

Sunday A.M. Oct 13<sup>th</sup> 1957

Dear Henryk:

Started this A.M. to draw up a panoramic structural view of Persimmon Gap - then thought what the hell - get the ink bottle and write a letter!

Your letter was very welcome and am glad that you are up and going. Had heard some rumors one way and another - am glad for you personally that you work for the shell and no more for an institution!

Have several problems in mind to discuss. You'll be surprised.

For the past 2½ months have been working up a geological map of a small portion of the Santrago Mts - its an area planed between Persimmon Gap and Jog Canyon. If you have ever visited the Big Bend - you'll remember Persimmon Gap on the way from Marathon to The Big Bend.

On the next page is a sketch - looking eastward.

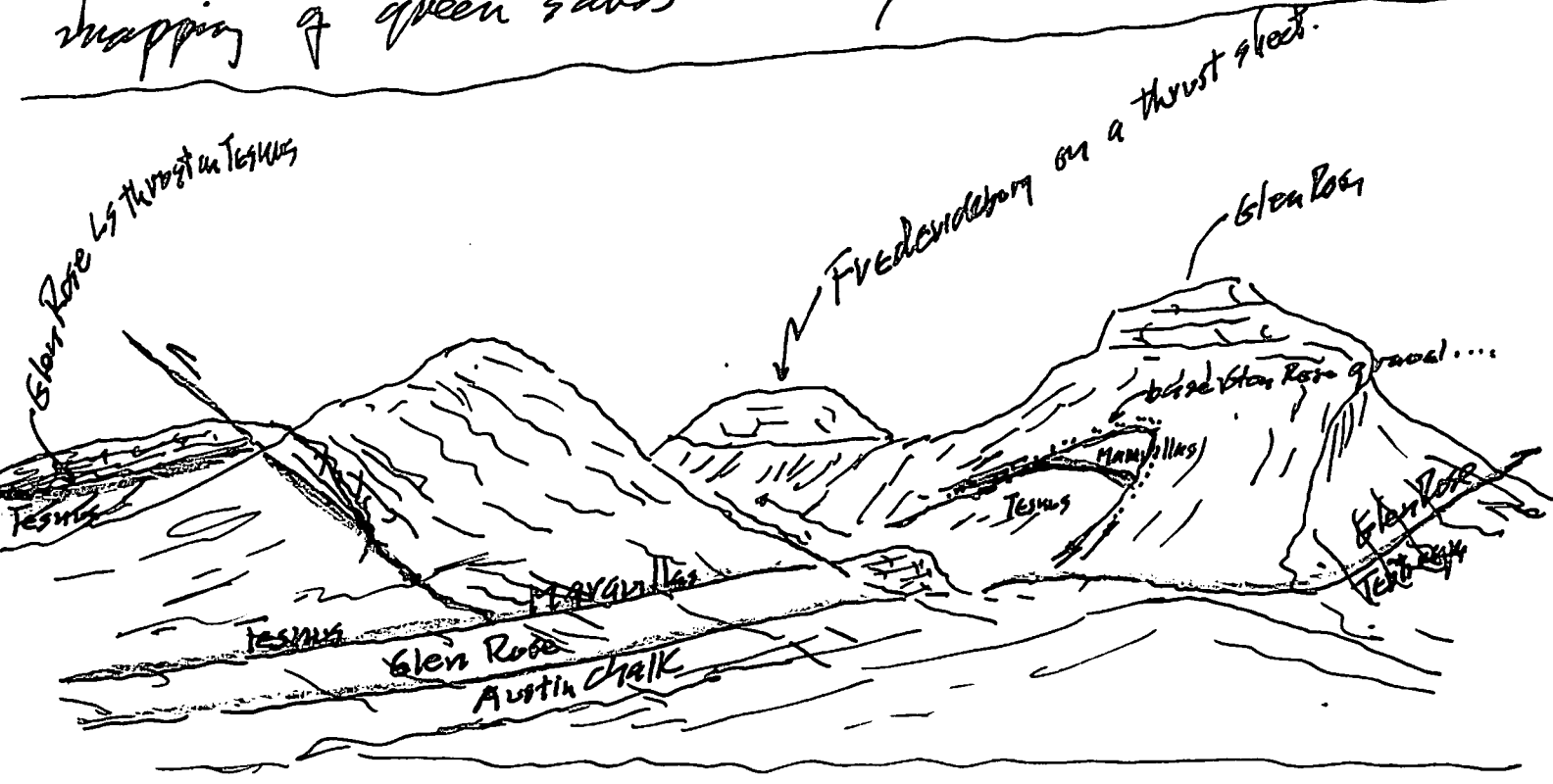
The red lines are pre-Cretaceous thrusts - from southeast. Green lines are post Cretaceous or post late Gulf Cret thrusts from northward. The green thrusting might actually be early Tertiary. Its a screw-ball map with 19 colour conventions. Have five major thrusts - involving Gulf Cret Cretaceous and paleozoics - one piled on another. You'd never believe it until you

② walked it - took about 1500 plane table shots and should have taken many more! The cross sections are just dreams - don't think many geologists will believe them Quien sabe!

⊙ Problem No 1 Tertiary!

a young man by the name of Chester Smith is working the geology of Caddo Parish + adjacent portions of Texas + Arkansas - and is using a shallow core drill to help. Seeing his dope you would at once recognize that the material published to date by the experts is all wet! and you just name the experts! on north Louisiana.

Wilcox <sup>in Caddo Parish</sup> rearing disconfably on Wilcox. Big Surprise. the Queen City of Queen City is Sparta. - all you have to do is study electric logs. The "Wrecks" of the iron mines of Caro County is Cook Mt. The mapping of green sands along the Rodessa fault



PERMISSIAN GAP  
Looking eastward.

(3) is all wrong - as is northern Caddo Parish.  
Chester just worked up a subsurface map from logs - of the area - then isopachs of 100 units - now is core drilling - then are hundreds of logs - the subsurface must fit into the surface!  
The reason I know all these details is that Chester is using one of my rooms + all the Gulf logs.

There is a <sup>subsurface</sup> unit of lignitic sds + clay in Cass County between the Redlaw + Wooges - but since the Sparta + Cook Mt are traceable across sw. Arkansas into Cass County and through the subsurface also to the Queen City locality - the "Queen City" should have another type locality.

Have been told by 3 east Texas geologists that core drilling in east Texas won't check the surface - in mapping - green sands were jumped - in particular in Cass County. So what! Have asked Chester to find all fossil localities possible. How different are the Cook Mt + Wooges on a paleontological basis?

## (2) Problem No. 2. Boring + phosphates

This is one next to your heart - phosphate nodules + borings! What do they mean - just a favorable marine environment - (to me). It's very interesting to check these features. Numbers of localities with chalk-clay contact - boring + phosphate nodules! In Mississippi the Taylor Austin contact at a phosphate zone at the top of the Arcola ls - let 9 feet below there is another phosphate zone. Which is the big unconformity? which one do you use?

(4) The choice depends upon your understanding + usage of the word "unconformity". Does the term mean a surface of subaerial erosion modified by marine planation? or is it just a change in lithology - therefore an unconformity.

I have attempted to follow in the field the U.S.G.S Austin-Taylor contact - it's the one at the top of the Guber chalk in some cases - elsewhere it's clay/clay with or without phosphate nodules. I am lost! at localities the chalk/clay contact is without phosphate nodules. What then?

In the Guber chalk there are two phosphate zones - in chalk - is this to be taken that two unconformities exist?

I have not read as yet the Stearn's article but will - am reviewing Pettijohn concurrently.

Out in the Big Bend area the clay/chalk contact is considered by many to be the Taylor Austin contact. There is a locality near Study Butte that our friend W.S. Adkins told me about - phosphatic ammonites in the Terlingua clay - not an unconformity - but the same ammonites as at the clay/chalk contact in pits south of Paris Texas.

The Doctor however went with us to Study Butte + looked at chalks in the Terlingua clay (so-called Taylor). In these chalks

⑤ were all the Austin communitites you might wish - he said - I believe the comments - the Taylor-like Terlingua clay is Austin!

Noted in the AAPG the article on phosphate nodules at a limestone clay contact in the upper Pennsylvanian of Kansas - also the "boring" at 60 foot depth on the bank off the Gulf Coast - also in the AAPG.

Where did the idea get started that borings and phosphate nodules indicate an unconformity? Just looks like there mean a sea bottom environment - who proves that the phosphate nodules were transported from a land surface undergoing erosion. I am all confused!

Problem No3

Which may make you laugh loud & long!

I have proved to my own satisfaction and well-being that the salt intrusions - the salt domes of north Louisiana + NE Texas - DID NOT intrude because of the weight of the overburden. The idea that salt acts as a fluid is all BUNK to me. There are some simple facts about salt domes that Nettleton overlooked. I'll tell you about the thesis when I see you next.

I am going westward the 1st of November to look at "Wrench Faults" - slip-strike if you wish. Interestingly enough an association

⑥ may be a thrust or a graben (NOT a manifestation of tension in the earth's crust).

Guess you'll think I am getting to be a cantankerous old man - well that's right - we retire after the 1st of 1958 moving to Edwards County. Will then have nothing to do but keep deer hunters and geophysical crews off the ranch. It's really a job to keep hunters out - both kinds.

Well will be ending this - keep happy - don't think about anything but how the "cow eats the cabbage" geologically. Take it easy as you can - hope the girls okay  
Best wishes  
Sincerely

Dry

By the way! Are the Anacacho limestones - reef limestones? Why the asphaltic material? In shallow wells we have bailed heavy oil - it would flow. I can't about guess what ranches to be drilled just why the asphaltic material in the near surface rocks - from below or in place! It's really wide spread.

USED ONE PINT OF INK!