

THEM

6

J.H.C. Martens,
Florida Geological
Survey.

Tallahassee

Book No. 6.

next number on sand samples
~~to~~ 187

Nov 15. 1927 1

38.
28.
7 1/2 mi. W. of Indian River City
St. Johns River Alluvial clay
(Exposed in ditches along highway)
Overburden 2 1/2 feet of sand
and much clay. Shows only
to depth of 1 foot. Much
color. Usually plastic, but contains
appreciable amount of shell.
Very many roots.

→ Actually muddy sand

sand
800
= 8000

sand
801
= 8001

Nov 16 64.5

2

Miami Beach.

Sand - with large proportion of
shell fragments and perhaps other
calcareous material.
From surface of beach (to depth of
2 inches or so)
Ships channel at S. end of Miami
Beach. At 60 ft from water's
edge as tide stands now (3 PM).

Sand similar to 8000. From Miami
Beach. 5.2 miles north of preceding
locality (800). The beach proper
(that is the part free from vegetation)
is very narrow and steeply sloping.
Samples taken from vertical face of
Two foot notch or nick which is first
reached by the waves at the present time.
There is a little more breeze than usual.

At the same locality tree trunks
(mangroves) are distributed through the
beach. And as if the trees were there.
Most of the branches are broken off and they
are so low that they might easily have
completely rotted and enclosed by the
rotting back of the mangroves.

The sand of Miami Beach is of a
normal yellow color, but not a bright
yellow. Similar to that at Palm Beach
as nearly as I can remember.

at "New" development
beach sand 15 ft. deep used in surfacing
some of the asphalt pavement.
Along here (I think) north of
channel at S. end of Miami

Nov 16

3

Beach. Large amounts of material
has been dredged out of the
lagoon inside of the beach.
The dredged material has a gray
color. Consists to a large
extent of young broken shells
(mostly shell sand) and fine silica
sand like on the beach, but has
also a certain amount of whole
shells and in places a large
proportion of limestone, but the
nature greatly from one place
to another.

10 miles north of S. end of
Miami Beach. In back of
the beach there is a ridge
about 9 feet high of sand
which looks like that on the
beach. Ridge about 200 ft
wide. Only small part of it
was the vegetation light
covered with grass, weeds and
a few bushes, but appears
to be of rather recent age.
Sample to 2 ft depth.

187

Nov 16.

4

10 miles N. of S. end of Miami Beach.
Beach at this locality is gypsiferous (not over 20 ft) and steeply sloping.
Beach sand 10 mi N. of S. end of Miami Beach, 2 ft section in gypsiferous or sandy cut cliff on the beach, not at back side of it. Sand at this locality does not appear to have been disturbed or directly affected by dredging as it may have unless 800 and 801 were collected.

= 800 2

Miami
Datum around ditch 15.8

(22.4 mi W. of Miami on Tamiami Trail.)

5

Fresh water marl and muck on spoil banks. specimens collected.
The road itself is built of hard limestone. Can not be certain whether any of this has been dug into here or whether it has all been hauled. Some blocks that look like it on side of canal away from road, so it probably occurs below the muck and fresh water marl.

1/2 mi. beyond here or about 22.3 mi W. of Miami.
These are blocks thrown up on the spoil banks that show conclusively that the hard limestone is obtained there rather than hauled. Some pieces of the cavernous limestone with the fresh water marl actually attached.

only 1 saved 3 spec. of hard ls. from 23 miles W. of Miami.

Construction work going on about 3.4 miles W. of Miami drilling in limestone in canal.

42 mi W. of Miami on Tamiami Trail.

6

Collected shells from sand removed from canal.
Bag of sand with shells, concretions from sand.

Several kinds of hard limestone. The limestone occurs very near the surface.
The sand containing the shells is below it.
Many more kinds of limestone than are represented by samples.

43.6 turned back.

Limestone 9 to 13 ft according to driller Alfred, average about 12 ft.

Says this is the only place they dig to 9 ft average.

A man named Alfred who is drilling holes for laying the ls. says that the thickness of the limestone down to the sand at this locality is 9 to 13 ft. averaging about 12 ft. taking the canal as a whole also on one of the dredges says they dig to average depth of around 9 ft and dug to 17 ft at this locality where the shell sand is exposed on the bank.

7

At only one other locality seen in going 42 mi W. of Miami is there any noticeable amount of sand thrown out. This is about 36 or 37 mi W. of Miami (by memory, no note taken of it at the time). This is a rather coarse white sand, at least it contains some coarse sand. Hardens somewhat on drying out, probably on account of lime. Did not notice any shells here but did not look much. The same Mr. Alfred says that these two places, this and the one where the shells were collected are the only ones where they dug much into sand. He says they used some of this sand in a bridge or bridges. Look up and see if this is the locality from which sample received by Mr. Hall. Project 690 D.

The locality "42 mi W. of Miami" is at about station 1930 of the highway survey and the bank containing the shells extends for about 1000 ft along the road.

8

Turritella's very common. Also something like a small olva. small round clam with one radial ridge on the side.

Small oval clam with smooth chalky looking shell. Oysters rather common, often cemented into bunches. Venus rather scarce.

Pectens and Cardium only fragments and these most common. Perna and Carditis not excessively rare but less common than the other or four of the smooth shelled species.

9

Nov 18

— miles N. of Mattcombe ridge of calcareous sand along shore. About 3 ft high, 50 ft wide. Limestone below shown in excavation in ridge, also in water. Used in surfacing bituminous highway.

803

=8003

2 mi N.E. of Bridge over Snake Creek. Longl. Monroe Co. Number may have been omitted on sample and locality given differently given on label as 3 mi S.W. of Tavernier.

John B. Orr
N.E. 20th St Miami plant office NE 6th St
Dimension stone from Key Largo limestone.
Wintys sole or (upper Mattcombe)
E.F. Griffiths, in charge of quarry

87.2

85.7

10

804

=8004

Calcareous sand

Beach 1.5 mi NE of
Mat. Acumbe station
This sand also forms 3 ft
ridge back of shore.

Rock exposed at water's edge

Beach is very narrow and
does not reach down to low
tide in most places.

Some has been dug from this
ridge and used on the road.

Wright
Tender of Alagar Light
on beach off Upper
Mat. Acumbe
Address Isla Morada.

C. K. Lyon, manager
Russell Arms Hotel
Isla Morada.

Sand copy of Dept of
Agriculture Map of State

C. Ed. DeBrowere.

Flourishing contrast at
684 NW 7th St Miami
getting out dimension stone from
Key Largo limestone

Nov 19.

Upper Mat. Acumbe Key

Calcareous beach sand
near S. end upper Mat. Acumbe
Coarser.

805

=8005

806

=8006

~~Sand~~ Sand - same locality
finer textured, a little
higher on beach.

Sand ridge rises two or three
feet above high water,
immediately in back of
beach might well be called
a beach ridge, coconut palms
growing on it.

807

=8007

Sand - with concentration of
heavy minerals, scraped up
from very thin layer on
beach, a little above high tide
level - Hollywood Beach.

808

=8008

Sand - in back of board walk
Hollywood beach. Seems to be
slightly coarser than the beach
sand proper.
Sand similar to this forms
a slight ridge in back of the
beach much of the way.
Has been used in Hollywood

13

in concrete sidewalks and
on bituminous surfaced roads.

809

=8009

Sand

Holly wood Beach

Cut through 2 ft wave
cut bank where section
of board walk was taken
out by storm.

Boca Raton

Nov 20.

Rock outcrop along ocean
shore for about $\frac{1}{4}$ mi S.
of where road from $\frac{1}{4}$ Boca Raton
station comes out to the shore.

It seems to be the consolidated
equivalent of the present day
beach deposits that is a
mixture of sand and broken
shell cemented together. At a
1 1/2 point toward the south
end of the outcrop its thickness
is 10 feet or exposed. There
is probably more below the
water. The waves are breaking
directly against it.
Some of the layers in the
upper part are rather typical

14.

coquina, but most of the shell
is much more finely broken
and more tightly cement than
the coquina. lateral extent must
be small since the ground
drops away in back to the canal
and swamp.
waves erode the rock with
a rough jagged surface but
no typical potholes were seen.

Only for a very short distance
does the rock rise much above
the water. Where the road
comes out to the beach there
is a sand ridge rising
10 to 12 ft above the water
and rock in front below high
tide level but farther south
the rock comes almost to the top
of this ridge.

Several specimen of
"coquina"
1 of coral - loose on beach

810

=8000

Beach sand

Boca Raton.

A little above high tide
cut to 6 inch depth

5.6
87.5
81.2

15.

Nov 20

Lake Worth.

Beach at Lake Worth, Casino.
Sand has large proportion
of finely broken shell similar
to that at Boca Raton.
Rather steeply sloping beach.
Ridge in back rises to 12 ft or
possibly a little more above high
tide. 15 width than at Boca
Raton - 200 ft or so. No rock
in sight.

811

8011

Sand from ocean beach
near Lake Worth, Casino.
cut to depth of 1 ft. a little
above high tide. Does not
show any distinct bedding or
aggregation of silica sand and
shell fragments.

6.3 mi S. of Gus's bath
Palm Beach.

Channel into port of Palm Beach
5.6 mi N. of Gus's bath at
Palm Beach. - Material dredged
out of channel is mixture of
fine sand, shell sand and whole
shells. The quartz is a little
coarser than that on the outer
beach. The shell sand is gray
rather than yellow or mixed gray
and yellow. Sand on outer beach has
not much different from that

Port of
Palm Beach

Channel
Riverside Hotel

W. Palm
Beach

Palm Beach

Lake Worth

1/8
M. C. Jones

rock

16

at Palm Beach 5 mi S
Sample not taken because of
probable disturbance by
dredging and break water

812
=8012

ocean beach.
Sand 13.2 mi N of W. Palm Beach
slight concentration of heavies
skimmed off surface on beach
upper limit of wave action at
present time

813

8013

Sand - ocean beach 13.2
mi N of W. Palm Beach
ordinary beach sand, section
to 1 foot depth, 15 ft
up front of "rip" at park side
of beach. A little above
ordinary limit of wave action.

Beach sand here has large
amount of shell fragments
mostly small, little sorting
of shell and sand. Higher
ridge short distance in
back of one nearest to present
day beach.

or 5 mi S of Jupiter

17

W. R. Hawkins.

Box 27

Olympia
send list of publications,
or copies of reports themselves

Nov 21.

Fort Pierce Beach.

on S. side of Ft. Pierce
channel, newly dredged,
a very little north of east from
the main part of the town of
Fort Pierce.

814
=8014

Sand - ocean beach.
Fort Pierce.
section to 1 ft depth, at
top of beach ridge on the actual
beach, bare of vegetation.
The waves have washed over
this at high tide this morning
but there is more of a sea than
usual, although nothing extreme.

Less shell here in sand than
at W. Palm Beach, and sand is
lighter colored. Little sorting
of gtz sand and shell fragments.

18

Nov 21

2 mi N of Ft. Pierce
on new Dixie Highway,
6 ft. cut through ridge of
white sand. - on old dune.

The road is running N-S here.
Transverses ripple marks run
up and down banks on both
sides of the road.
Amplitude of ripples about 3 inches.

Yesterday the wind was blowing
rather strong from the north.



Picture No 3 and No. 4
marks at the locality.

816
=8016

Sand - 2 mi N of Fort Pierce
skimmed off the surface of
a slope of about 45° on highway
cut shows slight concentration
of heavies by wind action and
probably also by sliding down
the side of the cut, but
does not represent any particular
part of the ripples.



Clyde Manning
Jellison.

19

817

=8017

Sand. Same locality as
816 - 2 mi N of Ft Pierce.
cut through undisturbed bank
to depth of 4 ft. includes some
of top soil. appears to have
slightly greater amount of heavy
minerals than usual in
dunes sands of east coast.

77.5.

818

=8018

Yellow sand - bank on
road side (N and D 4 W
Highway) 5 mi S.
of Vero.

Below 2 ft of white sand.
- Represents about a 2 foot
section of yellow.

20

Mrs Isaac M. Wells.

1 vol. St. Lucie Tribune.
starting Feb 25, 1916, ending
July 8, 1918

1 vol. St. Lucie Tribune.
July 16, 1918 to
Nov 16, 1920

1 package Vero Press
Sept 1919 to Sept 1923.

1 package Vero Press.
Sept 1923 to Aug 1924

1 package Vero Beach Press.
1924 - Sept 10 1925

1 package Vero Beach Press.
Sept 17, 1925 to
Jan 14, 1926

Rebecca Rodenkury. } College
Burnete Wilder. }

21

Nov 22, 1927

Vero Beach.

Specimens from collections of
Isaac M. Wells are in
boxes so marked.

Specimens collected by us on
this trip are marked JHCM
and H. G. in boxes.
Large shells in paper carton.
Sand and rocks specimens in bag.
Rock specimens in two (or three?)
boxes.

The last three boxes packed
of Isaac M. Wells Collection and
sent in a separate shipment from
the rest, and, with the exception
of a mammoth tooth and
large bone and some rattlesnake
bones, a lot of material
which, all lay together in a
box without separate labels and
may therefore represent a single
collection.

With the mammoth tooth just
referred to and with the bone
(with a hole in it) there is
a tag saying "no locality
indicated that no locality
label was found with it."

Most of the specimens are
packed in the small boxes
in which Mr. Wells kept
them and his labels are left
with them so should be

22

looked for carefully in unpacking.

Nov 23, 1927

Indian Lantic Beach.

2 mi S. of E. end of
Indian River Bridge from
Melbourne

Beach sand contains large
portion of finely broken shell.
Scarcely any whole shell or
large fragments. ^{Very little}
something out of shell fragments
from the silica sand.

Beach about 120 feet wide.
Probably near low tide.

Beach crops well developed
and apparently regular in
height and spacing.

small vegetation
Dune Ridge 8 or 9 ft.

Heavy
concentrate
beach.

23

Indian Lantic Beach.

Heavy concentrate in places at
foot of dune ridge, back side of
beach. Apparently not continuous.

819
=8019

Heavy concentrates. Indian Lantic
Beach - 2 mi. S. of E. end of
bridge from Melbourne.
Tare or greenish dark layer
immediately below surface at back
side of beach. Beach by waves
only in fairly high sea.

820
=8020

Sand, (Ordinary)
To depth of 1 foot on beach.
30 ft in front of dune ridge.
Indian Lantic Beach.
2 mi S. of Indian River
bridge from Melbourne.
(Same loc. as 819)

24

Nov 23, 1927
Daytona Beach.

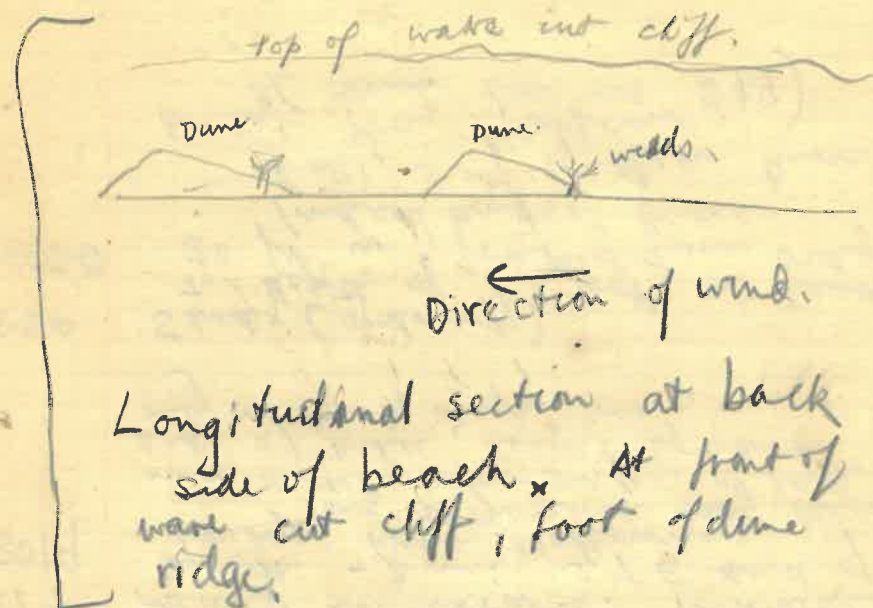
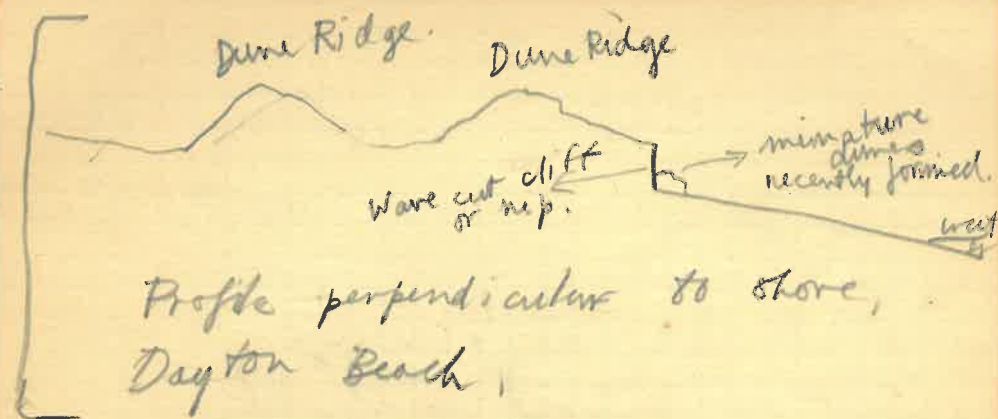
3 mi. N. of foot of Main St.

at present condition of tide
(4:30 PM) beach is about
200 ft wide, but advance and
retreat of water with each wave
is so great that this is only
approx estimate of beach
exposed above water.

On the back side of the beach
are very small dunes, formed in
the windy weather of the past
few days. The location of
most of them is determined
by scattering weeds which
acted as a wind break.

Aside from these very small
dunes which are seldom more than
a foot high and 5 or 6 ft long
some sand have evidently
blown onto the first dune
ridge from the shore very
recently but that is about the
extent of the activity of the
dunes. In other words they
are not advancing upon the
land.

On top of these small recently
formed dunes there is in many
places a thin (1/8 inch or little
more) surface concentration
of shell sand. There is very
little broken shell in the



(Daytona Beach 25
3 mi N. of Main St.

sand at this locality and what little there is has a tendency to be sorted out into these thin layers.

Dark heavy minerals in thin streaks can be seen in most places on the beach and frequently in the dunes but nowhere anything more than a small mineral or so in thickness that looked as if nearly pure leaves.

Probably greatest concentration on back side of beach a little below surface but did not dig enough to be sure of this.

821

=8021

Beach sand, slight concentration of heavier,

6 ft from back side of beach, 6 to 10 inches below surface, the sand above it is merely all quartz.

822

=8022

Sand, small dune on back side of beach, cut to depth of 10 inches, probably the bottom. Contains thin streaks of shell sand and rhinoceros sand.

823

=8023

Shell sand, natural concentrate scraped up from surface of small dune.

Daytona Beach

Part of tusk of elephant collected by O.G. Posey - Daytona.

Found in shell pit about 3 mi. NE. of main part of Daytona, about 6 feet underground.

Was about twice as long as it is now where first seen by Mr. Ballou.

Town Museum - Melbourne.
many fossil remains - vertebrate.
Eau Gallie creek.

30 to 40 ft blue clay.

Clay deposit at Old New Smyrna bridge. - for distance of 700 or 800 ft. on north side of bridge, from 300 to 700 ft west of river.

Dug up with dredge boat.

7 feet of clay with 3 feet overburden.

Is under the the marsh.

Blue in color.

Trail Ridge

April 19, 1928

7018 Light colored sand to 2 1/2 ft depth in R.R. cut about 2 1/2 mi E of Macleay.

7017 Hard pan sand, represents about 2 ft below 7018.

Blackish soil about 1/2 mi W. of Crest of ridge.

St. Augustine.

Center of town 14.0
S. on Dixie

Cocoa.

35.2

Starting across bridge.

36.3

38.1 - River.

42.7

44.2

} Bridge.

Cocoa Beach, near Hotel.

Beach about 150 ft wide at
high tide. - Little wind.

wave cut cliff
small dunes on back of beach
water

At the back of the beach is a
wave cut cliff about
6 ft above the part of the
beach. Behind it is low
land with grass and
scattering cabbage palmettos
sloping gently away toward
the marsh.
No real dunes.

April 20.

On the back of the beach at
the foot of the wave cut cliff
some very small temporary
dunes formed by south wind
of the past few days.
In places some of this sand has
blown on top of the grass covered
wave cut cliff.

8050

Sand - cut to 6 ft depth
from top to bottom of cliff
at back of beach. Obtained by
taking a larger amount
(all cut at one place) and
quarantining.

8051

Sand. same locality as
preceding. wind blown sand
on back part of beach directly
in front of cliff. Average of
three cuts spaced 6 ft apart
in direction parallel to shore.

8052

Sand - same locality.
Beach directly in front of two
preceding. Cut to 1 1/2 ft
depth 50 ft from back of
beach.

8053

Sand directly in front of three
preceding. Samples. 150 ft from
back of beach. Cut to 1 ft
depth (or about water level).
This is on the front side
of a rather poorly defined

Cocoa Beach April 20, 1922

beach ridge which the
waves overtopped at the high
tide of this morning.

46.5

0.4 mi. S of Cocoa Beach
Hotel and preceding locality

8054

Sand - cliff on back of
beach - cut to 6 ft depth
from top to bottom.

8055

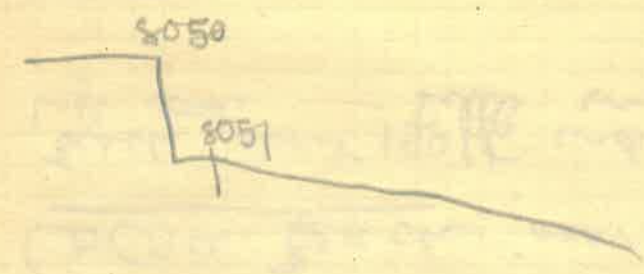
Sand cut to 1 ft depth in
wind blown sand at foot of
cliff - ~~cut~~ at back
side of beach.

8056

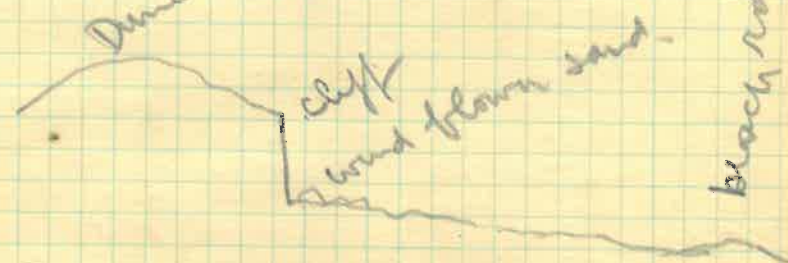
Cut to 18 inch depth 50 ft
in front of wave cut cliff.
Shows some thin dark streaks
A few inches of windblown
sand on top.

8057

Cut to 12 in depth, front side
of beach ridge 130 ft in
front of wave cut cliff.
Position corresponding to
8053 x Beach ridge
rises scarcely 1 ft above
lowest part of beach in
back of it. Probably
near Clutches.



In back of the beach there is a distinct dune ridge 12 ft or so in height above the beach. The wave cut cliff is along the front of it but reached only about $\frac{1}{2}$ the height.



In back of this dune ridge are many others parallel to it covered with small shrubs and some cabbage palmettos. At the hotel are lands as high as this dune ridge. Farther back from the beach near the hotel the land is under cultivation and ridges may have been more or less leveled.

Melbourne April 20.

55.9

80.6

2.1 mi S. of main part of town

2.5 mi S. of main part of Melbourne
on W. side Indian R. N.



Heavy concentrates extend for some hundreds of feet along shore in places suitably can be observed in progress at present time.

Ilmenite.

Staurolite

Waves leave heavier ilmenite at the top and carry the staurolite down a little lower giving a black and a brown streak. In the black are shining bright specks - presumably zircon. Tide seems to be only a little below ordinary high mark.

Heavy concentrates extend nearly two feet vertically above ordinary high tide line and in places 25 or 30 ft back from the

2.8 mi S. of Melbourne.

In fact some of the thickest heavy concentrate is high enough so that it is largely covered by vegetation. Much of the way there is nearly pure heavy concentrate to six inch depth on upper part of beach (not washed by water today). After ~~water~~ layers rich in ilmenite and staurolite respectively often seen. No doubt these correspond to the brown and black streaks at the actual water edges.

Layers of white quartz sand between the heavy concentrate layers are much coarser. However some of the staurolite approaches the quartz in coarseness. All of this beach sand here is much coarser than that on the ocean beach.

For about the first two miles S. of Melbourne are bluffs on W. side Indian R.

8058

Heavy concentrate rich in staurolite - scraped up from thin surface layer (up to $\frac{1}{4}$ inch).

2.8 mi S. of Melbourne.

Small amounts taken in several places along the strip of beach described in preceding pages.

93.8
86.2

7.6 mi S of Melbourne on W side Indian River - Coquina outcropping on shore - heavy concentrates between it and on top of it from water line up to about $1\frac{1}{2}$ ft elevation. Max width about 15 ft.

8060 Concentrated still further by panning. Should be enriched in zircon.

8059 Mostly quartz - scraped at at water line. Black on inch or so below surface from carbon.

8061 Large sample at to $1\frac{1}{2}$ mi depth (down to shell) at about 15 ft back from shore.

8062 5 inch layer of nearly pure heavy on surface 15 ft back from water.

11.5 mi S. Melbourne.

Hard pan our crops on shore. Land is much lower than at last locality. Small amount heavy concentrates, mostly at about high tide level. In places thin streak at present water edge.

8063 Heavy conc. with small about 975. At top of little beach ridge about high tide level. Black is about 1 inch thick. This inch is wide, so thin streaks of 975 through it.

2.4
86.2
16.2

16.2 mi S. of Melbourne
W. side Indian R. opposite
Sebastian Inlet.

Beach is wider than farther north (50 to 70 ft) but had some vegetation on it. No great amount of heavy concentrate. More in the edge of the woods than elsewhere.

8064 Heavy concentrate $2\frac{1}{2}$ inches on surface in edge of woods. (grass and bushes growing up through it) about 60 ft from water edge.

8065 16.2 mi S. Melbourne

200 ft back from W side Indian R. yellow subsoil of hill with scrub vegetation but through by road. Depth 2 to 17 ft from surface. White sand above bottom not exposed.

Valkeria 9.6

- 8066 No. 1 = 9.0 mi S. of Melbourne.
200 ft from shore.
water 2 ft deep. Sample
to 2 ft depth below bottom.
- 8067 No. 2 400 ft from shore.
water 2 1/2 ft deep.
sample to 1 1/2 ft.
- 8068 No. 3 1000 ft from shore.
water 3 ft deep.
1 ft into sand.
8066 and 67 are put in same sack with 8068.

8069 About 1/2 mile N of locality
of last three samples. Out from
small point about 300 to 400 ft.
two cores combined - one to
each 2 ft into sand - one in
2 1/2 ft the other in three ft.
of water. Our guide says
this is where he took other parties
prospecting for something.

8070 Bottom sample, same locality
as preceding - 3 ft depth
grime washed out.
1 1/2 ft

- 8071 = 9.0 mi S. of Melbourne.
Valkeria
Heavy concentrate.
thin layer about 3/4 inch
thick. 1 ft wide 1/4 inch
feathering out. Dry sandy
land in back.
samples 8066-67-68 are from
directly in front of this.
- Just boy at Valkeria says
diagonally across river to northwest
there is more of black sand than
on this side.

April 21, 1928

C. H. Rose Roy Cough
Cough Manufacturing Company

Nelson
Phillips - Mineral City

Abbot. 18.8 tourist camp

Cough Mfg Co. Grant, Florida
Goat Creek 3 mi N.
just the other side N of Goat Creek 1/2 mi

12 in well.
785 ft.

17 1/2 lb pressure closed.

3800 gal per minute
turbine operating on 10 lb pressure
using 1100 gal per minute,
maximum power operating
at 70% of closed pressure
using 30% of open flow of well

Smaller well has been
down 18 years, about 15% max
decrease in head. Mr. Cough
says this is related to rainfall

and that he can notice decrease

For ice making uses water from
44 ft depth slightly yellow
flows at 5 ft above sea level.
(first artesian flow at 258 ft.
actually flows at also at 44 ft.)

When artesian water is used for
ice salt concentrates in center

Manufactures outfit for artificial
ice using artesian water power.

St George Island.

21 lb pressure at low tide

8 ft above sea level

22½ lb at

Well finished Feb 25, 1928
Couch Manufacturing Co
elev. 7 ft above sea level
R.O. Couch

0-60 Sand - some clay and shell

60- Hard water flowing

89 ft landed casing on hard rock.

89-101 then drilled through 12 ft of rock.

101-115 sand and clay

115-140 green clay

140-142 sand

142-160 green clay with a little sand

between 142 and 150

160-168 pebble phosphate.

-170 hard green flint, about 1 ft thick
landed casing in this rock.

to 258 rock and clay

¼ inch flow on open 12 inch
casing - sighting across top
of casing and measure to
crown of water

337 ft 2 inch head (open)

332-to 380 very hard rock,
no additional water

at 500 ft 5 inch head (open)

all of this record for drilling
with 6 inch well.

started to ream
down to 360 ft with 12 inch bit
and had head of 7 inches

depth (reamed) to 12 inches. [actually light of jet]
head (flowing) jet)

500 ft -

532 ft -

8 inches
10 ½ inches.

531-534

very hard rock

540-545

13 ½ inches

646

17 ½ inches

660 ft

19 ½ inch head.

666 ft

18 ½ inch

724-730

very hard rock

756

19 ½ in

762

20 in.

785

2 ½ in.

bottom of well.

to 550 ft 12 inch

646 with 10 inch

balance 6 inches

2 small pieces of hard
limestone from 690 ft
pebble phosphate.

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

17110 17110
17110 17110
17110 17110

well drilled by Herman Brantsch
Mico, Fla.

S. Booth, Alturas, Fla.
 turbine operating on drainage
 well x 250 watt 32 volt
 surface of water in well at 18 ft.
 admitted about 262 gal per
 minute suction about 14 ft
 15 ft.

W.E. Sexton, Vero.
 4 inch well power plant
 3 1/2 lb. pressure.
 Pressure increased again
 as rains came on

McElbourne

2.8 mi S. of main part of
 town - sand locality as
 p. 33, just north of point
 on N. side of Turkey Creek
 and about at edge of Lynx
 of Palm Bay and Melbourne

8072 Two cores, each 1 1/2 ft.
 at 300 and 500 ft from shore
 respectively. water 2 ft deep.
 In both places struck shell
 which prevented going farther.

8073 core to about 1 1/2 ft (probably
 a little less, about 600 ft
 from shore and perhaps
 500 ft south of the preceding

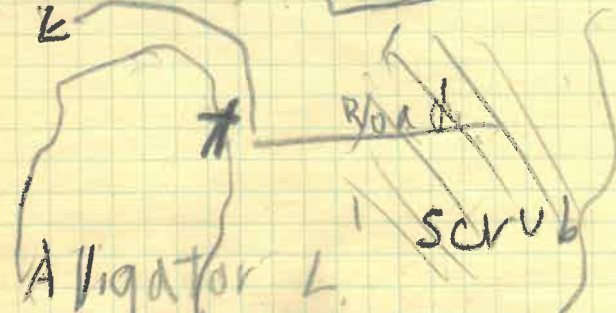
8074 Large sample heavy
 to 3 inch depth
 on beach about 20 ft
 back of ordinary high
 water line

8075 (1175 in bag)
 ordinary Pleistocene sand.
 cut to 3 ft depth on highway
 200 ft back from Indian R.
 about the upper half is white
 to light gray and lower half
 yellow.

McElbourne 47.8

Lake

to St Cloud



7019 Heavy concentrate
 NE. shore Alligator L.

Scraped up from
 thin layer at about water edge
 East of Alligator Lake
 and beginning about 1/4 mi
 from the crossed scrub area
 about 1 mi wide in E. west
 direction.

Haines City,
small roughly circular lake
on south side of town
on East side of this artificial
beach formed by dredging of
sand from lake. This sand
is mostly white.

7020

Cut to 1 ft depth through
dredged lake sand.

7021

Heavy concentrate scraped up
from beach (of artificial origin)
thin streaks not over $\frac{1}{10}$ inch
thick and 1 ft wide.

On the surface of the dry
dredged sand is a thin layer
of coarse sand somewhat
enriched in heavy. Finer and
lighter portions presumably
blown away.

7022

Panned after scraping up from
surface - coarse grains
of brown mineral (tourmaline?)
will not concentrate well.

7023

Yellow sand - ~~at~~ near
east side of lake of preceding
specimens. Road cut on hillside
About 15 ft above lake level.
Represents ordinary surface formation.
Cut about 6 to 7 ft deep.
Soil above is similar. Redder and

more clayey material begins
a foot below.

37.8
31.5

Sunday May,

Happ's Place
6.3 mi S. of Melbourne
Dock extending out
perpendicular to shore.

110 ft out

No. 1 Pumped to 2 ft depth
Took part of small sample
from bucket.

225 ft out

No. 2 Pumped 10 inch depth
water in both places about
18 inches deep.

Dock reaches out 900 feet.

Both of these samples taken
from along the side of the dock.

Sunday May
This is the same locality as that sampled
with Beechardson - 1/2 mi or a little more
north of Valhermat.

39.5

No. 3

200 ft creek point
100 ft off shore water 1 1/2 ft
deep - sample to 3 ft depth

No. 4

sample locality
200 ft off shore to 2 ft
depth.

No. 5

400 ft off shore to 1 ft
depth x water about 4 ft
deep.

>

Speedometer gives it as 8.9 mi
S. of Central Part of Melbourne.

Johns says that with
Zimmerman he found the
"ilmenite" "all around here"
referring to this locality, but
can give no definite place,
depth, thickness, or richness
of ore.

Dr. Beyer and Brown
Kroger and Johns were
with me in collecting these
samples

next day

No. 6

Same general locality as
preceding - 800 ft off East Creek
point - Core to 4 1/2 ft depth
into bottom in water 8 ft deep.

Johns says this is as good
as any that he any Zimmerman
found. Further questioning brings out
that in prospecting with Zimmerman
he did not see more than
what he himself calls traces
of ilmenite except on the shore.

He assumed or supposed that
the black sand on the shore and
the small amounts of the
dark minerals in the sand
between the channel and
the shore.

Report of supposed deposits of
 chromite and other minerals
 on state lands ~~between~~
~~between~~ Indian River
 between Melbourne and
 Sebastian.

Attach table of analyses.

In company with
 W. M. Johns of Tampa, Fla.
 on whose ~~former~~ statements
 as to ~~the existence~~ his belief
 in the existence of large
 deposits of chromite under Indian
 River led to the application
 of ~~certain~~ ^{at} a lease
 on certain state lands under
 Indian River for mining purposes
 I examined parts of the
 west shore of Indian River
 and may to and from
 took samples from the bottom
 of the river at the localities
 which Mr. Johns ~~to~~ said
 were as favorable as any of
 which he knew. Also on
 April 21 with Mr. J. E. Richardson
 I examined parts of the west
 shore of Indian River and
 took samples from the bottom
 at different localities and at
 varying distances from shore up
 to the ~~of these~~ general localities.
 Also on May 25, 1927, at
 Nov 23, 1927, I visited the
 region and made observations of the
 gold.

Mr. J. E. Brown
 Attorney at Law
 Melbourne - Fla.
 and Mr. Johns

The principal conclusions
 with regard to deposits of chromite
 under Indian River are as
 follows.

- ① No evidence has been
 submitted by to show
 that workable deposits exist or are
 likely to exist.
- ② Upon questioning as to
 size and richness of the
 deposits of which he has
 actual knowledge Mr. M.
 Johns replied that under
 Indian he had found these
 minerals only in traces
 in the sand of the river
 bottom.
- ③ Samples taken by
 myself total number
 examined (carefully in laboratory)
 show the ~~the~~ ^{the} mineral of the
 river bottom is ~~in~~ ^{of} ~~an~~ ^{an} ~~sort~~ ^{sort}
 containing a little sand and
 some shells. This applies to
 the particular localities to which
 I was taken by Mr. M. Johns
 and which he ~~said~~ ^{believed} were
 and which he believed indicated
 valuable deposits of chromite etc.
- ④ The sand of the river
 according to my own determinations
 contains a very small and fairly
 constant amount of chromite
 averaging about
 of one percent. ~~It is~~
 Zircon and rutile are also present
 but in much smaller quantities
 than the zircon. To be of
 any value as a source of
 these minerals the sand would
 have to contain at least twenty
~~per~~ and probably ~~more~~
 fifty times as much of these

0.3
 20
 0.4
 50
 200

15.90
3.75
12.15

④ ^{cont.} as is actually present, P ③

⑤ From a consideration of the known facts regarding the occurrence aluminate, green and rutile it is extremely improbable that workable deposits of these minerals occur under any part of Indian River or under any of the other submerged lands of the state below and outside of ordinary low tide line.

⑥ ~~The opinion of W. M. Johnson~~
The belief that a large and rich deposit of aluminate ~~was~~ ^{is} present beneath the water of Indian River to have been based on the entirely erroneous idea that the aluminate showing in narrow streaks on the beach and the traces of this mineral in the sand under the river must be

derived from such a large rich deposit nearby. As an actual fact geologic investigations all point to the quite different conclusion that these minerals are derived from the rocks of the Piedmont Region of Georgia and the Carolinas, that they are ^{merely} everywhere present in small amount in the sand of Florida but that workable deposits occur only upon beaches where the waves have sorted ~~them~~ out the heavier aluminate, green and rutile ~~but~~ from the lighter minerals marking the greater part of the sand.

Nov 14
 supper - .75
 AC 50 d 95 5.75
 Room Omaha 2.50

Nov 16
 Room Ft. Lauderdale 2.00
 breakfast .65
 Dinner .75
 5 gas Miami 1.30

Nov 17
 Breakfast .50
 supper .45
 5 gas Miami 1.30
 1 qt oil .30
 1 inner tube 2.75

Nov 18
 Breakfast .45
 Hotel Miami 5.00
 Repairing tire 1.25, lights 75 2.00
 Dinner .75
 Supper 1.30

Nov 19
 Room Matamoras 2.50
 breakfast .35
 supper .75 Dinner 75
 5 gas Matamoras 1.30

Nov 20 1/2 lb gum arabic .40
 Breakfast .70
 Dinner 75 supper .75 = 1.50
 7 gas 1.60 4 qt oil 1.20 1 qt oil .25

2.35
 1.14
 3.27

237

(over)

27 Nov 20 Stewart
 7 gal gas 1.89
 room Miami 2.50

Nov 21
 Room Fort Pierce 1.50
 Breakfast .50
 ball twine .30
 towel .10

Nov 23
 5 gal gas Cocoa 1.35
 supper .50
 Widge toll Ft Para. 40
 grazing etc, Daytona

7 gas 1.89 1 oil 30 2.19
 Ocala.

Dinner .75

Supper .50

Breakfast 50

6 gal gas 1.56 five oak

Hotel Daytona 3.00

\$ + .25 one Mr. Gunters