mond to a Lump of Graphite.

Why Exactly the Sane Elements Form Such Different Substances Is the Rid-Into a Minute but Pure Gem.

Carbon, one of the seventy or eighty primary elements out of which all matter is formed, occurs, pure, in two entirely different and contrasted forms. These are, first, diamond and, second, each of these substances was a compound or mixture of different elements, comprising in both cases carbon as the principal constituent there would be no they are totally unlike!

The molecules of each are the samethey are molecules of carbon, and nothing else-but in one the molecules are so arranged that they form a transparent, excessively hard, solid crystal, endowed with marvelous powers of refracting light which make it the most dazzling of all gems, and, in the other,

The secret lies within them. It is in the internal play of the molecular forces, but what makes those forces act so differently when they have precisely the same material to work upon? Burn a diamond and it turns to graph-

wood, whereby all the other elements contained in the wood are removed. leaving the carbon in the form of a soft, black substance which, in some ways, resembles graphite.

Charcoal and a few similar substances are called amorphous, or "shapeless" carbon, because they are never crystallized, as diamond always, and graphite sometimes, is. Yet charcoal, too, has the royal diamond blood, blood sometimes sits on the throne and sometimes slaves in the mine; but, despite the turn of chance below, it is always itself.

Charcoal can turn to diamond, and the things that make it turn are great heat combined with great pressure. Here, in outline, is the process, as it has been performed in laboratories, especially by the French chemist, Moissan: Into a mass of molten iron a quantity of pure charcoal is put. Then the liquid iron, which dissolves the charcoal very much as water dissolves sugar, is placed in an electric furnace and heated in a temperature of nearly 5,000 degrees F. Immediately it is plunged into cold water, in order to

cause a quick cooling. The result of the sudden cooling is the formation of a solidified shell on the surface of the iron which powerfully compresses the interior part, when it in turn cools and tries to expand. The result of this compression is to force the imprisoned carbon (charcoal) to crystallize into diamond. . If the molten iron is allowed to cool at tury. Again in the fifteenth century ordinary pressure the charcoal only the emblem was adopted by the feudal turns to graphite. So we see that the lords and warriors. The connection of magic wand whose touch makes dia- the emblem with the navy is also deep mond of what would otherwise be rooted, having had local usage as earmere dull pencil lead is the wand of ly as 71 A. D. and a more extended high pressure.

tially the way in which nature herself | took place in 1810. makes diamonds. In the great diamond mines of South Africa there is evidence that the gems were formed in the bowels of ancient and long since. extinct volcanoes, where, of course, both intense heat and enormous pressure were available in unlimited quantities. But nature in her huge volcanic laboratories works on a scale which We cannot imitate, so that there is no cause for surprise in the fact that, while she can make diamonds as big as walnuts when she chooses, we can make none even as big as a pin's head. The largest artificial diamond is less than a millimeter in diameter. But it is genuine diamond, and with that fact to start with, who can say what may be done some day?

There are a number of meteors which have fallen upon the earth from outer space that contain microscopic diamonds resembling the artificial ones. None of them is large enough to be of any importance except as scientific curiosities, but as such they fill the mind with wonder. Where and how were they created-in what world or what star? ly impurities. If it cracks it has been

The principal metals found in me teors are fron and nickel, with occasional traces of cobalt, copper, aluminum, tin and magnesium

"Gadspur is a man who prides him self on doing things."

"True. But I had to disappoint him the other day." "How so?" "He wanted to do me."

Cruel Comment. Manager-I say, Hamfat, old man, why don't you join a moving picture company? Crushed Tragedian-Why should I so degrade my art. sir? Manager-Because then, you see, you can become a reel actor.

Our life-a little gleam of time between two eternities. - Carlvie.

speaking at a recruiting meeting, of shunting at the consumers' Gas fered his services in any capacity. than thirty million dollars during the probe the coal and coke question in join the army as privates, not as ry in warfare," said the Bishop of Toronto law firm, died at Montreal past ten months.

# DODGING AN AVALANCHE.

Rick That Often Must Be Faced In Climbing the Alps.

While an Englishman was climbing The Mystery That Links a Dia- one of the peaks of the Alps be came to a stretch of broken snow about 100 feet in breadth, composed of the remnants of avalanches which had fallen from the face of the mountain above. A SECRET OF THE MOLECULES. It was necessary to cross it. An avalanche had fallen ten minutes before this Englishman and his two guides had reached the piace and another would doubtless soon follow. The dle-Changing a Mass of Charcoal crossing must be made between two

avalanches. Twenty yards this side of the snow track and perhaps 100 yards from the threatening snow wall the little party paused for critical survey. The question stood for instant decision. From the appearance of the snow wall it graphite or plumbago (pencil lead). If | must be determined whether another avalanche would fall within the next

few minutes. Was it best to hurry silently across? Was it best to wait? Was the next cause for mystification. But they are section of the snow face in such a conabsolutely the same unmixed thing, al- | dition that a mighty yell would send though in appearance and in properties | an avalanche down and gave them an opportunity for a hasty retreat? On the other hand, if they all yelled together and no avalanche fell would the concussion hasten the next fall, whereby they might be overwhelmed in the

One towering pinnacle of snow, pushed a little beyond its fellows, seemed ready to totter to its fall. They lookthe same molecules are so arranged ed at it doubtfully. It ought to have that they form a dull, soft, black or | gone with the last avalanche. Would gray substance that leaves a dirty it stand or would it fall within the next three minutes? A hundred feet is not much of a space to cross, but such crossing, if through fresh, broken snow from six to ten feet deep, is slow and floundering work.

lence had to be observed, and now, Charcoal is a third form of carbon, the searching but momentary scrutipered that they could come along. toward it. With noiseless speed they hurried forward. Silently they struggled through the snow and as silently emerged on the other side.

> Just the Thing. "Do you think I had better give the patient gas?" inquired the dentist's as-

sistant of his chief. "By all means," replied the eminent practitioner. "He has taken an hour and a half of my time telling me how be suffers, and on the 'like cures like' principle gas is just what he needs."

Humor on the Links. "Fore!" shouted the golfer, ready to play.

But the woman on the course paid no attention. "Fore!" he repeated, with not a bit

more effect than the first time. "Try ber with 'Three ninety-eight.' suggested his partner. "She may be one of those bargain counter fiends."

Japan's National Symbel. The origin of the emblem of the sun as the Japanese national symbol dates back to time immemorial. The first record of its use on land is that of a famous war lord of the eleventh cenfield in 110 A. D. The official adeption It is believed that this is substan- of the sun flag to represent the nation | thor I'd bless if he-it is usually he-

> An Ominous Outlook. "The judge of my court is a character," remarked the clerk. "He saw a play called 'Seven Days,' and the following morning every prisoner got seven days. Then he read a book called 'Three Weeks,' and every culprit got three weeks. I'm a little puzzled as to the outcome of his present literary activities."

"Why so?" "Just now he is reading a volume entitled 'One Hundred Years of Prog-

How to Test Paper. You cannot test paper, as you would string, by stretching it. It has been Good paper simply takes the appear-

bleached too much.-London Globe.

Remembered. "Mother, you must have known our principal when you went to school."

"Why, yes, I guess I did." "He seemed to remember you today. He told me what a bright girl I was, and then he said, 'It doesn't seem possible that you can be Amy Jones' daughter."

Rapid Thinker Mother-Always think twice before you speak. Tommy-Gee. ma, if you do that yourself you must do some swift thinkin' when you get goin' for

Infatuated. "Likes to hear himself talk, doesn'

"Does he? Say, if he talked in his sieep he'd stay awake all night to lis-

A brakeman named H. McDowell, Glenholme Falconbridge, | Toronto, was fatally crushed while

Works siding. Canada's revenue increased more A Government commission will fellow-preachers of military age to "The Germans have killed chival / Great Britain.

# CHANGED ONE LETTER.

How a Serious Political Crisis In Cana-

da Was Averted. At the period when British Columbia was threatening to withdraw from the Dominion of Canada because the Carnarvon settlement had been ignored by the Mackenzie administration the lic function in Quebec.

While the procession was moving through the principal streets a gentleried up to his excellency's carriage to say a "rebel" arch had been placed across the road so as to identify the viceroy with the approval of the disloyal inscription thereon.

"Can you tell me what words there

"They are 'Carnaryon Terms or Sepa-

ration." "Send the committee to me." commanded his excellency. "Now, gentlemen," said he, with a smile to the committee, "I'll go under your beautiful arch on one condition. I won't ask you to do much, and I beg but a trifling favor. I merely ask that you alter one letter in your motto. Turn the S into an R-make it 'Carnarvon Terms or Reparation'-and I will gladly pass-un-

The committee yielded, and eventually Dufferin contrived to smooth over the difficulties and to reconcile the maicontents.

# SENSES OF TREES.

Something Almost Human In Some of

the Plants' Actions. Mr. James Rodway, who is the cura tor of the British Guiana museum and From the time that the party came an eminent botanist, declares that within view of the snow the utmost si- plants have at least three of our five senses-feeling, taste and smell-and that certain tropical trees smell water ordinarily produced by the charring of | ny completed, one of the guides whis- from a distance and will move straight

> But trees not in the tropics can do as well. A resident of an old Scotch mansion, says a writer in the Scotsman, found the waste pipe from the house repeatedly choked. Lifting the slabs in the basement paving, he discovered that the pipe was completely encircled by poplar roots. They belonged to a tree that grew some thirty yards away on the opposite side of the

Thus the roots had moved steadily toward the house and had penetrated below the foundation and across the basement until they reached their goal, the waste pipe, 150 feet away. Then they had pierced a cement joining and had worked their way in long, tapering lengths inside the pipe for a considerable distance beyond the house.

There seems something almost human in such unerring instinct and perseverance in surmounting obstacles.

And Yet They Say Authors Are Poor. Authors may not now spurn the of fer of money for their work, but they really do sometimes fall to cash checks, according to the cashier of the Century company. "I don't know what they do with the checks," be said in complaint to a friend the other day, "unless they frame them. Though acknowledgments have proved the receipt of the checks, I am always carry ing on the books corresponding accounts that I can't close up for months, sometimes years. I remember especially one check issued to a famous actor and author. He died a number of years ago. The check was made out anew to the estate. Still it is uncashed. There is more than one auwould only go and get his money."

Ready For the Worst.

"A woman in a parish where I lived." said an English clergyman, "used each day to prepare herself for the worst. I was complimenting her one day on the extreme tidiness of the house even early in the morning.

I allus sez, you never knows what may 'appen, 'ow soon one of the children may be brought 'ome in a fit or with a broken leg, and, as I allus sez, it don't matter what 'appens, so long as you've got a bedroom to put 'em into.' "

Chivalry. "Do you know," said the particularly well groomed and elaborately vivastretched so much in the process of clous lady in the full bloom of her secmanufacture that it won't stand much ond youth, "that I have the most wonmore. The way to test it is to rub it | derful gardener in the world-the tenin the hands. After such treatment derest hearted not only of gardeners, poor paper is full of holes and cracks. but of men? He has always made me up a very special bouquet on my birthance of leather. If much white dust day and presented it to me in person. is produced we know there are earth- But ever since I was thirty-well, he's only given me a birthday bouquet every third year."

Heroes and Villains.

Men are not made heroes by the performance of an act of heroism. must be brave before they can perform it; so they were not made villains by make a fool of myself. His Loving off by human bodies. the commission of a crime, but were villains before they committed it

Is This So, Ladies? "They say that a Martiau year has over 600 days." our ladies give their ages."

Solved. Knicker-What would happen if an irresistible force met an immovable body? Bocker-The mule would kick

Intelligence is the mother of good luck.

Methodist Church, Toronto, urged the murder of her husband. chaplains.

IS OUR CLIMATE CHANGING?

Not at All; It's About the Same Now as It Was Ages Age.

The question of the constancy of the climate must be discussed for three different time intervals-first, has the climate remained constant during the recent past, say the last hundred late Lord Dufferin took part in a pub- years; secondly, has the climate remained constant during the historic times, say the last 7,000 years; thirdly, has the climate remained constan man, breathless with excitement, hur- during recent geologic ages, say the Curson, the late Lord Salisbury's as- fact that the state has a right to call

last 10,000,000 years? There are many stations where meteorological observations have been perused the despatch and pencilled it is needless to say, has been recogmade for more than a hundred yearsin fact, a few records cover more than comments upon the grammar of the draft has been invoked in the past 300 years. Based upon these observaare on the arch?" quietly asked Duf- tions, the statement can confidently be made that the climate is essentially the same now as it was many years or even a hundred years ago. This is the question of grammatical pro- not wise to employ the principle in largely contrary to popular belief. means that, taking one year with another, the snowfall is just as large now just as long now as then. It means that the winters are no milder now than then. It means that the summers are no hotter now than then.

The constant statements by the older people that the climate is different now than it used to be when they were younger are due to the tendency to magnify and remember the unusual while the ordinary is forgotten. Thus in time it is only the unusual snowfall or the extremely low temperatures that are well remembered, and unconsciously the abnormal has thus been substituted for the normal. These statements are also due to the fact that the attitude toward life, the amount of energy, the daily occupations and perhaps the place of residence of the older people are very different now than when they were younger.

the kind and amount of crops raised, the existence of certain wild animals His positively last appearance was and forest trees, the size of the rivers, the height of lakes and inclosed seas, thirty-two. He died in August, 1874, a etc. From evidence of this kind the conclusion has been drawn that there Standard have been no marked changes in climate during historic times.-From Willis I. Milham's Book on Meteorology.

Storms and the Wind. It is a curious fact that what is genstrong wind which frequently carries beavy rain is apparently driven from a northeasterly direction it is popular- production of fuller's earth. ly assumed in a specific area that the storm originates somewhere in a northeastern zone, while in truth its real source is in the west or southwest. The explanation is that such a disturbance is merely an indraft of a barometric depression in the opposite direction. The storm is known as a "flareback" and is one of the conditions which cause a weather forecaster diff culty.

One Reason. "Do you know why money is so scarce, brothers?" the soap box orator demanded, and a fair sixed section of the backbone of the nation waited in leisurely patience for the answer. A tired looking woman had paused for a moment on the edge of the

crowd. She spoke shortly: "It's because so many of you men spend your time telling each other why 'stead of hustling to see that it

The Oldest Libraries. The oldest libraries of which we have any certain knowledge are those brought to light by excavations among the ruins of the east. Among these are the Babylonish books inscribed on clay tablets, supposed to have been pre-"'Yes,' she said; 'I always likes to pared for public instruction about 650 'ave my bedrooms done hearly, for, as B. C. It is said by Aristotle that Strabo was the first known collector of books and manuscripts. This was about the year 330 B. C.

> Skeptical. Over the Phone-Hello! Is that you, Blank? Why, there's a report around town that you're dead. "Is that so? Well, call me up again

if it's confirmed, will you?" A Downpeur.

"What do you do when your wife begins to cry. Jibway?" "As my wife is a head taller than am and she cries copiously, my first him."-St. Louis Post-Dispatch.

thought is to stand from under."

Unkind.

too many other ways by which I can is infested with effete matter thrown Wife-Yes, dear, but you have tried all of those.

A Definition.

Debate-An argument or word battle of a formal nature, engaged in by two or more people, in which each tries to convince the other that he is wrong. died of that."-Detroit Free Press. but only succeeds in convincing himself more firmly that he is right.

The Hard Struggle. "It's a tough struggle." "What is?"

"Doing without the things we actu- the brow. ally have to have to try to keep up the payments on the luxuries we didn't

Mrs. Mohr was acquitted at Provi-Rev. Dr. W. H. Hincks of the dence of the charge of instigating. London in an address Saturday.

Fun in a Blue Book. According to the London correspondent of The Glasgow Hexild, an Objections to System Disappear amusing incident in the later years of the diplomatic career of the late Sir Claude Macdonald has passed un-

recorded by his biographers. It happened at the time that was at the head of the Legation at | Only 36 votes were counted against Pekin. He had sent to the home the bill on its third reading in the Government a despatch dealing with House of Commons, and the bill is events which were at that moment now before the Lords, who will cerengaging widespread attention, and a tainly not obstruct it. The war will rough proof of the document was sub- do at least this for Great Britain-it mitted in due course to Mr. G. N. will bring about a recognition of the sistant at the Foreign Office.

One afternoon the Under-Secretary. | fence in time of danger. This right, in the margin a number of piquant nized in the United States, where the distinguished diplomat. Indeed, so and would be invoked again, without forcible were the interlineations that any serious opposition, the moment no doubt whatever existed that be- the country got into a tight fix. The tween the two men there was the ut- question for us, as well as for Great most divergence of view in regard to Britain, to consider is whether it is

Foreign Office, the comments in all desperate moment. Both countries as then. It means that sleighing lasts their bald frankness appeared in the have learned by experience that no and upon attention being directed to all citizens to do their part, with equal the matter the issue was promptly service, in the defence of the country withdrawn and a fresh edition sub- The principle is in nowise different

came to be published in the finished premises clear of unsanitary or indocument will probably remain a se-, cendiary conditions that threaten his cret for all time, unless the theory neighbors. It is a part of what each be accepted that the printers adhered man owes to the safety of all his feltoo strictly to the wholesome rule as to following "copy," which is, or should be, one of the cardinal principles of the typographical art.

Actors In Retirement Many actors have lived long after retiring from the stage. Macready, retiring in 1851 at the age of fifty-eight. passed an honored leisure till his death at Cheltenham, England, in 1873. After Mrs. Siddons' farewell appearance In discussing the possible changes in as Lady Macbeth in 1812, being then in climate during the last 7,000 years in- her fifty-seventh year, she spent her reference must be drawn from such re- maining score of years in almost uncorded facts as the dates of harvest, broken retirement. The record in this respect, however, is held by that fathe kind of clothing worn by the peo- mous Master Betty whom in 1804 Lonple, the habits of life of the people, don acclaimed as the Infant Roscius.

made on Aug. 9, 1824, at the age of

"resting" of half a century.-London

Discovered by Accident. Fuller's earth was discovered in Flor ida in 1893 through mere accident. effort was made to burn brick on the erally known in some of the eastern property of a cigar company near states as a northeastern storm is in Quincy. The effort failed, but an emreality, says Popular Mechanics, of ployee of the company called attention quite a contrary origin. Because a to the close resemblance of the clay used to the German fuller's earth. Florida is now the leading state in the

> A One Sided Argument. "He wants to marry Mary."

"What do you think of him?" "Oh, he's all right, I guess!" "But doesn't it strike you that he

little bit foolish?" "Of course, dearest, I cannot argue that with you because the fact that he wants to get married would give you the strangle hold.'

Common Phenomena. "Father," said the small boy, "what are delusions of grandeur?"

"My son, they are what would cause almost any man to be considered insane if he were so indiscreet as to own up to them in public."

The Wrong Thing. "I can give you a few wrinkles about keeping young." "That's where wrinkles won't do."

The Play.

It is remarkable how virtuous and generously disposed every one is at play. We uniformly applaud what is right and condemn what is wrong when it costs us nothing but the sentiment.-Hazlitt.

Rewarded. Actor-I have been in your company ten years. Is it not time that you do something extra for me? Manager-Yes. From now on you shall play all the parts in which there is eating .-Fliegende Blaetter.

That's Different. "Faint heart never won fair lady, you know."

"Nonsense! I know a man who's got \$4,000,000 and a weak heart, and all the girls are just crazy to marry

Room Dust. Dust is everywhere, but the worst kind of dust is that which is confined Tired Business Man-Take dancing within the four walls of a room. The lessons! Well, I guess not! There are dust is always germ laden, because it

> The Comforter. "I understand Mrs. Green is very fil." "That's so? What's the matter?" "The doctor thinks it's pleurisy."

> "Oh, my, I must hurry right over to

see! I know dozens of people who

Brown Study. The term "brown study" is a corruption of brow study, brow being derived

We make our fortunes. We them fate.-Alroy.

from the old German "braun," meaning

A. R. Creelman, K. C., for fourteen years general counsel to the C. P. R., and formerly of a prominent

after a lengthy illness.

COMPULSORY SERVICE.

Boston Transcript.

England.

Opposition to compulsory service disappeared in Great Britain when the question came to its final test, lour preparation for defence instead To the amazement, bowever, of the of leaving its invocation to the last Blue Book as subsequently published, tyranny is involved in calling upon from that implied in requiring every How these marginal notes ever man to pay his taxes and to keep his why not recognize the duty frankly from the start, and introduce a form of universal military training for the young which would supply us with a sufficient number of capable soldiers for any emergency?

THE VALUE OF VESSELS.

Tripled In Cost Since the War-The Real Cause Of This.

ondon Mail. At least one-third of British merhant tonnage is in the hands of the Jovernment. The Admiralty is businesslike in its dealings with shipowners, but it acts only as a broker to the War Office and has no contro over a ship after it has secured it The system works this way: War Office wants to thousand men overseas. Admiralty to supply a ship. ship is requisitioned. After that it is for the War Office, not the Admiralty, to say when the ship's work is done. The men may be landed, and because someone thinks the ship may 'come in handy' some day she is left at a foreign port carrying no cargo and 'pushing up' the freights ev-

We want a special Government for this sort of work. Let the soldiers and sailors do the fighting and let the business men run the business end of the war-that is, the transis now 86s. A ship can pay for itself in three or four such voyages. port, clothing, feeding, and muni-

tioning of the men. A firm which has been buying and selling ships for a hundred years shows that the rise in freights is looked upon by ship-buyers as a so lid, tangible thing, which justifies them in paying three and four times

the pre-war price for a ship. weight in gold. A ship with a ne tonnage of 1,380 sold in January 1914 for £5,500. A similar ship, of less tonnage, sold last month for £11,250,"

These prices are not extraordinary freight to Genoa, formerly 10s a ton

Adolph Schatte, a German bandmaster, was arrested at Wingham, and a mysterious box of explosixes was discovered there in the railway

station. Chief Justice R. M. Meredith has been appointed a Royal Commissioner to investigate charges against County Judge Dowlin of Kent Guelph, St. Catharines, Brantford and other places have taken additional precautions to guard armories. factor'es, etc.

The world is full of short-measura

Mr. J. McEwen of Dundas. Ont., writes:-" For fifteen years I suffered with Piles and could get no permanent cure until I tried Zam-Buk. Perseverance with this herbal balm resulted in a complete cure, and I have not been troubled with the painful ailment since."

Mr. Henry Fougere of Poulamond, N.S., says:-"I suffered terribly with Piles and could find nothing to give me relief until I tried Zam-Buk. This cured me. I consider Zam-Buk the finest ointment on the market."

The above are specimens of the many letters we are constantly receiving from men and women who have ended their suffering by using Zam-Buk. Why not do likewise

Zam-Buk is best for eczema,

blood poisoning, ulcers, sores, cuts, bruises, and all skin injuries and diseases. 50c. box, all druggists and stores, or post free from Zam-Buk Co., Toronto. Send this advertisement with name of paper and one cent stamp for free trial box.

WRITE FOR FREE SAMPLI

Oysters Dominion Fish Co.

PHONE 826.

Here is Your Chance mmmmmm For a short time we will give an enlargement with a dozen of our \$4.00 Cabinet

THE COOKE STUDIO 159 Wellington Street, Next Carnovsky's Fruit Store.

Photos.

Coal The kind you are looking for is

the kind we sell. Scranton Coal

Is good Coal and we guarantee prompt delivery.

BOOTH & CO.,

Foot of West St.

Children Cry for Fletcher's

# CASTORIA

The Kind You Have Always Bought, and which has been in use for over 30 years, has borne the signature of and has been made under his personal supervision since its infancy. hat It likely Allow no one to deceive you in this. All Counterfeits, Imitations and "Just-as-good" are but Experiments that trifle with and endanger the health of

Infants and Children-Experience against Experiment.

Castoria is a harmless substitute for Castor Oil, Paregoric, Drops and Soothing Syrups. It is pleasant. It contains neither Opjum, Morphine nor other Narcotic substance. Its age is its guarantee. It destroys Worms and allays Feverishness. For more than thirty years it has been in constant use for the relief of Constipation. Flatulency, Wind Colic, all Teething Troubles an Diarrhoea. It regulates the Stomach and Bowels, assimilates the Food, giving healthy and natural sleep. The Children's Panacea-The Mother's Friend.

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