

Science Entering New Epoch.

Certain Recent Discoveries as Radical as Newton's, Says Waidemar Kaempfert.

"This is a scientific period as remarkable as that in which Sir Isaac Newton discovered the laws of gravity," said Waidemar Kaempfert, of The Scientific American.

"I am speaking now of pure, not applied, science," he continued. "We are living in what may be called a state of scientific transition. Discoveries in the radio-active substances, recently or now being made, such as those relating to the degradation of copper of lithium and the change of radium to helium, have disturbed all previous conceptions and lead us to new theories regarding matter."

"What is matter? The old philosophers and even the chemists of a decade ago could give no very satisfactory definition. The modern physicist, aided by experimental evidence with Crookes tube and the radio-active substances, is at least groping nearer the truth. He is quite convinced, at least, that the atom, small as it may be to the popular mind, is gigantic compared with what it ought to be."

"Radium, for example, disintegrates very slowly, and probably ceases to be radium in the course of a thousand years. If it hurried off atoms during this disintegration its life would be shorter. Atoms are clearly too large. Similarly we find the corpuscular discharge of the Crookes tube causes phenomena which cannot be explained on the atomic theory."

"Hence we find that the leading spirits in the revision of our chemistry, men like Sir Oliver Lodge, Sir William Crookes, and Prof. J. J. Thomson, have substituted for the old atom a new and very much smaller unit called 'electron.' According to the new views, atoms are composed of electrons."

"In size the electron bears the same relation to an atom that a baseball bears to the earth. Or, at Sir Oliver Lodge puts it, if a hydrogen atom were magnified to the size of a church, an electron would be the equivalent of a speck of dust in that church."

"According to the old atomic theory, there were seventy odd bits of matter, such as iron, zinc, lead, gold, copper and arsenic bits of matter which were supposed to be absolutely unchangeable. When Sir William Ramsay discovered radium, which was considered an element, changed into helium, still another element, and that by means of radium emanation, copper (an element) could be degraded to lithium, (another element), what becomes of this supposed immutability of the atom?"

"The electron theory explains away these difficulties. There is but one kind of matter, according to the newer views. If we arrange electrons in one way and give them a certain motion we obtain copper; change that arrangement of electrons, or their motion, or perhaps their number, and we obtain lithium."

"Thus, the new science derives all substances from one primeval variety of matter. In other words, the transmutation of matter, the dream of medieval alchemy, is realized in our own time. We have not succeeded in converting baser metals into gold, but we have succeeded in changing one element to another, which is just as startling from a scientific viewpoint."

"The electron, as its name implies, is also a unit of electricity. It would therefore follow from this mere fact that, according to the newer conceptions, matter and electrical force are one and the same thing. Here we reach the borderland of philosophical speculation." Sir Oliver Lodge and Sir William Crookes have not hesitated to bridge the chasm between experimental science and metaphysics. They have boldly built up a system of physics based partly upon the experimental evidence of the laboratory, partly upon sheer speculation, with the result that they have given us perhaps the most beautiful and simple conception of the universe that mankind has ever received.

CAUSES AND RESULTS.

What Democracy Means and Has Meant to People in Our Country.

The general causes of democracy are apt to be overlooked by Americans, because so much of our own democracy roots in a single unique condition, namely, access to free land. Think of the bracing and equalizing influence of the gratuitous distribution of a vast public domain to actual settlers! Is it any wonder the spirit of equality grew up out of recurrent frontier conditions and spread eastward? But now, alas, free land is gone, and henceforth our fate will be that of transatlantic societies. If men are cheapening there, they will cheapen here. If the people win here, it will be for the same reasons that they win in Switzerland or Finland. What are these reasons?

One is that light is flooding the social depths. In 1800, the average inhabitant of the United States had had eighty-two days of schooling. In 1900, the average American had had 1,045 days of schooling—more than twelve times as much as his great-grandfather.

Socially, democracy insists that the grading of folks on the basis of birth or rank or calling or class is coarse and barbaric. It does not deny that men are as gold, silver and copper in relative worth. But it wants men rated, not by place or trappings, but by essential things—wisdom, character, efficiency. The application of these higher standards always humbles the exalted few, and gives more dignity and consideration to the busy people who make the world go round.

Politically, democracy means the sovereignty, not of the average man—who is a rather narrow, short-sighted, muddle-headed creature—but of a matured public opinion, a very different thing. "One man, one vote," does not make Sambo equal toocrates in the estate, for the balloting but registers a public opinion. In the forming of this opinion the sage has a million times the weight of the field hand. With modern facilities for mind influencing mind, democracy, at its best, substitutes the direction of the recognized moral and intellectual elite for the rule of the strong, the rich or the privileged.—Prof. E. A. Ross, in Everybody's.

to a long building of two stories in which there is nothing but guest rooms. The house is run in every way like a hotel; each bedroom, furnished in mahogany and chintz, has its adjoining bath and a room for the visiting maid or valet, and one or two have sitting-rooms. At right angles to the guest quarters and occupying a second side of the riding ring, like an ell, comes a big billiard and lounging room, then the swimming pool, which is forty feet long and sunk in a broad white marble floor, and furnished like a conservatory, with parrots and other birds among the palm-trees, with fountains and long low divans upholstered in white rubber. There are also Turkish and Russian baths, and a Swedish massage and masseuse are in attendance. Adjoining the pool is the gymnasium—as perfect, except in size, as any at our colleges. Then there are racquet and squash courts, an indoor tennis court, and an artificial ice skating pond.—Emily Post, in Everybody's.

TO A TWELVE-FOOT BEAR.

Shooting a Brown Grizzly in the Alaskan Snowfields.

In Everybody's Rex Beach tells this incident of his adventurous "Chromatic Bear Hunt" in Alaska: "As I dashed across a snow-field I saw our guide suddenly appear on the ridge above me like a phantom, silhouetted against the evening sky. He was bareheaded—it took us three days to find his hat—his rubber boots were straddling at a ridiculous distance from each other, and he was hitting it off at the rate of one hundred yards in nothing and three-fifths seconds. He was looking backward over his shoulder, fumbling at his hip pocket for shells, and yet he coursed over those loose boulders with the sureness of foot of a mountain goat. He dipped out of sight as suddenly as he had appeared and I heard him cracking away again, then the louder report of Fred's rifle.

"An instant later I reached the top and glimpsing a huge brown bear rushing toward us in prodigious leaps I joined in the fusillade. The monster's great weight bore him deeply into the snow, which he flung behind him at every plunge, and yet, shocked and torn by those exploding bullets, he still came on and on, a tremendous ungainly figure of rage and determination.

"Even when he was down to his haunches and deathly sick, he redoubled the snow in a futile endeavor to continue that charge. It was a magnificent exhibition of courage, and he died facing us as he faced the red glare of rage still in his eye.

"Whew! I certainly stepped around a bit that time," said Joe, wiping the sweat out of his eyes. "My first four shots never fazed him, so I thought I'd sort of withdraw and reload on the run, but I couldn't seem to locate my fellows nowhere."

"We had no means of measuring our prize, but the carcass was tremendous, so large in fact that our united efforts were barely sufficient to roll it over. The skin stretched twelve feet in curling."

THE MODERN COUNTRY HOUSE.

Luxury and Elaborate Appointments Have Taken Away Much of the Country's Informality.

Today, visiting in a big country house is like stopping in a hotel. Your name is written on the outside of your door, and this seems to furnish the household with about the only clue to your identity. Over the electric-bells are printed lists showing what will be the results of various numbers of rings.

This is another of the innovations in the modern country house; it is no longer considered enough to provide guests with food, lodgings and good company—or is it for want of the last-named that some hosts feel incumbent upon them to furnish special amusements? In one house I know of there is a long gallery, which leads into the "riding-ring," a tank-bark-covered enclosure, two hundred feet square, roofed with glass, which they use for indoor riding and jumping in bad weather. They sometimes use it also for polo practice, though it is too small for a game.

A corridor crosses one end of the ring, and beyond that is the entrance

Snow fell in Europe for forty days in 1434.

Household Notes

MUSHROOM STEW.

To stew mushrooms properly do not add water, but put the tops and the stems, broken into pieces, into a dish, sprinkle them with salt and pepper and let them stand for half an hour or so until the juice is partly extracted. Cook them in this juice. At the last season with butter and cream.—New York Sun.

COOKING MEAT.

Meat should never be put into a half-heated oven to roast. The oven should be quite hot to start with, so that the meat may become rapidly browned and thus prevent the juice from oozing out. After the outside is nicely browned, the oven may be allowed to become a little cooler, but always hot enough to keep the meat at roasting point. Meat to stew should be well browned in boiling fat, then lifted to the back of the oven or stove and allowed to simmer slowly until tender. Boiled beef or ham intended to be eaten cold should not be taken out of the liquor when ready, but allowed to remain in till cold, else it will be dry and tasteless.—Boston Post.

TOMATO SOUP.

Put the bones on fire in cold water to cover; add salt, 1 onion, dessert spoonful whole mixed spices. These can be bought in package form and will add flavor to many an otherwise tasteless dish. Boil slowly all day or till the bones fall apart. Strain through sieve and place on fire again with 1 or 2 cups tomato, according to amount of soup stock. Boil 2 hours and strain again. This makes a most appetizing and nutritious soup, to be served with crisp crackers. I have found that a cupful of this soup taken when one is worn out from a cold shopping trip will nourish and revive quickly.—Boston Post.

CODFISH A LA COCOTTE.

Pick cold boiled cod into bits, taking care to remove all bones; place a piece of butter the size of an egg over the fire in a clean saucepan; when it bubbles, add 2 tablespoonsful of butter; mix thoroughly, then add 1 pint milk, 2 slices of onion minced fine and 1 sprig of chopped parsley. Cook, stirring constantly, until of the consistency of thick cream. Have ready a sufficient number of buttered codfish. (If these useful little individual baking dishes are not at hand, use a buttered ramekin). Fill the cocottes with alternate layers of fish, sauce and cracked crumbs, finishing off with crumbs. Dot with butter and brown in a steady oven. Serve without re-dishing. Garnish with sliced lemon and parsley.—Boston Post.

AN INEXPENSIVE DISH.

A toothsome and inexpensive dish is filet de boeuf when made of rump steak. The steak should be cut into slices three-eighths of an inch thick and trimmed to the shape and size of mutton chops. Melt some butter in a baking tin, lay the filets in it and let them stand in a warm place for an hour or two. Then take them out and fry them in very hot butter or good dripping, turning them so as to let both sides color. Melt a tablespoonful of butter and mix it with a tablespoonful of flour. Mix ten with some good stock free from fat, add a little coloring and a handful of button mushrooms neatly trimmed and washed. Let the sauce cook till the mushrooms are done, add the juice of half a lemon, pour the sauce on the dish, heap the mushrooms in the center, and arrange the filets in a circle.—New York Globe.

HOUSEHOLD HINTS.

It is a good plan to keep several needles always threaded in the pin cushion for times of haste. Those filled with white thread and black thread are best.

To avoid mold on cheese, wrap it in a cloth damp with vinegar.

To keep bread moist, a good way is to wrap it in a white cloth, wrung dry from cold water; then dry towels on the outside.

Always prepare an opening in freshly baked potatoes, as they come from the oven, else they will be soggy.

Save little paper sacks from the grocery to slip over canned fruits to exclude air. They are easily slipped off to examine the cans.

A few grains of popcorn in the salt cellars will prevent dampness and "caking."

If the hands are stained by picking over fruit or peeling new potatoes, rub with a piece of tomato and the stain will disappear.

A slice of bread in cake box will keep your cake moist.

A tear darning with ravelings from same goods and pressed will show very little.

In ironing a skirt—if you will iron the entire hem first, it will hang very much better than to iron one breadth at a time.

In putting away your laundry put the last to come in in the bottom of the drawer, and in this way the same things will not be used right over again and will last a great deal longer.

COMMERCIAL COLUMN

Weekly Review of Trade and Latest Market Reports.

R. G. Dun & Co.'s Weekly Review of Trade says:

Retail trade is active in holiday goods and winter wearing apparel, while wholesale and jobbing departments are reasonably quiet as to new business, but there is a good movement on old orders, and manufacturing operations are not curtailed. Inventories are in progress, and those completed indicate no excessive stocks. Ample rain in many sections has started much idle machinery, while statements of building permits continue to show gratifying gains, although operations in the Northwest are interrupted by severe weather. Mercantile collections are more prompt, and the steady gain in production of pig iron is a most encouraging indication of confidence in the leading industry.

Expected advances in prices of footwear have been asked by New England manufacturers, and while the rise tends to restrict new business, the raw material situation seems to warrant the small increase of two and one-half to five cents a pair.

Wholesale Markets.

New York.—Wheat—Receipts, 106,000 bush.; spot barely steady; No. 2 red, 1.08 1/2 @ 1.10 1/4 elevator; No. 2 red, 1.10 1/2 f. o. b. afloat; No. 1 Northern Duluth, 1.13 f. o. b. afloat; No. 2 hard winter, 1.16 f. o. b. afloat.

Corn—Receipts, 20,425 bush.; spot easy; No. 2, 67 1/2 to arrive elevator, and 68 f. o. b. afloat. Option market was without transactions, closing net unchanged. December closed 65 1/2; May closed 69; July closed 69; September closed 69.

Oats—Receipts, 49,500 bush.; exports, 7,713 bush.; spot steady; mixed, 26 @ 32 lbs., 55 @ 55 1/2; natural white, 26 @ 32 lbs., 56 @ 58 1/2; clipped white, 34 @ 42 lbs., 57 @ 62 1/2.

Poultry—Steady; alive Western fowls, 16 @ 17; turkeys, 13 @ 15; dressed firm; Western spring chickens, 13 @ 20; fowls, 12 @ 14; spring turkeys, Western, 16 @ 19.

Eggs—Unsettled; receipts, 8,538; State, Pennsylvania, and nearby fancy, selected, white, 50 @ 52; do., fair to choice, 44 @ 48; brown and mixed fancy, 40 @ 42; do., fair to choice, 35 @ 38; Western firsts, 34; seconds, 30 @ 33.

Philadelphia.—Wheat dull and lower; contract grade December, 104 @ 104 1/2 c.

Corn weak and 1/2 c. lower; December, 64 1/2 @ 65 c.

Oats firm; No. 2 white natural 55 1/2 c.

Eggs steady; Pennsylvania and other nearby firsts, f. c., 36 at mark; do., current receipts, in returnable cases, 35 at mark; Western firsts, f. c., 36 at mark; do., current receipts f. c., 34 @ 35 at mark.

Cheese firm; New York full cream, choice, 14 @ 14 1/2 c.; do., fair to good, 13 @ 13 1/2 c.

Live poultry steady; fowls, 11 @ 12 1/2 c.; old roosters, 8 1/2 @ 9; spring chickens, 11 1/2 @ 12 1/2; ducks 11 @ 12; turkeys, 14 @ 15; geese, 10 @ 11.

Baltimore.—Flour—Quiet and unchanged; receipts, 23,134 bbls.; exports, 10,174 bbls.

Wheat—Dull and lower; spot, contract, 1.01 1/2 @ 1.01 1/2; spot, No. 2 red Western, 1.03 @ 1.03 1/2; December, 1.01 1/2 @ 1.01 1/2; January, 1.02 1/2 @ 1.02 1/2; steamer No. 2 red, 98 1/2 @ 98 1/2; receipts, 8,236 bush.; exports, 1,081 bush.; Southern, or grade, 98 @ 1.01.

Corn—Steady at decline; new spot, contract, 65 1/4 @ 65 1/4; new year, 65 @ 65 1/2; January, 64 1/2 @ 65; February, 65 @ 65 1/2; March 65 1/2 @ 65 1/2; steamer mixed, 62 1/2 @ 62 1/2; receipts, 54,960 bush.; exports, 69,572 bush.; new, Southern white corn, 60 1/2 @ 65 1/2; new, Southern yellow corn, 60 @ 65.

Oats—Firm; No. 2 white, 56 @ 56 1/2; No. 3 white 55 @ 56; No. 2 mixed, 54 1/2 @ 55; receipts, 9,667 bush.

Rye—Quiet; No. 2 Western export, 81 asked; receipts, 1,038 bush.

Butter—Firm and unchanged; fancy imitation, 24 @ 25; fancy creamery, 32 @ 33; fancy ladle, 20 @ 21; store-packed, 18 @ 19.

Eggs—Firm and unchanged; 35 @ 36.

Cheese—Firm and unchanged; new, large, 14 1/2; new, flats, 14 1/2; new, small, 14 1/2.

Live Stock.

New York.—Beef—Receipts, 554; feeling steady; dressed beef in fair demand at 7 1/2 to 10 1/2 c. for native sides.

Calves—Receipts, 369 head; feeling steady. Veals, 6.00 to 10.50; barnyard calves, 3.35 to 3.50; Western calves, 5.15; dressed calves, steady; city dressed veals, 9 to 16c; country dressed veals, 7 to 15c.

Chicago.—Cattle—Receipts, estimated at 8,000; market was weak. Steers, 4.50 @ 7.80; cows, 3.00 @ 5.25; heifers, 2.50 @ 4.60; bulls, 2.15 @ 4.50; calves, 2.50 @ 8.25; stockers and feeders, 2.50 @ 4.85.

Hogs—Receipts, estimated at 30,000; market strong to 5c. higher. Choice heavy shipping, 5.80 @ 5.95; butchers, 5.70 @ 5.90; light mixed, 5.25 @ 5.45; choice light, 5.50 @ 5.95; packing, 5.50 @ 5.80; pigs, 4.00 @ 5.15; bulk of sales, 5.60 @ 5.85.

Sheep—Receipts, estimated at 20,000; market strong. Sheep, 4.00 @ 5.00; lambs, 5.25 @ 7.50; yearlings, 4.25 @ 6.25.

Immigrants do not come to New York City in a state of absolute poverty by a long way. They bring us annually about \$16,000,000 in money.

Giving evidence at an inquest at Lambeth, London, a woman said that she had had 21 children, six of whom were alive.

The Forest Commissioner of New York has reported that 90 per cent. of the forest fires in that State were caused by sparks from locomotives.

No Uplifter.

"Do you regard the stage as an educator?"

"Not exactly," answered Miss Cayenne. "It would be unfortunate if we were to get our ideas of society from the problem play and our ideas of costume from the musical comedy."—Washington Star.

The first thing a man believes he ought to do when he starts on a trip is to make cab drivers, sleeping car porters, and waiters think he is a millionaire.

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Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Testimonials sent free. Price, 75c. per bottle. Sold by all Druggists. Take Hall's Family Pills for constipation.

Getting The Cow In Line.

Bystander—What makes that cow persist in coming over this way?

Artist (annoyed)—Don't you see I'm drawing her?—Harvard Lampoon.

Piles Cured in 6 to 14 Days.

Pezzo Ointment is guaranteed to cure any case of Itching, Blind, Bleeding or Protruding Piles in 6 to 14 days or money refunded, 50c

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Mrs. Winslow's Soothing Syrup for Children teething, softens the gums, reduces inflammation, allays pain, cures wind colic, 25c a bottle.

The meddlesome third party causes many a divorce.

Rich cured in 30 minutes by Woolford's Sanitary Lotion. Never fails. At druggists.

Few women waste money—if they haven't got it.

FEARFUL ECZEMA ALL OVER HIM.

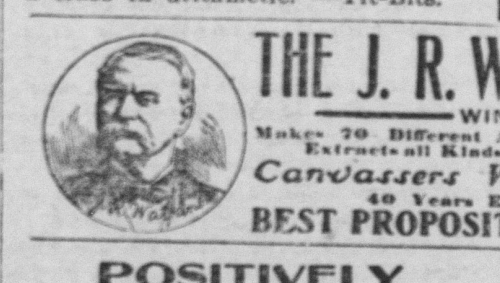
No Night's Rest for a Year and Limit of His Endurance Seemed Near—Overs Recovery to Cuticura.

"My son Clyde was almost completely covered with eczema. Physicians treated him for nearly a year without helping him any. His head, face, and neck were covered with large scales which he would rub until they fell off. The blood and matter would run out and that would be worse. Friends coming to see him said that if he got well he would be disgraced for life. When it seemed as if he could possibly stand it no longer, I used some Cuticura Soap, Cuticura Ointment, and Cuticura Resolvent. That was the first night for nearly a year that he slept. In the morning there was a great change for the better. In about six weeks he was perfectly well.

A Poor Preventive.

"Your husband says that when he is angry he always counts 10 before he speaks," said one woman.

"Yes," answered the other. "I wish he'd stop it. Since he got dyspepsia home seems nothing but a class in arithmetic."—Tit-Bits.



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A German peddler rapped timidly at the kitchen entrance. Mrs. Kelly, angry at being interrupted in her washing, flung open the door and glowered at him.

"Did yez wish to see me?" she demanded in threatening tones. The peddler backed off a few steps. "Well, if I did," he assured her, with an apologetic grin, "I got my wish; thank you."—Everybody's.

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Only One "Bromo Quinine"
That is Laxative Bromo Quinine. Look for the signature of E. W. Grove. Used the World over to Cure a Cold in One Day, 25c.

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It Removes the Cause. Relieves the aches and feverishness. Contains No Acetanilide.

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Malice.

"How is this? I thought you disliked your mother-in-law, and here you are carrying flowers to her grave!"

"Exactly!" She hated "em."—Journal Amusant.

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