

**OBSERVATIONS ON *ULOTHRIX SHAMEELII* FARIDI
(CHLOROPHYTA)**

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Ulothrix was reported for the first time from Pakistan by Shameel (1963) and reaffirmed by Faridi (1971). During a detailed study of the genus collected from Swat, Pakistan, a new variety, *U. zonata* var. *faridii* Shameel was established (Shameel, 1978). Faridi *et al.*, (1982) revised the genus from Pakistan, in which this variety was elevated to the rank of a new species, *U. shameelii* Faridi. This controversy initiated the author to reexamine this alga.

In December 1983, the present author, recollected the material from cold and running water of Swat River, near Madyan, in the north-western region of Pakistan. The specimens were preserved in 3% formalin and illustrations made by camera lucida. This is described below:

The alga is filamentous, unbranched, dark green and cylindrical (Fig. 1). Mature cells are rectangular and exhibit nearly the same dimensions as that of *Ulothrix zonata* (Randhawa, 1948; Gupta, 1950; Ramanathan, 1964; Shameel, 1978; Faridi *et al.*, 1982). In each cell there is a single girdle shaped chloroplast, extending from 3/4th to the entire circumference of the cell and having 2 – 6 pyrenoids with a distinct starch sheath. The alga was found in attached as well as free floating condition. *U. zonata* has a widespread occurrence in running water during winter and spring (Ramanathan, 1962). Some specimens also exhibited zoospore formation, which were 9 – 13 x 5 – 7 μ m. In these characters the alga completely resembles *U. zonata*.

The alga, however, differs from the existing varieties of *U. zonata* in having filaments tapering upwards, curved at the tip and apical cell convexo-quadrate with a fragment of chloroplast on the lower side (Fig. 1). The chloroplast forms a closed ring in the uppermost cell, which gradually opens downwards, the lowermost cell of the filament is detached from other cells and is smaller in length; the filament tapers at the

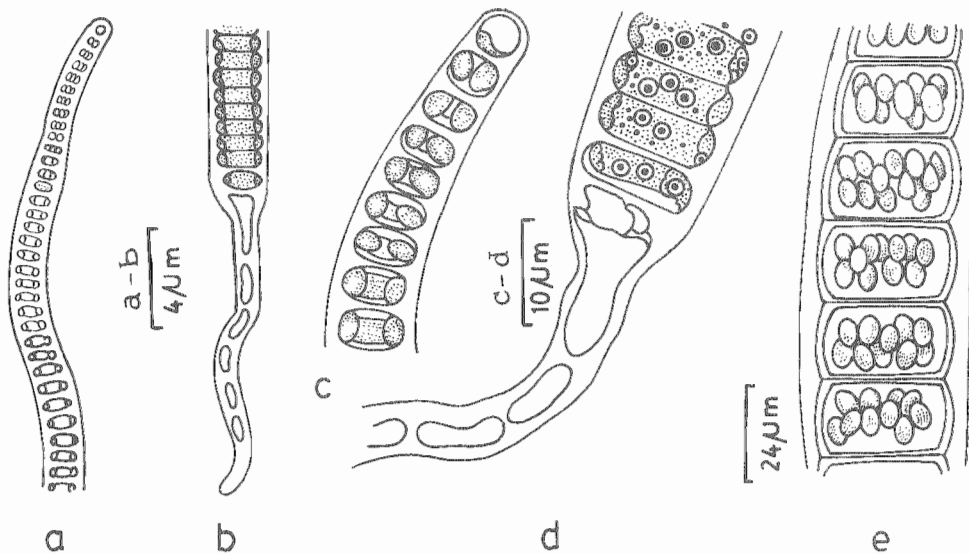


Fig. 1. *Ulothrix zonata* var. *faridii* Shameel

a. curved and tapering tip, b. prolonged rhizoid like holdfast, c. convexo-quadrangle apical cell, d. detached basal cell and filament base, e. zoospore formation.

base and the holdfast is colourless, very long and contains several fragments of rudimentary plastids. These peculiar characters are not sufficient enough to elevate *U. zonata* var. *faridii* to specific level. A decreasing cell width towards the tip of the filament is not unusual in *U. zonata*. The shape of the chloroplast and of the filament are highly variable within this species. It may rarely have a long holdfast and even the tip of a filament may sometimes be curved (Ramanathan, 1962).

It is, therefore, suggested to retain this taxon as a variety of *U. zonata*. The correct nomenclature would be:

Ulothrix zonata var. *faridii* Shameel 1978: 378.

Synonym: *Ulothrix shameelii* Faridi in Faridi *et al.*, 1982: 183.

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References

- Faridi, M.A.F. 1971. The genera of fresh water algae of Pakistan and Kashmir. *Biologia*, 17: 123-142.
- Faridi, M.A.F., G. Anjum and I. Haq. 1982. *Ulothrix* in Pakistan. *Pak. J. Bot.*, 14: 181-188.
- Gupta, A.B. 1950. A contribution to the algal flora of Khajiar-Chamba State, Himachal Pradesh. *Proc. Nat. Acad. Sci. India*, 20: 109-115.
- Ramanathan, K.R. 1964. *Ulotrichales*. Ind. Counc. Agr. Res., New Delhi, 188 pp.
- Randhawa, M.S. 1948. Notes on some Ulotrichales from Northern India. *Proc. Nat. Inst. Sci. India*, 14: 367-372.
- Shameel, M. 1963. Studies on the genus *Ulothrix* from Swat State. *Sci. Soc. Pak. Ann. Conf.*, Biol. Sec., 5: 13-14.
- Shameel, M. 1978. Contributions to *Ulothrix* (Chlorophyceae) from Swat, Pakistan. *Nova Hedw.*, 30: 377-384.