

Geological Specimens
h¹ ⁶⁷⁷ ~~1834~~ ——— 2851



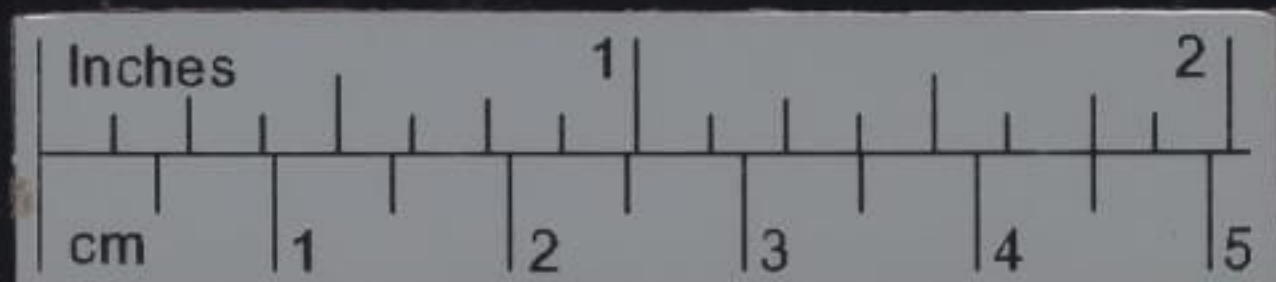
DAR 236:2

C. Darwin

MS. DAR. 236. 2: ff. 1-46
Front cover

Foliated 2015 November 17

ADP No folios loose:
Covers separated
& detached



1.

Red = 1000 +

Green = 2000 +

Yellow = 3000 +

M. means paper
with measurements.

DAR 236.2.



1682 These rocks were obtained from
a quarry opened by the Spaniards
to build the Fort, - to the East
 $\frac{1}{5}$ of a mile. -

1684 or alternate one with another
without any fixed order. -

1834

1677

✓

1678 ✓

1679 ✓

1680 ✓

1681 ✓

1682 ✓

1683 ✓

1684 ✓

X



3

- 1834 Jan: Port Desire. West cliffs. -
1677 ✓ Fine. dull red Oryctz, hard
conchoidal fracture, square, white
earthy crystals, very little quartz
lies above. (1678 & 1679)
1678 ✓ White hard FeD: rock. many scales of mica
1679 ✓ Pink red semi-cryt. Oryctz. with
specks of earthy FeD: rock. - Both
beneath 1677
1680 ✓ Pileolite, most intermediate between
Oryctz (1677) & rock. (1678 & 1679)
1681 ✓ FeD: rock. hard. very few specks of
mica, semi-cryt: occurring with (1675)
x Near the Fort. -
1682 ✓ White Pileolite. rock. lying above (1681)
1683 ✓ Coarse, softer, earthy variety, in which
upper parts show lines like water
deposit; then, seen in great scale, sometimes
knotted sometimes having
1684 ✓ Pale purple Oryctz, with some crystals
lying over a heavy sand dip with 5
following specimens. which pass



1719 Lying on surface (from great
Oyster bed?) diameter about 7
inches; very hard & heavy. -

Thirsty Hill

1720 Same situation as above
was unable to bring it home. -

1684

1685 ✓

1686 ✓

1687 ✓

1688 ✓

1689 ✓

1690 ✓

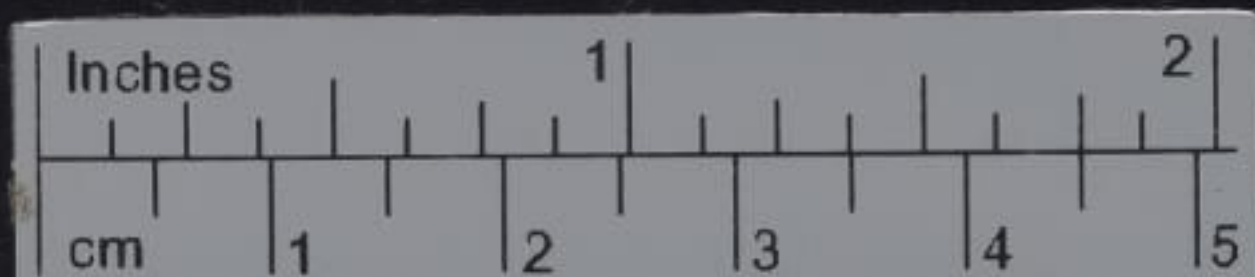
1691 ✓

1692 ✓

1711 ✓

1719 x

1720 x



4

1834 Jan: Port. Desire. near Fort

1685^v White compact felspar with very few crystals: a few - stone1686^v Pale purple: part of same block with the last. - used in building1687^v Dr. rather coarser, pale brown1688^v White softer, much coarser (quartz ^{partly})1689^v Reddish do do do1690^v Rock more perfectly porphyritic than (1684) of which rock it is a continuation1691^v Porphy. same structure as 1684 lying above, & same bed - (1684 & 1690)1692^v White Porphy. a felspar. rock. hard vesicular, with quartz; occurring in a common red Porphy. bed1711^v Porphy. with much quartz, earth & crystallized felspar; but ferruginous common rock: Lat 48°. 56' -

Port St. Julian

1719 x Fragment of petrified Vertebr.

1720 x 1721. Petrified wood (C.)



1722 Found in pale earthy bed, with
statachite of Tosca rock, which cut
through gravel & Argillaceous beds
at the South entrance Bananea
Lat: of St Julian $49^{\circ} 16'$

1733 Called "sitio del yeso" for
immense quantity of gypsum found
in this bed. - The impression of
shell is the only Organic remains
I have ever seen in these beds.

1736 Close to extremity of the Tiber
all the small bones were
found. -

1731 Through white. organ. structure is to be seen.

1732. Cylindrical & irregular concretions not very
hard of calc. sand; peeping into Marl, &
fine calcareous sandstone, minut-

transport particles of silex embedded
1733 exactly same as 1729 & 334.

1834

1722 x

1724

1726.

1727.

1729

1730

R

1731 x

1732

R

1733 x

R

1736 x

1738 to

1745



5.

1834 Jan: Port. St. Julian

1722 x 1723: Head of Femur & fragments
of the shank;

1724 1725. Fragments of socket which
were united. -

1726. Lumbar Vertebra. which were united
to the Pelvis

1727. 1728. - Parts of 3 Pelvis. -

1729 White soft; little spec: grav: Argillaceous
bed. lying above 3 oyster bed, &
alternating with 3 gravel; I. entrance of Bone

1730 ^{dup} Line of grey. hard. calcareous sandstone
R in concavities; almost forming bed

1731 x Concavities of hard ^{grey} limestone; a nucleus

1732 x Stalactites of pale. Arg: Calc: rock
R lying on pale earthy bed; above
gravel; in which are Bones (1722...1728)

1733 x Pale soft. Argillaceous bed; with
R trace of Turritella: entrance of inner duct

1736 x 1737. Belong to (1723)

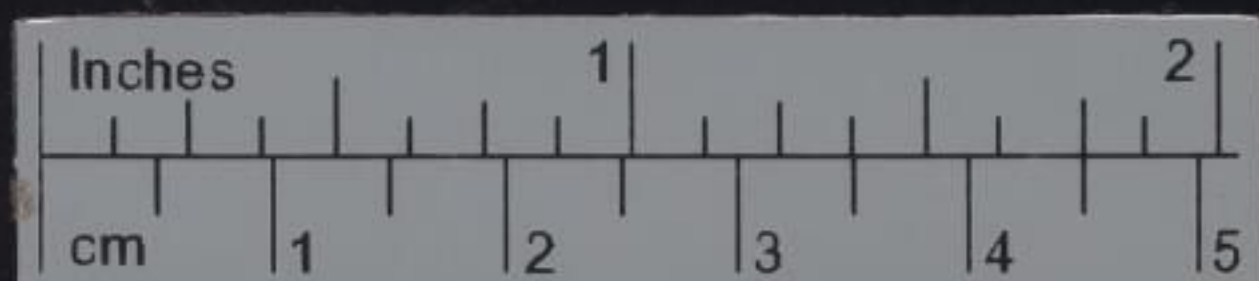
1738 to all belong to each other

1745



1764. These 5 specimens from north
entrance point of harbor. —
1769. I believe this has been
traced labelled
1789. Compact. heavy. deeper than grey
calcareous. clay slate. It is a
H: does
right. clay slate without laminated
structure. — easy fine greenish black enamel
1790. It is very compact, but very
little laminated. —
1791. ^{appearing crystalline}
Coarser grained, not laminated
approaches to character of grey wacke
easily fusible into nearly white
cream. —

1734.
1764 ✓
X
1765 ✓
1766 ✓
1767 ✓
1768 ✓
1769 ✓
X
1776.
1785
1787.
1789.
X
1790 X
1791 X



6

1834. Jan: Port Desrie

1764 ✓ Paste like Porphy, concretionary.
X vesicular with quartz; resembling ^{st. A} gyp.

1765 ✓ Do... common variety.

1766 ✓ Purple common porphy. with
crystals of earthy felspar.

1767 ✓ Soft. shaly rock like (1749)

1768 ✓ Porph. with crystals of quartz.

1769. Small bones. from Porcu bed.

X • Shells from the ^{at i Bay de} Porcu bed, &
part of it from Tarara.1776. Shells from the surface of
the high plains. Port Desrie

Feb: Port Famine

1785 1786 7 Spil resaria. like a common

1787. 1788.) Ammonis, dark concretion
of limestone in Slate1789. ^R X Cap. calcareo-slate, surrounding
the above rocks: h. of P. H. AntraX 1790. X Common Slate (not calcareous) the harborB 1791 X Calcareous g. earthy harder beds. frequently
alternating with the Slate



1801. I saw one N. side point of
Anna. tree as large, but
could not extract it. - its
relation to the animal ⁽¹⁷⁸⁵⁾ is
evident. but I think they
are quite distinct. -
There & the following organic
remains were found near
the summit of M. Tarn 26m
feet high. -

1813 North side of P. St Anna. -

1792 I can see scarcely any difference with
last rock. excepting non calc & enamel
rather white.

1806. Rock blackish grey. fine grained, but
same half kind of cryst. structure as
1792. & 91. - easily fusible into white
glass. - Non Calc.

1810. with a decided tendency to stony structure.

1811. Red. laminated, slightly calc: all there and sh. thin ^{muscular}

1812. Hard. strong rock. with a ^{rough straight} ~~straight~~ green ^{per} ~~even~~ ^{each} ~~each~~ ^{fact:}
full of cryst of f. which certainly appear there crystallized. yet
obscure. but sure traces of shells. & grains of 2.

1834.

1792 X

1796

1797.

1799.

1800.

1801 X

1805

1807.

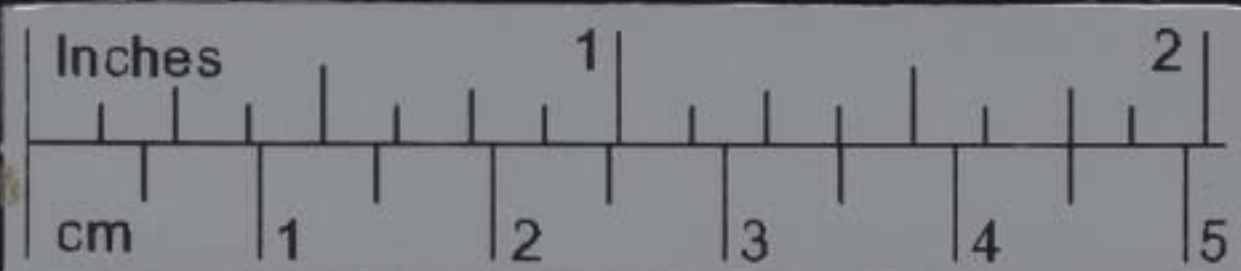
1809

1810. X

1811 X

1812 X

1813 X



1834. Feb:

1792^x Trap-rock. little crystalline, fusible,
cutting both latter rocks in Dykes.
Port St. Julian

1796 Tentella? shells for the great

1797. 1798 J. Dyke to land. P. St. Julian

1799. - Bone of rhynchonella belonging to
the others (1722..... 1728)1800. Box containing the above
or various shells. P. St. Julian.

Port Famine

1801^x 2: 3: 4: - They are fragments of
one spiral. Nautilus(?) M. Tarn
same sort

1805: 6: - Detached fragment of ...

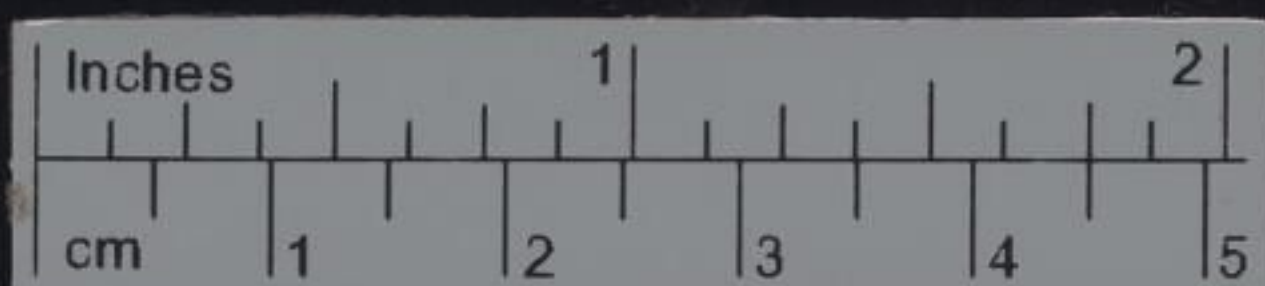
1807: 8: Univalve shells: M. Tarn

1809. - Bone of an Echinus(?) M. Tarn

1810^x - Coarse, yellowish slaty rock.

abundant. summit of M. Tarn

1811^x ~~greenish~~ ^{blackish grey rather} coarse slate. with fragment
of a bivalve: (gryphus?). Port Phil
Henslow says a true fine gryphus
Mudstone clearly1812^x ~~greenish~~ ^{crystalline} green fragment
alternating with last rock.1813^x Curious organic impression



- 1815 This is the whiter variety, part of
great alluvial bed. East entrance of No.
1847. These all come from bed of
Alluvium: SE side of Bay. —
1854. On the left of the Specimen. There
was a map of the black. com-
pounding to the right. —
1853. hard. sharp. irregular fracture. & decayed
thru fine crystalline structure. probably
altered slate
1854. decayed crystalline structure. without any
evident cyst. included patches & layers of
black fine grained altered clay. slate. extremely
blending together yet injected veins. —
1855. Basalt ^{red} conchoidal fracture, full of fibrous
green crystals. of wht appear green from weathering?
black enamel.
1856. not glass, even fracture (Felspar?)

1834
1815. x
1845
1847
1848 x
1849.
1850.
1853 x
1854 x
1855 x
1856 x
base



- 1834 extremely fine sand muddy. soft
1815. x Pale grey, sandy str. clay, alluvium with pebbles. St. Julian. 2^d horizon. St. of Napier
- 1845 Organic remains. L. St. Julian same as (1800). a Bx. —
-
- 1847 Entrance of St. Sebastian by a channel muddy fine sand ^{non calc.} with ^{of leaves} imperfections
- 1848 x The hardest str. in connection ^{calcareous} layer. with leaves. —
1849. Piece of wood in Do. —
1850. 1851. Shells. Crabs. & imperfections of leaves in Do. —
-
- Wollaston Island
- 1853 x ~~Fine grained~~ blackish green ^{rock} ~~with~~ ^{of hill} very little crystalline ^{higher parts}
- 1854 x Pale yellowish ^{green} felspathic rock with layers & patches of black slate like rock occurring with above
- 1855 x Black fine grained ~~Amphibole~~ ^{rock} occurring with the above
- 1856 x ~~Imperfect~~ Porphyry. base of peak base black. cryt. v. numerous, not v. well formed



1869. Also base of Hill —
- 1857 Cyst-larger. fatty. scarce any cleavage
Felspar ?? V. App. p. 20
1866. altered by H₂O, passing into a
Trapp. rock. — Black enamel
1867. Nearly similar base, rather more earthy
frag. with disseminated cyst & circular
patches of small aggregation of granit
yellow. partially decomposed Epidote.
or the granular mineral in series
1859. — 65. —
- 1869 Do do. base more felspathic. Epidote quite
decomp. — Blackish grey enamel.
1870. dark greenish grey crystalline felspathic ^{mass} slaty
rock. numerous specks of iron pyrites &
threads of calcareous matter. — Surface of
thick lamina with parallel striae as if fault
- 1868 Fragments small, almost blended together. Black
compact. — no cyst.
1865. angle 116.40. Red L 115.30
1861. Miller says. Green is Epidote & Garnet & white
appears to be Biotite & to be Prehnite.
1860. Do says has much appearance of Prehnite, given chemical
character on paper. wh. wraps it up. —

1834.

1857.

1858

1859.

1865

1866.

1867.

1868

1869.

1870.

1873

1874

1875

1876

1877

1878

1879

1880

1881

1882

1883

1884

1885

1886



1888. New Island. is one of the most
Westernmost one of the whole group
1890 This is interesting as being exactly
like the rock of Berkeley Sound.
Two extreme points of the whole
group of Islands.

Specimens 1886 1891. collected
on board the Adventure.

1891. - Probably drifted from
one of the Antarctic Islands

1888. Coarse. particles of siliceous aggregated together
by ferruginous cement. hard. compact rock,
but not metamorphic.

1889. coarse. sandstone. not very hard, not at
all metamorphic.

1894. cleavage. like paper perfectly flat. formed
by minute scales of siliceous mica. which do
not appear to occur within stone. which is
brownish & more earthy (than last. minute
grains ^{of iron & earthy limon. matter} appear very closely cemented together: mica
not produced, yet causing cleavage. (see: Henslow
(Henslow. this is very remarkable fact))

1884.

1888.

1889.

1890.

1891.

1892.

1893.

1894.

1895.

rather

white

Has no

white



1884.

Falkland Islands

still near

1888

~~granular quartz rock, still near~~
~~impure~~ - New Island.

1889.

Do. from lower parts of New
Island. excepting from analogy I
should have supposed the a mechanical
aggregation of particles

1890

~~granular quartz rock, cemented~~
^{grains of quartz}

not much
app. altered
structure

white earthy matter: near Cape
Meredith. SW point of W. Falkland Is.

1891.

^{possibly a part of the latter current}
Black sand picked up on beach: Do

1892.

granular quartz. with black
specks of imperfect ^{micaceous} mica.
chain of hills. East Falkland Is?

1893.

^{brown siliceous fine grained sandstone}
Micaceous. ~~granular~~ ^{conglomerate} quartz. Partaking
in the character of the quartz & sandstone

1894 X

Do. possibly a high perfect cleavage
from same site & circumstances

1895

granular quartz rock. with earthy
white particles, surrounding by rocks
near similar to (1894).

rather
white

Has not a crystalline appearance, each grain is coated
with white pulverulent powder & so cemented



1950 Looked like the whs
of a Cornu ammonis.

1896. Dirty greenish brown. ~~the~~ siliceous
sands. Clay. Slate. —

1897. same kind of fine grained siliceous sand
mingled ^{in places} in threads & bands together
with a compact black clay slate

1894.

1896x

1897x

1903....

....1909

1939....

...461

1945.

1947.

1948

1949.

1950

x

1951

1952



1834.

E. Falkland I.

1896x

1897x

The last variety passing into slate -
the passage almost complete
all obtained from a regular succession
in Johnson Harbor. -

1903....

Sandstone with Shells: from same

.....1909

site as last year. Near S. Iron. -

1939...

Gorgonia? in micaceous sandstone

... 46/

organic tubes still present: about a mile
further up S. Harbor: Sandstone in slate

1945.

1946: Shells; found with above.

1947.

Shells with Crallia V. 1947 other

April S. Cove

1948

Fossil shells; small area. passing upwards
in soft muddy clay. -

1949.

Fossil shells.

1950

Shells. adhering in $\frac{1}{2}$ or $\frac{2}{3}$ of circles.
pinning on the smooth surface of
some large *Voluta* or *Buccinum*
Shells.

1951

1952

1953: *Voluta*, same as now living



1967. All above specimens from
a mile or two up the Southern
arm of the river. —

1975. Appear like some large
lithaceous plant. curious if
such it should turn out to be
of a Tropical appearance, a
presumption of such climate
in Lat 50° S. during this
period

1969. Ev charact. ^{from Cole:} as decomp. I. rather less
pure. hence not quite so white as 10 light

1976 ~~Age~~ Structure nodular. with or even
smooth. semi-cord. structure: evy char.
possibly or. just same as decomp. I.
excepting in this case. the stone is compact
& heavy. owing to electric pressure or
concretionary power of Cole: matter. —
does not adhere so much to tongue
from concretionary & slightly facellous
fracture

1884.

1954.

1958.

1959.

1967.

X

1968.

1969.

X

1970X

1971.

1972

1973

1974.

1975.

X



12

1834. April. S. Cruz

1954. 5:6:7. Ocenebrum

1958. Venus (silicified)

1959. 1966 Venus shells

1967. Shells in bed (1969). which does
X not commonly contain shells. —

1968. — Shells

1969. ^{under micros: nigra, angulata & semityl. for. etc. with shells}
Common pale earthy sandstone ^{lined}

with gypsum & (salt 946): generally
more lined with ferruginous ^{lined} mottled.

1970 X Hard - Calcareo. Concret: spherical ^{in above} masses

1971. Hard ^{fine grained} - Calcareo. Sandstone; containing
shells, especially Venus in very large
north ^{future} ~~future~~

Concret: masses. Spherical

1972 Shells same as. (+ locality) 1950

1973 Arca

1974. White. yet partially retaining its
color: found a surface bed. of iron

Long. 70' - 72' —

1975. Fossil plant & wood, this

X



1978 + 1979: Parts of same. -

1980. Black. Basaltic crystalline lower
with numerous ^{small} circular vesicles. -
Black glass. -

1981-82. Rather more cryst. base. with very few
air cells. - a few spots of Olivine

1985. Bas. not quite so fine grained as last.
but true fine grained basaltic porph.
with large distinct cryst. well formed
of glass. F. - base fuses into perfectly
black glass. - base not at all
hard - no vesicles. -

1986. Do. very slightly vesicular. abundant with
the white crystals of glass. F. many minute
or disseminated, set glass quite black.
Cryst of f-f. much fractured not possi-
ble to obtain cleavage planes.

1894.

1976 -

1980.

1981x

1982x

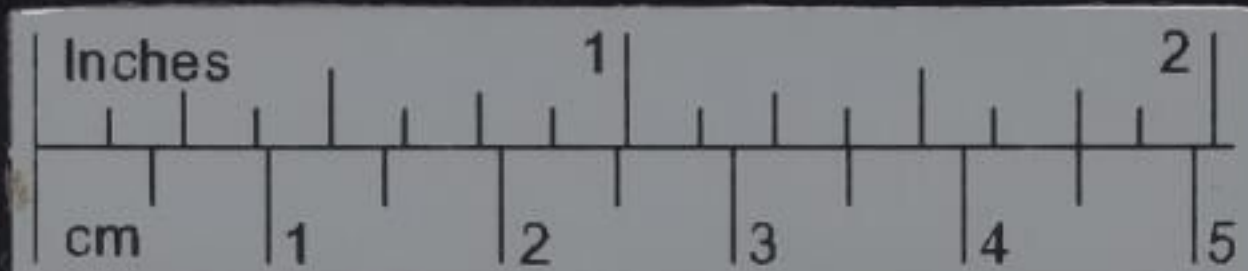
1983.

1984

1985x

1986x

X



1894. April. I. Mor

+ following specimens of Wood found
on banks of river, presumed
fr. Oyster bed formation. —

1976 — 79. — Wood. —

1980. Specimens collected up by River
Superior surface of Lava cellular
from some of first or most
East. part of bed: generally
even much more cellular. —

1981. ~~Common~~ highly porous Lava. with
Olivine

1982. Columnar Lava, ^{hexagonal} with Olivine:

1983. ^{white friable} Calcareous matter filling up the
intervals between columns of above

1984. ^{with not any residue} Black fine grained, ^{Basalt conch: fracture} compact Lava

1985. Do. Teph with white crystals

1986. Do. fuzer. coarse, with very
many of do crystals

From summit of much higher field
April 29th. —



1989. - A very good series of specimens. —

1995. but very abundant is strongly more or less penetrated by quartz veins. (- & makes granular (quartz))

1988. of the fl. f. a very rare small vesicle with strong lens. the whole with black & white specks. jet - jet black ^{slaps} ~~crack~~

1989. a blackish ^{very} fine compact Baralt, no vesicles. spotted with pale grey which appear the remains of cyst of fl. f. some of which are perfect decomposed. extremely rich brown. —

1990. colour not distinguishable; rather more compact. than charact. Dean f. —

1993 true decomposed f. a shade coarser so that the minute broken cyst. in the white porous substance can be seen with lens. —

1994 Pale, mottled with brown. siliceous. translucent siliceous hornstone. edges can just be touched, irregular fracture. Porph. with few cyst. of f. & not unimportant grains of quartz. Mem. Port. St. Julian. Port. Mar. —

1995. granular quartz. mingled in small masses & threads like veins ^{cracks} with a dirty green. highly crystalline state, which readily fuses into white.

1834.

1987.

1988.

1989.

1990.

1991.

1992.

1993.

1994.

1995.



14

1834. April. *S. Cruz* ^{ent. but not 1. abundant}
1987. Do. Cellular. ^{large} yet with the large
1988. ~~Do.~~ ^{large} grey Lavn. with few crystals
often much laminated
1989. Dark. heavy compact Lavn.
with grey spots. —
1990. Essentially same. ~~soft~~ ^{firm} ~~abundant~~
sandstone (sand clay) as (1969)
but of a ^{half} green color. —
1991. Same as (1969) but more laminated & ^{firm}
1992. ^{Dec. 7.} White. ~~Abundant~~ substance (not
effervescent) with minute ~~ex~~ ^{small} ~~shells~~
particles forming bands. between
beds of ~~red~~ ^{slightly} (1969) ^{microsc.} flocculent ^{beneath}
1993. X Slightly agglutinated sand with
white & yellow bands. beneath is Lavn.
very common. —
1994. Tranene blocks of this rock
are scattered over whole surface
72-71. Low: certainly the common
rock of Andes in this latitude
1995. Do do do do. not quite so common.



2001. Striated. *Mytili*, from
the surface of the
355 foot plain. —

1852.

1996.

1997. —

2001/XX

2056

C. Virginia

2057

or

2058

in grain

2059.

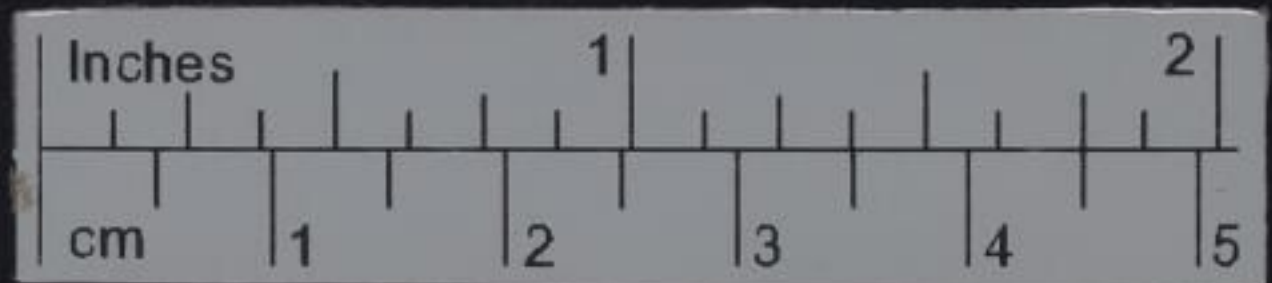
2060.

....2065

separated

together

particled



1852. T. Moor
1996. Characteristic specimens of the
1997. - comm. "Gallstone" & "Woods. B"
- Tophyry pebbles; more or less porphyritic, generally with small crystals of Quartz: doublets
- 2001)X common rock of Andes. in the Latitude
- 2056L Yellow. fine grained, much & even C. Virgin laminated clayey sandstone. -
- 2057 Interfolding beds of blackish hardened mud, with fragments of Slate C. Virgin. - May. -
-
2058. A compact. ^{Marking} ~~dark~~ brown. micaceous ^{refining into texture of Clay S} ^{W. Falkland} ^{hard} sandstone. Common Port. P. Egmont
2059. Conglomerate containing following
2060. Shells: Rocky Point: Port
- 2065 Fossils - in the Slate. -
- fragments or conglomerate; fragments about. bedded together, traces of shells, disseminated green pebbles; fragments appear like old sandstone & some chloritic rocks.



2075. none of the characters so strongly developed. grey colour: brown trace of crystallization

2076 77. In the first of them ^{most inclined} the slate quite perfect with a fine grained greenstone; in the second it is more or less highly crystalline (without distinct cym^t) felspathic, the junction of this will define in the former. the two are blended together so that for two or three tenths of an inch it is not possible to say which is junction. The greenstone in both. coarse grained. cym^t of H. acicular. those of F. rather large & tending to become porphyritic

2078 the black part. distinctly crystallized. the facets of the F. & the crystals of H. can be distinctly recognized. - not very equally crystallized

2079. fine cym^t / Hornblende ($55^{\circ} 30'$): many scales of mica. - crystals of albite.

(95° . $95^{\circ} 20'$ $94^{\circ} 40'$. there differ much)

But the micas $7^{\circ} 15'$. $6^{\circ} 25'$. numerous specks of pyrites. heavy compact rock coarsely crystallized —

1834.

2074

2075

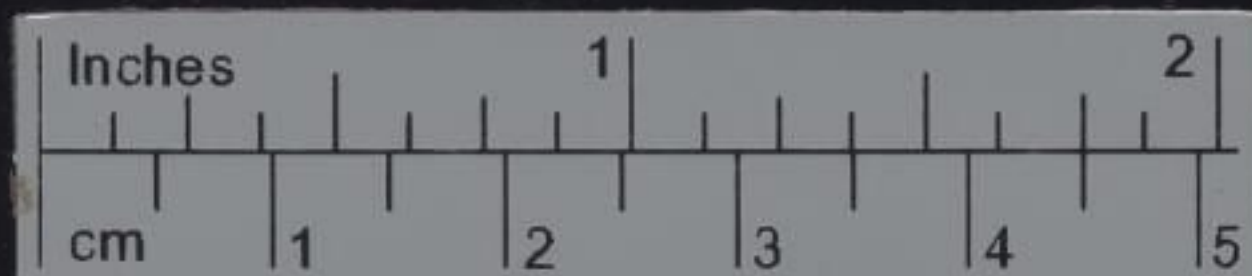
2076

2077

2078

2079

2154



16

1834. June 9th - Cape Turn in
the Magdalen Channel

2074 } ^{Black} Slate with distinct cleavage ^{but none in hand specimen}

2075 } ^{crystals} but compact, hard, ^{layers} altered, already
slightly crystalline: specks of iron
pyrites: splinters sharp. fragments

2076 } do: which was enclosed between

2077 } two great dykes or benches from
a mass of greenstone: in 2076. besides
the main contact, a small thread-like
vein is present: ^{slaty} rock. light but
fine crystalline, pale colored. Lepidolite.

2078. - The Black part. is a fragment of
Slate imbedded in a regular greenstone
such as below (specimen hand)

2079. greenstone with mica (& quartz
veins) forming tops of hills, cutting
through & overlying slate. -

2154. ~~greenstone with cleavage~~

(has to a slight degree a granitic
character: coarse grained.)



2114. All the following specimens come from the peninsula of Lacuz.

2085. sheets approaching to Pitchstone, few cysts of st. fr.

2086 with brown parallel few sheets slightly rounded cellular. - in center. // 1087. White glass

2088, parts purplish grey. parts yellowish, parts decomposed. brown. mingled together, cells lined with ferrug. & yellow matter.

2089. Reddish purple compact base. smooth surface. porous, purple with numerous cysts of st. fr., base scatches glass. very translucent, points fusible with extreme difficulty, then even includes ^{in places} patches of brown lava with earthy part. & earthy part. junction of the two ^{almost} blending together yellowish. partially decomposed base, harsh texture abounding with st. fr. & rather light fine number of minute in places vesicles

2092. Rubby texture. the greater part consists of a Pitchstone but with a texture not very brilliant, this seems to pass into an earthy lava: Multis into ^{glass} white

20698 v. app. p. 15

1834

2085

2086

2087

2088

2089

2090

2091

2092

2093

2094

2095

2096

2097

2098

2099

2100

2101

2102

2103

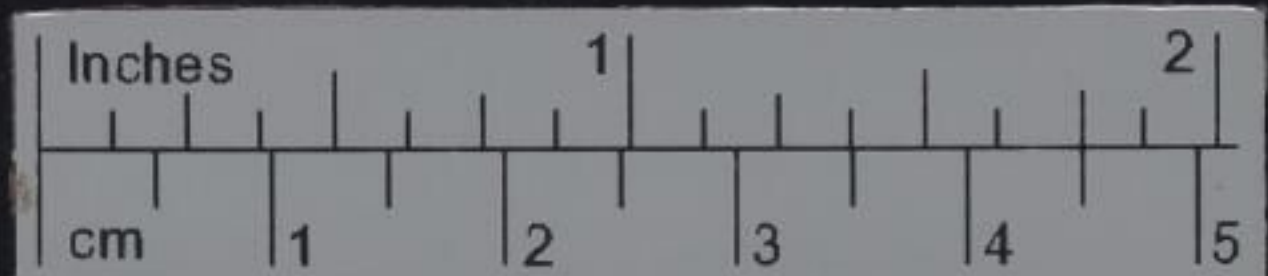
2104

2105

2106

2107

2108



17

1834

July.

Chiloe

2085

Grey. ^{with earthy fracture} earthy Lava, in close junction with

2092: 2093

2086

Close, compact, Basaltic lava

2087

varieties

2088

Lava - ^{high} vesicular ^{refers to} of simple texture

2089

Red Trachytic Lava

2090

Yellowish less crystalline kind

2091

Earth Lava or Wacke

2092

Pitachone. the less compact specimen

2093

compact ^{thickly} ^{well characterized} very abundant with white glass.

2094

Pebble of Coal

2095

Micaceous? Carbonaceous? veins

2096

in Meamic Breccia

2097

Various varieties of Lava common

2098

on S. Coast. SSE of Anchoage

2100

Laminated grey Lava from
highest part of road to Castro -
near to S. Carlos

2114

Pale brown, indurated earthy

XX

Stone, fusible in Bunsen



2121. Varieties between this & 2114
form the commonest varieties
in the Peninsula of Lancashire

2145. in bed about 100 ft above sea,
with it were the other shells
excepting (2146) from 648 ft level
& the Ironstone & shall about
fifty feet.

2140. I believe the mineral head
Pebbles - all Epistote?

2142. It has character of Thonidite

2144. The whole stone brown & ferrug. rather
hard. easily fractured, but otherwise character
perfect

2140. Fine crystalline Epistote with little ferrug.

angle $116^{\circ} 30'$. Spread of the two highest planes. omitting one
real angle. is $115^{\circ} 30'$

18 3/4

2115 V

2116: N

2118 V

2119. V

2120 V

2121. X

2140 X

2141.

2142

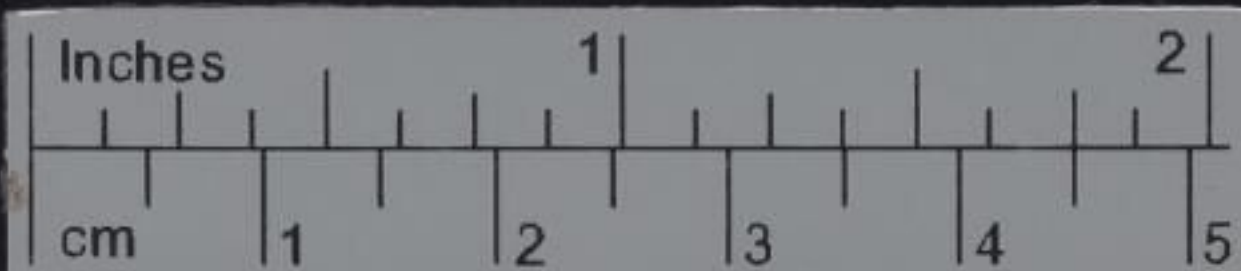
2143

And. section

2144 X

2145. 2

X



18

1834 July. - Chiloe

2115 V 80. with earthy white fragments

2115: N Dr. purer, white harder, with
numerous white fragments forming
Breccia. —

2118 ✓ Calcareous - sandstone. ^{above} cretaceous in

2119. *Siliceo-Aluminae*. Exact copies,
with mica, in above. -

2120 V. Blackish grey. ^{slightly pearly} lustrous under microscope. (laminated). (G. Nat.)

2121. $\times$ yellow. earthy stone

Ing Valparaíso -

2140) *Psedonota* ?? forming neps in *psedonota* vein

2141. Zalspar. Hornblende, mica forming
 globular mass in feldspar ^{granitic} - Coarsely crystalline.

2142 *Blackish* ^{very} *smooth* ^{the skin} *conchoidal*, T. *apt.*:

with ^{masses} acicular crystals of glass, felspar, &
+ hornblende

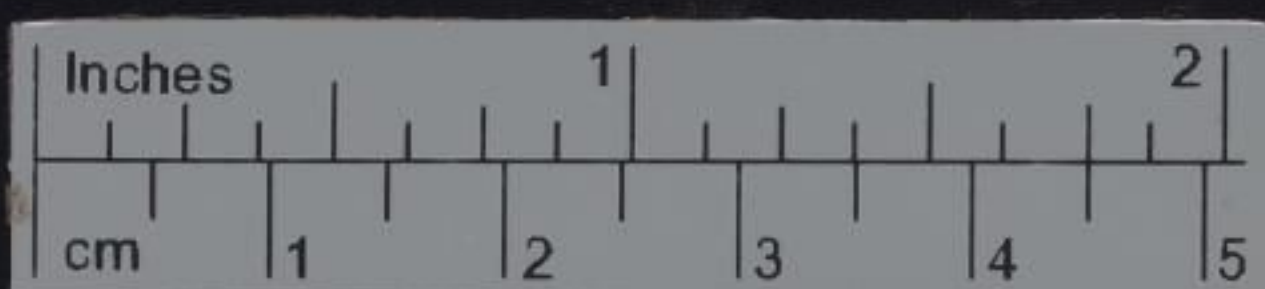
common to forming part of cortex: vein

2149 *gregis* ^{telusky base} *peon~~ex~~* ^{apric} *popl. niki* *ledger*
1. *l. t. t.*

And fracture forming a dyke in gneiss. — 2.00.

2144X. Upper part of do. Dyke, much altered

2145. 2146. Recent shells.



2154. Well cys. greenish. folia dent white,
an brown flat structure from point
of cysts of folia.

1834

21493

21503

2154

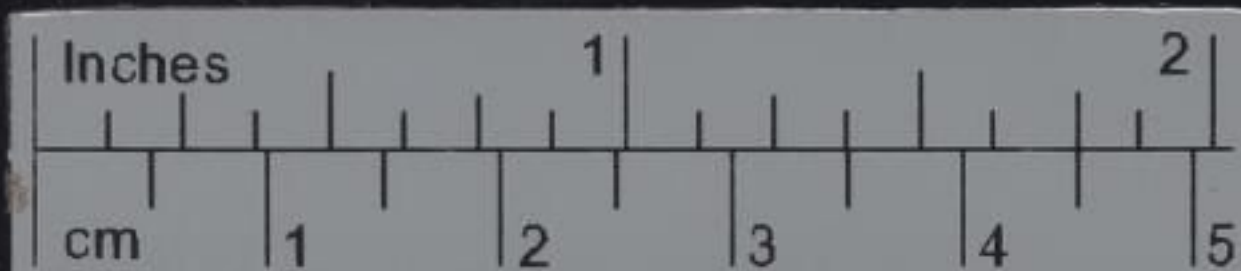
2155.

2156

2220.

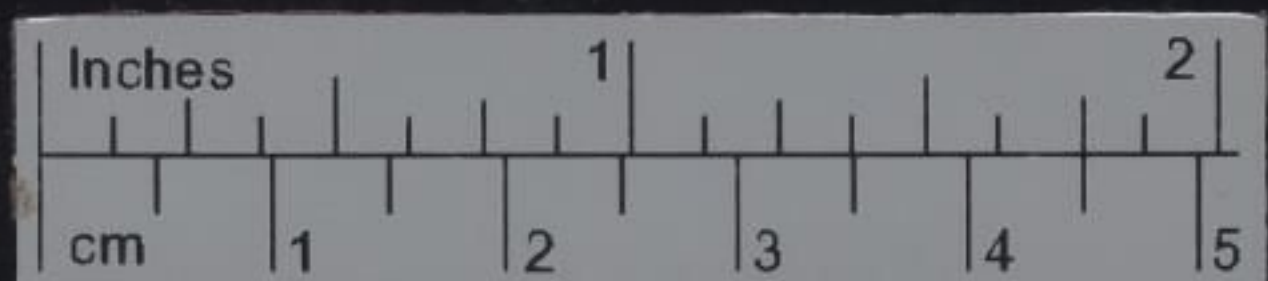
2227

2228



19

- 1832 Aug. Valparaiso
- 2149 } shells from 1003 feet high.
2150 } Flag-stuff hill. - lying on surface.
2154 greenstone with cleavage,
? (very A. l. t. r. i. t. e. ?). - Cascade. -
2155. Petrified wood in a
Cupressites. - Florilla
2156 : 2157. - Black Schist?
in granite vein. -
-
- Organic remains from bed of fine
earth sandstone. at Hacienda Mouth of
R. Rapel. -
- 2220..... 2226. Shells from the lower
gy. calcareo-sandstone in layers
! thin encrustations
- 2227 Petrified wood perforated
by marine animals
2228. 2229 Two groups containing
various shells



1834. Aug. Sept. Chile. -
- 2230 Compact ^{fine grain} dark-colored greenstone. Much Iron
- 2231 Coarsely ^{fine irregularly Irreg} crystalline. Do. (Do not understand nature of either - Between Leno. Talpaen, & Popico ^{angular} ^{various crystalline substances.})
- 2232 Black, very compact. ^{angular} f. Limestone. Popico
- 2233+ Greenstone. Int. of St. Lucia. St. Jago
- 2234 ^{Brown} ^{Irreg} ^{ly crystalline} dark-colored greenstone. ^{fine grained.} Much Iron. St. Christopher St. Jago
- 2235 Compact. ^{dark purple} dark f. Claystone. Popo: Breccia.
X L. pink viselle: Hill above St. Christopher
- 2236 White friable. Calcareo. Aluminous substance interspersed of layers of shells. St. Jago
- 2237x White Talcopoth. R. slightly. Popo: hard like near St. Christopher
- 2238 ^{note} Greenstone highly porph. with ^{note} Talpaen
- 2239 ^{base of} ^{cryst} In coarser: Under front of St. Jago
- 2240 Toca Rock. ^R uneven colored; part friable upper surface, irregular, except stalactiform containing extraneous particles. Podaguel. St. Jago
- 2241 Horn Silver. Copacabana. R. Caldeira
- 2242 ^{Long} ~~It is not~~ [?] Shells worked for lime near Quintero. -



- 2241 Breccia stone, perhaps just visible
of patches containing more crystals
- 2247 Much Agate in roots. -
- 2254 with Cent. of line
~~Purplish black~~
- 2243 Blackish brown. fine grained trap rock
porph. with v. few irreg. G. & S. F. -
- 2244 Dark brown. fine grained. Trap
2247. Pale grey base. abounding with small
elongated cpts. of opake. F. & small
bubbles of green earth. & irregular cavities
filled of ~~white~~ siliceous
- 2248 Brown - rhyolite. very uneven. abounding. with
cpts. of fractured glass. F.; dark greenish
grey glass.
2251. Cellular. semi-decom. Trap. cavities lined
with ox. of iron. Porph. with glass. F. mag.
be decomposed. " rhyolite
- 2252 Pale brown, sandy looking base, porph. with few
cpts. of angular (?) F.
- 2253 reddish brown base. porph. with numerous
elongated cpts. of semi-glass F. with vesicles
lined with green. & filled with
brown radiated substance. Cent. of root
with irreg. angs. rock of C. & fine

1894.

2243 x

2244 x

2245 R

2246 C

2247 x

2248 x

2249.

2250 C

2251 x

2252

ch. 127° 15'

real L. 127° 30'

2253 x

2255

twice cpts. of Agate

2256

L. 88°
Pat. Chert

2257



21

1894.

Sept. Chile: Baths of Canguenes

2243 x Blackish-purple slightly porphyritic structure

2244 x Blackish-green. fine grain. greenstone.

from dyke cutting the above.

2245 B Conglomerate, matrix. Stellated lath of feldspar.

2246 Compact, ^{blackish} dark-purple. hard ^{clayey} porph. abounding with ^{small glassy} large crystals of feldspar ^{with calcite} in places.

2247 x Pink allied to (2292). Feldspar in small plates.

2248 x Trachyte. cellular with elongated crystals of glassy feldspar.

2249. Pitchstone. ^{white glass} Porphyritic - with small crystals of feldspar.2250 Compact, heavy, fine grained. ^{blackish} slate colored greenstone with ^{small} a few ^{small} acicular crystals of feldspar.

2251 x Cellular crystalline rock (??)

2252 ^{brown earthy fracture. cellular black} Pale. stony. Feldspathic Basalt with small ^{of feldspar & hornblende} crystals of high up valley.

2253 : 54 allied to (2247 & 2292).

2255. ^{almost glassy. black} High cellular trachyte. ^{black enamel with crystals of} from surface of (2248).2256. ^{grey} Same as (2248) ^{more compact} other minerals, as above.

Yaguit near Rancagua

2257 ^{granitic} ^{granite} rock. Quartz, feldspar & with nests of imperfect crystals. Hornblende. green.



- 2261 a rather nice thin temporary
bed or "Breccia". -
2264. With pretty clear traces of
Breccia structure. -
2265. This various degrees of hardness;
base of all the Ophiolite
- 2269 ~~a very heavy brecciated~~
- 2258 This great rock of the axis: white like
^{V. measurement} crystall. ^{moderately well} crystall. green. Hornblende. very few
No. 7. scales of mica =. Quantity?? white
2265. Extremely few spots of imperfect reddish Fr.
2267. Grey. ^{like} lava. few small irregular vesicular cavities
lined with iron rust
2268. Has not character of Lava
- 2269 Purplish grey base. speckled with green. &
are earthy fracture. porphyritic with few
small cyst. of Fr. containing most of same
traces of embedded fragments



22

1832 Sept. Chili: Yaguit

2258X. As above: lower Iron Mountain

2259 Do. ^{is not hard - sandy} peeling into ^{small} ^{crystals} ^{of} ^{quartz} [?]

2260 R Copper pyrites. fctd. Plus by o. from

Durazno mine: rich in fctd. - ^{yellowish white}2261 S Black stellate mineral in ~~interstices~~
^{mostly with, grainy & small crystals of} ^{quartz}
X mica matter; - from bad vein. Bayos2262 The regular fctd. as in
^{same as above, but still more friable. in state of powder}
^{out of ground. -} Bayos mine2263 ^{crystalline structure just distinguishable}
^{compact by dark slate color.} 2^d semi:
^{melts easily black. enamel}
Conch: fracture. Feldspat. R: S. de. Chik'caugua

2264 Campana mountain. Quillota

2264 X ^{very} large ^{opaque} ^{irregular} ^{cryst. of} ^{Feldspar}
^{not very hard. -} ^{obscurely embedded}
in ^{soft} ^{red} ^{clay-stone} ^{base} ^{fragments}2265 X ^{not hard, but difficultly fusible. strong alumina}
^{Red. soft.} ^{clay-stone} ^{base:} 2^d part ^{very} ^{fine}2266 ^{Blueish compact} ^{greenstone} ^{porphy:} with ^{minute} ^{crystals} ^{of} ^{Feldspar}
^{some} ^{acicular} ^{res.} [&] ^{anhyd.} ^{with} ^{quartz.}2267 X ^{pale} ^{crystalline} ^{strong} ^{Feldspar} ^{R.} ^{with} ^{cleavage}2268 X ^{yellowish} ^{Dr.} ^{much} ^{more} ^{crystalline} [&] ^{pale}
with ^{yellow} ^{cryst} ^{of} ^{Feldspar} -2269 X ^{Imperfect} ^{very} ^{pale} ^{purple} ^{Coarct:} ^{fractured}
X with ^{green} ^{stone} ^{mineral}



2280. These lines parallel to former
dearings. - Breccia structure
pretty plain. -
- 2284 Crystals small. -
2277. Approaches to character of Porphyry or very
compact trachyte. base minutely pitted
- 2280 Clepton base. abounding with nodules. & thin
layers of white ^{molecularly} ~~nodular~~ ^{with obscure crystalline structure} hard. ~~crystals~~ ^{crystals} ~~felspar~~ ^{felspar};
these lines frequently show tendency to contract
in form of γ . - There are also ~~three~~ ^{two} kinds
of Epidote; the latter not unfrequently having
the same Felspar
2281. Yet external form ^{of patches} irregular, though cleavage
71. base tinged green. shows. obscure. cxt structure, angular
patches resembling Serpentine. irreg: fracture. translucent
pale dark green. soft. almost nail: easy
fracture - pale glass. - agree best with Soapstone.
2273. $\angle 109^\circ$. ? what is it? -
2275. Miller - decomposed rock, perhaps augite
has of one good cleavage, containing octahed
crystals of magnetic iron oxide $Fe+Fe$

1834.

2270

2271

crystals
white hard

2272

2273

2274

2275

2276

2277

2278

2279

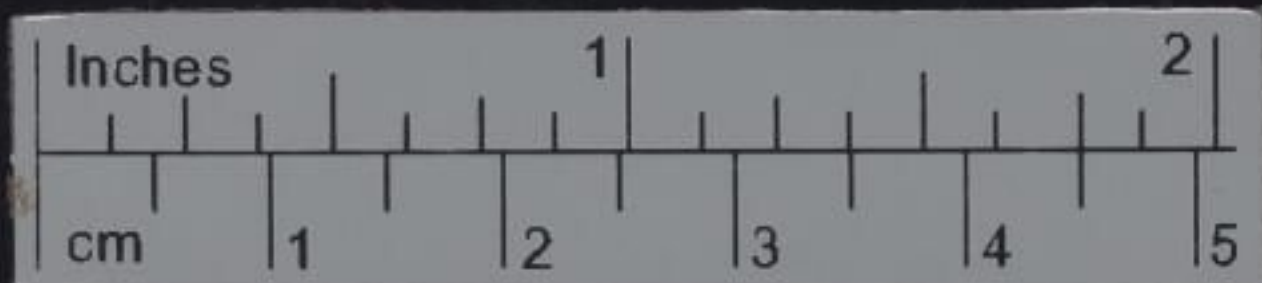
2280

2281

2282

2283

2284



23

1834.

Sept.

Chili: - Campana Hills

2270

Compact. pale-purple. Dsp. with ^{rather} imperfect
crystals of white Feldspar

2271 X

White strong Felds. R. with patches of

white ^{earth} ~~traces~~

earth Felds & green minerals (separation?)

2272

Coars. light crystalline granitic

2273 X

summit of Bell -

2274

Do. with layer of green ^{minerals} ~~minerals~~ ^{crystals of Epidote}

2275 X

Biotite? in greenstone base.

2276

Slate - chad. Felds. R. Kri-crystalline base
^{semi-coar. texture} like altered slate
(allied to 2267. 68)

2277 X

White - ~~siliceous~~ ^{compact irregular} Felds. R. -
^{aspect altered slate}

2278

Same as (2276), rather more parallelism.

2279

Greenstone, pale grey. felsitic

2280

Pale purple compact. very ^{irregular} ~~irregular~~ ^{patent} Dsp

2281

with lines of white Feldspar & Biotite
^{coar. texture}

2282

Do. Breccia structure not visible. Feldspar
^{formed. & with occasional deformed}

2283

better crystalline, patches not so ^{deformed}

2284 X

Black-purple Do: Brecc. It. not visible

2285

crystals small not numerous. little ~~biotite~~ ^{epidote}

2286

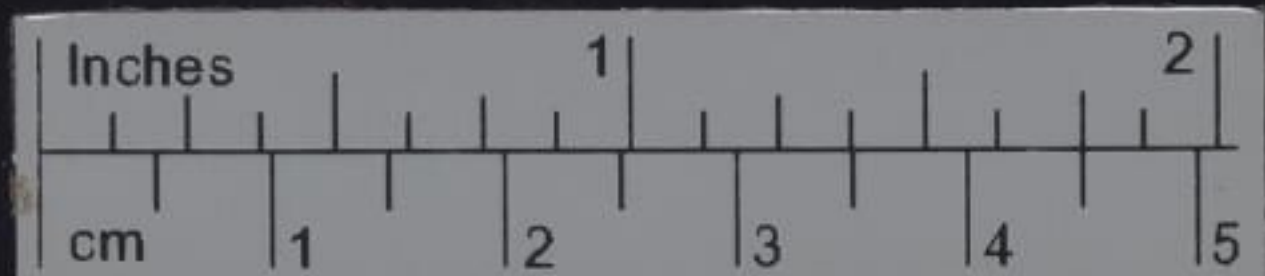
White Do. - Do - Do - Do with

2287

Red. compact perfect claystone Orthopy



- 2286 Tentative of character of lith. -
2290. As one of these characters
predominates. other subs:
Observe the green mineral.
2292 These plates are often cruciform.
2294 Same of (2283), with ^{altered f. plates} very fine cpts: also like
2295 Slightly granitic structure or ^{very fine} granitic structure
H.B. Jasper is at very base
of Andes. Near Acacaguan
2285 patches of a white hard. ^{crystalline} stone, ~~also~~ showing in part a well
developed cleavage structure
2286 a mottled purplish ^{contains small thin & on cpts} green base, with cpts of f.
(a porphyritic trap)
2287 pale greenish grey fels base. part with few
cpts of fels f.
2288 Angular & semi rounded embedded fragments,
of a white red slightly crystalline cleavage stone.
some of the ^{smaller} fragments becoming purple -
2289 The Purple strand of base is very fine, but contains
a little mottled with minute fragments.
2290. even angular frag. fragments (many of which are
green & copper like jade, & the red cleavage / blending
& joining together. whole mass, fragments & base. decidedly
Purple: though ^{few} cpts very perfect



The patches may be containing cryt. - each patch looks like
• porphyry from contained minute cryt.

1834. Sept: Chili: Aconcagua [24]

2285 V Coarse pale purp. Toph: Breccia Struc.
totally clear; angular & rounded

2286 X Greenstone = Tophy: Breccia: impure

2287 X Feldspar. passing into greenstone. purp
with Feldspar. - compact: great l. by the:

Mines of Jaquiel

2288 X Coarse - ^{grey} pale purple Toph. (with grains
& quartz) & large crystals of Feldspar:

Breccia Struc. very clear: some bits marked
angular. semi-

2289 V Compact (crack-f. & pale-purple Breccia:

(close allied to a Tophy: fragments
intimately united & blended together:

2290 X Do: but clear porphyritic. not so
clearly brecciated

2291 ^{True} Pink Claystone Toph. with quartz Feldspar
V. Measured p. 13??

2292 X Lamin. rock. base as before. plates

V. appearing p. 20.
p. reddish Feldspar & bulk of green. mixed
silicium in fine

2293 Blackish. impure L² part: altered clay. Slates?

2294 X Compact. ^{greenish grey} pale. chr. Feldspar: R: like the

2295 X Fine grained. grey. Greenstone
R.



2353. Thayer with numerous grains of Quartz
set with fine black enamel.

1834

2339 + 40

2341

47

2348

2349

2350

2351

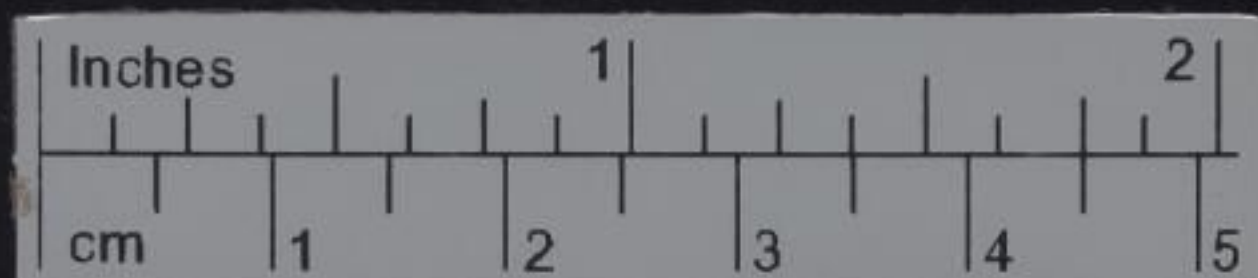
2352

2353

2354

2355

2356



- 1834 Nov. Archipel: of Chiloe. -
- 2339 + 40 Shell + Cast. in grey sandstone
concretionary layer. Main land in
front of Lemuy. -
- 2341..... Various shells from same
... 47 locality - - as above
- 2348 Abundant silicified wood. Lemuy.
- 2349 Less perfectly petrified wood front of Lemuy.
- 2350 The commonest variety of lignite Lemuy
- 2351 Lignite also common
- 2352 Lignite showing leaves: coast in
front of Lemuy. -
- 2353 x Common. ^{fracture under finger with care} very soft - yellow sandstone, grain
unequal size. where Lignite occurs. Lemuy
- 2354 Do, rather ^{harder} finer: where silicified wood
is interbedded. Coast front of Lemuy.
- 2355 Layer of hard. pale-grey ^{Cali} sandstone
^{min. grain 1/2} composed of broken crystals (~~Alumina~~?)
hard. Estero del Castro
- 2356 Layer of hard. black-grey ^{Cali} sandstone
near Lignite. Not common, Lemuy. -
very brittle



2358. ^{Dunwich} Blackish grey. ^{hard} ~~hard~~ ^{compact} ~~compact~~ ^{with little} ~~with little~~ ^{crystalline} ~~crystalline~~ ^{fine} ~~fine~~ ^{micaceous} ~~micaceous~~ ^{thin} ~~thin~~ ^{formation} ~~formation of ^{Huaso} ~~Huaso~~. (Cpt. Fitz R.)~~
2359. ^{Rocks} Compact Trachyte. white crystalline base
1 step below, with few distinct ones,
& elongate decomp. cyst. of brown
... & patches thereof. Fracture
straight rather harsh.
2389. Bas. rather earthy fracture. apparently
mixed with much green. earth. & many
cyst. with very few imperfect cysts
2360. ~~Basaltic~~ plates can scarcely be distinguished
this micaceous sup. layer in proportion to
layer of pure quartz ^{like dark lead.}
2378. with just soil white paper. — layers
deeply striated, pure. with grey glass. — a layer pure
whiten under. Oblique —
59. H. streaks of sericeous matter, which often
a lot of outline of ^{clusters} ~~clusters~~ of cysts. perhaps
^{considered as} ~~considered as~~ abortive attempt to form Houllé
very good in all trachytes. —



26

1834.

Prov. Archipi. of Chiloe

2357

Ash-ch. ^{very fine} ^{medium} ^{medium} sandstoneeven under high
exposure

fine grained. Much laminae -

> S. extent of Lenny. -

2359.

White semi-cyst. feldspar with
crystals of do. & feldspar patches. forming
regular column. Near Castro

2360

Layers of quartz. ^{gray} ^{thick} ^{crystals} ^{enveloped}
Black, ^{the} ^{talcaceous?} / Micaceous
Castro. -

2361

Twisted layer of quartz, ^{crystals} ^{gray}
Schist. ^{greenish} ^{micaceous} - San Pedro ^{in the} ^{area}

Chonos. Archipel.

2378

: 79. ^{thin} ^{thick} ^{crystals} ^{black}
Layers of quartz, with, micaceous
substance. ^{the}
Oryctolite in peeping into Argillite

2380

: 81 Greenstone, with green of quartz
from dyke traversing the above Schist.December 21st

Cone. Harbor. Peninsula of Tres Montes

2382

Smoke-gray, rather early greenstone, porphyritic
with ^{in part} ^{crystals} ^{of} ^{feldspar} [&] ^{green} ^{patches}

2383

Venus on above, fine grained, green
Chlorite greenstone



2384. Compact. strong stone, with irregular
fract. — easy fracture.

2388. Like (2386) but more irregular
fract. — not so perfect as fracture
minute cyst of Fe.

2398. Blackish brown. light crystalline. Lava
appears all cyst of ~~Fe~~ Fe, & lava
pieces with pale glass.

2399. Agate. stained externally from dark
red; organic matter (fatty) for
blackens under heat. —

2401. Brown. Miami mudstone, with
black patches, as if (decayed vegetable
matter

2402. Indurated brown. Miami sandstone
or mudstone, with small cavernous
cavities. —

2390. Albit 86.42 & 92.46
real 2 being 93.30 & 86.30
very vermicular cavities lined with green earth

? 2401, 2402

1884

2384 X

no later

arg. del.

2385

2386

2387

2388

2389

2390

2391

2392

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2418



27

in place 1834 Decent: Cone Harbor: Pen. of Des Moines
2384 X Pale ^{yellowish & grey} pseudo breccia; fragments blended
no calc together altered in their nature, most
angular ^{with some} indistinctly porphyritic. (East locality??)
2385 ^{concretionary} Incl. - ^{greenish} grey talc path rock (perhaps
[alter] slate?), ^{fine} ~~rather a fine greenish~~ ^{greenish}
Lava 2386 ^{blackish grey} Do. converted into Homogeneous talc path rock
lava with ^{minute} specks of quartz; & crystals of felspar:
dark angular ^{porcellaneous} ~~black~~ = fracture, smooth, fine, -
for 2387 ^{extremely sharp, irregular but} Black = ~~sepioid~~ talc path rock; altered slate
2388 Pale Do. ^{becomes} brecciated; both then
X from the Cone Hill; latter highest
with part. -
resemble

J. T. ...
 2390... ~~4~~ *Brown cellular* Laves, with few ^{small} ~~grt~~ & ~~gl~~ F.
 2395... ~~6~~ *Grayish Black* ~~stone~~ Compact-L. with few cells
 2397. *Bruffy* ^{brecciated} ~~inclining to~~ ^{brassy} ~~Pituitous~~ ^{black} ~~do~~, with little
 line in interstices
 2398 X *Lava* by ke. compact -
 2399:2400: X *Agate* in place in Lava
 2341:42 X Indurated. *Microscopic Sandstone*



2403. The greater number of fragments appear, like ^{rather compact} ~~purple~~, the rock is hard with harsh fracture though not very heavy.
2404. Gray. & very highly cellular white. Fracture rock. cemented & cgl. calc. Carb. of lime. —
2405. Blackish brown. (Dark grey) irregular fracture, with very few. qtz & gl. f. & irregular angr. with ^{zeolite} film.
2406. Greenish brownish black, very highly cgl. calc. almost made of cgl. of f.
2407. Fine grained compact pale & blackish brown lava mottled together with few small cgl.
2408. Blackish rather compact brown. porph. with very numerous large cgl. of gl. f. — ^{abundant}
2409. reddish brown brown. highly angr. with zeolite & quartz — with few qtz & gl. f.
2410. The. Breadcrusted structure is evidently ^{angular} compact, like interstratified substance. greenish brown. gl. f. in quantity, porph. with gl. f. — H.B. this concretionary structure seems to accompany all gl. f. the rock.
2411. dark brown. very fine crystalline texture, laterally compact.
2412. like (2398)
2437. grey. glossy. ~~the~~ striated felspathic (can. f.) slate, ^{hard & siliceous} appearing
2412. ^{red} perfect qtz & f. few scales of blood red mica. — rounded grains of quartz unequally disseminated. — highly crystalline rock.



1834. Decemb: 23^d One Harbor

240 B X Brecciated (Tumice) layer in
the above.

2404 X ~~Calcareous cellular Tufa.~~
(24th).

2405 X: 6: 7: 8: 9: X Varieties of Lava

2410 X Pap of Brecciated Tuffaceous

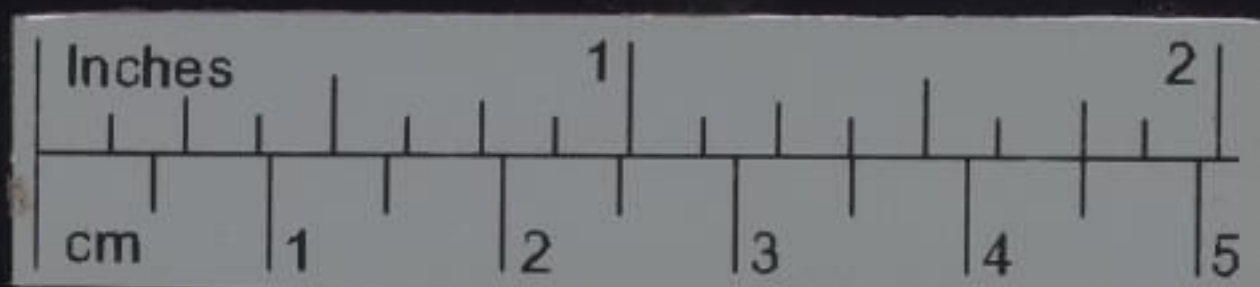
2411 X: 12^x 13^x ^{grey porphyritic with numerous small crystals of st. f.} of the
the fine fragmentary parts
of Lava.

2437 X ~~Trachyte~~ micaceous Schist. Dark
Harbor. middle of outer coast of
P. Tres Montes.

2441. ^{do} ~~do~~ with ^{some} ~~numerous~~ grains of
quartz. - + small crystals of f.

Ynche Is. - h. of Tres Montes
2442 ^{crystalline felspathic} ~~grey~~ ^{green} ~~quartzose~~ rock with grains
of quartz; easily fissile base, ^{glassy} white

2443 ~~do~~, which becomes finer grained
with semi-conch. fracture &
~~which seem partly felspathic~~
is common. crystalline felspar a little later



2460 The laminae are directly on the
sloping face of granite; in
this individual specimen the
granite is not so well character-
ized as usual. —

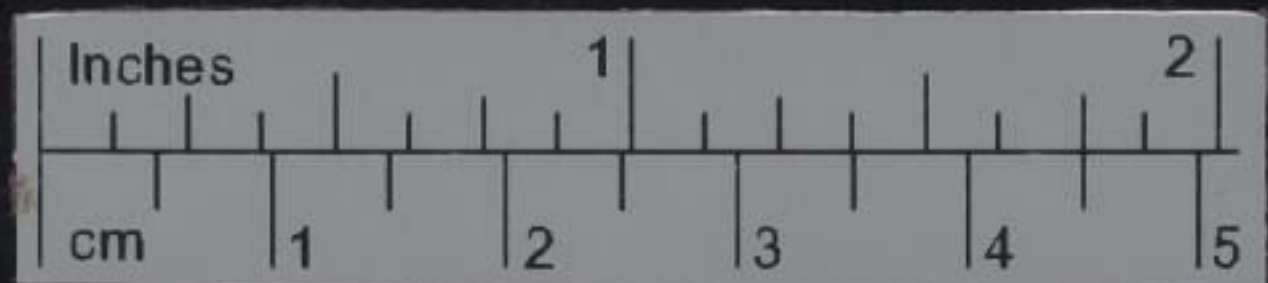
mic. slate in very fine laminae: quartz
small grained & perfect, but mic. in
very small quantity; at junction itself to
the distance of few tenths of inch quartz
rather quantity ore

2465. ss. Pale brown & white pelopithis bone above
with octagons of quartz. & few scales of mica

2467. Greyish white. cgl. pelopithis ss. with cgl. ^{on}

2468. Fine grained, friable with fingers, brown
sandstone — easy fracture

2469. Do. much harder. mottled, minute
broken cysts



"Patch" [29] 14 inches Is.

1834

2459

Decumbent? - low base of granite range,
or horally regular layers of ^{thin} quartz
separated by broad intervals of dark
purplish black micaceous ^{mass} ~~masses~~.
^{numerous minute scales of mica - probably white & siliceous}
~~has the aspect of gneiss~~ matter

2460

Do, resting on granite:

2461

Dike ^{white & decomp.} of granite porphyritic with
feldspar & large crystals (pentagonal)
of quartz - cutting the granite.

(Anna. Pinks Cove. Jan 4th -

2464

Blackish fine grained ^{thin} freestone, dyke
traversing mica slate. -

2465

Feldspathic. rock, white, with crystals

2466

of quartz & feldspar. cut by - dyke

2467

white feldspathic freestone, supposed
to be dyke. cutting do - do

Former Lemons. Jan 6th.

2468

The common grey sandstone, full of

2469

mica: former more common. latter more
indurated with dark: neither effervescent

2470

Layers of harder, finer grained, calcareous

2471

black sandstone; with various concretions



2511. These two specimens come from
extreme West Otago Islands;

2887. ^{hole} green slaty slate. appears talcaceous
but is of a felspathic nature. allied

distinctly to (2437) H. lapp. chloritic. strong fulgur base; striated
appearance; easy fracture into dark gr. & black

2488. the layers of quartz. swell out into little
kernels, which frequently contain large cysts of
F.

2489. Blackish crystalline base. porph. with few s. of st. F. ^{fract} even

90. Pale grey. speckled with red. base. porph. with ag of F.

91. do. more compact. lfp. porph. specks of red or of iron

92. Pale brown base. with most numerous grains of
iron & cysts of F.

93. ^{similar to conch. fracture} Greyish white. compact. homogeneous. nearly
smooth felspathic base, very easy fracture. white lfp. glf.
very translucent on edge, wax-like scales

minute specks of quartz & iron Pyrites. may be
called a kind of Hornstone - H. -

488. May be simply described as very slaty &
black, & as slightly staining paper.
appears as if rubbed of amethyst
consult Humboldt for latter name



30

1835.

Jan: Chonos. Archipel:

2472.

Lanelliform Crust on crevices no 4 5
above crevices

2473

Shells or from 20 Sandstone. -

Lomas Harbor

2487X

Green talcaceous - Chloritic Slate

2488

^{thin wavy lines}
Layers of quartz separated by black

X

micaceous Amphibolite, very glossy

2489X

: 90: 91: 92: 93: Dyke, traversing

above Schists: the order of rocks

Their abundance in 3 dyke: 89. Greenish
black feldspathic base with 2 crystals

92: with an abundance of small grains:

93: Beautiful white wavy feldspathic

rock, with spots of quartz: -

2498

Chloritic Epidote + Feldspar, ^{with micaceous layers} bed
in the Chloritic Slate (2487) -

2511

Pale-greenish Hornblende, feldspathic

rock; deep decomposing into a ^{uniform} reddish color
forming dyke in the mica slate

2512

Distinct crystals of feldspar? placed among
chloritic mica ^{porphyry} bed in mica slate



2513 Diameter $3 \frac{1}{4}$ inches: rather compressed
16. Light, conch. fr. (as before
decomp. - 7.)

2533. Magn. paper. thin layer of quartz
& black of Mg matter

2534 of concretionary origin. fragment of
dark brown & green earthy soft
substance, yet also strong, in texture
& thin vein of calc. matter. —

2513. H. soap very ^{like} bulk a Magnesian limestone
micro section & examine texture

Blue matter supposed as Phosph. Iron.
White ferr. Re. Darker. highly magnetic. Break
sh. with ease. — from Calc: — central
parts ^{minute broken crystals} ~~fracture~~ ^{scarcely} aggregated. not compact,
so as almost to show tendency to form minute
interstitial cavities. — centre a yellowish hard
particulate — as if of Fe granular texture. — external
portions brown. & appearing to have crystalline
fragments of stannous, which probably is owing to black crystals
embedded in a crystalline mass of Fe. —



31

1835

Jan: Chile

2513* ^{Diabase} Concretion from Tent: from of Chile

2514* (Headland. a which P. Tenny. is.)

Common here, rather coarse ^{soft-} sandstone2515. Soft Breccia. intermediate in its
character, between the more compact^{small fragments} softer laminae beds

2516* White compact Aluminous stone

2517 Very white ^{very} soft ^{under finger} friable Aluminous?
substance. Does not effervesce
in harder in patches2518: 19. - Silicified wood. occurring
in the above formation.2522. Greenish - Slate colored. compact basis
with crystals + ^{yellowish & some glassy} ~~crystals~~ ^{very fine} ~~very fine~~2533* Even laminated Amphibolite. Chonos
Archipelago. Lat: 44° 13'. -2534. Another variety of the Breccia
from near the spot with
white patches at Chile
Hugui Lacuz



51. Coarse. soft. brittle. ^{muddy} earthy sandstone
52 parting of nature of the Argillite.
Twenty layers. bulging into
distinct grains

1835

2535

2536

2537

2543

2544

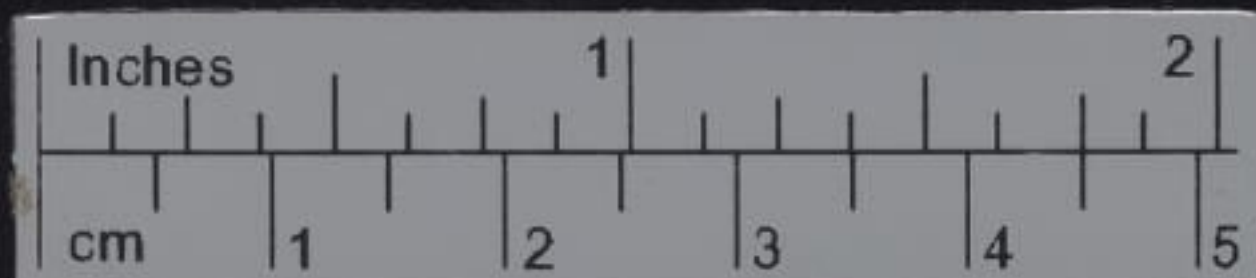
2547

2551

2552

2553

2562



- 1835 for
2535. Shells from hill 350 ft high in bay of S. Carlos. Chiloe
- 2536 Deers Horn found with 5 above; —
- 2537 2542 Shells in the Sertian strata of the Is. of Huasco —
2543. Silicified wood, partially converted into Iron pyrites. — Chiloe
- ~~2544. 2 Belemnites from within the same strata, in Feb? Valdivia~~
- 2547: 48: 49: 50 - Venus, Mytilus, Solen &c. from Sandstone. Agua del Obispo
- 2551 x Sandstone. with layer of yellow soft shells: Belemnites of Fucus?? —
- 2552 x Black Micaceous Slate
- 2553 Yellow ferruginous Co. with very many imbedded cysts of Scleropor
- 2562 68. Shells in a slightly calcareous Sandstone, from the Island of Mocha. — Coast of Chili. —



2578. All 5 above come from
Lizguen. -

2577. Appear to result from
decomp. ^{granitic} ~~ferrous~~ rocks.

2576. Loopy feel. twigs / plants in coal

81. stone with brittle

82. perfectly friable under fingers. sandy
matter; the white part. appear
decomp. &

83. with muddled grain & &

1835.

2570:

2573

2574

2575.

2576

2577

2578

2579

2580

2581

2582

2583

2584

2585

2586

2587

2588

2589

2590



1835. March. *Comparin.*

2570: 71: 72. Best layer of coal or
rather lignite. Black glossy. little
spec. purity. -

2573 Upper iron bed

2574 Lower mingled with pebbles. -

2575. Lowest. ~~very~~ hard. calcareous sandstone
grain of pure quartz cemented together

2576 The common sandstone, a rather soft
sand, ~~full of small pebbles~~ ^{slightly} ferruginous

2577. ~~slightly~~ Harder ferruginous layer in ~~do.~~ - ^{fine}

2578 Indurated argillaceous bed, beneath
layer of lignite (2573), pale brown

2579 Silicified wood. *Liriodendron*

2580 *do.* - near Salomana.

2581 *do.* of *Liriodendron*

2582. Dark greenish hard. ~~stone~~ ^{fine} ~~partly~~
imbedding grain of quartz & crystals

2582. Exceedingly soft earthy sandstone
imbedding white particles. -

2583 Light brown. micaceous soft sandstone
with few imbedding shells. -



87. all these f. mts. are homogeneous.
crystalline & without vestige of
other mineral
88. Brilliantly crystalline black trap
in which ext of f. can alone be
distinguished. fuses into ^{molten} grey enamel
91. snow white speck. earthy part,
fine crystalline base, with
large grains of g. - decomposed
into a soft brown rock



34

1835. Beach. Gravel. — *Trinacromys* L? —
- 2584 Black hard. carbonaceous laminated
Clay. slate
2585. More ^{scarcely} shaly. (approaching to what I have
called *Amphibolite* / even laminated &
not so abundant
2586. Pale. greenish Clay slate. shaly. —
2587. Pale. Shale. color. *Seldspar*. & *He*
2588. X Brilliant *py.* *Diorite*? shaly *Seldspar*. & *He*
- 2589 *Seldspar* rock. *Quartz* & *He*
- 2590 *Stony* ^{decomposed} *py.* *He* ^{like a *Seldspar* rock} with crystals of *quartz*
Seldspar & *quartz* & *He*
2591. same as 2593. but ^{by} partially decomposed
2592. X Iron white-stony *Seldspar* with large
quartz & *He*
2593. *Seldspar* greenish brown
with large irregular crystals
of *Seldspar* & large
quartz & *He*.



2598. These embedded fragments of small size

2601. In matrix

2605. Brown Porph. -

2606. Fine grained granular mixture of
F. & H. latter in nests so as to give
the rock a spotted appearance

2607. Fine white foliated felspar, abundant large
plates of black mica & a very little chlorite.
p. 8 with one single minute grain of
Quartz. - in fact an a granitic
granite. -

2608. Much broken cryst. easily fusible into
white enamel. -

2603. Albite $L. 94^{\circ} 28' 42''$. (true $L. 98.30' 86.30''$)

602. The cryst. are not very large; I cannot succeed in measuring them.
It is impossible to say with certainty whether the mica
structure is false or true.

2603.8. Few scale of mica. seen Hornblende $L. 124.30'$
 $L. 56.35'$: Albite
well foliated. large cryst. - no Quartz.

2607. Miller says Albite of feldspar

2603. Miller says Albite. -

1885.

2598

2599

2600

2601

2602

2603

2604

2605

2606

2607

2608

2609



35

- mill size 1855. *Cordillera* of St. Jago - Mendoza
- 2598 ^{harsh fracture} White, earthy, decomposing Feldspat. R.
X with obscure tendency to crystalline in part
^{shades of dark green} or bits of ~~Chlorite~~ coarse mottled fracture
- 2599 ^{slaty} greenish Feld. base, compact, with few
white crystals of do. -
- 2600 Pale light green base cementing together
very numerous equal sized cry. white Fr.
- 2601X Clay allied to (598), crystals much more
^{intense} distinct
- 2602X Brownish Porph., unequal part, few
large white Cryst of F, obscure Buccina str.
- 2603X White foliated Fr with green Hornblende & Albit
^{base}
2604. Heavy blackish ~~green Hornblende~~ R
uneven ^{cryst of dark Fr.} fine grained
compact, ^{fine grained} dark purplish stone
- 2605X Compact, ^{fine grained} dark purplish stone
- 2606X Fine grained granite, with numerous knots
of small Cryst of (Hornblende?)
- 2607X ^{fine grained} granite, white Fr. black mica, grains of quartz?
- 2608X Compact, fine grained heavy purplish R. ^{fine grained}
- 2609 Gypsum, saccharine structure, black water
lines, containing little Cryst of Lime
seen at plus / versus



2610. This rock common all north of
Chili. I know not whether it ought
not often to be called a Limestone

2610. white flaps.

2611. light black rock: ^{Hemlock limestone. or if laminated} might better be called by Agassiz,

2623. ^{brilliantly} grey crystalline. Anhydrite (no vapour.
^{no carb of lime} scalded calc. spar. not effervescent. melts
with flux on spar). (Hemlock yes)

24. (Hornblende a distinct pale green. Siliceous.
partly foliated. —

28. with ^{apparently} contemporaneous thread like veins of green

30. hard pale lilac porphy. with numerous &
unequal sized cxt of 7. & some large
ones of Hornblende

1835

2610 x

2611 x

2615: 16

2619

-20

-21

-22

-23x

-24

x

-25

-26

-27

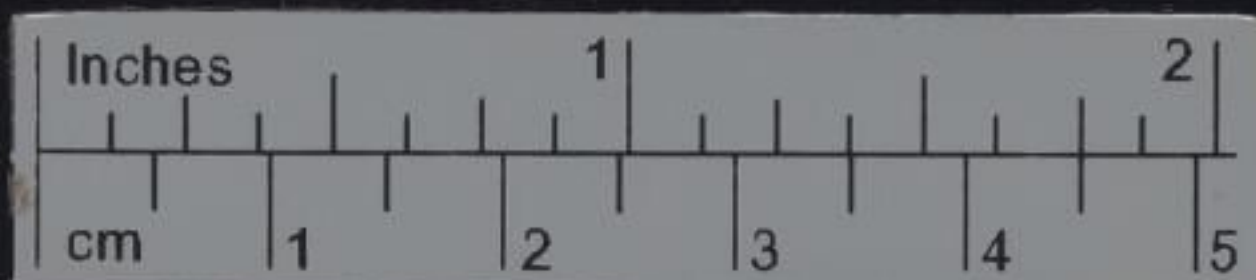
-28x

-29

fulcrum

-30x

2631



36

1835

St. Jago - Mendoza

2610 x Black hard, laminated. Conch. fracture
Calcareous Clay Slate: melts with quick

2611 x 12: 13: 14: Shells in left laminated do

2615: 16: 17. Gyphæa: 18. Pivabre

2619 - Ammonite

- 20 Snow white Gypsum with patches of
black Cryst of Carb of Lime

- 21 Very soft, impure Aluminous Gypsum

- 22 Hard compact Crystalline, ^{bracthy} & ^{translucent}

- 23x Black-grey, coarse hard Cryst. Gypsum??

- 24 Greenish grey. Mass of small imperfect Cryst
of Fe, with little green substance in interstices & ^{of Iron Pyrites}

- 25 Do. with yellow ^{ochre} powder in do in lines

- 26 Do Do do, + much Epidote

- 27 Compact, blackish Conch. fract. Limestone

- 28x Black Calc., apparently Carbonaceous, staly texture

- 29 Crystalline: Calc.: cement chiefly small pebbles

fuldiper of Quartz ^{brown} + Limestone ss on

- 30x Silice: Porph: with black Cryst

2631 Laminated, siliceous micaceous grey
fine grained Sandstone



2643. Is not this union of Olivine
a glassy Feldspar very
remarkable? Would this feldspar
melt into a white enamel?

2632. with black alone of some imperfectly crystalline
mineral, & small spots of an ochre
powder. —

36 irregular layers of q. ^{enamel} with mica
scales of mica small. —

42. Pale grey. compact. uneven fracture. lava.
full of minute grains of Olivine

43. minutely vesicular in sinuous parallel,
close approximate lines, minute grains of
Olivine & mica & Feldspar — see very
pale grey felspathic lavas

44. Black & brown mottled. qtz & glass & 2 low specks
of Olivine (both contain) & white Amyg. —
brown fuses into pale green enamel

45. resembling like 44. but decomposed. trachytic
arter. any fuses. —

33. Feldspar cleared. about 90°. therefore
not albite. —

1885

2632X

-33X

-34

-35

-36X

-37

-38

-39

-40

-41

-42

-43

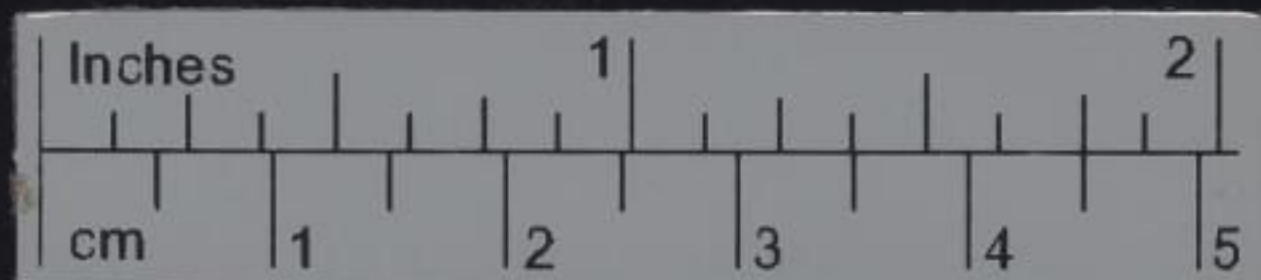
X

-44X

-45

-46X

2647



37

St. Leger - Pandora

Olivine 1835

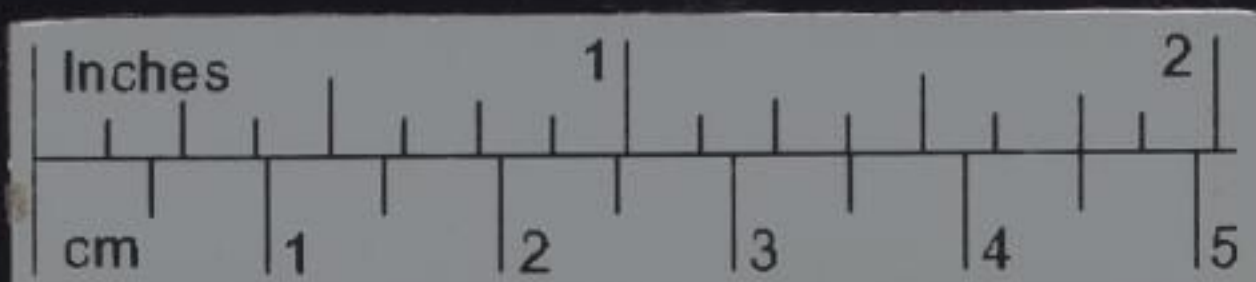
- 2632x granular quartz R. with specks of black mica
- 33x Large red Cy of F. & quartz, ^{imperfect mica} plates of Fels? ^{+ also scale of m}
- 34 Fresh red ^{massive compact} R. grain of quartz
- 35 ? green Do. like Propylite
- 36x Micaceous R. containing quartz
- 37^a Black do, compact ^{up} into Clay State, with
contrasted layers of L₃
- 38 Black micaceous R. passing into Clay State
- 39 Arch: fract: pale brown Feld: bare with
Cy. of F. & grains of L₃
- 40 Blackish Cryst. Feld. Brown tone
- 41 Chestnut Brown ferruginous do do
- 42 Greystone Lava ~~hard with much Olivine~~
- 43 Do, ~~carion~~ in lines, with do, & specks of
X Black mica & acicular Cy of glassy F.
- 44x Blackish do with Olivine, Zestite
- 45 Fine cellular ^{brown} red Scoria
- 46x White light, friable Aluminous Stone
647 Greenish-grey ^{siliceous} granular ^{bits} of
quartz & slate



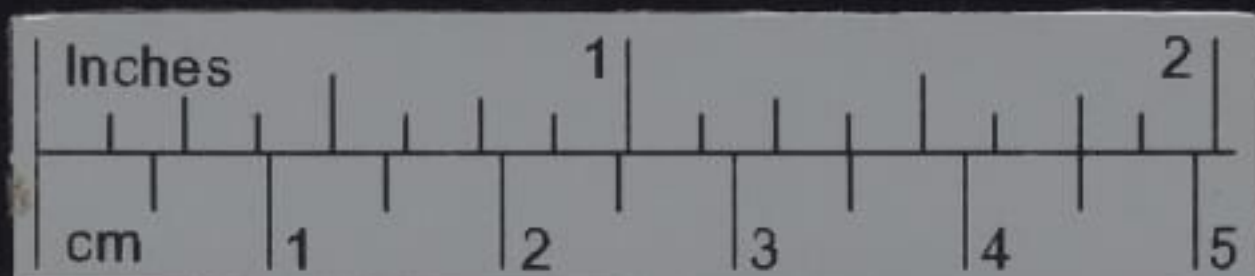
2651. Externally appears like sandstone. but consists of ~~fine~~ ~~at~~ probably of fine broken crystals; & is possible in the white enamel, fine grained. totally hard. -
52. appear as if decomposed.
53. not very easily fusible. not friable with fingers
54. may be considered. as compact F.B. with earthy part. - fusible. -
55. cannot say whether the crystals. structure is owing to. embedded decomposed F. or to reproduction. -
56. ~~small patches~~ ^{dark} of S.F. green mineral. appears to be collecting into ^{small} patches
58. Pale greenish grey. crystallized Feld. B.. with minute atoms like crystals
pink hornblende



1885. St. Jago - Mendoza
- 2648 True ^{thin bedded} laminated. micaceous. blue. Clay like
- 49 Compact. hard Crystalline: Calc: cement, grains of Quartz + Feldspar, pebbles of Porphyr.
- 50 Very compact. ^{smallly conch. fract.} purpled Porph. with red Gy of F
- 51x Fine grained Sandstone, ferruginous, water worn, particles closely united by some cement
- 52x Pale purple Sand: grains generally not Siliceous
- 53x White earthy hardest, slightly Calc. substance like decomposed Feld, Thin Alumina Shell
- 54x Do, faint green tinge, harder, more compact or homogeneous;
- 55 Do, in bedding grains of quartz + extensive feldspar assuming a granular Cryst. Structure
- 56 Pale grey. hard (scratched glass) siliceo-Alumina earthy base, with imbedded grains, & apparently ^{of various substances} ~~Anggdaloid~~ with Chlorite??
- 57 Numerous little ^{grain, some rounded} pebbles of quartz, cement together by ferrug: Alum: base, with little ^{traces} of ^{like 2654} ~~Concretions~~ ^{white Alumina substance}
- 58 Grey Cryst Feld R: - Cryst of F, with fine Hornblende? in 5 interspersed



63. V. Measurement p. 8
61. Black enamel
62. reg. irregular. angular. cruent. Irony cavities.
white, quartz like. scratches glass. but free
pretty easily. —
64. the part. wh. looks siliceous. is in fact
fine grain feldspathic. fuses. readily. faint
fine grained. more points of black mica.
Feldspar best developed. —
67. Onclain rock. fusible. —
71. Irony. carious like lignite
73. dark. near black base. North end. feldspathic. large
crystalline, with ang. cavities with fine
74. Bluish grey. trappean rock filled with large. distinct
crys. of Carb. & lime. —
75. Brown fine grained trap. thin reg.
76. black base packed with atoms of green earth &
white carb. & lime. —
77. Dull purplish base. angular-crystalline structure, abundant
with little nodules of pale green earth & Calc. spar.
78. fine grained ^{crystalline} black trapper. ^{angl.} no large crystals
79. allied to 77. but purplish. the crystals of feldspar
can just be seen pushed. mingled with green earth
& balls of 80. —
81. fine mixture of minute. semi-decay. clay to gyl. of 7. with
ferrous specks: kernels of white, or pale green. compact
feld rock. mixed with soft ferrug. matter. other spherical
balls of dark brown ferrug. matter. friable. which — $\frac{1}{4}$



1885

St. Jago - Mendoza

2659

Pitchstone, ~~very~~ ^{C. & Lin} unequal fract, cyst of

- 60

Black ⁹⁵³ ~~Homblende?~~ ^{fine} Cyst. R. Trap.

- 61

X To Black basaltic ~~like~~ ^{with iron} conch. part:

- 62

X Possibly same nature with (2653), but much ^{+ more Cyst.} harder

- 63

White foliated fr. Black piece little ^{no Quartz?} Homblende

- 64

X One half spec: Blackish Sil. rock, other half

fine Cyst. Feld. with very numerous small

grains, minute of Quartz

- 65

Imperfect ^{minerals} granitic Cyst. ferruginous Feld. R. -

- 66

The width of ^{black lines} line of ferruginous. Feld. one

- 67

X Compact ^{black lines} conch. part. white Siliceous Feld. R

- 68

Rather less hard & harsh. than (2662)

- 69

Feld one, (said to be Phosphate of Lime)

- 70

Do. with copper

- 71

X 72¹ Feld one. (latter like quartz)

- 73

X 79. Various curious Cyst R. (77 like roadster)

- 80

74.30' ^{not a vein} 74.55' ^{vein}
Mass of Carb of lime included in above

- 81

82: underivable; I am nearly certain belong to same ^{bed}

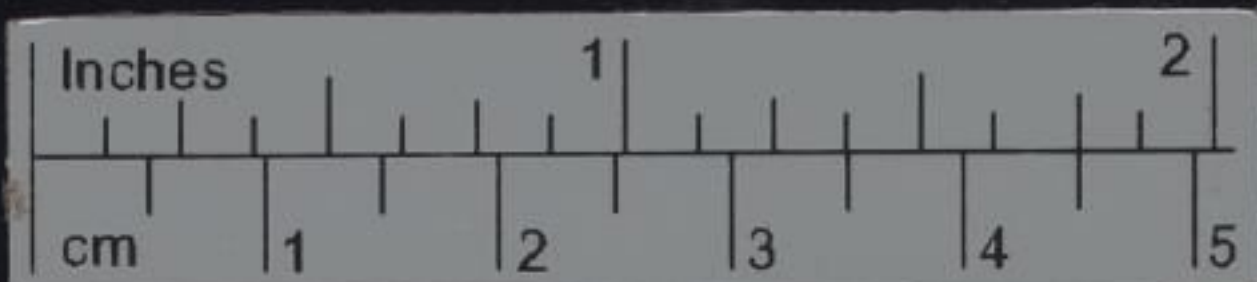
- 83

Lowest part of bed, of similar underivable

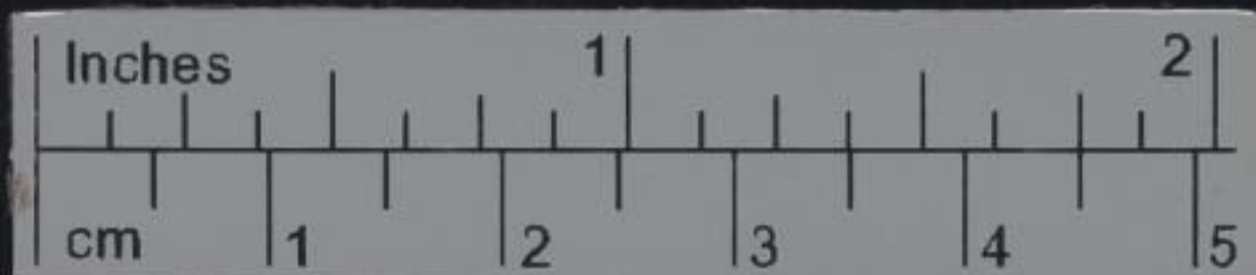
- 84

85 Compact blue-grey R, perhaps same nature

as 2654, with impurities & Vegetation

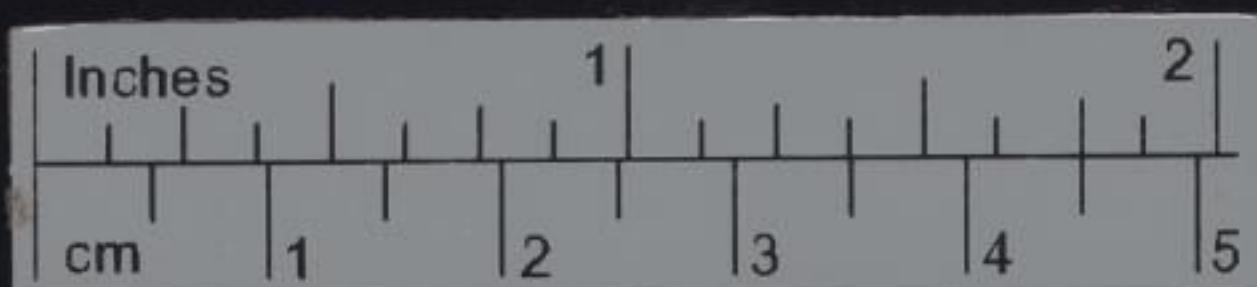


91. Pale drab green. nearly compact, but
containing crystalline felspar. rock. very
minute cavities. - (no siliceous)
95. whole rock clay of nature of Pitchston.
but not so plastic - both embedded
in lime as if of water deposition
96. of which many of the crystals containing
an felspar
98. peeping into a mudstone. when clearest
are so united as to appear ^{semi-} crystalline
2700. Here mudstone would be most proper
name. - structure really almost cryst.
761. well crystd. white fels. with ferrug.
matter in interstices. & partially empty
ang. f. cavities. -
762. Pale brown ^{very fine} compact. mudstone. mottled
with broken crystals - ^{very} fusible. -
how Calc.: !! calc in parts.
700. easy fus. pale green glass. V. app. p. 15.
96. Common angular fragments basalt, abraded
with deep ^{con-} brown crust. of an angular
mass - easy fusible, repeated
bead.

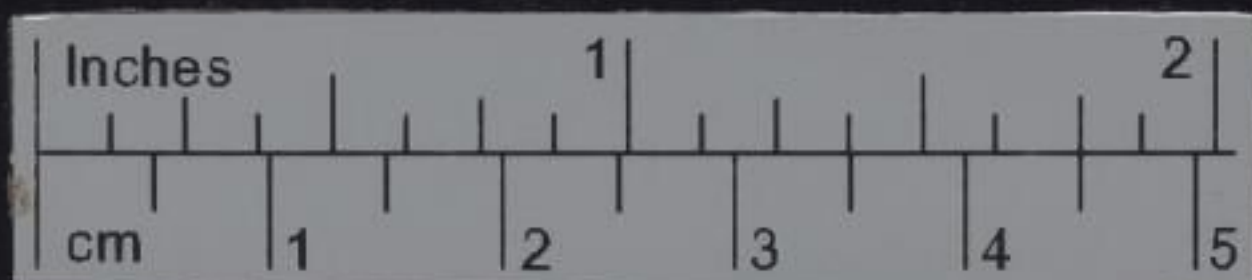


40

- 1835 St. Jago Pandora
2686 Blackened Rock, heavy, irregular cavities
- 87: 88. White rock, such as the above. ⁽²⁶⁹⁰⁷⁾ Blackened
- 89. Much the same as (2657)
- 90. Fine grained. ^{hard, and fracture} Aluminous. ferrug. R. perhaps
like (2653), but slightly granular like Sandstone
- 91. Light brown compact Sandstone, ^{are at all siliceous} where particles
- 92. Blackened R. like 86
- 93. Whitish Fed R. ^{with ferrug matter in interstices} with Cryst. of Do. -
- 94. Like (2655) without extraneous particles & Cryst. ^{developed}
- 95. Pitch stone, in which rounded bits appear imbedded
in a hard sedimentary R. (seen by Wetling/
- 96x Black, ^{coarse} Crystalline, ^{trap} yellow crystals
- 97. Carb. of Lime
- 98x Compact, fine grained, greenish grey Sandstone, ^{broken Crystals} minute
- 99. Nearly similar to (2690) -
200x Very compact & fine grained purplish Sandstone
- 701x Allied to (2699) ^{obviously}, a micaceous.
- 702x Sandstone which has touched the Tree
- 703. Silicified wood
2704. Section, which shows external surface. diff: tree



11. Ineg. part. Alum. Limestone
14. Black brilliant conch. part. Basalt
minute
Some acicular cryt of Fe can be distinguished
may could not measure specimens.
~~Others of Angite?~~ after fusion becomes highly
magnetic
15. indurated shale. (them: coal formation
of Pasco)
17. Dull red, some beccidite stone, abounding
with cryt. Calc. matter, & ang. with little
green earth. - brecc. structure, probably
concretionary - but nature? -
19. I cannot say whether cryt or sedimentary
It will be important to know origin of
this rock on account of Fe parallel
layers.
21. earthy & very part
22. slaty, crystalline (alter) slate?
23. scarcely fusible. the nearest point being
touched. -
709. $\angle 74^{\circ} 50'$ - val $\angle 74^{\circ} 55'$

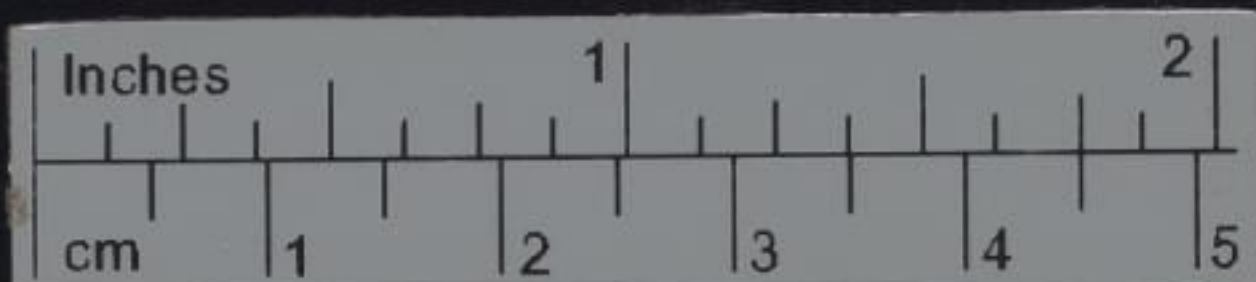


1835

St Jago — Mendoza

41

- Basalt 2705 : 06 : 07 : 08 — Fragments near centre of section
- 709x Carb of Lime replacing wood
- 710 Do. drusy lined with minute Cryst of quartz
- 11x Pale brown, much indurated Calc. Mart
replacing tree
- 12 Copper ore, from mine. I believe same formation
- 13 Blasted R.
- 14x Black. Cryst. (Argentic?) R.
- 15 Jet Black, laminated, very compact, non Calc
x Clay. Stale; with vegetable impressions on one surface
- 16 Brick red, hard, crumbling fract, sediments
unequal sized, ^{broken crystals} particles imbedded in fine brown
- 17x Red. pseudo-Brecc. Cryst. R. do not know nature
- 18x Nature between 2653 + 54 — non. Calc:
- 19x Numerous Cy & F. & L in a spring red basis
- 20 Glossy, ^{rather} harsh fracture, coarse grained Clay shale
- 21x Layers of Cy & F. in purple Clay-stone. base
- 22x White earthy. Folds here with ^{of more Cryst. pinkish Feldspar} obscure patches
- 23x Apparently a greyish granular Feldspathic R.
- 724-25. Salmon-colored, compact. Feld R. with red
= dark small Cryst of Fe



27. broken particles of green or red
leucophaea. water & cyst; ^{very easy} fusible. not
34. untraced parts. white, & then hard,
siliceous. with becciated structure:
35. very all shalle. gritty in warm then
acid. then in minute particles
adhering as if of an amorphous
pink rock: maybe called Magnesian limestone. H.
38. fragments all appear dull purplish
very compact. embedding grains of sand,
& sometimes cysts of F. - not fusible
39. nice often hexagonal
37. earthy bar appear cyst; the red cysts
rather opaque. appearing iron. no doubt cyst
of iron oxide of iron. - balls very spherical & carb of iron
coarse crystalline. - base purplish grey. fine
grained. crystalline full of above two ingredients,
& something other matter. fine coming into
dark green glass. -
31. bits angular. irregular fracture. translucent bright
green. almost cut by nail. under B. P. fuses into
white glass. - which character agrees with soapstone
but not with shale. - but is too hard & not clear enough.



1835

St. Jago. - Mendoza

2726

Dark bluish F. R. porph with ^{minute} acicular Cr
of glassy Feld (~~olive~~)— 27 greenish white earthy, ^{hard parts} little ^{fine} aluminous
X substance with broken ^{crystalline} particles

— 28 Ore of metal. ??

— 29 Argentiferous Lead

— 30. Gold ore, like that of Hornillos

— 31 Red ^{brick stone} paste. Porph. with Cryst of ^{quartz} ~~Iron~~ a bit
X a green substance, which ^{is} ~~is~~ ^{structure} ~~is~~ ^{is} jade— 32 Grey. ~~semi~~ - cryst F. R. with concret. or conglomerate— 33 Feld R. tinged black with ~~Hornblende~~?

— 34 X Rock altered with metallic ferrug. veins

— 35 X Yellow fine grained Limestone, effervesces slowly.

— 36 Pale blue base with numerous Cryst of white
Feld & black mica.— 37 Purplish-grey. ^{minute} composed of little pebbles of
X Cryst. Carb & Limestone & earthy material, & red Cryst

— 38 X Coarse hard red Conglomerate, cement Calcareous

7 39. White Cryst. Feld base & little soft ferruginous
X patches, with numerous Cryst of white Feld
& scales of black mica



41

Heavy compact stone. Heavy black. base
decidedly crystalline. non calc. easy
furnish into pieces glass. get allied
to (37) - red cyst probably same texture
as (37) = decidedly igneous rock =
calc. matter in specks. & some inept
angl. cavities lined with epidote

44.

Contains (calc. matter in lines. grey brittle
serpentine fract. give out vapour. get portion sealed
glass & examine the only date

49.

Knife scratches. limestone containing a
good deal of Alumina: matter

1885

27402

41X

42

-43

-44X

-45

-46

-47

-48

Heavy 7

-49

-50

-51

2753



St. Jago - Mendoza

1835

740 L

Dull purplish, fine grained Calcareous

Sandstone; Crystalline aspect
of amygdaloid, with no crystals

Paris like (2737), with white Calc. specks

-41X

Pale purple, very compact, fine grained, slightly
Calc. sandstone. -

-42

-43

White Gypsum, & contorted layers of purplish
impure. Aluminous, no Calc. do. -

-44X

Gypsum partaking characters of bog. + 623

-45

do. like (2609)

-46

Pure soft Gypsum

-47

Red purple base with numerous ^{white feldspar.} true Cryst of

-48

Red fine Crystalline: ^{grain of ss} granular, with white patches

-49

which appear only to sort of Cryst purpl. one little
white patch in traversed of grains of ss red base

-50

Dull. whitish, very compact, hardest, heavy, no
Cryst. Calc. Aluminous R; weather ^{bright red} fractures.

-51

White Cy. Limestone, numerous impressions
of shells (& specks of Bitumen?)

-52

Oyster shell in do

753

Blueish compact, very ^{very} fine, Aluminous
Limestone



55. compact almost cyst. struct:

56. soft green mineral. appearing Chlorite

2757 V. measurement for 17

2777. I found the number lost

2791. Lower part of intermediate bed

185.

2754

-55

-56

-57

-58

-59

-60

2711.

-62.

-63

2777.

2781

2789

2790

2791



1835.

St. Jago - Mendoza

Chlorite 2754

Brown. hard, Calc. fine grained sandstone.
fermygon veins

-55 x Dull purple, fine grained Calc. sandst

-56 Compacted mass of white Cryst. feld. containing
more perfect foliated G. & ~~specks~~ ^{elongate} of Chlorite?-57 x green base with numerous plates of white Cryst
feldspar & Ansg. with ^{small} ~~Agate~~ ^{little} green ^{as black} little balls

-58 granitic? base, with metallic veins. J. Pedro de

-59 Balls produced by dripping of hot mag. Incas

-60 Silicified wood from Aspallata.

-7 61. Small shells from 557 ft. Valparaiso.

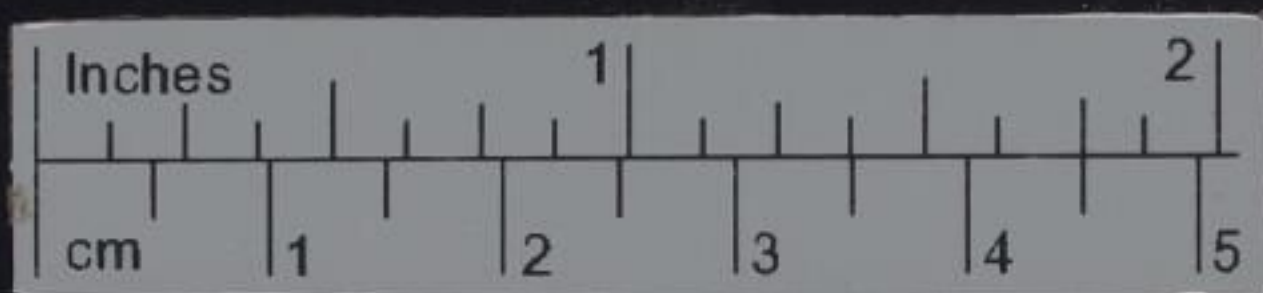
-62. Greenish feldspathic R. with small beccato
structure. quartzon fragments. P. & Pichideg-63 Black green - fine grained. ^{thin conchoidal} ~~granitic~~ feld. Vado777. Shells. Paph. Breccia formation, descent from
Agueros. ~~the north~~. Copernicus

781... 88 Shells. Do. Do (Proclero) Do Elque

2789 x Shells upper Calcaesom. or ^{Ciguinbo} ~~Isca~~ ^{Isca} ~~Isca~~ ^{Isca}

2790 Do Do Do

- 97. Shells. Collected Covington, same station
contained large. Oyster & 3 cresent muscles,



1835

278 : 99.
elle

279 : 801

282 : 10. 12
led,

283 - 18

284 : 20. -

4 lo

284 Shells

led

285 Litrey

are

286 2 1/2

Port

Soft.

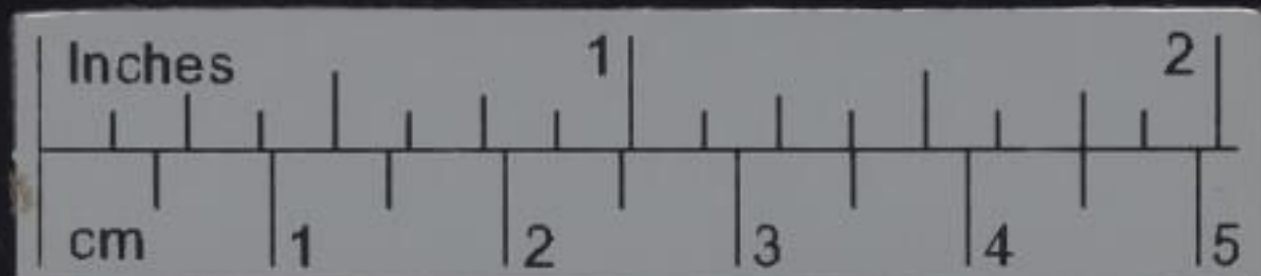
Yellow

48 : 49.

mks

50 grey.

51 white



1835

Copernicus. —

45

2798 : 99. Shells. in $\bar{s}$ intermediate bed collected by me, little beneath Tosca

2800 : 801 — do do do

2802 : 10. 12. Shells from lowest sandstone bed, in Concretion. in Herradura Bay

2813 — 18 do do do —

2819. 20. — From the Tosca cryptom: on top of low plain near Shipu. —

844 Shells. Copernicus, close beneath the white bed: it is associated with green. crested. Hyalites

845 Silvery micaceous Clay Slate, when scale are not visible. Concretion. —

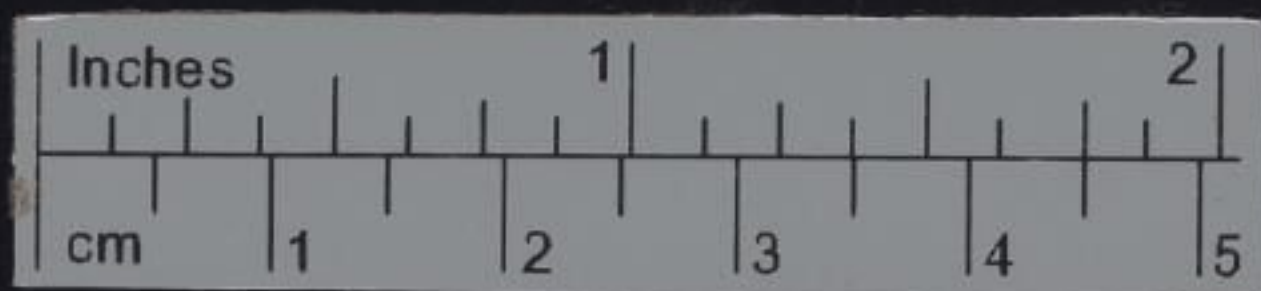
46 2 species of recent Venus. upper green Part of Copernicus

47 Soft. Very fine ^{micaceous} clay. (or better stone) yellowish color, thin bedded with chert. do

48 : 49. Heavy black, fine grained Feldspar rock, ^{Stately. Copernicus} more or less siliceous? structure like clay

50 gray. Feldspar base. full of nodules of quartz ^{agate & Epidote}

851 White siliceous concretion base with imbedded grains of quartz —



53. *crystallina*. looks like 7. but =
infusible

54. fusible

62 edges fusible

63. almost black. Hornstone. fusible

1835

2852

-53 x

-54 x

-55

-56

-57

-58

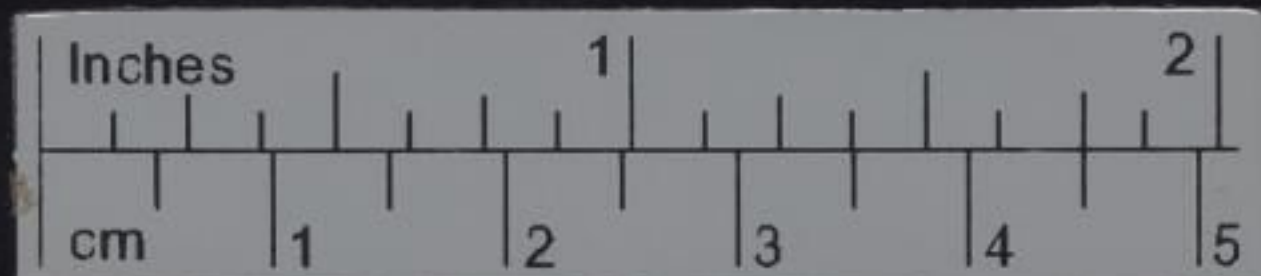
2859

-60

-61

-62 x

2863



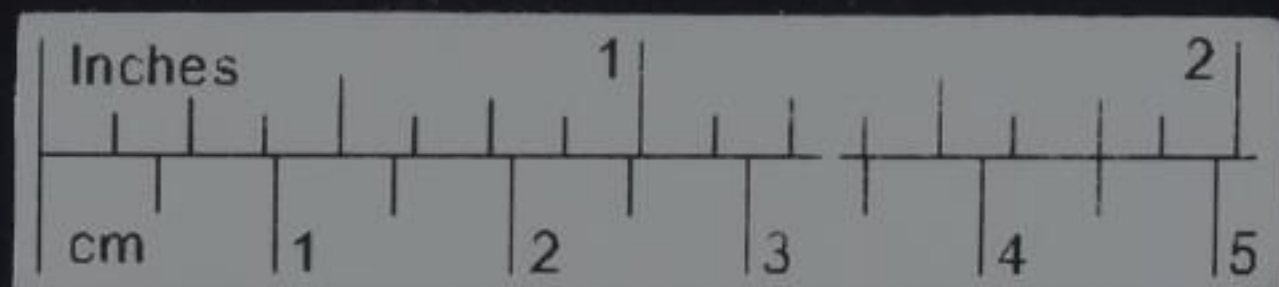
46

Valparaiso

- 1835
- 2852 Do. with ^{dark specks} fony specks & ^{white mica} others of Chlorite
- 53 x Grey siliceous ~~base~~ base, with minute scales of
- 54 x green compact siliceous. Feld. with veins & specks of Quartz
- 55 dull green. ^{felsparitic} fine-grained greenstone
- 56 Quartz & Schist? decomposing
- 57 Dull green ^{crystalline} fine-grained greenstone
the ^{so-called} front lenses collected into specks
- 58 Do. more yellow, more Tetrapartite &
Valparaiso to Copiapo
- 859 Compact. Conch. frag. yellowish grey R. with
(broken?) G. of F. small a bit of black Cy. rock
imbedded, edges blanded away.
- 60 Grey Felt Cryst R. ^{becoming highly crystalline} passing into greenstone
- 61 Oolite compact Feld base, with glass
a common Cys of Felds.
- 62 x Compact. purple-red jasper base ^{in appearance}
^{stone} containing ^{small} particles blanded together & perhaps
Pyrite with Feld
- 863 Dark purple, very compact conch. frag
Jasper R. Iron pyrites in threads



[Faint, illegible handwritten text, likely bleed-through from the reverse side of the page.]



MS. DAR. 236.2
Back cover

