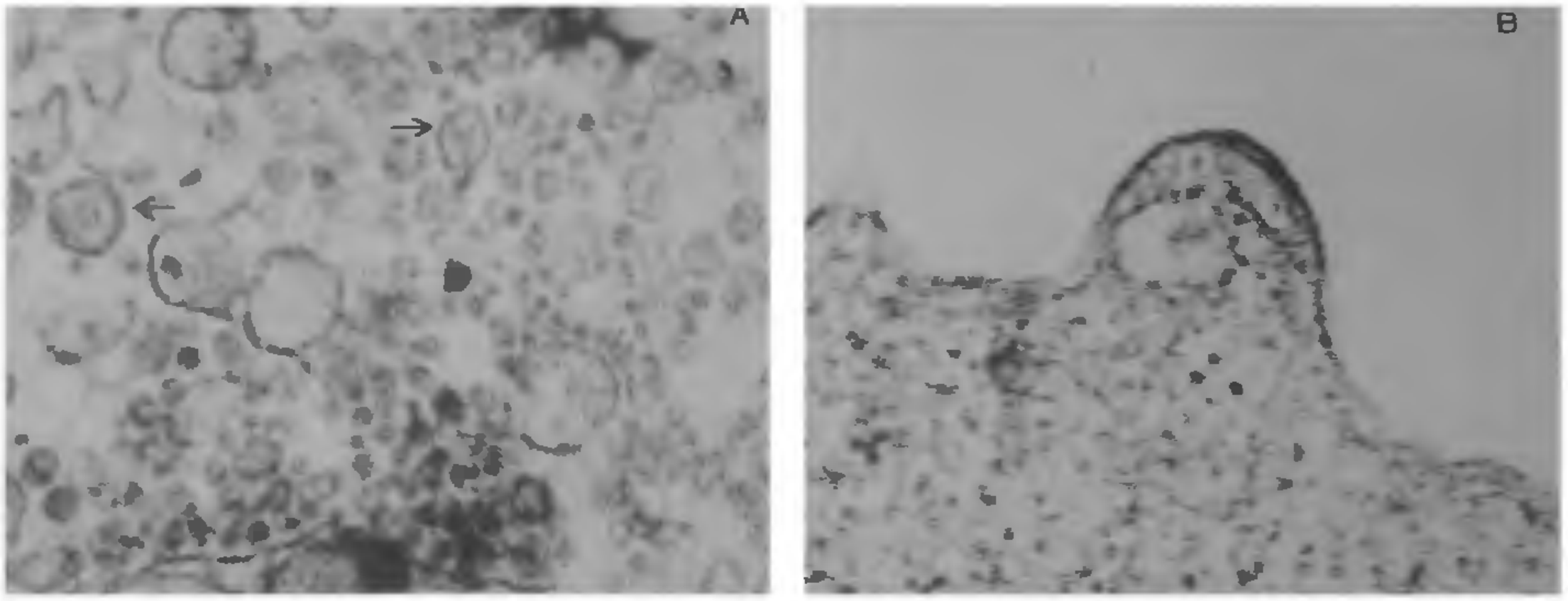

Figure 2A, B. A. Virus-like particles showing the cylindrical core (100,000); **B.** Budding of virus-like particles.

natants collected 8 days post infection (PI) and 30 days PI were harvested and monitored for particulate Mg^{++} dependent reverse transcriptase (RT) activity[6] and for antigen detection (Abbott antigen detection kit).

RT activity of the above-mentioned supernatants were 3.9×10^4 cpm and 4.7×10^4 cpm respectively, and these were significantly greater than the uninfected PBMC control value (3.6×10^3 cpm). Thus, a retrovirus was concluded to be present in these supernatants[7].

An H9 continuous cell line was infected with the supernatant. Electron microscopy of the cell pellet from the infected H9 cell line revealed the presence of virus particles measuring 100–120 nm in diameter. The morphologic appearance of these particles and its budding is consistent with lentivirus. Some of the virus particles showed the cylindrical-shaped cores of HIV (figures 2A, B).

In the present study we have isolated a retrovirus from an IV drug user. That this retrovirus is HIV is supported by antigen detection in the supernatant, and the electron microscopic morphologic features.

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PILLOW LAVA OCCURRENCES IN DECCAN TRAP FLOWS AROUND CHHINDWARA, MADHYA PRADESH

A. K. BHATTACHARYA and M. GHOSH
Geological Survey of India, Central Region, Nagpur 440 001, India.

THE present note reports our results on mapping around Chhindwara, and conspicuous occurrence of pillow lava horizons at many places. Of the several occurrences, pillow lavas of the following localities are worth mentioning.

1. A hill cutting section near the 6.4 km stone on Chhindwara-Narsinghpur road opposite to Hindusthan Lever Factory, NE of Chhindwara at 700 m MSL: Bun, ball, balloon, bulbous to ellipsoidal-shaped pillows with 4–8 cm thick-chilled margins represented by glassy material; some of them with radial cracks and generally without any vesicles are found. The pillows, in general, are seen to vary from 30 to 120 cm in diameter. The lower margin of most of the pillows are flattened. Basal parts of some of the pillows are moulded over the top of the

lower pillows. The interspaces between the two pillows beyond the glassy margins are occupied by greenish chloritic material.

2. On the southern bank of the Pench river, just near the Chhindwara-Narsinghpur road bridge, 2 km SE of Singori (22°12′:79°03′30″) at 620 m MSL several irregular-shaped, roughly ellipsoidal pillow-like bodies ranging from less than a meter to 2.2 m in diam. are found. Some pillows exhibit radial cracks, otherwise concentric ring-like structures formed by comparatively medium to fine-grained minerals near the centre and glassy/pitch stone-like material near the peripheral zone. Each pillow exhibits chilled margins of shining glass/pitchstone-like material ranging from 5 to 15 cm in thickness. Gradual reduction in glass content towards central part is observed in some pillows. The basal part of each pillow is moulded over the irregular top of the lower pillows and the interspaces between these bodies are occupied by secondary silica and Zeolites.

Similar pillow lava occurrences are also recorded by the present authors near Chargaon (22°07′05″:78°58′) and Anjaniya (22°05′30″:79°00′) and in other parts of Chhindwara district.

The pillow horizon of Chhindwara area was also seen to be overlain by the medium-grained tholeiitic basalt enriched with secondary glass and opaques suggesting grading of spilitic lava to tholeiitic type. Based on available evidence, it is likely that such structures were also forced under subaqueous condition. Considering the distribution of the pillow lava in Chhindwara area along with its petrographic study, it appears that this area was also in close proximity to the sea and (or) was connected by arm of sea from the west.

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IMMOBILIZATION OF CELL WALL DEGRADING ENZYMES BY ISOLATED HOST AND NON-HOST CELL WALLS

G. S. PRASAD*, A. R. PODILE and H. C. DUBE

Department of Life Sciences, Bhavnagar University, Bhavnagar 364 002, India.
**Department of Botany, Osmania University, Hyderabad 500 007, India.*

PLANT cell walls have high capacity to bind proteins including polygalacturonase, produced by plants and fungi[1-3]. Cooper *et al*[4] reported binding of pectic enzymes (endo-polygalacturonase and endo-pectin lyase) of plant pathogens by isolated host as well as non-host cell walls. Studies on binding of enzymes by plant cell walls have been limited only to endo-type of pectic enzymes. In the present study we have examined the ability of isolated host (pigeon pea) and non-host (tomato) cell walls to bind and inactivate exo-pectic enzymes [exo-pectin lyase (exo-PL) and exo-pectic acid lyase (exo-PAL)] and endo-xylanase of *Fusarium oxysporum* f.sp. *udum*, causing wilt of pigeon pea.

Enzyme samples, prepared from fungal cultures grown on Czapek medium containing host cell walls (pigeon pea) were examined for their activity on predetermined optimum incubation period (6th day for pectic enzymes and 12th day for xylanase). The enzyme was assayed by methods described earlier[5,6]. The hydrolytic or *trans*-eliminative cleavage of the pectic substances was identified spectrophotometrically by thiobarbituric acid (TBA) test of Neukom[7], as modified by Sherwood[8]. A colour reaction between an acid reagent solution of TBA and product of enzyme substrate reaction, gives characteristic absorption peaks for the hydrolytic and *trans*-eliminative split. A peak at 510 nm suggests the presence of a galacturonase enzyme while a peak at 547 or 550 nm indicates lyase activity. Release of reducing sugars from pectic substances suggests *exo*-enzymes activity. The enzyme that releases reducing groups from pectin is called exo-PL while exo-PAL releases reducing groups from pectic acid (sodium polypectate). The results of enzyme assays are expressed as (μmol of substrate hydrolysed/min/ml).

Cell walls were isolated from the host (pigeon pea) and non-host (tomato) plants by the method described earlier[4]. The isolated cell walls (not containing any ionically bound proteins) were hydrated by soaking them in distilled water for 5 min. Fifty mg of hydrated cell walls was added to 5 ml of enzyme samples and removed after 1 h by centrifugation. Supernatant was used for enzyme assays. The control set lacked the cell walls. Enzyme activities of the 'control' and the supernatant were compared to determine loss in activity, if any, due to the presence of cell walls. The release of bound enzymes from cell walls was achieved by adding 5 ml of 0.2 M NaCl to the centrifuged cell wall samples. The centrifuged supernatant was used to assay the enzyme activities (desorbed from cell walls on addition of NaCl). The enzyme remaining in the supernatant after removing the cell walls plus the