ANIMAL ~~~~ PLANT ~~~~ HUMAN

LIFE EXTENSION BULLETIN

4 IN 1 ---- D. M. S. & B.

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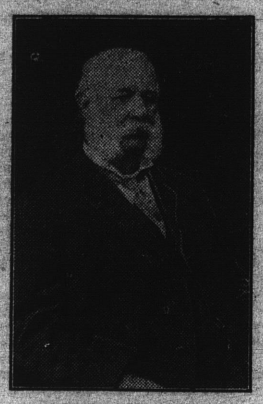
PROF. BAILEY NOTES GREAT DEVELOPMENT OF D. M. S. & B.

World's Famous Geologist Endorses Policy of Preserving Prehistoric Fossils



Prof. Gilbert Ellis Bailey, Ph. D.

The Torrance Lime & Fertilizer Co. take this opportunity to express their appreciation to Prof. Gilbert Ellis Bailey for the intensive interest taken in the D. M. S. & B. Lime Quarry from a commercial standpoint, as well as from the Geologic, Scientific and Historic, the all-important factors in his life's study. In order that our readers may have a better side light on Professor Bailey, we quote herewith from

"Who's Who In America"
and
"Who's Who In Science, International":

Gilbert Ellis Bailey, Prof. of Geology, University Southern California, Los Angeles, California, U. S. A.

Residence, 9728 South Figueroa Street, Los Angeles, California.

Born, 1852, Pekin, Illinois. Educated Universities of Chicago and Michigan.

A. M. (Chicago) 1876. Ph. D. (Franklin) 1881.

Society American Chemists.

Academy of Science, Southern California.

Professor Analytical Chemistry, State University, Nebraska, 1874-79.

Professor of Metalurgy, State School Mines, South Dakota, 1888-90.

State Geologist, Wyoming, 1882-87.

Books: "Saline Deposits of California." Published by State of California.

Water Supply Arid Portions of California.

Mines and Minerals, San Bernardino County, California.

Contrib. Geologic Formations of California.

Map of Arid Portion of California, Los Angeles Times.

Invented Pressure Gauge for Testing Explosives.

(Instrument for Measuring RADIO Activity of Mineral Emanations.)

In addition to the above, Prof. Bailey has published many books and Bulletins, among which are:

"California Soils."

"The Use of Explosives in Agriculture."

"Nitrating the Soils by Inoculated Legumes," etc.

"UPS AND DOWNS OF SAN PEDRO HILL"

Notes on the Geology of San Pedro or Palos Verde Hills, between Redondo and San Pedro, Los Angeles Harbor.

By GILBERT ELLIS BAILEY, Ph.D.

Chemically Valued, Man Is Said To Be Worth But Ninety-Eight Cents

Mere man got an awful wallop along side the well-known chin bone when an organization of Los Angeles women (name deleted) dug into the archives of science and produced the following:

"The ingredients of a man, plus water, include enough:

"Fat for seven bars of soap.

"Lime to whitewash a chicken coop.

"Iron for a ten penny nail.

"Phosphorus for 2200 matches.

"Magnesium for one dose.

"Potassium to explode a toy cannon.

"Sulphur to rid an average sized dog of fleas."

And to add insult to injury, these scintillating bits of research close with the comment:

"The whole collection is worth 98c, and things are three times as high as they used to be."

——D. M. S. & B.——

Black Alkali

CORRECTED BY D. M. S.

Memorandum of statement made by Mr. E. R. Stillens, Garden Grove, regarding D. M. S. & B. Lime, February 2, 1922:

Mr. E. R. Stillens, Garden Grove, used 265 tons of Decomposed Marine Shell and Bone on his groves during the fall of 1920.

The soil on two of his groves, comprising forty acres of seven-year-old Valencias, varies from light sandy to a very light loam. A third ranch, comprising thirteen acres, which is set out to two-year-old orange trees, is in a section of very hard, black alkali soil, regarding which there is a question as to its possibility as of being reclaimed for orchard purposes.

On the forty acres of seven-year-old Valencias the D. M. S. & B. Lime was evenly spread at the rate of five tons per acre and plowed deep into the soil. On the lighter sandy portion of the grove the trees had shown no growth for several years, although they have each year received their share of manures and other fertilizers with the rest of the grove. These trees have put on a very satisfactory growth since the application of D. M. S. & B. Lime, and this year have a very fair crop of fruit. For the first time Mr. Stillens has been able to grow a good cover crop on this particular portion of the grove.

The entire forty acres has a fine cover crop this year. The trees are in a healthy, vigorous condition—not a sick tree in the grove, nor has this grove been affected to the slightest degree by the recent very severe freeze, and Mr. Stillens will market a heavy crop of unusually smooth, uniform size fruit.

In view of the fact that neighboring groves where D. M. S. had not been used were more or less badly frosted, Mr. Stillens states that in his opinion it was the application of D. M. S. Lime and its effect of putting the trees in such healthy, vigorous condition that enabled them to withstand the freezing weather in such fine shape. This point was still further brought out on the adjoining lemon grove where D. M. S. & B. Lime had been applied on one-half of the grove. That portion of the grove on which lime had not been spread was so badly frozen that there will be an almost complete loss of fruit, while on the half of the grove receiving the application of D. M. S. & B., after a very careful inspection, it was found that at least one-half, and probably more, of the fruit has not been damaged.

Mr. Stillens states that the outstanding features of the improvement brought about by the D. M. S. & B. Lime was the fine physical condition of the soil noted, the great increase in size over the usual cover crop, and the unusual growth and vigor of the trees themselves. These features, together with the fact that his grove and crop came through a very severe freeze undamaged, has convinced Mr. Stillens, according to his statement, that D. M. S. & B. Lime has secured for him a condition and result in his grove impossible to secure in any other way.

On the thirteen acres of two-year-old trees on black alkali soil D. M. S. & B. Lime was applied at the rate of 100 pounds to the tree, and worked well into the soil around each tree. In this connection Mr. Stillens mentions that the gophered trees were the only ones that have been lost in the planting, and considering the very intractable nature of this soil, having been hitherto considered unsatisfactory for orchard purposes, it is remarkable that he has been able to secure so near a perfect stand of fine, vigorous growing trees. Mr. Stillens very positively states that he does not believe the trees could have been started in this soil without the aid of D. M. S. & B. Lime.

D. M. S. & B. for Chickens

Dr. S. O. Barnes of Gardena, a national authority on poultry, states:

"It is not necessary for the chickens to digest D. M. S. as it is already available. Some of the lime is absorbed where it is prepared for further absorption for the intestinal tract. We find within the gizzard the crystals and the lime acting as a grinder of the food for assimilation in the intestinal tract. We also find that the D. M. S. had been entirely absorbed, i. e., these properties, except silica, which was still performing its function of disintegrating. In the chickens that are allowed free access to D. M. S. we find no irritation of the mucus membrane. Place D. M. S. before young chickens taken from the incubator and it will prevent bowel trouble."

——D. M. S. & B.——

D. M. S. comes to you as a plant food, a fertilizer, with a lineage that extends back 500,000 years.

Artist's Conception of the Cause of the D. M. S. & B. Fossil Beds—Palos Verdes Hills.

WHAT WE WANT TO KNOW IS When Smith Left Home, and How He Got Out of the D. M. S. & B. FOSSIL BEDS

EVOLUTION

By LANGDON SMITH

When you were a Tadpole and I was a Fish
In the Paleozoic time,
And side by side on the ebbing tide
We sprawled through the ooze and slime,
Or skittered with many a caudal flip
Through the depths of the Cambrain fen,
My heart was rife with the joy of life,
For I loved you even then.

Mindless we lived, mindless we loved,
And mindless at last we died;
And deep in the rift of a Caradoc drift
We slumbered side by side.
The world turned on in the lathe of time,
The hot sands heaved amain,
Till we caught our breath from the womb of death,
And crept into life again.

We were amphibians, scaled and tailed,
And drab as a dead man's hand;
We coiled at ease 'neath the dripping trees,
Or trailed through the mud and sand,
Croaking and blind, with our three-clawed feet,
Writing a language dumb,
With never a spark in the empty dark
To hint at a life to come.

And happy we loved, happy we lived,
And happy we died once more,
And our forms were rolled in clinging mold
Of a Neocomian shore.
The aeons came and the aeons fled,
And the sleep that wrapped us fast
Was riven away in a newer day,
And the night of death was past.

Then light and swift through the jungle trees
We swung in our airy flights,
Or breathed in the balms of the fronded palms
In the hush of the moonless nights.
And oh, what beautiful years were those,
When our hearts clung each to each,
When life was filled and our senses thrilled
In the first faint dawn of speech.

Thus life by life and love by love
We passed through the cycles strange,
And breath by breath and death by death
We followed the chain of change
Till there came a time in the law of life
When over the nursing sod
The shadows broke and the soul awoke
In a strange, dim dream of God.

I was thewed like an Aurochs bull
And tisked like the great Cave-Bear,
And you, my sweet, from hand to feet,
Were gowned in your glorious hair.
Deep in the gloom of a fireless cave,
When the night fell o'er the plain,
And the moon hung red o'er the river bed,
We mumbled the bones of the slain.

I flaked a flint to a cutting edge
And shaped it with brutish craft;
I broke a shank from the woodland dank
And fitted it, head and haft.
Then I hid me close to the reedy tarn,
Where the Mammoth came to drink,
Through brawn and bone I drove the stone
And slew him upon the brink.

Loud I howled through the moonlit wastes,
Loud answered our kith and kin;
From west and east to the crimson feast
The clan came trooping in.
O'er joint and gristle and padded hoof
We fought and clawed and tore,
And cheek by jowl, with many a growl,
We talked the marvel o'er.

I carved that fight on a reindeer bone
With rude and hairy hand;
I pictured his fall on the cavern wall
That men might understand.
For we lived by blood and the right of might,
Ere human laws were drawn,
And the age of sin did not begin
Till our brutal tusks were gone.

And that was a million years ago,
In a time that no man knows;
Yet here tonight in the mellow light
We sit at Delmonico's.
Your eyes are deep as the Devon springs,
Your hair is as dark as jet;
Your years are few, your life is new,
Your soul untried, and yet—

(Continued on Last Page)

World's History ON A PIECE OF CHALK

To those who think that science lacks poetry and romance or that the common things of life make no appeal to the imagination, I commend this passage from Nuxley's lecture "On a Piece of Chalk":

Thus there is a writing upon the walls of cliffs at Cromer and whose runs may read it. It tells us, with an authority which cannot be impeached, that the ancient seabed of the chalk sea was raised up and remained dry land until it was covered with forest, stocked with the great game whose spoils have rejoiced your geologists. How long it remained in that condition cannot be said, but "the whirligig of time brought its revenges" in those days as in these. That dry land, with the bones and tooth of generations of long-lived elephants hidden away among the gnarled roots and dry leaves of its ancient trees, sank gradually to the bottom of the icy sea, which covered it with huge masses of drift and boulder clay. Sea-beasts, such as the walrus, now restricted to the extreme north, paddled about where birds had twittered among the top-most twigs of the fir trees. How long this state of things endured we know not, but at length it came to an end. The upheaved glacial mud hardened into the soil of modern Norfolk. Forests grew once more, the wolf and the beaver replaced the reindeer and the elephant, and at length what we call the history of England dawned.

ACTUAL ANALYSIS

Los Angeles, Cal.,
Dec. 24, 1921.

Acid Insoluble (including Potash)	7.23%
Total Water	1.26%
Iron and Alumina Oxides (Fe203 & A1203)	3.38%
Calcium Oxide (Ca0)	46.60%
Sulfur Trioxide (S03)	0.26%
Magnesium Oxide (MgO)	1.54%
Free Sulfur	Trace only
Organic Matter	1.53%
Phosphoric Oxide (P205)	1.96%
Carbon Dioxide (C02)	36.26%
Total Potash (K20)	0.31%

SYNTHETIC FORM OF ABOVE

Acid Insoluble (including Potash)	7.23%
Total Water	1.26%
Iron and Alumina Oxides (Fe203 & A1203)	3.38%
Calcium Sulfate (CaS04)	0.44%
Gypsum Equivalent	0.56%
Calcium Phosphate (Ca3 (P04)2)	4.28%
Calcium Carbonate (CaC03)	78.68%
Magnesium Carbonate (MgC03)	3.22%
Potassium Silicate (K2S103)	0.51%
Organic Matter	1.53%
Free Sulfur	Trace only

GEO. W. GOOCH,
Analytical Chemist.
——D. M. S. & B.——

LIME AND TUBERCULOSIS

Reason To Believe That Breathing Lime and Limestone Dust Is Actually Beneficial to Sufferers From "White Plague"

Rock Products Magazine. Vol. XXV. No. 1. January 14, 1922. Chicago, Illinois.
Address—542 South Dearborn St.,

Quotes a wealth of information as to the wonderful research being made by the National Tuberculosis Association relative to limestone and the dreaded White Plague.

——D. M. S. & B.——

NOTED SCIENTISTS SEE SPECIMENS FOUND AT LIME QUARRY

Torrance Lime and Fertilizer Company Heartily Commended by Prof. Bailey

The poet speaks of "the everlasting hills," because they are long-lived in comparison to the short life of human beings.

The fact is that hills, mountains and valleys are all born, reach maturity and pass away, and their life is simply a series of UPS AND DOWNS, elevated to the clouds for a time and sinking beneath the waves of the ocean, only to be reborn again.

Each hill, each mountain, bears the marks, the scars, of its battles for existence, and the work of the geologist is to study the scars and find out the causes.

The San Pedro Hills, or range, is plainly marked from head to foot with scars, and these "Notes" are for the purpose of calling attention to a few of them, and trying to find the interpretation of the cause.

LOCATION—The San Pedro Hills are a low range immediately west of Los Angeles Harbor, culminating in San Pedro Hill 1482 feet above sea level. This summit is in Lat. 30 deg. 31 min.; Long. 118 deg. 21 min.

The range measuring from Point Firmin northwest to Flat Rock Point is ten miles long, and the width is about 4½ miles. It is bounded on the east by Los Angeles Harbor (the City of San Pedro), on the south and west by the Pacific Ocean, and on the north by the Moneta-Downey Plains.

The land rises to the summit in a series of wave-cut terraces that correspond to the system of terrace that exist on San Clemente Island and others that may be observed all along the Coast line of the State.

GENERAL GEOLOGIC SECTION

Rent Period—Strand Formation—Marine sands. Terrace Epoch—Raised beaches dating at various times from the Inter-Glacial to after the San Pedro epoch.

Pleistocene Period—San Pedro Epoch—(2) Upper S. P., soft sandstones and indurated sands. (1) Lower S. P., marls and light-colored sandstones.

Pliocene Period—San Diego Formation, red and yellow standstone.

Miocene Period—Monterey Formation, bituminous shale and sandstone.

Jurassic Period, Franciscan Formation, shales, schists, igneous rock.

OUTLINE OF GEOLOGIC HISTORY

(1) Time of depression—Franciscan Formation—These sediments were laid down in the Logan Sea, which extended to Long. 117, or east of the present site of the Sierras. Glaucophane schists of this period are exposed at the heads of several canyons near the summit of the range.

(2) Elevation—The Sierras were born at the end of the Jurassic period. The Franciscan rocks were probably elevated a little, forming a low island.

(3) This range of hills was probably a low island through the Cretaceous and Eocene periods, as no sediments of these times are found around the flanks of the hills.

(4) Depression — Monterey Formation—During the Miocene period this low island sunk to a depth of 500 fathoms beneath the waves, and the sediments of the Monterey formation were laid down. The depth of the sea above the Monterey is judged by the types of the seashells, some of whom are living today, and the depth of the water they exist best in.

The Miocene Sea covered most of Southern California, reaching to the foot of the Sierra Madre. The Monterey formation is well known, as it contains the petroleum of the Los Angeles oil fields.

At Point Firmin is a sea cliff showing the Monterey for 100 to 300 fet in thickness, the shales dipping to the north. At Timms Point the Monterey is overlaid by the San Diego formation, which dips from 5 to 30 degrees east. In the City of San Pedro a well penetrated the Monterey to a depth of 850 feet, showing a brown shale, with a little heavy oil and considerable asphalt. The sediments were laid down in water less than 500 fathoms deep, but far enough from shore (north of Pasadena) to be fine, clayey and silt-like.

The general structure of the range is made up of the Monterey shales and standstones, and these are folded, faulted and intruded by igneous rocks.

(5) Elevation—Coast Range Born—Just after the monterey sediments were laid down the rocks were fold-

(Prof. Bailey's Geological Report Continued on Page 2, Columns One and two.)