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PROPAGATION IN *PROSOPIS CINERARIA* (L) MAC BRIDE BY AIR LAYERING

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PROSOPIS CINERARIA plays a significant role in the rural economy of the north-west arid region of the Indian subcontinent. Being an important constituent of the desert biome, it is a major source of top feed, fuel, timber and vegetable. As it is well adapted to the arid conditions the rural communities encourage the growth of this tree in their agricultural fields, pasture lands and village community lands. However, this tree is constrained by slow growth in initial stages and extremely poor regeneration.

Vegetative propagation is a valuable tool which facilitates basic genetic research and practical tree improvement programme. Studies conducted on vegetative propagation on *P. cineraria* in any form except through tissue culture¹ have so far are without any success. However, its ability to produce root suckers is a fair indication of its potential for vegetative propagation. The results of successful vegetative propagation through air layering are reported in this communication.

An experiment was planned with two twigs (5–7 mm and 10–15 mm diameter), control and two rooting hormones (3-indole-acetic acid (IAA) of 100 ppm concentration and Seradix B 3) and two covers (moss and clay). Each treatment was applied on 4 twigs of an approximately 40-year old tree during July and August, 1983 with a total of 48 air layers. Approximately 15 mm wide girdles were made on the twigs and the barks were removed. Both the rooting hormones were applied at the upper end of the girdle.

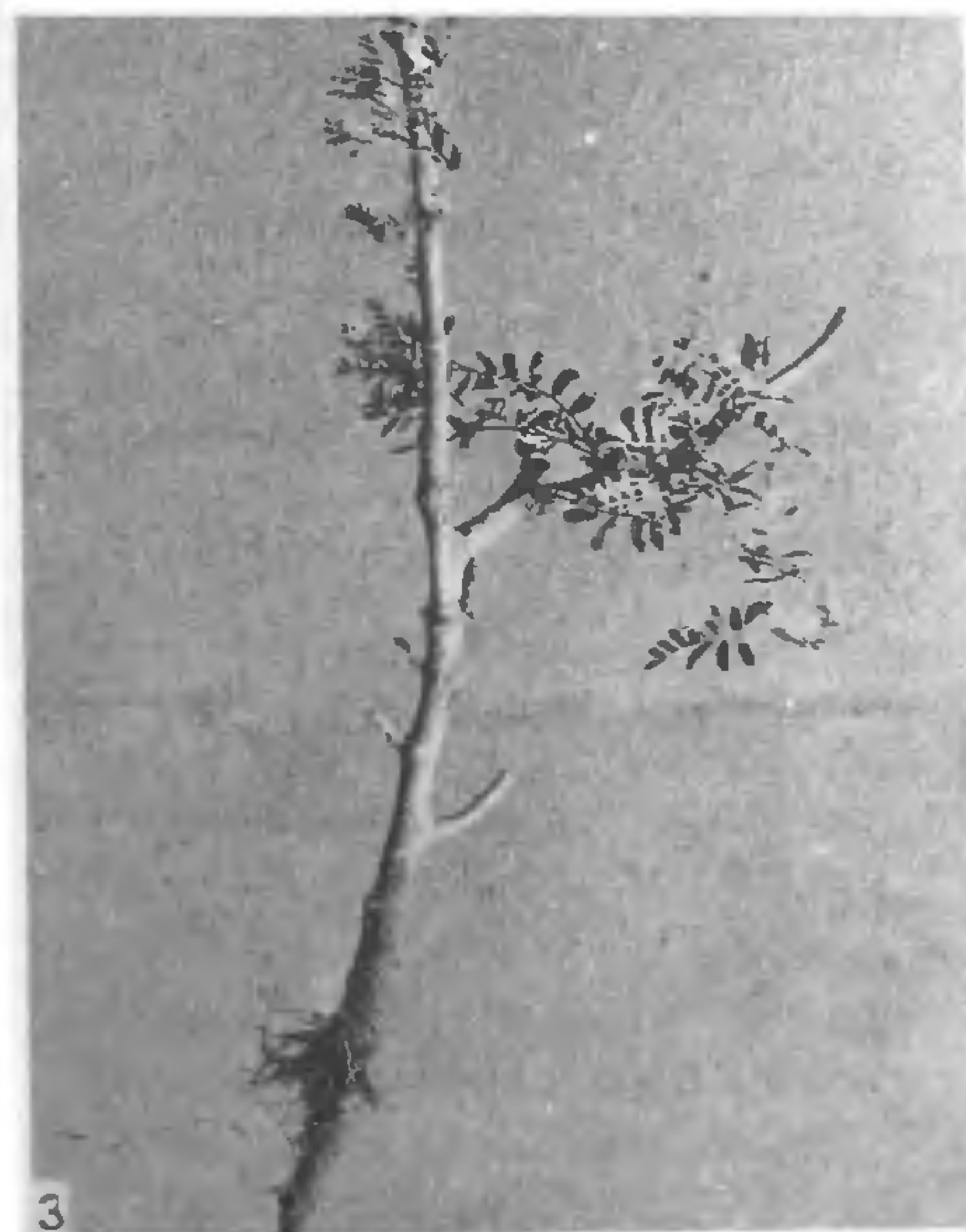
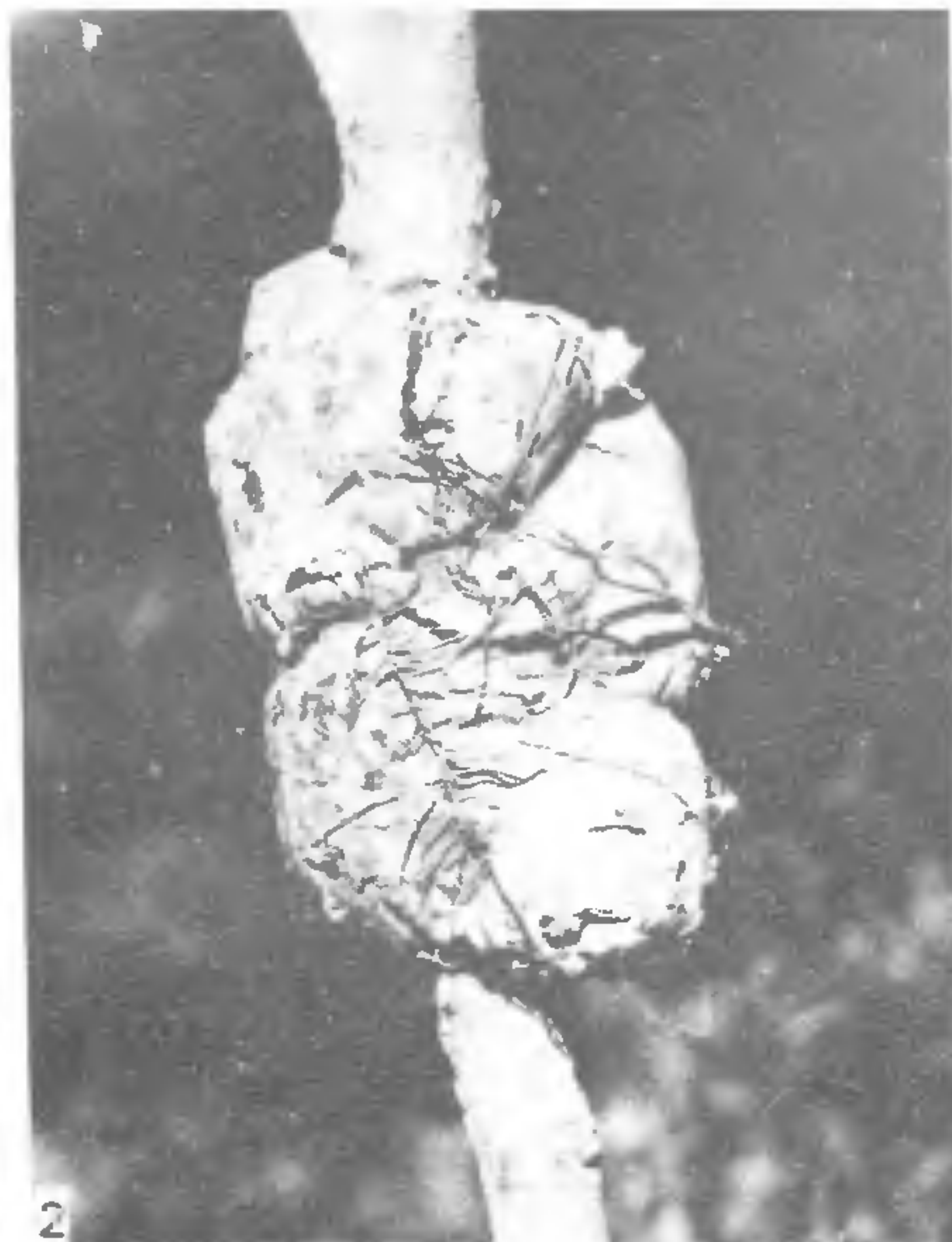
The lump (clay or moss) was covered with polythene sleeves and tied firmly at both the ends to retain moisture inside (figure 1). These air layers were detached from the tree and planted in earthen pots filled with garden soil.

Root initiation was observed after a month (figure 2) in all the four hormone treatments in the twigs having 10–15 mm diameter, whereas in 5–7 mm diameter twigs rooting was not noticed. The success in the former may probably be attributed either to sufficient amount of reserved food material available and/or also due to high activity of meristematic tissue to cause good rooting in thicker twigs. Application of both the root hormones i.e. IAA and Seradix B 3 proved effective over the control. However, comparatively profuse rooting was observed in the twigs of 10–15 mm diameter treated with Seradix B 3 and covered with clay (figure 3). Establishment of air layers was also better in this treatment (figure 4). Successful rooting in July and August may be due to higher cambial activity during this period when high temperature is coupled with the high humidity². Propagation of *P. cineraria* tree through air layering is not only quick but economic at the same time because seed formation is rare in a lopped tree. Tree lopping for animal fodder is a recurrent phenomenon. However, with the present technique the propagation can be done successfully on new twigs arising after lopping in subsequent monsoon season. This is the first attempt in air layering on this species. The results are of preliminary nature. Therefore, a need exists for future trials. The present study is, however, useful in demonstrating the scope of air layering for the clonal propagation in *P. cineraria*.

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Figures 1-4. 1. Attempted air layer on a tree, 2. Roots after removing polythene, 3. Roots prior to transplanting in pot, 4. Established plant in pot.