VADIAN'S THEORY

TRADIUM PROVED BY EMINENT BRITISH SCIENTIST

pisintegration Is the Met de usigme in the New Canadian Theory, dibe 'Canadian' Theory for the Preat golds the Field"-Interesting Exdiments With the Wonderful Rays.

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\$4.25 to \$4.70 per

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\$4.40 to \$4.80 per

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Selects sold at \$5

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PLE MARKET.

. 15. Cattle-Re-

tely active, barely 15 to \$5.50; bulls.

and feeders, \$2.50

75 head; strong; ipts, 15,300 head; ive on others; 15c

mixed, \$4.75 to mixed, \$4.75 to \$4.75; ags, \$3 to \$3.50. ipts. 7000 head;

5: yearlings, \$4.50 4.25: ewes, \$3.50

Beeves Receipts,

ports to-day, 1339 quarters of beef.

peals sold at \$5.40 harnyard calves, receipts, 1861; steady; tambs 10c to \$4, exclusive y for export, at 5.50. Hoga, receipts.

to \$4.

STOCK.

at Buffalo.

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ward.

dum's rays have pierced through ralls that seemed to mark the g light far beyond them. The erious metal has been the means dowing that there is much more gate than was dreamed of in the air theory of Dalton or in Farathe least prone of mankind to satize, have been taught by it suspend judgment about many s they formerly scouted or den-Speculations once regarded as est treated as necessarily proposos, but are being respectfully indigated by some of the most dismisier drove out of chemical tons a mile high." The disruption of the atom ings back old ideas of a primal The proved convertibility, andium into helium diminishes our gumpt for the alchemist of the fidle Ages. And if the knowledge retly obtained of this metal's prorties has made some of the disediter assumptions of the past less impossible, it makes some prer guesses about the stuff of naan seem more probable. Its phenosea lent support to the view that satter and force are identical. Atoms and Electrons.

Sir William Ramsay, professor of

demistry in University College, Lon-

den announced the other day that he ad actually changed one element to another. From the simple submore radium he had obtained the geally simple and markedly distinct shetance helium. What might not e done after that? Might not the operimentalist hit upon the magic else breaking up the atoms of iron and so reassociating the ultimate particles as to change the base metal bit the pregious? For, atoms, till later thought indivisible, are now hewn to be resolvable into elecment. That was discovered before the wenders of radium attracted atmion. Sir William Lockyer long teld that the elements were broken of in the flery mass of the sun, thus disputing the theory that the comlining unit is undecomposable. But it is neither to astronomers nor to demists that we owe the discovery. It is the result of investigations into the nature of electricity. It is thirty mars since Sir William Crookes bepan his observations of the effects d electricity in vacuum tubes. They led him to the conviction that there kanother state in which matter may larch, 6s 44d; May, mist hospiles the gaseous, liquid and give the name of "radiant matter." atoms nor molecules, and whatever kind of cas they were produced from their properties are the same. So chall matter. Whatever doubts may have been left by Sir William Crookes

These are electrons, and the hypo-

tonsists of an aggregation of elec-

trees in orbital revolution. Rays

and cathode rays produced by electricity in the imperfect vacuum are produced spontaneously by radium. Transmutation. Sir William Ramsay's lecture has much in common with a splendid article that was published in the last number of the Edinburgh Review. He is probably the writer. The fact, announced in the lecture, that radsum could be changed into helium is one for which the scientific world was prepared. In the Edinburgh Rewiew article we find this sentence: "Recent discoveries, however, compel a suspension of judgment as to the feasibility of some modified kind of transmutation." Further on in the article is the following passage about radium and thorium: "Remarkable, above all, is their associstion with their better-known relatives of the inert family. Sir William Ramsay and Mr. Soddy obtained decisive spectroscopic evidence that the gases evolved from radium bromide by solution in water include helium. It seemed, moreover, to develop from the emanation. A number of characteristic helium rays, at first invisible, were derived from s tube in which a radium gas had been collected, and allowed to stand four or five days. Prof. Rutherford is of opinion that the emergent belium was really made fresh from the emanation. For this is apparently a fleeting form of matter; it is breaking up into others, and its break-up is accompanied by the emission of Alpha-rays. Now Alphalays are, as we have said, atomic in composition, and the weight assigned to the atoms composing them posably agrees with the atomic weight of helium. That they are, in fact, belium atoms the Canadian investigator is persuaded, and we can rely upon his neglecting no experimental device for testing the truth of so

Professor Butherford. The Canadian investigator's theory has been proved, not by himself, but Possibly by the very writer of the oregoing passage, by Sir William damsay at any rate. He stated in interview that Prof. Rutherford

mignificant a view."

and Mr. Soddy were co-operating with him in his investigations. The great services rendered by these physicists are freely acknowledged in The Edinburgh Review article. In that article we are told that the analysis of the effects manifested by radio-activity has been largely due to the splendid work carried on at Montreal by Prof. Rutherford, with the able co-operation of Mr. Soddy. "He (Prof. Rutherford) employed, for the first time in such researches, a quantitative method. He precisely measured results. The scale by which he gauged their intensity was the ionisation, in a certain interval, eds of science and have flung a of a given quantity of air. And this in turn was known by the readings of an electrometer. The rate of leakage of electricity, then, under the influence of emitted rays, supplied the standard for determining their conception of the ether. Scien- efficiency. And it is one eminently trustworthy and refined. The electric test for radio-activity is of almost preternatural delicacy. Quantities of matter can, by its aid, be detected five thousand times smaller ful or mad, theories long explod- than those revealed spectroscopicalor condemned as humbug, are no ly." Credit is given to Prof. Rutherford for elucidating "with brilliant success," the nature of the emana-"'Atomic disintegration," gished physicists. The gaseous we are told, "is the mot de l'enigme anations from radium, given off in the new 'Canadian' theory; and dimuously without appreciable loss the Canadian theory, for the present substance or change of structure holds the field." "A gramme of radthe mass, along with rays that ium, according to Prof. Rutherford's estrate thick walls of lead, recall indisputable statement, contains a principle of "phlogiston" which store of power sufficient to raise 500

SCHOOL GARDENS. Nature Study Engaging the Department

The establishment of school gardens Minister of Education.

"School gardens," said the Deputy only in the city.

"In the establishment of a school garden a fair-sized site would be desirable, but much may be accomplished with the present school grounds if the matter is taken up with interest. Portions of the school grounds may be cultivated in common by the pupils under the teacher's direction, or, what is probably better, plots may be assigned to different scholars, who will then display much pride in having the price of ground kept in good shape. Flowers and vegetables are grown in such school gardens, and in a few places the products have been sold and have realized quite a little rewenue, which is spent for the improvement of the school.

which is engaging so much attention, could be taken up with much greater zeal if school gardens became general. It would be exceedingly desirable if the operations of agriculture could be made more attractive to pupils in the rural districts. Nature study will do much in this direction, and, with the establishment of a school garden, a teacher will have additional facilities for making a success of the subject.

the importance of this matter is has been done to create an interest somewhat resembling the Rontgen ly the way is open for doing much for children living in the country."

Hydraulic Lift Lock. The students of the School of Practical Science, Toronto, recently paid a visit to Peterboro. To them the wonders of the hydraulic lift lock on the Trent Canal, the highest lock in the world, and the peculiarities of its construction and working, were explained fully by the enthusiastic chief of the engineering staff, Wm. Rogers, assisted by his staff, two of whom are graduates of the school, viz., Messrs. Francis and Easson. Standing on the top of the central tower, which has a very pleasing outline, it was very hard to believe that the lift is only 65 feet. It is simply a tremendous height, and it is marvellous to think that it is proposed to lift a vessel up this with one lock. This must revolutionize the system of canal construction, and it is pleasing to think that Canada should be leading the world in its advanced system of inland navigation. This novel lock, with its massive masonry, its graceful lines and proportions, its pretty grassy slopes and tasty white fences combine to make a sight that is very pleasing and impressive.

plant. We have got it fixed in our stupid human heads that plants do not think and plan, or have the power of locomotion. Here at our very doors is the refutation of this belief. -Phares, in The Globe,



The Shopping you can do To-day

Only one short week to buy all those gifts that you fully intended buying before this.

The Christmas Shopping Season is now on in all it's glory.

For your own benifit as well as ours we want you to come on Friday this week and the first three days of next week so that we can serve you to better advantage and avoid the great hustling, bustling crowds of Saturday and the day before Christmas.

Can't think of suitable gifts you say? What's the use of puzzling over the question? Come find out what is to be had—you'll see moer Every department of this store is overflowing with practical, sensible, acceptable gifts for every one, Look around, note the lowness of prices giveable things here in thirty minutes than you could think of at home in a week. We feel confident that your search for gifts will end in this store and you will highly appreciate the money we enable you to save without accepting

You can't step in here without finding more gifts that you'd like to buy than you ever had any idea of getting. an inferior quality of merchandise. These tew hints may help you.

or Sweetheart

Mandkerchiefs

exquisite Neckwear, the Dainty. newest and handsomest styles ever shown in Lindsay at 25c, 35c, 50c, 60c, 75c, \$1, \$1.25, \$1.50, \$2, \$2.50. Neat Handsome Belts

Silk, Leather or elastic at 25c, 50c, 75c, \$1, \$1.25, \$1.50, \$2, \$2.50 and \$3.25.

The Always Acceptable Kid Gloves Many styles, all wanted shades at Warm serviceable Mitts of wool, Of wool, plain or fancy at \$1.75, For kid or mocha 25c, 35c, 50c, 75c, \$1, \$1.25 and \$1.50.

Wrist Bars Always useful, serviceable and appreciated at 25c, 35c, 50c, 75c, \$1, \$1.25, \$2, \$2.50 and \$3.

Purses-many styles and qualities at 25c, 50c, 75c, and \$1. Flegant, Handsome I arge Cape Coller. Assorted plain colors at \$2, \$1.50, Of Lace, Sequin and silk Applique

at \$3.50, \$3, \$2.50, \$2, \$1.50, \$1.25, \$1, 50c and 35c. Imitation *strachan (launtiets

Warm and comfortable 75c and \$1. **New Shirtwaists** New attractive styles in most wan-

ted materials and colors at \$8 down to 50c. Fur Ganntlets All guaranteed qualities at

\$2, \$2.50, \$3, \$3.50, \$5, \$6.50, and \$10. Cloth Coats

Numerous styles and prices \$20 down to \$3.75.

ings, \$1 up to \$3.50 with any price between. bress Skirts

Ready-to-wear dressy new styles at \$3.50 up to \$10, and any other price between.

Pur Fuffs and Stoles Wife, Sister An immense range of kinds, styles and prices at \$1.50 to \$35. Fur Mafia

Big assortment of unequalled values at \$2 up to \$15. Caperines of Par Nothing so comfortable for the Light,

money starting at \$2.50 and gradually raising in price up to \$35. strachan Fur Jackets At \$25, \$30, \$35, \$40, \$50 and

New Rraid Girdles Black and colors at \$1.25, \$2.50 and \$3.25.

Golf Conts "ilk Mufflers

Pretty patterns, very comfortable and useful at \$1.50, \$1.25, \$1, 75c and 50c. Muff Chains

For around neck to hold muff, priced at 50c and 75c. Pancy Wool Shawls

\$1.25, \$1, 75c and 50c. Belt Buckles and Waist Sets Neat and fashionable, at 25c to

Fur Sets Ruff and muff of Sable, Thibet and others at \$50, \$35, \$25, \$20 and

All reliable Furs at \$10 down to For all purposes, any size and in Assorted lengths at 25c, 35c and \$1.50.

Cushion Tops In Tapestry, Lithographed and outlined designs, all new and novel at 19c, 25c, 39c, 50c, and

Table Covers New, novel handles, reliable cover- Chenille or Tapestry, any size 50c

anxminster Ruge

6 feet at \$5, 21 x 5 feet at 3.50. "tand overs of Pancy | inen Of fancy linen, new attractive pat- 50c, 75c, \$1, and \$1.50.

terns 60c, 75c, and 85c.

Tray Cloths In pretty patterns on fine linen at 25c, 30c, 35c, 40c, 45c and 50c. linen Sine Board Covers At 25c, 35c, 50c, and 75c. Bed Comforters

warm and serviceable at 98c to \$6. Wool Blankets Soft lofty qualities, any size and

tramed Pictures at \$1, \$1.50, \$2.50 and \$3.

weight at \$1.98 to \$6 a pair.

Husdand, Father, Gentle-Friend.

Stylish new shapes at 50c, 75c, \$1 Cute little wool coats at 50c and \$1.25, \$1.50, \$2 and \$3.50.

Way Mufflers Of Union and Pure Wool and wer-

sted yarns, assorted colors in plain and fancy stripes at 25c, 50c, 75c kind \$1. Neckwest

In all the newest and most popu-

reds to choose from at 25c, 50c, 75c and \$1.

for dress or street wear at 50c, 60c. 75c, \$1, \$1.25, \$1.50, \$2, \$2.50.

Umbrellas An excellent assortment of new

nobby handles with all silk, wool Of wool cashmere or silk at 50c, and silk or cotton coverings at 75c, \$1, \$1.25, \$1.50, \$2 and \$3. \$3.50, \$3, \$2.50, \$2, \$1.50, \$1.25, \$1 and 75c. Silk Handkerchiefs

Rich in colorings and patterns, 3 x One can never have too many. with or without initials at 25c, Assorted colors at 15c, 25c and

Suspenders

Silk web finished with rich embroidered worv, neatly boxed, ready for presentation at 50c, 75c and \$1 pair. Shirts

A new lot of New York's latest .designs in still bosoms, assorted colors or all white at \$1.50, \$1.25 and \$1.

Linen Handkerchiefs

Assorted sizes and hems at 25c and Fur Caps

Handsome subjects nicely framed Of Persian Lamb, Beaver, Neutra, shapes at \$10, \$8, \$7, \$6, \$5, \$4, \$3, \$2 and \$1.50.

Of Mocha or leather for dress or work at 50c, 75c, \$1 and \$1.50.

Gifts for the Baby

Embroidered Coats

Of white cashmere or Bedford cord real beauties at \$5, \$3.25, \$2.50 and \$2. Enderdown Coats

In white at \$1.75.

Rearskin Coats lar shapes and colorings, hund- Of serviceable dainty white bearskin cloth, lined very warm at

\$3.25, \$5 and \$7.50. White Wool Boas

Wool Toques In white and assorted colors at

25c and 50c. **Hainty Ronets**

Wool Mitts

White or assorted colors at 15c, 25c and 35c. Wool Bontees

CHRISTMAS GREETINGS TO OUR FRIENDS AND PATRONS

You are cordially invited to call at our store and accept with our compliments one of our "Yuletide" Calenders for 1904.

& FORD WAKEKY

The Safe Satisfactory LINDSAY

One of the Big Syndicate

BETWEEN THE SEASONS. Remaining Relics of Summer Take on

Strictly Cash Dealers

New Interest-Brilliant Centrasts of Scarlet and Green, The searching, penetrating air winter persistently impresses the universal law of change. It comes supremely indifferent to its welcome, and regardless of the petty human activities it interrupts. The remaining relics of summer take on a new interest. Birds are not careful gleaners, and the berries still clinging to the withered and shrunken stalks of the solomon's seal and wild lily the valley betray their negligence. Even the freely-displayed berries the viburnum have been overlooked in many places. The wintergreen and partridge berry reveal their brilliant contrasts of scarlet and green in perfect indifference to the passing seasons. But the most brilliant display of the closing year is made by the gles over shrubbery unable to with-

to how it contrived to climb with-

out taking hold. Sometimes the bit-

ter-sweet will clasp a tree scarcely as large as itself, coiling round and of the cedars, but he cannot remain round about it like a serpent, and slowly strangling it to death. dead and attenuated victim may remain in the great evergrown coils, while the serpentine trunk reaches up among the branches of other trees. Its handsome display of rich, red fruit is now revealed among the naked branches, and, in spite of its tempting appearance, is carefully neglected by the birds. The valved, spherical orange pods that cluster irregularly on the smaller branches are now open and turned back, displaying the bright red pulpy covering of the seeds. This fruit has the reputation of being peisonous, but while birds avoid it, other bipeds collect it for decorative purposes. It is very enduring, and dries without losing its form or color. The bright colors now displayed among the naked branches are an attraction to the feathered gleaners, but while they bitter-sweet, as it clings and strug- linger and flit about they are not further tempted by appearances.

ible, inviting various speculations as blue and white, but is too busy even ings are lest as the mind soars to gratify his vanity. The chirp of away with the wheeling years,

in hiding. His active energy is contagious as he struggles with the problem of a feed supply. Birds become sociable with the approach of winter. Their more somber colorings seem to climinate all class distinctions. Juncoos, chick-a-dees, and free sparrows gather together in communal activity. The tree sparrow, distinguished by a little black dot in the centre of his otherwise plain breast, seems to take special delight in hiding and concealing his identity, while his friend the chick-a-dee has nothing to conceal, and completely ignores his most curious visitors. The remaining rebins are congregating in flocks and rehearsing for the long migration by lofty, simless flights. And away up, almost among the grey clouds, a belated flock of wild geese appear like a geometrical form of black dots as they move slewly and steadily southward. That angled outline in the silent distance is moved by a guiding instinct as The bracing air is an inspiration to certain as the calculations of the orous climber sometimes sways all animated nature. A brightly- navigator. Autumn seems incomloose, in apparent indifference to the decked jay pulls the last remaining plete if the wild geese slip away unacorn from the highest branch of a seen. Their familiar formation is for bass. I told her I didn't know, slight hold on a branch, in a lofty, | red oak, shaking in his strength the | looked for with the old expectancy | but would find out. I asked the stewspreading top, is all the support it clinging bunches of withered leaves. from year to year. It awakens the demands, and it swings to the ground He flies to another tall branch to all-pervading instinct of migration, display his handseme mottling of the spirit in which self and surround-

a junce comes from the close tonage

COSTLY PRICE FOR A BATH. It Was So Much a Pound, and the Woman Was Heavy.

"When I was connected with the hotel at Lake Minnetonka several years ago," remarked a hotel man, "we had as a regular summer guest a woman from the south who was remarkship stout, weighing something over 200 pounds. One day she called a bell bey and inquired:

"'What do they charge for a bath? "'I don't know,' said the boy, 'but

I'll find out' "After being gone a short time the

boy returned and said: "'Seven cents a pound."

"'Seven cents a pound,' said the boy a second time, while the woman's face became scarlet as she made her way to the clerk's desk.

"'I want my bill,' she exclaimed. 'I have been grossly insulted and shall leave your house.'

"She stated her grievance, the bey was sent for and explained:

"'She asked me what they charged

dawned upon them both the clerk and the guest made the hotel office resound with their laughter."

of Education Just Now.

is engaging the attention of the Education Department. Some explanation of their purport was given recently by Mr. John Millar, Deputy

Minister, "have been in existence in some other countries for several years. In the Eastern States much attention has been given to the movement, and much advantage is said to be the result. Any movement is deserving of consideration which tends to make children fonder of the country and less disposed to feel that everything pleasant is to be found

"The subject of Nature Study,

"That the Legislature is alive to extras, per lb., 25c; stem but seemed to have got to the shown by the fact that \$1,000 was ental element, the constituent voted last year for the purpose of making a beginning. Already much in school gardens in the County of Carleton by Inspector Cowley. It is intended to make a grant to each school that establishes a satisfactory school garden. Too often the school grounds are far from being attractive. Much has been done already by tree-planting on Arbor Day, but it still remains for such grounds to be put in still better shape by the establishment of school gardens. The farmers of the community will doubtless be ready to assist teachers in this movement. Certain-

> The Witch Hazel's Gun. The propulsive power of the Witch Hazel seed pod is extraordinary. It flies open with a click like a rifle, and fires its seed to a distance of several yards. Naturally the Witch Hazel knows its own business, and has sufficient reason for this strange behavior. It desires to start its seeds in new and unoccupied spots, where they will root and start out in life for themselves. It is a cunning