tion to the bleeder tube at the distal end of the mani
fold until all entrapped air is removed from the sup
ply lines. Pinch off the bleeder tube. Then fill the
permeameter units with water and remove the pinch
clamps from the unit supply tubes. Small quantities
of air introduced into the manifold upon the removal
of pinch clamps may be withdrawn by again applying
suction while opening the bleeder tube. The apparatus
permits ready interchange of the permeameter units
during operation. The procedure for changing units
consists of pinching off the unit supply tube, replace
ment with another unit, filling the replacement unit
with water and removal of the pinch clamp.

The calculation of permeability is made in accord
ance with the Darcy equation. Inasmuch as an in
verted Lutz sampling can is used to maintain the head
of water, the hydraulic gradient (h/L) is equal to 2.
The average cross-sectional area of the soil core is 28.5
square centimeters. Hence, permeability expressed in
centimeters per hour is equal to the number of cubic
centimeters of water passing through the core in one
hour divided by 57, the product of 28.5 times 2. —C. A.
Bower, senior soil scientist, and R. K. Petersen, agricul
tural engineer, U. S. Regional Salinity and Rubidoux Laboratories, Riverside, Calif.

A SIMPLE, LOW-COST SHELLER FOR
PEANUTS, BEANS, AND PEAS

This sheller was developed for the purpose of pro
viding a quick, economical method for shelling
small to medium-sized lots of peanuts from plots,
selected hills, and other sources, primarily to avoid
slow expensive hand shelling. This device has also
proved quite satisfactory for shelling dry beans and
peas, and further testing may prove its usefulness for
other seeds.

This sheller consists of a framework of metal or wood
which supports a grid of bars or perforated metal ar
ranged in a curve having a slightly greater circumfer
ence than the oscillating cylinder, which is guided by
a shaft working in vertical slots in the frame of the
machine.

A typical sheller of this type is 24 inches long,
12 inches high, and approximately 13¼ inches wide,
drums for the smaller-sized shellers may be hollow
wood cylinders with ballast added to the desired weight. The drum may be provided
by 1-inch wood cleats spaced an inch and a half apart, using the one best adapted to the ma
terial being handled. This plan has the advantage of a grid opening for each frame. Because
difficulty and low cost of the apparatus, it is desirable to have a series of grids in which the sizes
of the openings vary by 1/32-inch increments. Such a series makes it possible to select a size
suited to the material to be shelled and avoid in less damage to the seed.

The oscillating drum may be of any suitable mate
rial. Drums for the smaller-sized shellers are made out of hardwood. Oak or maple drums
are best. Sheet rubber of good quality, “chute” rubber with shallow grooves cut with the axis of the
shaft that corresponds in size to the slots in the frame with a grid width that shells only the larger seed,
minimum damage. The material is passed through a frame with a grid width that shells only the larger seed,
interchangeable grids of perforated sheet metal
is to fit slots cut in the sides of the frame making it possible to use one frame for all grid widths.

Irrespective of the type of construction used, it is
desirable to have a series of grids in which the
sizes of the openings vary by 1/32-inch increments. Such a series makes it possible to select a size
suited to the material to be shelled and avoid in less damage to the seed.

This type of construction permits the use of
minimum damage. The material is passed through a
frame with a grid width that shells only the larger seed,
interchangeable grids of perforated sheet metal