

4. DRIER-TRANSPORTERS FOR PLANT PRESSES

Extended plant collecting trips necessitate frequent changes of drying paper to prevent plant specimens becoming mouldy. This, together with vehicle interior space limitations, which can lead to frequent plant press restacking, can cause specimen damage. Changing drying paper is also time-consuming. Plant presses transported outside the vehicle can allow better interior space utilization and the method can include a specimen drying function not possible inside the vehicle.

A fully enclosed aluminium rack, mounted on the roof of a NISSAN long wheelbase Ekonovan, is shown in

Figure 7. The roofrack is suitable for 12 standard strap-type plant presses, filled up to about 350 mm in height. Plant presses are loaded through four side-flaps and are secured by straps in guides which ensure airflow around each plant press. The end-flaps can remain open, even when travelling, for ventilation. In moist or dusty conditions the end-flaps can be closed. The exterior is painted black for heat absorption, to assist the drying process. The drying process is, however, not even throughout the roofrack as the four front presses have a markedly faster drying rate than the others when the vehicle is moving.



FIGURE 7.—Roofrack drier-transporter showing open front and side flaps and stowed canvas awning on awning pole box.

A partitioned 2,12 m trailer with a perspex lid over the rear partition for light transmission and heat capture is shown in Figure 8. A large ventilator on each of the sides, the tailgate and the rear of the lid ensure adequate ventilation when stationary and, forced ventilation when moving. The lid and a side ventilator, in the open position, can be seen in Figure 8. The front partition can be used to stow camping gear. This configuration is suitable for six top-loading plant presses (Westfall *et al.* 1989). Both partitions have webbed rubber mats for floor protection and insulation.

In later models the rear lid was made of metal and painted black for heat absorption as the perspex, apart from being expensive, is inclined to crack. This did not influence internal temperatures significantly as temperatures of about 53°C at 1 700 m altitude were recorded in both models when cloud cover was absent. The perspex model did, however, appear to have a faster rate of heat buildup than the painted model.

The roofrack drier-transporter should dry plant specimens more efficiently because considerably more air can pass over the plant presses than in the trailer. However, in inland summer conditions, the trailer has proved adequate for specimen drying, eliminating the need to change drying paper in all but the wettest specimens, such as geophytes with large, moist storage organs. In comparison with the trailer, the roofrack has the following disadvantages: 1, loading and unloading of plant presses is difficult; 2, plants cannot be pressed with the press *in situ*; 3, noticeably higher fuel consumption, especially with

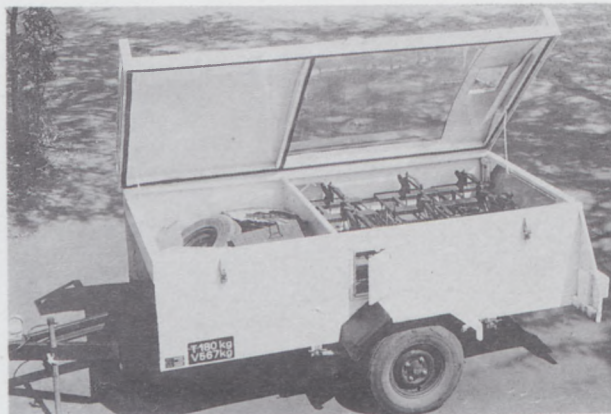


FIGURE 8.—Trailer drier-transporter showing open ventilators, perspex lid and top-loading plant presses.

speeds in excess of 90 km/h; 4, altered vehicle handling characteristics; and 5, higher manufacturing cost.

The plant-press securing straps of the roofrack can be used to take up slack in the plant presses as the material dries. The roofrack is also equipped with a canvas awning on an awning pole box, with width almost that of the roofrack length and length sufficient to pass over the open door and reach the ground. The awning is rolled and stowed on the side of the roofrack as shown in Figure 7. The trailer lid can also offer some protection from inclement weather when raised, as shown in Figure 8.

The trailer drier-transporter, although possibly slightly less efficient than the roofrack drier-transporter for drying plant specimens, can reduce plant-press handling considerably, thereby saving time and possible information loss through specimen damage.

ACKNOWLEDGEMENTS

The authors thank Drs B. de Winter, J.C. Scheepers and Mr J.M. van Staden for comments and assistance.

REFERENCES

- WESTFALL, R.H., BRITZ, P.J. & PANAGOS, M.D. 1989. Plant collecting apparatus for taxonomic and ecological studies. 3. A new top-loading plant press for off-site specimen pressing. *Bothalia* 19: 268–269.

M.D. PANAGOS and R.H. WESTFALL