Table 1 *Acetylene reduction by M. laminosus and Gloeocapsa.*

Assay condition		Organism *M. laminosus*	*Gloeocapsa*
Light (N-free)	− MSX	660*	88
	+ MSX (10 μM)	590	70
Dark (N-free)	− MSX	69	42
	+ MSX (10 μM)	62	32
Light	− MSX	Nil	26
	+ MSX (10 μM)	Nil (at 48 hr) (80 (at 72 hr)	20
$+NO_3^-$ (20 mM)	+ MSX (100 μM)	69 (at 24 hr)	21 (2 mM MSX)

*n moles C_2H_4 formed. mg Chl^{-1}. h^{-1}

Gloeocapsa, ammonia excretion in the dark is negligible while in *M. laminosus* the excretion rate is slightly more than in light indicating the operation of a catabolic process. MSX-treatment results in decreased oxygen evolution (table 2) and decreased reductant supply and this may account for the lowering in nitrogenase activity, since DCMU also completely cuts off acetylene reduction.

Combined nitrogen (20 mM NO_3^-) represses nitrogenase activity either partially as in *Gloeocapsa* or totally as in *M. laminosus*. *Gloeocapsa* may poorly assimilate MSX[6] since concentrations as high as 2 mM do not alleviate the repressive effect of nitrate on nitrogenase. The thick lamellated sheath induced by growth of nitrate[7] may also contribute to this poor assimilation. In *M. laminosus*, MSX effectively derepresses nitrogenase after 72 hr and 24 hr at 10 and 100 μM concentrations respectively.

It is thus obvious that the absence of combined nitrogen and the presence of light are prerequisites for effective ammonia production by *Gloeocapsa*. *M. laminosus* is efficient both in dark, and in presence of light and with combined nitrogen and hence, better suited for field applications. Its thermophilic nature is also an asset for its application in the tropical region as a suitable candidate to be used in the preparation of blue-green algal biofertilizer.

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A NEW SPECIES OF *ASCOGLENA* FROM INDIA

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DURING the studies on euglenoids from Bihar, a new species of *Ascoglena* Stein was collected. The organism was growing in Hinoo River at Ranchi and collected in the beginning of November 1977. The organism was found attached on the thalli of *Compsopogon coeruleus* (Balbis) Montagne. A perusal of literature revealed that this is a new species.

Ascoglena kumaraii sp. nov. (figure 1)

Lorica thick-walled, yellowish brown, more or less ellipsoid to cylindrical, slightly asymmetrical, with hind end sometimes narrower and the front end drawn out into an open slightly bent cylindrical neck provided with a narrow basal ring; cell only partially

Table 2 *Oxygen evolution by M. laminosus and Gloeocapsa.*

Assay condition		Organism *M. laminosus*	*Gloeocapsa*
Light (N-free)	− MSX	68*	221
	+ MSX (10 μM)	18	183
Light $+NO_3^-$ (20 mM)	− MSX	56	235
	+ MSX (10 μM)	22	120

*μl O_2 evolved. mg chl^{-1}. min^{-1}

filling the lorica and irregularly ellipsoid and attached to the base of the lorica by its hind end, chromatophores small, numerous, discoid and without pyrenoids, paramylum also small, numerous and discoid to short-cylindrical, flagellum slightly longer than the cell, stigma very small, streak-like and at the front end; gullet and reservour prominent; lorical 80.9–87 μm long, 30.3–33.7 μm broad in the median region and 13.4–20.2 μm broad at hind end; neck alone 10.1–13.4 μm long and 20.2–23.5 μm broad.

Habitat: Growing on *Compsopogon coeruleus* (Balbis) Montagne in Hinoo River, Ranchi, India.

Iconotype: Figure 1.

Ascoglena kumaraii sp. nov.

Lorica cum pariete crasso, flave-brunnea, fere ellipsiformis vel leviter asymmetrica, cuius extremitas posterior interdum angustier et extremitas anterior producta formans quasi collum cylindratum apertum et leviter curvum cum annule basali angusto; cellula tantum partim ad loricam conveniens et irregulariter ellipsiformis et affixa basi loricae cum eiusdem extremitate posteriori; chromatophori parvi, numerosi, disciformes, sine pyrenoidibus; paramylum etiam parvum, numerosum et discoide vel breve cylindratum, flagellum vix longius quam cellula; stigma parvissimum, lineiforme, prope extremitatem anteriorem; gula et fossa prominens; lorica 80.9–87 μm longa, 30.3–33.7 μm lata in regione media et 13.4–20.2 μm in extremitate pesteriori; collum solum 10.1–13.4 μm longum et 20.2–23.5 μm latum.

Habitatio: Crescens in *Compsopogon caeruleus* (Balbis) Montagne in fluvio Hinoo, Ranchi, India.

Iconotypus: Figra 1.

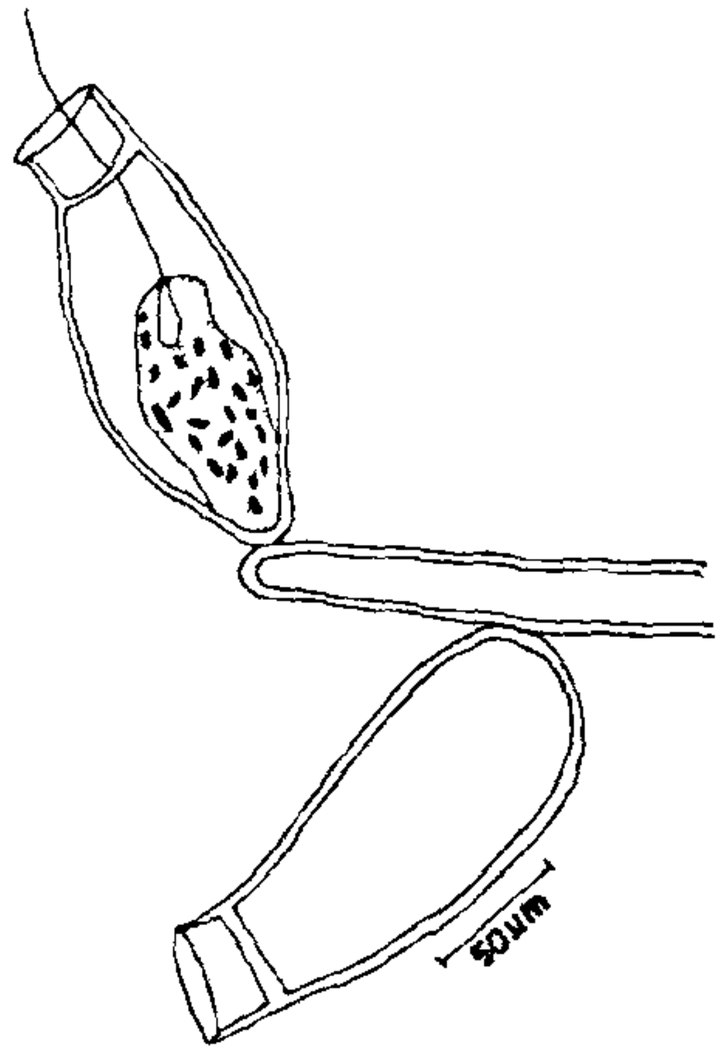

Figure 1. Two cells of *Ascoglena kumaraii* sp. nov.

The organism under consideration here resembles (1) *A. vaginicola* Stein in having a brown colour, in shape of lorica and protoplast but differs in that the lorica is not symmetrical, there is a distinct ring on the neck which is bent on one side and the lorica is thick-walled and almost double in size, the dimensions of *A. vaginicola* being 43 μm long and 15–16 μm broad and neck 8–11 μm broad[1,2]. (2) *A. amphoroides* (Francé) Lemmermann in the brown colour, a short broad neck with an opening at the upper end and structure of protoplast, but differs in the lorica being not symmetrical, there is a distinct ring on the neck which is bent on one side and the lorica is thick-walled and almost five times in size, the dimensions of *A. amphoroides* being 18 μm long and 14 μm broad[2].

Since the present organism does not completely agree with the two species mentioned above in spite of similarities in a few features, it is considered here as a new species *A. kumaraii* sp. nov.

The species is named in honour of Professor H. D. Kumar, an eminent Phycologist.

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