

CATEGORY 30

Short Cells

(Poaceae)

30I. Regular short cells: MU uses a modified version of the classic Twiss et al. system; no numbers have been assigned to types

PANICOID

bilobate (semi-rounded to squared lobes with distinctive shaft)

nodular

crenate

3-lobed

cross

variant 1

variant 2

variant 4

variant 5/6

variant 7

unilobate

FESTUCOID/POOID

round to oblong

square to rectangular

long, sinuous

CHLORIDOID

saddle, squat ($H < W$, or $H=W$)

BAMBUSOIDEAE

Bambus. bilobate (squat, no or indistinct shaft)

BAMBUSOIDEAE AND ARUNDINOIDEAE

saddle, tall (height > width)

30II. Complex short cells

30IIA. lobed base

a. simple bilobate base

1. flat top

A. tall (clearly taller than wide)

30IIAa100Aa: flat-topped, redundant (old MU 10P)

30IIAa100Ab: flat-topped, redundant (old MU 14P)

B. equidimensional to elongated (distinctly wider than tall)

30IIAa100Ba: wide and square in side view, *Pharus* type

30IIAa100Bb: flat-topped, concave sides, Panicoid type (old MU 12P)

30IIAa100Bc: elongated, straight sides, Panicoid type (old MU 11P)

2. spiked top

A. tall (clearly taller than wide)

30IIAa200Aa: bifurcate or two-spiked, redundant (old MU 20P)

30IIAa200Ab: three spike, rectangular tier in top view, redundant (old MU 2P)

30IIAa200Ac: three spike, line in top view, panicoid (old MU 8P)

30IIAa200Ad: 2 or 3 spike, lobed or square tier in top view, Panicoid type (old MU 4P)

B. elongated (distinctly wider than tall)

30IIAa200Ba: flat or slightly 2-spiked, redundant (old MU 1P)

30IIAa200Bb: distinctly 2-spiked, top view is bilobate/saddle, Panicoid type (old MU 17P)

3. siliceous plate: 30IIAa3: bilobate enclosed in a siliceous plate, *Raddiella* body (Olyreae).

b. simple cross base (4-lobed)

30IIAb1: Variant 3 and Variant 8 crosses (and bilobates); 1 cross (or bilobate) tier, flat, opposite tier with conical projections from the lobes, Olyreae type

30IIAb2: cross shaped body with blocky structures, concave faces, and serrated short axes, *Chusquea pittieri* type

30IIAb3: cross shaped body with three indentations, blocky structures, and concave faces, *Otatea fimbriata* type

30IIAb4: one tier is cross or bilobate; the opposite tier is a saddle-like structure that extends about 2/3 of the length of the body, *Polypogon* (Pooideae, Aveneae) type

c. irregularly lobed base

1. single point

30IIAc1: cone-shaped, Panicoid type (old MU 19P)

2. flat top

30IIAc200: tall, top view shows 3-lobed tier within, *Eriochloa punctata* type (old MU 6P)

30IIAc201: tall, top view shows a thin, curved line within, Panicoid (old MU 7P)

30IIAc202: elongated, Panicoid type (old MU 15P)

3. two or more spikes

A. tall (distinctly taller than wide)

30IIAc300Aa: spikes can be rounded, redundant (old MU 13P)

30IIAc300Ab: 3-spiked, redundant (old MU 18P)

B. equidimensional or wider than tall

30IIAc300Ba: wide base, short spikes, *Maclurolyra* type

30IIAc300Bb: wide base, tall spikes, *Arberella* type

30IIAc300Bc: bifurcated top, redundant (old MU 16P)

30IIAc300Bd: distinctly elongated, two spikes on shorter top, redundant (old MU 9P)

30IIAc300Be: distinctly elongated, 2-3 spikes on wide top, Olyreae type

30IIB. rondel base

a. two spiked in side view

1. short/wide (height < width or height = width)

30IIBa100: side view shows an angular body with double outline, distribution unknown (old MU 21F, observed in *Guadua*)

30IIBa101: two-spiked, base has single indentation, distribution unknown (old MU 22F, observed in *Chusquea uniflora*)

30IIBa102: two-spiked, base irregular elongate, distribution unknown (old MU 23F, observed in *Chusquea scandens*)

30IIBa103: wide, base is concave, top is flat to angled, *Arundinella* type

30IIBa104: very short and long, *Guadua/Chusquea* group, also in *Gynerium* (Arundinoideae)

2. tall (distinctly taller than wide)

30IIBa200: bifurcate, narrow top, redundant (old MU 16F)

30IIBa201: bifurcate, top is wide, redundant (old MU 4F)

30IIBa202: two-spiked top with flaring bottom, top view shows oblong shape within, Bambuseae type (old MU 9F)

b. three or more spikes or rounded projections

1. short

30IIBb1: redundant (old MU 15F)

2. tall

30IIBb200: three to many rounded projections, Bambuseae type (old MU 12F)

30IIBb201: three spikes, base is round to oblong, redundant (old MU 5F)

30IIBb202: 2 or 3 spikes, base is irregularly rounded, redundant (old MU 19F)

c. single spike or rounded top

1. flat bottom

30IIBc100: pointed or flat top with straight sides, redundant (old MU 11F)

30IIBc101: elongated with flat top (old MU 20F) or squared off with single point (old MU 14F), *Pharus* type (Bambusoideae)

30IIBc102: rounded top, thin base, redundant (old MU 10F)

30IIBc103: flat top, irregularly shaped base, redundant (old MU 18F)

2. concave bottom

30IIBc200: angled in side view, square base, redundant (old MU 2F)

30IIBc201: rounded in side view, thin base, Panicoid type (old MU 1F)

d. flat top (some with slight flared edge on top), tall

1. elongated base in top view

30IIBd100: triangular when turned, redundant (old MU 6F)

30IIBd101: top view shows oblong tier, redundant (old MU 8F)

2. round to square base in top view

30IIBd200: flat to flared top, irregularly rounded base, redundant (old MU 7F)

30IIBd201: flared, concave top, squarish base, *Pharus* type (old MU 13F)

e. wavy top rondel; base is longer than height; top is a single, undulating wave (*Zea mays*, domesticated, type)

f. ruffle top rondel; edges of top are ruffled or undulating (like the edge of a skirt); top tends to be flat (*Zea* spp. type)

g. half-decorated rondel; sides and top are decorated with beadlike or speculate projections (*Zea* spp. type)

30IIC. saddle base

a. two “spiked” in side view

1. short (height < width or height = width)

30IICa100: slightly two-spiked, redundant (old MU 5C)

30IICa101: distinctly two spiked, Bambusoideae, *Guadua/Chusquea* group (old MU 2C/3C)

30IICa102: *Chusquea* type (old MU 7C)

2. tall (height > width)

30IICa2: Arundinoideae type (old MU 4C)

b. three or more spikes or rounded projections in side view 30IICb100 *Streptochaeta* type (old MU 1C, 6C)

30IICb101: concave saddle base with multiple-spiked top, Bambusoideae, *Guadua/Chusquea* group (old MU 8C)

30IICb102: tall saddle with irregular (ridged) top, Bambusoideae, *Guadua/Chusquea* group

30IICb103: short, elongated body with concave base and rounded projections, *Aegopogon* (Chloridoideae, Cynodonteae)

c. flat plateau or “tent ridge” top in side view

30IICc100: concave saddle base with flat top (“tent-shaped”) *Neurolepis* type

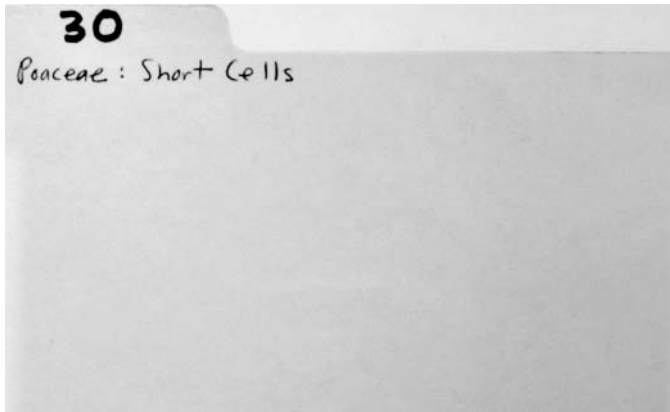
30IICc101 rondel top, *Aristida* type

30IICc102 modified saddle top, Bambusoideae type

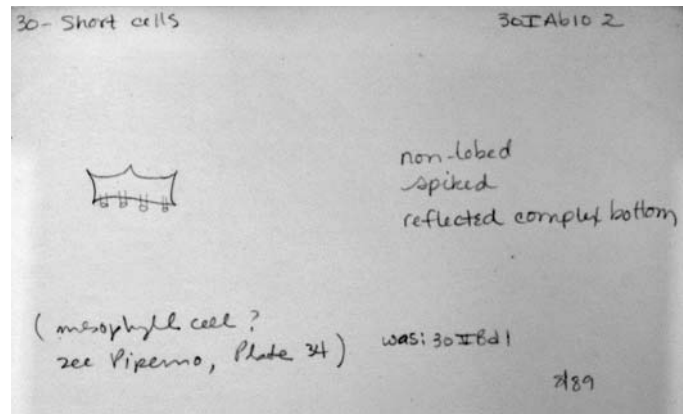
30III. Fragment: one straight or concave edge, joining other edges at acute angle. That edge very poorly silicified or at least not reflected when other edges are reflected. (UC Riverside type)*

30IV. Not classifiable without rotation (UC Riverside type)*

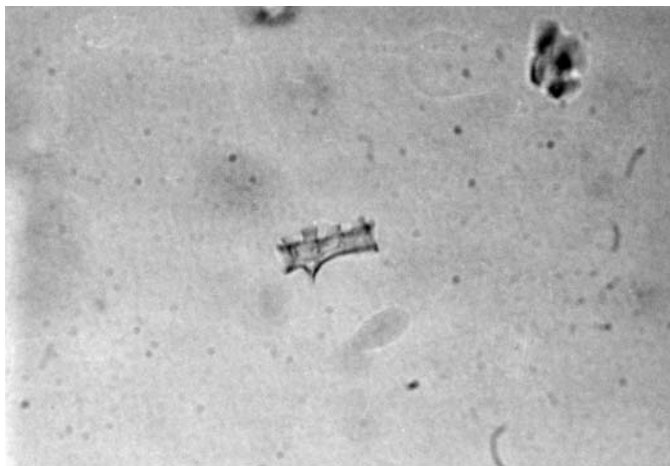
*No card in MU card file



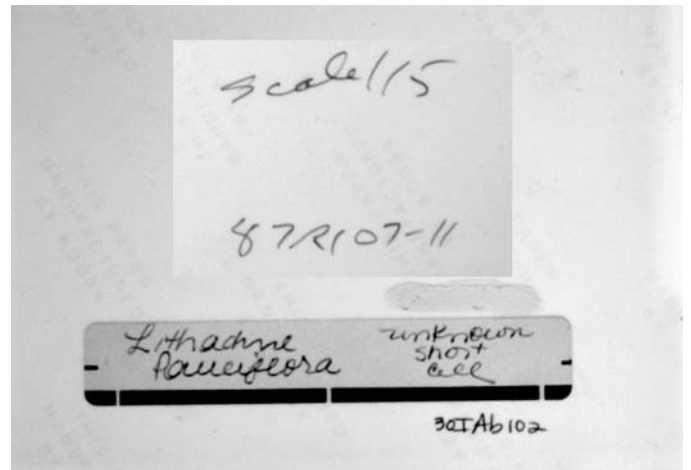
30 card1.jpg



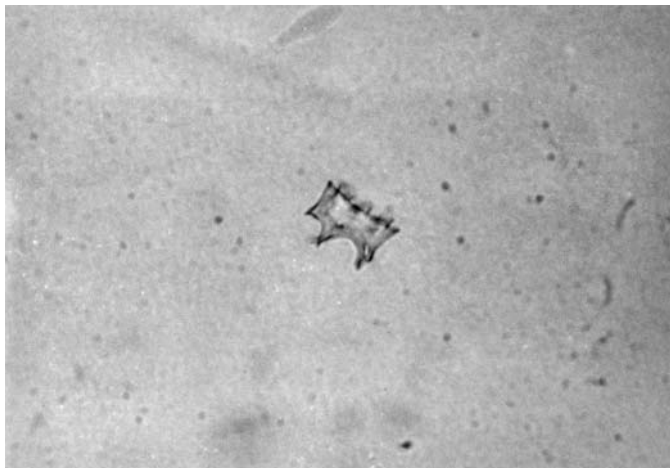
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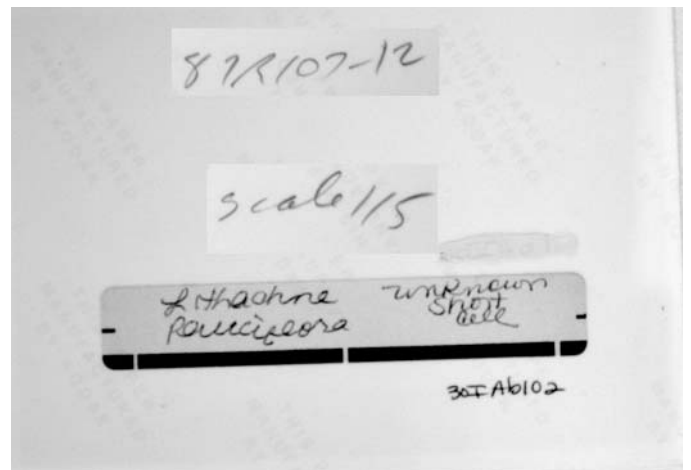
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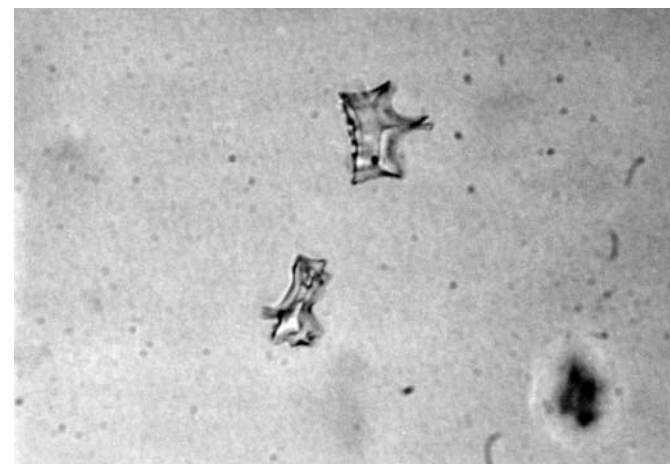
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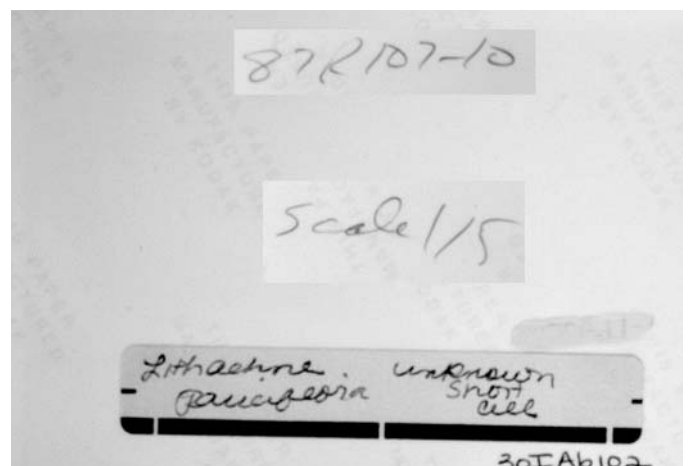
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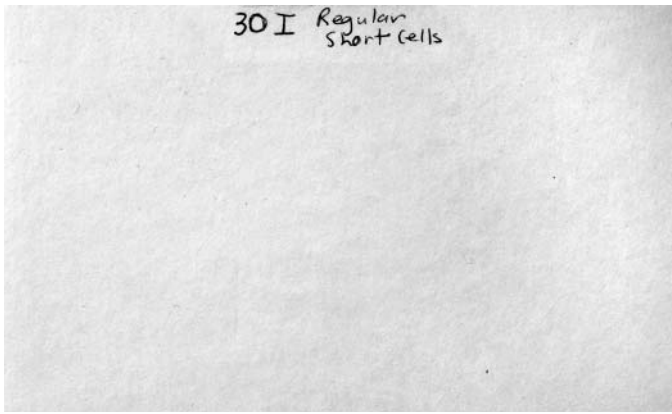
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30IAb102 photo3f.jpg



30IAb102 photo3b.jpg

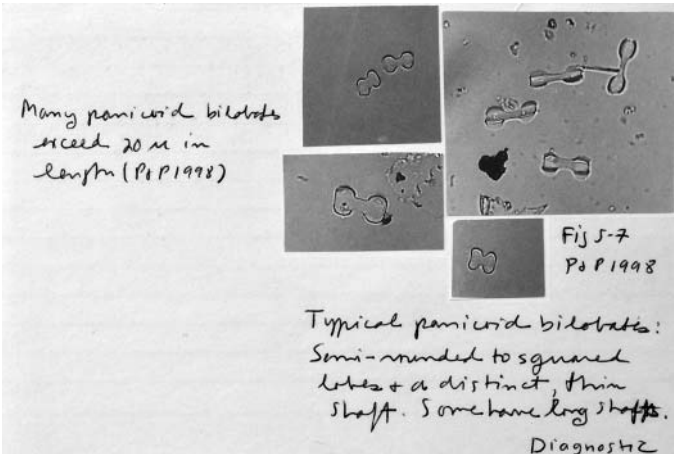


30I card 1.JPG

Category 30I Regular short cells

- standard (regular) lobed, rondel, or saddle face has a mirror image shape (or nearly so) opposite it. Opposite face is typically a plateau + not highly decorated.

30I card 2.JPG



30I bilobate card 1.JPG

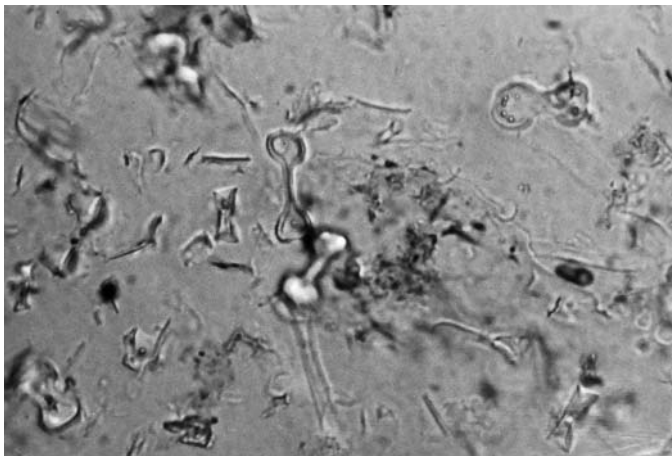


30I bilobate photo 1f.JPG

Gramineae
Neteropogon contortus
 Clark II
~~30I Bato~~
 bilobate short cell

R158 8

30I bilobate photo 1b.JPG

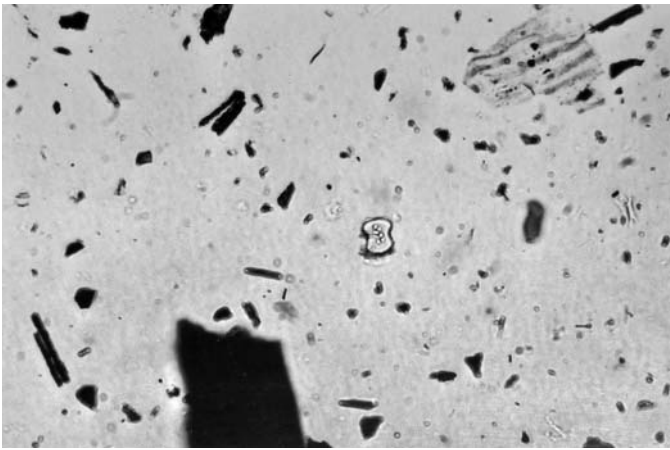


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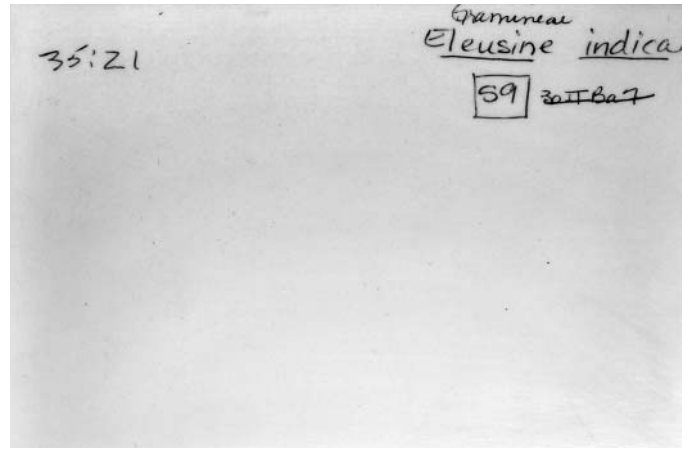
Gramineae
Neteropogon contortus
 Clark II
~~30I Bato~~
 bilobate short cell

R158 7

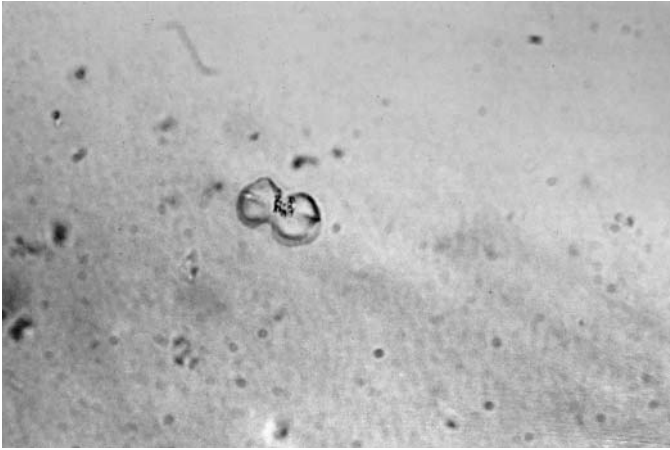
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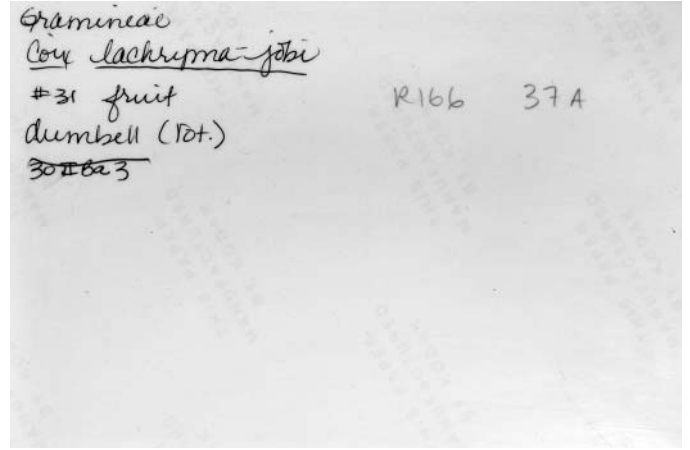
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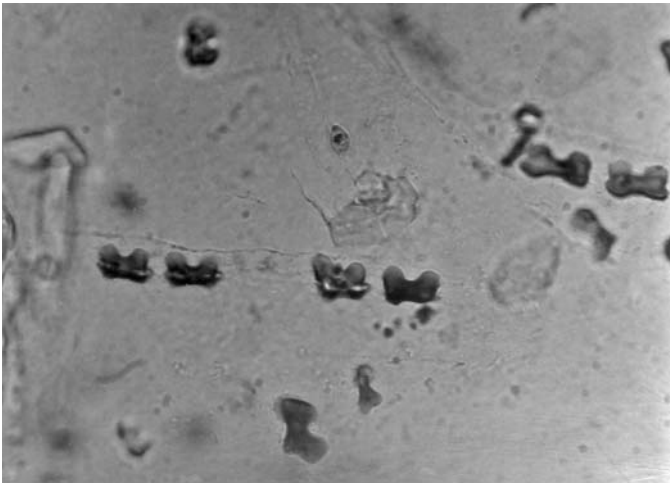
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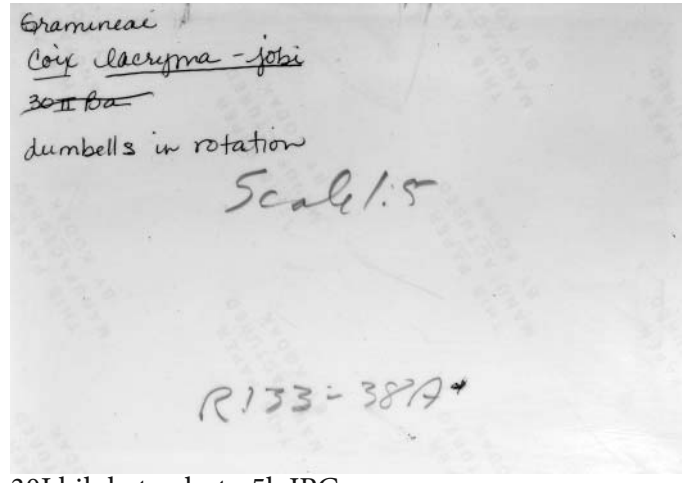
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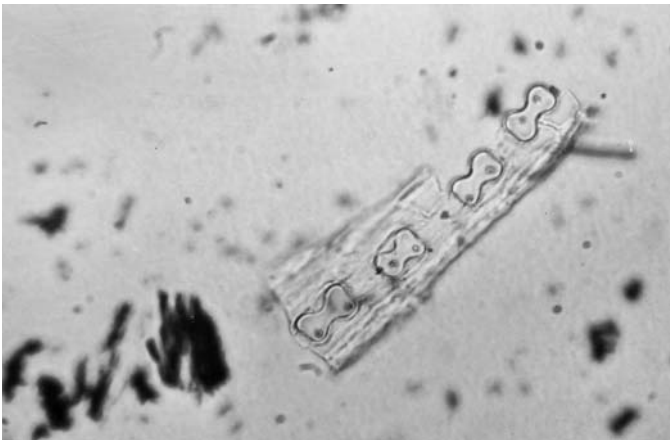
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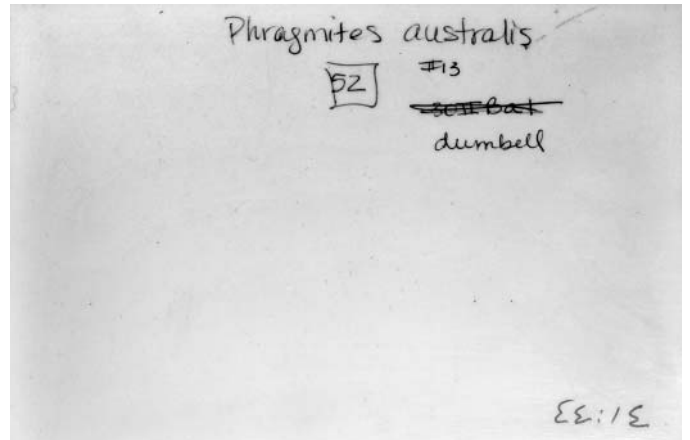
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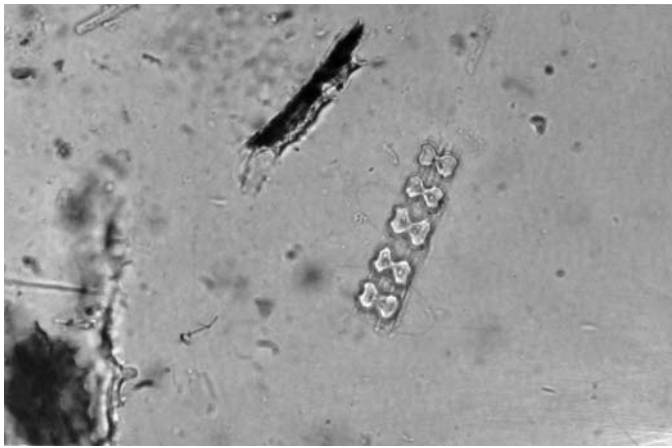
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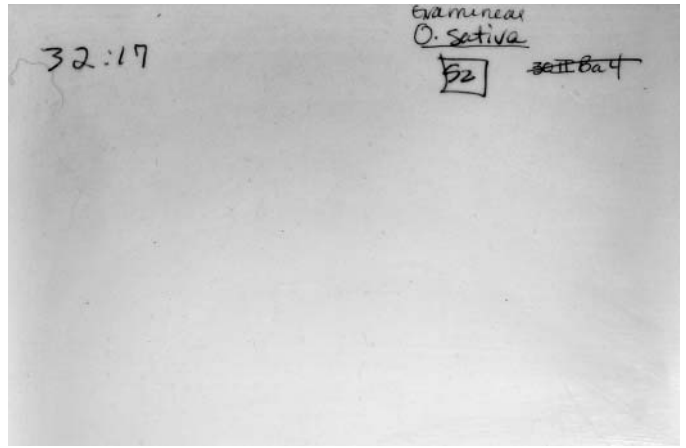
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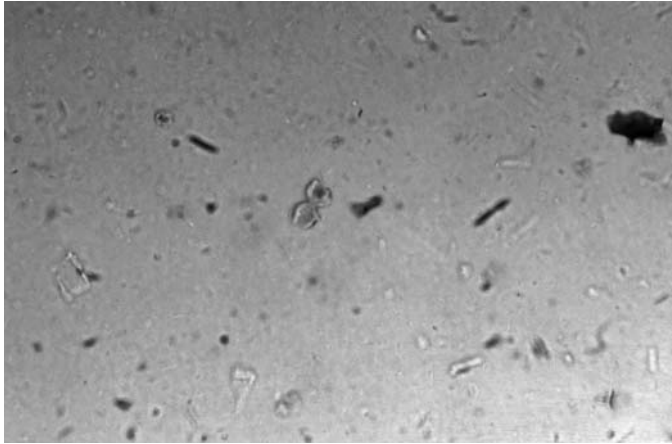
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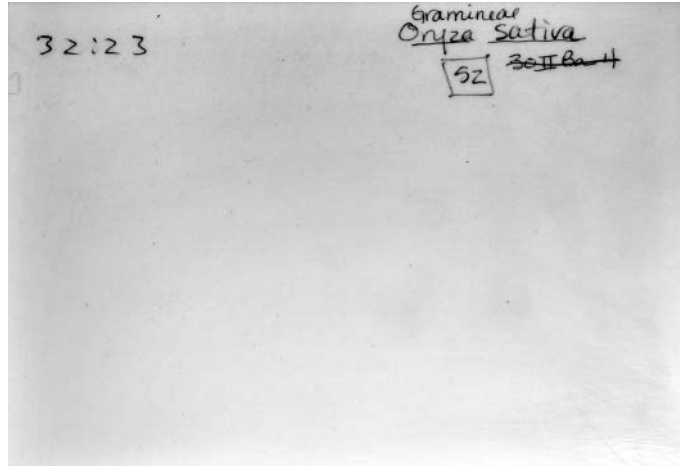
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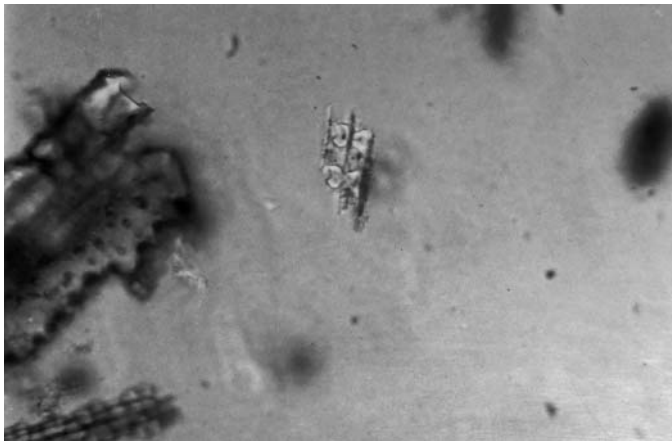
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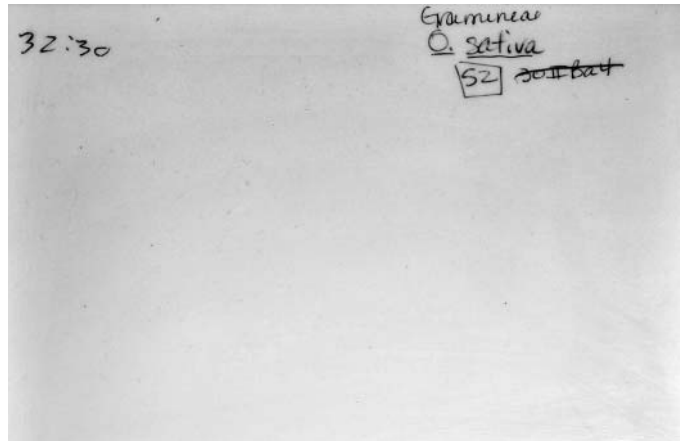
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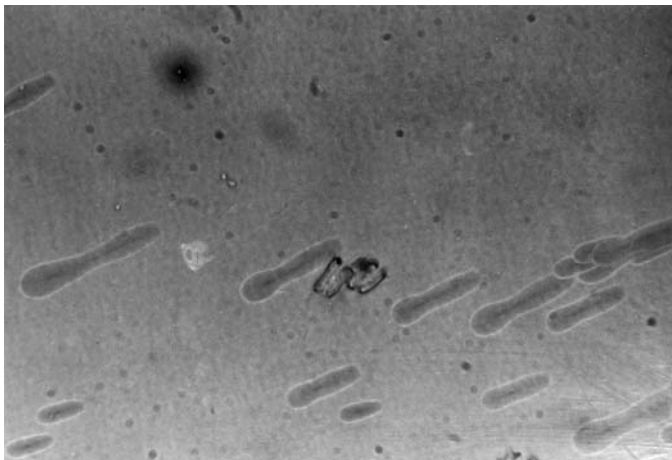
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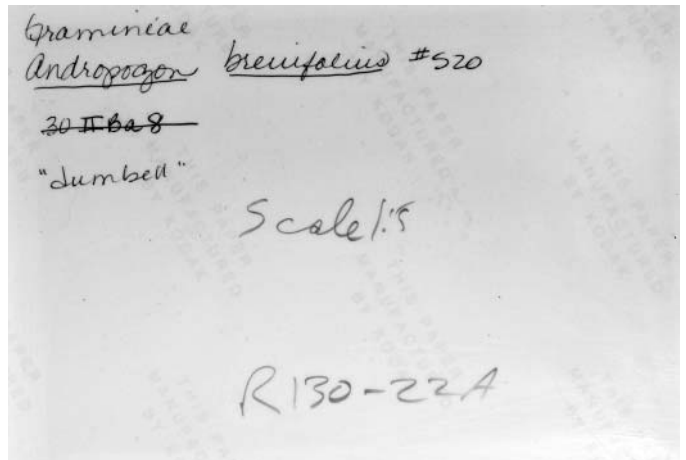
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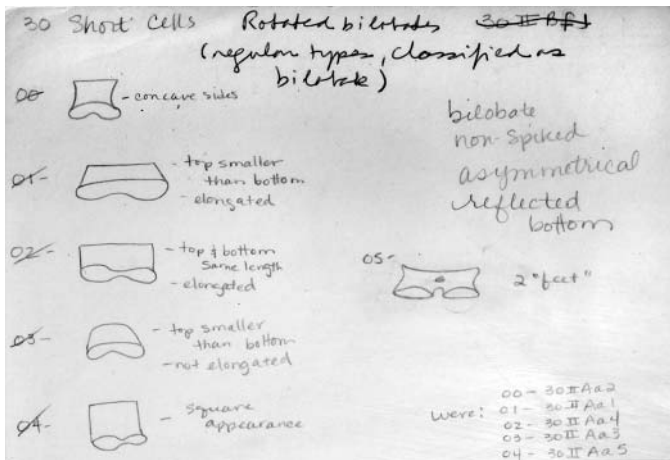
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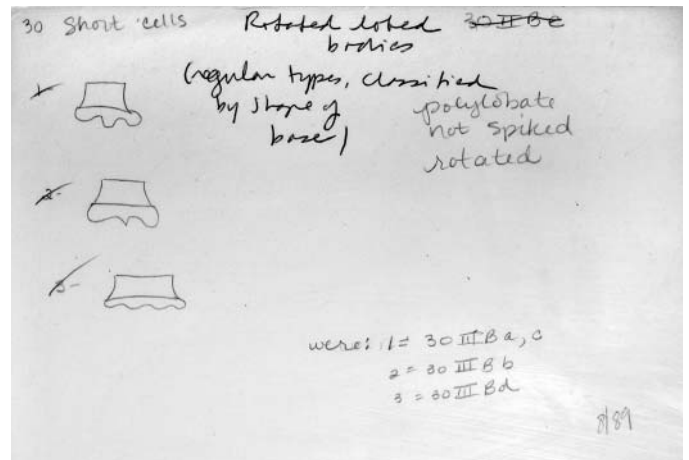
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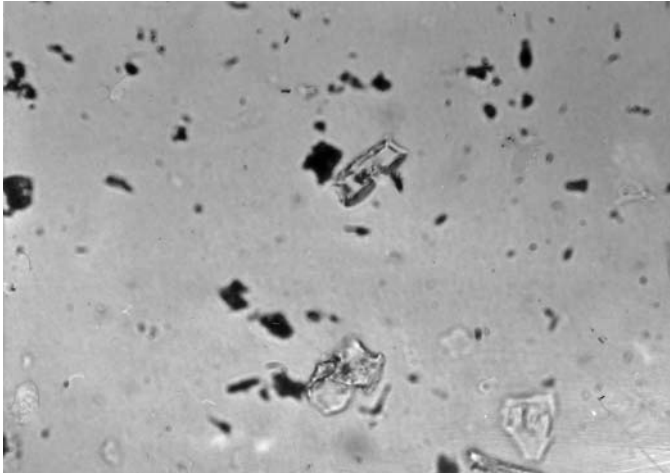
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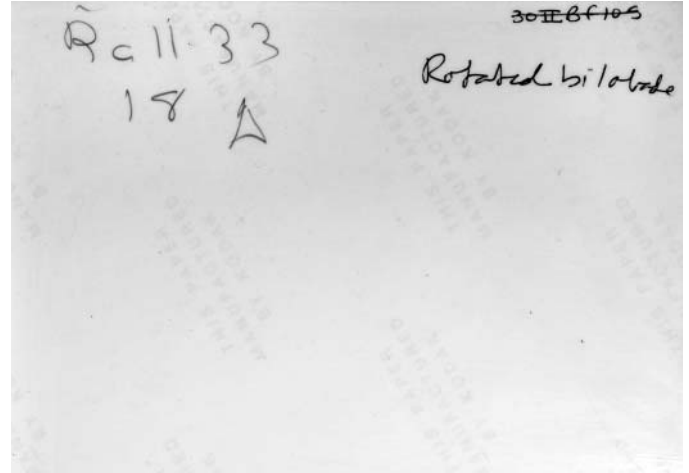
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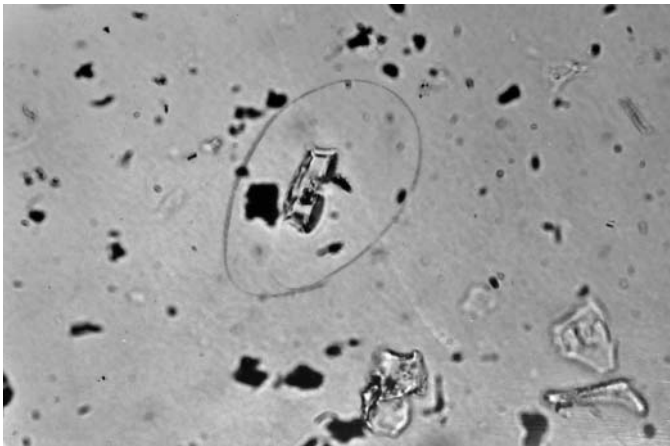
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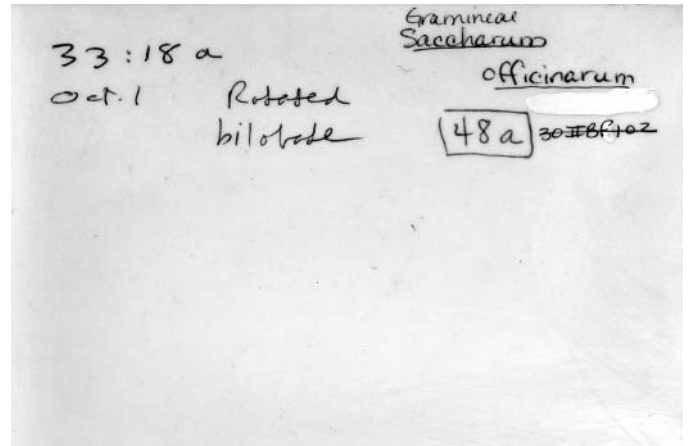
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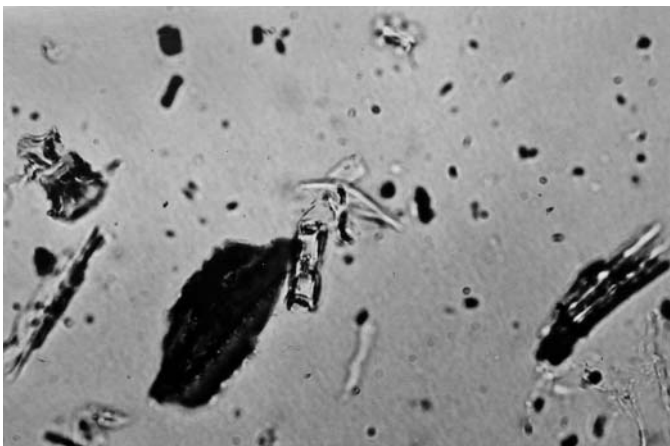
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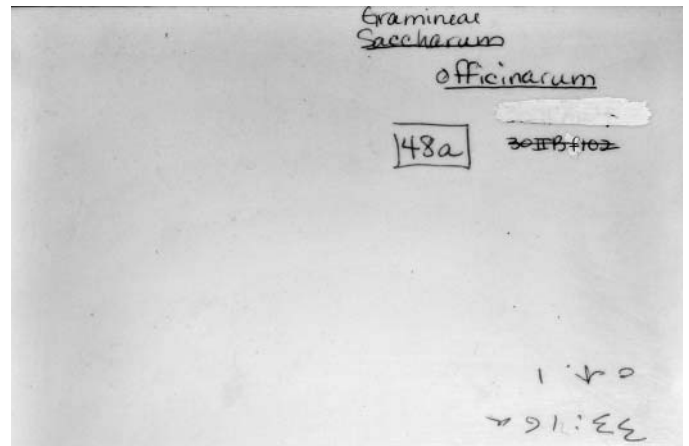
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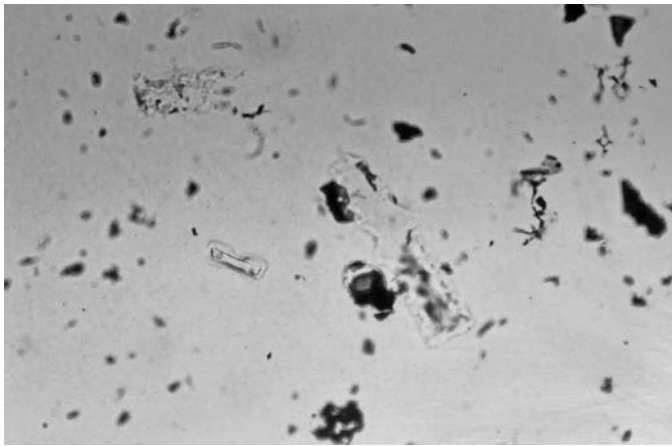
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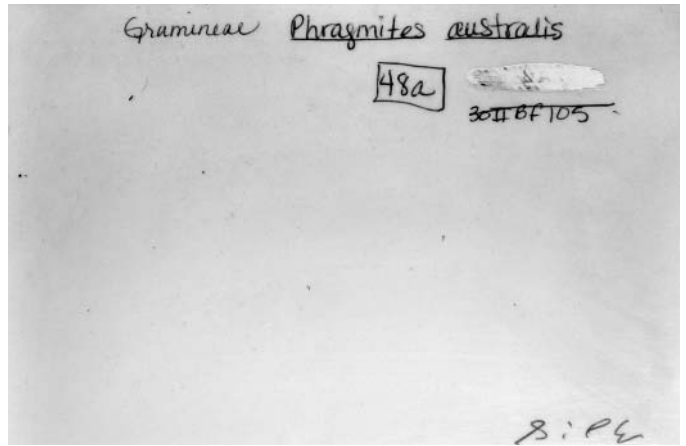
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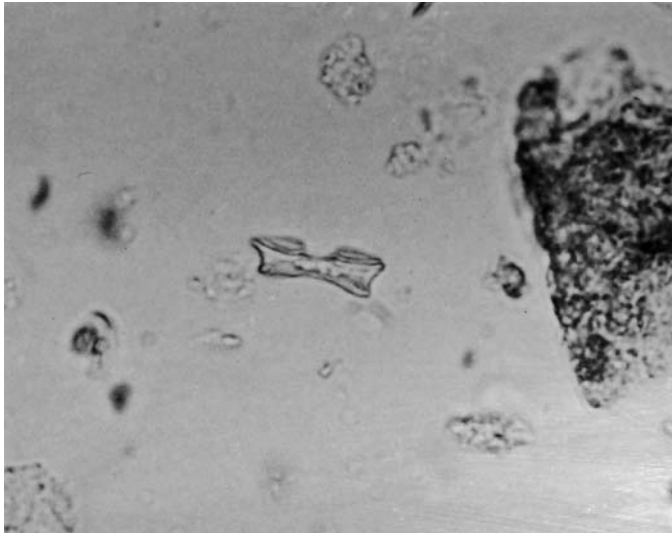
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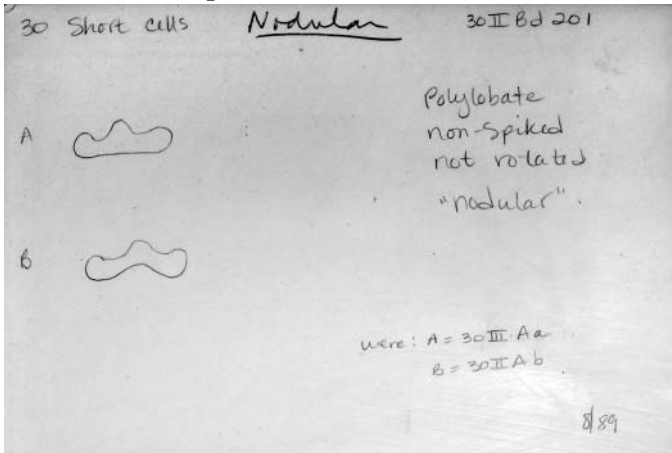
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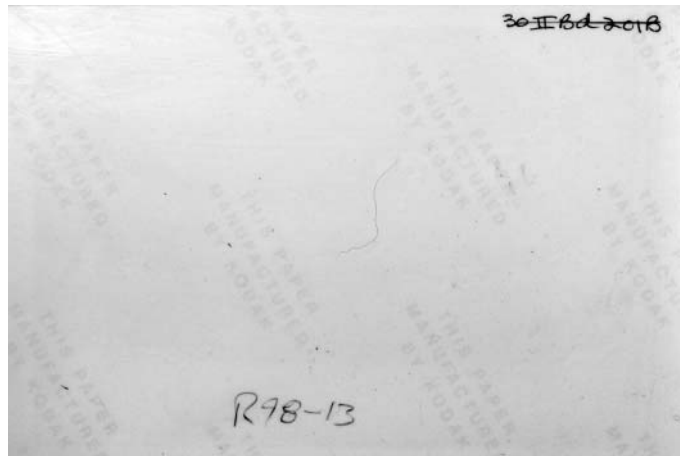
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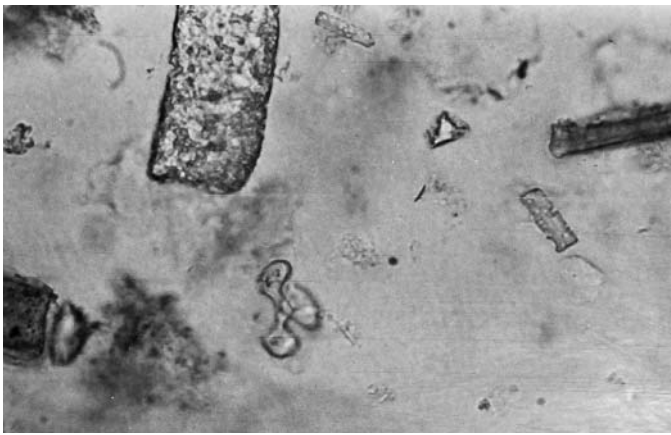
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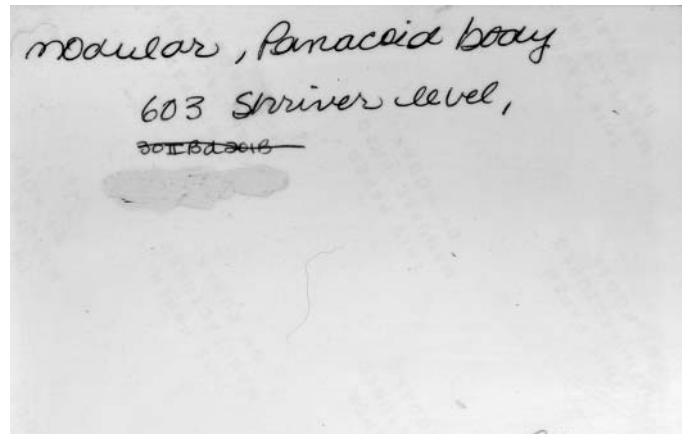
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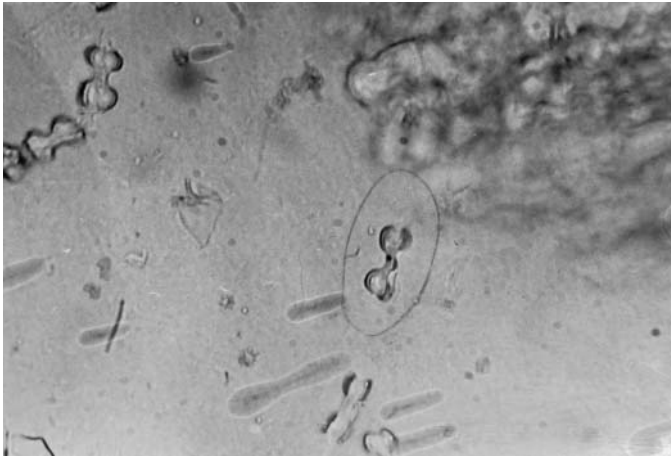
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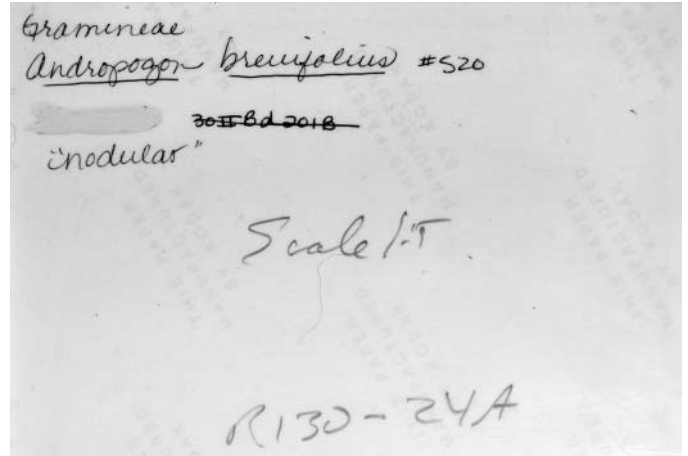
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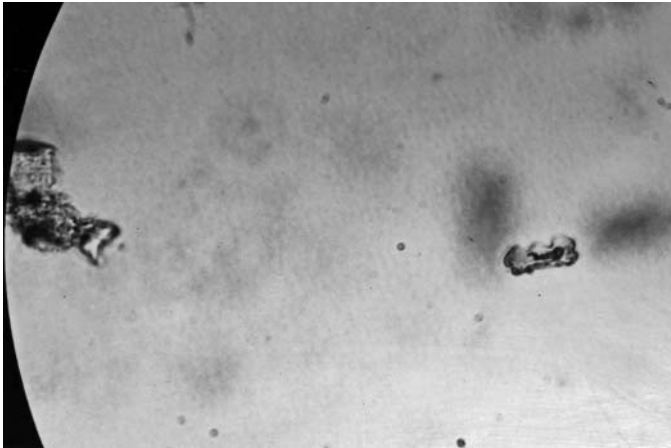
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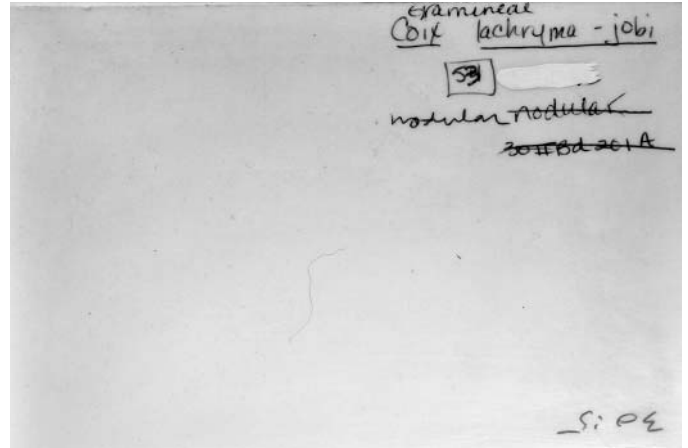
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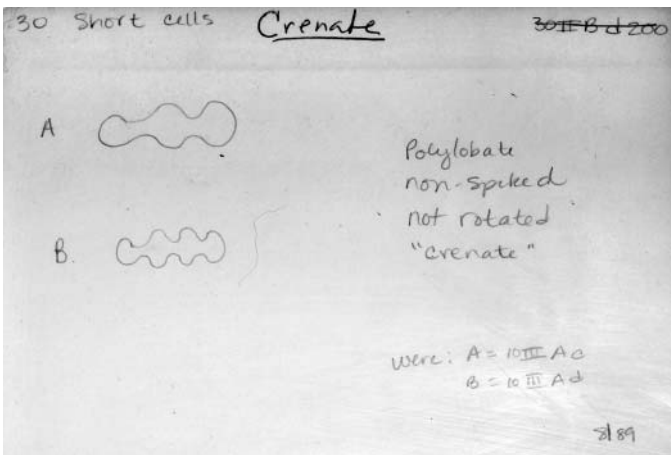
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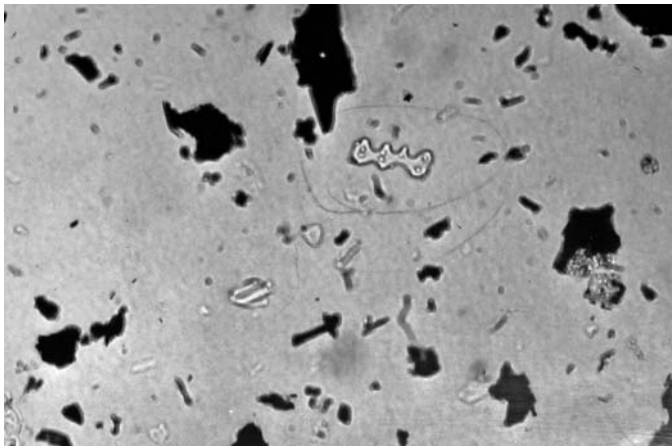
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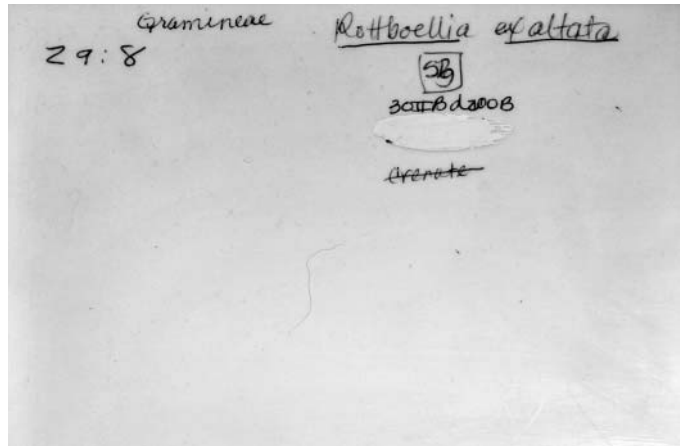
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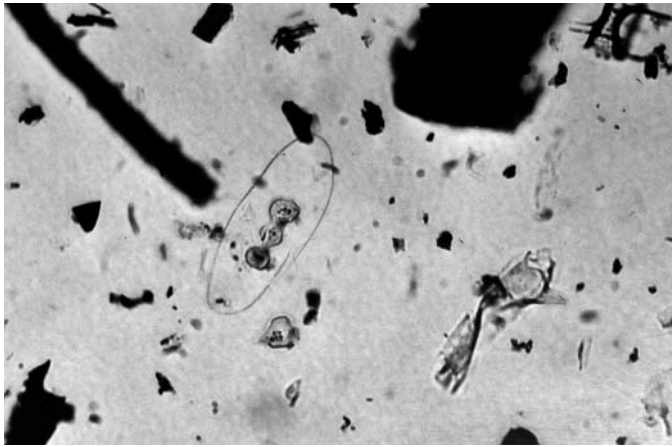
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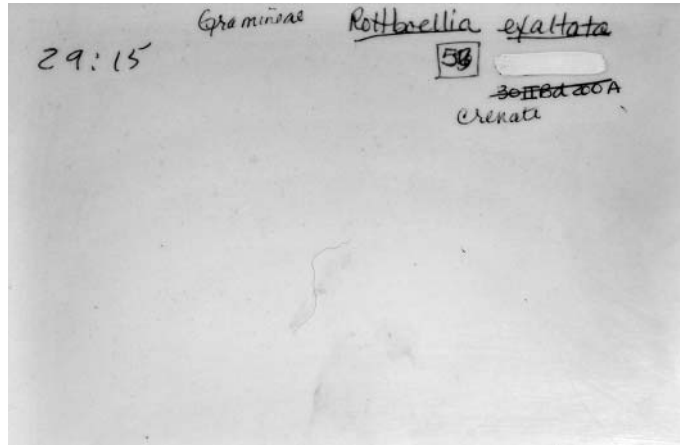
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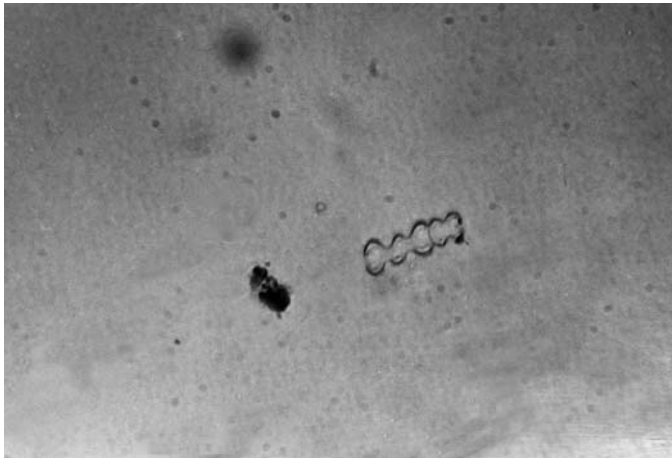
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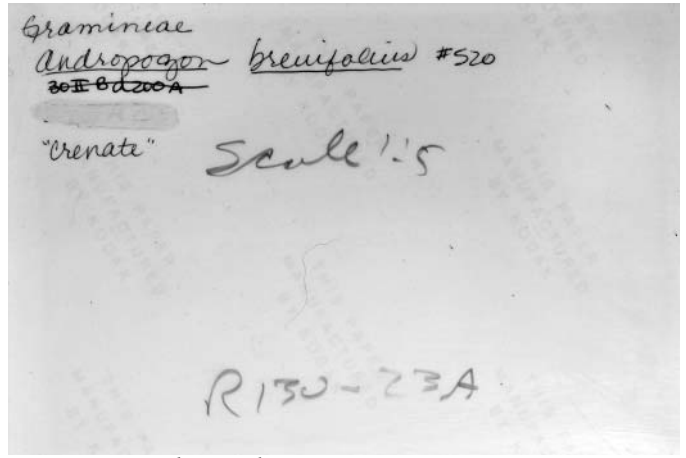
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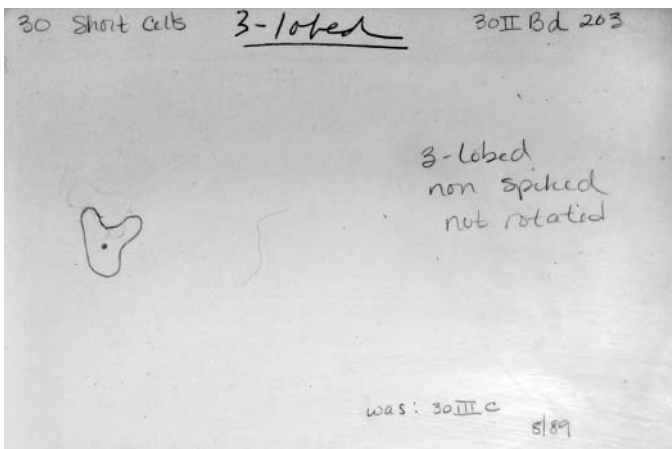
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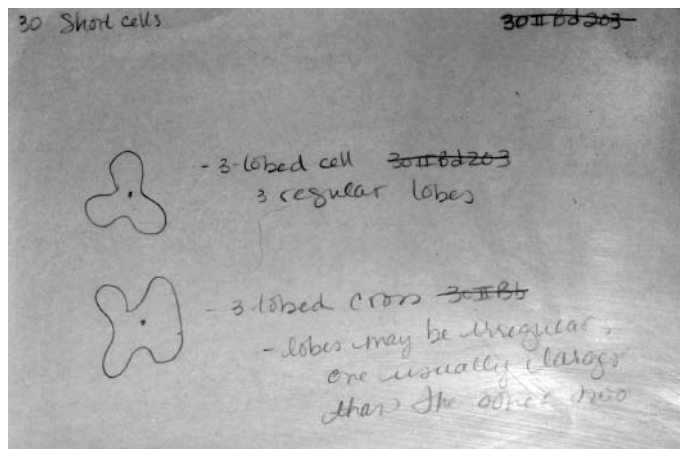
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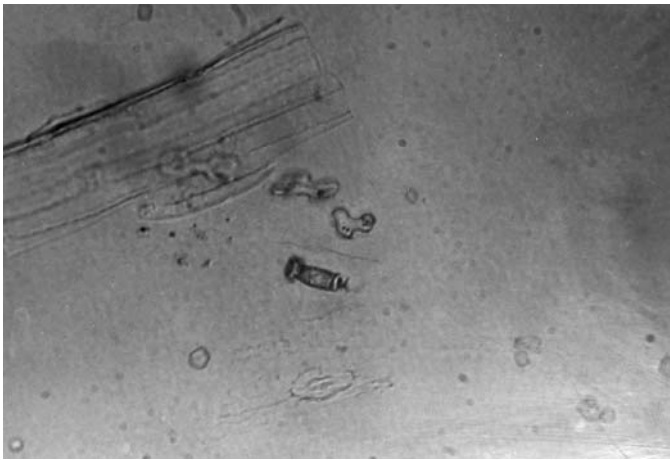
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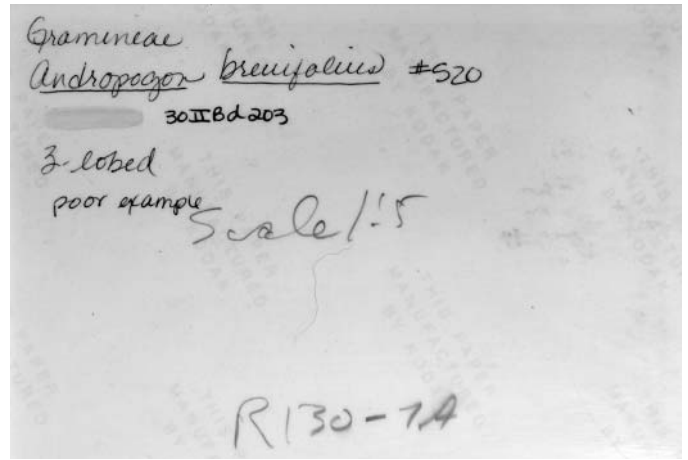
30I 3 lobed card 1.JPG



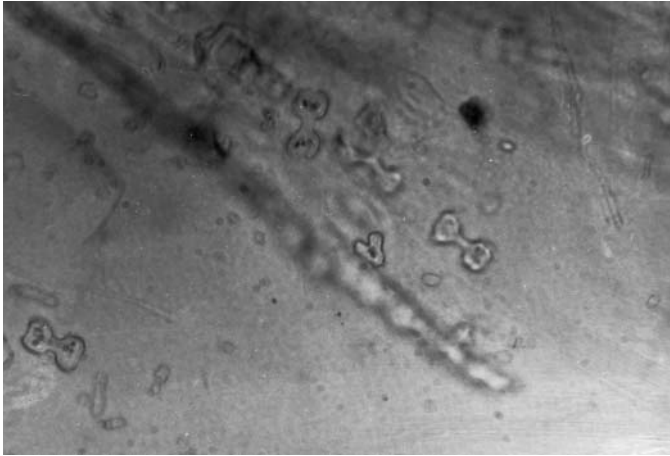
30I 3 lobed card 2.JPG



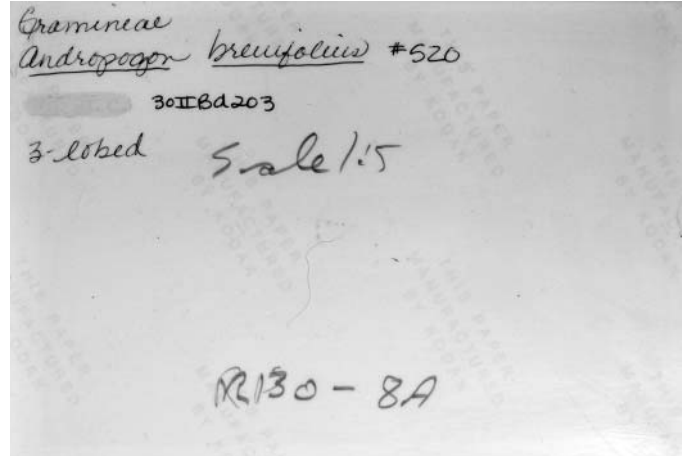
30I 3 lobed photo 1f.JPG



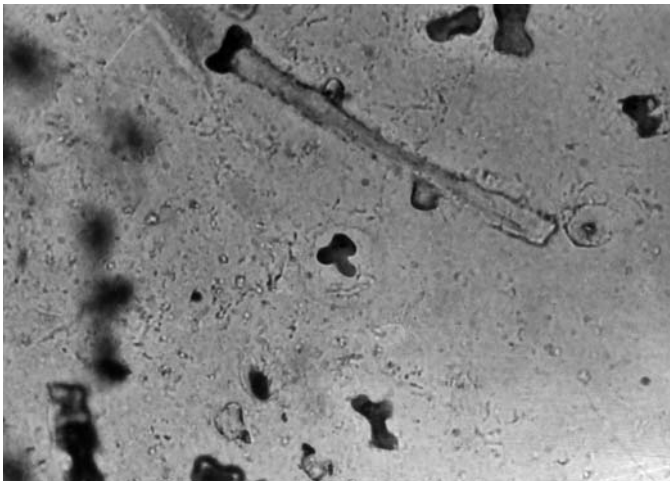
30I 3 lobed photo 1b.JPG



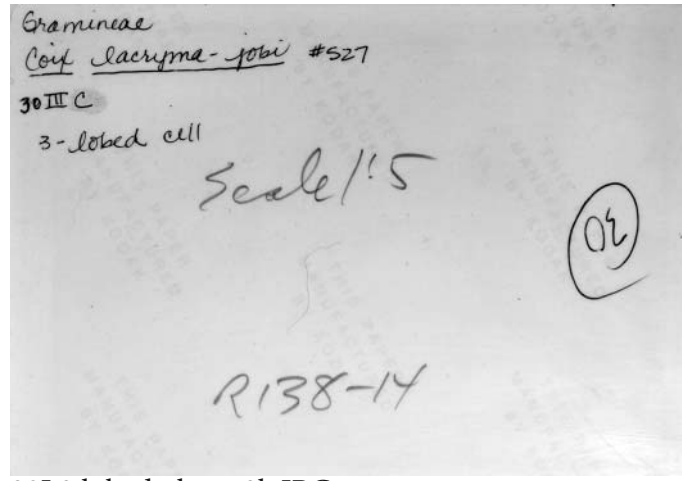
30I 3 lobed photo 2f.JPG



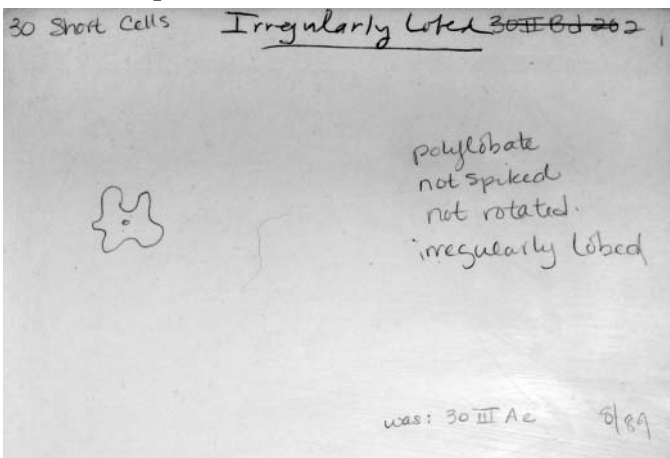
30I 3 lobed photo 2b.JPG



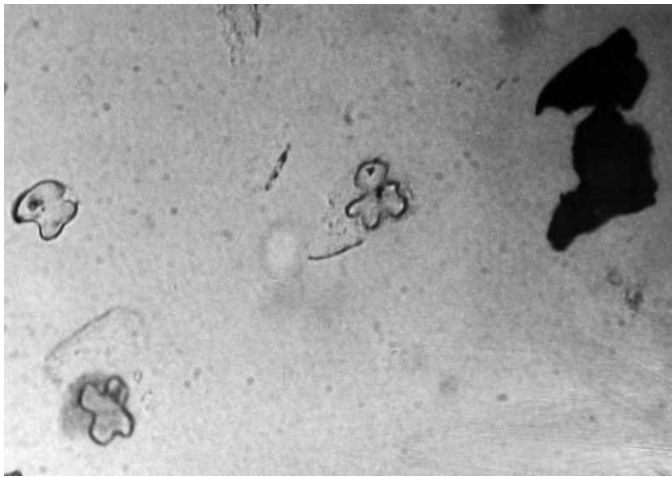
30I 3 lobed photo 3f.JPG



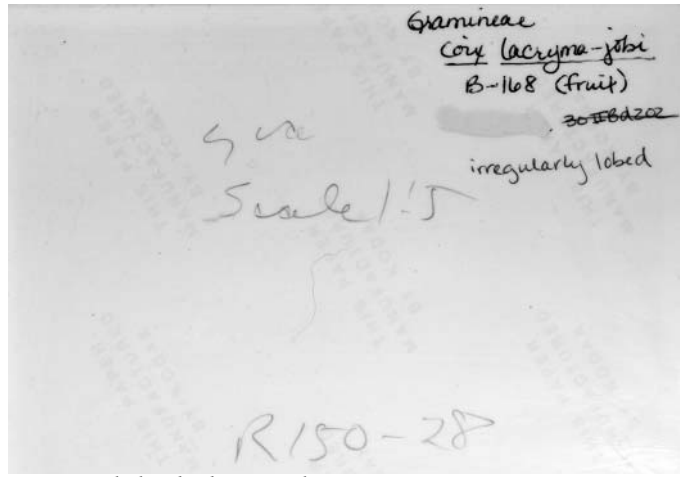
30I 3 lobed photo 3b.JPG



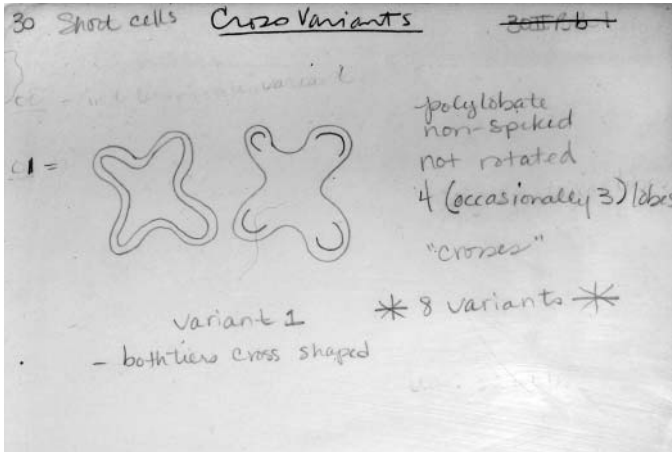
30I ireg lobed card 1.JPG



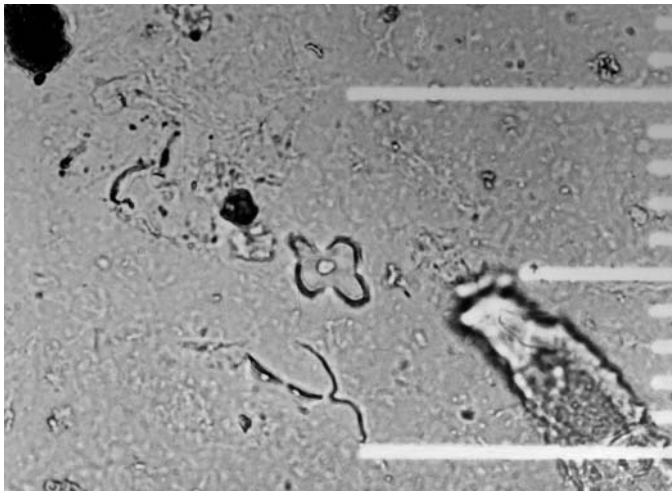
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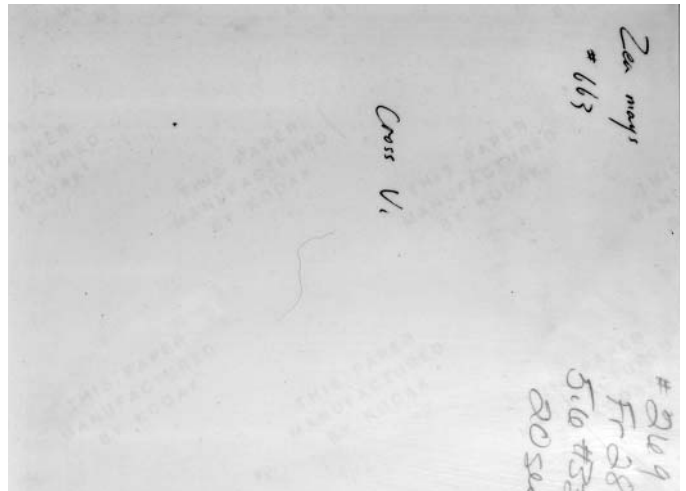
30I ireg lobed photo 1sb.JPG



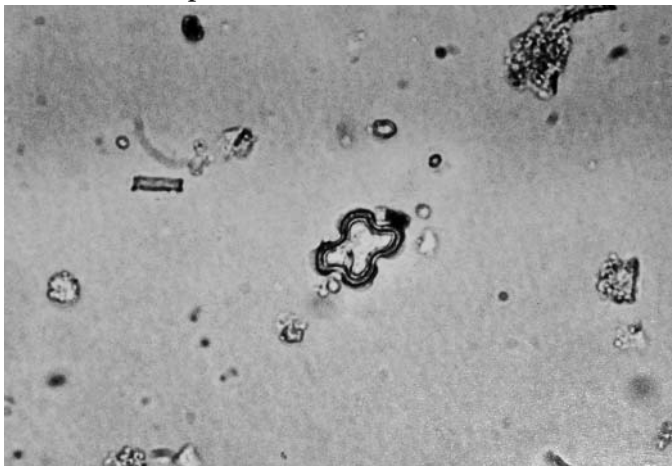
30I cross var1 card 1.JPG



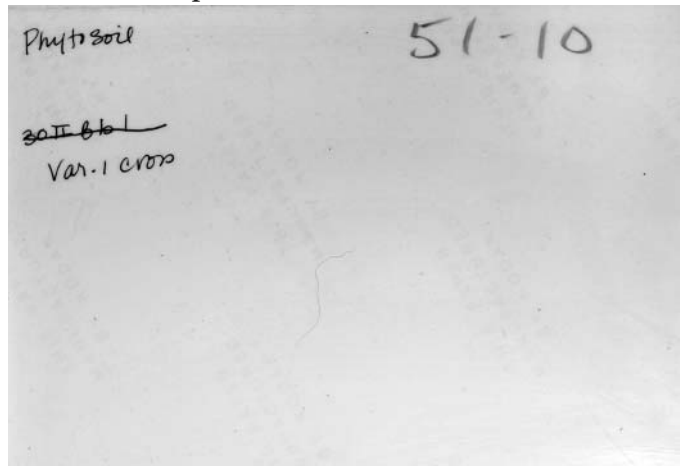
30I cross var1 photo 1f.JPG



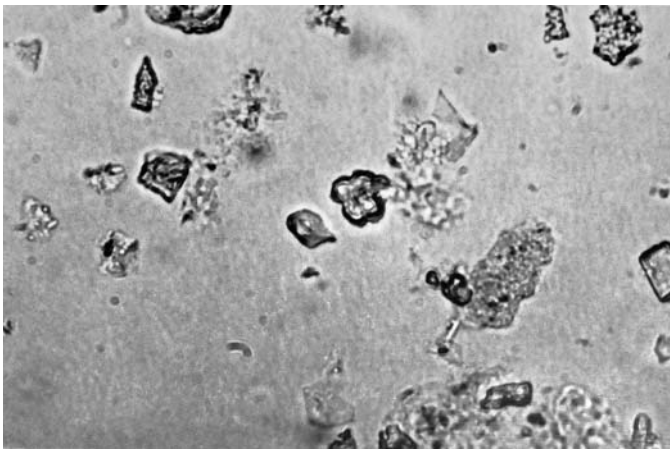
30I cross var1 photo 1b.JPG



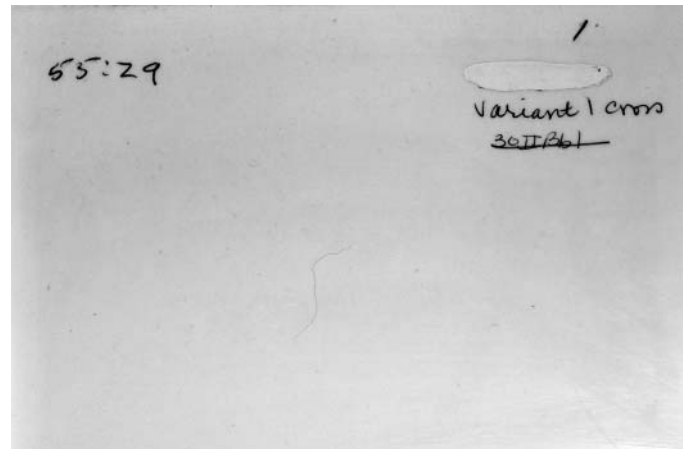
30I cross var 1 photo 2f.JPG



30I cross var1 photo 2b.JPG



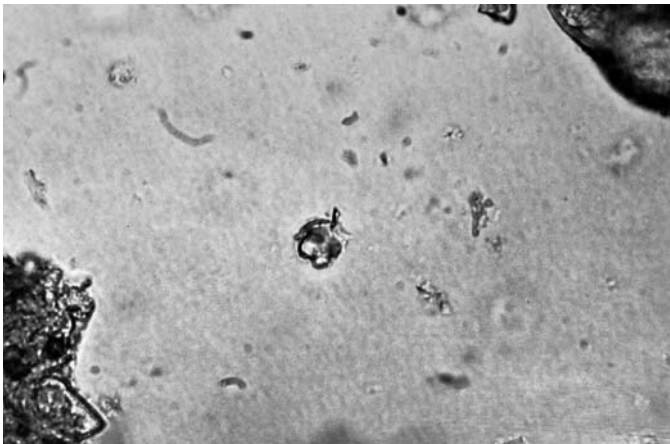
30I cross var1 photo 3f.JPG



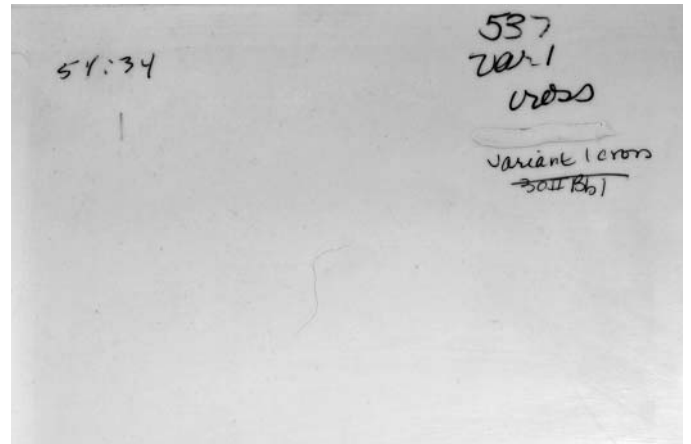
30I cross var1 photo 3b.JPG

55:29

1
Variant 1 cross
~~30II B61~~



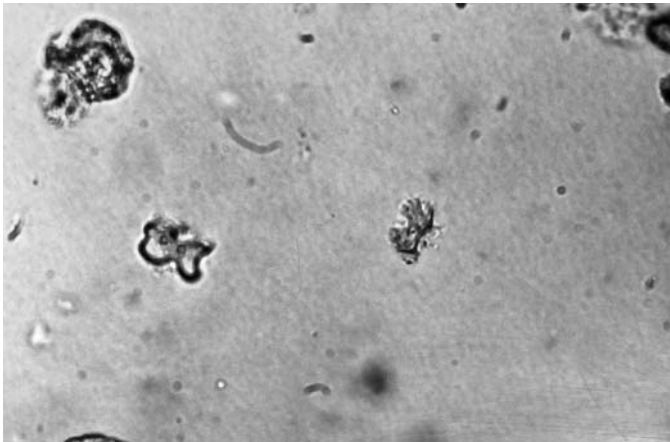
30I cross var1 photo 4f.JPG



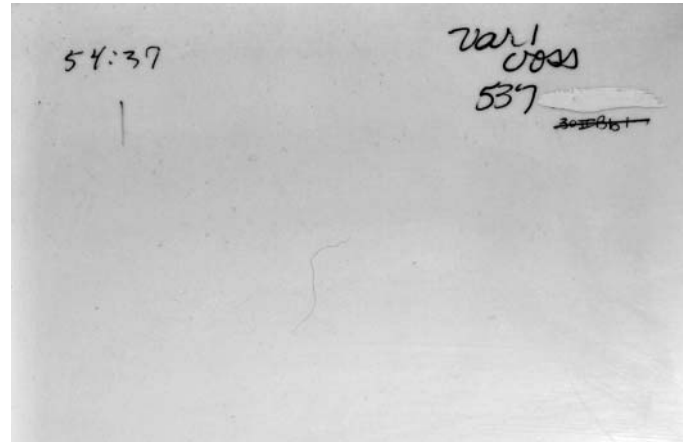
30I cross var 1 photo 4b.JPG

51:34

537
var 1
cross
Variant 1 cross
~~30II B61~~



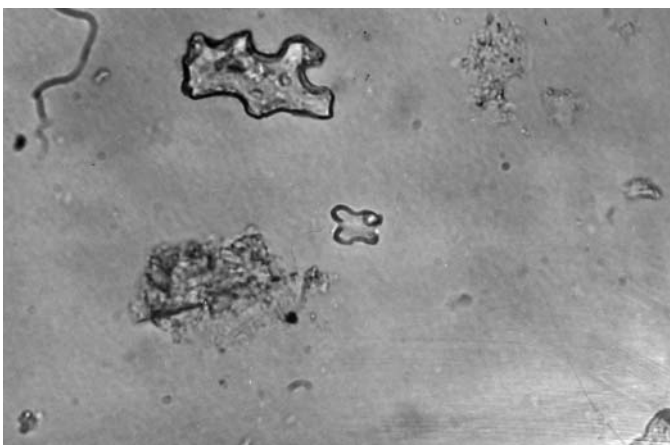
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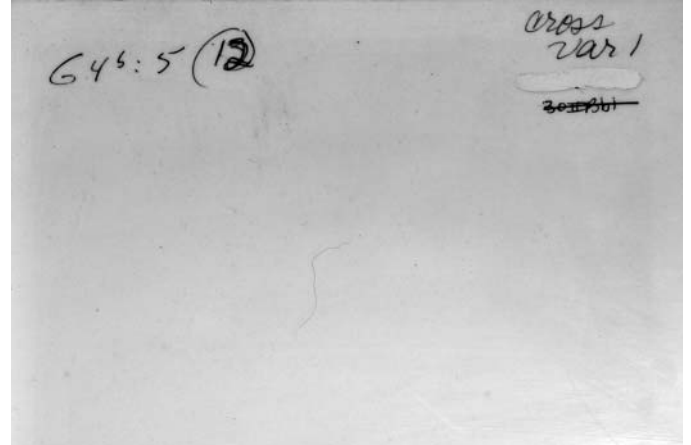
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54:37

var 1
cross
537
~~30II B61~~



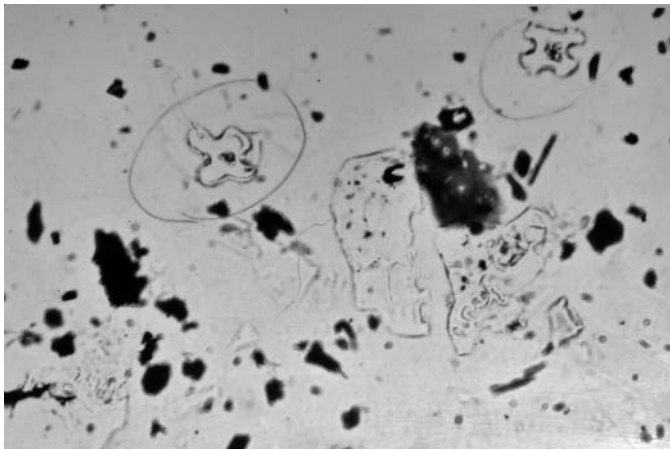
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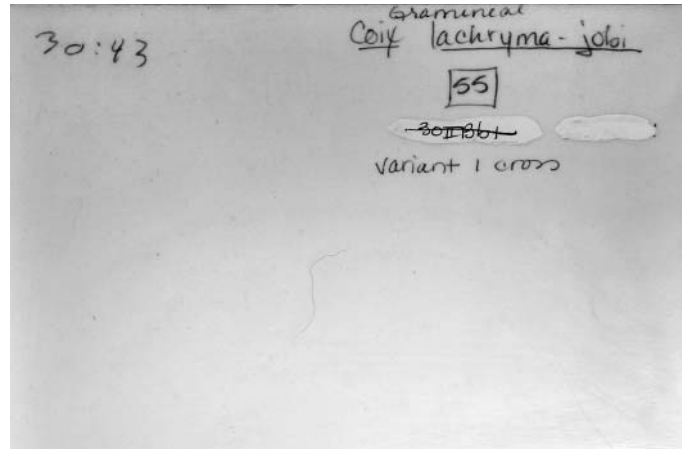
30I cross var 1 photo6b.JPG

646:5 (12)

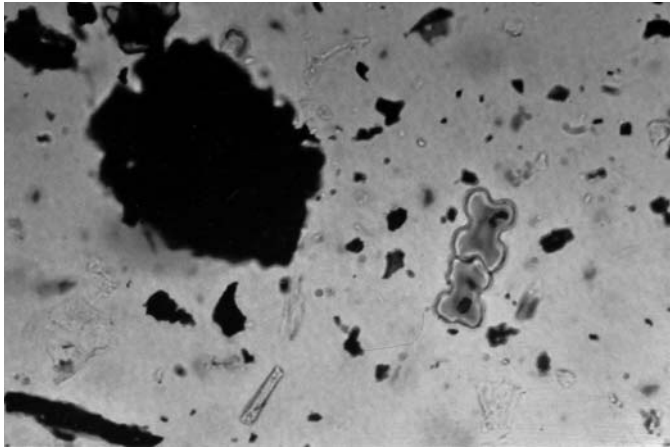
cross
var 1
~~30II B61~~



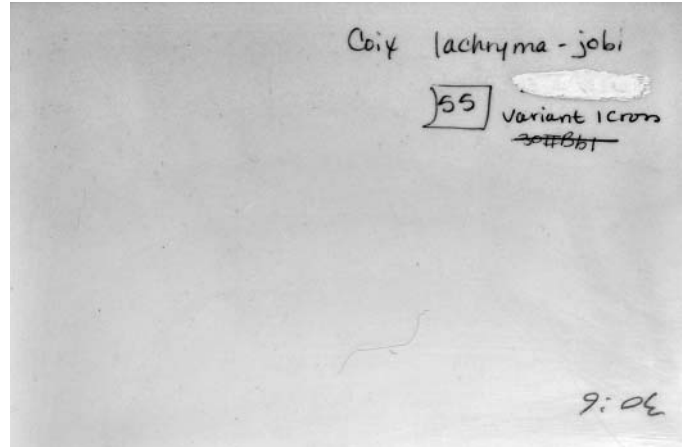
30I cross var1 photo 7f.JPG



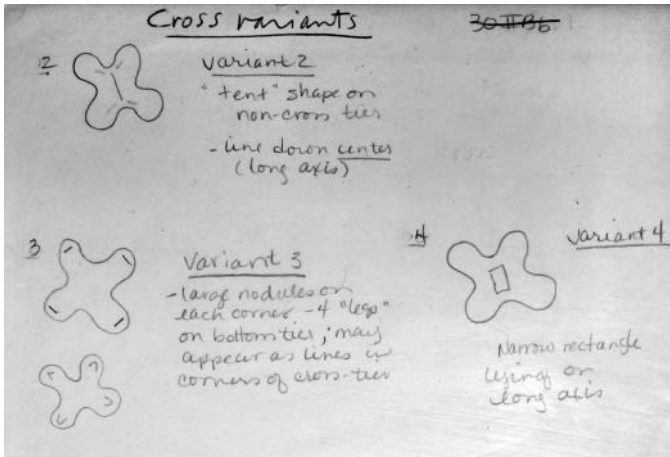
30I cross var 1 photo 7b.JPG



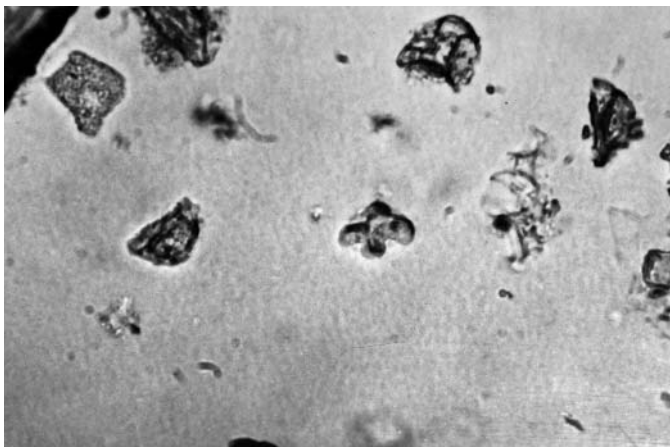
30I cross var1 photo 8f.JPG



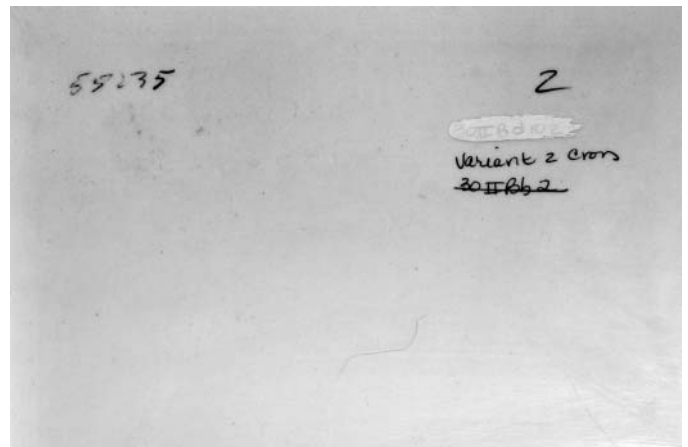
30I cross var1 photo 8b.JPG



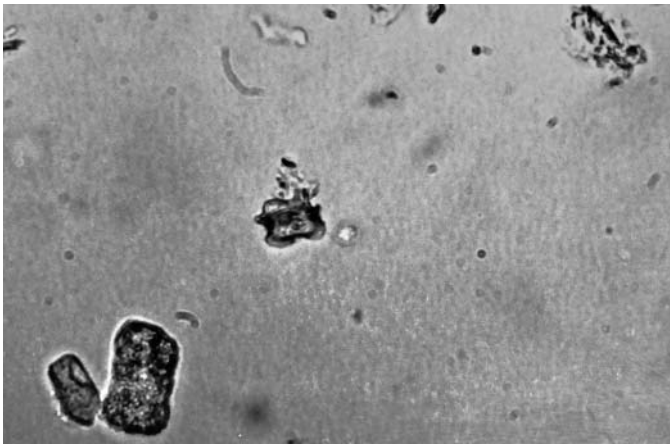
30I cross variants card1.JPG



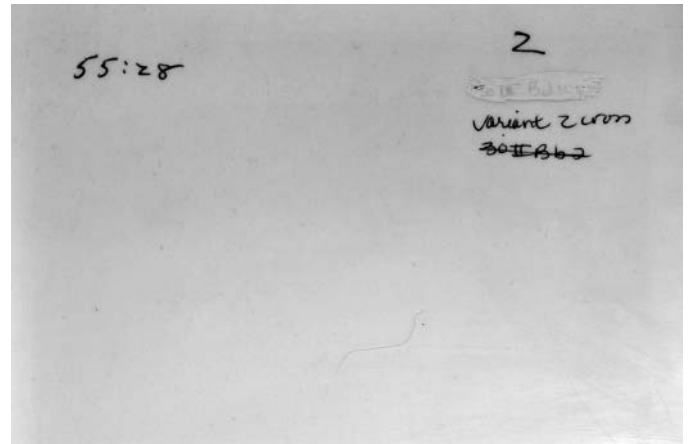
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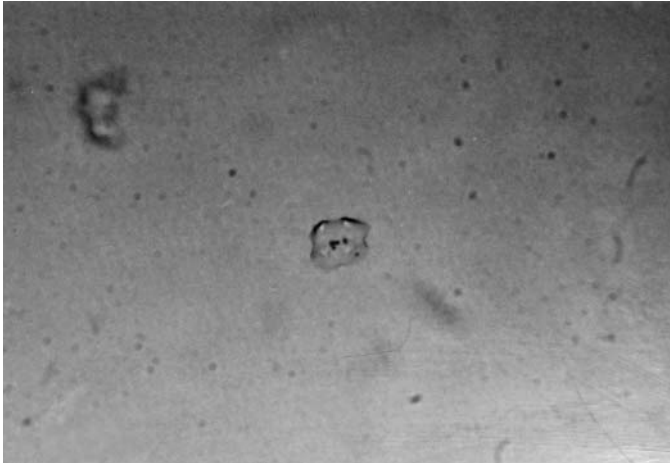
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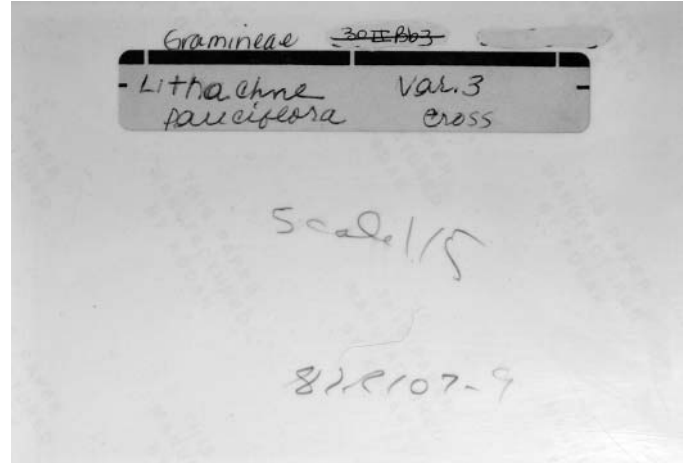
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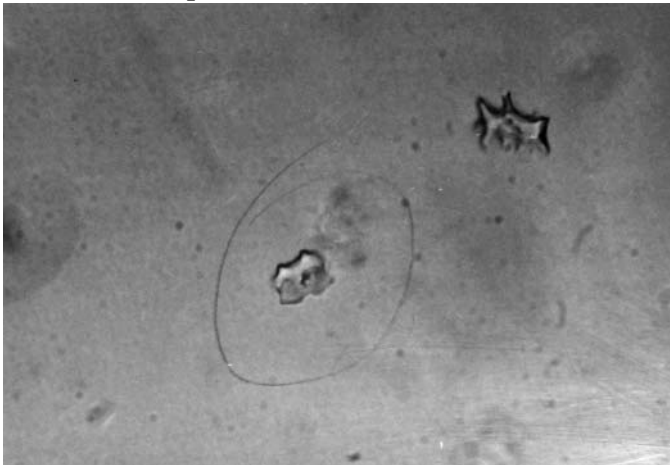
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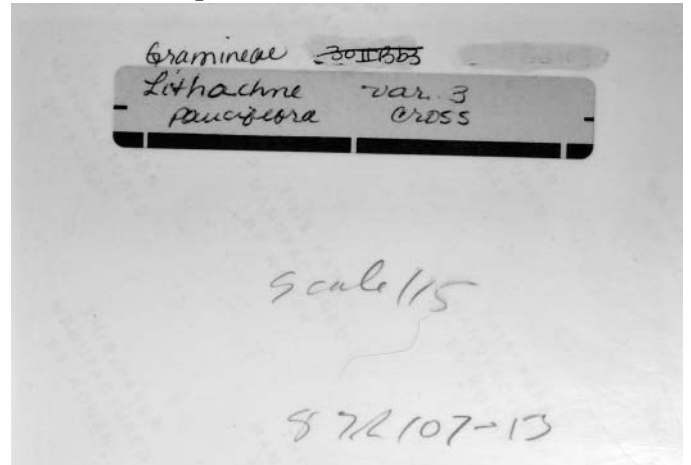
30I cross var3 photo 1f.JPG



30I cross var3 photo 1b.JPG



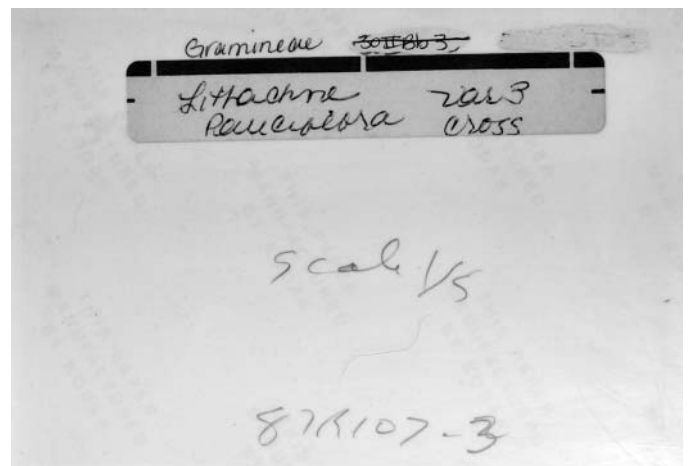
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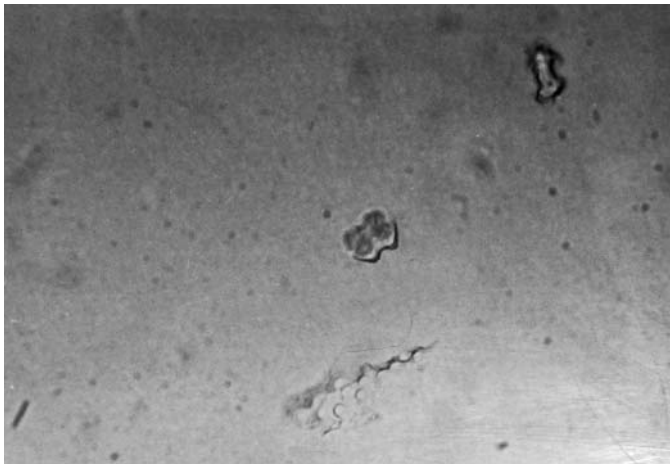
30I cross var3 photo 2b.JPG



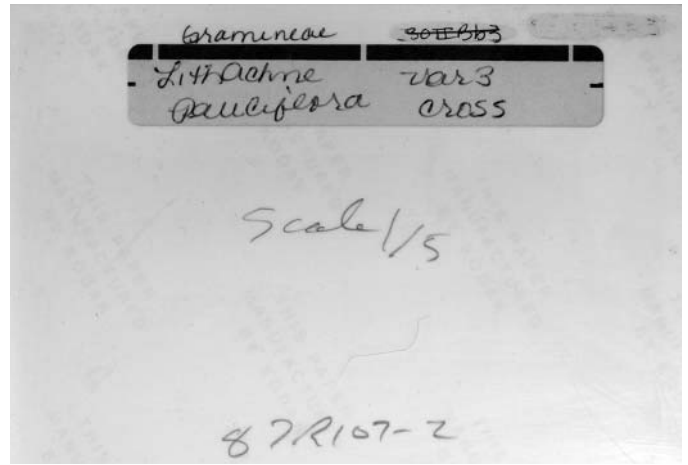
30I cross var3 photo 3f.JPG



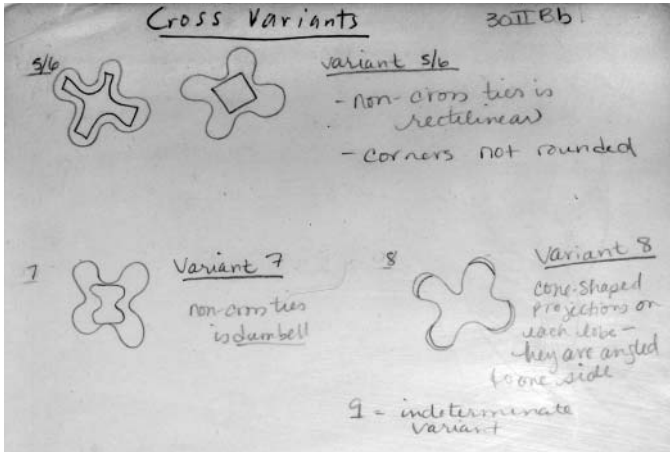
30I cross var3 photo 3b.JPG



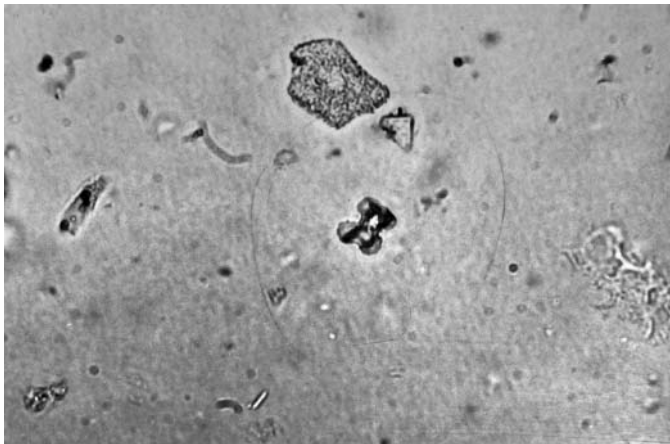
30I cross var3 photo 4f.JPG



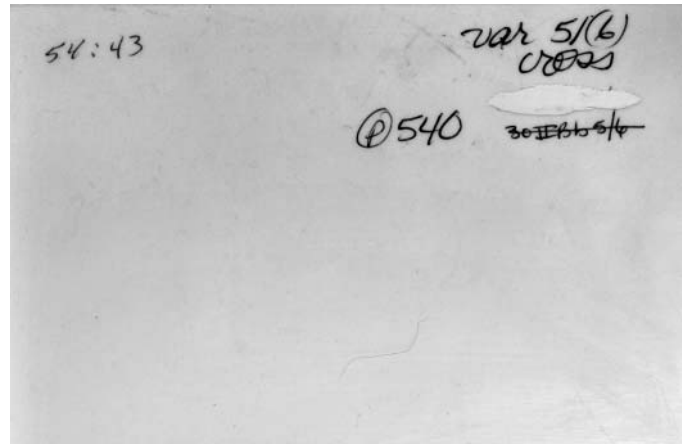
30I cross ver3 photo 4b.JPG



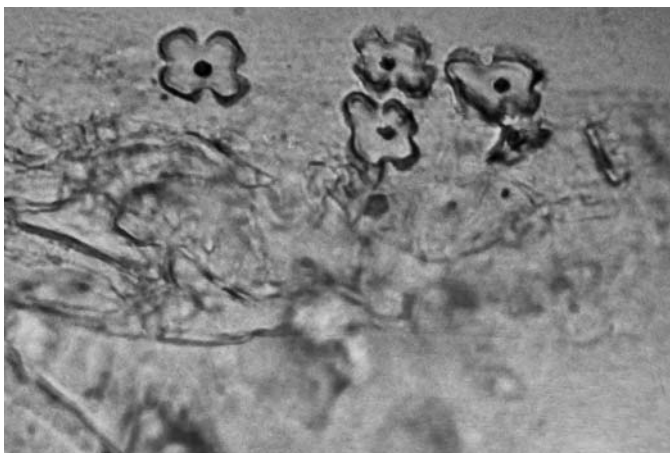
30I cross variants card1.JPG



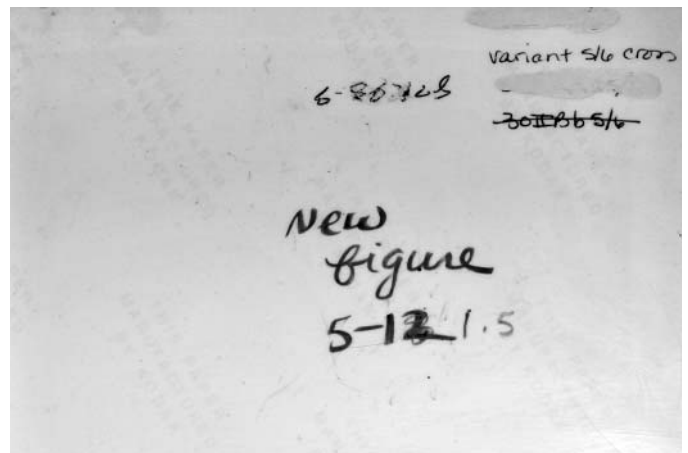
30I cross var 5-6 photo 1f.JPG



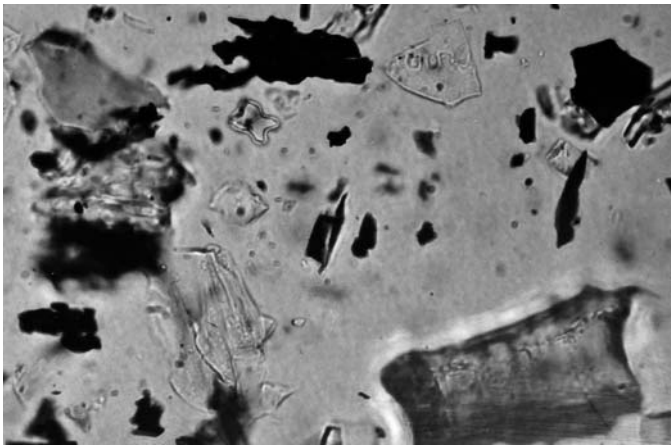
30I cross var 5-6 photo 1b.JPG



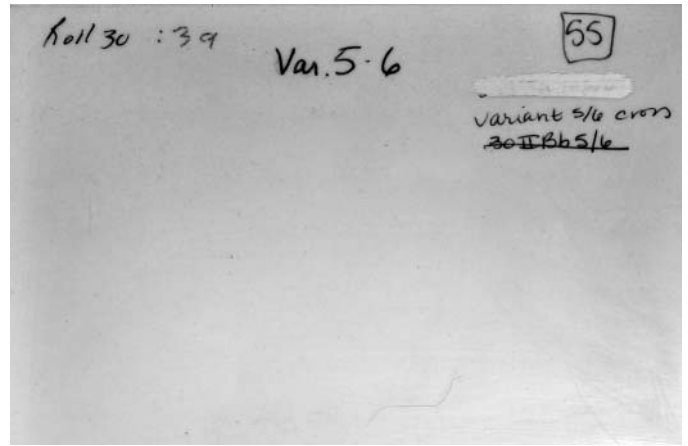
30I cross var 5-6 photo 2f.JPG



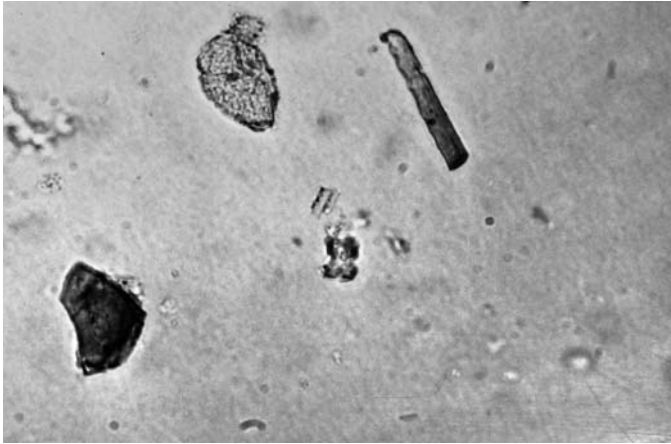
30I cross var 5-6 photo 2b.JPG



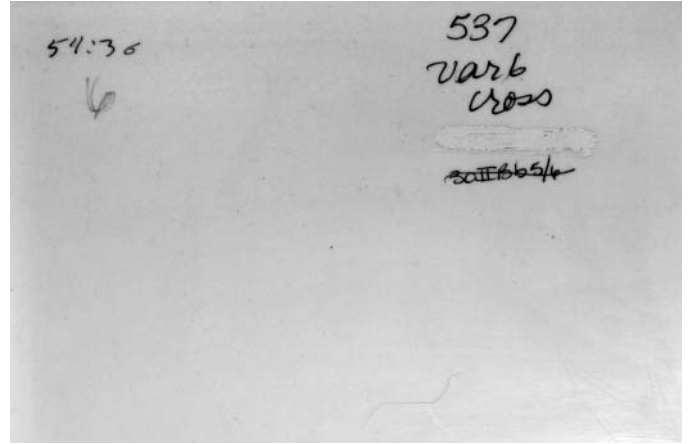
30I cross var 5-6 photo 3f.JPG



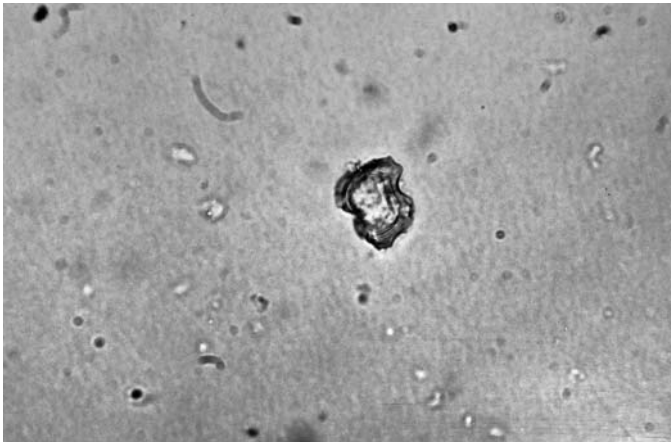
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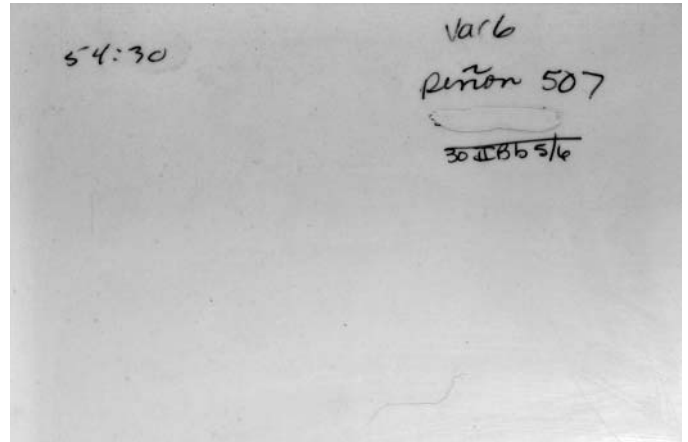
30I cross var 5-6 photo 4f.JPG



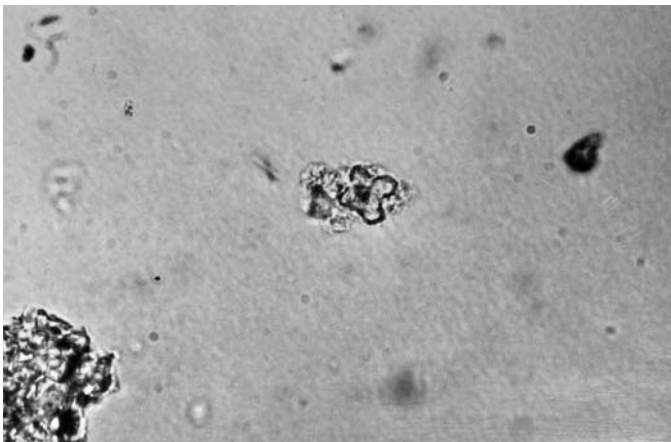
30I cross var 5-6 photo 4b.JPG



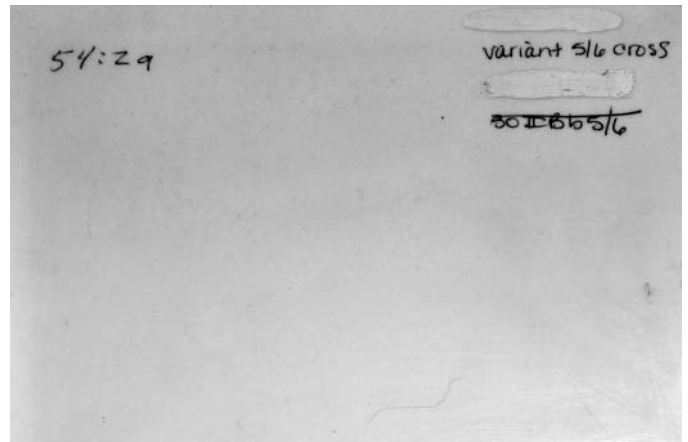
30I cross var 5-6 photo 5f.JPG



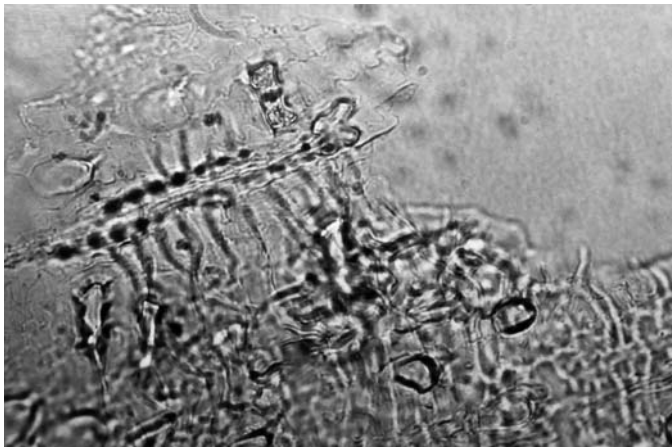
30I cross var 5-6 photo 5b.JPG



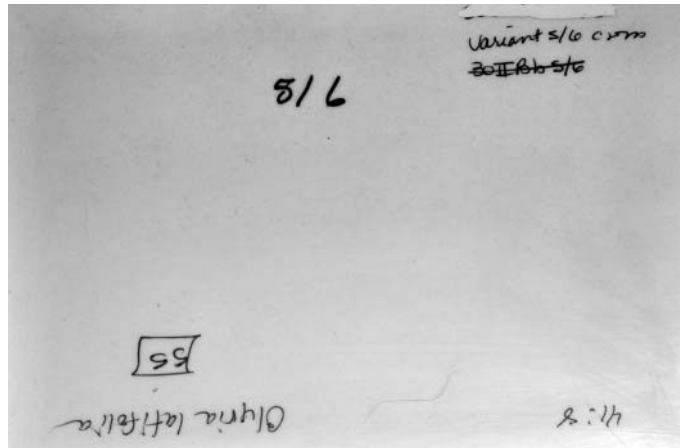
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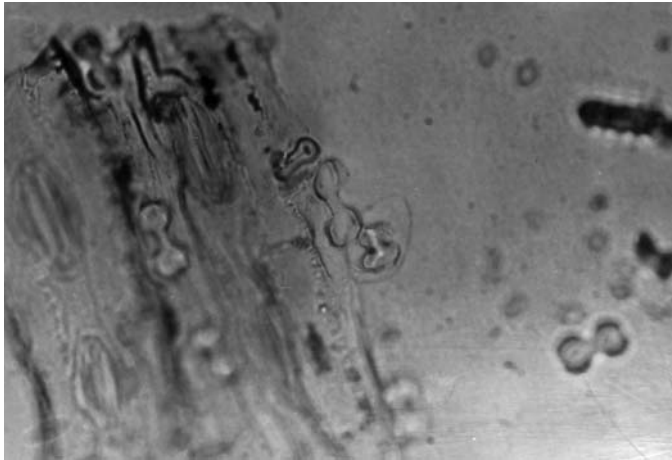
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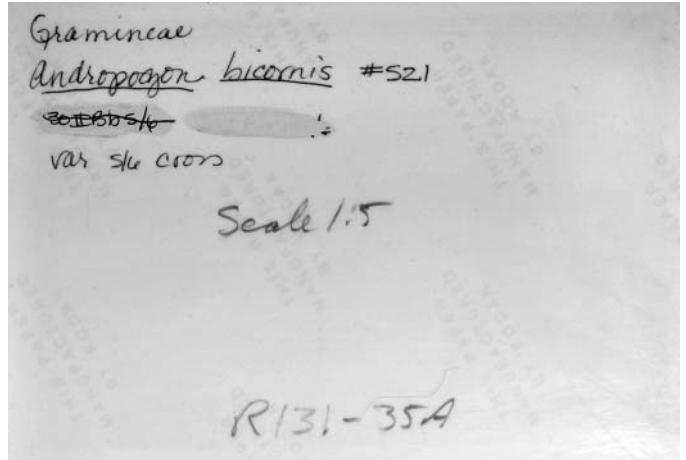
30I cross var 5-6 photo 7f.JPG



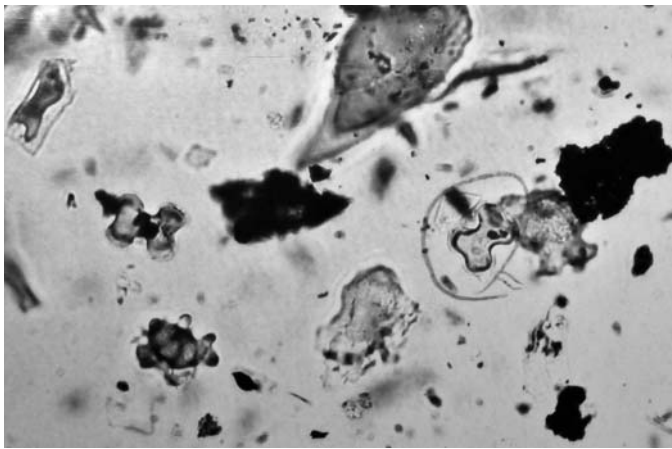
30I cross var 5-6 photo 7b.JPG



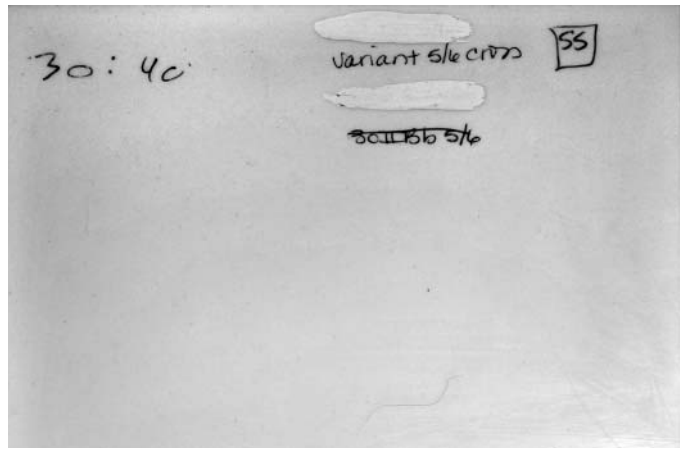
30I cross var 5-6 photo 8f.JPG



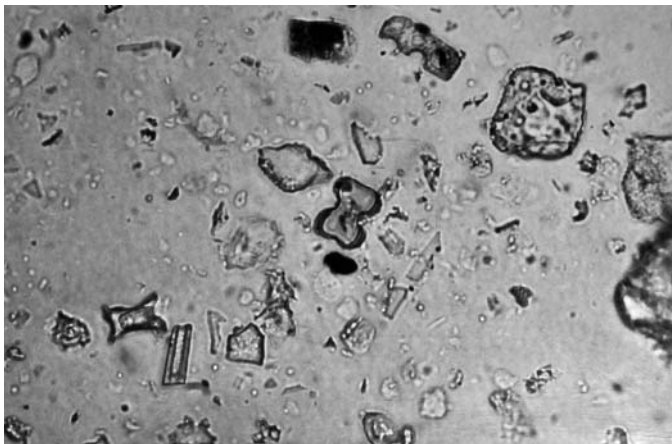
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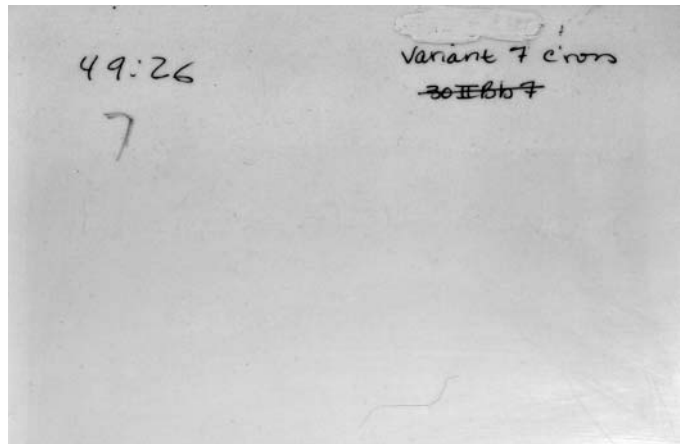
30I cross var 5-6 photo 9f.JPG



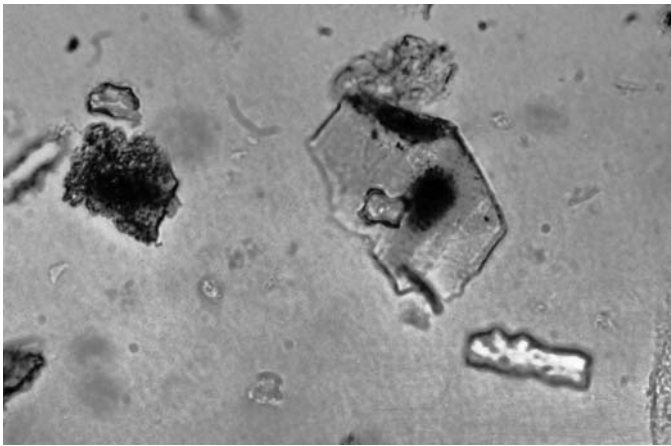
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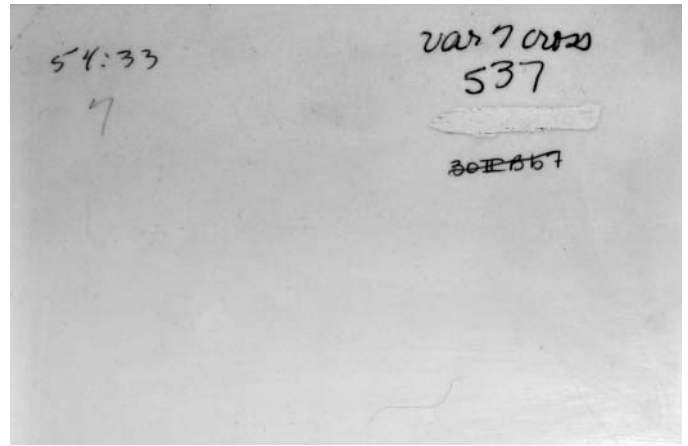
30I cross var 7 photo 1f.JPG



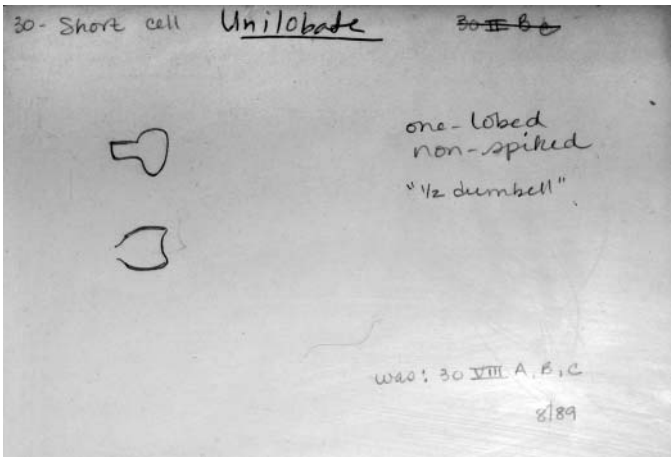
30I cross var 7 photo 1b.JPG



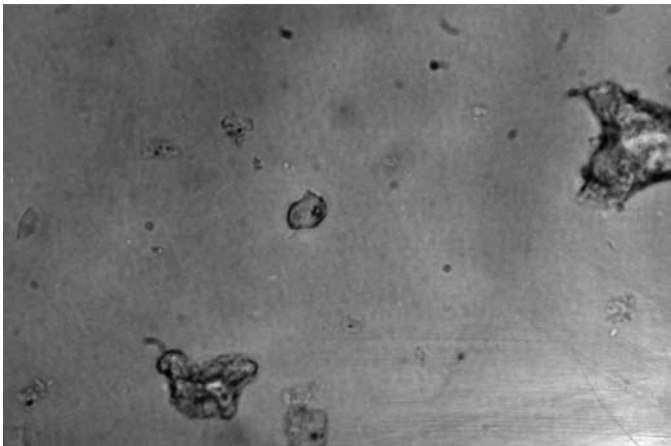
30I cross var 7 photo 2f.JPG



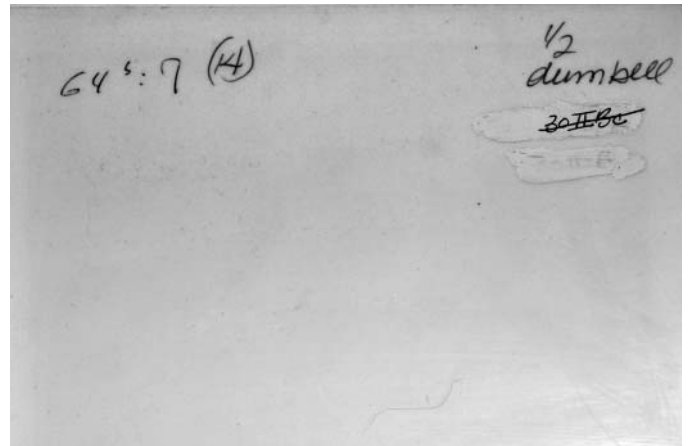
30I cross var 7 photo 2b.JPG



30I unilobated card1.JPG



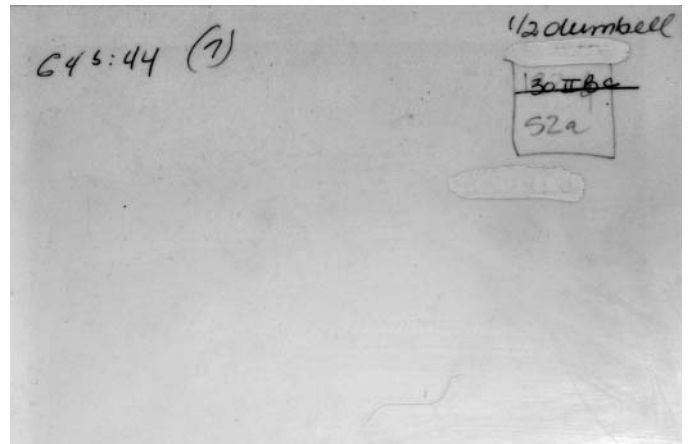
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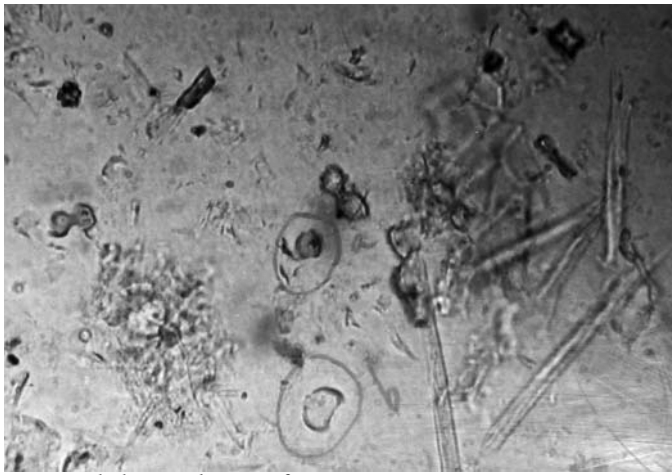
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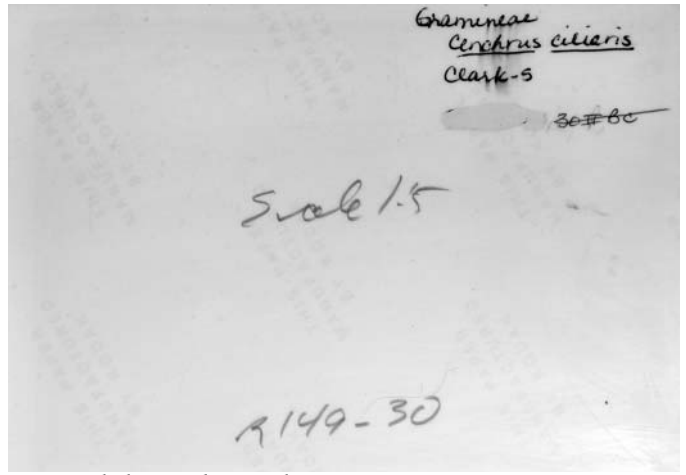
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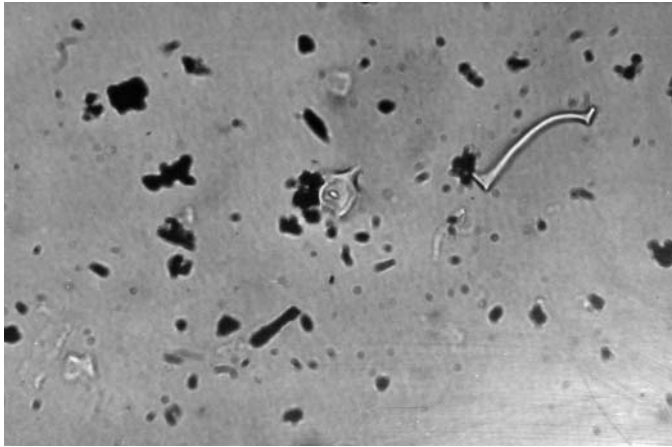
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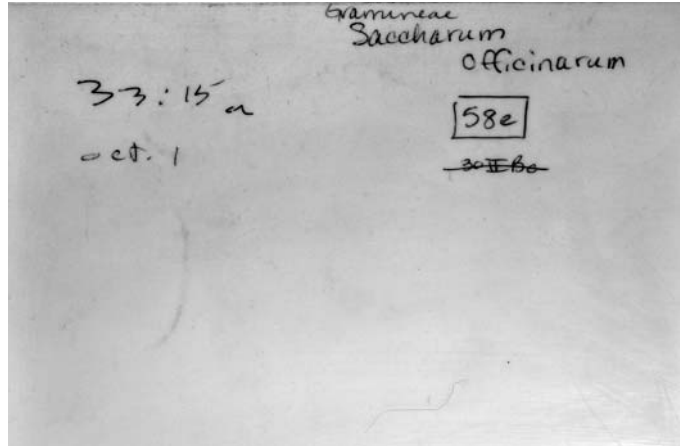
30I unilobate photo 3f.JPG



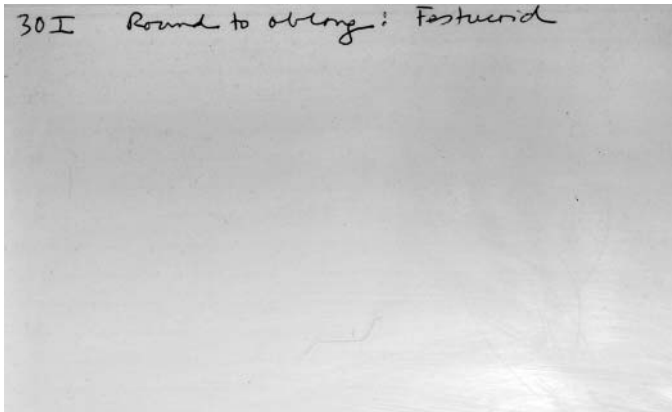
30I unilobate photo 3b.JPG



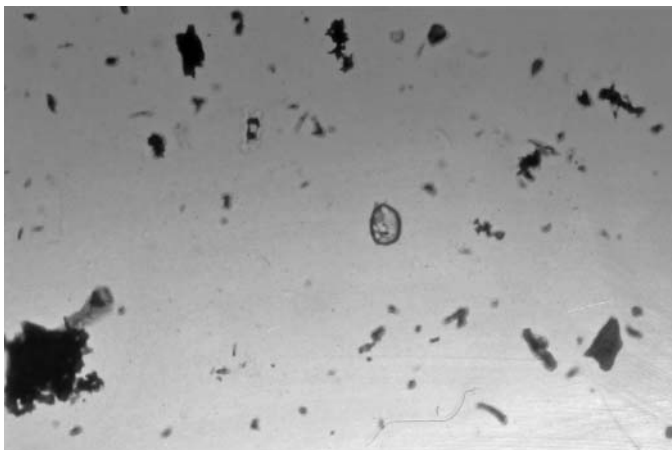
30I unilobate photo 4f.JPG



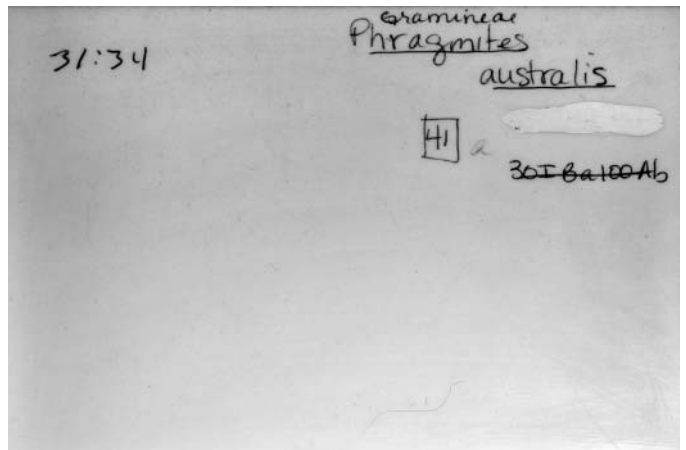
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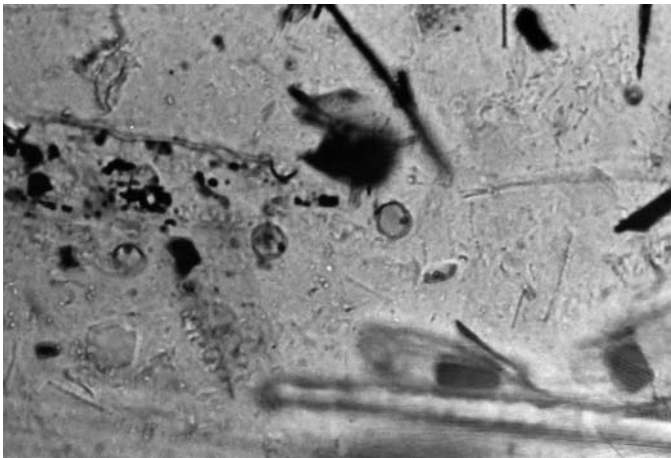
30I rd to ob card1.JPG



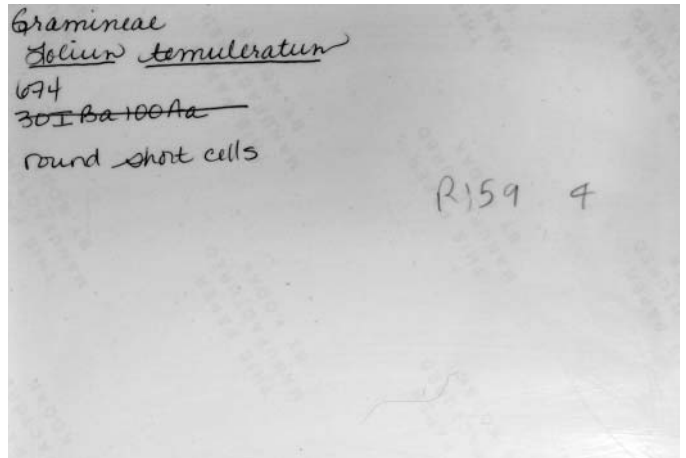
30I rd to ob photo 1f.JPG



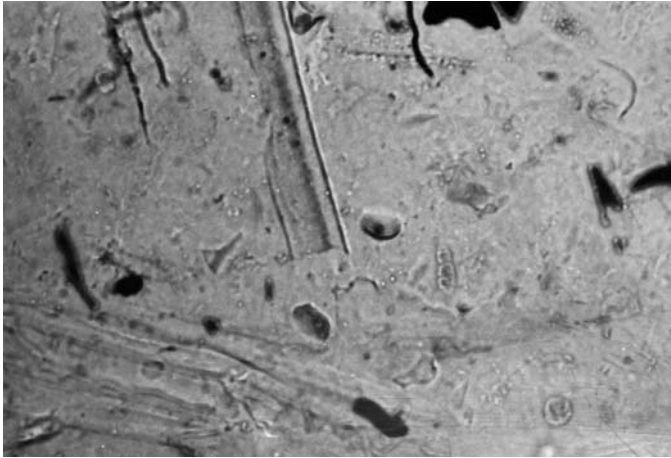
30I rd to ob photo 1b.JPG



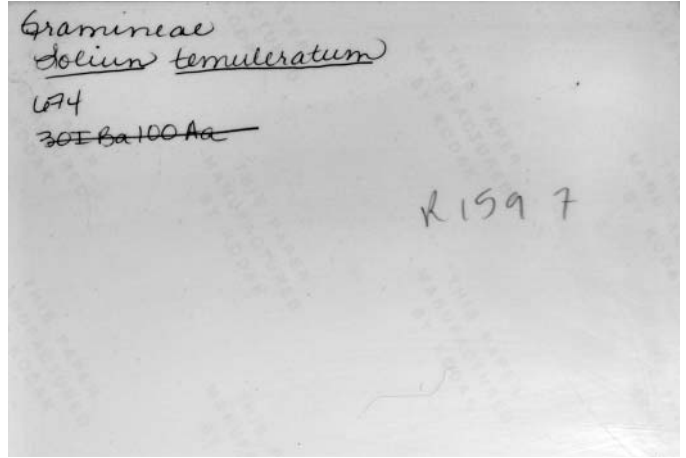
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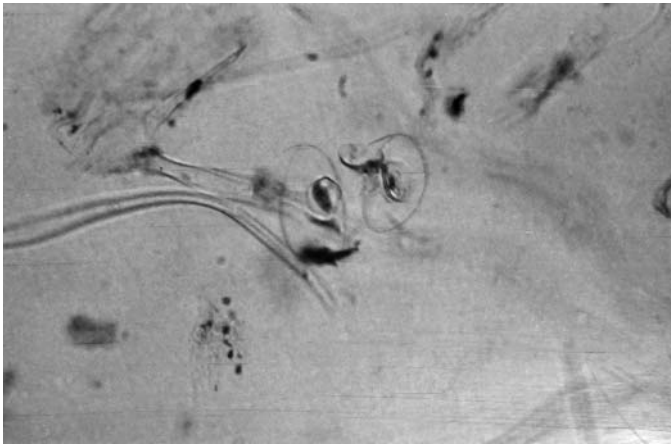
30I rd to ob photo 2b.JPG



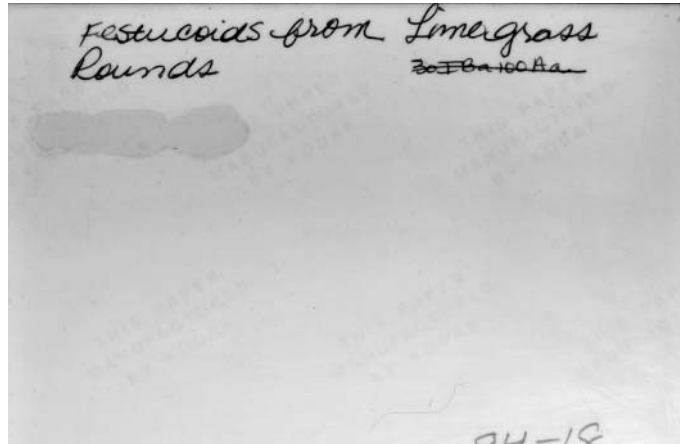
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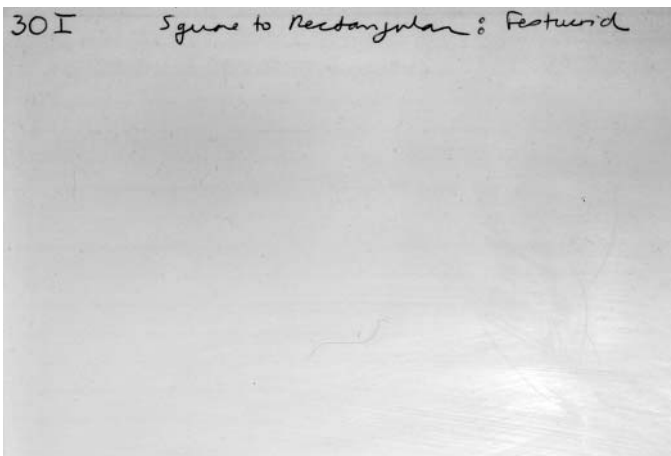
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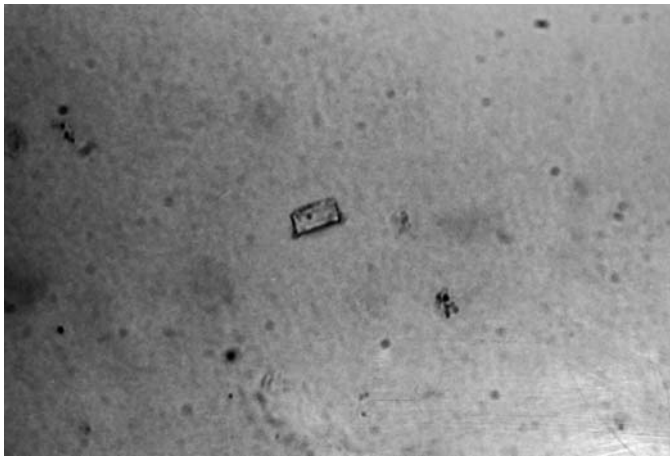
30I rd to ob photo 4f.JPG



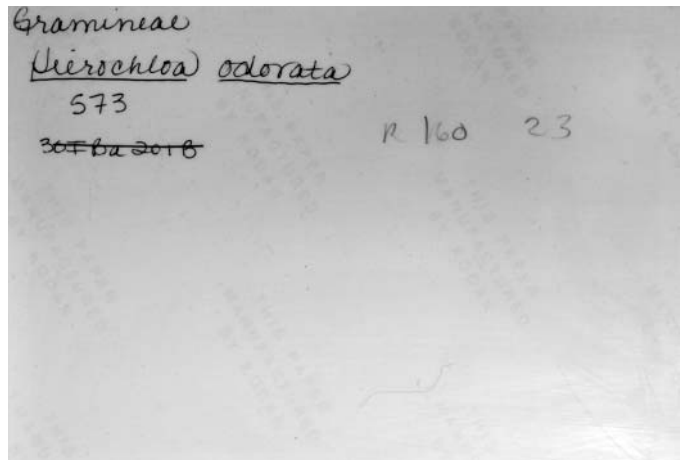
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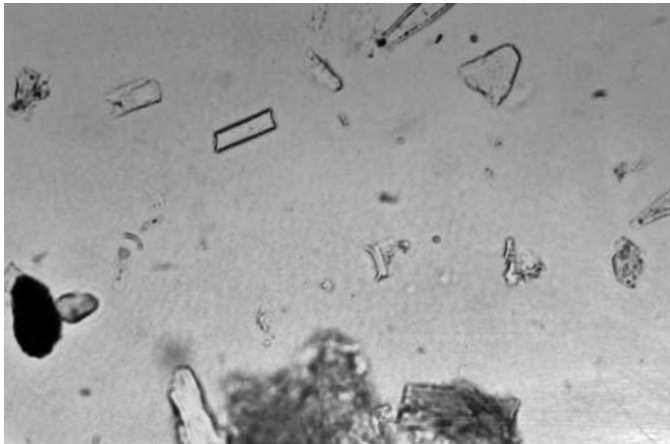
30I sq to red card 1.JPG



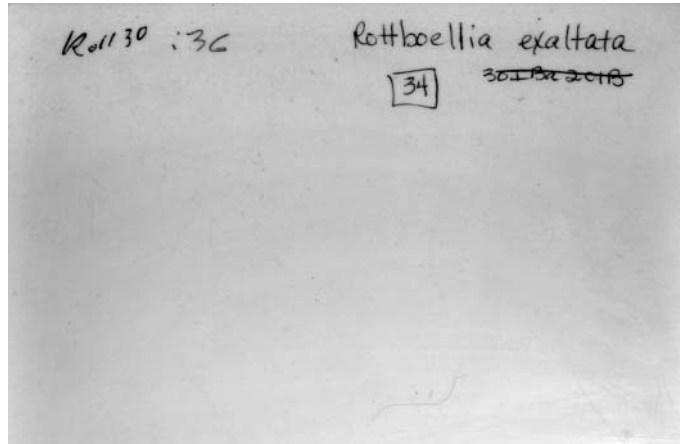
30I sq to rec photo 1f.JPG



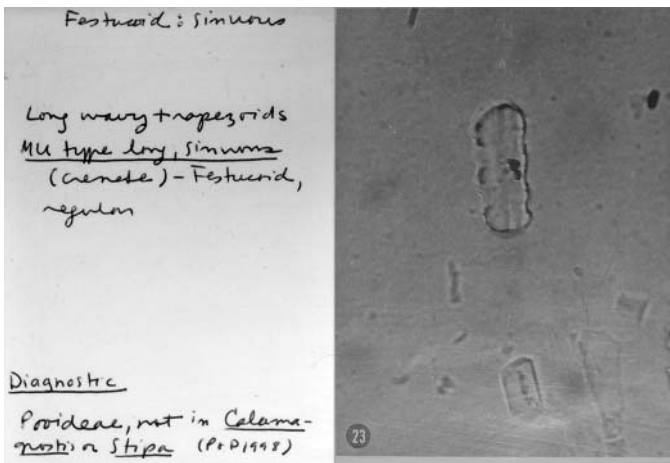
30I sq to rec photo 1b.JPG



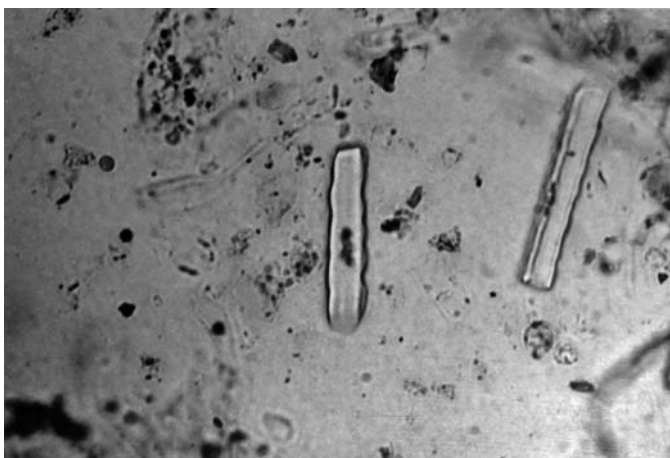
30I sq to rec photo 2f.JPG



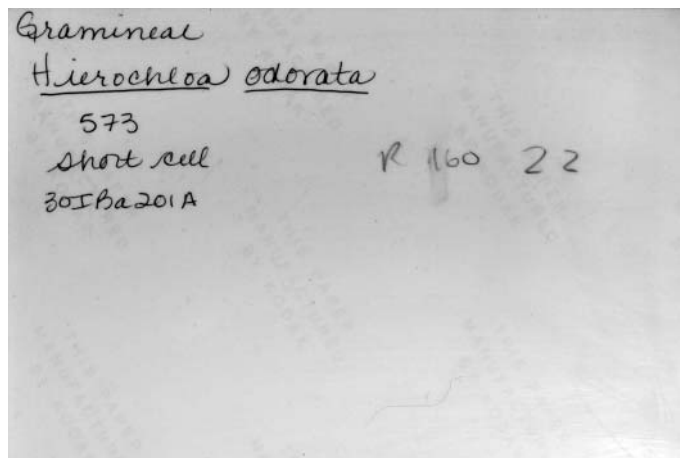
30I sq to rec photo 2b.JPG



30I sinuous card 1.JPG



30I sinuous photo 1f.JPG



30I sinuous photo 1b.JPG

Diagnostic

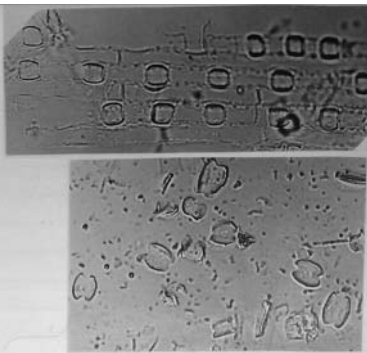
Chloroidrid grasses produce squat saddles in significant proportion (32-86%)



thickened edge
shorter than wide, or equidimensional

Very tall saddles (>15µ) are rare - most are <15µ in height.

In soil: if >30% of saddles are squat, & saddles are <15µ: Chloroidrid

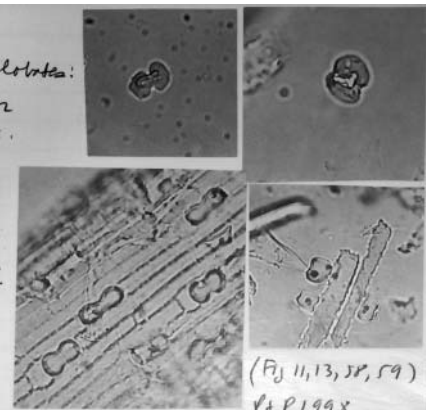


Pt P1998: Squat saddles from Chloroidrid grasses (Fig 19, 20)

30I saddle card1.JPG

Typical Bamboos bilobates: squat bodies w/ no or unremarkable shafts.

Many are <20µ in length (µm) is also true of rare bilobates in Chloroidrid & Poideae, peris)



(Fig 11, 13, 58, 59)
Pt P1998

Diagnostic

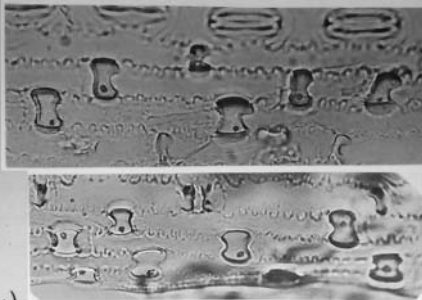
30I bamboo bilobate card1.JPG

Diagnostic

Bambusoideae & Anandinoideae
Saddles have >90° that are taller than wide



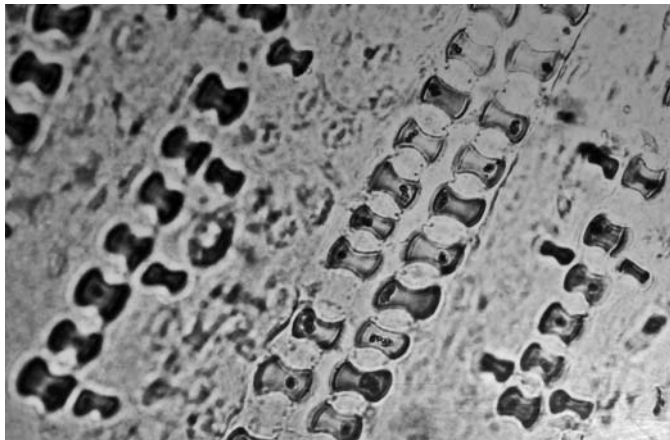
Very tall saddles (>15µ) dominate assemblages



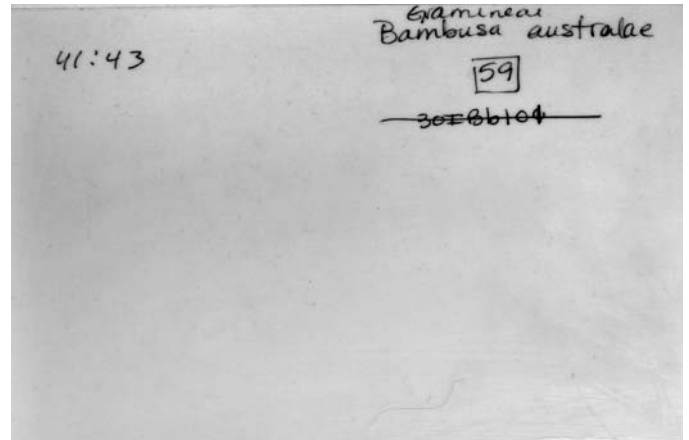
Piperno & Pear 1998: Tall saddles from bamboo (Craaton) (Fig 21, 22)

In soil: look for >80% tall saddles & some of the other bamboo types if bamboo is present. also saddle >15µ

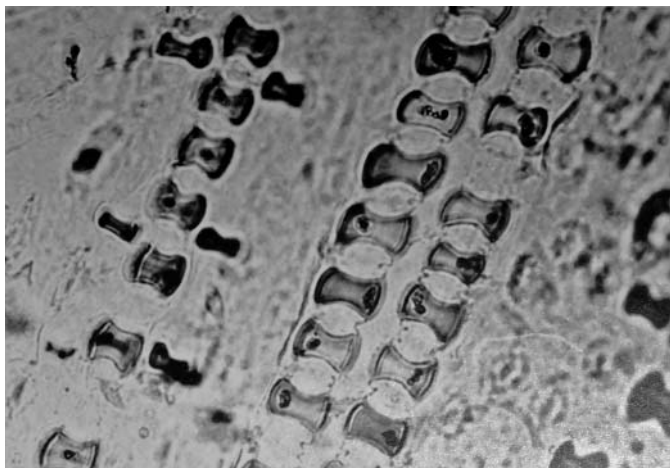
30I tall saddle card1.JPG



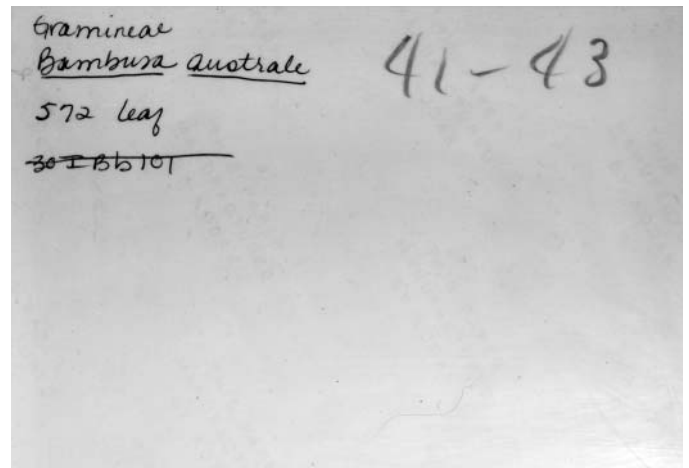
30I tall saddle photo 1f.JPG



30I tall saddle photo 1b.JPG



30I tall saddle photo 2f.JPG



30I tall saddle photo 2b.JPG