

THE BLACK DIAMOND

It is One of the Curiosities of the Mineral Kingdom.

A PUZZLE TO SCIENTISTS.

Nature Has in Some Peculiar Way Produced This Rare Form of Carbon and Then Thrown Away the Secret of the Process—Found Only in Brazil.

The term "black diamonds" is sometimes jokingly applied to ordinary coal which we burn in our furnaces, but the real "black diamonds" of commerce are among the most unique mineral products of the world, and they serve a purpose in the industrial world that makes them of great value. The black diamonds are pure carbon and yet in no outward appearance resemble the diamonds which we are accustomed to wear as ornaments. They are slightly harder than the crystal or gem diamonds and, in fact, about the hardest substance known.

Black diamonds, or carbons, are among the greatest curiosities of the mineral kingdom. They are without crystalline form and are found in irregular pieces, ranging in size from half a carat up to three, four and five hundred carats. They are dark gray, black or brownish in color and opaque. The real diamond of the jewelry trade is also pure carbon, but translucent and crystalline in form. Two objects so alike in composition could not be found so opposite in appearance as these two forms of carbon.

Another peculiar thing about the black diamonds is that they are found only in one locality in the world. They come from a very small section of Brazil not more than 25 miles square in area. Outside of this limited territory no pure black diamonds have ever been found.

What peculiar freak of nature caused the deposition of the black diamonds in this section of the world and nowhere else is one of the mysteries which science has failed to explain. None of them has been found in the great Kimberley diamond regions, where the crystal form of diamonds have for so long been mined.

The whole origin of the black diamond is, therefore, a scientific enigma. Naturally the question is raised, "Of what use is a black diamond?" No one would care to wear one of these diamonds, which resembles a piece of coal more than a real diamond, and so far no one has popularized the black gems as the black pearl has been. Nevertheless the black diamonds serve a most important and useful function in the industrial world.

This pure black carbon is not only harder than the real diamond, but tougher and not so brittle as the gem. Consequently it is of great value for many mechanical purposes and particularly for boring with diamond drills. In diamond drilling the tips of the drills are studded with carbon, or black diamonds, and when the bores are deep the pressure is so great that the gem diamonds would be crushed in the process. But the carbon resists this continued pressure and slowly eats down into the rocks.

In diamond drill work the carbon is set in circular pieces of soft steel or iron, called bits, and these bits are attached to tubing. Armed with these black diamond teeth, the drills push their way down under severe pressure to a depth of five and six thousand feet, cutting through the hardest kind of rock. Some black diamonds are much harder than others, and there is no way to determine by the color the difference in the degree of toughness.

Black diamonds or pure carbon are not by any means cheap, and the owners of the mines in Brazil where they are gathered are making a good thing out of their monopoly. There is no known substance that can take a place of carbon in drills in boring for gold, silver, copper and other mineral deposits. Before the black diamonds of Brazil were discovered it was impossible to make borings.

When the carbon was first introduced in our industries it was used in diamond saws for cutting stones, marble and similar substances. Then the price advanced so that the carbon was found too costly for such use, and bort was substituted for stone cutting. Bort is really an imperfect crystal or gem diamond, but it is too brittle for use in drills. Consequently bort has taken the place of black diamonds for stone cutting, and the latter have been restricted almost entirely to diamond drilling purposes.

The average size of black diamonds used in the drills ranges from two to five carats, but the larger specimens give much better results. They cost more, but they last longer. Consequently there is a greater demand for the larger pieces of pure carbon, and the price is sometimes run up to premium figures for unusual specimens.

The fear that the supply of black diamonds may some day give out and paralyze the diamond drilling industry has stimulated prospectors to systematic search for new deposits, but so far they have not been successful. On the other hand, scientists have been making a close study of the chemical conditions which have produced the black diamonds, but their manufacture is apparently about as difficult as the making of the gem diamonds. It is possible under certain conditions to make either, but not in sizes sufficient to be of any commercial value.

Nature in some peculiar way has made these rare products and then thrown the secret of the process away. If any man can ever unlock or find that secret he may come a pauper in the diamond trade.—Scientific American.

FOOTBALL TANGLES.

Queer Situations That Have Developed on the Gridiron.

In the fall of 1898 Young, the Cornell quarterback, received a bad bump on the head during the first half of one of the early games and was so dazed that he gave the signal for the same play eight times in succession. The rival eleven, unable to comprehend such generalship, or, rather, lack of it, became just as bewildered as the injured quarterback and in the effort to understand the unintelligible let the Cornell backs through for a quick touchdown.

The calling out of numbers while the opposing quarterback is trying to give his team the signal for the next play has resulted in numerous tangles. In one of the Army and Navy contests the quarterback of the latter eleven became so confused in one instance when the Army players were shouting out various numbers while he was trying to direct the next play that he actually gave his men one of the series of numbers the Army men were suggesting. The incomprehensible signal and the subsequent mixup may be better imagined than explained.

On the Yale squad in 1906 there was a man who was not only a good player, but an excellent comedian. It was told of him that more than once he put this gift to good account in a game. An amusing remark here, a bit of a story there, then a touch of burlesque, and his rival in the line would forget for the moment that football is too serious a matter for laughter. It is unnecessary to add that the comedian was never so interested in his own dramatic efforts as to fall to take advantage of their effect on the other man.—Outing.

A LITERARY SIN.

The Fabrication of Quotations Is a Censurable Practice.

Plagiarism is hardly so great a crime as the fabrication of quotations—a practice which has caused many an earnest student to waste hours in a fruitless endeavor to trace the passage cited. Among the guilty Samuel Warren deserves special mention. On one occasion he took part in a debate during which Roebuck boasted that he was not a party man, whereupon Warren rose and said that "my learned friend's boast reminds me painfully of the words of Cicero, 'He who belongs to no party is presumably too vile for any.'" At the conclusion of the debate Roebuck came over to compliment his adversary on having made a successful hit, adding, "I am fairly well up in Cicero, but I have no idea where I can find the passage you quoted." "Neither have I," said Warren. "Good night."

That literary sin, the fabrication of quotations, leaves its legacy of trouble behind it long after it has been committed. Only the other day to a weekly journal's correspondence column came the venerable question as to where in the Scriptures is to be found a reference to "oil on the troubled waters," a quotation countless preachers and writers have used for centuries, but neither Cruden's "Concordance of the Bible" refers to it nor has Notes and Queries or its industrious correspondents ever been able to throw a light upon its origin.—London Chronicle.

Instructed the Queen.

Queen Victoria of England was once pulled up short by an old Scotchman. Her majesty had started out one afternoon to sit on a hillside and watch some of her relatives fishing in the river below her, when she found that she had no thimble in her pocket, so could not work, as she had intended, at the sewing she was carrying. Turning out of her way to Mrs. Symond's shop, she bought the smallest thimble there, which was, however, many sizes too big for her. There was an old Scotch dame at the counter impatiently waiting to make her own purchases. Not recognizing the queen, she broke into the conversation with a "Hoops, but it's a rare fuss an' fiddle you're makin'. Blow intae it weel an' it'll stick." That phrase, the latter part of the sentence, amused her majesty immensely and became quite a proverb in the royal family.

Mind Over Matter.

"Much may be done," said the acute observer, "by an authoritative voice. Now, if a man says to a dog, 'Come here,' with a note of absolute authority in his voice the dog comes immediately."

"Yes," said the traveler, "I've noticed it. And it is especially marked in oriental peoples. Why, when I was in Khalsandjharo I heard a man say, with that authoritative note in his tone, 'O king, live forever,' and immediately the king lived forever."—Carolyn Wells in Success Magazine.

Disinterested Affection.

"I'm afraid, Edward, you're marrying me only because I've inherited from my uncle 100,000 crowns."

"Why, Blanche, how can you think that of me? Your uncle is nothing to me. I would marry you no matter from whom you inherited the money."—Der Floh.

Successful.

"I started out on the theory that the world had an opening for me, and I went to find it."

"Did you find it?"

"Oh, yes; I'm in a hole."—Baltimore American.

A Double Hold.

Miss Moonlite—Er—let me hold the reins, please. Mr. Beaphul—What will I do then? Miss Moonlite—You might hold the holder of the reins.—Boston Herald.

HIS OWN MEDICINE.

The Dose That Was Handed to the Persistent Agent.

He was a sewing machine agent of the most aggressive type. For twenty minutes the lady of the house had been awaiting an opportunity to say that she already possessed one.

At last he paused, only long enough, however, to thrust a card into the lady's hand.

The bit of pasteboard was certainly a novelty.

"My name is Sellem," it read, "of the firm of Blank & Co., sewing machine manufacturers, and I intend to prove to you that it is madness to defer purchasing one of our unequalled machines."

After a long description of the machine came the following:

"You may plead that you are unable to work a machine. I will remove that objection in fifteen minutes or in three lessons. Will call next Wednesday."

When the agent called again a six foot man opened the door and blandly remarked:

"You're the sewing machine man, I suppose?"

"Yes; I called last week, and"—

"Yes, I know," interrupted the big man. "You don't know me, I suppose. My name's Bury of Bury & Keppel undertakers, and I intend to prove to you that it is madness to defer purchasing one of our unequalled coffins."

The agent began to edge away.

"You may plead that you are scarcely qualified for a coffin," the big man went on. "I will remove that objection in ten seconds."

But the agent simply tore from the house.—London Tit-Bits.

WHAT TO DO.

Hints on First Aid to Everybody on All Occasions.

When a man rushes into your office hurriedly and says:

"By Jingo, Dawson, I hate to speak of it, but I need \$500 like the very old dickens today!"

Answer—"What a singular coincidence, Binks! I go too!"

When the lovely young maiden at the seaside to whom you have been paying court all summer shakes her head violently and says:

"No, Mr. Bilthers; I cannot imagine any circumstances under which I could be induced to marry you."

Answer—"Thanks, Miss Jones. This is a great relief. I was afraid you had misconstrued my attentions and, of course, desired to live up to my implied obligations."

When you run face to face with your tailor upon the street and he turns a cold, beady eye upon you and says:

"Excuse me, Mr. Bump, but what have you to say about my little bill?"

Answer—"I don't think I have met your little Bill, Mr. Snippeton. Indeed, I didn't know you had any children at all."

While he is recovering from this jump into a taxi and proceed to break the speed laws.—Carlyle Smith in Harper's Weekly.

Relative Strength of Arms.

As a result of some very interesting experiments made at Washington with a view to determine the relative strength of right and left limbs it has been ascertained that over 50 per cent of the men examined had the right arm stronger than the left, 36.40 per cent had the arms of equal length and strength, and 32.70 per cent had the left arm stronger than the right. Of women 46.90 per cent had the right arm stronger than the left, and 24.50 per cent had the left stronger than the right. In order to arrive at the average length of limbs fifty skeletons were measured, twenty-five of each sex. Of these twenty-three had the right arm and left leg longer, six the left arm and right leg, while in seventeen cases all the members were more or less equal in length.—Exchange.

Disadvantages of Poverty.

"We're going to move again in a month or two," said the little girl on the back porch. "We move into a new house every year."

"We don't," said the little girl in the adjoining yard. "My papa owns this house."

"And you don't never move into any other one?"

"No."

"My, my! It must be awful to be as poor as that!"—Chicago Tribune.

A Reliable Plan.

"Whenever I don't like a man very well," remarked the cynical person, "I give him a tip on the races. I don't care how much it loses for him."

"But suppose it wins?"

"Then he's unhappy because he didn't bet more."

"And if he doesn't bet at all?"

"I keep on giving tips until one does win, and then he feels as if he had missed the chance of his life."—Washington Star.

A Rialto View.

"Do you think a little Shakespeare would go as a vaudeville act?" inquired Hamlett Fatt.

"Why not?" responded Yorick Hamm. "Everybody feels that he has got to stand for it if it comes along. No man is going to admit that Shakespeare is over his head."—Washington Herald.

His Little Joke.

Percy—I—aw—wrestled for an hour with me scarf this morning. Algernon—Which won the victory, dear boy, you or the scarf? Percy—Neither. Cawn't you see the match resulted in a tie? Haw, haw!—Chicago News.

FRAUD ORDERS.

The Way Our Postoffice Inspectors Protect the Public.

When a person or firm that is unknown to the postoffice inspectors begins to receive large quantities of letters the inspectors begin to investigate. They visit the office of the concern and learn what they can. If it is a legitimate and honest business it is not interfered with. But if it looks "shady," if it happens to be a mining or land scheme that offers large returns upon the investment of money, the inspectors abstract a dozen or so of the incoming letters from the mail, get the names and addresses of the writers and then reseat the letters and permit them to be delivered.

The next move for the inspectors is to visit the persons whose names and addresses were taken from the letters and to get from them the correspondence of the supposed fraudulent concern. With this the inspectors "make" a case and either cause the arrest of the dishonest persons or cause a "fraud order" to be issued against it.

A "fraud order" is simply an order made by the postal authorities at Washington declaring that such a business is fraudulent and warning the public against sending money to it. After that each letter coming addressed to that concern is stamped "fraud" in red ink across its face and returned to the sender.

Thousands of schemes for defrauding the public has been stopped by the postal authorities, and they are always on the watch for them.—Kansas City Star.

ROQUEFORT CHEESE.

The Discovery Made by a Poor French Peasant Boy.

A shepherd boy with a poor appetite discovered the secret of making Roquefort cheese. True as gospel! They swear by that story today in Roquefort, France, and if they only knew the lad's name they'd raise a monument to him. He was out tending sheep, and, the sun smiting down hard, he went into a cavern to eat his cheese and rye bread. He failed to get away with all of it and threw a hunk of the cheese off to one side. It happened to drop on a natural shelf, and a few months later the boy found the cheese still there. He saw that it had undergone a constitutional change, for instead of being dry and hard it was moist and creamy. Besides, there were veins of greenish mold running through it. The boy took a nip, and the taste was so pleasing he carried a crumb home to his mother. She must have been a woman of intelligence, for no sooner had she tasted than she took one of the largest rolls of cheese from her dairy, had her son guide her to the cavern and placed it on the shelf. In due time the same change was wrought, and Roquefort cheese had arrived as an article of commerce. All the natural caverns around the quaint old town now are used for ripening cheese, and the women work in them with small oil lamps strapped around their chests.—New York Press.

Hood and His Aunt.

While still a boy Thomas Hood went to Scotland for a holiday trip and stayed with his aunt, who was a rigid Sabbatarian. He describes how upon one occasion the old lady was too indisposed to go to her beloved kirk, but found entertainment in the description of the passersby furnished by her irrepressible "nevy": "Tammy, my man, keek out—wha's that?" "That's Bailie So-and-So's daughter, aunt, and isn't she making desperate love to young Somebody, who's walking by her side?" "The graceless hizzie! I'd wauk her, gin I were her maminie! Keek out again, Tam." "There's Mrs. Blank, aunt, and she's got on a grand silk gown and such a velvet mantle!" "Set us up, fiddle! She, indeed, the sille wastrife bodie! She'd better far pay a' she's owing. Wha's neist?" And so they would go on, the crabbed old Scotchwoman little suspecting half the "stour" proceeded from the active imagination of her "nevy" to heighten the fun and draw her out.

Overstocked.

Madge as the oldest of a family of girls has evidently heard and taken to heart the disappointment of her parents over the excessive femininity allotted by the fates to the family quiver.

When recently the fifth little daughter was born Madge was playing in the garden with one of her sisters and, as a neighbor considered, was decidedly rough with the child.

"Madge, don't treat your little sister so," remonstrated the neighbor. "You might kill her."

"Well, if I did," was the cool response, "there's plenty more in the house."—Philadelphia Ledger.

Unchanging Sport.

The sport of deerstalking is still the most natural and most nearly allied to the hunting of primitive man that is to be found in the British islands. The difference between the actual hunting of the hungry Pict and the stalking of the owner of a modern deer forest is little more than the weapon.—Field.

When He Feels Safe.

Bacon—A map feels more secure when his views are endorsed by others. Egbert—Especially so if the man in question is a baseball umpire.—Yonkers Statesman.

Out on Top.

Fuddy—Did you ever notice that successful men are generally bald? Duddy—Certainly. They came out on top.—Boston Transcript.

BIRDS' NECKS.

It's the Number of Bones in Them That Makes Them Flexible.

The flamingoes were making their afternoon toilets in the big flying cage at the Bronx zoo the other afternoon, says a writer in a New York paper. A crowd of children and grown people were looking on and exclaiming with admiring wonder at the way these birds were twisting their long necks about into all sorts of corkscrews and curves when one of the ornithological experts came along and stopped to watch the performance.

"It's the larger number of bones in a bird's neck, not the length, that make it so flexible," he remarked. "There are twenty-three bones in the neck of a swan, for example, and a few more in that of the flamingo. It seems that the smaller the animal organism the larger the number of neck bones. The giraffe, for instance, has only seven bones in his long neck, which has a reach of nearly twenty feet from the ground. That little white throated sparrow over there is only three inches high, but he has fourteen bones in his neck and can almost scratch the back of his head with his bill. The swan has twenty-three neck bones and swings his head about with even greater freedom than a snake."

THE PLEBEIANS.

Their Secession From Rome and Their Rise to Power.

Plebeians were the commons of Rome, who were originally forbidden all political rights. They were for the most part poor and were not allowed to intermarry with the patricians. They served in the army without pay and were sold into slavery for debt and could even be cut into pieces for distribution among their creditors.

Finding their condition intolerable, the plebeians in 497 B. C. seceded to Mons Sacer, near Rome, where they resolved to build a new city. But this step so alarmed the privileged classes that they granted to the commons the right of annually choosing from their own numbers two magistrates, called tribunes, with power to protect them against the aggressions of the patricians.

After the lapse of about 200 years the disabilities of the plebeians were almost entirely removed and between the years 356-300 B. C. they secured the dictatorship, the censorship and the praetorship as well as the right to be pontiff and augur. Thus the Roman republic, after two centuries of existence, finally secured a democratic form of government.—New York American.

Sweat and Perspire.

It is possible to tell almost exactly when the more elegant "perspire" drove out the vulgar "sweat." According to a writer in the London Gentleman's Magazine in 1791, "for some time past neither man, woman nor child in Great Britain and Ireland of any rank or fashion has been subject to the gross form of exudation which was formerly known as 'sweat.' Now every mortal, except carters, coal heavers and chairmen, merely 'perspires.' Far these twenty years past the word 'sweat' has been gradually becoming more and more odious."

Before 1770 or so "perspiration" commonly meant an insensible process, "sweating" the grosser variety thereof. In one of his sermons Wesley remarked that "during a night's sleep a healthy man perspires one part in four less when he sweats than when he does not." That would be meaningless today.

Queer Sort of Borrow.

He was displaying with much pride a silver dollar "pocket piece."

"One of my best friends," he said, patting it fondly. "Have had it ten years, and during that time have been dead broke half a hundred times and in actual need of food and a bed quite often."

"What?" a listener exclaimed. "Keep a dollar from sentiment and go hungry and sleepless?"

"I didn't say so," the other replied. "I never went that far. You see, when I'm so hard pressed I use the coin as collateral. I borrow another dollar and give this one as security—to be held till called for. Queer sort of borrow, isn't it? But the coin's too good a friend to desert."—New York Globe.

Identified Her.

A story of lovely woman's ability to rise superior to those petty details which so often hamper, limit and nullify the operations of any mere man is told of a Harrison woman who tried to have a check cashed at a bank where she was not known, says the Newark Call. The usual remarks were made by the cashier concerning the need of identification, to which the woman immediately replied: "Oh, well, that's easy. I can always be identified by this mole on my cheek."

A Mistaken Cure.

"Jennie!" yelled the composer. "Yes, dear," called back the gentle wife.

"Why in thunder don't you keep that kid quiet? What ails it?"

"I can't think, dear. I'm singing one of your lullabies to the poor little darling!"—Lippincott's.

A Potential Difference.

"Pa, what's the difference between idealism and realism?"

"Idealism, my son, is the contemplation of marriage; realism is being married."—Boston Transcript.

The world is a ladder for some to go up and others to come down.—French Proverb.

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Neglect or pessimism, we believe, is the greatest enemy the public has to contend with when applied to the loss or recovery of health. Practically every case of consumption might have been cured if hope had been maintained and proper treatment had been resorted to at the first symptom of the disease. Until the advanced stage is reached consumption is curable. Catarrh is responsible, we believe, for many cases of consumption. It is about catarrh we want to talk to you today, incidentally consumption, since the two are so closely allied.

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