

CATEGORY 110

Schlereids
(not subdivided)

CATEGORY 120

Stomata
(may be left undivided)

120I. no subsidiary cells, guard cells rectangular (not diagnostic)

120II. subsidiary cells outside guard cells

120IIA. four large, turgid subsidiary cells (1 on each end) (Bombacaceae, *Matisia longipes*, family level diagnostic)

120IIB. two subsidiary cells (not diagnostic)

120III. stomata as intercostals cells (old 31) (not diagnostic)

CATEGORY 130

Silica casts of Parenchyma (for artifact residue applications)

130I. large, round blocks (root, tuber, rhizome parenchyma; see for example Araceae, *Colacasia esculenta*; Dioscoreaceae, *Dioscorea*, Marantaceae, *Calathea crotalifera*)

130II. lobed

130IIA. multiple lobes (root, tuber, rhizome parenchyma; see for example Araceae, *Xanthosoma*, Dioscoreaceae, *Dioscorea*, Fabaceae, *Pachyrrhizus*)

130IIB. two lobes (Fabaceae, *Inga* fruit; diagnostic level under study)

CATEGORY 140

Silica casts of transport tissues (xylem, phloem) (for artifact residue applications)

140I. undulating (fruit/seed type; see for example *Spondias purpurea*, *Chrysobalanus icaco*, *Inga spectabilis*)

140II. straight (root, rhizome, tuber type; see for example Araceae, *Colacasia esculenta*; Fabaceae, *Pachyrrhizus*, Marantaceae, *Calathea macrosepalia*)

CATEGORY 150

Fibers (for artifact residue applications)

150I. bundled: small diameter, in bundles, length is variable (fruit, seed type; see for example *Bixa orelliana*, *Canavalia*, *Acacia macrocantha*)

150II. forming an irregular mesh (fruit, seed type; see for example *Arachis*, *Acacia*, *Chrysobalanus*)

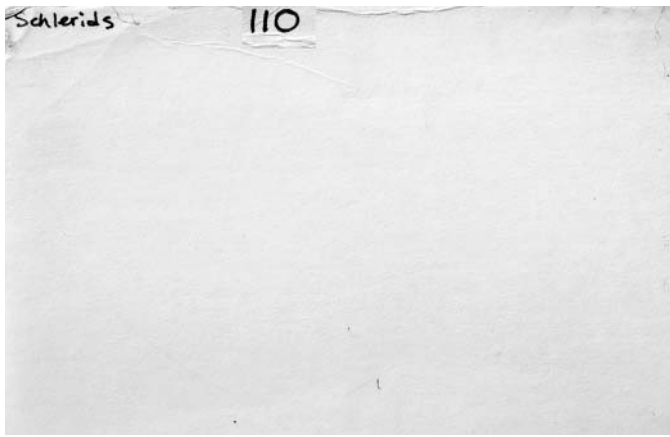
CATEGORY 160

Secretory cells

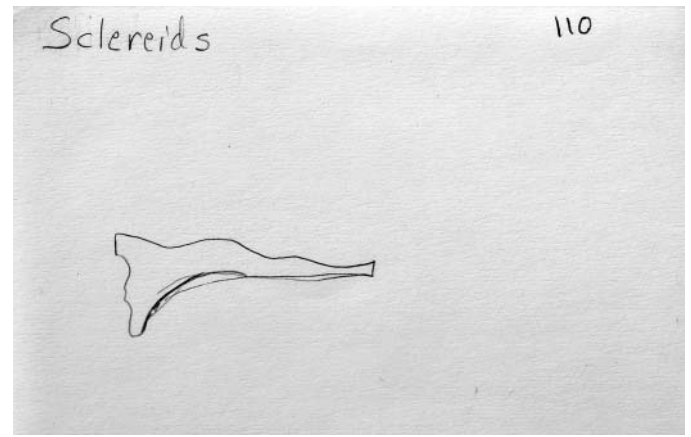
160I. small, heart-shaped secretory body (Euphorbiaceae, *Manihot esculenta*, genus-level diagnostic)

160II. Secretory body with variably shaped center (Malvaceae, *Gossypium*; diagnostic level under study)

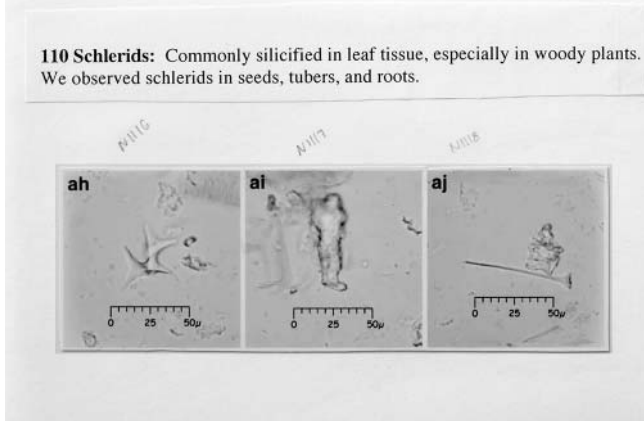
*NO card in MU card file



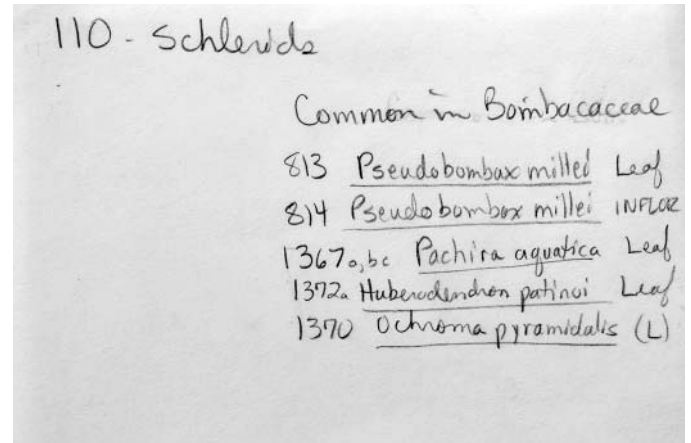
110 card 1.JPG



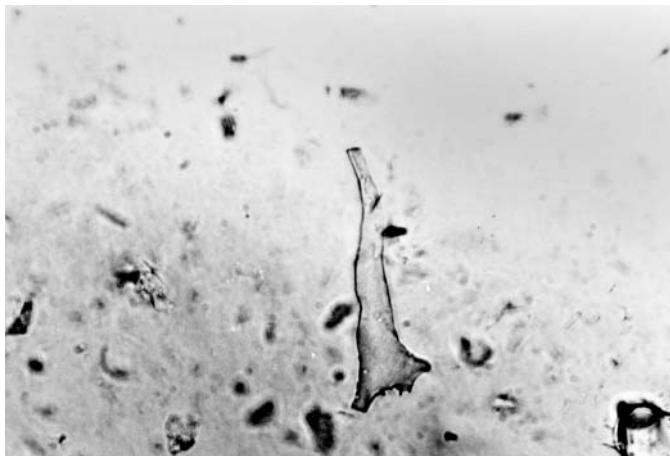
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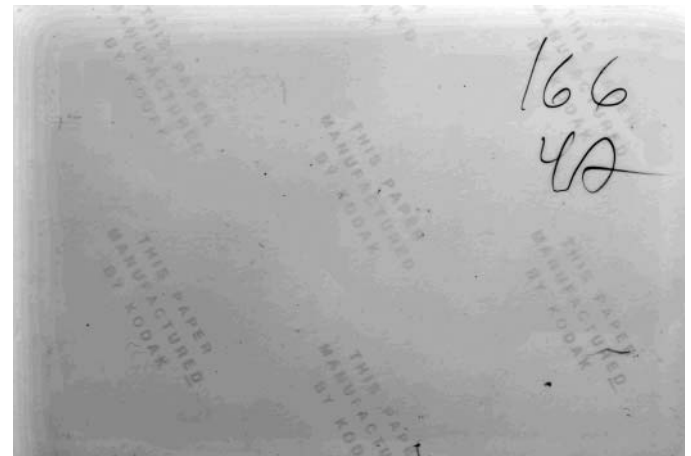
110 photo 1.JPG



110 card 4.JPG



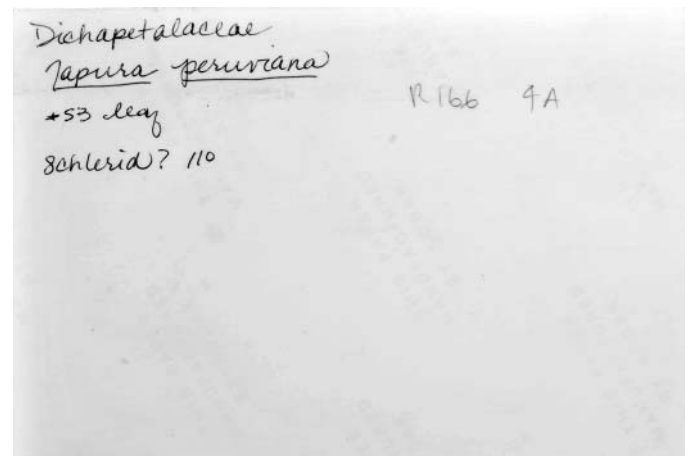
110 photo 1f.JPG



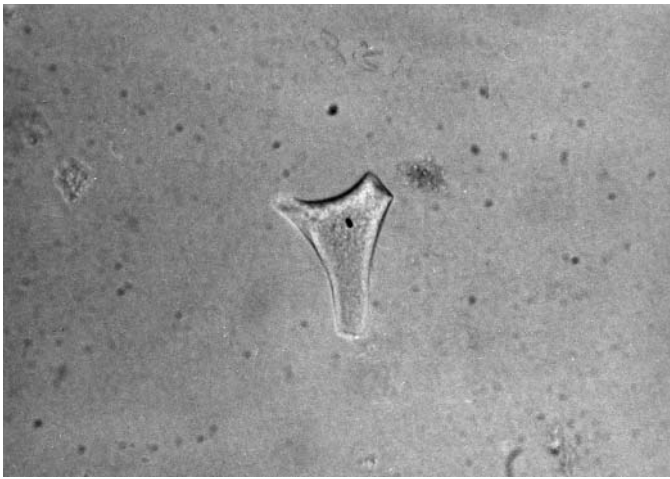
110 photo 1b.JPG



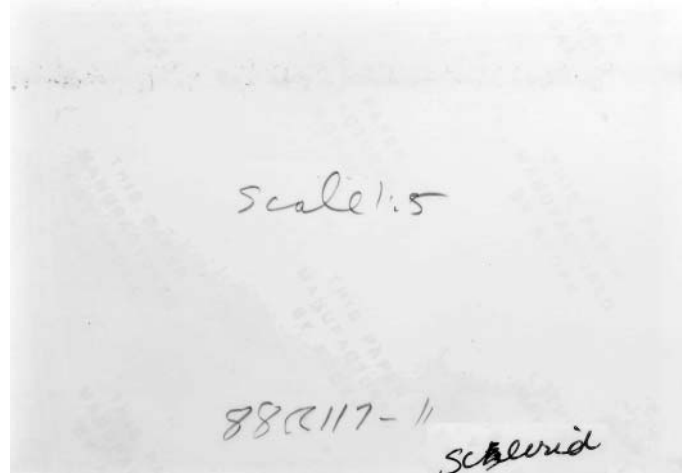
110 photo 2f.JPG



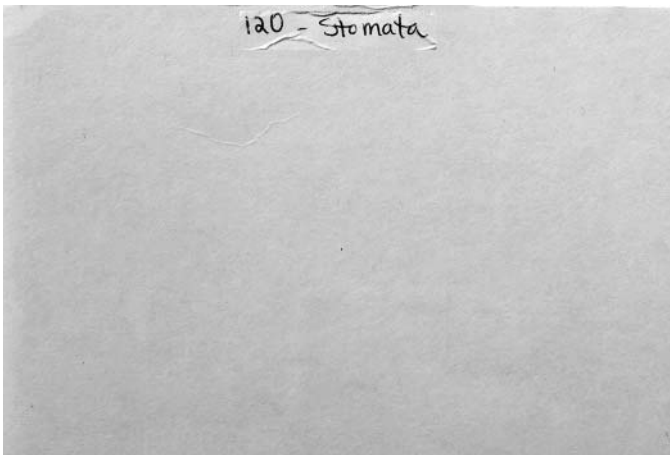
110 photo 2b.JPG



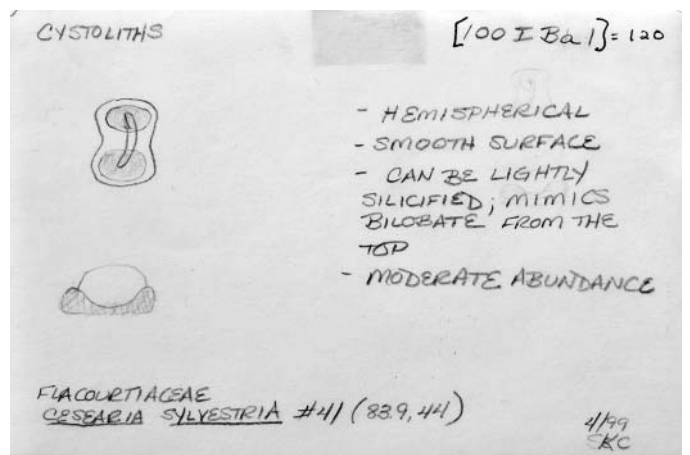
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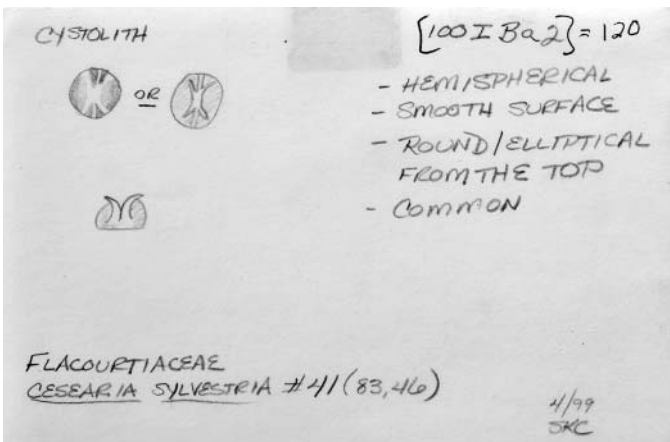
110 photo 3b.JPG



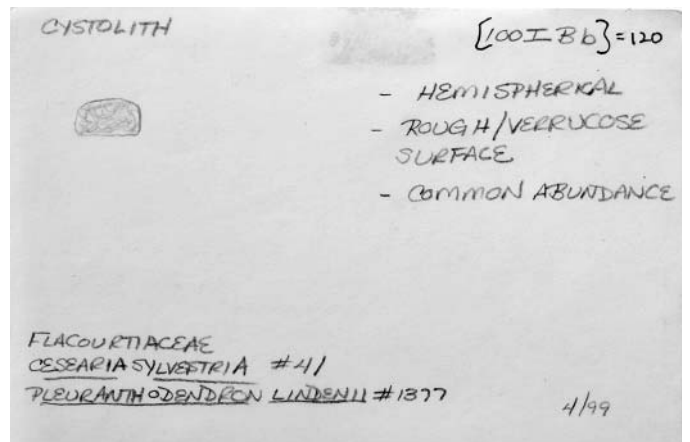
120 card 1.JPG



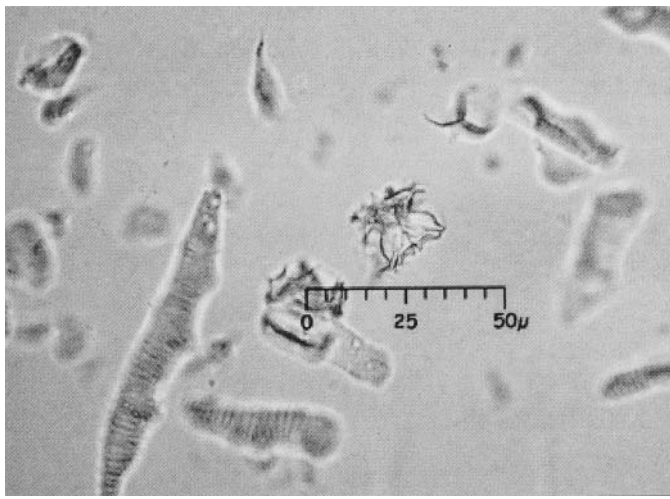
120 card 2.JPG



120 card 3.JPG



120 card 4.JPG



120 photo 1f.JPG

MU#	100 I Ba 200
Family	Flacourtiaceae
Genus	Casearia
Species	sylvestris
Comments	See next record for a variation of the same body. Occurs in the leaf. Note the decorated sclerids in background-- these are common in the sample.

- Crystalline bodies
- Cystoliths
- Hemispherical
- Smooth surface
- Rounded

120 photo 1b.JPG

Stomata, no subsidiary cells 120 I

- No subsidiary cells
- guard cells parallel and oblong to rectangular
- pore closed, ridged
- surface sometimes grainy

1372a Bombacaceae
Huberodendron patinoi (leaf)

120I card 1.JPG

Epidermal appendages - ha ~~4011 Ba 401~~ 120 IIA

- large central cell with smaller surrounding cells
- central cell rounded with clear divisions that appear inside base

1367c Bombacaceae Pachira aquatica (L)

120IIA card 1.JPG

Stomata 120 IIB

Stomate, 2 subsidiary cells.
Surface granular.
Side view - body is as thick as it is wide.

Bombacaceae
Huberodendron patinoi N272, psd photo

120IIB card 2.JPG

Stomata as intercostal cells 120 III

Stomata may occur as intercostals, esp. in Poaceae.
may vary:
pore open or closed
guard cells turgid or flacid
subsidiary cells present or absent

120III card 1.JPG

Stomata 120 III

conditions of pore

- guard cells/pore closed
- pore open
- guard cells flacid (limp)
- may appear "puckered"

120III card 2.JPG

120 III

closed stomatal pore
"bridge"

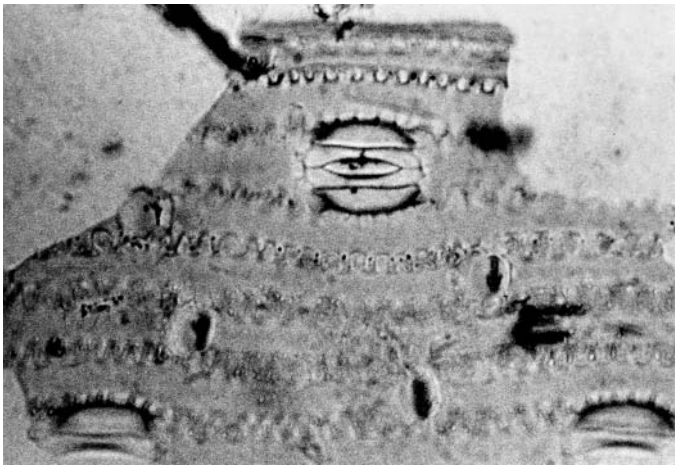
vs. dumbbell:

stomata bilobate portion

- * does not have cell nucleus
- * slightly grainy throughout

updated 5/19/99

120III card 3.JPG

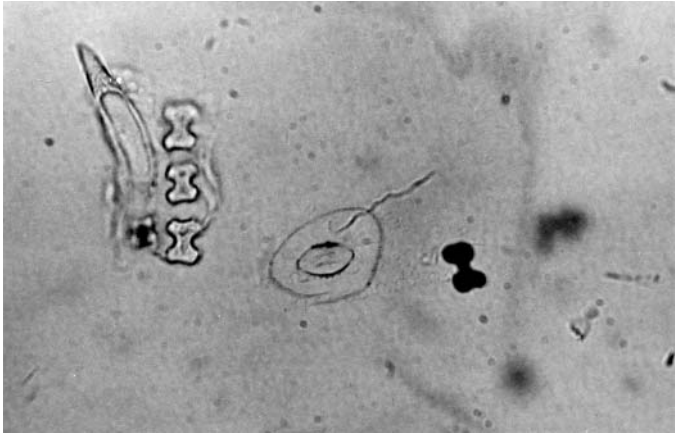


120III photo 1f.JPG

Gramineae
Poa candamoana
 676
 31 III
 Stomata

R 160 18

120III photo 1b.JPG



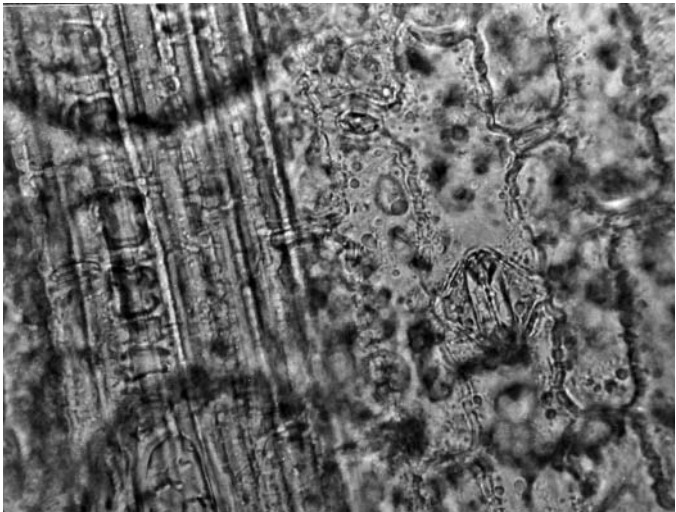
120III photo 2f.JPG

Gramineae
Andropogon brevifolius #520
 stomata
 31 III A

Scale 1:5

R129-8

120III photo 2b.JPG



120III photo 3f.JPG

Gramineae Zea mays
 epidermal peel
 31 III A
 stomata

Scale 1:5

120III photo 3b.JPG



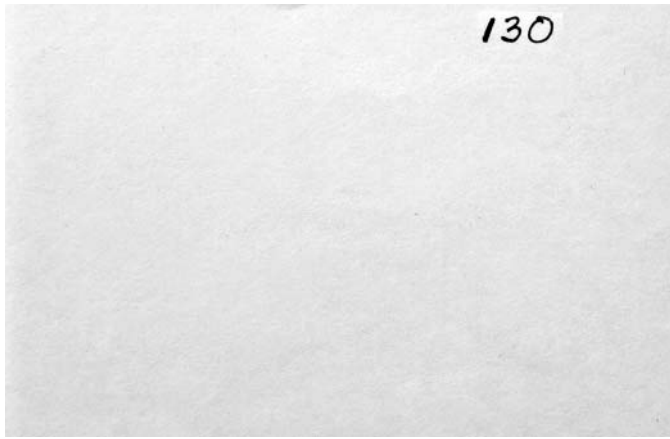
120III photo 4f.JPG

Gramineae
Andropogon brevifolius #520
 31 III A 120 III
 Stomata

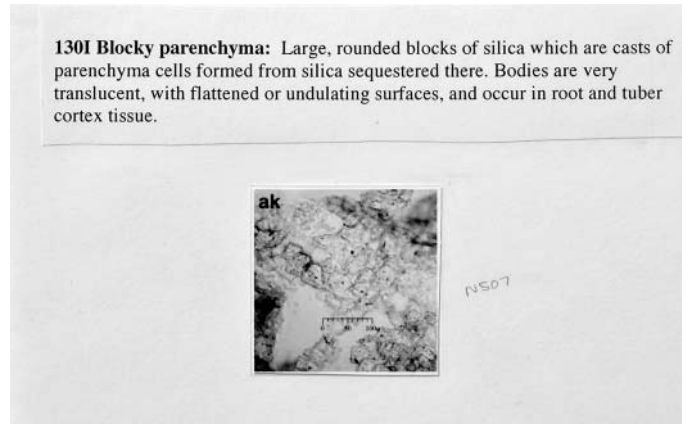
Scale 1:5

R130-11A

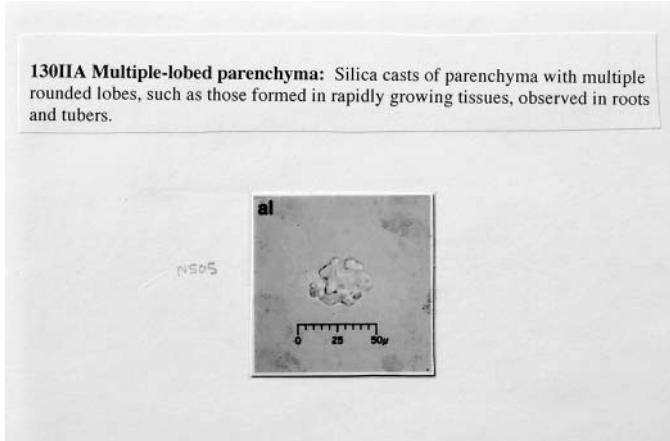
120III photo 4b.JPG



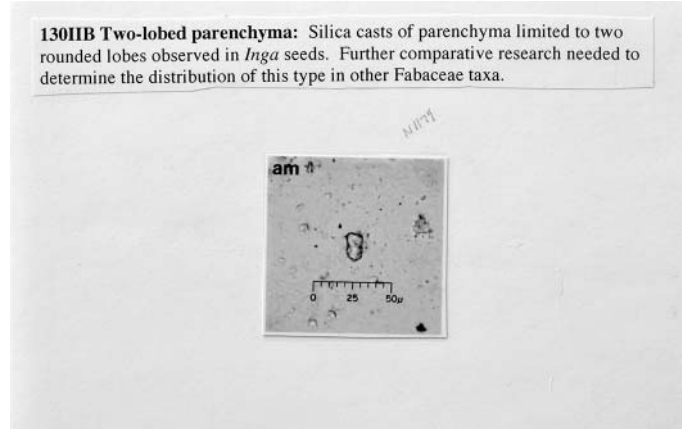
130 card 1.JPG



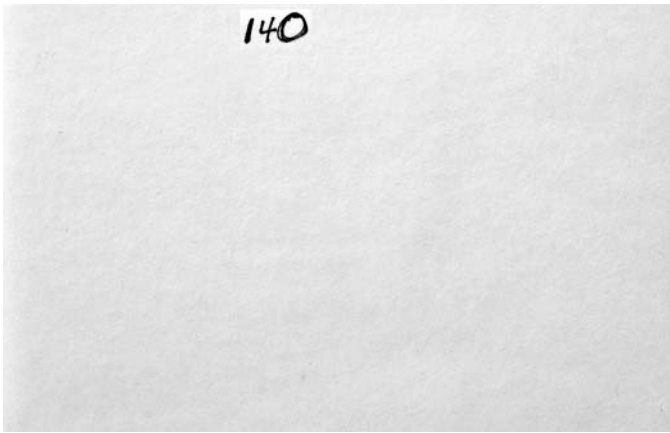
130I photo 1f.JPG



130IIA photo 1f.JPG

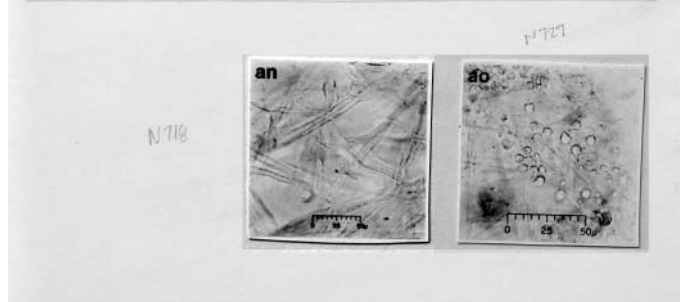


130IIB photo 1f.JPG



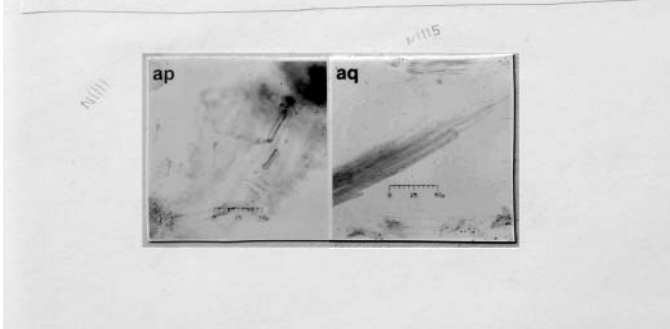
140 card 1.JPG

140I Undulating transport elements: Silica casts of transport elements (xylem and phloem) observed in a number of taxa, predominantly in fruits and seeds. Type includes thin-walled, smooth, undulating tubes without end plates.



140I photo 1f.JPG

140IIA Straight transport elements: Straight, silicified transport elements arranged in bundles. Found in roots and tubers.

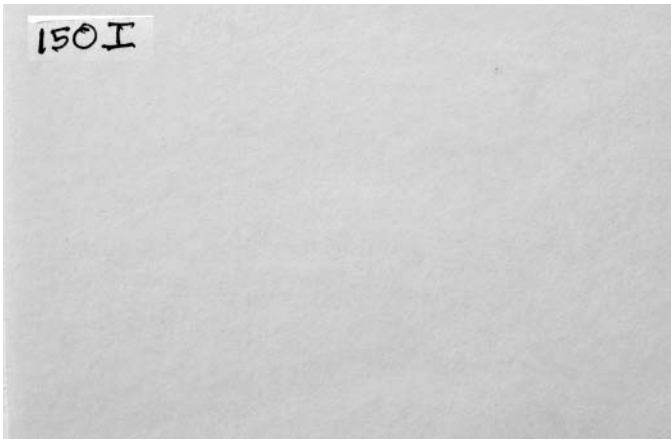


140IIA photo 1f.JPG

140IIB Striated, wide transport elements: Open-ended transport elements with striations running perpendicular to the long dimension. Found in roots, fruits, and seeds.



140IIB photo 1f.JPG



150 card 1.JPG

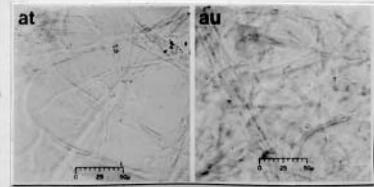
150I Fiber bundles: Groupings of long, small diameter fibers, packed closely in off-set ranks.

Diagnostic level: fruit / seed

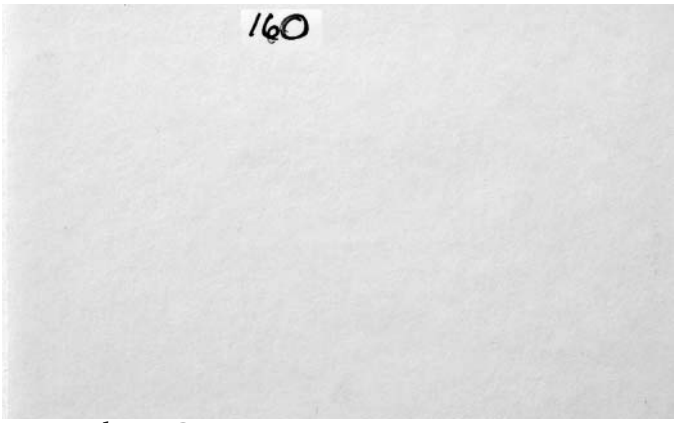


150I photo 1f.JPG

150II Fibrous mesh: We observed silicified fibers in irregular masses, mesh-like in appearance, in Fabaceae seeds and pod.

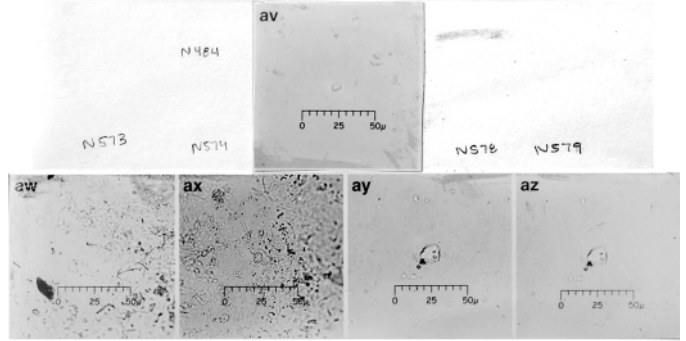


150II photo 1f.JPG



160 card 1.JPG

160I *Manihot* secretory body: *Manihot esculenta* (yuca, manioc) root rind, leaf, stem, and fruit silicify distinctive cells resembling pores or nectaries. These bodies also occur rarely in one wild species tested (*M. huzikerii*). Bodies are small (5-12 microns in diameter), heart-shaped, with a raised exterior and indented/open interior. A thin, flat marginal flange is sometimes present.



160I photo 1f.JPG