



No. I

Indexed June 18, 1915

These note Books are stained

Fuller's Earth.

P 20
99

Notes on Barometric elevations.

100 and
103.

Given phosphoric acid to obtain
calcium phosphate multiply by 2.184
Given calcium phosphate to
obtain phosphoric acid multiply .458.

Given calcium oxide to obtain
calcium carbonate multiply by 1.786
Given calcium carbonate to obtain
calcium oxide multiply by .56

Sand Lime Brick.

(1) July 17, 07

Seminole Pressed Brick Co.
plant about $2\frac{1}{2}$ mi east of Fort
Jacksonville post office.
Col. Raymond Cas office 5th
Floor of consolidated building, Pres.
Mr. J. K. Munmerlyn. Ft. of Hogan
St. Sec. of Treasurer.

Lime from the Ocala plant is
used. It is reported to be a lime with
a low magneson content. It is
hydrated in the evening and is ready
for use on the following morning.
method of hydrating not exam-
ined. Apparently it is sloped only
as lime powder, not sloped & dried.
Foreman reported Alabama lime
as unsatisfactory owing to the
length of time, two to three days
necessary to slope it.
The sand used does not

require drying except in time
of excessive rain. at the time
of the beginning of the work
apparatus for drying the
sand was put in as it
was thought desirable to
dry the sand before mixing
with lime. Then after
mixing to again moisten
to desired degree. This drying
plant was after much
experimenting abandoned.
at the time of visiting the plant
the sand was being taken
directly from the fork mixed
with lime and made into
brick. During the forenoon ^{Mr. Scott} states

that during the period of prolonged drought it was necessary to add water to the sand. The sand bank was being worked to a depth estimated at about 25 ft. below that depth it was stated to be too wet. The foreman stated that 4 shovels of sand was being used to one of lime. method of mixing apparently liable to result in errors. Two tricks examined as they came from the machine give no indication of the lime content.

The German machine is in use altho reported as unsatisfactory. The make is apparently the Kahl. Capacity said to be 8000 to 10000 cu

day of ten hours(?) per machine.
Two machines in use. Three
hardening cylinders in use.
steamed about ten hours or over
night. Temperature reported
about (412 F) 194°C. Pressure
not known. The fuel used is
wood.

The reactions in this process should
be according to present views

The lime, CaO , + water $+ \frac{1}{2} \text{O} =$
 CaH_2O_2 , lime hydrate or slaked lime.

Lime hydrate + sand + steam = Calcium silicate
 $\text{CaH}_2\text{O}_2 + \text{SiO}_2 + \text{H}_2\text{O} =$

most of the sand remains as sand
simply. Some of the silica however
enough to unite with the calcium
combines to form the calcium
silicate and this is the cement.
The brick is then sand grains cemented by calc. silicate

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(2) July 17th 07.
The Florida White Pressed
Brick Co. Mr. Harward Pres.
Geo. P. Locker Mng. Office
104 main st.

This plant is using american
made machinery. The lime is the
alabama lime bought already
hydrated. The sand is the same
as that of the Seminole plant nearby.
This plant has a cylinder in
which by the use of large rocks
in the revolving cylinder some of
the sand is ground fine. This
cylinder was not at the time of inspection
in use.

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3. Dec. 2, 1908.

22. G. Bordin

Line Oak Brick & Supply Co.

This plant is located about 1 mi
capacity, about 10,000 bricks per day.
S. E. of Line Oak. P.O. Time used
is the local lime. The proportion
used is eight parts sand to one of
lime mixed by shovel (eight
shovels sand to one of lime) Negro
workmen are responsible for the
mixing under direction of owner.
Immediately after mixing the
mixture is sprinkled with
water until moist. It is then
allowed to stand three days.
Within two hours after mixing
the mass is appreciably heated in

as the lime is refuted thoroughly
sloped at the end of three days.

It is then taken to the brick
cutter by a revolving feed similar
to but smaller than that of
phosphate workers. From the
brick feed it is conveyed by small track
to the cylinders. ~~and~~ The steam
pressure ordinarily used is 120 pounds.
The time is 10 hours. Experiments in
which steam 130 lbs and time
15 hours ^{was used} are reported to have given
better brick.

The sand used is a yellowish sand
from the surface four or five feet below
there is a foot or two of slightly coarser
and much whiter sand. The sand
appears to be compactively fine,
and is fine. The water is obtained
from a well about 120 ft deep.

Sand from Brick Co. p. 101.

Brick Plant

(1.) Exam. July 18, 07 (Samples taken)

Jacksonville Brick Co.

Mr. M. Angus, President, Office
315 West Forsyth St. Yards S.E. & A.A.
& city limits.

This plant has a theoretical
capacity of 12 million brick per
year. Its actual output approx-
imates 9,000,000 (Statement of foreman)

The clay used is at the bottom blue
and refuted to vitrify at low temperature.
At the top the clay for about 3 ft is
very sandy and is yellowish with
variegated blotches and streaks.
The whole is mixed, and comes from
the pug mill as a dun-yellow
color. Bricks are dried under shade
30 to 40 days depending upon the
weather. Drying by heat is not used.

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This clay furnishes 1 1/2 to a red. No. 2.
The completed burning results in a
so called gray brick - really a brown red
brick.

C

Mr. J. Sphinx.
Brick plant, Whitney Fla.
Capacity of plant giving to the owner
as 20,000 per day. The clay used is
a blotched redish and blue clay. It is
reported as variable in depth. 9 to 21 ft.
Building brick is made and is air
dried. water supply is from a deep well.

C

Mr. S. E. Walker Brick plant.
Whitney, Fla.
at pit
over burden of sand 16 in.
Bluish sandy clay worked 6 ft.
not worked deeper on account of water
in the pit. Capacity given as 15,000
per day. Expect to be able to make 200,000
per year.

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Examination of the dredge work
in the St. Johns River. July 18, 07
(Samples taken)

The dredging examined is that at
the mouth of Trout creek being
done under contract let to
R. G. Ross. Cost of removal, for
hard material \$4.33 per cubic foot
yard; of soft material 23¢ per cubic
yard. The top loess material
down to a limestone layer
had been removed previous to
the examination. This top material
is reported to contain shark's teeth
of various size from small to large,
one large vertebra (reported by John Blinn
and presumably that of mastodon or elephant).
The limestone layer on which

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the dredge was working at
the time the floor of excavation
is a yellowish white limestone,
varying from hard to medium soft,
and containing in places many
shells. (See collections). This limestone
layer has as shown by the soundings
many holes dissolved out of it.
at the west end it dips south
5 ft in 30. From the soundings
it would seem to dip in
general to the south, ~~probably~~
evidently however not so much
as ~~to~~ 5 ft. in 30. Below this
limestone is extremely irregu-
lar deposits of clay, and some
marl. The dredge brings up
blue, black, white, yellow etc clays,
also water worn quartz grains. These

the size of a plumb and smaller
seen. much larger reported to
occur. The limestone has
occasional solution cavities
through it.

Jacksonville Gas Co.
H. G. Vesey Gen. Supt.
Exam. July 18, 07.

This plant makes the
water gas. Anthracite coal is
used. Sample of the heavy oil
taken to be used in testing fullers bath.

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Armour Fertilizer Co.
Jacksonville, Fla.

Mr. Foster Supt. of the plant,

Ex. July 19, 07. Sample of acid
phosphate taken.

Treatment of phosphate as follows
1000 pounds phosphate, to this is
added 1100 pounds commercial
sulphuric acid. mixed in brick
lined retort.

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Robert Ransome,

Peat manufacture Bayard, Tex.
^{samples taken}
Location of peat beds about 5 mi.
west of Bayard, along the south
side of Big Louis creek.

The swampy bog covers an
area of apparently some 200 acres.
It is ^{reported} stated that the peat is in the
average 30 ft deep & over the
area mining has been begun
at the edge. Water stands near
the surface and the use
of dredges for mining
is ^{reported} intended. Heavy
Mottin Brick machine is in
use for running the peat through.
Gas has ^{been} reported made from the peat.

Coguin Rock on Auostoria

Exam. in company with Mr. Webb. July
22 07. two samples left.

The coguin rock is in alternate
hard and soft layers, or more
accurately in cemented and non
cemented layers. Towards the
north end of the island non cemented
material apparently predominates.
Further south the rock is more
largely cemented. The coguin
extends from near the north end of
the island south. It occurs as
a low flat ridge. There is a dip
usually, and when observed was to the
east. Was not able to determine whether
or not the rock dips at all points.

The Ponce de Leon and the Alcazar
hotels are built not of natural coguin

rock. put of the loose shells with
the proper mixture of Portland cement
and some sand(?). a number of other
structures about St. Augustine
are built in this same way as it
is considered cheaper to make the block
by the cement mixture than to
quarry the natural stone.

Extent of the coveering to the South.
It is reported that the coveering
either disappears or dips down
or at least is covered by the sand
in the southward part of Anastasia
island. Its exposed part being perhaps
6 or 7 miles. It is probable that
it dips down and is covered by
sand. inasmuch as the inlet
matanzas inlet, at the south end

of Anastasia 18 mi south of ~~La~~
^{de Augustine}
~~exposes~~ coquina rock between
low and high tide. The coquina
is here overlaid by a sandy clay
which ~~becomes~~ sometimes becomes
a calcareous yellow soft rock.
This rock and clay is more resistant
to erosion than is the soft
layers of the coquina. The many
small pillars ^{of coquina} are thus capped
with this rock & clay cover.
This top rock also weathers into
basin shaped rocks. (see photo).

The coquina at this locality is
sometimes the ordinary shells
or again shell with a good deal
of clayey impurity.

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Beyond Mutongas inlet no
coquina was observed until north of
Leuponts landing $\frac{1}{2}$ mi or so.
Here the coquina is harder than
farther north, the shells are more
worn and ground up. The
rock is in layers, all the layers
hard, at least along the
exposed edges. The dip is here
pronounced and is to the east.
The rock contains a good
deal of clayey impurity. (Sample
taken.)

The rock at Leuponts house
and north $\frac{1}{4}$ mi is very similar,
consisting of bedded worn shell
fragments with clay impurity.

Just at Dupont's landing
there are strips of clay with
scarcely any shells. Evidence of
the sandy clay above the cquina
was seen here. The cquina of
Dupont's is not little if only
above high tide.

The dredge was working at a
point estimated as 30 miles from
St. Augustine, 23 or 24 from Ormond.
at this point there is seen at the
water level fourteen inches of typical
loose cquina shells entirely un-
cemented. Below is stated to be
sand, above for about two to 3 ft.
and resting directly on the shells, is
gray sand. Above this sand is clay.

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of brownish to black color 4 or 5 ft.
There is a distinct line of break
between the top clay and the
sand. The top surface of sand is
often irregular, whether caused by
unconformity or merely by cross
bedding not determined. (Photos)

a mile or two on down the canal
is the big cut in the hard rock.
This is a light colored coquina,
rather white and harder than
any further north, but not
essentially different from
that at Duponts except
perhaps having less clay im-
purity. This rock is several feet in
thickness, estimated 8 or more feet.

Drainage canal into the
Everglades. Exam. July 28 '87.

The new River is of varying depth,
usually as much as 25 ft. It has
a few peculiarly deep holes.

The ^{north} canal being cut by the dredge
Everglades was examined in more detail
than was the south canal.

The rock is the dolitic limestone
evidently the northward extension
of the Miami oolite. The top
surface of this limestone is
eroded and extremely irregular, agree-
ing in this respect with the top
surface of the Miami oolite at
Miami and south. The depth
of the oolite is not known at this
point. The canal has gone into
the rock as much as eight feet. feet

without going through it.
 The rock here is stony and looks
 uniformity. The fossils are preserved
 usually as casts. Sometimes as
 original. The top few feet of
 limestone is discolored yellow.

The fossils found are bivalves mostly,
 altho a few corals were found
 (3 specimens) and one bryozoan.

a section just North of the dam
 in the path canal gave the following

- 1.- Black mud or peat about two feet.
- 2.- Clayey-sandy loam ^{containing} ~~filled with~~
 gastropod shells. The transition from
 the black mud to the clayey loam is
 definite. No unconformity however
 exists between these two. 1 ft. 4 in.
- 3.- a grayish dark sand nearly pure
- 4.- a yellow sand in holes in the
 limestone.

5. The oolitic limestone. line of unconformity between the limestone and the deposits above.

Section on
north canal.

(1)	Peat	2 ft.
(2)	Loam	1 ft 4 in.
(3)	Gray sand	unconformity
(4)	sand	
(5)	Miami oolite.	

Following along the canal it appears that No 4. is often lacking. No 3 is sometimes lacking, No 2 may disappear. Towards the east even the much may be thin or perhaps lacking, the limestone then approaching the surface.

The section along the south canal is not so good, so that canal is following a stream which has washed off much.

of the peat and sand occur-
ulation above the limestone.

at the east end of the canals
the rock is non-oolitic (south
canal examined in particular), but is
a yellow white amorphous limestone.

The small stream running
south from the mouth of
the east canal affords a good
illustration of the formation of
a river channel by solution.
This channel is now very deep in
places and the bottom dissolved
out in very irregular patches and
avoids. The water is practically
devoid of sediment in suspension,
but is discolored by organic acids
in solution.

Notes from well samples
from the four wells supplying
the city water of Miami. Exam. July 27.
These wells are about $1\frac{1}{2}$ mi north west
of town. They are nearly 100 feet in
depth. The water rises almost to
the surface and flows by gravity
to the city pumping station in
Miami, and is pumped there
into a stand tower reservoir.

The oolitic limestone as shown
by samples from the several wells
reaches at this locality a depth of
14 feet. The rock from 14 to 18 ft is
unknown. At 18 ft. contains some
oolite grains.

From 21 to 98 ft. The rock
while variable presents no

sufficiently marked characteristics to enable a separation into horizons. In general it contains much siliceous material, consisting mostly of sand siliceous sand grains of varying size. There is also a good deal of calcareous material mostly in the form of fragmental shells. The rock is of coarse appearance and probably for the most part permeable to water. water flow mentioned at 79-80 ft. and at 87-88 ft. from soft rock.

The following notes were made.

- 21 to 31 ft. - a coarse grained hard ^{siliceous} rock.
- 31 to 43 ft. - coarse siliceous rock. fossils as casts.
- 48 to 52 ft. (No. 4) coarse white sand rock. No fossils. Elongate concretions.
- 57 - 58 (No. 3) Coarse siliceous rock. shells often as casts or sometimes as original.
- 61 - 66 (No. 4) Pure white loosely cemented siliceous sand.
- 55 - 70 (No. 2) Beach deposit of water worn pebbles, pieces of shells, corals etc.

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Plastic Karlin deposits -
Edgar. Fla. July, 29. '07

samples taken. The Karlin is overlaid
by several feet of sand as on ourforden.
This is removed by working and
pumping with suction pump.

The clay itself is mined by
means of dredge carrying a suction
pump. The clay being pumped
to boxes and washed in order to
remove the sand which it contains.

The water #6 in the pit and
floating the dredge is apparently
seepage water i.e. surface water.

During prolonged drought it is sometimes
insufficient to float the dredge.

An added supply has been ob-
tained by sinking a well in the

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pit reaching to the ground water of
the limestone. The limestone
water at this locality rises to
within ten feet or less of the surface.
hence at the bottom of the pit
will flow when additional
water is desired in the pit the cap
is removed from the well
allowing the water to flow.

after washing the dregs squeezed
into cakes to remove the excess
of water. It is subsequently dried
a part being air dried requiring
ten days or so. and the rest
artificially dried.

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Waldo Area.

This area as here used refers to
N. E. Alachua Co.

1. Wells.
2. For domestic use, wells; for stock,
wells and ponds; for irrigation, wells.
3. Ten to sixty feet.
4. twenty to thirty-five feet.
5. Variable.
6. water stands near the surface, 1 to 20 ft.
7. Mostly not exhausted by pumping.
8. 35 to 40 feet.
9. Mostly a limestone.
10. No springs.
11. No public supply.

12. Mostly sandy with clay beneath.

13. -

14. -

15. Supage

16. Wells mostly 2 in. driven wells
20 to 60 feet.

17. hard from the deeper wells.

18. Most of the wells ~~are~~ ^{are} poorly
not protected against surface
pollution. Especially true of the
dug wells.

19. -

20. - Some sanitation with seasons
especially true of the shallower wells.

21. Household, stock, and irrigation.

22-34. No quarries.

Wells of the Waldo area.

No 1.

35. J. M. Reubson
36. Waldo, Alachua
37. $\frac{3}{4}$ mi. S. W. of P. O.
- 38.
39. Slightly above the general level
40. Tubular well.
41. 1907. April.
42. Top 4 in to 39 ft. Bottom slightly smaller
43. Sand. E of day to 39 ft.
44. Below 39 ft.
- 45.
46. Cased 39.
47. Water stands within 6 ft. 2 in. of surface
48. Gasoline engine
49. Capacity of pump, 4 gallons per minute. Well is lowered by pumping to 20 ft. not lower.
50. Slightly affected by seasonal variation
51. No samples
52. No analyses.
53. -

37. -

38. Used for irrigating turbing farm
of ten acres. Spinner system of
irrigating.

Well No. 2. of Waldo area.

35. C. R. Sporkmon

36. Waldo.

37. $\frac{1}{4}$ mi west of P. Q.

38. W. Sporkmon.

39. Level.

40. Two inch driven.

41. 1907

42. Two inch.

43. Sand and clay

44.

45. Limestone

46.

48.

Well No. 3.

- 35. W. E. Thigpen
- 36. Acor. Waldo.
- 37. Acor.
- 38.
- 39. Level.
- 40. Two inch driven.
- 41.
- 42. Two inch.
- 43.
- 44.
- 45.
- 46.
- 47.
- 48. Steam pump.
- 49. Not exhausted
- 50.

Some other well of the General
 type listed in detail are the following.
 Mr. A. Jolly. well at home. 40 ft
 deep. Enters rock. water stands at
 about 15.

Public supplies of Malden.

88. No city water supply. Individual wells are used.

89. ~~All~~ all these wells are either open dug wells or driven tubular wells. The dug wells are usually from ten to twenty feet and are especially liable to contamination. The water often stands within a few feet of the surface. The casing in the tubular wells ~~is~~ often driven to the solid rock, ~~then~~ a boring is then made through the rock until water is reached. Some of the tubular wells like the open ~~fall to~~ are shallow and are thus almost as liable to contamination as are the dug wells. A severe epidemic of typhoid during the summer of 1887 is believed to have come from the water, about 12 cases, out of which 5 were fatal. Three

deaths and ^{seven} ~~five~~ cases occurred in
one family using water from one ~~open~~
well.

Jasper to

The area about Jasper and to the ~~west~~ ^{east} is covered with fine sand to a variable depth, below which is clay. No sinks occur throughout this area. Coarse sand is found within a mile or so of the Alopoka river. The area lying between the Alopoka river and the Withlacuche is of a different type different from that of East Hamilton. The top covering of sand is unusually coarse. Below this are sandy clays. The rock is near the surface. There are no or almost no surface streams. No lakes, except occasional small ponds. Limestone sinks are numerous. Caves occur. Steep dissection occasionally. A good illustration is seen in the Devil's Den. This is a sink that

opened up in the bed of a
 slough and remains except in
 time of excessive rain the run of
 water the opening of the sub 2
 come deep detaches have over cut.
 about $\frac{1}{2}$ mile further down this
 slough a second sub has formed
 and receives water.

The rock exposed in the Devils
 den is a white, very compact
 limestone with occasional fossils. It
 weathers in a manner similar to
 the rock of the Suwannee river near
 Suwannee Springs & White Springs.
 See samples, Devils den is 9 miles west of
 Jasper.

The Rooble river is ten or eleven
 miles west of Jasper. Rock is exposed in one
 of these and is similar to that in
 the Devils den. (See samples)

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Notes on Kort.

Mr. A. S. Hardman ^{of Lansing,} states
the Kort was given a temporary appointment as State Geologist by the Governor, and was to make a preliminary report to show the necessity and usefulness of a State Survey. No compensation was provided. The necessary traveling expenses were met. Mr. Hardman believes from the Governor's contingent fund.

Mr. Hardman traveled with Mr. Kort for about four weeks in the fall of 1886 or 1887. They went 27

by conveyance from Summerfeldt
 to about 40 miles south of
 Danversville. Going past
 Isterhotta. Kost was at that
 time looking for phosphate
 and admitted to Mr. Horton
 that ~~he was~~ a large Boston
 syndicate was interested
 in his results. He desired
 especially to determine the
 anticline of the Peninsula and
 Mr. Horton states that in the
 vicinity of Lake Wier Kost
 stated to him afterwards that
 he found evidence of the
 anticline the crest ~~being~~
 lying west of Lake Wier.

Most temporary service
contained Horton's Thresh about
ten months, presumably from
the summer of 1886 to the
spring of 1887. The Legislature
at its meeting refused to provide
for the State Survey. The opposition
to Horton's State was led by
De Ross who himself ^{had} desired the
Geologist's appointment.

Some kilns at Ocala, (2)
Kendricks and Howell owned by
Messrs. These kilns all
work the Ocala limestone.

The Ocala pit has a good
deal of flint in ~~see~~ vertical
masses or thick seams & veins.

Pleistocene vertebrates.

The pit used for road making on the way from Alcala to Martin, 2 mi west & one north of Alcala is reported by the negro workmen to have many bones. (see Johnson. Acklondale St. east of city)

Mastodon Remains & doubtless other Pleistocene vertebrates occur on Thompsons place 2 mi east of Sumpterville. When seen on Dec. 5. Some bones of the pelvis were exposed but badly decayed. Partial measurements indicated a length of about 30 inches. width, narrowest place 16 in. widest $19\frac{1}{2}$ in. From center of coxals to projection 26 in. center of femur to second phal 16 in. The leg (not seen) was reported to be 4 ft 4 in.

Localities from Leidy's memoir Vol. IV Trans.
N. F. S. of Geology.

- (1) 10 mi S. Archer on plantation of J. M. Nixon.
- (2) 10 " N. " " Hallonell's place.
- (3) A pond about $\frac{1}{4}$ mi. from station at Archer.

1 mi. N. Bainersville, in the race for the "old mill" on Newmansville road. Also another near town in digging water way known as "Swiss ditch".

Clay Landing on The Swannee, near Ft. Griffin

Rock Springs, Orange Co.

The water of this spring resembles in color a sulphur water. It has however no odor. The flow of the spring was estimated Dec 17 00 3000 gallons per min. cu ft. per minute. The rock around the spring is a sandy lime rock, in places having no fossils, and elsewhere many. It ^{contains} many water worn dark colored pebbles from small to size of fist. The rock shows horizontal stratification. It is apparently later than Peninsular limestone. About 20 to 25 ft of rock is exposed. From under this rock a stream emerges. 25 ft or so out from the rock is a foil. The rock exposure of this spring was identified by Smith as Moccasin

Clay Spring, Arizona. 5
also known as Wekiva Spg. 1

This spring emerges as a
fool or rather as several foils
from a bluish rock consisting
of clay, sand, and lime. It is
a sulphur water, and is reported
as having a temperature of 72°

It is at the knee springs, as shown by aneroid
barometer is 100 ft lower than depot at Fort
White

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Collection of Mrs. Cusker,
Coleman, Fla.

Turtle bone? bedded in limestone
apparently of Peninsula limestone of fl.
A thick blunt tooth from the Pleistocene?
at Tompkins sink.

A fossil apparently clon of toe.

About two dozen sea urchins from the
local limestone at Tompkins sink
There include several species.

Hollow iron stone concretions from Coleman
silicified cereals reported to come from
Tompkins sink.

Some pottery, one piece of a shank suddenly
imported into Florida. - reported found in the
state.

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Collection of Dr. Harry Dyer.

Holder. Fla.

Corium shells in place and changed
to 80% calcium phosphate.

Numerous shells changed to phosphate and
in a phosphate matrix. Good specimens.

Shells phosphate with 15% calcium carb.
This specimen reported to come from
the contact line between phosphate &
limestone.

Shell of a land tortoise, (exceptionally good).
many sea urchins from the phosphate.

Tuller's Earth,
 Section of maha at

Monatee Co.

Sandy soil 1 ft.

" " 1 ft.

Sandy yellowish 7 ft.

Tuller's earth 8 ft.

Limestone at bottom

Readings taken by Dr. Bellards, aneroid
Barometer.

A.C.L.

S.A.L.

Half moon	1860	8:45	Live Oak	1940
Newberry N.D.	1900	10:05	Madison	1940
Lexington	1890	10:37	Greenville	1925
State	1900	11:13	Drifton	1970
Clark	1905	11:35	Lloyd	1930
High Spring	1900	11:50	Chaires	1910
St. White	1910	12:25	Jalla Lane	1920
L.C. Junction	1905	12:45	House	2035
Bramford	1865			
O'Brien	1905			
McAlpin	1955			
Pinemount	1965			
Crossroads	1965			
Paddock	1980			
Live Oak	1950			

Bond Sandstone, fine w.

H. J. Roberts, ^{Ex. Pres. Minn.} ~~For~~ Larnion, Lake Helen.

The plant is located just east of the
Lake Helen depot.

The sand used is the fine white
sand (Pleistocene). It has a depth of
5 to 8 or 10 ft. Underneath is the foreman
reports occur a hard iron stratum
2 or 3 ft thick, below which is sand
again to 20 ft. as deep as exposed.

The sand is carried from the pit
to the plant by means of a
belt. One man now does the
work formerly done by four.

No bones of any kind have been found
in the sand. In wet weather the sand
has to be dried by cylinder.

The lime and sand proportion is one
given to four shovels sand to one
of lime. The lime used comes in
car loads, is ground and mixed by
shovel.

Output for last year about
8 million.

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Barometer readings, (centis)

House 1710
Depot 1590-1600
Ponds 1600
Stop (Savini?) 1610 (7.22 1/2)
Ponds 1510-1600

Lake Jackson station 1605

Bridge (DeKloster) 1600-1605 (7.27)

Station 1620
Havana 1725
Bismarck 1755
Hinson 1735
Batzloff 1625
Swamp 1645
Launcester 1650
Atlapulguo 1740
Bower 1625
Bainbridge

Pitron 1655
Brick yard 1610
DeKloster 1610
Lake J. station 1630
Sallakuma dep. 1630

Bainbridge 1625
Bower 1790
Atlapulguo 1710
Launcester 1715
Batzloff 1740
Swamp 1680
Hinson 1765-1780
Havana 1775-1780
Carroll 1710

103

Section at Old Chattahoochee Landing
made March 4, 1908, measurements by
an anemometer. Sect. on road N. E. from ^{Landing}

Section at the ^{city} shore pit 1 mi south of
 along Fla made Dec 7, 18

1. Bottom stratum of mud, $3\frac{1}{2}$ to 4 ft
 exposed. This stratum has a
 slightly uneven top or undulating top
 surface

6 ft of
 top

variation in level amounts to about
 six inches in 6 ft. not much if any variation
 this around the entire pit. The unknown says that
 this stratum becomes ~~more~~ harder below. He also
 says that he has taken bones from this stratum.

2. Lying upon no 1 is a stratum of
 yellow clay in which is imbedded clay
 concretions. The change from no 1 to the
 clay stratum is abrupt. The was distinctly
 decay part of no 2 and the largest concretions
 occur at the bottom of the stratum.
 as the top no 2. becomes more sandy, has
 some shell fragments mixed in and forms
~~mixture~~ with a less abrupt change into the
 next stratum of mud

3. The upper mud stratum has an
 extremely irregular top. its thickness is 2 ft or less
 to be cut a more

shipment of fossils from Richard

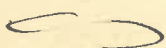
108

Box no. 1. ⁺ contains material from the lower stratum, north side.

Box no 2. ⁺ contains 100 lb. material from the same stratum or south side; also one sack with two pkgs of fossils from Ellenton

Box no 3 ⁺ contains material from the upper most stratum or north side

Box no 4 ⁺ contains material from the upper stratum or north and south sides of pit.



an apparently natural well opens at the east end of the north side of this pit. This well is about 6 or 7 ft. deep & is about circular. The sides cut off smoothly like slickensides. The first foot or so is clay the center of the well being filled with fine sand. The well cuts through both work strata its depth being unknown.

4. The more stratum is followed by a sandy clay. at the fresh section examined this clay consists of a yellow tinged sandy matrix, it has, bluish clay streaks with red at the top.

This clay stratum is seen to run entirely around the pit. Its top surface is irregular and the sand above rests unconformably upon it. Thickness 30 to 40 ft.

5. Fine white sand to the surface 20 to 10 ft.

109

Crest View to Laurel Hill

A good deal of sand occurs in the Crest View region. This is indicated by the amount of scrub oak growing. After the first three or four miles the country has more typical grand Gulf topog. The streams have sloping sides with sand bottoms.

The head of the streams is usually semi-circular thus  indicating springs and with an amp growth in the bottom. Some of the streams however head with a gradual slope then  Others on the contrary may have a bluff heading  with exposed vertical bluffs.

Lake Grove Section.

The morl at Lake Grove is exposed on the left side of the fork above the bridge and on the right side just below the bridge. The exposure above the bridge is but slightly indurated. That below is quite fossiliferous. The morl is gray or blue gray. Upon oxidation attending decay however it becomes brown or light yellow. Lithologically it resembles the chert of the morl. Hall says however that the family relations are with the chipola. The section is: below yellow sands 9 or ten feet morl above water, sandy, yellow on decay. abt. 3 ft. " below low water, at least 2 1/2 ft.

A similar morl but without fossils occurs on Horse Creek about one mile S.W. of Cook Grove P.O. This morl is reported also to occur on Black water Creek about eleven miles west of Cook Hill near Otobite.

Barometrical readings

Level of morl stratum at river	1775
	1820
Cook Grove P.O.	1790
morl at Horse Creek	1860
Top of first large hill east of River	1860
Extreme top of this hill south of road. Oct. 23rd 1883.	
Of plowd over a two miles west of Laurel Hill	2800
	1860
Laurel Hill depot	1885
Cent View depot	1900
Mossyhead	1925
stop	1910
Lebanon	

Brick Plant of Hall
 1 1/2 mi S.W. of Chipley.

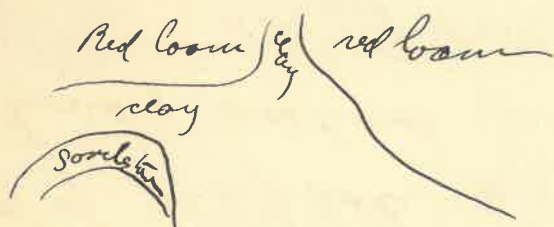
The clay used is a slightly mottled greenish clay having no overburden. This clay is worked to a depth of about 4 or 5 ft. It lies near a natural sink, along the sides of which limestone is exposed. The water in the sink is reported to stand on a level with Holmes Creek, & is affected by the rise of that creek. This clay is reported to make a brick which is sufficiently resistant to fire & some as fine brick. The clay seems to be a residual material. One of pit reports that at the depth of 22 feet he finds a buried swamp with roots & branches etc.

Tallahassee north on S. F. & A. 14

The first cut of importance is about one mile from the depot. At this cut a red clay loam (Lafayette?) with iron concretions lies at the top. This changes in parts of the cut to a green-blue checked material, unlike ordinary Lafayette. Near the base of the red loam phosphate concretions or rolled rock fragments are inclosed in the loam. Beneath the red loam a light colored layer very full of this material comes in.

The second cut of importance is about $1\frac{1}{2}$ mile from the depot. The top material here is the red loam. Near the middle of the cut there comes in unconformably the stratum full of phosphatic and concretionary material. This stratum is steeply inclined, but seems to have a thickness of about ten feet. Beneath this is a green clay which reaches to the top of the cut on the west side & continues to the end of the cut unconformable under the red loam & the concretionary stratum where the latter is present. 15

Another cut occurs at the mile post 52, or 2 miles from the station. Here in the first part of the cut the red red loam forms the sides. About the middle of the cut a fold in the strata brings deeper formations to the surface.



An indurated sand lime stone stratum 2 ft. thick was observed in a ditch north of the R.R. about $1\frac{1}{4}$ mi from the station.

Lowest water level recorded in
 alabua sink is that indicated by
 the accompanying photograph.
 The rock on the right measured above
 the water on Oct 21 '03 six
 feet. at time of photo this rock
 apparently measured about 11 ft above
 water.

City well Gainesville Fla.

120

35. city
37. 2 mi S.E. of Gainesville, Alachua co.
38. Allen
39. located in same surface elevation of well estimated at between 75 & 80 feet above sea level.
40. 12 inch bored.
41. completed Sept. 07.
42. top diameter 12 in.
43. clay to about 70 ft. Rich below.
44. Some water obtained after entering the well. Principal water supply from 3 ft cavity at depth of 194 ft. Total depth of well 194 ft.
45. Limestone. 46
- 48.

Suwannee Sulphur Springs

- 64 Suwannee Spring co.
65. ^{South} On side of Suwannee river, one mile S.E. of Suwannee, in Suwannee county.
66. Suwannee sulphur springs.
67. Almost clear except when mixed with river or other surface water; abn. sulphur
68. Analysis by C.H. Chandler & C.E. Pellen. etc. as follows.

READ THIS—ECZEMA.

A. LEFFLER, Savannah, Ga., writes: "For over twenty years I was the victim of a most intolerable itching which made my nights miserable and my days periods of indescribable torture. During this time I consulted physicians of the greatest celebrity in all the principal cities of the world, and submitted to every known treatment, physical, surgical and electrical, without benefit. Finally, at the suggestion of Dr. J. B. Read, I went to Suwannee Springs, and after a stay there of only three weeks, I am now completely cured of a malady which has been to me a life-long curse."

SUWANNEE Springs is the finest place, I know, to rest. I went there unable to sleep at night, and didn't think of such a thing in the day time. The first thing I knew I was sleeping all night and one or two hours a day. Consequently my nerves were in fine condition and I felt like work and house-keeping, even with a Florida darkey to aggravate me in the summer time too. The baths beggar description. The cold plunge in the early morning is positively the finest thing I know—it makes a person of fifty feel like sixteen; it seems to bring back all the vigor and vim of youth. Our little girl, who was always so delicate, has become so strong and healthy since her stay at the Springs part of last summer, and two months of this summer, that we feel too much cannot be said about this wonderful place. The swimming is exceptionally fine and develops weak muscles wonderfully and strengthens the nerves. MRS. GEO. E. PORTER,

THE SUWANNEE SPRINGS

121

Power for the Electric Lights at the Hotel, Grounds and Spring is Furnished
by the Company's Own Plant on the Grounds.

C. H. CHANDLER, PH. D.

C. E. PELLEW, E. M.

EAST 49TH STREET, COR. 4TH AVE.

CHEMISTS AND ASSAYERS.

NEW YORK, October 10, 1893.

Below please find report of analysis of Suwannee Springs Water:

CERTIFICATE OF ANALYSIS:

The sample of water from Suwannee Springs submitted to us for examination, contains in one U. S. gallon of 231 cubic inches:

Chloride of Sodium.....	0.6196 grains
Sulphate of Potassa.....	0.6027 "
Sulphate of Lime.....	1.7772 "
Bicarbonate of Soda.....	0.9613 "
Bicarbonate of Lime.....	11.0149 "
Bicarbonate of Magnesia.....	3.4827 "
Oxide of Iron and Alumina.....	0.1516 "
Silica.....	0.8048 "
Organic and Volatile Matter.....	2.1839 "

Total Solid Matter.....31.6017 grains

Respectfully,

Your obedient servants,

No. 3140.

[Signed]

C. H. CHANDLER, PH. D.
CLAUDE E. PELLEW, E. M.

The analysis clearly defines and sustains the absolute purity and superiority, as also the medicinal properties of **Suwannee Water**, and explains its remarkable efficacy in bringing back fleeing health and strength to those whose public tributes to its merits are now submitted to the public in the annexed testimonials.

THE FOLLOWING ENUMERATED DISEASES ARE CURED POSITIVELY AND PERMANENTLY,
AS IS CLEARLY PROVEN IN HUNDREDS OF CASES, BY

SUWANNEE SPRINGS WATER:

Bright's Disease, Malaria, Dropsy, Lumbago,
Inflammation of the Kidneys, Ureters,
Bladder and Urethra, Gout, Rheumatism,
Ropy or Cloudy Urine, Female Weakness,
Torpid Liver, Diabetes, Dyspepsia,

Suppression of Urine, Brickdust Sediment,
Hemorrhage of Kidneys and Bladder,
Stone in Bladder, Gall Stone,
Incontinence of Urine, Insomnia, Eczema,
General Nervous Disorders,
And All Blood and Skin Diseases.

FOR FURTHER INFORMATION, ADDRESS

F. L. REES, VICE-PRESIDENT AND MANAGER.

SUWANNEE, FLORIDA.

Suwannee Sulphur Springs.
64. Suwannee Springs Co.
65. ^{Sulphur} *Wells*? Suwannee river, one mile S. E. of
Suwannee, in Suwannee County.
66. Suwannee Sulphur Springs.
67. Almost clear except when mixed with
river or other surface water; also, sulphur
68. Analyzed by C. H. Chandler & C. E. Pellew, etc.
as follows.

87. There are 18 cottages, costing when built \$500 apiece. One hotel, costing \$1,200. Pumphouse, Electric and pumping plant, in all about \$2000

These springs were a favorite resort for many years. Having been used for at least 20 years.

The attendant at the spring states that the water comes from county which has been followed by pole 15 ft. running for that distance to the south.

71. The spring is sometimes discolored by mixture of river water. This occurs ordinarily as a result of the river rising above the level of the spring.

It is reported that on at least two occasions the spring became milky in color presumably from suspended limestone or mud. The source of this pollution is unknown, but was from some underground source. It occurred following a rise of the river.

It is also reported that the spring has several times become discolored from some source other than from the river backing in. The rise of the river as much as 23 ft. usually does not contaminate the spring. On these occasions, however, contamination has occurred at a medium rise.

73. Reported 12,000 gallons per minute.

74. " 76 % ; 76. One fork river.

77. As foil from rock.

78. From rock. 79. Flows into river.

80. Health and bathing resort.

85. Delivered at station \$2 per 12 gallons

86. Swimming pool. \$18,000; building etc. \$20,000

Philip Plouffe Plouffe city.

1
9
x

