PHOTOREACTIVATION OF CYANOPHAGE AC–1 INFECTING *ANACYSTIS NIDULANS*

LETHAL damage, caused by ultraviolet light in micro-organisms, can be repaired by photoreactivation[1] and this phenomenon seems to operate in some cyanophages also[2]. The present communication deals with the photoreactivation in AC–1 cyanophage[3] infecting *Anacystis nidulans*.

Phage preparations suitably diluted were irradiated from a distance of 30 cm for 15, 30, 45 and 60 seconds by a Hanovia mercury vapour germicidal source with its main output at 2537 Å. During the irradiation period, the sample was constantly stirred by magnetic stirrer and aliquots were removed at an interval of 15 sec., diluted and assayed for plaque forming units. The plaques were counted after 10 days' incubation under identical conditions.

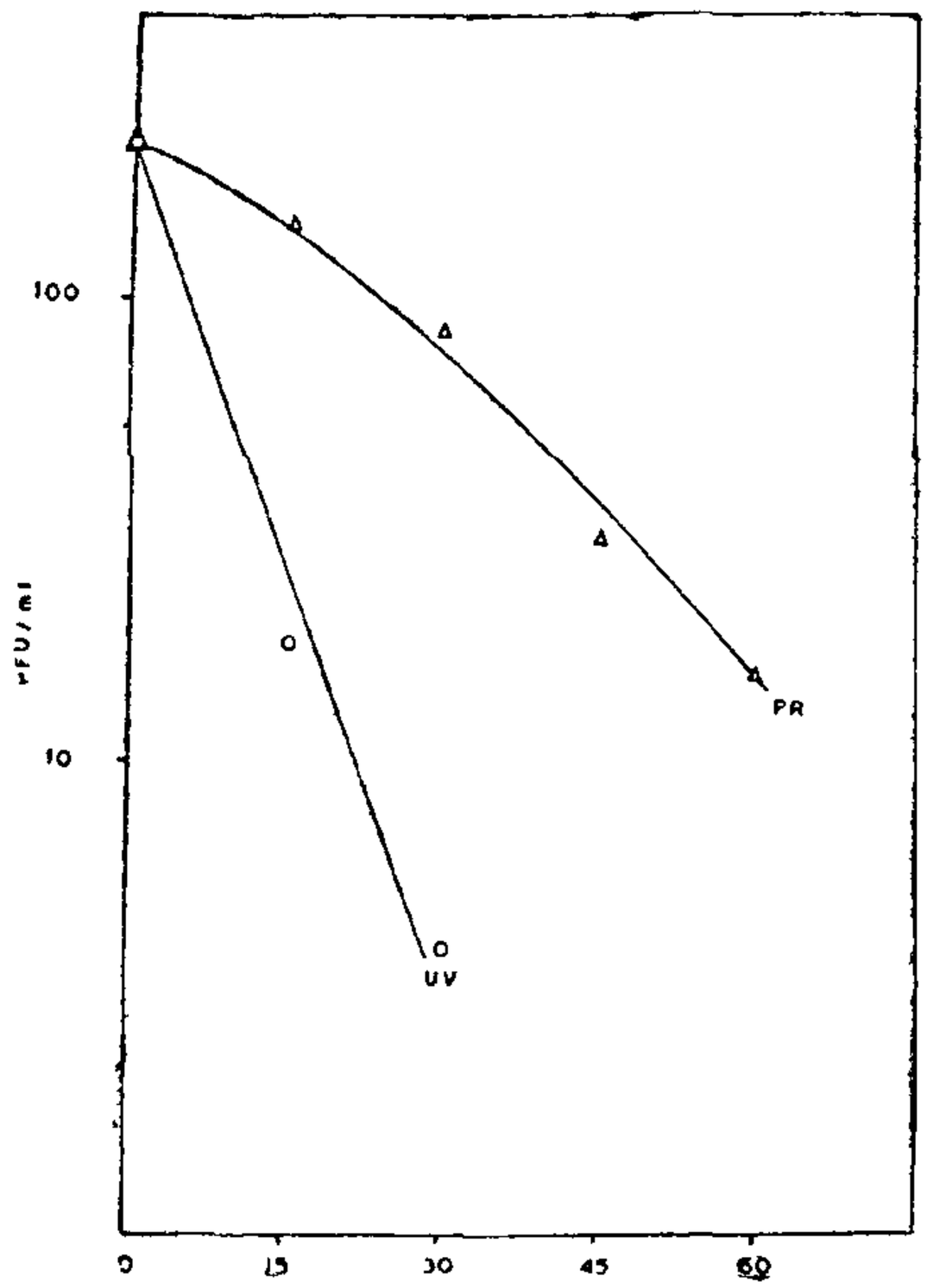

FIG. 1. UV-inactivation (UV) and photoreactivation (PR) of cyanophage AC–1.

For photoreactivation, the host cells of *Anacystis nidulans* infected by the irradiated phage suspensions were placed in a thermostated (30° C) glass photoreactivating chamber fitted with 2GE 250 W lamp at 20 cm away from the sample tubes. A filter of 0·03 N aqueous $CuCl_2$ in a 3 cm deep cell was used to absorb a large part of the infra-red radiation. Sixty min. exposure to the above visible light was found to cause maximum photoreactivation at this temperature at all UV-exposures and was, therefore, used as the standard photoreactivation time. After photoreactivation, the samples were suitably diluted and assayed by plaque assay method.

Figure 1 shows the linear relation between the surviving fractions of the AC–1 phage and the time of exposure to UV (curve UV). However, the host showed a pronounced photoreactivation system as observed by an increase in the surviving fraction of phage AC–1 when the UV-irradiated cells were exposed to visible light (curve PR).

Unlike LPP–1, AC–1 production could not proceed in the dark. Although CO_2 fixation has not been studied in the present investigation, it suggests a possibility of photofixation of carbon for a complete burst of the phage. The lack of alteration of photosynthetic lamellae by AC–1 upto the late stage of infection (unpublished) also points to this possibility.

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A NEW SPECIES OF *PERICONIELLA* FROM INDIA

DURING a survey of fungi from Gorakhpur region, the authors collected a species of *Periconiella* Saccardo causing leaf spots on *Casearia elliptica* Willd. This species comes close to *P. leonensis* (Ellis[1,2]), but differs in having larger conidiophores and wider conidia. Further this is the first record of this genus on *Casearia elliptica*. Hence it is described here as a new species.

Periconiella minutella Kumar and Kamal sp. nov.

Coloniae maximam partem hypophyllae, effusae, pilosae, brunneae; mycelium e hyphis partim immersis partim superficialibus, hyalinis vel subhyalinis, septatis, ramosis, levibus compositum, conidiophori macronemati, mononemati, singulares, recti vel paulum flexuosi, crasse tunicati, brunnei, in stipitem et capitulum bene signatum ramulos fertiles gignens partiti; stipes ad 500 × 5·4–6·2 (vulgo 5·4) μm, septatus, levis;

capituli ramuli hyalini, ad apicem inflati, pallidiores, cylindrici, stipite pallidiores; cellulae conidogenae polyblasticae, integratae, terminales, cum capituli ramulis commixtae, sympodiales, cylindricis, cicatricibus notatae, cicatricibus conidicis bene evolutis; conidia catenata, sicca, simplicia, acropleurogena, recta, plus minusve cylindrica, hyalina, haud septata, levia, vulgo 8–11 × 3·75–6 μm.

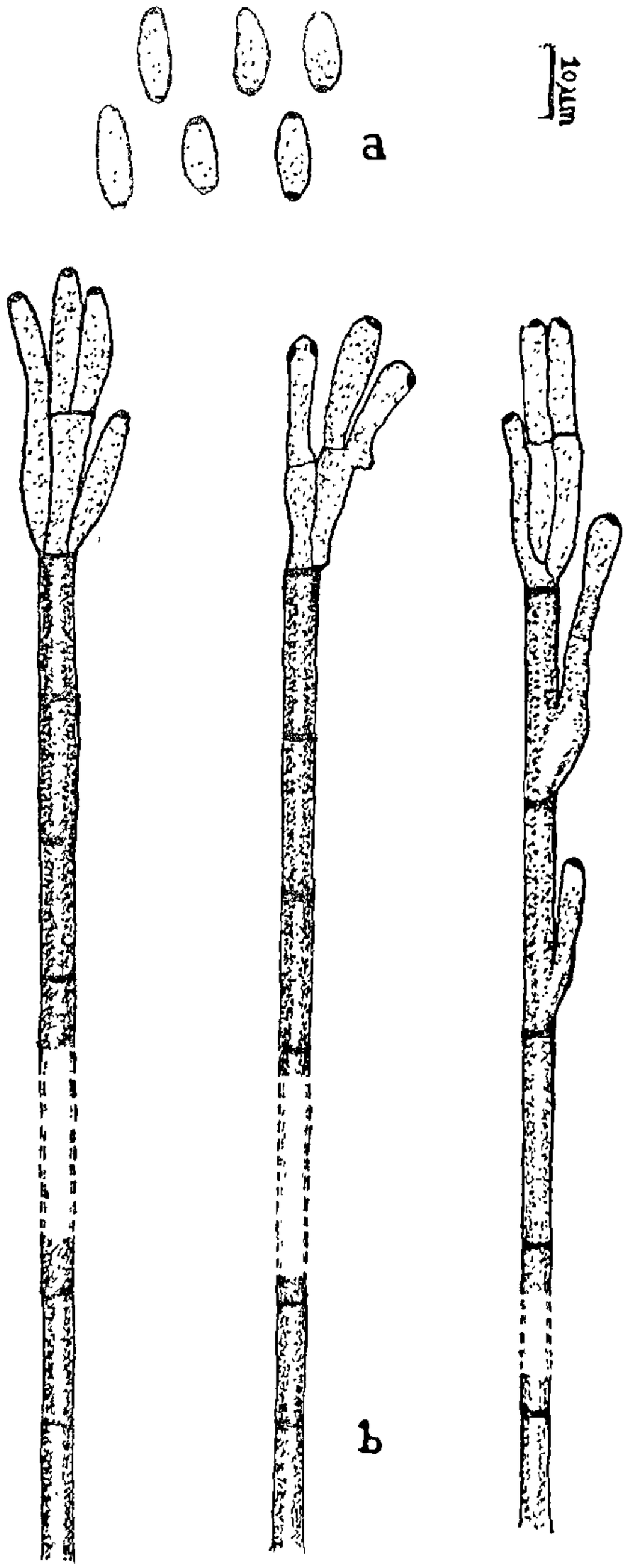

FIG. 1. *Periconiella minutella* Kumar and Kamal sp. nov. (*a*) Conidia, (*b*) Conidiophores.

In foliis vivis *Casearíae ellipticae* Willd. Gorakhpur m. Decembri 1977 leg. P. Kumar 1; IMI 229182, typum.

Colonies predominantly hypophyllus, effuse, hairy, brown; hyphae partly immersed, partly superficial, hyaline to sub-hyaline, septate, branched, smooth; conidiophores macronematous, mononematous, solitary, straight to slightly flexuous, thick walled, brown, divided into a stipe and a well marked head bearing small fertile branches; stipe up to 500 × 5·4–6·3 μm (usually 5·4 μm), septate, smooth; branches of the head hyaline, swollen and paler at the apex, cylindrical, paler than the stipe; conidiogenous cells polyblastic, integrated, terminal, incorporated with branches of the head, sympodial, cylindrical, cicatrized, with well developed conidial scars; conidia catenate, dry, simple, acropleurogenous, straight, more or less cylindrical, hyaline, *o*-septate, smooth, usually 8–11 3·75–6 μm (Fig. 1*a*, *b*).

On living leaves of *Casearia elliptica* Willd. Gorakhpur, December, 1977; leg. P. Kumar, 1; IMI 229182.

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A NEW EXPERIMENTAL RESEARCH ANIMAL FOR *MYCOBACTERIUM LEPRAEMURIUM*: *MASTOMYS NATALENSIS*

Mycobacterium leprae and *M. lepraemurium* are fastidious and exacting microorganisms in their growth requirements. Absolute proof of their *in vitro* cultivation is not yet fully confirmed (Ridley[1]); however, they have been cultivated *in vivo* in one or the other animal species[2–5]. Despite their *in vivo* cultivation, very few experimental models are available for their study. Since these mycobacteria have many common facets, development of newer experimental models are of renewed interest. Attempts to grow *M. lepraemurium* in *Mastomys natalensis* have not been made so far. This communication reports that *M. lepra-*