

No. 27



PROPERTY OF
N. Y. STATE GEOL. SURVEY



W.C. COTTELL - 1884

Herb. No. 12,434

Handwritten scribbles and wavy lines, possibly representing a signature or a series of connected letters.

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Indexed to page 24. June 8, 95

Vegetation types in the Ocala area.

- 1.- Open pine woods, including along the border a very few cabbage palmetto. some live oak. No undergrowth. No in grass. Good growth of long leaf pine; very level. Probably no rock exposure. No natural or artificial exposures.
2. Low hammock.- short leaf pine and many cabbage palmetto. sweet gum. white oak and water oak. Underlaid by muck although not reached by the auger. Very level. No natural or artificial exposures seen.
3. Heavy low hammock.- more calcareous material. muck being reached by the auger. Cabbage palmetto. sweet gum. magnolia. little or no short leaf pine. Hammock growth dense. No good exposure found.
4. Ball berry flats, a phase of the palmetto flat woods. very level. some ponds. long leaf pine and palmetto. No rock exposures.

No. 5. Swamp. Cypripedium. pine etc.

No. 6. Rolling ~~for~~ well drained pine land, the limestone lying next below the residual material. *Desmodium frutescens*.

No. 7. well drained pine land, a ~~calcareous~~ sandy and more or less indurated material lying above the Vicksburg & capping the hills. long leaf pine. no undergrowth.

No. 8. Calcareous Hammock. Vicksburg limestone near the surface. Oak. Hickory. magnolia. etc.

No. 9. Middle Florida Hammock land. Non-calcareous hammock. growth of Hickory, and other deciduous trees some short leaf pine, and occasionally some long leaf pine.

No. 10. Scrub. dense growth of stunted oak.

Shunellon to edge of the area
on north side of the river is
rolling. yellow sand / shale / slate
formation beneath.

at or near the boundary line
of the area pass into flat woods
for about six miles. Soil
sandy 2 ft. hard for 1 1/2 ft.
light sand below.

Then pass again into level pine
woods the palmetto. Soil
yellow sand to 5 ft.

the country continues to the
camp down & towards English
at the down a yellow lime-
stone is exposed. also on the road to
English about one mile from the down
in a stream, yellow limestone is
exposed. many fossil echinoderms.
similar to those at Ocala. collector.

From English the Gulf
the Vicksburg is either on the
surface or is covered with

18 2 ft light colored sand. 8
The long leaf pine here has
no top root as the lime rock
prevents. Cabbage palmetto
is present through the pine.
Saw palmetto is abundant
short low growth.
No hard pan.

From Inglis to the Gulf on
the Withlacoochee River the
Vicksburg shows occasionally
to the Gulf. The dredges for
the channel bring up the
Vicksburg. The prevailing
growth along the Withlacoochee
from Inglis to the Gulf is
cedar on the Vicksburg rock. cypress.
cabbage palmetto, bay, sweet gum.
No mangrove.

Geology of the Ocala Area.

The Vicksburg Limestone ^{calcareous} lies
practically at the surface in the
area of calcareous hammock land.
The Hill south of Ocala, at about 150 ft.
is capped by calcareous sand rock.
resembling the Alum Bluff formation.
The calcareous hammock land covers
this hill.

The middle T. laid Hammock belt is
underlain by the sandstone
which normally has very only a
little calcareous material.

The silicious ^{calcareous} ^{where} the
Vicksburg supports significantly
a growth of long leaf pine.

The extensive areas of surficial
sand probably mark the extent of
the Hurlston formation.

Film 4 - About 3 miles
below Ingles view on north side
of river facing down stream.

Film 5 - Shell bank dredged
up from channel out
from mouth of with benches
Vicksburg limestone. (Sample)

Film 6. Port Ingles
from the Gulf side.

Film 1. With Crocker River
4 mi below Ingles or
mouth of Bennett's creek
looking up stream (Oct. 2). (?)

Film no. 2. With Crocker
River 3 mi below Ingles
near Cherry Landing.

Feb 3. Fish at 2 1/2 ft. 12
" 4. " " 1 1/2 ft. 4
" 5. " " 1 1/2 ft. 4

From Jughis to Camps down¹³
the river is much the same as
below Jughis. at the dam
yellow limestone shows. This
is rather soft but is probably
the Vicksburg. leaving the
river at the dam and traveling
S.E. find palmetto flatwoods
for about 2 1/2 mi. Previous
to the building of Camps
dam the water level
in this area was about
25 ft from the surface.
as seen in sink on Cosens
farm and in well on Priest
farm. After the dam was
built raising the water level
in this river about 20 ft. The level
rose in the flat woods on equal
amount. The sink on Cosens farm

was thus filled almost full.
The water rose in Pines well
about 20 ft and to within about
5 ft of the surface. During
the heavy rains of Sept. 1912,
Cannon's farm was flooded &
he obtained damages from
the Florida Power Co.

After leaving the flat
where the elevation rises
gradually and the land becomes
sandy with scruboak. At
Citrouelle the country becomes
hilly. This type of hilly country
continues going south east into
the Pral. upflow Area as it is.

No rock exposed in this drive.
Sands cover the geology.

It is reported that rock is¹⁵
found in the hill about $\frac{3}{4}$ mi
n. of North east of North-west
Ever Borne place where camp was
made. This rock presumably is the
Vicksburg.

Go and about LeConte the
Vicksburg is found on the side
hills, elevation 50 to 70 feet
above sea. Examined &
collection made at King
Jenny 1 mi S. of LeConte P.O.

The Vicksburg is seen again
at and near Mansfield. elevation
40 to 60 or 70 feet. No rock seen
between. At the LeConte area &
Mansfield the country is
sandy pine land no rock seen
no water and no streams at all.
Vicksburg seen at Baby Creek

About $1\frac{1}{2}$ mi north East of
LeConte. Also at Joseph
Wolfe farm 3 mi N.E. &
near Tom Borne place about
4 mi north of LeConte.

Nov. 18, 1912

Film no. 1. Buchenbachs 1st
River mine on north side
of Withlacoochee River. Showing
line of sand clay pebbles
formed at the lower line of
weathering.

Film no. 2. Sludge of some
plant.

Films 3 & 4. Phosphate pit
on Sect 18. 9 1/2 mi. S. W. of Lake.
showing typical farren gray sand
of the phosphate formation. Nov. 22, 12
Film 5

The large hill 220 ft in Citrus County
shows only sands and sandy clay, on
the sloping sides. no rock.
The pit of the Atlantic Coast line on
the Hamilton Decatur Road is in the
Vicksburg limestone. elevation.

Hamilton to Sumterville. '17
Nov. 18 - 2/1.

The country on the north side of
the Withlacoochee River for about
two miles from Blue Run
(Wekiva creek) is well drained
and sandy. elevation 50-60-70-80
feet.

From this point through
to Camp Ford ferry is chiefly
flat woods with many small
ponds, and little prairie.
with occasionally a cypress
pond. Near the river is horned
larch, live oak, etc. Palmetto
and gallberry predominate in
the flat woods. The Wekiva
limestone was not
seen on the surface in this
flat woods. its depth is not
known altho it is probably
not very deep. No evidence
of phosphate seen.

at and around cedar Grove & church on the way to Stokes ferry is found extensive hammocks reaching from the river back inland two or three miles. From Stokes ferry to H. A. Ross is pine land. Good grade diomoge grad. and limestone occasionally at the surface. From Ross place to Gaiter (old location) is a good deal of flock jack. From Gaiter to Gum swamp is chiefly palmetto and galberry flats. Rock (Vicksburg) is occasionally seen here, and also around the head of Gum swamp. Elevation 50-60 ft. Some phosphate rock was found in Marion county west of the head of Gum swamp. Pits had been dug here. On the east side of Gum swamp a line of low land and prairie border the swamp. From this inland the elevation

uses giving the sandy flock jack lands. There passing into the big scrub. Vicksburg is near the surface in the low land, but is rarely seen in the flock jack land. West and a little north of Oxford (2 1/2 mi to 3 mi. pond through open pine land with much rock on the surface elevation 70-80 ~~80-100~~ ft.

One some of the higher elevations 100 ft between Oxford & Wildwood 2 or 3 mi west of the S.A.L. rock of the phosphate formation was seen. From Wildwood to Ocala Coleman the Vicksburg is abundant. Also to Sumterville. The rocks in Sumterville described in Bull. 1 as Thompsons field were in Thompsons field, now owned by Brignan. The water level in these rocks is much above that when examined fully. The rock being covered in west of the rocks. Well rock measured about 10 ft from edge Nov. 20, 1882 was 78 ft deep from

the water level: about 80-20
feet deep from the surface
level. A small stream
emerged from one of these
creeks and flowed through
several, and finally disappeared
into a creek. Water flowed
about $\frac{1}{4}$ mile or a more.

Mr. T. L. Brigman, Sumterville, Tenn.
visited Oxford.

Limestone near Vicksburg is
found $2\frac{1}{2}$ mi south of Oxford.
Elevation 90 to 100 ft.

Thin rock, probably Vicksburg
said to be found 20 ft from
the surface.

Sand rock seen frequently
on to Belview.

about $2\frac{1}{2}$ mi south of
Belview, elevation 90 ft.
a pit on east side of Public Road
about 5 ft deep, chiefly clay
under used for road, but also
found layers of rock including phosphate
fossils near 200 ft. 21

The "Grotto" at Belview is 21
located on land 110 feet
above sea. The main is
about 60 ft to water level.
The fuller earth stratum
occurs near the top, ten feet
or more, most of the rest of
the wall is covered, the upper
25 or 30 feet is phosphate rock
discovered in soil. Nov. 22, 1912.
see section in 2nd column.

Old soft phosphate mine
 $1\frac{1}{2}$ mi south of Belview on
East side of Ry. Vicksburg limestone
soft and showing local phosphate
at a depth of a few to 10 ft.
Peaks and irregular top. On top
of this is a mixture of materials
mostly clay, but with some
fossils of the sandstone.

Bellevue - Dunellon.

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From Bellevue west for three miles
is hammock. Sandstone on the surface.
Wichburg limestone in the depression
running stream. Elevation 60 to
120 feet.

Next 2 miles is 60 to 80 feet.
scrub oak and sandy. to hard red &
ocella. Some country on to the
scrub. North on hard red Hammock
comes in again about one mile on
the 100 ft contour just beyond
Pudings Pond.

Adam Warner, Shady Grove
Fla.

Horn's still about 4 mi.

Wichburg limestone pit is
found in the depression 1 mi north
of Pudings Pond. Elevation 80 ft.
Wichburg fragments seen along the
road to 100 ft or perhaps 110 ft.
Shady Pt. is in the edge of
the hammock on south side of road. B.
about 1 mi from edge of scrub.

at Horns still 8 1/2 mi S W of
Ocala. Sect 18. is seen two
old pits mined for phosphate.
The material here is typical of the
hard rock phosphate. The Wichburg
projects as usual in peaks.
The elevation is 100 feet above
sea. The phosphate being on the
knoll.

lime pit on south side of the
Dunellon Ocala hard road about
12 mi from Dunellon. Ocala
phase of the Wichburg. (about 2 mi
south of Horns still).

On Dunellon sheet 120 ft
hill, all scrub oak.

Come into hard road at

Ocala 11 mi.

Pit in the open pine country
on the Ocala - Dunellon road
shows white top road 2 ft
phosphate matrix & Wichburg

Another pit near Shallow 24
in the open fine shales
which are 2 ft. a foot or two
of nearly clay & soft Vicksburg.

T. B. Mergon. Bones
of Mergonville & mi
ner of Rome. Sand rock.

Indexed to here June 8, 1915

Dec. 4. at Latona

Pit nearly full of water. It
is evident however that shell
marl gives place at the top
to fresh water marl. The
upper foot or so has fresh water
shells, including Planorbis.
There is however no evident
break between the marine shells
and that which follows.
E. L. Bond. Hauled mud & Myxos Boud.
also Sec. Area Macchault.

24
26
Letter of Hrd. & mammals

Nov. 27. - Took for explanation of
bleached condition of the bones.
about one of four not yet able
to find definite causes, but nu-
merous details that make the
contemporaneity doubtful. Human
bones old. no question about that. but
may not be so old as some of the
animals represented in the same
deposits. some of which early
Pleistocene, perhaps over 500 years ago.
Extra additional finds and evidence.

Bones of 2nd skeleton is but of
them in lowest part of no 2. but
undoubtedly as to the specific course.
Exclusion of bones that lay on some
distance in the sand deposit and
may belong to the same.

27
Approximate length of the line
that should be assigned to them (as
I make in one 6-7 ft but that may
not be quite right). etc.

Reply to Mills. Nov. 29, 1876.

Yours Nov. 27. See pg 17 &
described in the text page 140-142.
Your questions fully answered &
truthfully & well I will testify. The
best that I can do for you is to say that
when you have examined all things
as carefully as Mr. Sellards did
how you will be of the same
opinion as he is. Being an eye
witness to the measurements
and fossil finds as well as of
the photos taken with the
fossils in place. I can make the
above statement. It is immaterial to
me whether you or any one else

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believing the statement as
made by the Doctor. The facts
still stand. & etc

Salisbury said I am afraid
wait, for when the Com. make
investigation they will be of the
same opinion. As our doubt of any
to so it will be when full
investigation has been made of
the fossils.

Hed. Nov. 28 -
who first noticed the fallen out
part of the second skeleton.
about the "inch" when fresh had
only the consistency of mortar.
The fact not of great con-
sequence.

29

Only much in the north Bank.
Wells Beth. Dec 1. -

Fallen out part. Mr. Agassiz's own,
myself & fatal.

Excavation made over the first
skeleton. The hard marl
rock was in the fork, back just
a few inches of the skeleton, and
a section had broken off and
lay on one angle of, should say
was, and if the bones were laid down
in place it would have been beneath
our skeleton. We turned it out
of the way the better to get at the
excavation of the fossils. and
later when excavations were
resumed & we dug up a fossil
stump beneath bed 1 which

The fossil was found, and
undoubtedly that stump the
rock was so hard that the
root could not penetrate it
and they were curled up there
in a nest. The rock that
you refer to as being as soft
as mortar & that exists only
in small pits where the water stood
frequently on it.

There is a bed of mudstone
the north bank of the canal
but not so thick as on the
south bank and is gradually
thinner out to a few miles as
it recedes from the old stream
bed. I refer you to

Sellards p. 132 in the description
of Fig. 3. Humors bones as in-
dicated in the sketches are below
the bed rock and were imbedded in
the brown sand. This is correct,
but I suspect the dredge had fractured the
rock, and as the sand came in and
it, the fact that we find in the banks
had fallen in the position we found it.

Dec. 7 - Deer Hunt on the
Beach. Jim Knight, Joel Knight,
Albert Knight. Lawrence and Lem Law.
Frank Ayers. 2m will + E.H.S.
8 men - 8 guns - 5 dogs. no deer.

Dec. 8 - Deer hunt. 7 men 5 dogs
no deer.

Dec 9 - Invertebrates all from #3
Small fish and the latest corals. Also
deer bone and turtle bone.

Dec. 9. - Forenoon Deer hunt, no deer.
 Afternoon, at the canal
 snails from #3. Bear tooth and
 ulna of fox? from no 3. also #780.
 Turtles from #3. Horse tooth from no 2.
 section on lateral canal.

sand
 more - - - 6 in #3
 sand - - - 1 1/2 #2 } no fossils.
 worn shells and sand

Section on canal beyond the lateral
 seems to show #3 becoming the dark
 mainly sand layer with mal above this

mal
 black mal + sand. #3 sand +
 mud
 #2.
 #1.

The mal is certainly younger
 than the mud.

Dec. 11. Lohubul.
 Forenoon, fix of Lohubul Pleistocene.
 Afternoon. Corvus Plus. co.
 osteology of corvid. To bone of bone, etc.
 Mr. J.A. Pomeroy, plant foreman -
 .. H.W. Webster, probably owned Dept. ✓

Dec. 12. Brewster, Pit #1 Obol
 looked out. Principal feature the 2 H
 of "bed rock" in the Pleistocene. Pit
 No. 2. Principal feature clastic bed
 red + sandy matrix

Dec 13. Ft. Price & Tiger Bog.
 Ft. Price. Hippurion pinnip & more
 in place in the light wheel pebbles.

Dec 14. Forenoon at Newboke
 Bed rock projecting in brooks on
 in the head rocks. This erosion
 must have been previous to the
 deposition of the Pleistocene.
 Uplift not between the one brook
 and the rock.

Dec. 14 - afternoon at
the pits of the Phosphate
Mining Company East of
Barton about 2 mi. east and
near (within $\frac{1}{2}$ mi. of) Bear Creek.

An examination of these
three pits open indicates very
plainly that there is at
this place ~~an unconformity~~ a
formation overlying and
above the phosphate. This
overlying material is chiefly
sand stained from iron. Its
maximum thickness is
about 15 ft. In places it
rests directly upon the phosphate

matrix or workable bed.
elsewhere it rests not upon
the workable bed but upon
a part of the ^{underlying} ~~underlying~~ ^{matrix} ~~matrix~~. The
unconformity is quite well
marked. In places there
is a conglomerate of as
much as one foot, also
as a rule there is no marked
conglomerate. The change
however is indicated by a
difference in color and by
an irregular line including
trenches, ditches and valleys.
There is no doubt of the unconfor-
mity being general over the whole
exposure. Whether it is confined to
Bear Valley or more general is not known.
The ~~rest~~ ^{rest} of the formation not known
is too thin to be of use.

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water level in cut 20 ft above sea level.

Phosphet Rock.

Florida produces $\frac{1}{2}$ of the world's supply.

Florida phosphate, $\frac{1}{2}$ exported.

Don.

Don 30. 1917 See also p. 45.

Sink near Wokulla line.

Depth to water	60 ft
Depth of water	65 ft

Rock fr. line 25 ft above water
 chert-like rock. fossils north of
 cut also oysters, silicified.

June 16, 1917. Sink 80 ft. water 30 ft.
 11 miles south of above 2 mi.

West. Lignite in small sink	65.3
Water of Fall 51.5. Water of winter	51.3
	13.8

Sink on Rock place in S. 28. 25 NW
 water level said to come up & go down
 again.

Sink of Fish Creek probably on

Sept 19.

Liasal sink probably on S. 28

17 in Leon County. 10243
 cut here + 82.45 ft

March 13 7.25 am
 meter 8578 out 81.6
 Summer River

March 19. 1917.

Forenoon. Chamberlain, Perry, Smith & Sellards followed the banks of the main canal west about 2 miles. No fossils whatever were found in Chamberlain's hypothetical forest formation.

Afternoon. Chamberlain continued the examination of his canal. No fossils reported.

Perry, Smith, Smith, Ayer and Sellards spent of the old excavation and collected fossils as follows. Mr. Smith noted a layer of corals shell having a thickness of probably 6 inches. From this spot he obtained several pieces of bone fragments, pieces of pottery, parts of turtle shells and other bones.

This place is in immediate proximity from 39
 1st house been

and distant 12 feet. all the material found at the face of No. 3.

Field no. 1.

at this same place in No. 2 Smith found a complete T. minor & some other bones from no. 2. Field no. 2.

Sellards found in No. 2 farther west a deer antler. Field no. 3.

Ayers found in no. 3 well tracks to top a hole known as Field no. 4.

March 20. Forenoon. Chamberlain and Sellards examined the to south lateral about $\frac{1}{2}$ mile. No fossils whatever.

Perry, Smith and W. J. collected on to some locality as on the preceding day.

From #3. pottery, bone implements and fossils.

From #2 well took in place a piece of pottery. Location 13 ft from stake 1. direction

Location 3 or 4 in. above the shell succession. Brown sand 15 in
Lense of shell corals & sand 6 in
Sand & b. much alternating in
the usual way about 2 ft.
Muck and sand out 1 ft.

Field no. 5. one piece of pottery from #2. 13 ft from 1st ulva, direction
Taken from the ground in the ~~place~~ of
Columbin. Berry. seeds are Lustr.
pottery about 3 in from the shell & about
1 ft from the top of #2 and 3 1/2 ft from the
surface.

Field no. 6. forest and mud from
No. 3. near the pottery.

Field No. 7. Here all collected at 4 ft
one place & probably all of one
individual.

Field no. 8. Bone implements and
pottery from no. 3. or some general
locality.

Field no. 9. Complete carapace
of a turtle from hole in #2.
Turtle house seems to belong to
#3. Also a second part of some turtle.

Field no. 10. pottery and turtle from
#2. found by Mr. Wells 3/24/11.
Hertford ulva ft.
direction.

also turtle from some place

Field no. 11. From no. 3. sand rich of
coral. bone pottery etc

Field no. 12. From no. 3. north rich of
coral. pottery and bones

Field no. 13. perforated shells
tells from #3. rock rich of coral.
Field no. 14. from #2. north bank.

March 22. Thursday

F. no. 15. pottery. found & influenced
from No. 3 soil finds.

F. no. 16. bird bone, same place.

F. no. 17. Corned bone implements
from # 3.

F. no. 18. Ceroid! from from # 2.
collected by Perry & said to be from # 2.
Close from no 2 in some package

F. no. 19. Bone from # 2.

F. no. 20. Small turtle carapace from
no. 2 ~~area~~ - collected by E.H.

F. no. 21. Small turtles from No. 3.

March 24 Saturday

F. no 22. Bone implement from
3 found 6 in from fire, 37 ft
west of canal (lotter) and 39 ft
east of the ulna. Section here
soil undisturbed 8 in.
Fairly with more 10"
sand & vegetable material 9 ft 6 in.

Brown sand # 2 3 ft.

Total thickness of # 2 + 3

8 ft. 3

F. no. 23. Huntrod from # 3 43
about 2 ft east of the bone implement &
6 in lower. also other bones from
same place.

F. no. 24. pottery in corns from
near the bone implement.

F. no 25. Chert from
2.

Wat Hopkin June 1917

45

Animal Sink near mouth of
Leon county.

This sink was visited on Jan 30. 1917
by Selma Smith, Sumner & Harg. The
depth & water was measured by hand level
on 60 ft. The maximum depth of
water was then 65 ft. Total depth 125 ft.
Limestone rock extended above
water about 25 ft. This rock was
at that time considered as probably the
equivalent of the chert rock, the
fossil being preserved in casts. After
the system are silicified.

On June 16¹⁹⁰⁷ this road was
revisited by Hopkins and Sellards.
Barometrical reading of the road was 58
and at the river 80, the fall being thus
30 ft above the public road. The level
of the road is thus about 5 feet below
the public road and the water level
30 feet below the road.

30 feet below the road.
This sink is probably on Sect 17
in Iowa county.

in some cases
 direction for finding the sub.
 From Tolla. East House on Crawfordville

road 10.2 miles. (at 9 mi 46
just house on left side of road. at this
place the road changes from that
shown on the map to soil map.
From here to the road would be the
S.W. passing the sec. 29. The turn to
the Reservoir is 1.2 mi beyond
this house.)

The turn off to the right is
by an unimproved road off the
west which crosses the main
road about 50 yards north of our
old house. The right is about
 $\frac{1}{2}$ mi west of the main road &
about $\frac{1}{2}$ mi north of this west
road.

The sink of Wokulla River
(locally called Fisher Creek) is
probably on sec. 20.

On sec. 28. Form of the Roker
is a sink like Falmouth spring.
Hoffman says a much as 30 feet of
rock and a strong stream

About $\frac{1}{2}$ mi. W. of 47
main road & near the 10 mi
post (10 mi from Confluence,
probably 10 $\frac{1}{2}$ from Talla) is a stream
is small sink & right of main road.
To go to the place turn to the west
or leave north 10 mi past from
confluence.

120
 18.6
 9.8
 125
 165
 175

1 1/2 mi from Gilbert Hill.
 see Brooks out clay.



