



**Figure 1.** Changes in activity of  $\alpha$ -amylase with time in organogenic and non-organogenic cultures of *Solanum surattense*.  $\Delta$ —Organogenic callus on MS + kinetin (3 mg/l);  $\blacktriangle$ —Organogenic callus on MS + kinetin (3 mg/l) + GA (2 mg/l);  $\circ$ —Non-organogenic callus on MS + kinetin (3 mg/l);  $\bullet$ —GA induced organogenic callus on MS + kinetin (3 mg/l).

buds. This investigation further envisages that  $\alpha$ -amylase activity could be suitably taken as a biochemical marker of morphogenetic potential of callus cells. This finding substantiates the earlier view that the loss of morphogenetic potential in callus cultures might be due to some physiological changes induced during prolonged cultural conditions<sup>3</sup>.

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### AN UNUSUAL STRAIN OF *APODACHLYA MINIMA* COKER AND LEITNER

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DURING a course of study on soil inhabiting fungi belonging to the zoosporic series of Phycomycetes one representative of Leptomitaceae was isolated from the soils of Naina peak (2611 m altitude), Nainital. Axenic culture and identification of this isolate were carried out on the lines of Sparrow<sup>1</sup>. After a careful examination it was found to resemble *A. minima* in the absence of sporangia, oogonial and oospore size presence of androgynous antheridia (rarely present). However, the preponderance of sub-oogonial cell functioning as antheridia suggested its relationship to *A. brachynema* (Hild.) Pringsheim also. This strain appears to be a transitional stage between *A. minima* and *A. brachynema*.

*Apodachlya minima* Coker and Leitner

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Hyphae slender, segmented and branched; segments 39.6–181.5  $\mu\text{m}$  long  $\times$  6.6–8.2  $\mu\text{m}$  in dia on hempseed and 19.8–27  $\mu\text{m}$  long  $\times$  1–2.5  $\mu\text{m}$  in dia on CMA; sporangia absent, oogonia numerous, pyriform and oval-shaped borne on the tips of short moniliform stalk, 11.5–19.8  $\mu\text{m}$ , mostly 16.5–19.8  $\mu\text{m}$  in dia wall unpitted and smooth; sub-oogonial cell functioning as antheridium, rarely androgynous; oospore single, completely filling the oogonium, eccentric, 10.7–17.5  $\mu\text{m}$  in dia.

The type specimen and the preserved material have been deposited in the herbarium of the Botany Department, Kumaun University, Nainital.

The present representative of *Apodachlya* was isolated once throughout the study from pristine, strictly terricolous habitat. It failed to grow in any other media except CMA and OMA and showed extremely slow growth which hardly attained 2 cm diameter even after 20 days of incubation under normal laboratory conditions. This pattern of growth and absence of sporangia may account for its rare occurrence.

A perusal of literature reveals that no species of this genus has been described from India so far. This communication besides describing the new genus for India deals with the unusual strain of *A. minima* Coker & Leitner for the first time.

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### EFFECT OF SUNFLOWER MOSAIC VIRUS ON THE ACTIVITY OF RIBULOSE 1,5 BISPHTHOSPHOTASE IN SUNFLOWER

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RIBULOSE 1, 5 bisphosphotase (E. C. 4.1.1.39) is the main carboxylating enzyme in photosynthesis. The activity of this enzyme was assayed following the procedure of Fair *et al*<sup>1</sup>. The leaf segments were fed with NaHC<sup>14</sup>O<sub>3</sub> (radioactivity 0.5 mic obtained from BARC, Bombay) for 10 min. Cotyledonary leaves of sunflower were dusted with 600-mesh carborundum and inoculated by rubbing with a cheese cloth pad dipped into a partially purified suspension of the virus in 0.05 M phosphate buffer pH 7.5. Control plants were treated in the same way with the buffer solution only. Counts per minute were recorded in a Packard Tricarb scintillation spectrometer. Results were expressed as  $\mu\text{mol}$  of HC<sup>14</sup>O<sub>3</sub> fixed per gram fresh weight of leaf per hour.

Table 1 reveals that the activity of ribulose 1,5 bisphosphotase is lowered to the extent of 22.5% to 52.2% in the infected leaves after different days of inoculation of the virus. Ribulose 1,5 bisphosphotase is the main carboxylating enzyme and its activity can account for the total CO<sub>2</sub> incorporation during photosynthesis<sup>2</sup>. The reduced activity of this enzyme has also been reported in *Brassica pekinensis*<sup>3</sup>, sugarbeat<sup>4</sup>, sugarcane<sup>5</sup> and tobacco<sup>6</sup>. This loss in enzyme activity may be associated with the loss of structural integrity of chloroplasts<sup>7</sup>.

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Table 1 Ribulose 1.5 bisphosphotase activity (RUBP) expressed as  $\mu\text{mol}$  of HC<sup>14</sup>O<sub>3</sub> fixed/hr/g/fresh weight

|             | Days after inoculation |      |      |      |      |
|-------------|------------------------|------|------|------|------|
|             | 15                     | 30   | 45   | 60   | 75   |
| Healthy     | 80                     | 160  | 172  | 190  | 230  |
| Inoculated  | 62                     | 110  | 130  | 95   | 110  |
| % reduction | 22.5                   | 31.3 | 24.4 | 50.0 | 52.2 |

|           | Healthy vs inoculated | Interval | Interaction |
|-----------|-----------------------|----------|-------------|
| 'F' test  | Sig.                  | Sig.     | NS          |
| SEM $\pm$ | 0.026                 | 0.325    | 0.45        |
| CD at 5%  | 0.187                 | 0.115    | 0.159       |

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### STRUCTURE AND HISTOCHEMISTRY OF THE INTERNODE IN *NITELLA FURCATA* SUBSP. *MUCRONATA*

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*NITELLA FURCATA* (Roxb. ex. Bruz.) Agardh subsp. *mucronata* (A. Br.) R. D. Wood, exhibits an equisetoid vegetative organization. Both the main axis and the branchlets possess small, discoid, nodal cells that alternate regularly with large, vacuolate and coenocytic, internodal cells (figure 1). The alga was collected from Badkhal Lake, Faridabad in January 1986. Selected parts of the thallus were fixed in 10% aqueous acrolein<sup>1</sup>. The fixed material was dehydrated in methoxy-ethanol series; infil-