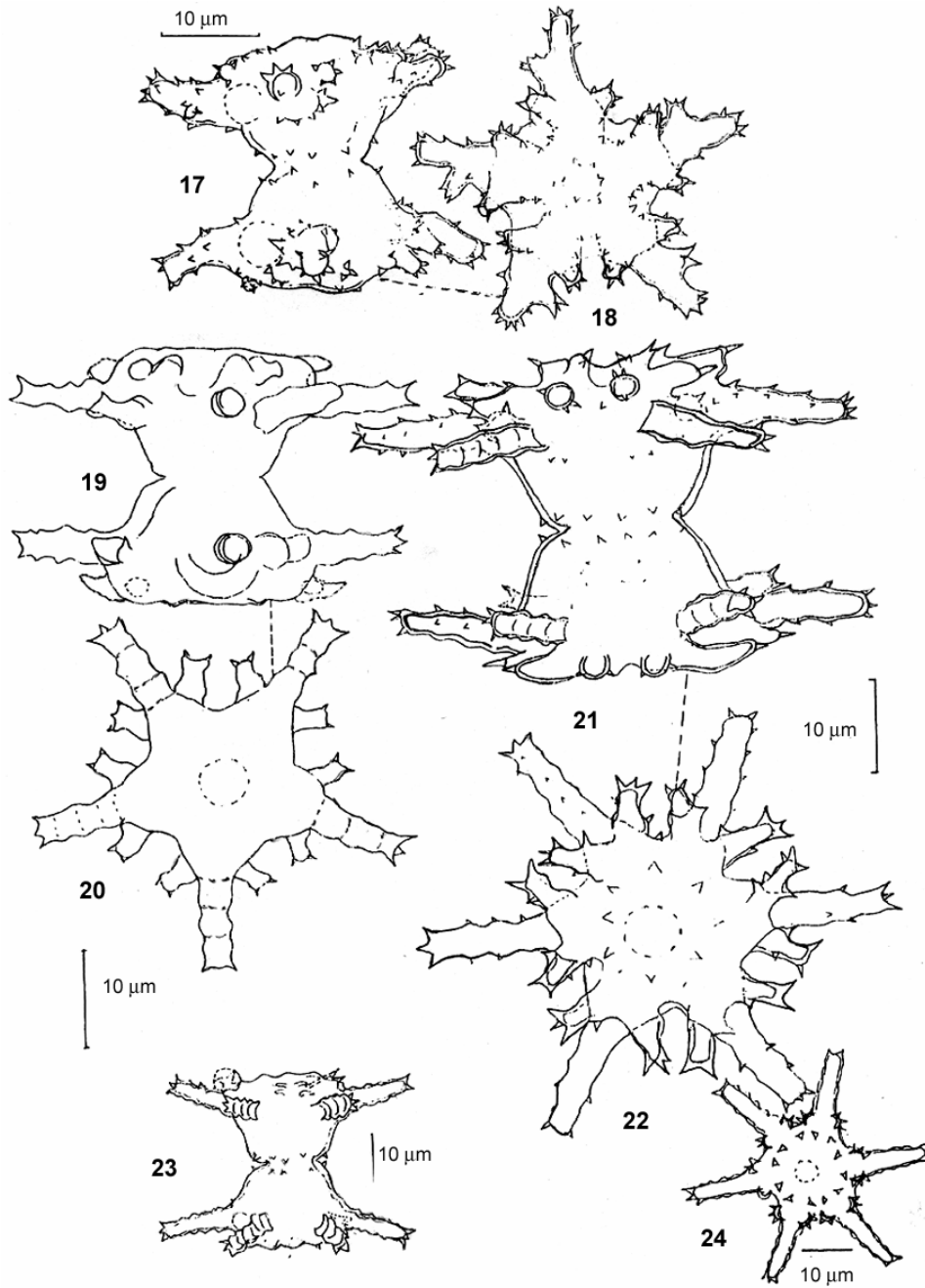


Plate 2 (Figs. 17-24)

Figs.17-18. *Staurastrum pinnatum* var. *hydra* fa. *supernumerarium*; 19-20. *St. pinnatum* var. *hydra* fa.; 21-22. *St. pinnatum* var. *simplex*; 23-24. *St. pinnatum* var. *subpinnatum*.

9. **St. pinnatum** Turner var. **subpinnatum** W. & W. fa. (Pl. 2, Figs. 23-24)

Cell small, slightly broader than long; cell length 35.5 μm ; mid-diam. without process 20 μm , with process 54 μm ; isthmus 11.4 μm ; a form with diverging arm, prominent spine at the base of isthmus, relatively few number of spines on the cell wall; it differs from the typical.

Specimen studied: Collected from a Khilkhet *beel*, Dhaka by squeezing the hydrophytes on 6 September, 1989; common in the collection.

10. ***St. saltaus** Joshua var. **javanicum** Scott and Prescott (Pl. 1, Figs. 1-2)

(Scott and Prescott 1961, 105, Pl. 57: 8,9)

Cell length with the spines 37 μm ; mid-diam. without processes 22.7 μm , with processes 62.5 μm ; isthmus 8.5 μm ; this is slightly smaller in length than the typical.

Specimen studied: Collection No. KG₂, collected from a ditch near the Kaliganj Railway station, Gazipur district; collected on 12 September, 1989; common in the collection.

11. ***St. saltans** Joshua var. **sumatranum** Scott and Prescott. (Pl. 1, Figs. 3-4)

(Scott and Prescott 1961, 106, Pl. 51: 3,4)

Cell length without spines 34.1 μm ; with spines 42.6 μm ; mid-diam. without processes 20 μm ; with processes 91 μm ; isthmus 8.5 μm ; a form with narrow isthmus.

Specimen studied: Collection No. KG₂, from a ditch near the Kaliganj Railway station, Gazipur district, collected on 22 September 1989; common in the collection.

Note: Our specimen is like the typical form as shown by Scott and Prescott (1961, Pl. 51, fig. 3).

12. ***Staurastrum subjavanicum** Islam and Akter sp. nov. (Pl. 1, Figs. 12-13)

Cell medium-large, broader than long, with prominent depression/incision at middle; each semicell with 3-radiating arms/processes, apical 2 horizontal and the third process developed from almost the mid-region of the semicell, straight but twisted at the base; process margins serrated; apical margin with bifurcated spines, 2 bigger spines one at each apical corner and 4 small spines in between; at the apex; top view triangular with asymmetric arrangement of the central arm; cell length with spines 57 μm ; mid-diam. without processes 25.5 μm ; with processes 96.5 μm ; isthmus 14.2 μm broad; bifurcated spines are present at the base of each arm/process.

Holotype: Pl. 1, Figs. 12-13; Collection No. Utt₁, collected from a shallow pond (part of an old *beel*) opposite Uttara Shopping Centre, near Zia International Airport, Dhaka, on 6 September 1989; rare in the collection.

Staurastrum subjavanicum Islam and Akter sp. nov. (Pl. 1, Figs. 12-13)

Cellulis medio-grandis, latus quam longior, medianus incisura/depressus non-profundus; semicellulis cum triprocessus, 2-apicalis horizontalis, tertius irregularis, basalis tortus; marginem processus serratis; marginem apicalis cum medio spinis bifidus ad centralis, et unus spina in quoque angulis apicalis; cellulis 57 μm longis cum spinis; medio-diam. sine processes 25.5 μm , cum processus 96.5 μm ; isthmus 14.2 μm latus; bifid spinis in quoque basalis ad processus.

Holotypus: Pl. 1, Figs. 12-13.

13. ***St. tetracerum** Ralfs (Pl. 1, Fig. 16)

(Grönblad *et al.* 1968, 25, Pl. 9, figs. 140, 141; Scott & Prescott 1961, 112, Pl. 57, fig. 12)

Cell length without processes 8.9 μm ; mid-diam. without processes 7.7 μm , with processes 19.2 μm ; isthmus 3.8 μm ; in shape and size it is similar to Sierra Leone material shown by Grönblad *et al.* (1968).

Specimen studied: Collected from a ditch near the Kaliganj Railway station; Gazipur district, on 14 August 1989; common in the collection no. KG₁.

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