

July 7th No

Acapulco - 1:3. -

Hot Springs
near Nula in Tlaxcala

Coronilla av. of Street
7 feet vegetable earth

9 - Turf

9 - Soft clay

8 - Sand

4 - earth

10 - Clay

4 - earth

10 - Sand

2 - Clay

4 - White sand

1 - Soft earth

1 1/2 - Sand

8 - Clay mixed with sand

4 - Sea sand mixed with shells

102 - Soft clay

31 - Sand

Scru

Globe
Sand and Water - 1:3. -
Water

Salt - Fresh, Hard Soft
Currents - Gibralt. Flowing
- Temperature with the
same - Evap. fresh - frozen
fresh -

Land

Mountains - height
by the shadow - Quadr

Barometer -

	M	meters
1	=	160
$\frac{1}{2}$		116
$\frac{1}{4}$		84
$\frac{1}{5}$		50

Volcano

- Volcano shape -
- Conical top
- Crater 1 - 3 miles circ.
several hundred yards deep
- Smoke issuing from fissures
of different colors - Bad weather
- Shoes - Furnaces -

Signs of an eruption

1. Smoke in puffs -
2. Ashes mixed with small
pumice stones
3. Lightning frequent -
4. Noise like lightning crashing
5. Earthquake, the consequence
 seldom the cause of the
eruption - Booms -
6. All Encrease towards the
eruption -
7. Dense col. of smoke in the
night at 10 miles in dia

8. In 1779 Dense cloud in over
the night road in total
darkness - flashes of light
rendered the sun more dead-
ful

Eruption

9. Noise - Tempest - sea
Eastern Gale, Thunder
Whistling all mixed -

10. Lava rises in the Crater
- shot up to a great h.
- 1779. Dr. W. N. a coll.
of Lava = 2 miles above
the crater

x Now would the coll. re-
main entire on acct. of
the resistance of the air?
- Current of air - strong wind
on the side
- None on fire

11. In 1779. a Rock 700
Tons was thrown 1300 feet
from the Crater -

12. Lava fills the Crater
- sometimes bursts the
sides

13. River of liquid fire 2
miles broad 100 feet deep
covered with a white smoke
in the Day time in the
night with a ruddy flame

14. Great quantities of purple
Flowers on the surface

15. Great assistance - walked
over by Dr. W. N.
over in motion -

16. Takes many years to cool
- Shut in the Crater 1000
feet 7 years for the eruption

17. Lava consists of
Iron, Flint, Calc: earth
with sometimes a little
clay - much sulphur
is added. Sulphur im-
ported from the neighbor-
hood of Volcanos -

18. Herкулениан and
Pompeii were with
ashes - Lava -

19. China

20. Light thrown on
antiquity

- Sculpture painting -
- Three on top of flaggs
3 on each side carved about
1/2 feet between the cheeks -

Theory

1. Inflammable air produced
by various processes
2. Elecⁿ sets it on fire
3. Metals instantly melted
produce an amazing quant:
of air - A drop of water
on melted copper danger-
ous -

4. Electricity - Washer
of lightning - fire ball
falling Man -
- Smoke attracts ashes
+ Lender spirit charged
1779 - Thunder about
passed over the crater
- Col. Darted to an other
height -

uses

Vents for the crushed matter -

- Like Chemney -

x Arsenic and Copper
found in the tops of the Pyrites
masses - These pyrites
road - in Marble - Not known
- bones in the rock of Gold
- one in a Third state -

Strata

- Coats of an Onion
- Leaves of a book
- Hoop out at intervals
- Cores of metals
- Intervals filled with abun-
- x nous matter - rubble

Metals

Now prepared for them
ores -

Gold - Silver, Copper
Iron, tin, Lead -

Platina -

Gold Quantity
leaf 300,000
cube $1\frac{1}{2}$ a globe $1\frac{1}{2}$ Equate

Volcanic Theory

1. Miths formed by sub. pro
2. Raised from the bottom
3. Hence these large beds of
shells &c
4. Crater, Lava Basaltus
Discovered in many parts of
the earth —
5. Islands formed in this
way —
6. Volcanic Explosions also
sufficient to raise the
strata of the earth a prodigious
7. Giants Causeway
Crystallization —
strata - convex - conical

8.

- Strata broken a fortu-
nate circumstance —
- Regular conformity must
have prevailed except to some
of the strata — Minerals
much greater variety.