

**VITAL CHEMICAL ANALYSIS OF
D. M. S. & B. LIME, RARE
MINERALS, METALLURGY,
CHEMISTRY**

Rock Phosphate Department

(Reprint, April 11, 1921, Los Angeles Times.

TORRANCE, March 25.—Question. Reply to yours to Walker, our superintendent, Torrance Lime and Fertilizer Company. Herewith large samples: shark teeth, tusks, bones, etc., found in same deposit.

Answer: Correspondents will read with pleasure that the greatly desired rock phosphate will, in all probability, be an added asset to the mineral wealth of California.

Today, after running down many reports, and in analyzing many minerals from the mining boys in the hills, we find it is probable that California will be in a position to mine phosphate rock in sufficient tonnage to meet all requirements.

The samples sent to us from Torrance are rock phosphate running fairly high in phosphoric acid. They are of blackish-brown color, and from their worthless-looking appearance, at sight, have probably been unnoticed for, lo, these many years.

IN REFERENCE TO D. M. S. & B. LIME

Reprint, May 9, 1921, Los Angeles Times.

There are, however, many localities in California and in Arizona where the phosphate content is around 20 per cent tricalcium phosphate. These deposits will be referred to in this column later, when properly examined, with reports and analyses had and obtained.

TORRANCE ROCK PHOSPHATE
Reprint, May 23, 1921, Los Angeles Times.

Los Angeles, May 7.—Q. This lot of specimens is from same bank where dark-colored samples occur, with many samples from the same cut in the marine shell bank. Fossil deposits on display at Guaranty Bank.

A. The previous samples sent to this department for tests were of blackish-brown colors. The last consignment of specimens consists of five different varieties, massive and granular, and chiefly yellowish-white in color. All of the minerals comprising the last shipment of five big packages run fairly high in phosphoric acid.

Let us hope that the entire deposit will turn out to be rock phosphate.

RARE MINERALS, METALLURGY, CHEMISTRY, PHOSPHORIC ACID PRESENT

The Los Angeles Times, Monday Morning, September 12, 1921.

TORRANCE, Aug. 21.—Question. Sample A is light clay from top strata. B, medium clay, middle strata. C is black clay from bottom strata. These samples are from same deposit as previous samples; sharks' teeth and vertebra in above material. Can you advise if organic matter and nitrogen still exist with phosphoric anhydride, potassium, sulphates, sulphides, barium? A new thought is presented in connection with the matter, in that it may have the same action on plant life that radium has on human.

TORRANCE LIME AND FERTILIZER COMPANY—P.

Answer: The new thought you suggest is probably barium present, and it is noted that you do not refer to calcite, silicic acid or fluorine.

We have heretofore reported in this column that the two, first and second lots of specimens received from you, were rock phosphates, and now we give you the results obtained on the third and last consignment of samples, not only by the editor of this department, but by his associates also, as follows: The three samples—A, B and C—all react for phosphoric acid, sulphur, and potassium. Samples B and C, from lower strata, react from nitrogen and other organic matter and no definite tests were made for baryta (barium).

Little Nugget Ranch,
May 11, 1921.

It is with pleasure that I recommend the use of Torrance Lime, handled by F. L. Sexton, to the orange growers of Orange county. I saw a marked improvement in color of trees in a few days after first irrigation. The orchard took on a rested appearance, larger leaves came along and greener foliage. It held its fruit until the late market picked in October, that is, more than half of its crop, looking just as though it had "been on a vacation." I had used a liberal amount of fertilizers and the lime seemed just what the trees were looking for. I am well pleased with its results and feel it is the right step for one who aspires to be a successful orange grower.

Sincerely,
(Signed) EVA L. BEATEN.
Cor. Prospect and Fairhaven Ave.
Santa Ana, Cal.

VITAL

A MESSAGE TO THE SOIL CULTIVATOR

Awed Mystery Surrounds

The Immediate Activity, The Penetrating Availability
The Wonderful Productivity of

Organic D. M. S. & B. Super Lime Fertilizer

Calcium Carbonate, Phosphoric Acid, Sulphur and Potash

Marvelous results obtained from this Ancient deposit of soil vitalizer, from which fossils of animals of the most gigantic size known to man have been removed, cause users to ask: Is it Radio-Active?

They like it so well, the news is nation-wide; Our quarry is working overtime and orders are filled in turn of receipt. Without lime there can be no life, either animal, plant or human, and D. M. S. & B. Lime is Super-Lime.

ABSORB THE THOUGHT! Throw out the D. M. S. & B. Lime line and get in the front ranks of agricultural prosperity

GREEN'S ART STORE
825 South Hill Street
Los Angeles

September 26, 1921.
Torrance Lime & Fertilizer Co.,
Lomita, California.

Attention: S. Maus Purple, Mgr.,
Dear Sir:

In response to your inquiry about results obtained by using the D. M. S. & B. Lime Fertilizer purchased from you some three months ago—

It is a pleasure to assure you, your fertilizer has given far greater results than any I have used previously; it has not only greatly increased the growth of all my vegetation but has caused a more sturdy growth and better production.

My best wishes for the success in the promotion of such a clean, odorless, and "as you say" Available Fertilizer. I am,

Yours sincerely,
(Signed) LEO GREEN.

On account of its accessibility, adaptability, availability, to all growth and high analysis D. M. S. & B. Lime is the most economical lime obtainable in Southern California, if not nation wide.

LOS ANGELES CHAMBER OF COMMERCE
128-132 South Broadway
Los Angeles

May 2, 1921.

Mr. Lee Hawkins,
Moneta, California.

My dear Mr. Hawkins:

I would like you to deliver at 125 Satsuma Street, Eagle Rock City, two tons of your shell lime fertilizer if possible Saturday morning, the 7th, or the 14th of May. If this is impossible, would appreciate your notifying me a day or two before delivery, that I may be enabled to have a man ready to receive it.

You asked me why I used a vegetable lime in preference to ground or processed lime rock. Possibly the easiest way for me to answer this question would be to suggest that you ask the hen why she prefers an egg shell or a broken oyster shell to crystalline lime. Because it is easier to digest.

Mineral lime is a water crystal formation. Animal lime is an organic deposit of lime salts. It is more porous and therefore more absorbent, and more quickly available for plant needs. Again, it usually carries with it other properties necessary to plant production of a real fertilizer quality. As a plant food this is why ground bone and marl have been for years recognized by agriculturists as being superior to natural mineral lime rock.

There is another reason for this which possibly is that while as a soil renovator an excess of lime may be necessary, for actual plant availability its release should be very gradual and its subsequent conversion into different soluble lime salts a slow proposition. There are, you understand, two distinct services lime performs, one to the soil itself and the other to the plant. The former naturally has an indirect action through making the soil a better pabulum for plant food development; the latter directly as an available plant food.

Like peat, lime is not strictly recognized as a fertilizer, but is one of the most necessary adjuncts in fertilization.

Yours very sincerely,
(Signed) GEO. P. CLEMENTS, M. D.,
Manager Agricultural Department.

BLACK CLAY
Los Angeles, Aug. 11th, 1921.
Organic Matter.....10.00%
Nitrogen (N).....0.40
Water Soluble Potassium
Oxide (K₂O).....Trace
Sulphates (SO₂).....Present
Sulphides.....Present
SMITH, EMERY CO.,
Chemists and Chemical Engineers.

USE D. M. S. & B. FERTILIZER
The Izzet of the Day

Speaking recently to a newspaper reporter, Thomas A. Edison said: "We have in this country an enormous capacity to invent super-machinery. But our desire to install the device is very, very weak. Human inertia is the problem, not invention. Something in man makes him resist change. He clings to his old processes and habits, rather than scrap them for something ten times more productive."

There is no reason why Mr. Edison's comments should be limited to manufacturers. Merchants and professional men and ranchers are subject to the same disinclination to discard the old methods for something better. Then, too, changing to the New Process and Method takes initiative, time for learning and decision, and the fact remains that often the new way is better and more profitable when you get it started. Naturalists tell us the pine tree is evergreen because it keeps shedding its old leaves for new ones. Many a rancher needs to adopt the principle of shedding the outgrown and less effective ways for those that have been proven better. Use the D. M. S. & B. Route to keep your growth young, fresh, and guarantee its production.

USE D. M. S. & B. FOR 100% EFFICIENCY

What per cent efficient are you?
What per cent efficient is your land?
What per cent efficient is your crop?
Are you disregarding 100 per cent efficiency of others?
Are you disregarding scientific research?
Are you disregarding unassailable facts?
Fifty bushels of corn removes 12 lbs. of lime from the soil.
A two-ton clover crop 80 lbs.
A 200-bushel potato crop 200 lbs.
Can you hope to constantly remove it without replacing the vital element of all growth?

GEO W. GOOCH
Analytical Chemist
306-311 Copp Bldg., Los Angeles, Cal.
Laboratory No. 9136
October 5, 1921.
Torrance Lime & Fertilizer Co.,
Los Angeles, Cal.

D. M. S. Fertilizer—Sample from Bin Analysis

Moisture (at 110° C.)	3.57%
Acid Insoluble Matter	10.58%
Iron & Alumina (Fe ₂ O ₃ & Al ₂ O ₃)	3.44%
Calcium Oxide (CaO)	44.76%
Magnesium Oxide (MgO)	1.22%
Carbon Dioxide (CO ₂)	35.74%
Sulphur Trioxide (SO ₃)	Trace
Phosphoric Anhydride (P ₂ O ₅)	.75%
Synthetic Form of Above	
Moisture	3.57%
Acid Insoluble Matter	10.58%
Iron & Alumina (Fe ₂ O ₃ & Al ₂ O ₃)	3.44%
Calcium Carbonate (CaCO ₃)	78.28%
Calcium Phosphate (Ca ₃ (PO ₄) ₂)	1.63%
Magnesium Carbonate (MgCO ₃)	2.56%
Calcium Sulphate	Trace

(Signed) GEO. W. GOOCH.

LIME-ER-ICKS
There is a young farmer named Sime, Who practices using some lime. "After clover," says he "There will nitrogen be." And his fields remain fertile a long time.

There once was a young cabbage plant Who said, "On good looks, I could bank

If some lime they'd apply; Otherwise I shall die." And a victim to club root it sank.

FRANK C. YORK
351 Norton Avenue
Los Angeles

Says in part—
Dear Mr. Purple:
If you will drop around I will show you a new lawn produced without top soil or barnyard fertilizer—she is 3 weeks old and a fine baby. I used 5 sacks of your product.
Sincerely yours,
(Signed) F. C. YORK.

DAVID STARR JORDON
Stanford University
of California

October 13, 1921.

Mr. S. Maus Purple,
301 Bradbury Building,
Los Angeles, Cal.

Dear Mr. Purple:

I have gone over the things you sent with some care. It is a most extraordinary mixture of land and sea-stuff and only a geologist on the spot can tell how it came about. A few shells are from deep water—the rest from the shore.

The mammal bones seem to be fragments of whales, partly of beasts, which I cannot place, the sea lions perhaps. And these are in various conditions—some wholly petrified, others just plain bones. The latter probably came from Indian camps of much later date.

There are three species of *Carcharodon*, the Great White Shark. One is *Carcharodon reversi*, the small one with saw-edged teeth, the thick one is *Carcharodon branneri*, the big one is new to Science. This, if possible, I want you to send both specimens to me, for the United States National Museum. I want all the shark teeth, if possible.

I enclose the list of the shells and teeth. Those I mark † I would like to have you return if you are willing as they are rare in collections. I ask you not to grind up any shark's teeth or other teeth, or any of the sea-snails as these have great scientific values.

All these belong to the Lower Pleistocene formation, about as old as the earliest relics of man, perhaps 100,000 to 150,000 years ago. A few bones and teeth seem to belong to Kitchen-midden or old Indian camps.

Since dictating the above, I have received the little box of teeth. The largest with saw edges seem to belong to the living Man-eater or White Shark, (*Carcharodon Carcharias*), occasionally taken off our coast. As this reaches a length of 35 feet, with teeth 1½ inches long, the great *Carcharodon* must reach 120 feet.

The smooth-edged teeth are *Isurus*, apparently the species now living on the coast, *Isurus glaucus*. The little tooth and the bird bone I do not recognize. The tooth looks like a sea-lion pup.

Very truly yours,
DAVID STARR JORDON.

Los Angeles, Cal.
August 6, 1921.

Mr. S. Maus Purple,
General Manager,
Torrance Lime & Fertilizer Co.
Dear Sir:

I want to express to you my appreciation for the wonderful D. M. S. & B. Lime fertilizer which I received from you.

On the 28th of June I applied less than 15 lbs. to a two-year-old walnut tree in my yard and to date, namely, 6 weeks, it has produced more healthy growth than it had produced in the entire two years.

It seemed to be the exact fertilizer necessary and surely has produced the most marvelous growing demonstrations that I have ever witnessed. Indeed it is very marvelous.

Furthermore all of the floral vegetation to which I applied it has taken on a very healthy growth and presents a beautiful rested appearance.

It is a most marvelous product.

With my very best wishes for the success of this most wonderful product, I am,

Yours always for D. M. S. & B. Lime Fertilizer.
(Signed) MRS. EMMA R. BEALL.
1836 Middleton Place.

Los Angeles, Aug. 8, 1921.

Bin.

Acid Insoluble Matter	9.88%
Soluble Silica (SiO ₂)	0.74
Aluminum Oxide (Al ₂ O ₃)	0.71
Iron Oxide (Fe ₂ O ₃)	0.96
Calcium Oxide (CaO)	46.70
Magnesium Oxide (MgO)	1.32
Sodium and Potassium Oxides (Na ₂ O, K ₂ O)	Trace
Phosphoric Anhydride (P ₂ O ₅)	0.74
Carbon Dioxide (CO ₂)	38.25
Organic Matter	Trace

SMITH, EMERY CO.,
Chemists and Chemical Engineers.

100 Per Cent American Drugs
S. O. BARNES & SON
DRUG SPECIALISTS
Gardena, Cal.
Specialties:
Medicinal Oils, Cerates, Tablets,
Green Plant and Normal
Tinctures

April 29, 1921.
Mr. Lee Hawkins, Moneta, Cal.

Dear Sir:
Decomposed Marine Shell Lime and Bone does several very important things, as it greatly assists vegetation to assimilate properties that are in the soil, but are not available, unless assisted. Having a component part, "Phosphate of Lime," and in this case in the form of disintegrated BONE as well as other salts found in flesh, it is of a certainty, a valuable assistant to the strong growth of root.

It is a combination that will be of great benefit to the truck grower, as it will assist the plants to take the nourishing elements from the soil. The tendency is to re-establish the capillaries that have been broken down by the lack of proper nourishment, and so trees should show a good hearty growth where it is used.

A soil may be strong, but if this fertility cannot from some cause be assimilated by the plants, it becomes useless. The D. M. S. & B. Lime will give such encouragement, the plants will take on new life quickly and you will observe a marked change.

This Lime Phosphate will induce more sweetness in fruit as it will enable the tree to secure this from the soil and will increase the action of the capillaries. Certainly roses will have greater odor, and colors will be brighter with a corresponding growth as to size and symmetry.

I have found that my calendula, that we grow for the petals, shows a greater amount of the resin which is the active principle of this drug, so from a commercial point, our California drugs are worth more than the imported.

The relation that these phosphates, especially bear to vegetable life, is the same that is found in the human, building up the system, establishing BONE growth, producing stability and greatly assisting assimilation of all foods.

I am sure the Ranchers and Citrus Growers will find this product of great value, and that it will greatly assist them to overcome many very trying conditions.

I thank you for calling my attention to this much needed, and at the same time very reasonable, economical and stable assistant in my work. We are sure that this will be valuable to us. Wishing you every success in its distribution, we remain,

Cordially yours,
A. O. BARNES.

The ideal fertilizer for citrus and deciduous fruit, nuts, berries, vegetables, alfalfa, grain, lawn, flowers, ferns, bulbs; for the chicken industry mixed with scratch food to assist shell formation.