

average of 3.5 grade lesion, which rose upto 4 grade in the next liver passage (table 2). Initially 40% infection with 2 grade lesion was produced in mouse liver inoculated with a piece of abscessed liver produced in hamster by PK-amoebae. Liver to liver passage in mouse, the infection rate increased from 60 to 100% and the grade of lesion also changed from 2.5 to 3.0 respectively (table 2; figure 3).

Histopathological preparation (figure 4) revealed typical amoebic lesions in the liver with an abscess cavity and trophozoites in the liver tissue. The lumen was filled with necrotic material mixed with fluid, red blood cells and leucocytes. Smear preparations of the infected liver tissue showed active trophozoites under microscope (figure 4). Portion of infected liver when inoculated in culture medium gave rise to positive *E. histolytica* cultures. Neal and Harris<sup>2</sup> achieved little success in infecting inbred mouse intracaecally with *E. histolytica*. Westphal<sup>3</sup> reported successful caecal infection of mice with *E. histolytica* using a diet rich in carbohydrate and vitamins. The caeca of infected mice showed pin-head-sized ulceration containing amoebae. Woolfe *et al*<sup>4</sup> produced liver abscess in mice by using selective strain of *E. histolytica* by repeated passage through mouse liver. For mouse liver infection they used the "gelatine sponge" method of Jarumilinta<sup>5</sup> and got cent per cent infection. The main advantage of the present method is that as many as

10-15 mice can be easily infected from a single infected liver. This method of infection is being employed for *in vivo* screening of anti-amoebic drugs. The method also ensures that the amoebae used for inoculation maintain their virulence.

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### **PORPAX CHANDRASEKHARANII BHARGAVAN ET MOHANAN— A NEW SPECIES OF ORCHID FROM SILENT VALLEY**

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*PORPAX* Lindl. is a small genus found only in the Mainland of Asia<sup>1-5</sup>. It differs from its close relative *Eria* Lindl. in having the sepals jointed into a tube and having a very short pseudobulb which is wider than long. *Porpax* Lindl. consists of 10 species<sup>6</sup> of which 6 are known earlier from India. *Porpax jerdoniana* (Wight) Rolfe and *P. reticulata* Lindl. are the two species reported from South India<sup>7-10</sup>.

While on an exploration to Silent Valley a curious population of *Porpax* was located. Comparing with other known species of the genus, the plants were found to possess distinct features and is therefore described here as a new species. The plants were growing on lichen covered tree trunks in moist shady places.

*Porpax chandrasekharanii* Bhargavan et C. N. Mohanan sp. nov.

*Porpax elwesii* (Reichb.f.) Kraze. affinis sed differt scapo prominenti floribus 3-6, floribus parvioribus, labiis simplicibus et parvioribus, columna brevioribus.

*Porpax Chandrasekharanii* Bhargavan et Mohanan sp. nov.

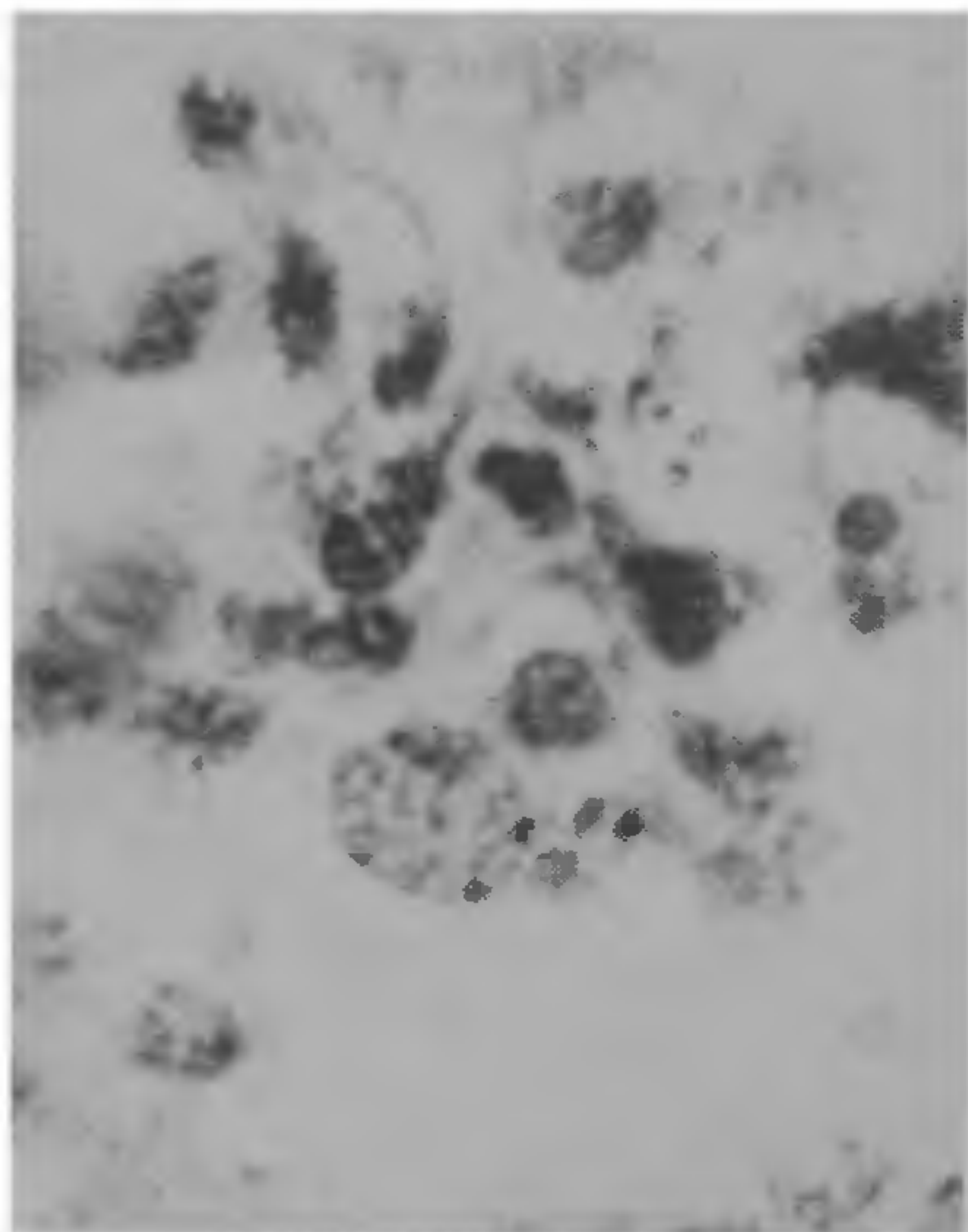
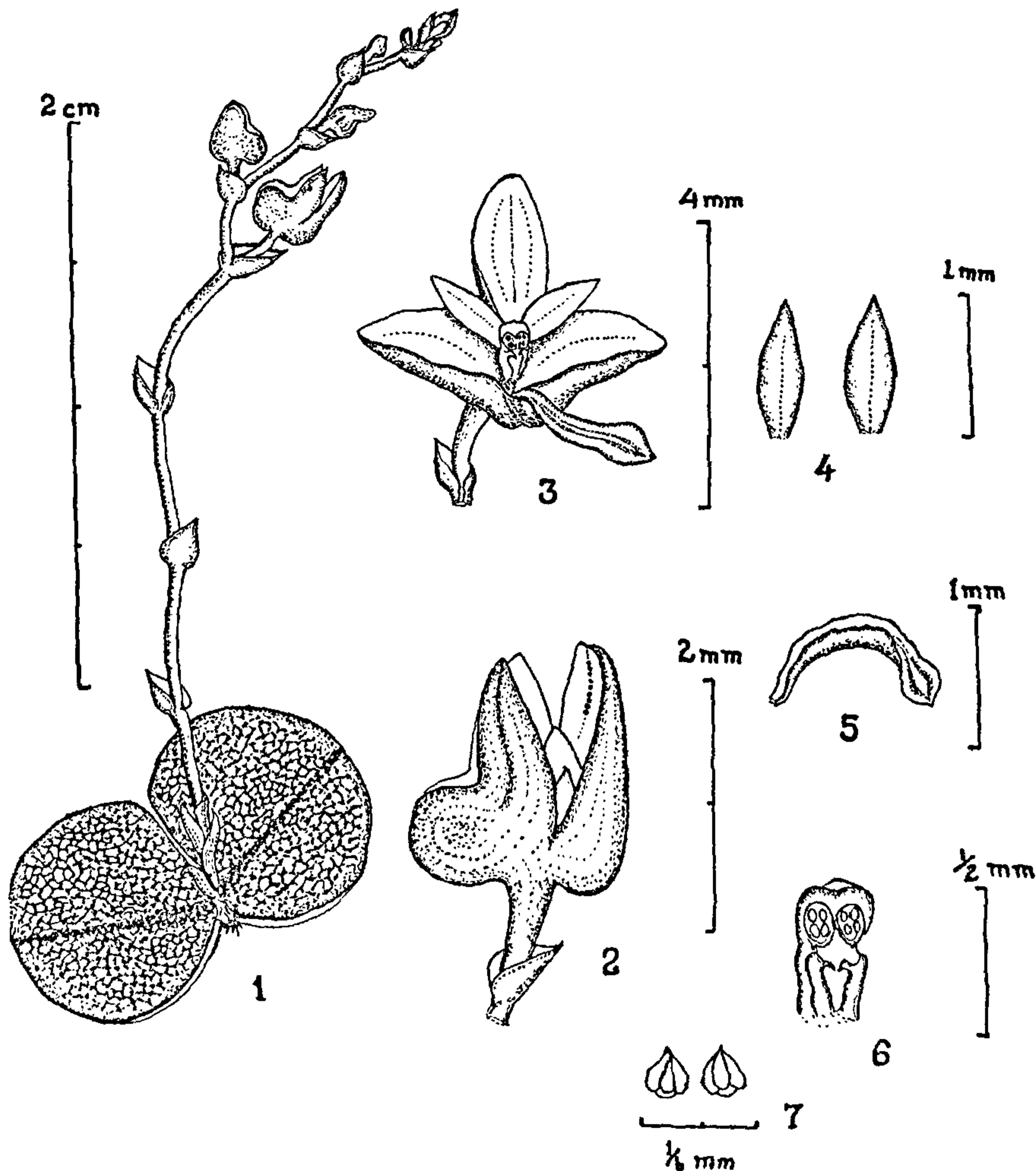


Figure 4. Histopathological preparation of infected mouse liver showing trophozoites and necrosis of the liver tissue (x 600).

Allied to *Porpax elwesii* (Reichb.f.) Kraze. but differs in having a prominent scape with 3-6 smaller flowers, lip being smaller, simple; column shorter.

Epiphytes: Pseudobulbs *ca.* 5 mm across, depressed, crowded, finely reticulate; Leaf-shoot develops laterally, leaves deciduous before flowering. Scape *ca.* 2 cm long, capillary, with imbricating membranous bract-like sheaths, bracteate, bract *ca.* 1 mm, ovate, apiculate, one nerved; equal in length to the

pedicellate ovary, lower bracts sterile and distant. Flowers 3-6, subsessile, dull-white. Sepals *ca.* 2 mm long, united almost near the saccate base, glabrous, apices subacute, slightly mucronate. Petals shorter than sepals, *ca.* 1 mm long, ovate-elliptic, acute-acuminate, one nerved, softly attached to the tube near the base. Lip *ca.* 1 mm long, falcate, attached to the incurved foot of the column by a very short claw, simple, truncate to obtusely acute at apex. Column *ca.*



Figures 1-7 *Porpax Chandrasekharanii* Bhargavan et C.N. Mohanan sp. Nov. 1. Habitat with scape. 2. Flower. 3. Flower spread open. 4. Petals. 5. Lip-side view. 6. Column. 7. Pollinia.

0.5 mm, anther 2-celled, yellow; pollinia, 8, all equal, free, 4 in each cell, yellow; stipe very short, gland minute; ovary *ca* 0.5 mm long including the pedicel, glabrous. Fruits not seen.

Holotype (*Bhargavan* 65795-CAL) and isotype (*Bhargavan* 65795-2 specimens-MH) were collected at Silent Valley R.F., Palghat District, Kerala, India at an altitude of 1000 m on 20-1-1980.

This species is named after Dr. N. Chandrasekharan Nair, Joint Director, Botanical Survey of India, Coimbatore in admiration of his valuable contributions to Indian Botany.

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## RELATIONSHIP BETWEEN DOWNY MILDEW EVALUATION PARAMETER AND PEARL MILLET PRODUCTIVITY

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DOWNY mildew of pearl millet caused by *Sclerospora graminicola* (Sacc.) Schroet. assumed special economic significance during the last decade because of its capacity to attain epidemic proportions in a short span of time. However, no quantitative estimates of

epidemic are available. Even the estimates of losses are only approximates<sup>1,2</sup>. The incidence of the disease ranging from 30% to 100% has often been equated to similar quantitative losses in yield. The Scientific Committee Report (ICAR, 1976, p. 11) on downy mildew epidemics in Maharashtra observed that "incidence of the disease is not necessarily an index of loss". With the availability of standardized method of mildew evaluation, such as percentage incidence, 30 days after planting and percentage infection index<sup>3</sup>, the relationship with pearl millet yield, has been investigated.

Downy mildew susceptible hybrid, HB-3 was grown in twelve blocks, (10m × 10m). The number of susceptibles was maintained around 2000 per block with the spacing of 40 × 10 cm between rows and plants. Oos-

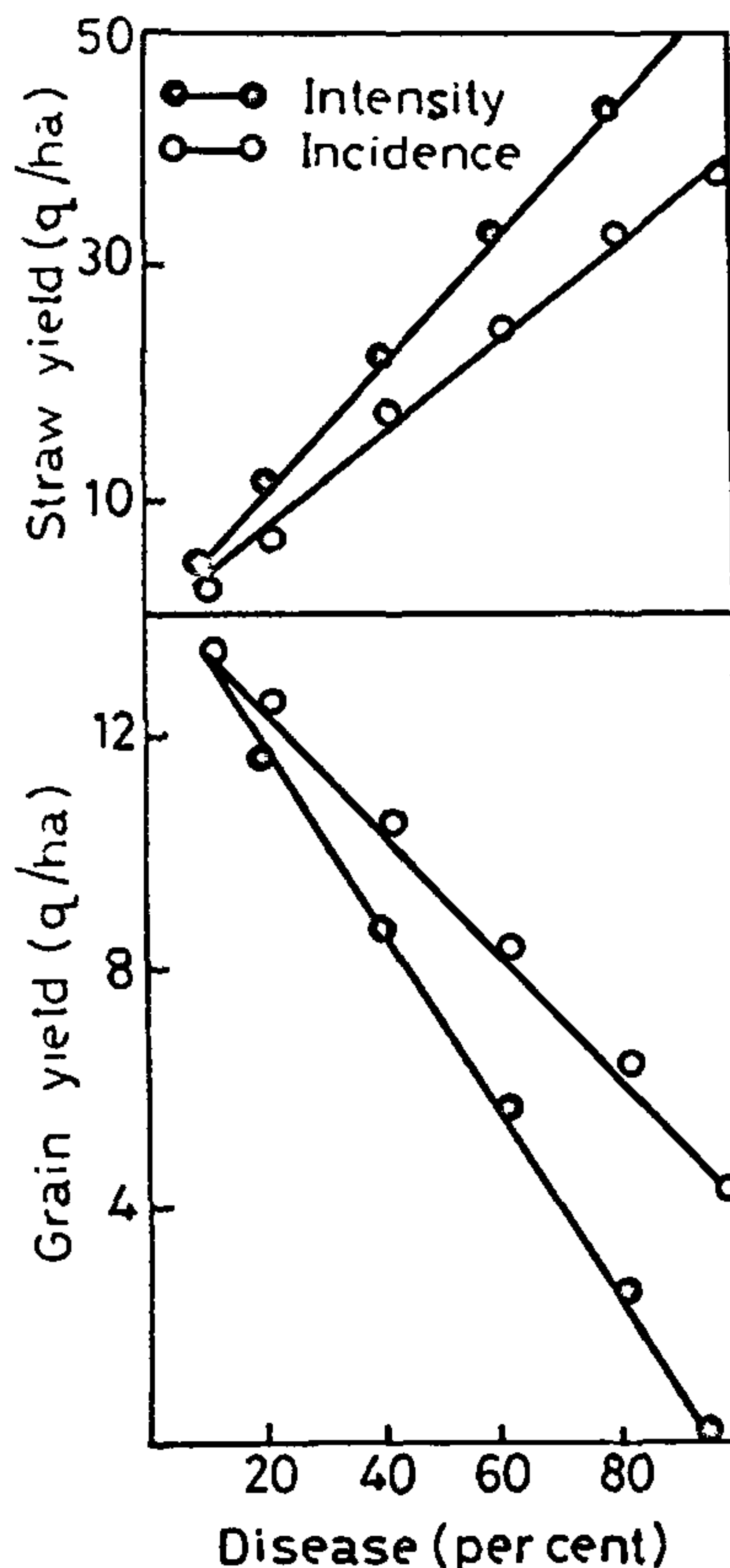


Figure 1. Relationship between downy mildew incidence, infection index and grain, straw yield of pearl millet.