



The Bee's Home Magazine Page



SILK HAT HARRY'S DIVORCE SUIT—There Are Some Things that Rummy Don't Get

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Drawn for The Bee by Tad



Atomic Life Ends Its Mysteries

By GARRETT P. SERVISS.

We are beginning to get glimpses into the world of the infinitely little which startle the imagination even more than the vast spectacles of the firmament above us.

The unlocking of the atom, within the last few years, has revealed the fact that all things above us, even our very bodies, are made up of miniature solar systems, spinning so swiftly that their infinitesimal "planets" may make as many as three millions of revolutions, or even more in a single second!



No doubt, you know what an atom is, but nevertheless, we will define it again, according to the older ideas of science. An atom until the recent discoveries were made, was supposed to be the smallest particle of any kind of matter that could exist. When they spoke of an atom, physicists and chemists thought that they were referring to something that was no longer divisible. There could be, they believed, nothing smaller than an atom.

When they get down to that they imagined that they had got to the very bottom of things. Out of atoms as the ultimate particles, every kind of substance was built up.

Now we know that this was all wrong. An atom is not the smallest possible thing, and instead of resembling an unbreakable, indivisible particle, an atom is made up of vast number of things so much smaller than itself that, in comparison with the whole atom, they have been likened to the sun and the planets in comparison with the whole solar system.

The name corpuscle has been given to these infinitesimal particles which constitute an atom, and it has been found that an atom of hydrogen probably contains 1,000 corpuscles; an atom of oxygen, 16,000; an atom of iron, 55,000; an atom of gold, 97,200; an atom of mercury, 200,000 and an atom of radium, 225,000. This is sufficiently marvelous in itself, but it is by no means the whole story.

pieces, the earth and other planets shooting away into space.

Now atoms with their corpuscles, combine into larger (but still invisibly small) particles, called molecules, and in these also revolutions take place. The atoms in a molecule revolve around other atoms. They do not travel as swiftly as the corpuscles in the atom, and yet it has been shown that in a drop of water the hydrogen atoms, which are the lightest, may revolve round the oxygen molecules so fast that they make 3,000,000,000,000 revolutions in a second! This is the same number we have referred to above.

Imagine one of these revolving atoms to represent the earth, and call its period of revolution an "atomic year," thus comparing it with the revolution of the earth around the sun—and then go a step farther, and imagine infinitesimal beings inhabiting that atom. If their lives lasted the same number of atomic years that our lives last of our years, at least 50,000,000,000 generations of those creatures would pass in a single second of our time!

A similar comparison was made by Dr. Johnstone Stoney many years before the discovery of the real constitution of the atom. At that time he took the velocity of the vibrations of light as a basis for his calculation, and he said: "The motions of light bear the same relation to one second of time that the motions of our limbs bear to a period of 30,000,000 years. If there were sentient beings with bodies which move as deftly as this ether, and with thoughts and perceptions as quick as their bodies are active, there would be sufficient time for them, within a small fragment of one second, to live the lives of all the generations of men that have dwelt upon this earth, thinking all their thoughts and doing all their acts."

The comparison becomes all the more striking when it is based upon the revolution of an atom, which so curiously simulates the revolution of the earth in its orbit. It is no violation of reason to suppose that an inhabitant of an atom would think and act with a quickness proportioned to the measure of time in his world.

Are we forbidden to imagine such beings? No more than we are forbidden to imagine gigantic inhabitants among the numberless worlds of space. We do not know what life is, and it is mere folly to assert that it can only manifest itself in the forms familiar to us. The quality of mind is of incalculably finer grain (if such an expression can be used of mind) than, as far as we can see, it might as easily be present in a creature transcending in minuteness the utmost imaginable powers of the microscope as in an animal six feet tall.

The Manicure Lady

"I was talking to a swell fellow from out west the other day," said the Manicure Lady. "Gee, George, I wish I had been born out west. Then I wouldn't have to be slaving along here, listening to a lot of fresh talk from fellows that comes in to have their nails did. I could have grew up on one of them western prairies like a wild flower, and at least some big western man would have come along and claimed me for his bride."

to marry a nice western man. I was telling father and mother about it last night, and the old gent said that it wouldn't be a bad idea for me, to wait till some western man proposed marriage first. The way he said it, George, seemed to me that he thought there was about as much chance of a western man proposing to me as there is of brother Wilfred getting a steady job. I didn't tell the old gent the real truth, George, because ever since he quit locking up highballs father has become a awful cynic. In the old days, when he had his regular sessions at Gallagher's and Sam have saw the bank roll that he showed when he paid me for getting his nail did, you would have died of yellow jaundice or gangrene or something that is colored like bank notes. I got a notion to accept him, George."

Advertisement for Daffydils featuring a cartoon and text: "THE UPS THAT TOUCH LICKER SHALL NEVER TOUCH MINE". The cartoon shows a man and a woman in a domestic setting with humorous dialogue.

The Great Erasmus

By REV. THOMAS B. GREGORY.

July 13, 1536. Erasmus died 378 years ago today—July 13, 1536. He was the most learned man in the world of his time, and on account of his wonderful erudition and charming personality he attained to the fame which is as fresh and virile today, after the lapse of almost four centuries, as it was at the time of his death.



Erasmus was a waif, born into the world without any legal paternity, or even so much as a name, but by his genius he made for himself a name that will endure forever and to the end of time be dearly loved by the intellectual of the earth. Those who were responsible for Erasmus' birth died while their child was quite young, but kind and appreciative friends took the little orphan in charge and educated him, and Erasmus did the rest.

With an intellect of gigantic proportions and a thirst for knowledge that knew no limit, Erasmus stopped not till he had reached the summit of learning, as learning then was. He knew everything, and as the bee, gathering the sweets from the flowers, turns them into honey, Erasmus put his almost superhuman knowledge into books—books which are still the delight of the intellectual aristocracy of all lands.

It is quite unnecessary to set forth the extent of the literary labors of Erasmus; it is sufficient to remind the reader of the "Adagia," the "Colloquies" and the

"Praise of Folly"—books which reflect the real human side of the illustrious author, revealing him to us as the master humorist not only of his own time, but of all time.

Just as "Cervantes smiled Spain's chivalry away," Erasmus, by his good natured dissection and ridicule of the follies of his day and generation, dealt them the blow from which they never recovered.

From the summit of things the great man looked down upon the vanities, iniquities and shams of church, state and society, and in his inimitable word pictures made all the world laugh at them, and despite them. The "Praise of Folly" remains to this day the most masterful work of its kind to be found in the world.

It is a standing wonder how Erasmus managed to keep his head on his shoulders, even with all his strong friends at court. He had all Europe endorsing over the venerated symbols and ceremonies of church and state and yet he lived in security and died at last quietly in his bed.

And this leads us to the one great flaw in Erasmus' character. He was, with all his genius and learning and wit and humor, a coward—a very charming coward, but still a coward. Living in one of the most thrilling ages that the world has ever known, he sat on the fence, refusing to join either side. Like the man who crossing the deep stream on a shaky plank, exclaimed: "God is good—and the devil is not bad." Erasmus trimmed between the great contending hosts without deciding with either.

Hence, after all, it is only with a very important reservation that we can speak of the illustrious man as the "Great Erasmus."

Michael Faraday's Great Discovery

By EDGAR LUCIEN LARKIN.

On August 31, 1831, the master mind in science, manifesting in the brain of Faraday, directed his hand to take up a wire that was conveying a current of electricity from one terminal of an ordinary zinc-copper-acid galvanic battery to the other, and place it across a bar of soft iron, not touching the iron.

The eye of man hath not seen an event more wonderful than that which followed: the iron at once became a temporary magnet and attracted iron filings. Faraday then wrapped thread around the wire to insulate it—that is to prevent contact of metal—and made one turn of wire around the piece of iron; his magnetism was increased. Then he made a coil of many turns, like thread on a spool, and secured a strong magnet. By moving a wire in front of this temporary iron, instead of permanent steel, magnet, increased current was obtained, depending on the number of turns of wire and speed of the moving wire.

One more capital discovery was necessary before practical machines could be made. This was that if the thin wire connecting the ends of the thick moving wire was insulated, lengthened and twisted around the bar the galvanic battery might be dispensed with. It was found that the machine could use the very electricity it generated to increase the magnetic force of the bar by simply conveying the flow around it in increased number of turns.

When steel or permanent magnets and

galvanic batteries were discarded the name was changed from magneto to dynamo.

Now, bend the bar of iron into the shape of the letter U and the two poles are near to each other, with the effect of increase in the rate of alternation. Make a number of U magnets, arrange them on a frame in a circle. Make hundreds of turns of insulated wire around each branch of each U magnet. Then make many coils of insulated wire into one spherical bundle, place on an axis in the center of the circle of electro-magnets and turn the bundle.

You could turn it a few times by hand possibly. Try to turn it faster, and you would feel a mysterious pull, attraction or force working against your effort. Go buy an engine to turn the coils of wire. Then this would feel the pull of magnetism, and the pull would increase with each revolution. Put on more steam, increase speed and likewise the pulling force and work up to limit.

Make thirty or forty U's weighing a few tons each, bind them together on a huge yoke or frame of iron from thirty to fifty feet in diameter. Make coils and bundles of insulated wire into a cylinder weighing many tons. Move the curved ends of all of the U's close as possible to the cylinder to allow free motion. Buy two double compound engines to turn the bundle in air space against invisible resistance and insensible to the human body, but very sensible to the metals. Let the compound engines be of 5,000 to 10,000 horsepower each.

Buy a dozen of these gigantic sets of magnets and rapidly revolving bundles, assemble in a large building, start the huge engines, after having built a number of railroads whose cars receive current from the central station in their motors, and move the people.

Do not stop at \$5,000,000,000, make \$100,000,000,000, for all humanity. Change the word bundles to armatures, changing revolving in an intense field of self-made magnetic lines of force. Put these mythical letters on the machines. 100 KV., 3 P., 60 C., 120 R. P. S. A. C. G., which translated, reads: 100 kilowatt, 3 phase, 60 cycle per second, at 120 revolutions per second of armature, delivering as an alternate current generator. All due to the fact of Faraday taking up the wire carrying a current and placing it across a small bar of iron.

The Girl in Business and Why She Doesn't Marry



MISS ALICE CLARK.

Likes and dislikes, says Miss Clark, should be kept in the background during business hours. As a sex, she says, women are too personal in their business views and relations.

By ADA PATTERSON.

"The greatest mistake we make is in being afraid to do more than we are paid for."

Miss Alice Clark graciously said "we," although the fault she pointed out seems to be no part of herself. She has always been a willing worker, for others as well as for herself. For eleven years she faithfully served the interests of her employers, before she, in turn, became an employer and acquired her own patrons.

"It pays to work overtime," Miss Clark spoke with the quiet confidence of one to whom experience has taught a fact. "The president of one of the great eastern railroads was asked how he managed to earn \$100,000 a year. He answered, 'I am being paid now for my overtime when I was a boy and learning the business.' The extra work one does yields a good

that the home woman is narrow, and we assume a superior air when we assert that the society woman is shallow and insincere. It is disciplinary to make a little list of the errors into which we are likely to fall and think how we can correct them.

"We are likely to develop an abrupt manner. There is a good excuse for this, because our lives are busy ones, and we know the preciousness of time. Yet an odd, jerky, unpleasant manner is a bad asset in business. By self control and watchfulness we can avoid it. Some business women have spent their lives at desks and remained gentle of manner. It was a triumph of self control and of consideration for others.

"Another fault into which we are likely to fall is overpithiness of speech. We may be direct, decisive and dignified without being rude. And if business life scope out our bump of reverence into a hollow we should hide that fact, for while business is a battle, it is often a battle of diplomacy, and antagonisms are more apt to become liabilities than assets.

"One of our sex faults in business is unreasoning aversions. We call them intuitions and are rather vain of them. Occasionally they are safe guides, but no matter how strong our likes and dislikes—and I grant that these are temperamental and often inherited—we do well to keep both in the background during business hours. In fact, as a sex we are altogether too personal in our business views and relations.

"An instance of this is that the woman employe, secretly or openly, hates the boss. She regards him as her natural enemy. At bottom is perhaps her rebellion against authority. One of the most successful women I know told me she would have been still more successful had not this mental anarchy stood in her way. A staunch friend of hers sharply told her that he had never seen her when she was not in revolt against authority. Even if she only regards him as a means to the end of her own advancement in the business world, it is not well to "hate the boss," though this is no less unwise than to entertain the opposite feeling for him. Girls should be impersonal in their attitude. Feeling should be left at home and thinking take its place during business hours.

"Men are cleverer than we in that respect. They don't think much about the boss except to adapt themselves to his peculiarities and round themselves out against his character angles. He is their means of advancement and they seldom think of him in any other light.

"A fault we must overcome is that of criticism of those about us, and especially those above us. We are likely to say of our immediate superior, 'Why does she do this?' or 'I wouldn't do that,' while we probably would not do nearly so well. That is bad, not only because it causes foolish little schisms and cabals, which some one has disposed of with the phrase, 'kitchen politics,' but it is a stunting influence upon ourselves. It is a sign of ingrowing character.

"Business women are disposed either not to economize at all or to economize in the wrong way. We like to follow fads in dressing instead of asking ourselves when we buy a suit or hat, 'Will it

return in knowledge, and knowledge eventually brings dollars. So it is a very short-sighted plan to do only as much work as you are paid to do, especially in the first years of a business life.

"The next greatest mistake is to be careless in business, because we hope that marriage will cut short our business careers. It may, but it may not, and it seems less and less liable to come since the high cost of living has curtailed romance. That is a bad business motto that some girls follow. 'O, let it slide,' 'It' being the task of the moment. 'Get through somehow' is another business motto of the makeshifts. Girls who have adopted it are nearly always looking for work.

"We will do well to examine ourselves for the mistakes that grow out of our manner of life. We patriotically say