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Seed Cleaning with a Winnowing Chamber

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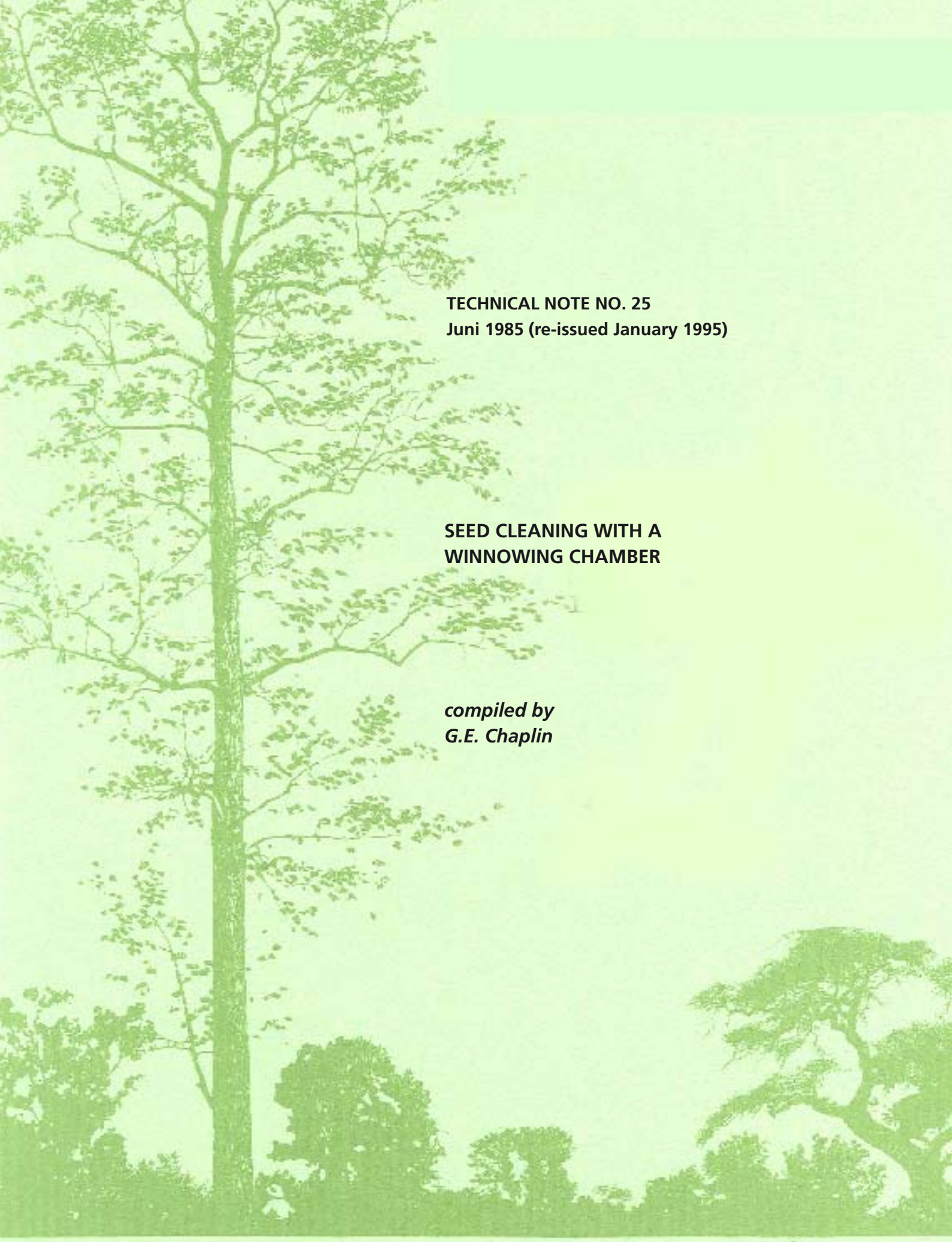

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SEED CLEANING WITH A WINNOWING CHAMBER

compiled by
G.E. Chaplin

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SEED CLEANING WITH A WINNOWING CHAMBER

by

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1. INTRODUCTION

A locally made seed winnowing chamber is described. It works with a stream of air from an electric fan and can be used to separate debris and empty seeds from dry seed batches.

This note was originally sent out as Forest Research Note 1/84 from the Forestry Division Munda, Solomon Islands, July 1984.

2. DESCRIPTION

The winnowing chamber is made up of three separate sections:

1. Wind funnel; made of hardboard and beading with two sizes depending on seed bulk.

2. Centre section; made of hardboard base and sides with an elevated central section with a formica top which slopes down against wind direction.

3. Gauze cage; made of gauze mounted on beading.

All three sections fit together into a continuous chamber. The electric fan is placed at the far end of the wind funnel. The draught strength is varied by strength of fan and proximity to the winnowing slope.

3. FUNCTION

The chamber is used to clean dry seed that is mixed with light debris. The unsorted seed is dropped onto the sloping formica top. There are two variables:

a. the height of the drop
b. the position on slope.

Usually the unsorted seed of *Swietenia macrophylla* is dropped from about 30 cm onto the middle of the formica slope. The unsorted seed may be dropped by hand or from a container to ensure a more uniform flow.

Adjustment of the variables and of draught strength will determine the efficiency of separation and speed of work. Skill of operation is rapidly acquired but requires fine judgement and attention.

Seeds need to be winnowed repeatedly as rarely does one passage remove all the debris.

4. USE

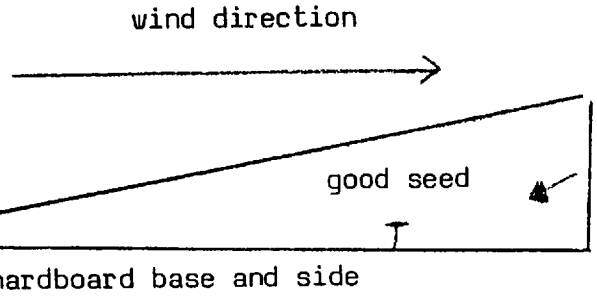
This locally made winnowing chamber is now used routinely to separate the broken wings and empty seeds of *S. macrophylla.* All of the debris and virtually all the empty seeds can be separated by a skilled operator.

The dried pulp debris of *Campnosperma brevipetiolata* has been separated from the seed. The pod debris and detached funicles of *Acacia mangium* are also easily separated.

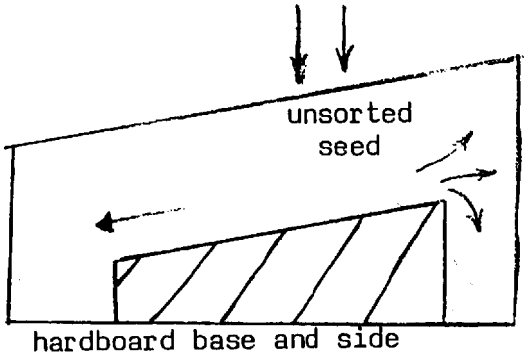
This winnowing chamber is a useful addition to a seed handling facility and can be used to separate debris and empty seed from the full seed of other species in addition to those already cleaned in this way at Munda.

SEED WINNOWING CHAMBER

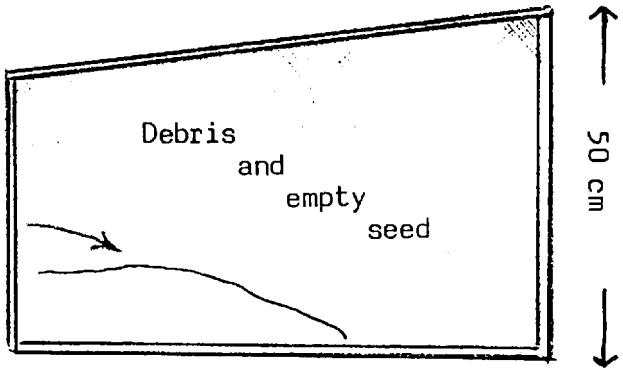
ELEVATION



WIND FUNNEL

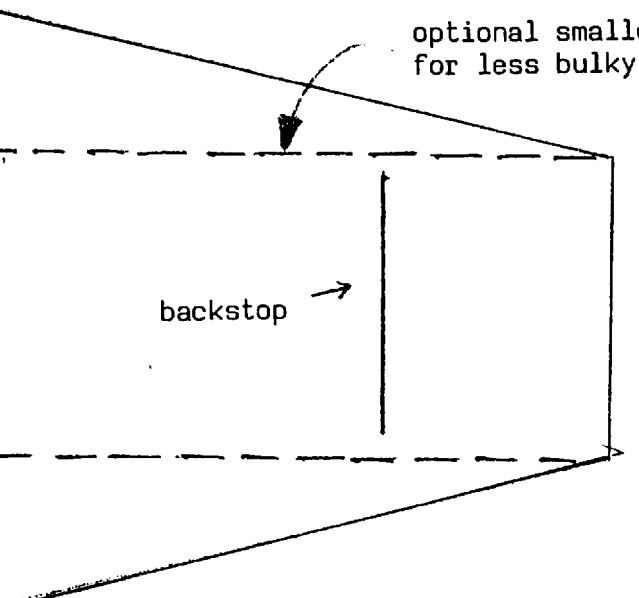


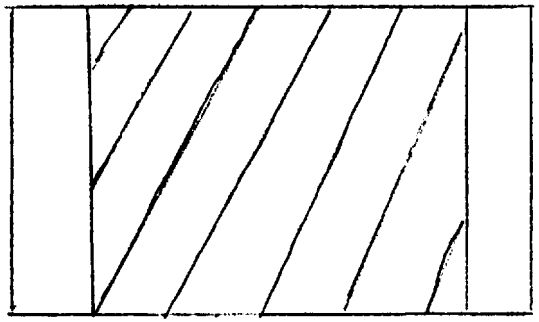
CENTRAL SECTION WITH WINNOWING SLOPE



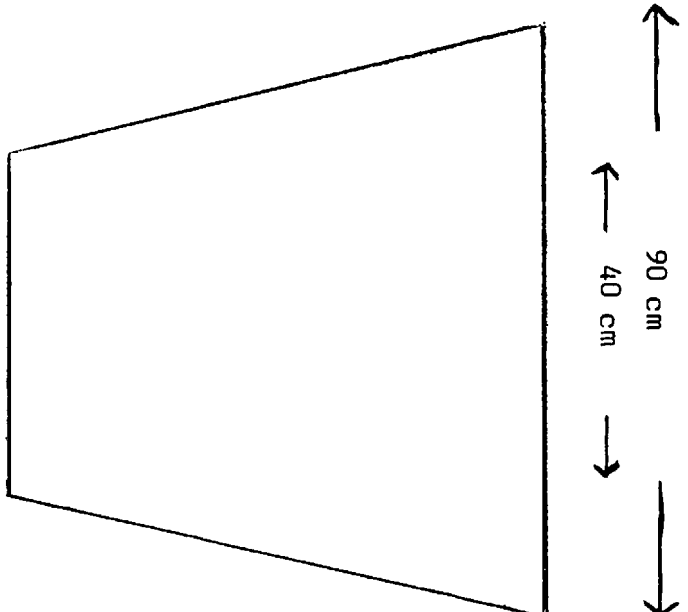
GAUZE CAGE, TIMBER FRAMED

PLAN

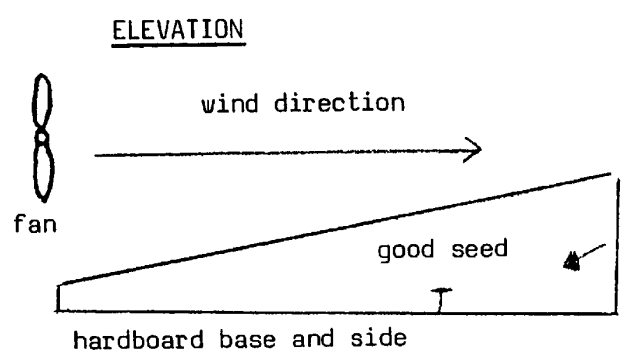




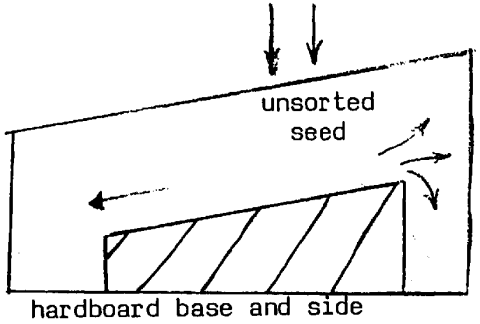
formica top, sloped



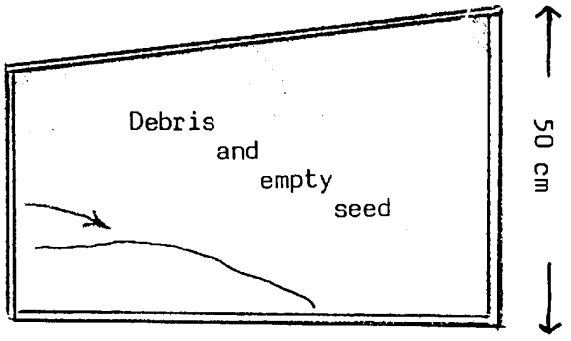
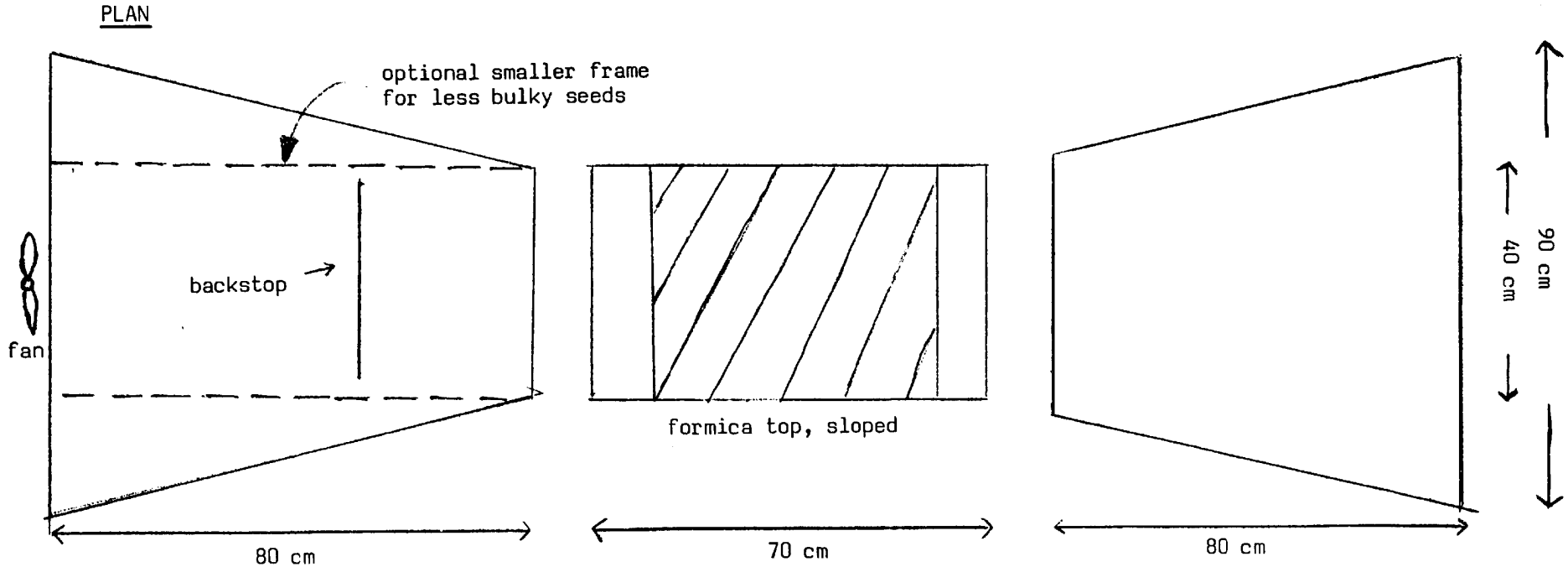
SEED WINNOWING CHAMBER



WIND FUNNEL



CENTRAL SECTION WITH WINNOWING SLOPE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