The host algae themselves were epiphytic on leaves of *Hydrrilla* sp. The material was collected from a large pond in Telibagh, near Lucknow (Coll. No. 33, date: 21-2-1980). No mucilagenous envelopes could be detected around the colonies of the alga. Individual cells are spherical to ovoid, some bearing a long seta at their distal end (Figs. 1, 2). Each seta possesses an axial cytoplasmic filamentous prolongation with its basal portion encased in a prominent sheath. Groups of cells are sometimes seen connected to one another by slender, tubular cytoplasmic connections. Each cell contains a single, parietal, shell-like chloroplast with usually a single pyrenoid. The cells are uninucleate.

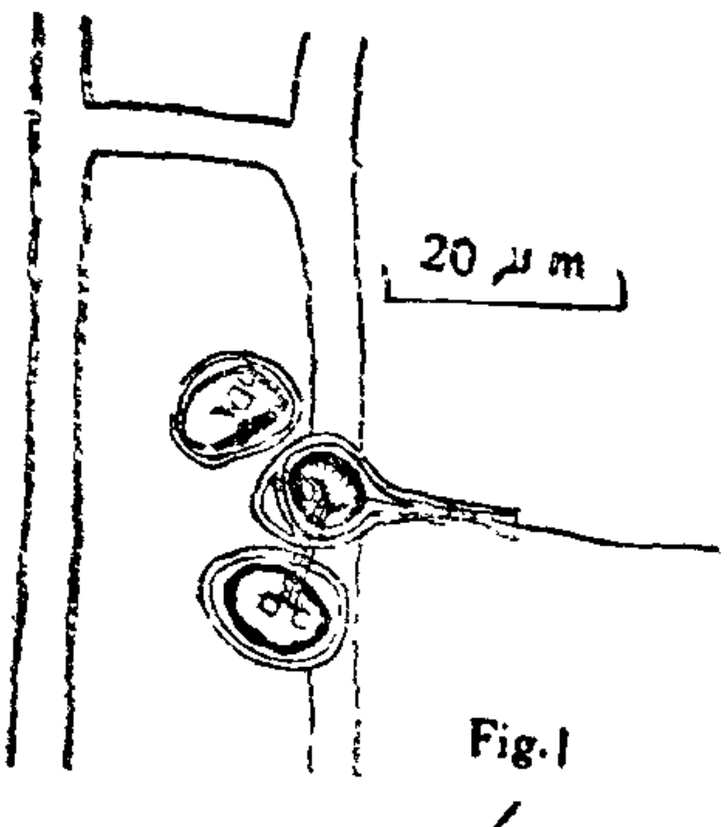

Fig. 1

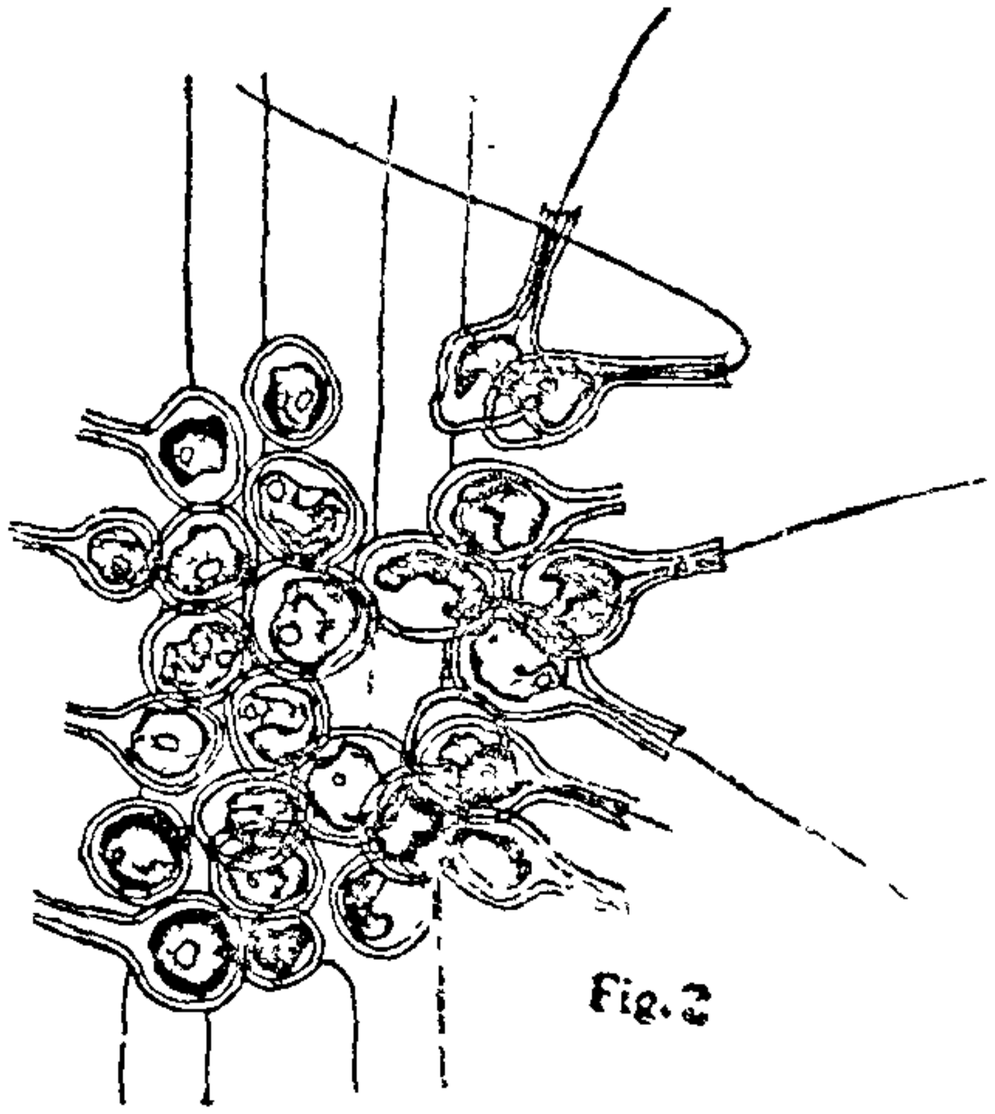

Fig. 2

FIGS. 1–2. *Chaetosphaeridium pringsheimii* Klebahn. Fig 1. A young colony of three cells showing protoplasmic interconnection between two cells. Fig. 2. A mature colony showing cell-structure with well-developed setae and their sheaths.

The cells measure 8–12 µm in diameter. Sheaths of the setae are 8–11 µm long and 2 µm broad; setae are up to 600 µm long.

Zoospores or other means of asexual or sexual reproduction were not observed. However, a few empty cells were seen suggesting that their contents may have escaped as zoospores or aplanospores (?). The present alga resembles *C. pringsheimii* Klebahn in morphology and dimensions. It, however, differs from the letter somewhat in the length of setae and its basal sheath which is a little smaller. These are deemed to be ecological variations of minor taxonomic significance.

May 21, 1980.

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NATURE OF DISEASE RESISTANCE IN COWPEA TO *SEPTORIA VIGNICOLA*

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COWPEA [*Vigna sinensis* (L) Savi. Ex. Hassk.] is one of the important sources of protein in human diet. The crop suffers from many fungal diseases among which a leaf spot disease caused by *Septoria vignicola* Rao is the most serious one. In view of this the existence of resistant as well as susceptible varieties to the disease, they were examined for stomata and cuticle thickness.

Three resistant (P_{426}, Cream-40 and Iron) and two susceptible (Pusa Dofasli and Pusa Barsati) varieties of cowpea were grown in the field. When the plants were at third trifoliate stage, fully grown leaves were clipped off in the morning hours on a clear sunny day and the epidermal peels were taken with the help of a sharp edged blade these were examined microscopically at 10 × magnification in water drops on clean glass slides. The number of stomata in 25 microscopic fields was counted in each variety and averages were calculated. For determining cuticle thickness, thin transverse sections of the leaf were cut and measurements were made under 40 × magni-

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TABLE I

Cuticle thickness and number of stomata in Septoria *resistant and susceptible varieties of cowpea*

Sl. No.	Variety	Disease reaction	Cuticle thickness (μ)*	Number of stomata per microscopic field**
1.	Pusa Dofasli	S	10·9	10·8
2.	Pusa Barsati	S	8·1	10·4
3.	P_{426}	R	13·6	9·9
4.	Cream-40	R	18·6	10·8
5.	Iron	R	18·2	9·8

S = Susceptible; R = Resistant.
* Average of 10 leaves.
** Average of 25 microscopic field.

fication of a microscope. Ten such leaves were examined in each variety and averages taken.

The data presented in Table I indicate that there were no marked differences in the number of stomata between the resistant and susceptible varieties. They ranged from 9·8 to 10·8 per microscopic field. Appreciable differences in cuticle thickness in resistant and susceptible varieties were observed which might be responsible for resistance of varieties like Cream-40, Iron and P_{426}. The cuticle thickness in resistant varieties varied from 13·6–18·6 μ as compared to 8·1–10·9 μ in susceptible varieties. This, most probably[1] acted as a barrier for infection. Louis, reported that the degree of penetration of *Botrytis cinerea* was related to cuticle thickness in bean, tomato and other host plants. The same phenomenon in was reported the case of *Barbaris* spp. resistant, immune and susceptible to *Puccinia graminis*. The well developed and tough cuticle might resist the pressure exerted by the fungus thereby avoiding its entry and acted as a defensive barrier. The cuticle thickness can be one of the tools used by the breeders to mark resistant plants.

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MUTACHROMOSOMIC EFFECTS OF LANTHANUM CHLORIDE ON MAMMALIAN BONE MARROW

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LANTHANUM is known to occur in traces (0·5 μg/g) in the bones of men and animals exposed to it, though normally it is not found in the animal body. An increasing use of the element in the production of lenses, colour television tubes, mirrors and other glass products has raised a question of possible health hazards posed by it[1]. The present investigation was undertaken to observe the clastogenic effects of chronic doses of lanthanum (La^{3+}), in the form of lanthanum chloride ($LaCl_3$), on the bone marrow chromosomes of *Rattus norvegicus in vivo*.

Healthy albino rats (*Rattus norvegicus*) of average body weight, ranging from 80–100 g, were treated with different doses of lanthanum chloride ($LaCl_3$) intraperitoneally. A single dose, *i.e.*, 1/4 of the LD_{50} of the chemical was initially used[2]. The treatment was divided into two series. In the first series, a chronic dose for a period of four days was administered at 24 hr intervals in order to observe the cumulative effect. In another series, the animals were permitted to recover after exposure to the same dose for 72, 96 and 110 hours. Two replicates of the experiments were carried out. Bone marrow preparations were made following the usual flame drying schedule and stained in Giemsa. Metaphases (200) were analysed from each animal in chromosomal aberrations.

The mitotic index and the chromosomal abnormalities were compared for the different treated and control animals (Tables I and II).

Earlier information on the action of lanthanum on chromosomes is very meagre. Lanthanum trichloride has been recorded to cause an appreciable increase in mitotic index, nuclear volume, DNA and histone contents of liver cell nuclei. These observations were attributed to the increased cellular activity of the liver during regeneration treatment[3]. The present observation indicates a progressive decrease in the mitotic frequency following increased periods of treatment, as compared to the control. When the rats were permitted to recover, the mitotic frequency gradually increased to the normal level in about 5