

PROPERTY OF
FLA. STATE GEOL. SURVEY

No. 19.

Land Pebble P. *in plate*

1909.

2

7/14. 1816

1

Indexed to page 75. June 18 1815.

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Rickwell -
Cott Englis, John C.
near Bigelow
Chas Tullis
H.R. Keister.
Booke

5

Englis.
Horse Knight, at the River Plant.
J.B. Hall, at the Booke, Chem. Co.
county fair Menellon & Englis very hot.
pine woods. A small pond on
3 1/2 mi. old cypress pond beyond.

The dam that is being built is
about 4 mi. up the river from Englis.

Dryer plant at Englis, Mr. Knight in charge
Jan 6/10.

The rock is unloaded from the cars on each side of the track and switch. It is lifted by a crane into a gauge hopper, thence falls into the cars. The old cars were side dump cars. Those now being installed are front dump cars.

From the cars the rock falls into a ^{cylinder} ~~box~~ with perforations about $\frac{3}{8}$ in. across. In ~~pass~~ the fine rock which does not need crushing falls thru & the large rock remains & falls in to the crusher. The rock from the crusher & that which fell thru the cylinder is carried by belt with cups to the dryers. The phosphate is fed into the dryers automatically.

Three dryers are in use. Each of these is ~~turned~~ packed with asbestos. They are about 6 ft in diameter & 20 feet long. They were turned by means of a belt. This was found unsatisfactory & now they are being arranged to turn by

wheels. not cogs. but friction only.
^{2nd} Coal is used as a fuel. In these
 dryers the rock drops in at the ~~ex~~
 furnace end & falls in on a white
 heat. From this the rock moves
 along through the cylinder, as usual.
 Being somewhat cooled by the time it
 reaches the opposite end. ^{Rich goes}
 through the dryer at about 10 tons an hour.
 The furnace is so constructed that
 the flame passes directly into the
 cylinder. Each furnace has a blower
 to send air up from the bottom.
 Each has also an automatic stoker.
 From the furnace the rock passes
 by cup & chain to the dry bin
 about 50 feet from the dryer. Here
 a second cup & chain distributes
 it. It is loaded into the bag
 by a large belt.
 All of the phosphate is brought direct
 from the mines, no pile forming now.
 But this pile did would fall below and
 knightrays would be when dead in water.
 Kila and two 20 Co. is loaded into ^{cars} ~~cars~~ ^{at the} ~~at the~~

Barker Chemical Co. plant 10

This plant makes acid phosphate only. Can you make about 30,000 tons a year. Can make about 250 tons sulphuric acid a week & this limits the output of acid phosphate.

acid plant.
The pyrite used is the ground pyrite from Spain. This is cleaner than the rock pyrite. It is brought in ships not there coming for phosphate. Tugs bring it up to the plant. The pyrite is lifted to the top stairs by means of an elevator. It is there spread out to dry. It is fed into the ten furnaces by holes from above, a charge is made each 15 min. so called automatic charges were formerly used but were unsuccessful. Now coke which can

be opened by hand as used, these are filled through first discharge in order. The furnaces once started are allowed to go indefinitely day & night.

The gas from the pyrites passes through pipes to the lead chamber. The sulphuric acid as used is about 50 %.

The phosphate used in this plant is that from the Dunellon Co. which is of low grade, including screening & dust from the dryer. The phosphate is taken green & is passed thro the dryer. The dryer used here is not asbestos lined.

From the dryer the rock goes to the storage bin, thence to the crusher & then to the mills for grinding. The Kent grinding mills are used. After grinding the rock is passed over the Kent screen of 40 mesh. All that passes the 40 mesh is retained. Mesh of 60 & 80 mesh. That

which will not possible. 12
mesh & returned to the mill for
further grinding.

The ground rock goes up an
elevator to bin, from which
it is fed automatically into the
mixing bin. This bin is cast
iron lined, & is 3 years old. Lead Hull
says would not last so long. A
weighted amount of rock is mixed
with a weighted measured amount
of acid.

From the mixer the stuff
goes to the cooling bins. About
12 hours afterwards, while still hot
it is spread out into the store room.

From the store room the acid
phosphate is shipped out as needed.
As it is needed the phosphate
goes about 17% phosphoric acid.
Before shipping its grade is checked

by mixing sand & 16 + 14% 13

The amount of sand necessary
is a few shovels full per ton.

Florida pale yellow sand is
used for this purpose.

Section at Ingles, Myr plant.

Pure white or slightly grayish
sand (+ mud & sh.) 4 ft.

Vicksburg limestone

Typical granular just
below. Somewhat.

to the water edge

5 ft.

Sheller P. Co. No. 6 -

One good section seen when removing overburden.
as follows, sand 5 mixed doz sand 2 1/2 ft.
plus phosphate (expanded) 1 1/2 ft.
sand 5 on dirt line & be noted. 60 ft.

In an old roadway from this mine 7 ft.
find nodules in the phosphate stratum. These
nodules are just of the same size.

Sandstone pebbles at the top of 14
into the upper clay of the lower
+ ft. and section 14
not level off 20 ft.
In this pit also I find
clay of a redish hue within the
blue flat stratum. This is
seen in the old roadways.
The redish clays being under
the sand pebbles.
Gray sand colored pebbles
one exposure on road
here also.

2. Buckenbal + co. Enggs mine.
on E side of Standard + Hercules R.R.
2 mi. S. of Min. closed June 09.
Pole markers Sept 1888 15 ft.
Plaster to water
note level here near the 10 ft.
Closed on account of bad - rainy low.

Hunellon Plaster Co. Section 1.
Closed down abt. June or July 09.
Slide not laborable 1889
Closed Dec 17, 1888.
T.B. Rahr, Hunellon, Supr.

Marion
J.B. + co. Marion mine in Citrus Co.
closed 1888 in 1888. Byston says closed
in 1889.

Cullers mine was running in 1888
at close of 1889. Byston has three
mines between Cullers + Hunellon, all
worked during 1889, but only one
working at close of 1889. Two are
the same as one on West side.
Cullers mine is a ledge not far from the mine.

2 Buckhubs River mine. on
 the East side of river. many fossils
 phosphatic but containing sand.
 No cadd. Still hole

Strat. bl. phos 2 17 ft.

white phos. to 62 ft.

Brown phos. phos 10 ft.

Black & brown sand that

phos. phos 2 72 ft.

Sand to be usually 15 ft.

pit it is equal. red & red

clay as in the pit.

Below this is ten feet of calcareous
 clay of dark color & below this is
 limestone.

All of these mines to the point
 are east of Standard & Hernandez A.B.

Compo two mines on one sect.
 are 1/2 mi. to west of the same A.B.

P. co.

^{P. Co.}
Dunellon Section 7. On the new cut
on the Citrus co. side. $\frac{1}{2}$ mi. a S. of
S & H R.R. Bond in Spring 7 1909
Reburied in June 1910. J. H.

Rebut in June 1860.
The dredge is digging into the
monium on side of the river.
The bottom here is low and
mud is not above the
river and there is no overbeddy
other than a few a foot or two
of sand as this pit extends back
from the river sandstone.

Small pit - a pocket of Fe_2O_3 1 mi. N. of road?
 Pale sand & then the Al_2O_3 & Fe_2O_3

statue

~~then~~ 20^s of 20 + 20

Then 20th of Nov. 1808
 Two of them sent to our work
 during a part of 1808. all clear
 in Jan. 1808. described by letter of
 18th Oct. on London annual magazine
 no had been written of perfect states
 of the system of all
 three of them in 1808

its of the thin plant mid. 20
to some. Thin all day lit.
men to surface near.
pale soil little Hardpan.
No lentils seen in bottom.

Insects in 17 + 18 - 19 - 19.

Birds of Floral City in 28 - 28 - 20.

Mutual of Floral City in 34 - 20 - 20.

Williams Phosphate Co.
Plant a shot detector. $\frac{1}{2}$ in S. f
Insects.
Rt. slout as usual. No Hardpan
in the surround.

Southern Phosphate Dev. Co.
One plant in east central Sect 19 - 19.
Two pits. pits as usual for this
section.

see Mr. S. are about drilling.

C. P. Sovary, Insects, Fl. Co.
2nd annual.

well 187 ft. deep. stopped in. 10 ft.

Rt. & S. Dev. Co. - slout. Pale soil 2 ft
to 2 ft. Hard pan 0 to 6 ft. - Top of
phosphate strata very irregular.

the overburden on S P H. Co 22
removed with of stone above &
by pump.

black colored sand, occur in this pit.

Plot 4 of Prospecting truth

Mr. Savary says holds water both
mines for awhile during 1908. not now closed.

Mutual did not work during 1909.

at Hermosillo it is reported that Mutual
worked during a part of 1909 two mines &
one mine during all of the year.

Extensive Caliche mines on the
west side of S. & H. about 1/2 mi
& 1 mi N. of Dunellon No 12.
also on west side of A.C. & closed. ^{not} ^{will}
_{concrete says did not work in 1909}
Dunellon 12 closed at Chusquea but
not yet open again. on
East side of S & H. but close to it -
a good deal of clay especially in the
pit. not S & H. P.

Don't know by in 1909

2B & Co. mine 1/4 mi south of
Dunellon, 2 also west of A.C.
of S & H. Closed. can't say where
a good deal of flint boulders in pit.

Dunellon P. Co. No 11 - running.
on west side A.C. & S. & H.
samples of yellow fonder rock taken
Photo 4 of this pit & plant.

2B & Co. Old Sonoma
mine about 1/2 mi south of
D.P.C. No 11 & on S & H.
don't know which side west of A.C.
Barred & closed. don't know where
at terminus of S & H.

Mutual small plant 1 mi S of
Hermosillo on East side of A.C.
closed. can't say where
a ichthyofurter in bottom of the
used for coal character.

Mutual plant. $1\frac{1}{2}$ mi south ²⁴
of Hernando + east of H.C.
Pits much as usual.
One fowlder of Silice seen in thick
 $26 \times 30 \times 26$ in. This is the
smallest fowlder seen.

A large plant of fowlder seen
cross section about 8×6 .
Sulphur yellow color below
note especially around the edges.
Gray pink ^{purple} center

A good deal of fowlder rock
in these pits - colors sulphur
yellow, black & bluish black
predominant.

General conditions as
seen at Hernando.

All of the mines are dry
mine & are worked to the
water level. Vicksburg limestone
is not often reached & was
seen in only one mine, mutual
small mine. The phosphate
stratum is much as usual.
There is a good deal of clay lenses
especially noted in P.L.P. Co
pit of #12. Flint fowlder in
considerable number noted
J.B. & Co's + in mutual. The
fowlder seen on large black
sulphur yellow alth bluish
rock occurs.

Only two mines in operation
at this place in Jan. 1919.
L.P. Co No 11 + mutual.

Embroider is removed by mules +
Scraper + by latest wheelbarrow
P. phosphate taken up by stone hand shovel.

General conditions in the Holby 26
section. This section is made & include
all from D.P. Co 3 & 4 D.P. Co # 4.

The mines in this section are
being worked from 1909 are dry
mines. Dredges have been used
however, one having been used in
D.P. Co # 9. The Vicksburg limestone
is not continuously worked in the dry
mines and was observed in
only one mine, the southernmost of
the group, D.P. Co No 4.

The phosphate stratum is
much as usual. The overburden
is largely the pale yellow sand
largely incoherent. "Hard pan"
occasionally occurs, altho
not often. Flint boulders
seen occasionally. Black phosphate
boulders occur & sulphur yellow
color in boulders seen also.

Mines in operation in this section
from 1910, D.P. Co 2, (Ind. 1 & 3).
D.P. Co 2, # (2 & 5).

General Conditions in the 27
Inverness Section.

The mines operating here are dry
mines altho ~~the~~ ~~Carex~~ dredges
will be used in the Southern Phosphat
E.C. mine. The Vicksburg limestone
was not seen & white probably
sometimes needed was not seen.
Holdrups pits not examined. Flint boulders
were noted as abundant in D.P. Co pit.
Black phosphate boulders were
observed.

~~Only~~ No rock was being
taken from the ground from 1910
altho the one plot the Williams
was removing rock & one D.P. Co
was removing overburden.
The overburden here is almost
entirely pale sand.

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General Conditions in the Juliette Section.

All of the mines operating in
this section are dry mines
and work to the water level.
The limestone was not observed
in the pits. The phosphat
stratum is much as usual.

Two mines were operating here
Jan. 1910.

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General Conditions in the Dunellon Section.

This section includes the mines
at Rockwell & along the line S.E.
of Dunellon to J.B. & Co. Set 20.

This section includes dry mines,
dredge mines, & run dredge mines.

Frequently the mines are mined as
dry mines to the water level, then as
dredge mines to the depth of 30 to 50 feet
below the water level. The run mines
are necessarily operated as dredge
mines from the first. The Vicksburg
limestone lies at some considerable
depth below the surface and was
not seen in any of the pits examined. It
is however doubtless reached by the
dredge & inclusions from this
limestone are frequent. The phosphat
stratum is much as usual, the top of the
stratum while frequently uncovered is
not so uncovered as in the Dunellon
section.

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old Cullen mine west of Boy City.
 The phosphate stratum in this
 the southernmost mine is very
 similar to the stratum as seen
 elsewhere. There is 5 to 10 ft of
 tal iron hematite bed followed
 by the usual white & gray sandy
 phosphate matrix. The top
 surface of the phosphate stratum
 is uneven.

The water level is 20 to 35 feet
 from the surface & a dredge was
 used. The aluminum phosphate
 shows similar in character &
 those seen at Tallahassee
 occur here also. The usual
 weathering pink ore observed.
 Smutty black phosphate found rock
 observed. Some days. Phosphate, iron & mud
 near Boy City, about 2 mi. S. of
 C.W. Gilbert. Boy City
 2nd Annual.

Closed Gilbert & Boy about most of

A second pit about 1/2 mi west of the plant was worked on a dry pit. This pit presents much the same conditions.

The incline goes down thro gray sand weathering pink.

In the pit proper the sand passes into clay. This redish clay underlies the pale sand & overlies the phosphatic rock.

Brownish bolder rock occurs. This pit has on the whole a good deal of clay in some cases overlaid by the gray sand. sometimes red is overlaid. No limestone is seen in this pit. -

J.B. & Co. mine s. w. of Crown
mining & close to 1889.

old pit abandoned & dry pit.
conditions about as usual. a good deal of sand clay. also sand pinkish.
No limestone in this pit.

- old dredge pit conditions much the same. a good deal of clay.

- second abandoned dry pit.
conditions about the same. No limestone & a good deal of clay.

- Pit being worked. Afterbush pale sand about as usual. & great deal of clay. dredge working.
Limestone said to be reached by the dredge at one place 150 to 20 ft below the surface.

Some of the rock light colored.
Some is redish brown.

- G. H. Affott. Crown.
water 35 ft
plant is on 19. - 22 - 21 M.T. 1/4.

Bradleys Abandonment
 pit is Sec. 24-22-20
 a dry mine. interests in title
 as usual checked. Vickers
 Ucla?

over for 3 in N of
 this is not shown some
 this is Old Wash Bottom.

Camp Ray mine at Russellton.
 Plant starts on north side of river
 dredge working in north fork
 running low. This is the Anderson
 mine the second from Russellton.

Camp first mine near Russellton
 no mining. mine on south side of the
 river. worked north or west side. This
 is Camp Russellton mine. Closed in
 July.

Camp Ray mine the second
 from Russellton stands on Blue
 run west side of north river.
 Running low. 14.

Camp Blue run mine stands
 on Blue run on east side near the
 river. closed Oct. July 1919

Faust or Ray mine says.
 camp has the river mine
 two by closed Jan 18. opened in Sept.
 Fairley " " 18, still not working.
 sugar hill. closed not ok.
 Fair near Felicia.
 even & mining.

Camp sugar hill. on East side of
 south of L.P. Co. 7. Closed July 09
 pit as usual. about 4 1/2 in from Russellton
 runs from diller in rd. Camp. Camp
 Camp. Cullen. D.P. Co. River. 23 c. known
 23 c. D. P. Co. Camp 2 log
 Camp & log. P.P. 7. Camp. Sugarhill.

HP Pla to Sect 8.

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Shells soft lime shales 20
deep 20 85 ft
one 6 ft.

Shells 18 ft

light colored red fudde
Blue red 18 ft
calc. clay
soft limestone.

✓ W.L. Abin. Lunell on the
rpt.

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The lime Kiln I visited is
abt. 2 mi S. of Acola is found up
in ~~the~~ old sink. Conditions muddy
as in last & 1 ft above 7 ft.
Material alone is residual &
mixed including pieces of flint, broken
clays, rocks, etc. One monotonous
red band in the local. Not
known whether it came from
the limestone or the red shale.

At Bushnell found that the
iron pyrites was sent in from
samples furnished by a negro.
Arch Pichens, who claims that
he found them while digging a
well 1 mi. E. of Bushnell. 3 years
ago. Character of negro doubtful.

✓ S. Stevens gave some information
also sample of very fine sand from
Stevens. Also send rpt.

Plas pla Part on land near
Bushnell

Medulla Phosphate Co. 39
 at Christina, N. Y. ^{addrs 92 Williams St.}
 P. H. Fuller, Mgr. send Rth.
 & Ireland, Mr. W. M. Mazzyck, ^{subt. Christing.}

Two large wells being pumped by
 air lift at this plant, both giving
 water having a faint H₂S odor.

In the pit is seen very evident
 stratification. Lines of stratification
 are seen lying practically on
 a level so far as the eye detects.
 A section in this pit is as follows

Soil & meadow sord 2 ft.

Iron stained sand followed by
 gray sands 8 ft.

Passing gradually into malleable
 phosphate stratum 15 to 20 ft.

The lower part of this stratum is
 more greenish & prob more clayey
 Iron stain yellow clayey 2nd (exp.) 4 ft.

Exam. of cross section gone following

1. Lower 2 1/2 ft of workable stratum slightly greenish in color. phosphate as very smooth light colored pebble uniform texture throughout. on the interior more or less pitted & color stained reddish. These pebbles are smooth on the surface and rounded. The very much in shape of some are flattened. All are soft enough to shone off with knife. The minute contents of the interior show but upon fracture. not so well upon cutting with knife. Other pieces are found light colored & smooth on the outside. After the shell is broken they are softer on the interior. Fragments of shells are sometimes found in these as casts. These may be of the size of ones hand & maybe quite irregular in shape. minute crystals are found within the concretion. The next 12 ft is much richer. The character of the pebbles is much the same. The larger may have smaller of the usual type within them. Some of the large ones have clay inclusions in the interior.

These nodules, hard shelled. 41 tend to lie in layers in the stratum.

Roll 8. Film 4 & 5. in Pit 7. medulla phosphate co. looking across the pit from west to east.

Cloudy turn off 3 + sec. opening 16.

Farther along the pit is a clay lens in the redish one burden showing stratification - with the phosphate. It seems that the redish material at the top is merely the upper part of the phosphate stratum.

See Mr. H. B. Lamm alt. from here.

At the South side of Pit No. 2. This condition is found.

- 1. Sand & soil grading below into iron stained & marbled irregular sand 5 + 6 ft.
- 2. Sandstone concretionary contact layer 1 + 2 ft.
- 3. Light colored sandstone top upper 1 + 2 ft concretionary. Top surface very irregular 8 + 12 ft.
- 4. Sense of bushy clay 6 in.
- 5. Phosphate 10 ft.

In pit #2. 4 bank 3

clay comes in practically entire of
the plot. From 1 of Roll 9.

This is cross bedded clay & sand.

Upper & lower zone, smaller ^{smaller} in the office.



The wells at the plant are 700 + 44
600 +. Limestone in each is reached
at something over 100 feet. Sutherland, diller.

Phosphate rock dark in color & very
hard occurred at some depth less than 100 feet.

—

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Coronet Phosphate Co.

Ball 9. Film 1, washer 1, Coroner phosphate Co.

Pit No. 2. Flint pebble $1\frac{1}{2} \times 1\frac{1}{2}$ in
taken from contact between sand
phos & clay phosphate section in

1. Pale weathered or white sand.
2. Sandstone in upper top, grading
at bottom into phosphate conglomerate
3. phosphate clay heavy stotens
4. Not well washed.

many coal in No. 2.

Some coal in No. 3. Two (?)
samples taken in place in Pit.

Section in N. W. Corner of
pit no. 2, near where human bones
were found.

- | | | |
|---|--|-----------|
| 3 | superficial sand about | 6 ft. |
| 2 | Sand & sandstone grading into
phosphate conglomerate approx | 2 1/2 ft. |
| 1 | Ordinary pebble phosphate stotens
(exp) | 5 ft. |

An unconformity probably exists
between 1 & 2 as indicated by the
pebble conglomerate & by the water worn
flint up to $1\frac{1}{2} \times 1\frac{1}{2}$ in in size.

A coral taken from near by
from the conglomerate ledge.
The contact here very irregular



Memminger says that no sales
are made on guarantee of less than 75%
The usual guarantee is 75% with
fall to 74%. But those no can low
run less than 76%. The highest
known was 78.86% in corals (?)

Films 2, 3, 4, & 5 to show unconformity
between No. 2 & 3 of section. Cloudy
at 2 P.M. Exp. 32 stop on 2+3. 2 sec
16 stop on 2+3 1 1/2 sec.
No. 6. Contact between 1+2, cloudy.
16 stop exp. 1 1/2 sec.
rest Roll 1. cloudy stop 32. exp. 4 sec.
2. similar exp. 1/2 sec.
all 8 film contact.

Section of overburden.

Pale weathered sand 10 ft.
Resting irregularly upon.

Slightly pinkish or light colored sand.
exp. 2 ft.

The following section was
made at the south side of pet 1.
1. fine yellow sand 6 ft.
Phosphate-bone - coral pebble conglomerate
resting on gray sand & yellow
conglomerate from 1 to 1 1/2 ft. sand 4 ft. 2 ft.
light yellow & olive green matrix with
phosphate pebble included 1 to 0 ft.
yellow sandy clay pebbles & shells at base 1 ft.

Memminger says the northernmost land
pebble which occurs is about 5 mi north
of the crown point at a ^{near} Kight station
on the S. & C.
The southernmost bed rock known & lies
at Richland on the S. & C. an interval of the
miles no intervening.

In the plant of the Coronet co.

the water is as follows:-

material + phosphate pumped into screen
having holes of about 1 in diameter. Large
pieces go out here. Remaining material
goes into double log. From this log it
drops into double screen. From this
screen into second double log & into
second double screen. From this last
screen the fine material goes direct by
chaffer chain to a bin. The coarse
material if desired is sent to turn
table & from this falls into cars.
no crusher is used. ~~not~~ Unless good
high grade is desired the turntable
is not used.

Wells 700 to 1300 ft. water
sulfur.

An erosion nonuniformity in the
certain hard pebble phosphate deposits.

Certain of the exposures ^{the} below pebble
phosphate formation made in in the
pieces of mines in the northern part of
the section reveal a very interesting un-
conformity. This is best observed in
the pits of the Coronet Phosphate co.
near Plant City. Eleven miles west
of Lakeland. A section near the
south side of pit No. 1 of this plant
was as follows.

Overlaid pale yellow sand about 6 ft.
yellowish gray sand grading at
base into phosphate-bone-coal-
pebble conglomerate 4 to 6 ft.
^{non uniformity}
Buff yellow & olive green clay
matrix with phosphate pebbles 1 to 2 ft.
middle
yellow sandy clay or marl
at bottom of pit. so called rock.

The superficial pale yellow sand is of medium fine texture and is so far as I have observed non-fossiliferous. It rests with a markedly irregular surface on the underlying ~~coarse sand~~ ^{natural sand}.

The yellow gray sand is also ordinarily non-fossiliferous in the upper part. Toward the base however this stratum grades into the conglomerate previously mentioned the lower 1 to 1 1/2 feet being a very rich phosphatic conglomerate. This conglomerate is made up chiefly of pebble ~~conglomerate~~ phosphate. The individual pebbles range from very small to 1/2 or 1 inch in length. They are as a rule elongate & all are smooth or if water worn. Aside from the phosphate there is found in this conglomerate

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a considerable amount of coal in water worn pieces up to 8 or 10 pounds or more in weight. The larger corals usually lie immediately upon the contact line. Monated ribs & other bones also occur, water worn flint pebbles up to the size of one fist are also seen.

The underlying stratum of phosphate is chiefly a bluish clay which upon exposure quickly oxidizes to a light buff yellow. This underlying stratum contains the bones, flint & phosphate found in above. The cold double at times but was not found.

Standard Phosphate Co.

Christina, Fla.
 Mng. Henry Bigot, & G. C. Wright
 Mrs. Nath. Saff.
 cost with one punt 50.00

Bedding of deposit unusually irregular
 Rise in stratum of about 14 ft in 50.
 That is our burden 6 in of one
 place & 50 ft once or 14 ft.
 yellow clay beneath also uses
 phosphate passing about same
 thickness 8 ft or so

Fossil wood imbedded in the yellow
 clay. Sample taken.

This plant marked during 1909 having
 been removing our burden during one
 half of the year. Removing our burden
 in Jan. + Feb. 1910.

At this place the conditions are not
 materially different from Coon's for as
 the loose yellow sand goes. Beneath this
 loose yellow sand in the same relation is
 the same yellowish light gray sand with
 irregular top surface. The gray sand
 is now phosphate lying at the top but
 forms ridges & runs with abrupt peaks

into the day pebble matrix below.
Evidence of an unconformity does
not seem.

Film No. 3 is to show dipension
in the top surface of the rock.

J. H. & Peter
P.T.D. No. 1. P.H. L. L. L. L. L.

L. H. Thompson. Send 3.4.95.
Samsville, N. W.

Feb. 10, 1900.

Spent the day with Dr. Pratt
& prospecting party.

Usual method of prospecting in the lead
pebble section is as follows.

An auger is used 4 in. and boring
4 1/2 in. diam. when the platy matrix
is reached in Dr. Pratt's method all of the matrix
from the 4 in. hole is kept. The relative
thickness of sandy and of clayey matrix
is noted. The sample in rock is
weighed after letting the excess of
water drain off. Afterwards it is
washed and the amount of
dried pebble weighed. The average
washable matrix runs 15 to 20
% pebble phosphate. The matrix
or agglomeration varies from
10 to 45% pebble phosphate.
Ordinarily 3 to 5 men work with an
auger. 5 augers can about prospect an
acre but per mat. putting hole & depth
of 30 ft overburden & one hole for each
2 1/2 acres, that is every 330 ft.

The track of land on which this prospecting is being done is prospect to 80 ft. altho the usual depth is 20 ft. Much difficulty here on account of a red somewhat coherent sand (hard pan) at a short distance, 15-3 ft. from the surface. Beneath this "hard pan" is so called quick sand usually. The phosphate stratum is sometimes reached in this tract and sometimes is not.

Dr Pratt thinks the phosphate stratum as a formation is continuous over this general area exact limits not determined. Aside from places where streams have cut into & removed the formation Dr Pratt thinks its absence very exceptional & it occurs at all. Phosphate as a stratum known across the Peace River but limit of extent in that direction not determined.

Box 203

57

Feb. 11, 1910.

Pit of Prairie Pebble Co. just west of Mulberry. Pit No. 3.

Section

Pale bone sand	28 ft.
micaceous sand grading below to phosphate	12 ft 16 ft.
phosphate stratum white	10 ft 14 ft.
yellow clay mat (cap)	5 ft.

The bone sand is of the usual color. The micaceous clayey sand is iron stained for five or six feet. Below it passes gradually into gray sands. And this into sands bearing some light colored pebble rock. & finally to one to two feet pebble rock conglomerate. Under this the matrix is more clayey & near base olive green.

The conglomerate here differs from that at Coonard in the absence of coral, & in the presence of the soft beds of lime-phosphate. The bedding in this pit is tolerably uniform for $\frac{1}{4}$ mi or 20. Overlying removed by stream should.

Pit of Prairie Pebble Phosphate
 No. 8. $\frac{1}{4}$ mi. n. of Plantation.
 Removing overburden. not met.
 Hydraulic used for overburden.
 Contiguous much is used
 Large sand obs
 Clayey sand
 Phosphate stratum is usual.
 At the west end of the pit the
 steam shovel is being used to
 remove overburden.
 This pit seems to present
 nothing exceptional.

4 ft.
 3 ft.

Mines in Loup & Bellefleur
 during 1909.

Coronet Phosphate Co. Sec. 24 N. side. - 22-29
 about 3 mi S.E. of Plant city.
 Standard Phosphate Co. Sec. 13-23-29.
 $\frac{1}{2}$ mi S. of Medulla + just east A.C.L.
 Medulla Phosphate Co. S. 24-23-29.
 Non. The Phosphate Mining Co.
 At Christina just east A.C.L.
 Prairie Pebble Phosphate Co.
 No. 1 Sec. 34-23E-29S.
 No. 2 " 35-23-29
 " 3 " 2-23-30
 " 4 " 2-23-30
 " 5 " 11-23-30
 " 6 " 23-23-30
 " 7 " 36-23-30
 " 8 " 3-23-31

1909

The Phosphate Mining Co.
 Central Plant sec. 8-30S-23E
 Pit No 1. " 3-30S-23E
 " " 2. " 4-30S-23E

Mr. C.C. Mortimer. Gen. Mng. Prairie Pebble

The Phosphate Mining Co.

Copies of report to
 Mr. Lytle, Secy.
 Mr. C. B. Mitchell, Nichols
 Mr. R. McCreary, Nichols
 W. W. Gibbs

Pit No. 2. - This pit has in the new
 part only a slight embankment. The
 conglomerate part is not
 conspicuous. The underlying
 rock is unusually hard being
 fairly hard rock. It contains the
 phosphate pebbles etc. as usual,
 from stone used

Pit No. 1.

Embankment thick & continuous
 about as usual. The conglomerate
 layer near the top as usual.
 Embankment removed by hydraulics.

Prairie Pebble Pit No. 5
on west side of C. & O. R.R. 1/2 mi from road.
Removing overburden by water
not mining phosphate.
Plot No. 11 No. 18 show the
usual character of the overburden.
No rock removed since Oct.

Prairie Pebble Pit No. 1.
on west side of C. & O. R.R. 1/2 mi from road.
not mining. but would remove in 2 or 3
conditions as usual. bed No. 109
Prairie Pebble pit No. 2 1/4 mi E of No. 1.
T. A. Cason, Moberly, former
overburden off 11 ft.
Phosphate strata 10 & 11 ft.
yield 7000 tons per cu. 25%
of material phosphate,
Removing overburden by water
not taking up rock.

2

The Florida Mining Co. Feb. 12,
Howden, Gen. Mgr.
Pit 1 mi N.E. of Moberly.
Removing overburden by hydraulic
but will dig in stream channel.
Taking up rock.
Section in pit
6 ft.
1 core sand or mud.
Red sand cemented with iron
ore.
10 ft.
Phosphate strata.
15 ft.
yellow marl

The change from the phosphate to the
sand here or everywhere is a
gradual one the pebbles being much
mixed with the sand. The change marks
a change of conditions. gradual elevation
brought in first a conglomerate of phosphate
followed by sand.
Runs 5 & 6 Roll 11 to show overburden.

Feb. 13.

Prone Pebble Phosphate Co 64

Pit No. 4. - Just north of ³ Rich by north.
Removing ³ our burden & Rich by north.
section

- | | |
|-------------------------|-------------|
| 1 Loose yellow sand | 5 ft |
| 2 Indurated sand | 12 " |
| 3 phosphate | 12 8 15 ft. |
| x Yellow mud at bottom. | |

samples of 1 & 2 taken.

Waternum coal fragment 2 x 1 in
found in this pit. Probably connection to
works for pit no. 3.

Feb. 14.

Prone Pebble Pit no. 6.

West side of C.R.

Removing our burden by north & stone.
Also taking up rock.
stone as usual, a good deal of soft
flint pebble. ³ inches on the ³ soft.
burden as usual. mud at bottom.

82

65

B.H. King.

Lab. mode. R.H.

87

Mines in Bond Pebble District. 67
location of layers plants only.

Coronet Phosphate Co.

Standard Phosphate Co.

$\frac{1}{4}$ mi south of medulla on east side of A.C.

medulla Phosphate Co. now The Phosphate
mining Co. at Chertona on east side of A.C.

Prairie Pebble Phosphate Co.

$\frac{3}{4}$ mi N.W. of mulberry.

The Phosphate mining Co. sec. 8.
at Nichols alt. 3 mi N. of mulberry

The Florida mining Co. about
 $\frac{3}{4}$ mi S. of mulberry on
east side A.C.

The Pierre Phosphate Co.

Central pits in N.W. corner sec. 36

Pit occurs line in N.E. corner sec. 35

Two waters fed from one large pit.

The limestone or mud exposed in this pit
has a very rough eroded surface. Pits 1 & 3.
Pit 12. The phosphate matrix fills these
irregularities. In places the mud is
absent & the phosphate rests directly upon
the so-called pepper and salt. a clayey
matrix in which is imbedded fine

phosphate and sand pebble 68
An old stream flowed across
this pit. In the bed of the stream
is fine some more or less stratified
sand, dark in color or mixed dark
gray or light. This stream when
examined has cut down to the
coarse part of the phosphate matrix
& at one point almost cut out this
coarse part of the matrix. That is it has
cut thro the sand upper part of the
phosphate formation. Near by in
the same pit is a sudden drop in
the ^{sand} overburden. Photo # 2. Roll 12.
The point of break gives way much the
character of a sink hole. The stream
occupies approximately the position of a
present stream. The conditions here
may be (1) a stream entering a sink
& cut its bed deep, afterwards the stream
bed & sink filled. (2) The land here originally
stood higher so that this stream cut deep.
(3) The stream marks an actual old
stream running through this sand.

69
Mr. Schneider Supt. Bellevue
the following observation is to
hold as applies to this concretion
property. The rock which is heavy
in specific gravity is low in grade
or compared with that which is
light in specific gravity. Moreover
the light rock occurs at either side or
surrounds (!) the heavy rock.

Mr. H. Schneider. Supt. Pine, Fla.
Mr. Dunlap. Electrician.
Mr. Schmidt. Smith.

Feb. 15.
Pine Pebble Pit No. 7.

Long Branch mine.
not making.

Overburden also as usual but with
a good deal of sand rock. Water used in
removing overburden.

at 7 1/2 Bays

70

✓ Mr. L. W. Cotton

Mr. Jones at Brim
my Brookhead at Swift.

✓ Mr. R. H. Knapp.

Lower Fertilizer mark.
Benton. Fla.

Plant on 9:24 - 31

A steam shovel is being used to
take up the phosphate at this
place. The pit is being worked
back from the edge of a cypress
swamp. The overburden is
much decayed down or mostly of
the phosphate. The soil beneath
is hard & fine iron. Screens
are not ^{very} much used in
working. A picking table is
used and the bones allowed to
go ^{for} with the pebble.

Feb. 15

The Swift Phosphate Co.

71

Plant at ^{Squid} 3/4 mi S.E. of Orono.

at this pit the rough top
surface of the soil is seen. The
phosphate stratum is much as usual.
with rare inclusions of limestone.
short of - # Taken from the conglomerate
bed. Overburden more clayey
& showing more evidence of stratification.

Feb. 15.

The Dominion Phosphate Co.

✓ Mr. Walden, Gen. Mgr. Boston

section in pit	some sand	57
	under sand with	58 ft.
	Phosphate	58-59 ft.
	1st soil or shales	59-60 ft.
	yellow more with	60-62
	unconsolidated	

The conglomerate stratum here
is not conspicuous.

Feb. 16.

72

The Florida Mining Corporation.
Remains overburden by steam &
shut out by water.

Section.

Sand. Loose 4 x 5 ft.
Sand, hard, much broken, irregular
& with a layer iron staining 10 x 12 ft.
Phosphat 11 x 12 ft.
Phosphat to come on a mile.
On one side low 4 x 5 ft clay
matrix on the coarse.
R. J. M. 1. Bull, 13

Feb. 16.

The International Phosphat Co 73
mine of Ft. Meade.
✓ James Watson Supt. R. J. M.
Remains overburden by water. Not mining yet.
Section.

Case sand old 8 ft
Hard sand cement with iron
making floating pieces in pieces 10 ft.
Phosphat
Cement of rich & light color 3 ft
Slab colored to fair 2 or 3 ft
Bottom not exposed.

Feb. 16

The Tilghman Phosphat Co.
Brill's Gun in Hunter's Sulf
m. Honoring of the mines.
Black pebble comes from under on
old pond. also under in cybers swamp.
Light pebble from upland.
x x mine.

Feb. 16

The Palmelle Phosphat Co.

Central plant at Tiger Bay.
One pit operating at Little Tiger Bay
mining overburden by water. Remains much
water. Sand 4 ft. Hard sand 10 ft. 4. Pools 10 ft 12
Bottom not run. (Porphyrate layer not seen)
seems to be madominum co.

Feb. 16.

94

Germofert Mining Co.

Mining hard rock along the
Pearl River. This rock is about
4 ft hard rock & 3 ft loose.
Overborden consists of the sand and
decayed residual lumps remaining.
Rock is flinted up & highly ferruginous.
Some said to go to 72%. Said to
extend for some distance along
the ~~river~~ side of Pearl River. A little,
not much said to occur on the
south side. 5000 tons in 1909.

Feb. 16

95

Charleston Mining & Mfg Co.
minor.

Pit near town

Section base sand	4 ft 6 in
hard sand	10 ft 12 in
Chert & Totis	12 ft 18 in

Chert nodules at bottom.
Conglomerate ledge not exposed
4 to 5 ft of clay matrix to the water.
shell nodules & boulders in the pit

Indexed to here June 8, 1913.

96

76

77

77

78

a shell marl is exposed
on the Marion County side
of the North Branch
of Stokes Ferry in Marion
County. see collection.

Hard rock Hunellon south.
Hunellon Phosphate Co.

operating 11 mines as
follows. 1. 2. 3. 4. 6. 7.
8. 9. 10. 11. 12.

no 5 out since last year
2 in

Comp operated 4
mines during 1911.

Cullen operated 2 mines
during 1911.

Bucknitch has new mine
N.W. of Hunellon near Spring
mine.

Crown mine, N. of Floral City, 110

Sutton one plant
mutual " "
Broderly " "
~~Stebble~~ " "

at Inverness

Southern Phos. Co 1 mine
Hulse Phos. Co 2 ..

at Hernando

Hunellon 11 + 12
Buckner One
this includes Thore S. W. of A. C. L.

Buckner worked 5
mines during 1911.

