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OCCURRENCE OF LEAD DEPOSITS IN THE JUTOGH FORMATION OF SIMLA HILLS, HIMACHAL PRADESH, INDIA

THIS communication puts on record the first report of occurrence of lead deposits (Galena) along with other sulphides in the Jutogh quartzites and metasemipelites exposed near Koti Ghat ($31^{\circ}15'40''$ N : $77^{\circ}23'$ E) in Kumarsain Tehsil, Simla District, Himachal Pradesh. The area has previously been investigated by West¹ and recently in more detail by Srikantia and Sharma². In the work done so far there is no report of mineralisation in the above-mentioned area.

During a detailed field mapping of the area along the Shali Thrust near Koti Ghat, the authors came across lead sulphide mineralisation. The occurrence is seen 100 m above the Shali Thrust in the Jutogh metamorphites. The samples from Koti Ghat show profuse development of galena with small amounts of chalcopyrite and pyrite. Galena is antimonial. The deposits occur as cavities and lenses up to 30 cm across. There is no basic intrusion in the area to suggest an igneous parentage for the sulphides. In

such cases sulphides may have been deposited along with the rock in which they occur as found in the Daling Series at Rangpo, Sikkim by Sarkar and Bannerjee³. Later on, after the regional metamorphism, the rocks suffered thrusting and diaphoresis during which the ore pockets have been disturbed. Mineralisation of chalcopyrite and pyrite has also been noticed in the Shali slate sequence of West (*op. cit.*) near Chamola ($31^{\circ}18'$ N : $77^{\circ}22'20''$ E) and in Gauru Nala section just to the southeast of Kangar ($31^{\circ}17'05''$ N : $77^{\circ}21'45''$ E).

The mineralisation is indicated by sulphurous smell given out by the rocks when broken. It was further confirmed by studying the recent cuttings and excavations being carried out by the Public Works Department for their project. It is too early to ascertain the economic potentials of these deposits. However, it is suspected that mineralisation continues perhaps along the bands into the hill as the quartzites dip into the hill at an angle of 35° in N 40° E.

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A NEW SPECIES OF *PHYLLOSTICTA* FROM INDIA

IN April, 1978, a leaf spotting coelomycete was collected on *Monstera deliciosa* Liebm. from North Gorakhpur Forest Division (U.P.). The present communication describes this collection as *Phyllosticta monsterae* sp. nov.

Phyllosticta monsterae sp. nov.

Maculae amphigenae, parvae, circulares vel irregulares, griseolae rufobrunneo-marginatae; pycnidia epiphylla, pauca vel multa, dispersa immersa, aetrobrunnea, globosa vel subglobosa, crassitunicata, 50-90 μ m diam.; ostiola distincta, singula, circularia, parva, ex hyphis obscurioribus crassitunicatis circumdata, 10-21.5 μ m diam.; cellulae conidiferae a cellulis parietis interioris pycnididici enatae, -elongatae, cylindricae, hyalinae; conidia solitaria, simplicia, hyalina, glabra, unicellularia, numerosa, plerumque plus minusve cylindrica, recta vel curvata, utrinque rotundata, tunica muccsa circumvallata ad apicem.

TABLE I

Name of the species	Pycnidia		Pycnidiospores	
	Shape	Size (μm)	Shape	Size (μm)
<i>P. colocasiicola</i> Höhnelt	Globose	100-120	Ovoid	$10 \times 5-6$
<i>P. monsterae</i> sp. nov.	Globose to subglobose	50-90	More or less cylindrical, straight or curved	$12.5-14.5 \times$ upto 4.5

appendice addita parata, guttulata, $12.5-14.5 \times 4.5 \mu\text{m}$.

Infection spots amphigenous, small, circular to irregular, greyish with reddish brown margin; pycnidia epiphyllous, few to many, scattered, immersed, dark brown, globose to subglobose, thick walled, $50-90 \mu\text{m}$ diam.; ostioles distinct, single per pycnidium, circular, small, with darker and thick walled hyphae along ostiolar region, $10-21.5 \mu\text{m}$ diam.; conidio-genous cells arising from the cells of inner wall of the pycnidium, elongated, cylindrical, hyaline; conidia solitary, simple, hyaline, smooth, one-celled, numerous, usually more or less cylindrical, straight or curved, with rounded ends, surrounded by a mucilaginous sheath and bearing an extra appendage at apex, guttulate, measuring $12.5-14.5 \times$ upto $4.5 \mu\text{m}$ (Fig. 1 a, b).

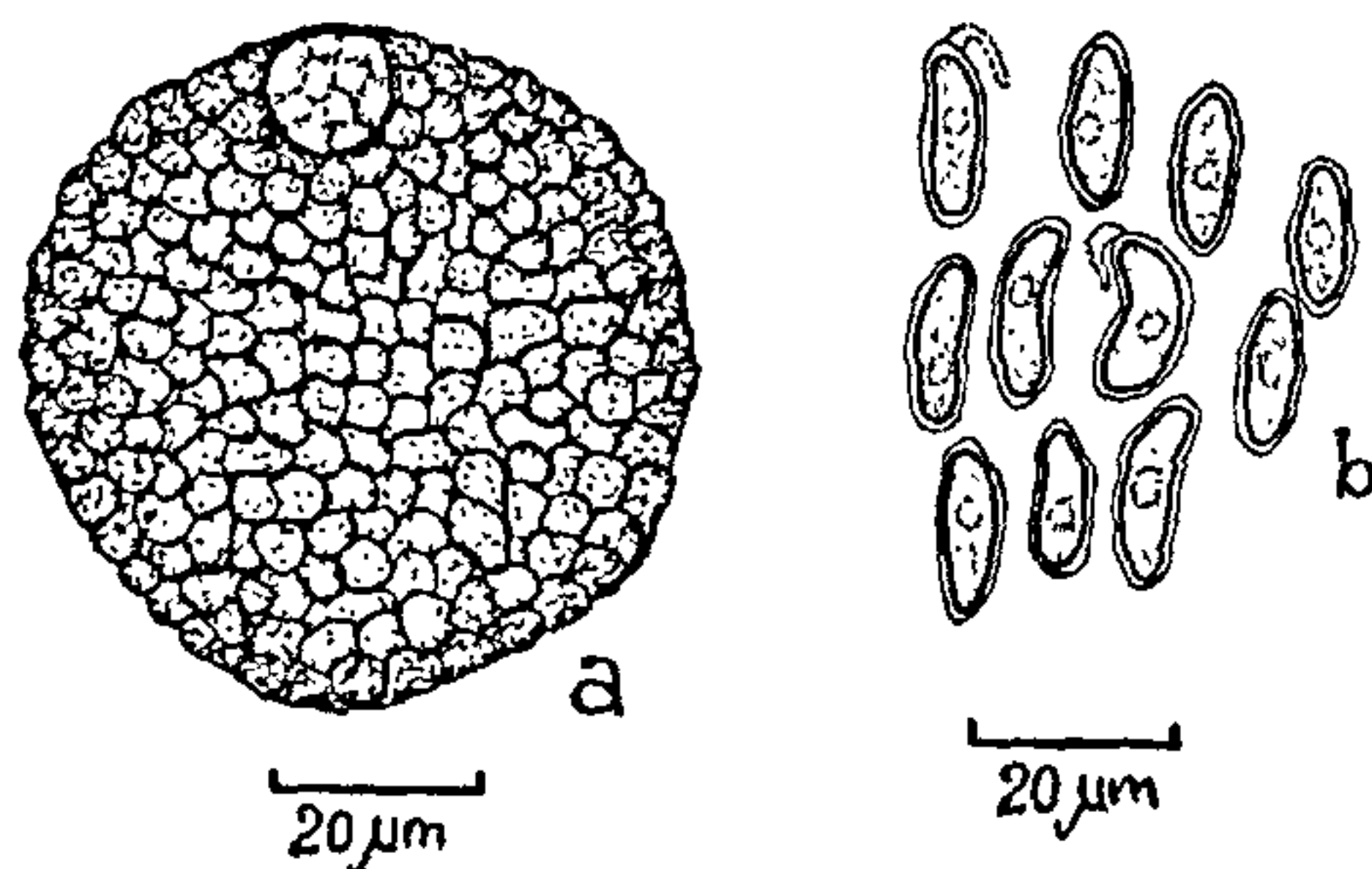


FIG. 1

On living leaves of *Monstera deliciosa* Liebm. Gorakhpur, U.P., April, 1978, Leg. P. Kumar Type (IMI-228176b).

The infection appeared fairly widely distributed. Previous literature indicates that no *Phyllosticta* species has ever been described parasitising this host genus. However, the present collection comes close to *Phyllosticta colocasiicola* Höhnelt¹ described on *Colocasia*, a different host genus of family Araceae to which

the host in question (*Monstera*) belongs. For comparison Table I with morphological features of *Phyllosticta colocasiicola* and *P. monsterae* sp. nov. is presented.

The pycnidia of the present collection are significantly smaller as compared to those in *P. colocasiicola* Höhnelt. The pycnidiospores, on the other hand, are larger and narrower in the present species as opposed to *P. colocasiicola*. The shape of pycnidiospores also differs distinctly in the two cases. The present fungus, therefore, merits description, as a new species.

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INFLUENCE OF PRESOWING HARDENING ON RESISTANCE TO ALLELOPATHY, DRY MATTER PRODUCTION, CHLOROPHYLL CONTENT AND SENESCENCE IN WHEAT

Introduction

GROWTH inhibitors are reported to get exuded to soil from the root system of many allelopathic weed species and these are found to reduce yield of cultivated crop species significantly^{1,3}. Phenolic acids which are prominent amongst these inhibitors are reported to inhibit germination and seedling growth¹.

Hardening seeds with very low concentrations (1-10 ppm) of phenolic acids has been found useful in inducing resistance to allelopathic agents and enhancing productivity in wheat, ragi and tomato (Cowsik and Jayachandra, unpublished).