An Uncommon Mineral and its Varied Uses

Advantages and Drawbacks of the Species of Clay Called Bentonite in Roadwork and in Industrial Operations.

A non-metallic mineral which promises to be of considerable importance when it has been further investigated is the clay known as bentonite. During the past season the Mines Branch of the Department of Mines has had Mr. H. S. Spence, Mining Engineer, in the field making intensive investigations as to possible economic occurrences, uses and markets. Mr. Spence will also review present conditions and developments in several industries on which special reports have already been issued.

The occurrence of bentonite in Canada was first noted in 1911 by the late Joseph Keele, ceramic engineer of the Department of Mines at Camrose, Alberta, and later, along the Red Deer River in Alberta and in the Nikola Valley in British Columbia. As described by Mr. Keele, bentonite, when freshly exposed, varies in color from a light yellow to a light olive green with a waxy lustre. It is exceedingly fine grained and has a soapy feeling when wet. In water it forms a jelly-like mass. When sufficiently wetted it swells to as much as twelve times its original volume.

The research laboratories of Alberta University are reported to have established the fact that the presence of bentonite is responsible for the gumbo soil of western Canada. The laboratories have also reported that as the bentonite content of the gumbo soil constitutes the hardening element, if a waterproofing material can be economically provided a high grade road bed can be established. Under present conditions the absorptive properties of bentonite forms the country roadways into a wet, sticky mass. Research work is being carried on at present with the bitumen sands of the McMurray district as to the possibility of using this material as a waterproof coating for western roads.

While its presence in the soil is undoubtedly a serious drawback in regard to transportation, bentonite has already a few commercial uses. One is as a filler in the manufacture of paper, for which purpose it is claimed to be superior to kaolin, at present largely used. There is a patented process for its use in the de-inking of old news print. It is also used as an ingredient in pastes for attaching paper labels to metal or leather surfaces, thus preventing the labels from curling up and becoming detached. It is finding some use as a filler in the lead pencil and crayon industry. It has been used as a 'hoof-packing' in veterinary practice.

Other suggested uses for bentonite are: as a filler in rubber, leather, phonograph records, cordage, pressed and moulded insulating materials, and in cheap soaps; as an ingredient in gypsum and lime plasters, and for glazes in ceramics, as a water softener, a carrier of printer's ink, and as a substitute for fuller's earth, and as an adulterant in cheap candy.

It is largely with a view to establishing the fitness for the above purposes that the investigations are being carried on by Mr. Spence, and as a result of his enquiries no doubt many additional industries will find a new raw material available for their manufacturing processes.

—AND THE WORST IS YET TO COME

Stories About Well-Known People

Princess on the Stage.

The youngest child of the late Czar Alexander II. of Russia, Princess Catherine Yourievsky, recently made her first appearance on the music-hall stage at the London Coliseum.

She and her husband were made prisoners as soon as the revolution broke out in Petrograd.

"Hidden by friends," she said, "I lived through a dreadful period of terror. At one time I served as a maid at an inn, and at another I passed as the niece of a gardener and his wife, doing all the cleaning and cooking, and sleeping on bare boards.

"At last I managed to become attached to a unit of the Red Cross, and so finally crossed the frontier."

As Hall Caine Looks To-day.

In a beautiful suite at this hotel, affording a wonderful view of the Thames and a vast area of London, I found "the Manxman." Time, which transforms us all, has not neglected Sir Hall Caine. His famous shock of red hair has now the yellowish white that is frequently reminiscent of former redness. The well-known contour of his distinctive and luxuriant coiffure is completely preserved, though the upper part of it is very transparent, revealing the shape of his entire cranium. His features seemed to have settled like a sediment into the comparatively small area of his triangular face, the forehead, emphasized in its size by the long hair, dwarfing them. The color of his skin is uniformly pink, and he is not so thin as portraits of him had led me to expect. His picturesque aspect was heightened by a distinctive manner of dress. His double-breasted waistcoat was cut low, revealing a hugs Ascot cravat of black satin.—From "Portraits of Pen and Pencil." By Walter Tittle.

From Clerk to Playwright.

"Robert E. Lee" and "Oliver Cromwell" are two of the finest plays in London; the former is drawing crowds to the Regent Theatre, and the latter is at His Majesty's, says an English writer.

The young man who wrote both of them, Mr. John Drinkwater, poet, dramatist, and critic, began work as an insurance clerk. He stuck to his desk for twelve years, and then the call of literature and the theatre became too strong, and he launched out as writer and actor. He wrote "Abraham Lincoln"—an inspiring play—and "Mary Stuart"; he is, too, one of the leading modern poets and the joint editor, with Sir William Orpen, of "The Outline of Literature and Art."

Keeping Well.

Man was made to live outdoors. Nature did not invent base burners, steam-heated apartment houses and factory buildings. Men designed these things, and man must make the best of them. But let us not overlook the necessity of getting as much good, clean, wholesome fresh air in our systems as we can.

The diseases most common from unwholesome air are influenza, pneumonia, bronchitis, diptheria, tuberculosis and colds. Colds are the most prevalent ailment and the most easily avoided. It isn't the cold wintry air that gives you a cold; it's your clumsy effort to dodge it, the doctors say. It is because we allow the germs to be introduced into our noses, mouths, throats and lungs, and then don't get enough good air to enable our bodies to kill them.

A medical man declares that employees of a large institution lost 18,736 working days a year through illness. A ventilating system was put in the building, and the days lost were cut down to 10,114 a year. In another factory 500 employees did the work it had taken 600 to perform after fresh air was introduced as a factor in efficiency.

Maybe these figures do not mean much to you. What does mean a great deal, however, is your health and that of your family. Guard it. It is easy It merely means that you should sleep with a window open every night—even the coldest nights. You should have some air circulating in the room wherever you are, and as soon as you go out of doors you should not hunch down into your coat of furs, but throw up your head, take a deep breath of the crisp, fresh air, and put disease to flight.

Tinley Woods.

There's magic out in Tinley Woods,
where Caesar's feet once trod.
And folk have seen on Halow'en a
shaggy woodland god;
The goblins have made mischief there
since first the world began,
And now it is a Fairyland for Timothy
and Ann.
They've hung the cloudy twilit skies
with woof of Make-Believe,
And no one but the night-wind hears
the foolish dreams they weave.
An knight is he of high degree, and
she the queen of all,
The trees become their men-at-arms,
the stars their tapers tall.
And he forgets the knives and boots,
and she her pots and pans. . . .
The music of the world is made by
Timothys and Anns.

—Westminster Gazette.

Ready for the Worst.

An Irishman who was signing articles on board a ship began to write his name with his right hand; then, changing the pen to his left hand, he finished it.

"So you can write with either hand, Pat?" asked the officer.

"Yis, sor," replied Pat. "Whin I was a boy me father always said to me: "Pat, learn to cut your finger-nails wid yer left hand, for some day ye might lose your right!"

Hot Weather Stuff.

Mrs. Gabb—"My dear, I've a bit of gossip that's too good to keep!"

Mrs. Stabb (coldly)—"Put it on ice and it won't spoil."

Not in the Dictionary.

She wrote him a note which read: "Dear John—Meet me at the trysting place at 6.30 this evening, without fale." And John answered: "In that lexicon of youth which fate has reserved for a bright manhood there is no such word as 'fale.' "

Strong, We'll Say.

Wife—"Mercy, John, but some of these highwaymen must be mighty strong!"

Hubby—"How so?"

Wife—"The paper tells of one that held up an automobile with four men in it."

Foods That Make Men Strong.

The hardest work in the world is lumbering, for it means working at top speed from dawn till dark, and usually in intense frost. Lumberers live principally on beans baked with pork and flapjacks (a kind of pancake) eaten with maple syrup. They also eat quantities of steamed brown bread.

It is a mistake to think that a lot of meat is necessary to make muscle. The coolie, especially the Chinese, who lives on rice, is more active and enduring than the Negro fed on meat; and the Arab, who lives largely on dates, is extraordinarily wiry and can travel all day in burning heat that would kill a meat-fed man.

Among the strongest men in the world are the Turkish porters. Two of these have been known to carry a grand piano up a flight of stairs, and one will carry a load of 100lb. twenty miles in a day on his back. These men live almost entirely on dried fruit and olives.

The Spanish peasant works all day and dances half the night on black bread, onions, and occasionally a little cheese; while the Italian, who is the best navvy in the world, does his work on an equally simple diet, of which the principal part is chestnut meal, onions and fruit.

Dr. Stefansson, the Canadian explorer, who has lived longer in the Arctic than any other white man, existed for months on nothing but fish. All day he was out in temperatures below zero, yet he has put it on record that during that time he actually gained weight.

The staple diet of the Roman soldier was coarse brown bread and sour wine, yet on this he built roads and carried incredible weights of armor and baggage over extraordinary distances.

Can It Be True?

A French physician has been carrying on some interesting experiments to determine the amount of force expended in piano playing.

He finds that to sound one of the white keys requires in its doing an application of energy equal to that in handling a weight of something more than two and a half pounds. For a black key the weight increases to a bit over three pounds. To play Chopin's Nocturne in C Minor requires an expenditure of force equivalent to nearly 40,000 lbs.

Ought pianists to be classified as artists or athletes?

Ignoring Failings.

Mrs. A —"How do you write references for your cooks?"

Mrs. B.—"As I would write their epitaphs."

A Mighty Four-in-Hand.

Kingdom Ward, who has returned from Burma after eleven months spent in the Tibetan-Yunnan marshes, made a complete traverse, east to west, of that extraordinary belt of the earth's crust through which the waters of the Tibetan plateau escape.

Here four of the greatest rivers of Asia flow in a strip of mountainous country not more than seventy-five miles wide.

There is nothing elsewhere on the earth's surface to compare with these mighty rivers—the Yangtse, Mekong, Salween and Iriawad—running parallel to each other for a hundred miles and separated only by rock partitions which in places attain altitudes of 25,000 feet.—London Times.

Fact vs. Theory.

Little Janie—"Mother, if baby was to swallow the goldfish would he be able to swim like one?"

Mother—"Oh, my heavens, no child. They'd kill him."

"But they didn't."

Just the Place.

Mosquito—"Ha, I guess I'll park here awhile!"

King George's Highland Home.

The Canadian tourist when in Scotland should endeavor to spend a day or two in royal Deeside. Many tourists visit the Trossachs mainly owing to the spell of Walter Scott, but though the Trossachs have undoubtedly a charm Deeside is in many respects superior. The crowning glory of Deeside is Balmoral Castle, the highland home of King George. The castle is beautifully situated in a romantic and delightful country. For a few months in the fall King George is in residence and visitors flock from afar. The great event of the season is the Braemar gathering, when sports are engaged in and the kilt, the one time national dress, is much in evidence. Englishmen come for the occasion who have probably never worn a kilt before and strut about in all the glory of Scotia's martial garb as to the manner born. The kilt is seldom worn except at this time, when it is the fashion. Ladies dress particularly for the event and their frocks are duly chronicled in the press. The ladies, as in other countries, are well advanced, but so far they have not donned the kilt.

To the south of the castle stands "dark Lochnagar"—a mountain some 4,000 feet high—which is celebrated by the poet Byron, who spent his early years not very far from it. Queen Victoria had a great regard for Balmoral and kept it as secluded as possible. She would not allow the railway to be extended, so that there is a motor coach journey of eight miles from the railroad terminus at Ballater. The surrounding scenery must be seen to be appreciated. In an obscure part of the castle grounds there is a statue of a faithful retainer, John Brown. He was a great personality and a prime favorite of Queen Victoria.

A few miles from Balmoral is Grathie Church, where the royal family worship when in residence at Balmoral. Motor coaches come from all parts and the church is invariably crowded. At other times it has been known to have very few worshipers. King George is a model landlord and he has no more loyal subjects than his Deeside people.

From Balmoral it is a short run to Braemar, which is in the heart of the mountains. It was here that Robert Louis Stevenson conceived and partly executed his famous romance "Treasure Island." Here also he made a beginning of the nursery verses which afterward grew into the volume "The Child's Garden of Verse."

Siam's White Elephants.

With regard to the phrase, "white elephant," Mr. Hermann Norden, in "From Golden Gate to Golden Sun," gives some interesting information.

The white elephants are kept by the King of Siam in the Royal stables at Bangkok, and are not really white, but merely lighter in color than the normal beast.

They are supposed to be animated by the spirit of some great king or hero. According to Siamese faith the soul of Buddha existed in the body of a white elephant before it was incarnated again in Prince Gautama. In ancient sun worship also the white elephant was a sun emblem.

The King keeps these sacred animals in great luxury. "But the ownership of one by a prince was by no means a piece of good luck, for the king made war on him to obtain possession. This is the source of our commiseration of anyone who has a 'white elephant' on his hands."

A Live Wire.

"That fellow fairly shocks you with his energy."

"Yes—he's a live wire."

Spartan Discipline in Royal House

It has been evident to every intelligent observer that the chief interest of King George during the past twenty years has been his children.

As a much younger man than he is to-day, he sensed the direction affairs were taking, the breaking down of the old, substantial aristocratic, the rise of a democratic spirit the like of which no royalty had ever faced before, and the need of a royalty equal to the conditions which have arisen.

To his children, the King has been a Spartan father.

There is nothing of the modern, easy-going daddy about King George. He does not enjoy the jolly, free and equal companionship of his children as most present-day fathers do. After twenty years of a domestic discipline which never has wavered or weakened, King George has rather the respectful love of his children, after the manner of fathers and children half a century ago.

The formalities of royalty have not been responsible for this altogether. But he has always insisted on the formalities. That is to say, that when the Prince of Wales, when he was living with the royal family in Buckingham Palace, came to say good-night to the King, he entered the King's presence, even though it were the drawing-room or the King's study, with formality, and addressed him as "Sire." After the formal good-night was said, they would unbend for a moment, and behave as father and son. But the irreverent atmosphere of the ordinary intercourse between father and grown son has never existed between the King and the Prince who will follow him.

There is little or nothing of King Edward's jovial and beaming spirit in King George. He takes most of his character from his Danish mother, and a little of Queen Victoria's active sense of responsibility. He is an aloof man. Rather a shy man.

He determined, after the manner of a shy and serious man, that his children should grow up not merely with a sense of responsibility to the state but with characters adaptable to serving the state. He was determined that none of his children should grow into bored and blase royalty.

When at Windsor Castle, twenty years ago, it was customary for the royal children to go walking each afternoon. And their walk took them past the cottage of a lady who had a very beautiful and inviting croquet lawn.

The children insisted on playing, and the nurses and attendants asked permission of the lady.

Day after day, the children came and played with the greatest zest. They held a long series of matches between themselves. The lady one day said to the attendants of the children that they should be got a croquet set of their own—they seemed to enjoy it so.

"The King has refused to let them have a set," she was told.

"But why? It is a harmless game."

"Oh," said the attendant, "croquet is one of the things the children have to do without."

That was the King's system. There were certain things which the royal princes must arbitrarily do without, just for the sake of doing without. It was possible for them, naturally, to have everything. But the King arbitrarily refused them certain things.

It has been the same throughout their lives in all things. They could not do what they liked or have what they pleased. Thousands of wealthy families have been ruined by it. The wealthy classes of England to-day are spoiled by their boredom.

But the princes of Britain are not spoiled nor bored.

In every relation with life, in their relations with people of every sort, they are fresh and interested and unaffected.

It is a triumph for King George, at some expense to himself. For it is known that the princes fear him not a little, and that the royal family is going through that uncomforable stage when a family of boys who have been brought up under control reach the age of manhood and control must cease.

The removal of the Prince of Wales from the family circle to quarters of his own outside the palace was only agreed to after long delay on the part of King George, who has always been somewhat at a loss to deal with the lively spirit of the Prince.

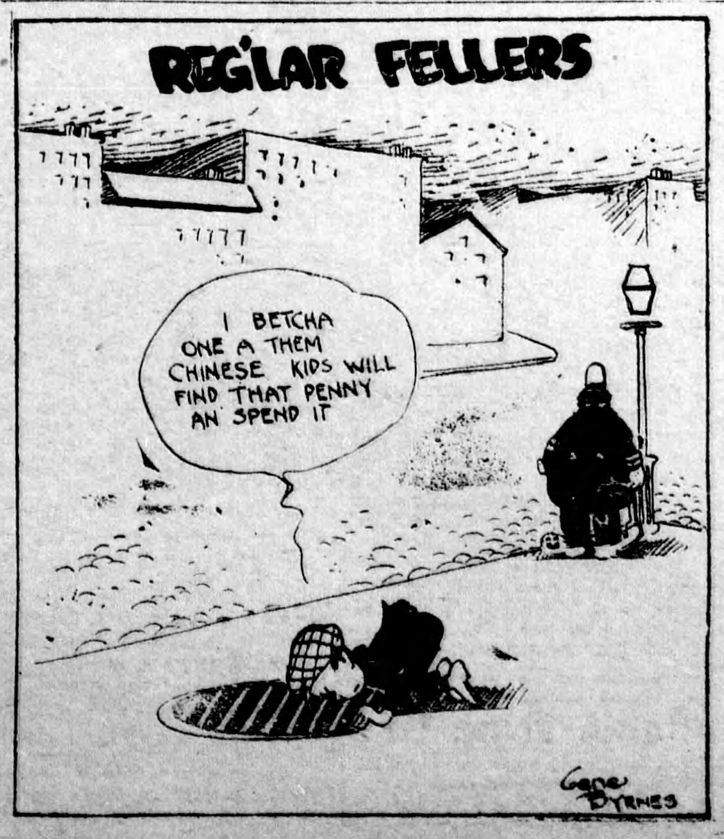
The Duke of York, who is more like his father than is the Prince, is afflicted with a very severe stammer. He sometimes has to stop dead in his speech and struggle painfully for words. I spite of this, he goes out to functions and makes public addresses, and generally takes his share of the burden of royal appearances. This is another evidence of the King's hand, for the Duke of York was most shy of public appearances. Consider these royal folk as human beings. And who ever heard of a man with a stammer who gladly spoke in public? But the King, who conquered an instinctive distaste for public appearances, handled the matter to the King's taste, and the Duke of York enjoys a popularity not much less than that of the Prince.

Simple tastes, in keeping with royal appearances, have been used by the King to keep his children unspoiled in a spoiled world.

The King himself is a toiler. He has his office in the palace and has his office hours. Every document of government that he is supposed to see, he sees. There is nothing of the perfunctory figurehead about him. There are thousands of heads of great businesses who know less about their business than the King. He studies every bill brought to him for signature. He has ministers and secretaries closeted with him to explain points of law or administration. Historans and essaysts may say he is a formal head of the state, but he doesn't admit it. He investigates, studies, argues, checks everything brought before him. His reason is this: governments come and governments go, but the King remains. He is the continuity of government.

These things he has impressed on his sons, particularly the Prince of Wales, in the frequent formal discussions he has with his sons. He catechises them on their studies (or used to), lectures them on their duties, deportment.

A shy, reserved man, thrust into kingship unexpectedly, who has ridden the waves of a turbulent democracy in his reign, who has seen millions of his subjects ground and torn in the mightest war of the ages—serving him.

And who has made a success of his sons.

God bles the King!