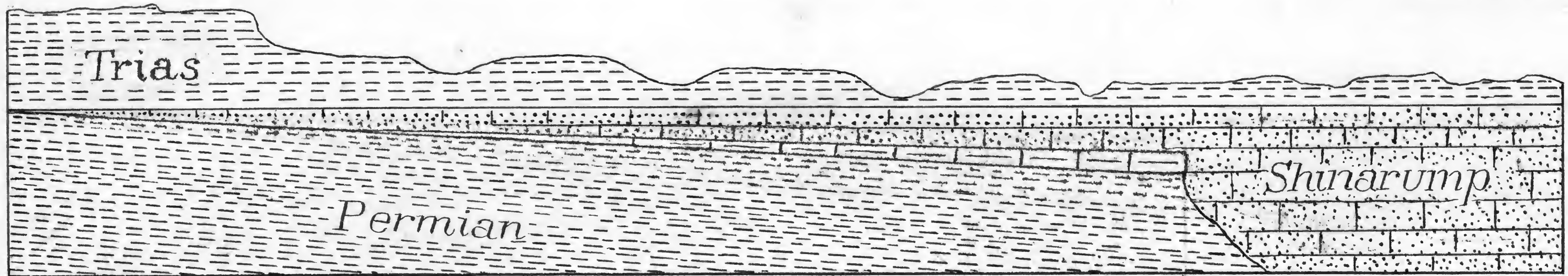


Fig. 12

West

East



K-12

K

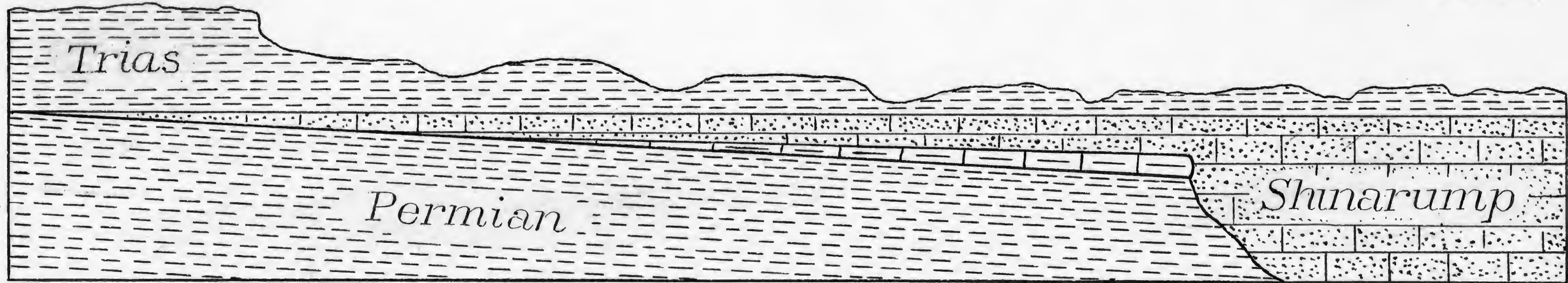
Red 3

Reduce to 4 3/8 inch.

W.F. 2.5

West

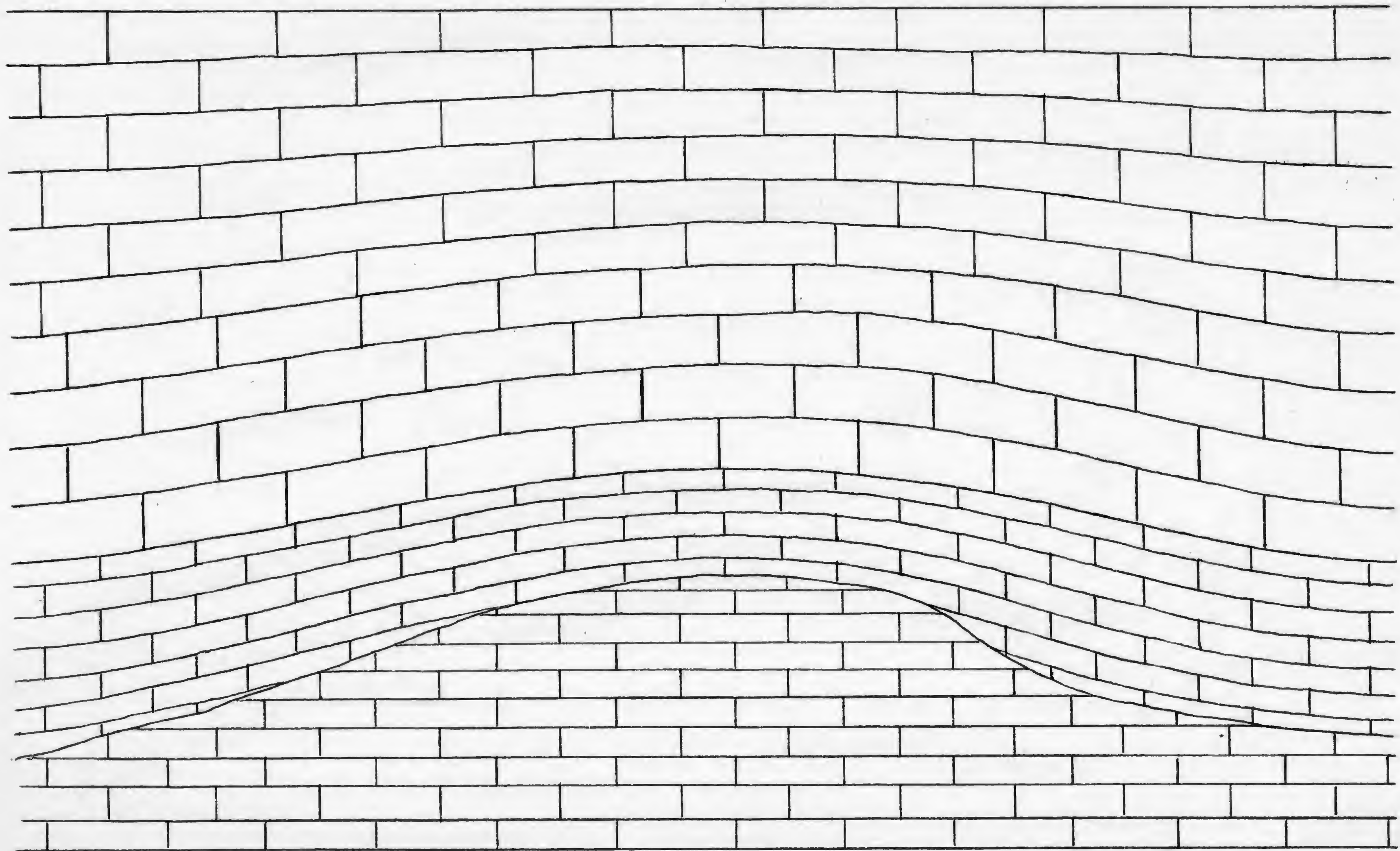
East

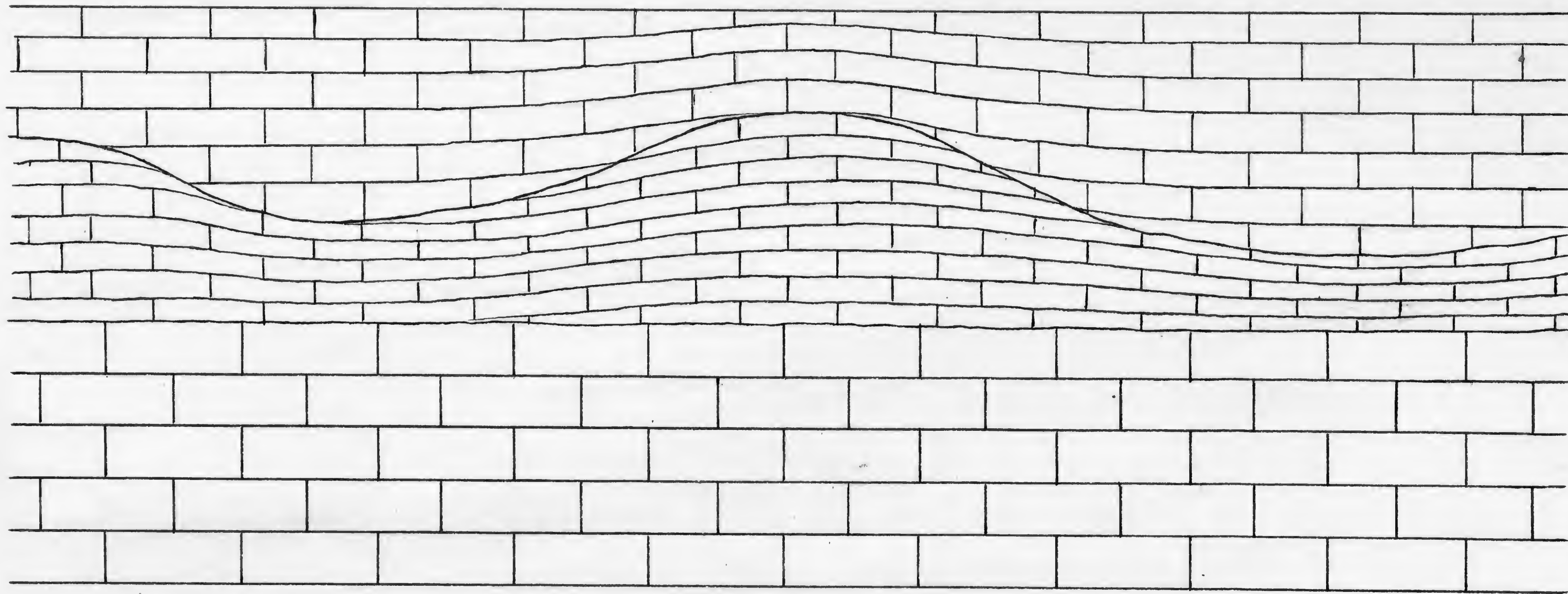


Trias

Permian

Shinarump





Kiabab plateau
Kai

West
UA Aubrey Limestone = U.A.
LA Aubrey Sandstone = L.A.
RW Red Wall Limestone = R.W.
Tonto & T.Sd Cambrian U.T. + T.Sd

Pre Cambrian ^{Cambrian} Terranes
unconformable Pre Cambrian Terranes
Chuar shales underlain by the superjacent to the
Sandstones of the Grand Canyon Group Terranes

Sea Level
Section 12

Butte Fault

Chuar Butte

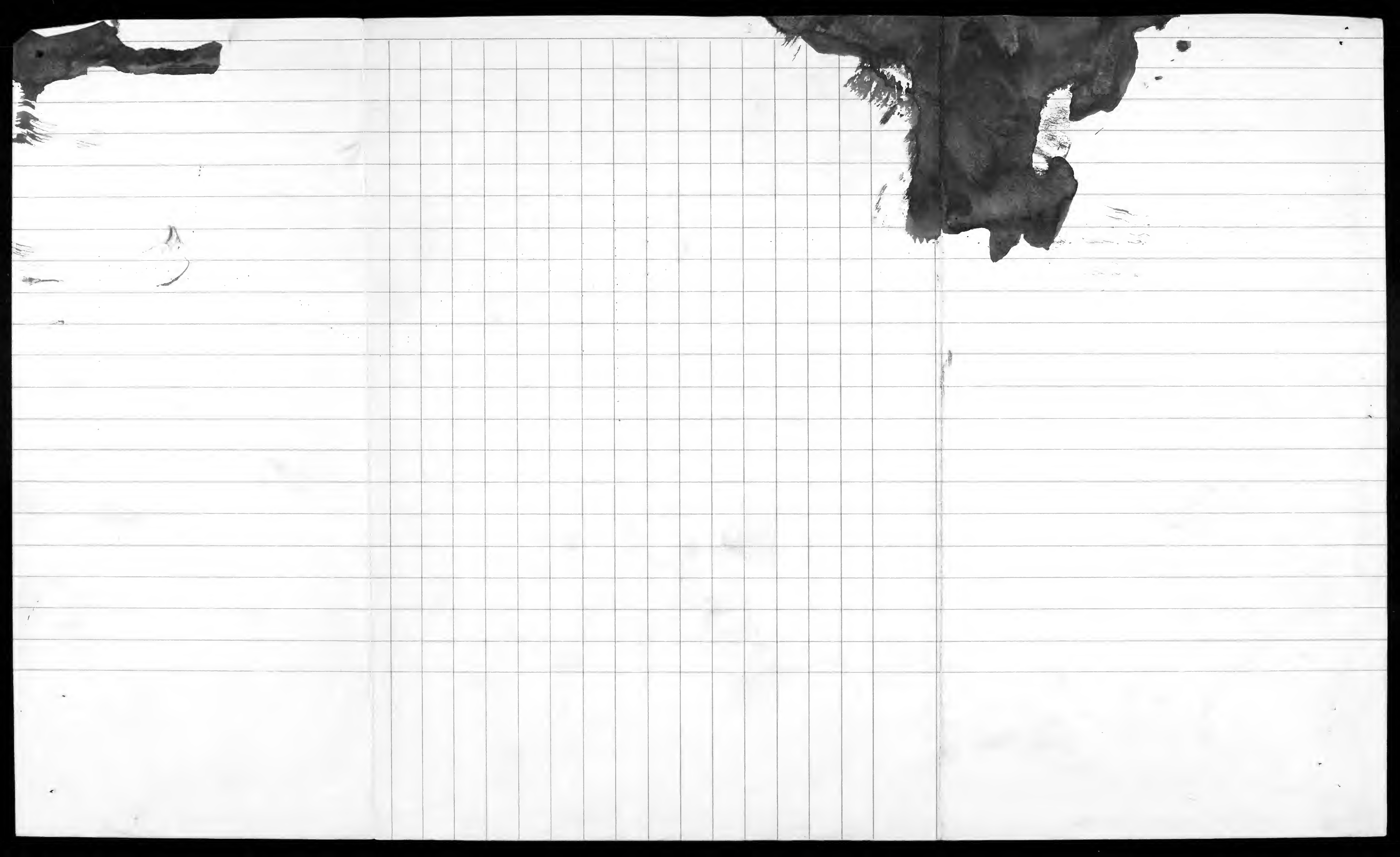
Colorado River

East

U.A. UA
L.A. LA
R.W. RW
U.T. + T.Sd Tonto

Pre Cambrian
Chuar





No 2

h. 159

I & II



III



c = Carboniferous, D = Devonian - S = Silurian

Sketches

Cross bedding - (Old notebook p. 14, Copy sketch)
" " " " " 19 " " "

Cliff at mouth of Upper Grand Canon " " p. 15

Section across Chaco Valley Notes p. 63 & 60.

Slyke p. 68 -

Lava Beds Notes p. 100 - 102.

Illustrations

Permian - Unconformity - 3. Uca's,
" strata 2 "
" Congl - at base 2 "

Pre-Cambrian.

Sketchbook, Nos 5, 17, 18, 19, 20

02

100

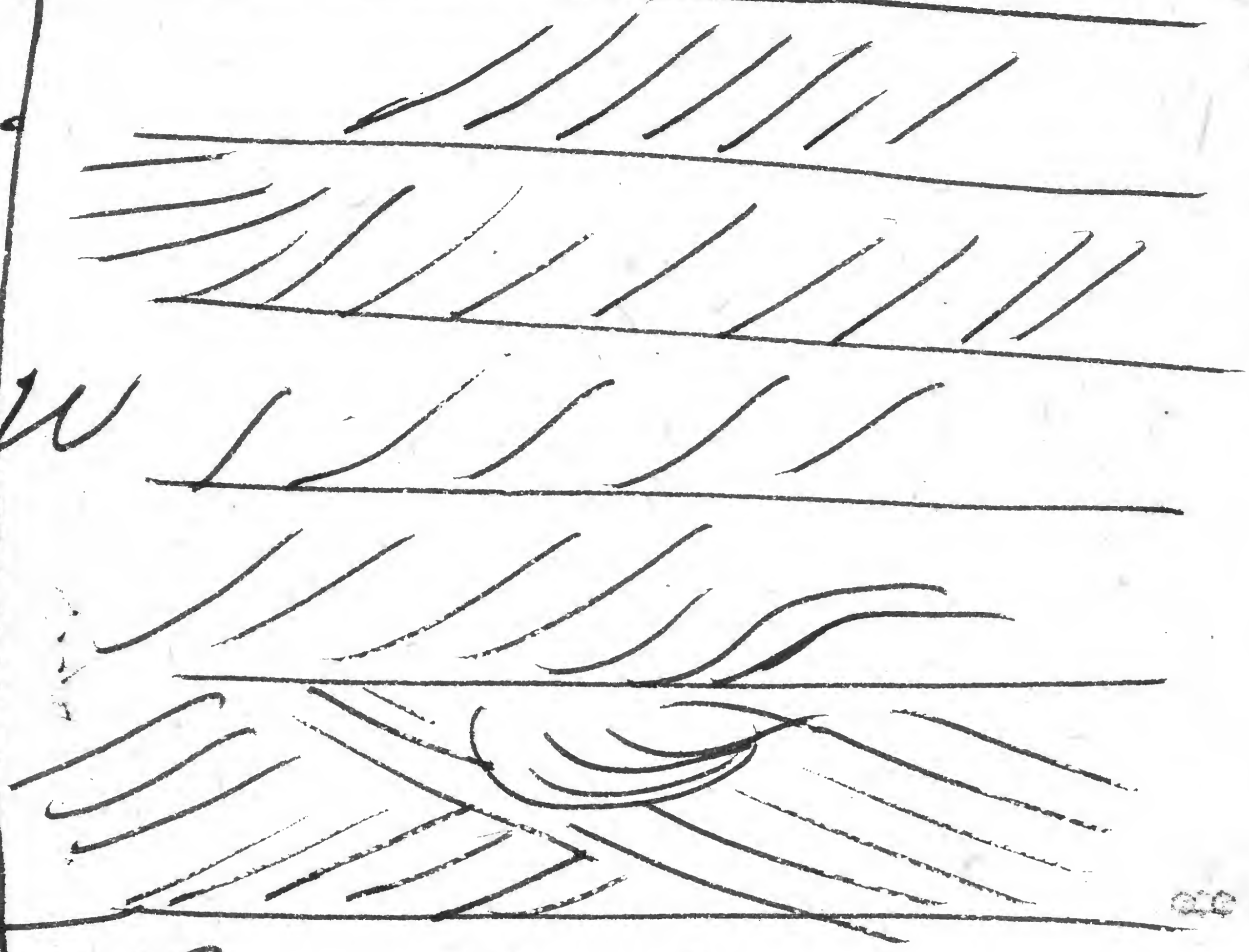
Point

Hard

1075

W

E



Redish bed

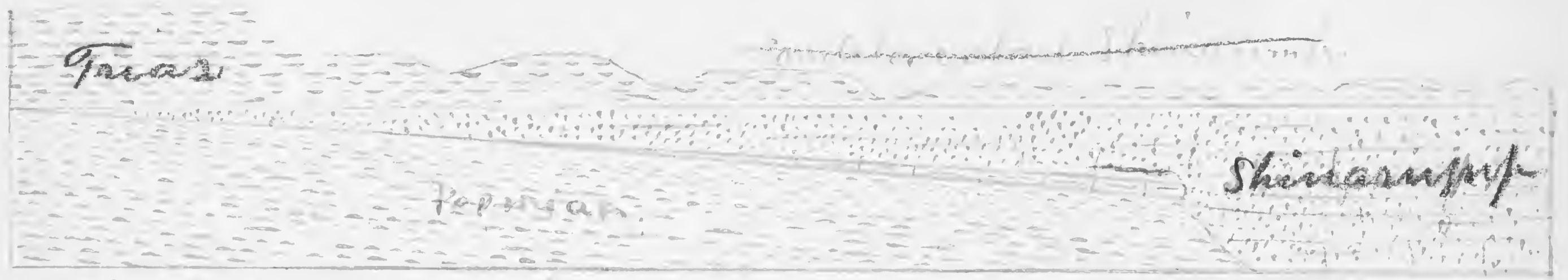
Section of white cliff
1 mi w of Kanab Canon

Aug 28th 1879

Pg 74 notebook.

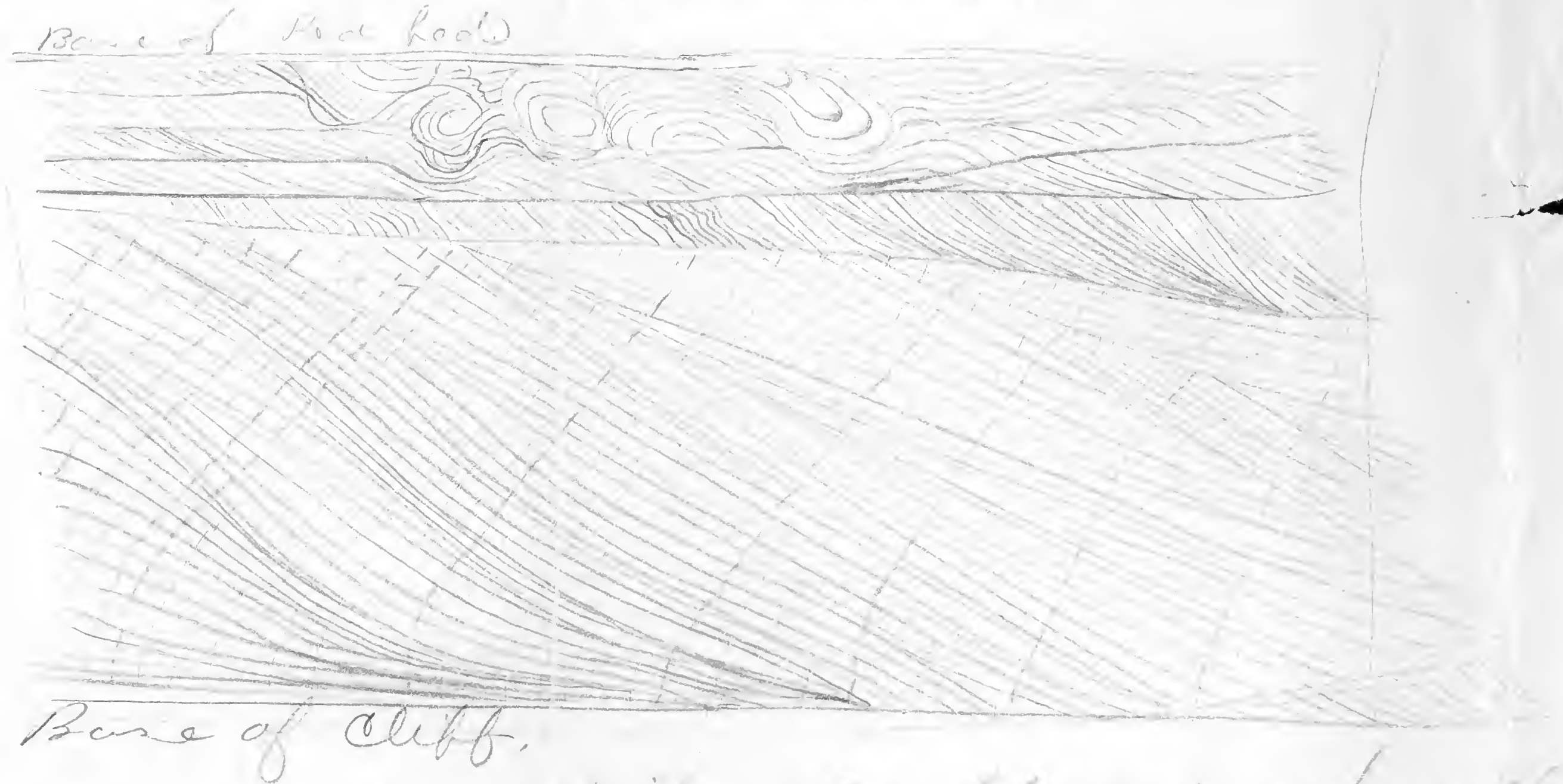
West.

East.



Section showing the thinning out of the Upper Permian and the Shinarump conglomerate against the more highly inclined Permian strata beneath. The Permian cliff is introduced, although concealed by strata on the west side of the section.

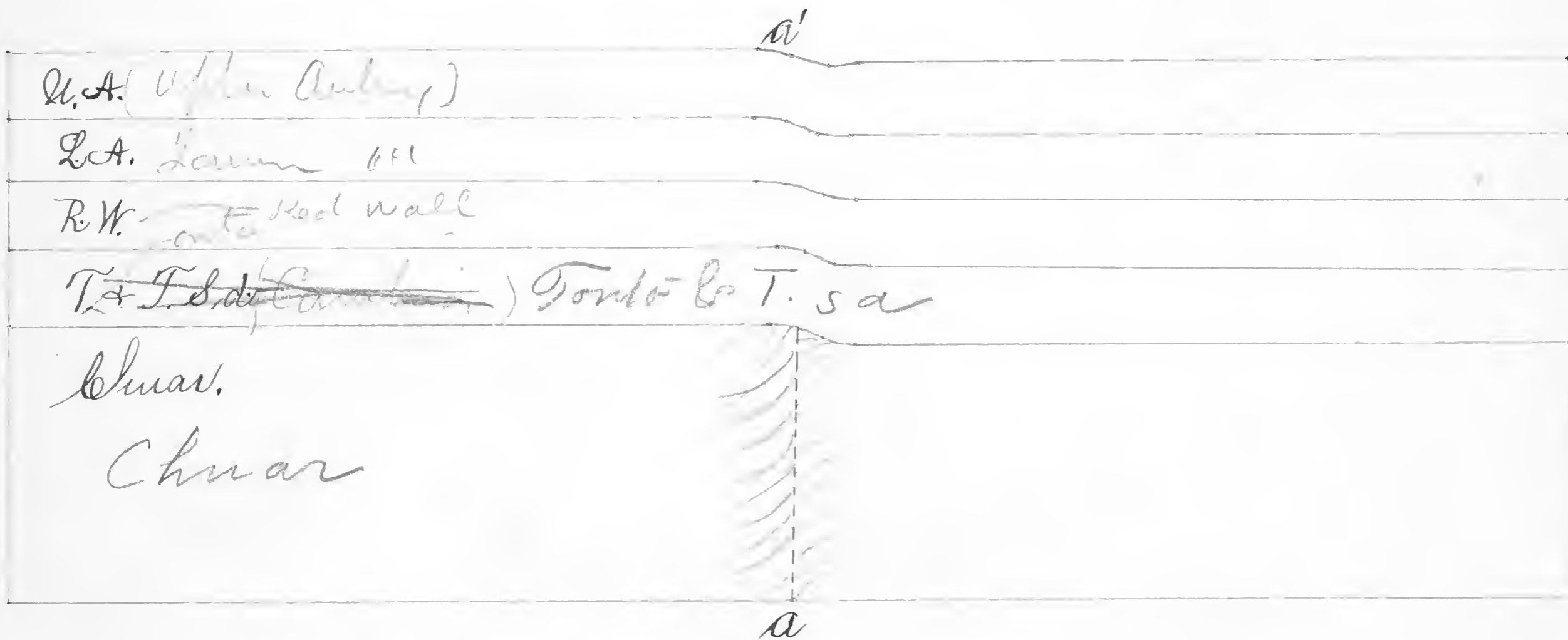
Sketch of Crossbedding etc with lines of cleavage
running at right angles to the lamination of
the strata. Not pines etc.



Aug 4th
Page 74
notebook

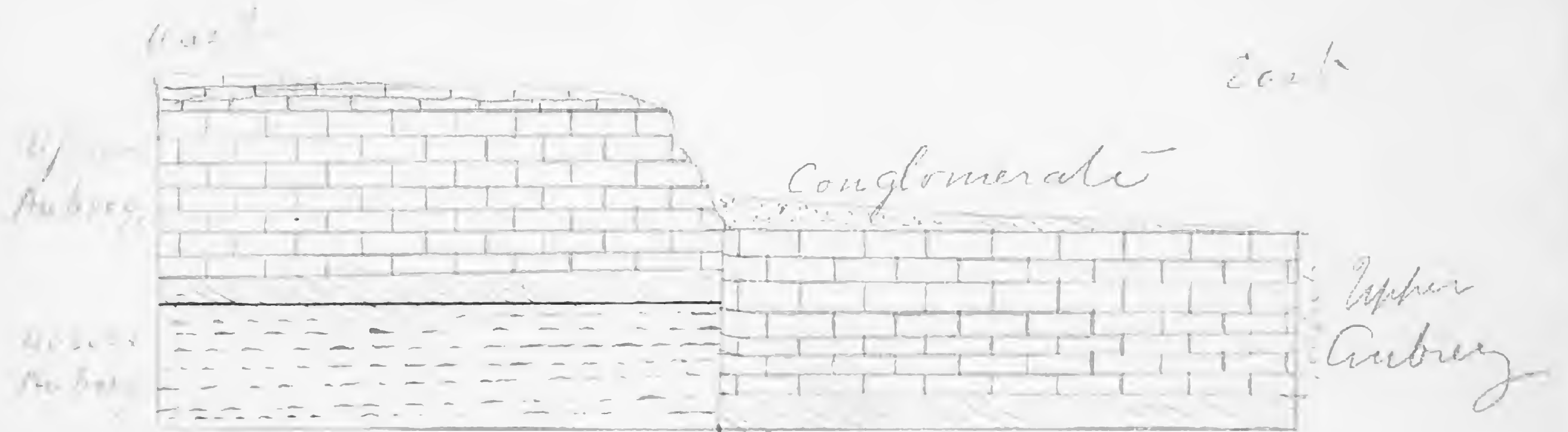
This is seen in the White Cliff 1st especially
in the outlying buttes also in the light colored
sandstones beneath. Adm. Sept 30th 1879

10/22



Section 11. - Ideal section of the position of the strata on the line of sections 4, 5, 6, etc, before the breaking of the monoclinial fold, portions of which are preserved by the Tonto sandstone in sections 5 and 6.

Section 17



Section 14

as shown by the increasing size of Permian (Glen)

The East Karibab displacement may have begun at the same time as the Hurricane ^{fault} movement, or the latter ^{continued} on through Permian time. It is probably that the era of the deposition of the Permian was one of slow movement of the sea bed. Elevation and depression are shown by one strongly marked unconformity by erosion in the lower portion of the Upper Permian ^{unit}. The sediments are mostly detrital in character ^{and} ripple marks and other ^{indications} ~~signs~~ of a littoral

seen as well in the fields south
of the Shivansh cliff 18 miles south west
of Kanab Utah.

Section 10

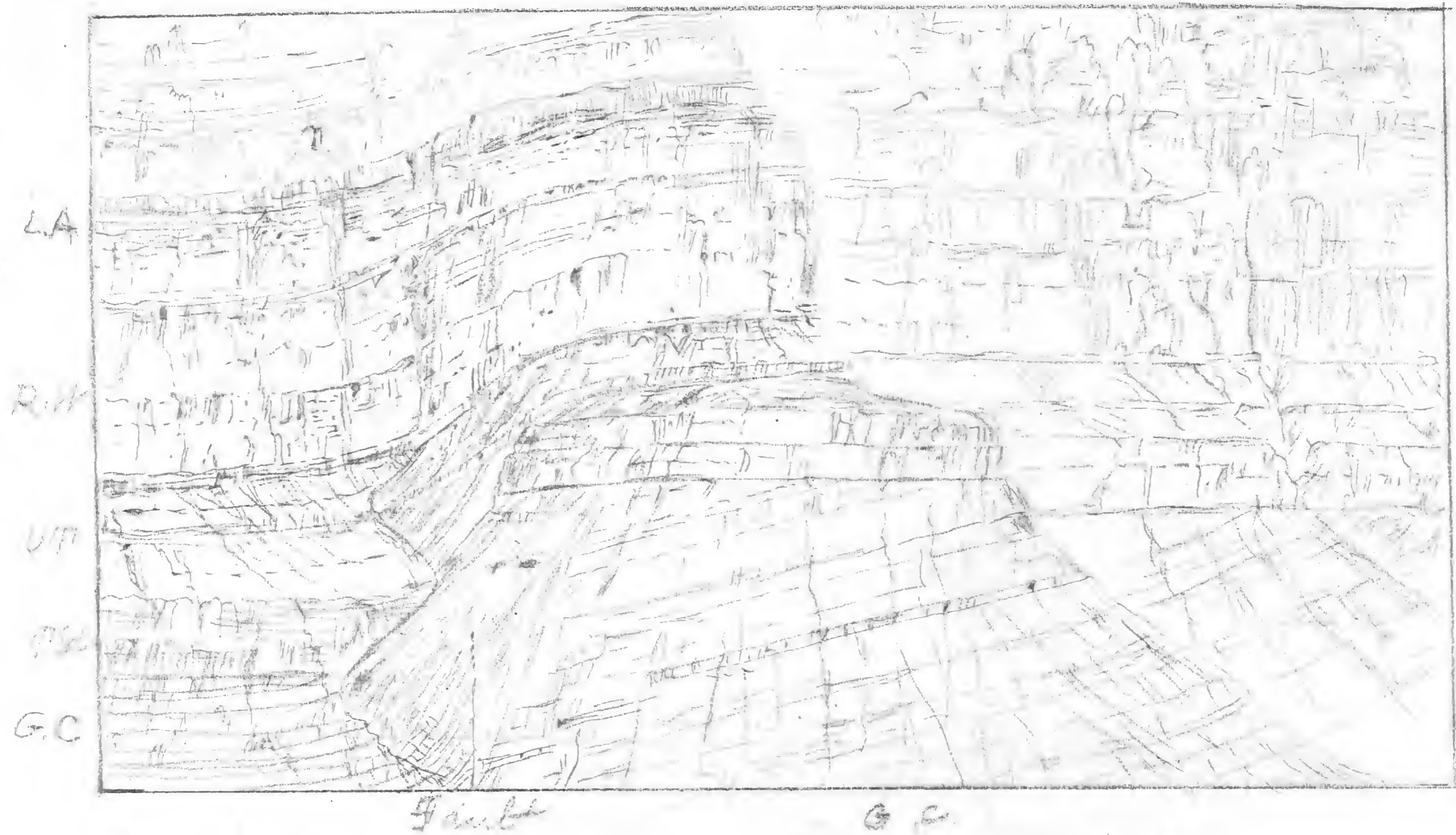
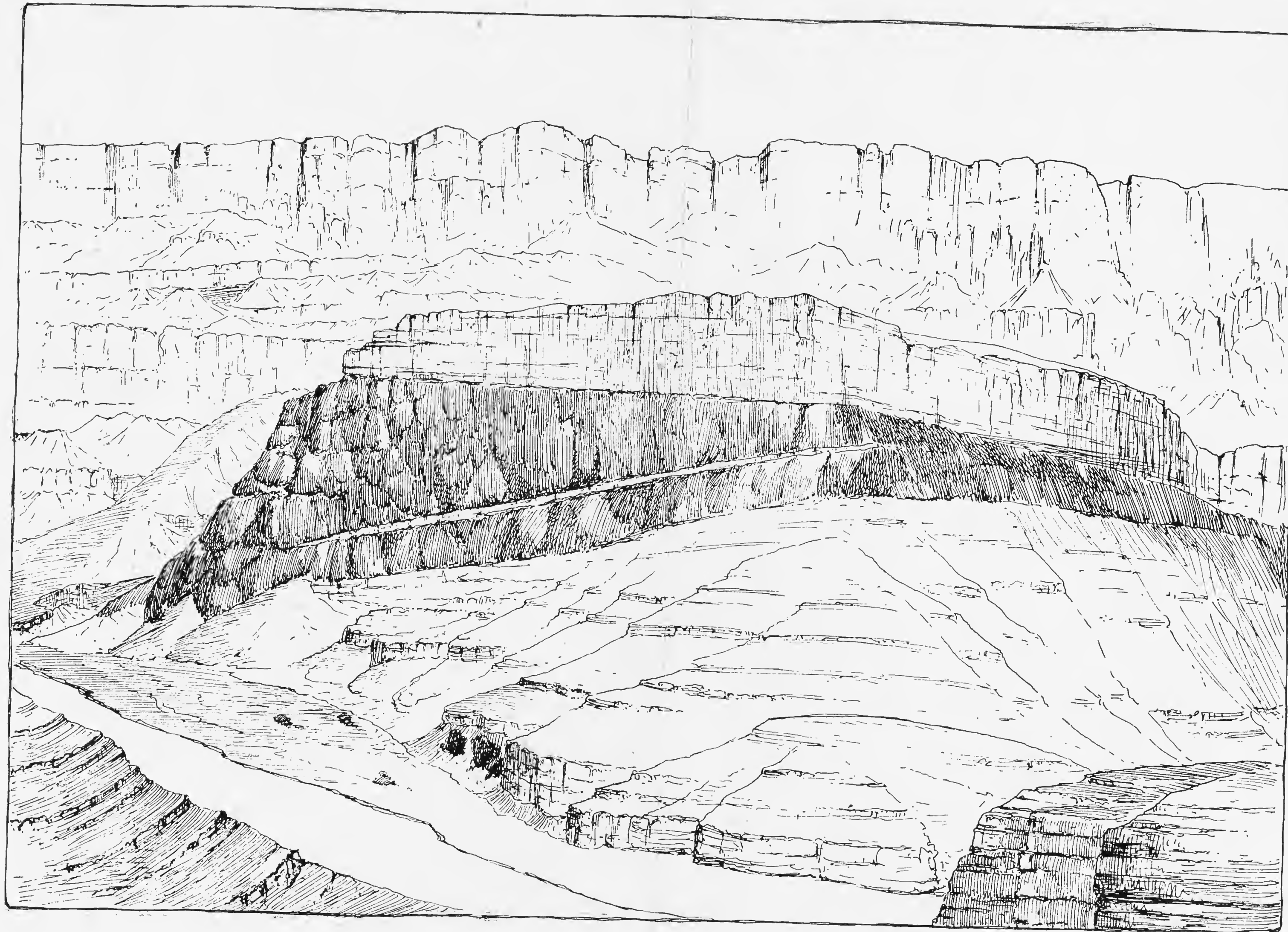


Fig. 11
Section 10.- Sketch of the east side of the Grand Cañon, opposite the mouth of Chuar brook. The displacement of the massive lower Tonto sandstone is distinctly shown; also the butte fault and the arching of the Upper Tonto strata over it in a simple monoclinial fold.



Section 10.- Sketch of the east side of the Grand Cañon, opposite the mouth of Chuar brook. The displacement of the massive lower Tonto sandstone is distinctly shown; also the butte fault and the arching of the Upper Tonto strata over it in a simple monoclinial fold.

14064.

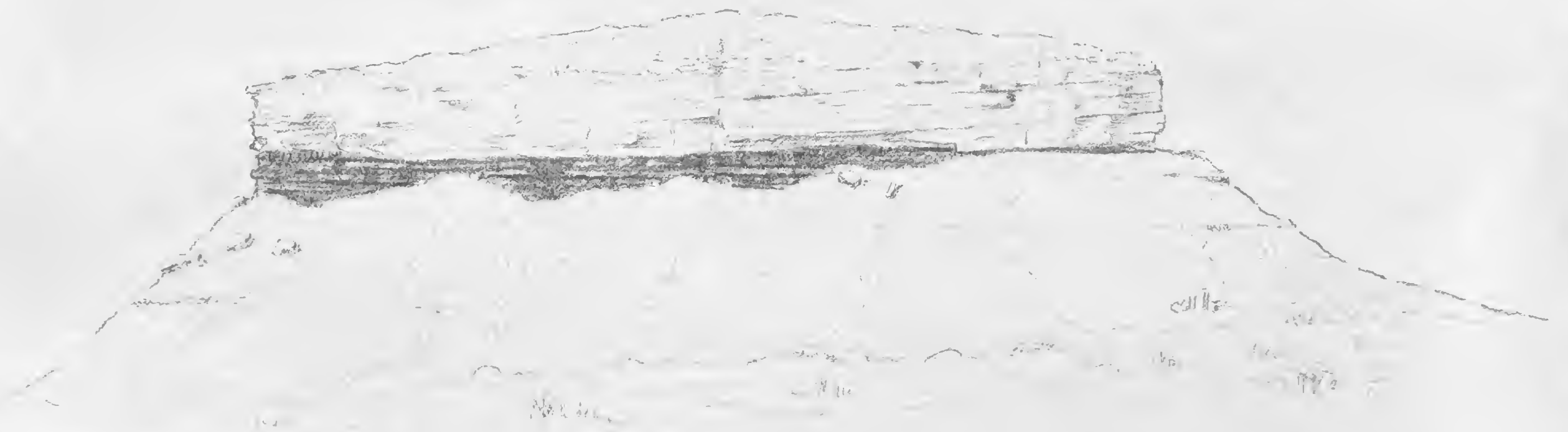




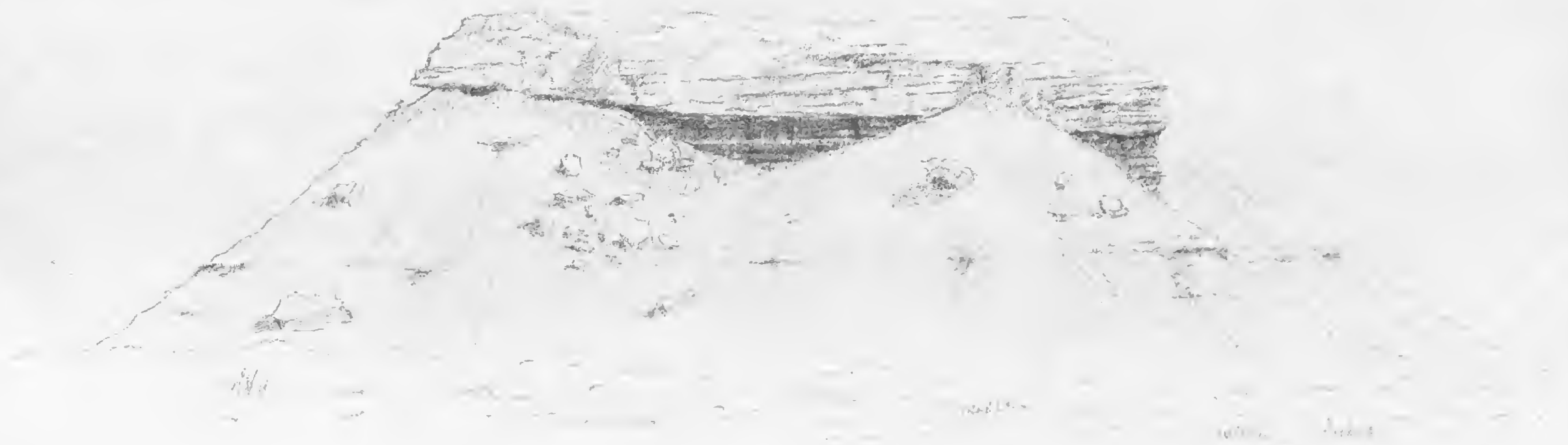
East
9/8 '82.

Cliff mine mines S. W. of Ramab,
half a mile W. of Dunderberg Butte;
Bearing, W, distant 600 yds.

Showing Plane of Unconformity by Erosion between
the Shinarump Canyon, and the Permian.



Middle Butte, -
Bearing S.W., distant 500 yds.



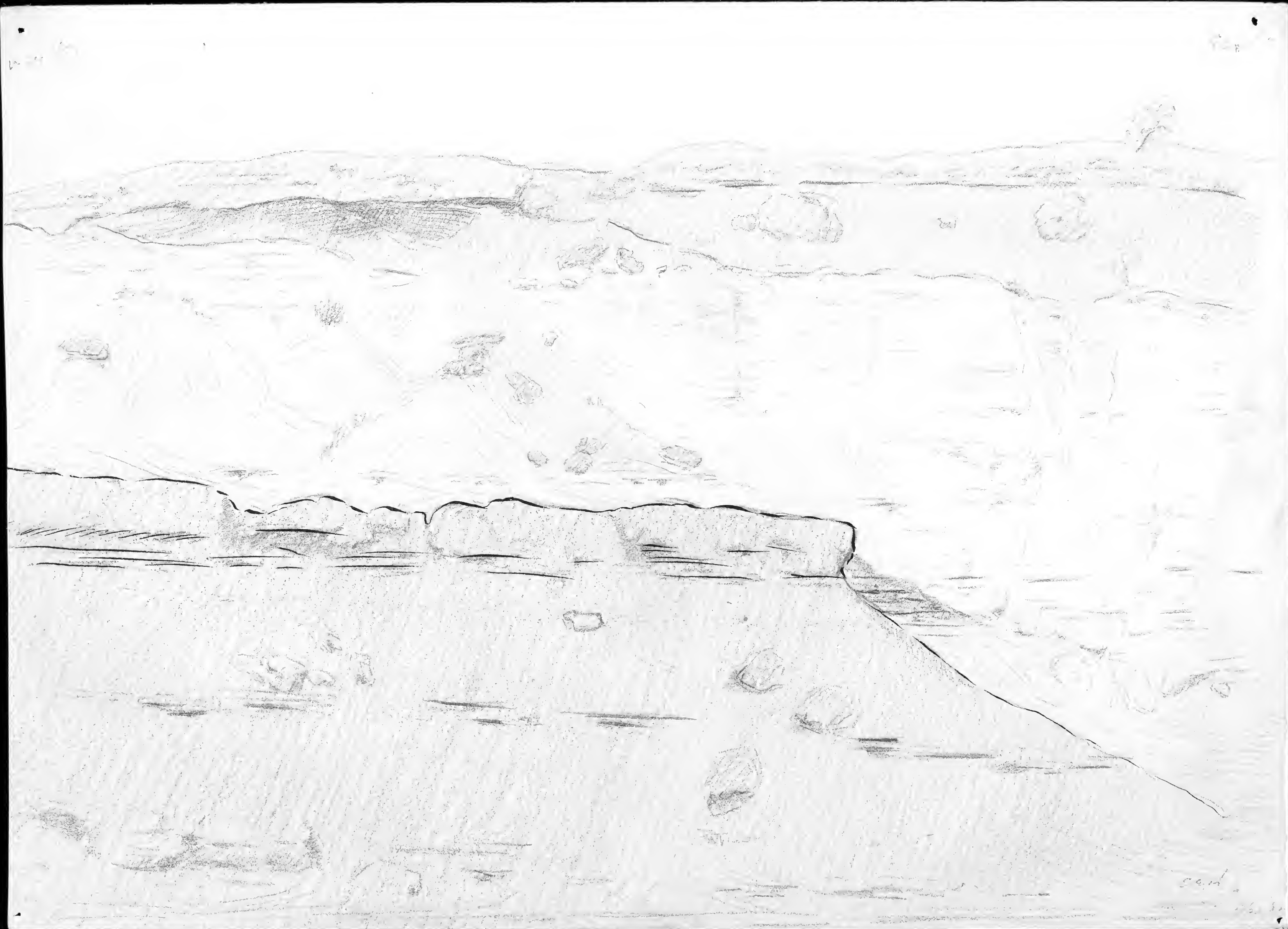
Southern Butte, -
Bearing E., -distant 600 yds.



Middle Butte, -
Bearing nne., distant 500 yds.

Sketches of the Three Buttes 11 miles S.W. of Kanab,
showing Unconformity by Erosion.

Est.
3/7/82.



cont.