Truro Decmr. 5th. 1842

Dear Sir

I forward You by Mr. Ross two or three Specimens of plaister of singular appearance for the mantle piece. I promised them to Your Mother when at Pictou. I am sorry that I could not obtain any thing more interesting. I was in hopes of reaching Parsboro during summer and there meet with something more interesting. Please present them with my compliments. After parting with You at Keys's, Mr. Lyle regretted that it was not in his power to spend another day at Browns, the place from whence You commenced the Survey, as He was anxious to Know what intervened between the Lime Rock and the red freestone formation at Greys. The House near the Rock on the road we went down from Truro village distance about 1 mile, I send You a sketch or plan for Mr. L— The Lime Rock You commenced with is about 20 feet thick much Contorted, under side very hard, brittle, color inclining to red, much like Chert, then follows underlaying with conformity of dip a Stratum or bed of fine laminated Slate of a red micacious nature resembling the leaves of a book much com=pressed and about 10 feet thick and the same with the addition of the mica as that on the back of Lime Rock forming the lode, that You commenced with —

then a Stratum or Layer of grey ~~free~~ Sand Stone partly
Crystaline about 8 feet thick much compressed
hard and brittle this is in Cleavage of about 1/4 Inch
thick — then a Stratum of very hard Slate nearly
Compact with mica in particles of whitish appearance
about 8 feet thick then alternateing with Quartz
Rock ~~[illegible]~~ brittle and very Hard then with Slate
untill it ends in heavy Ranges of Gray Quartz
and Grey wacke much Compressed and as
It approaches the red freestone of Truro Channel
it becomes highly inclined cropping out
N. by E it there meets the Truro free Stone cropping
out in the oposite direction and dipping E N E
Shewing plainly that the black Rock Limestone
lays the Carboniferous formation of the Shubenacadie
and that It is a Separate Section from the Truro
I find Cross Sections in those old Rocks with
heavy lodes of valuable minerals this is proof
of Truro being rich in minerals, — now for
fossil Shells or chronological tests as Your friend
calls them I send You a lott of them many differing
from what You obtained at the Shubenacadie
Mr. L requested that I would send any new
Species to You, I since met with very extensive
ranges of fossil Shells in beds lying horizontally
aparently in their primitive form as they
rested on old Contorted lime Stone highly
inclined with fossil Fish and free Stone
of anterior deposit.

(with the fossil plant) of same inclination and under this Clay Slate in an adverse direction at Clarkes in Brookfield - I send you one of the fossil fish - I find the great Invertebrata &c and fossil fish and fossil oyster and other shells in highly inclined lime stone much indurated and near Corral agreeing with the Ludlow Section as laid down in the classification, this is an important section the one I named to Mr L in your presence. and the one I wished him to inspect while with you. You know I am a Metaliferous man and care nothing about Shells - However I cannot pass over the fossil oyster without commenting - as Mr L said when He wanted the Euomphalus as the Key - the Oyster Shell is the identical species of that now in a living State at Cape Breton. and perhaps the accompanying shells found with the oyster and the fossil fish, can be detected in species similar at Cape Breton - I send the fossil Shells and fish to you, we have not an oyster Bed in the Shubenacadie or the whole of the Bay of Fundy. in a living State, this shews that during the time, this part was under the Sea that It was governed by the same Sett of tides as Cape Breton. consequently the oyster then could exist in a living State, when the water receded It gave new boundaries and

Created

new laws and caused an additional impetus
to the Bay of Fundy tides so that they ~~could~~ not
exist under the great rush of tide and removal
of sustenance, this perhaps on enquiry would
lead to the cause of the Erratic Blocks in certain latitudes
and throw some new light on the cause of change of
Tides and other matters connected with our Bay
by referring to maps and taking the high ranges of
Land in the Latitude of about 50? that serve as boundaries for
the Ocean and confine the ranges of Ice that is
supposed to be conductor of those deposits that are
unaccountable for in any other way. this would
open to the reasoning faculties of a light to assimilate
and connect in Geological order.

The sulphate of Lime or what is generally
known by the name of Plaister seemed to attract
his attention. He has not an Idea of the extent
of this formation, it is very extensive. It rises
near Windsor and extends on to Cape Breton
It makes its appearance but seldom to the Eye
in comparison to its great extent. I have traversed
Its range and am acquainted with the range of
Country it makes in, it is closely connected with
the great fossil shell beds that exist in certain
woodland districts ranging generally the central
part of the great basin lying between the mountains
of Londonderry and the eastern ranges of slate in
this province. He is also unacquainted with
the enormous extent of Fossil Shell Beds. +

+ that it ranges through at the
Shubenacadie

they are
are but few in number and comparison to what
exists. I feel Confident that the formation of
saline springs and
Plaister is created by the decomposition of Animal
and vegetable matter that gives rise to Sulphuric
acid and then the violent Chemical / action
that takes place with the Lime that accompanies
disengaging the Carbonic acid and becoming
the sulphate of Lime. Plaister is ejected from
below by fusion when it makes its appearance
in pyramids It stands elevated and destinct
from all other surrounding formations towering
to the highth of from 3 to 4 Hundred feet.
the external Confines of Plaister is allways
surrounded by lime standing vertical which is
brought from below as it bursts forth - and
the pyramids and kettle holes which is formed
that is allways vertical I mean the latter is a
mechanical formation while in the act of Cooling
they extend down in some places to the distance.
of from 1 to 200 feet and allways vertical - and
sometimes not more than 3 feet in diameter its
singular while the chemical action of Crystaliz
is going on at the same time that It should
also form into parallel Strata and also into
Circular forms. as if to finish all and
Pluto gave the cauldron a whirl to finish
with; for instance Graham's and White's
big plaister Rock on the Shubenacadie
that Mr. Lyell

admired so much. upwards of Twenty thousand Tons has fallen from the East face that has destroyed its external beauty. nevertheless it was fortunate for White the advantages in Shipping—

Plaster I consider to be the production of various period. Its newer than fossil Shell and formed since the Sea receded from this Country for instance all the pyramids of Plaster that extend for miles in some sections of Its range there is not a trace of Erratic deposit on its surface – Trees grow luxuriantly on Its very summit and if It was of a very old formation vegetable matter would have decayed and filled up the Kettle Holes – there is matter connected with the Plaster formation and [illegible] the fossils connected with Geology that It requires to be looked into

I understand Mr L intends visiting at N S Next Year we must endeavour to excite His mind with matters of fact that Nova Scotia affords and not allow our great fossil Beds of Shell. Vegetables – Coal Plaster – Fishes & Tides to go unnoticed we must endeavour to make Nova Scotia the Key to Geology

I send You a Specimen of transparent Gypsum I find It in great abundance in one of the most extensive formation of Plaster in Nova Scotia this is taken from an under Eruption where it had been under violent Chemical action forcing through and carrying with It an immense load of Breccia of Grey Sand pudding Stone &c that can be better explained on seeing and by verbal communication than writing excuse these extravagant remarks and the encroachment on your time with best respects to the old Lady and Gentn. Remaining Your's

Sincerely

To Jas Dawson Esqr. Geo Duncan

Pictou.

N B — there is an enclosure in white paper of some fossil fish or Quadruped let me know what ~~it~~ is they are abundant in lime also a cluster of Shells same as I found below the old Saw mill at Gays River and gave to Mr Lyell