

## A Field Book Example

Nde: sketches  
 questions / hypotheses  
 misspellings  
 errors  
 ruminations  
 data  
 date/location info  
 scale/orientation in sketch maps  
 use of abbreviations etc..

A field book is YOUR business.  
 Make the most out of it as  
 a tool to collect and consider  
 and share your observations.

Be bold, be honest, be accurate  
 be wild, but make it clear  
 what is obs. and what is interp.

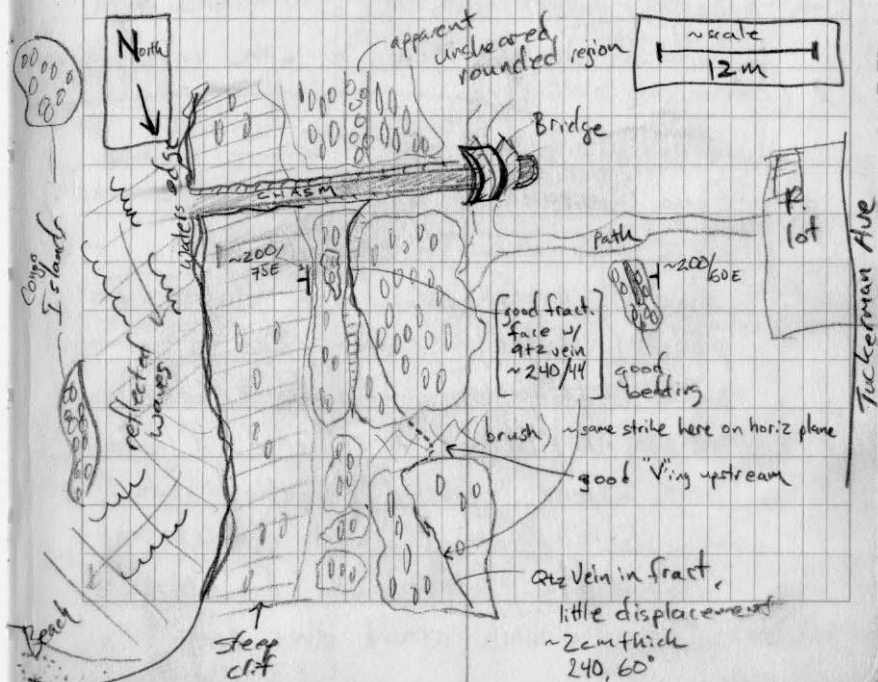
19 IX 2005

B. CROSBY

RI Ocps

## Class Trip to Rhode Island Outcrops

- with Chris SG and Structure/Field students<sup>(9)</sup> + Brandon McElroy + Kyle (?) Wiki's new student.
- Leave Boston ~ 7:20 (early!?! ) and drive direct to Purgatory Chasm State Park East of Newport. Walk from P. lot to chasm/seacliff to see stretched congs.



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① - Students collect loads of trend-plunge data for elongated clasts

CONVENTION "30 → 250" read

"plunging 30 degrees toward 250", where trend is always in the down-plunge direction

- collection is all-over ocp. using pens and pairs to aid data collection
- mention magnetic declination
- mention local magnetic field disturbances (hammer)
- mention data collection philos. (hypo. gener/testing)

② - Students collect loads of clast-ratio data to look at strain. Msmt. is with ruler/tape measure

Notes

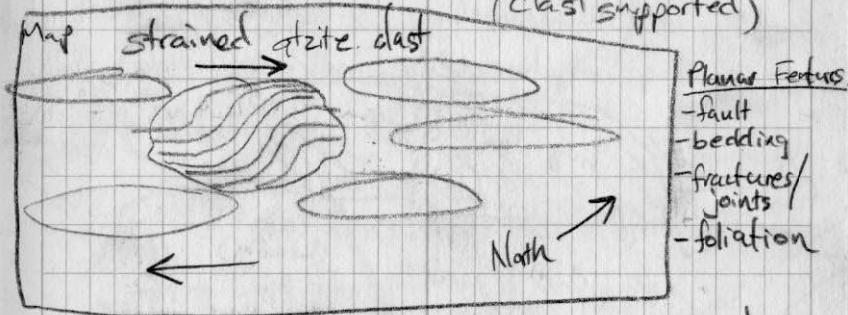
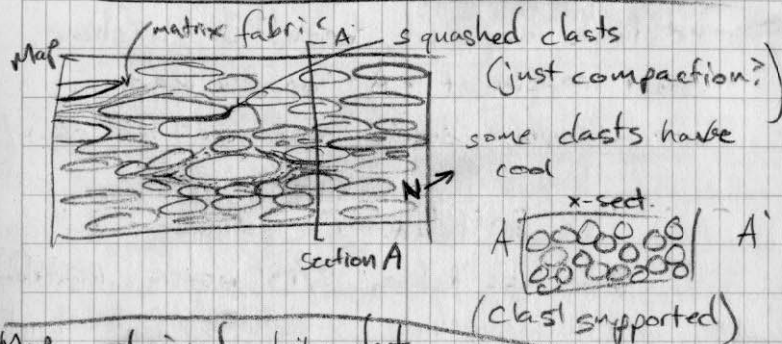
- Congo. Composed of largely quartzite/sc clasts, ~5 cm (small axis) x 25 cm (lg. axis). Some other liths recognized. Large clasts also present (angular) (~30 cm x 8 cm). Some weak bedding obs. in f.g. lenses/beds, esp on path nr. Plot and nr. cliff edge. Clasts in congo. appear "squashed" together with some clasts deformed against contacts w/ other clasts, matrix mashed and great fabric as strained around other clasts.

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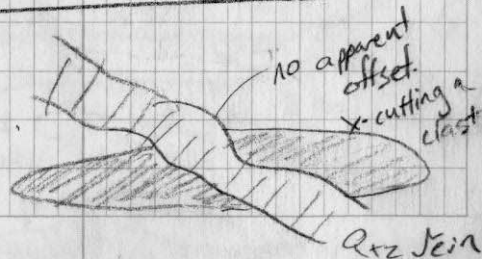
RI Ocp.

Notes cl. - some pebble/clast tops striated  
- some matrix looks like its lithified then strained!

- some layering in congo looks more strained than other layers (partitioned)
- followed qtz. vein in fracture across ocp
- congo clasts spherical in x-sect



END STOP ① CHASM,

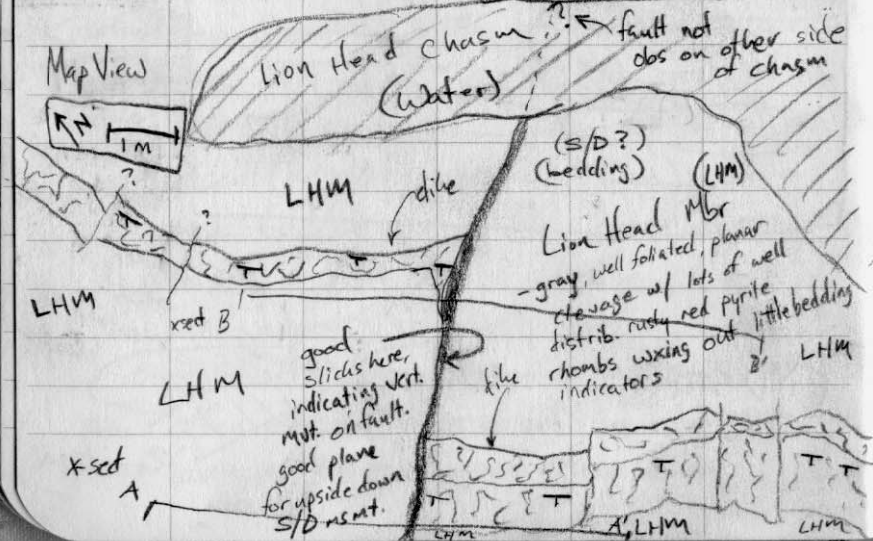


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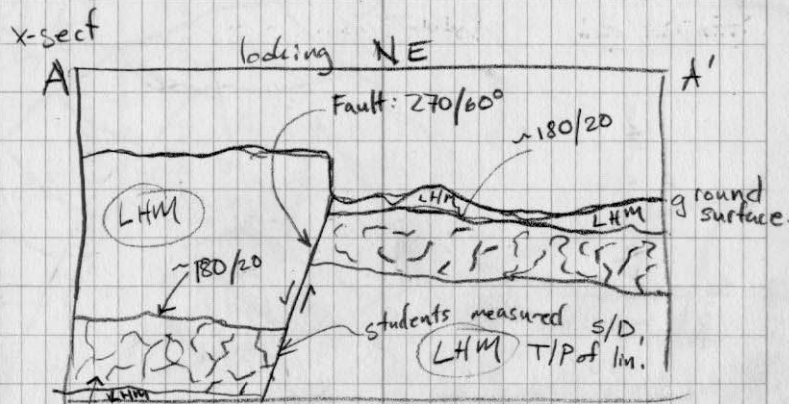
**STOP 2** - Bever Tail point-

- we take scenic tour through Newport Area to Bever Tail State Park -
- park in lot # 3, (Better, obser in Lot 4)
- cool lighthouse at point (bathrooms there)
- walk down (North) to mapping region, good surf!
- eat lunch in perfect, beautiful sunshine
- start mapping at "A" on the map
  - lamprophine dike (rare potassic?) +/pe ass. w/ Kimberlites, deep earth rocks) is cut by a fault. We discuss its geom.
  - discuss taking S/D msnts, Right Hand Rule
  - discuss making x-sections / fault mt. indicators
  - shear-sense indicators slick-a-slides



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RI Ocps



tons of spidery, irregular white qtz veins and void filling... maybe had been a rigid dike, deformed, fractured while local LHM was more flexy (ductile) and qtz. pref. ly deposited in open space in dike → OR maybe chemistry of dike was better for buffering qtz. precip. than LHM. (?)

- order of events

- LHM sed. deposited (f.g. marine sed environ)
- LHM compaction, lithification
- LHM deformation/metamorphism
  - How tell which first?
  - How rule out soft-sed deformation?
- Dike intrusion
- Brittle deformation, qtz. precip. in open spaces
- Uplift, Erosion
- Glaciation.



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RI ocpS

Location 2 @ Bever Tail.

- We move south, visit an outcrop to consider foliation, cleavage, bedding, intersection lineations, folds, etc. we make msmts. of the above and move to study a fold near the "C" on the map.

x/notes:

- foliation is a generic term describing thin layering ... it has no tectonic genetic implication
  - cleavage specifically refers to a planar fabric in the metamorphic rocks that has a tectonic and mineralogical context.
- The fabric is penetrative throughout the rock.

There are distinct regions that have variable

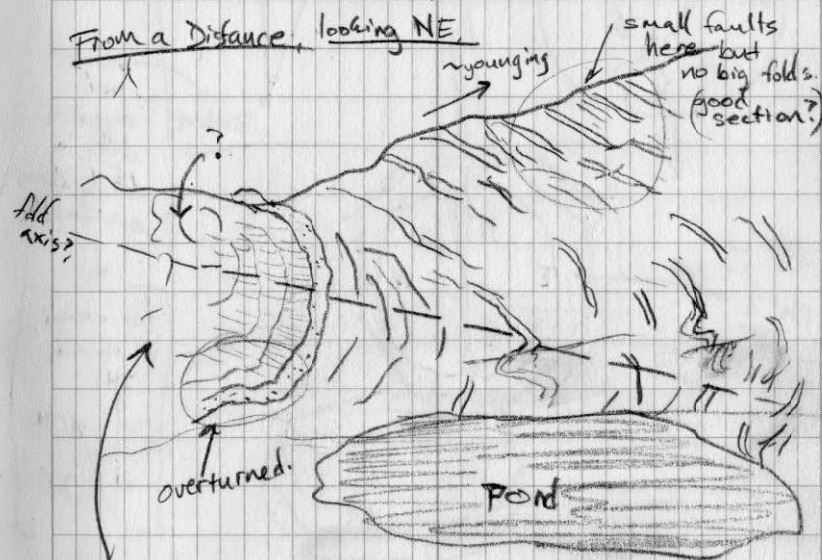
- preservation of bedding (or even visibility)
- sedimentary architecture (all muds vs. sand/mud alternating)
- degree of deformation (layer like to chos)
- degree of brittle fracturing and qtz veins

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@ loc. 2

- we find a fold to concentrate on.
  - we consider up indicators
    - truncated sed beds
    - x-bedding sed fabric
- we consider foliation and intersect lin.
  - use dip frisbee
- we try to figure plane of fold and T/Pst. axis.



This thing is an over-turned Anticline!

- Maybe w/ plunging limbs, maybe.
- It is all faulted up by younger brittle structures!

## Some Afterthought Notes

### - Setting Compass Declination

- Mag north <sup>(MN)</sup> dif from True North (TN)
- We want to measure True North
- We off-set compass dial so reads TN.

