

GRAVITY BOWS TO NEW TRICK

Scientist Shows How It Is Done With Magnetized Steel

Atlanta—Cable dispatches telling of a demonstration given by a young London scientist of his discovery of a method of overcoming gravity were read with added interest here after a similar demonstration had been given by Dr. Sergius P. Grace, vice president of the Bell Telephone Laboratories, Inc., New York.

The experiment was given in the office of Evelyn P. Harris, public relations representative of the Southern Bell Telephone company.

Dr. Grace made it clear he did not wish in any manner to detract from the claims of the English scientist, but merely called attention to the fact he could duplicate the experiment—as described in the dispatches—with apparatus brought here for demonstration in his address before the regional convention of the American Institute of Electrical Engineers.

Dr. Grace used in his private demonstration a piece of cobalt steel about four inches long and about one-fourth of an inch square. This he held above a similar piece of metal encased in a wooden block. He then released his hold on the heavy metal and, believe it or not, it remained suspended in the air.

The scientist smiled at the amazement of his audience of two.

"You see," he explained, gravity hunched before science. Cobalt steel is capable of supermagnetization. These supermagnetized pieces of cobalt steel have been placed with the positive pole of one over the positive pole of the other. The natural repulsion causes the upper bar to remain suspended."

Reversing the ends of the upper bar, Dr. Grace caused it to adhere closely to the wooden block, causing the lower bar, showing how great was the attraction with the poles reversed.

"Of course," he said, "I don't know from what I have read in the newspapers, what principle the young Britisher is using in his tests. I would under no circumstances from this far distant point, say one word derogatory to his claims."

The scientist asserted that science, for all its advancement, has not yet determined what caused the historic apple to fall from the tree and hump Sir Isaac Newton on the head.

"We frankly do not know what gravity is," he said.

Naval Bugaboos.

Professor William Starr Myers, professor of politics at Princeton, is one of our ablest and best informed expounders of history. His views on public questions always command and deserve attention and are usually right. In a recent address he spoke strongly in favor of the fifteen-cruiser bill, and herein he followed too easily, we fear, the bland persuasiveness of the senators and of men of even lower than senatorial calibre.

Professor Myers thinks the bill would be an asset valuable for trading purposes, and regards the president's truculent Armistice day speech as a great state paper. If holding a grant of authority to build fifteen cruisers puts the administration in a good position to make a horse trade, why stop at fifteen? Think of the fist we could shake if there were a law authorizing the building of a hundred cruisers! The Kaiser with his justly famous shining armor, in which he proclaimed himself to be standing side by side with his great and good friend Franz Josef, could hardly have been more persuasive. Nor would authority to build fifteen or a hundred cruisers be as effective a "trading argument" as fifteen cruisers actually on the ways, and these in turn would not be so effective a trading argument as fifteen cruisers in commission, nor these as fifteen battleships, nor these as twenty-five battleships, and so ad infinitum.

The "trading argument" might be and is used to justify any and every increase in naval construction, no matter how ill-advised or useless or even silly the proposed increase may be. Whatever worth authority to build more cruisers might have as a trading argument is insignificant in view of the assured activities of a restless and astute lobby to make the authority fruitless in action; a lobby wherein contractors, manufacturers, navy leaguers and vocal patriots would all be adequately represented.

We have certain naval needs. A nation of the extent, possessions and responsibilities of the United States needs at the least something in the way of a floating police force. When it gets beyond that we come into a region whose most striking characteristic is its ever-changing aspect. The submarine, aerodynamics and modern chemistry are revolutionizing everything we knew about the safe carriage of men, goods and munitions at sea and about exposure to foreign attack. It is to these rapid developments rather than to the tonnage of foreign cruisers and battleships that we should give concern.

The weakness of the cruiser bill is that its fundamental thesis is childish and archaic. That fundamental thesis is that the United States must maintain a fleet of naval vessels equal in strength to that of Great Britain. As a matter of fact the strength of the British navy is not of the slightest concern to us. Its strength is determined by its government's views of the needs of a tiny but rich and powerful island for whose people it is of vital necessity to protect their foreign trade, a trade without which they would perish. No such measure exists for us.

Quite Impossible.

From Ladies' Home Journal.

The teacher was telling a story to the kindergarten and interest was intense.

"So that night the wicked red fox came and stole a chicken. The next night he came and stole another. And the next night he came and stole another chicken. And . . . dramatic pause. "what do you suppose happened the next night?"

"Oh, teacher!" panted Peter. "Did he get another chicken?"

OF INTEREST TO FARMERS

FEEDING MILCH COWS

Anything that has to do with converting the feeds grown on dairy farms and those purchased into higher values and greater net returns strikes at the heart of the business side of dairying. All dairymen are looking for higher values and greater net returns for the things they sell. Not all dairymen, however, have equal skill in feeding cows. This is another way of saying that some dairymen convert feeds into higher values than others. They do this partly because of their better knowledge of feeding. It costs money to grow feeds for cows. On most dairy farms quite a large part of the crops grown are marketed through cows. The kind of crops grown and the way these are fed have a lot to do with their ultimate value when marketed as dairy products. It is true, of course, that the kind of cow fed has much to do with establishing the value of the feeds used but the right kind of skill in feeding cows avoids the sending of good crops to market through poor cows. The dairymen is therefore responsible, to no little extent, for the way in which he markets his crops. The cost of maintaining cows is best shown by example. A dry cow weighing 1,000 pounds, if maintained on corn silage and clover hay, would require daily 20 pounds of silage and 8 pounds of clover hay. This does not appear to be much, but a herd of 12 cows of similar weight would require in a year 43.8 tons of silage and 17.5 tons of hay if fed throughout the year on these two roughages. If no more than this was fed there would be very little milk produced if the cows were kept in good condition.

A cow weighing 1,200 pounds producing 30 pounds of 3.5 per cent. milk daily would require daily 36 pounds of corn silage, 12 pounds of clover hay, 3 pounds of ground corn, 2 pounds of ground oats, 1 pound of wheat bran, 1 pound of linseed meal, and one pound of gluten feed to supply the required nutrients for maintaining her body for producing the 30 pounds of milk where the feeds named are used. Of the total nutrients required, 52.6 per cent. would be used to maintain the cow's body and 47.4 per cent. would be available for making milk. It costs money to maintain cows whether they produce little or much milk. Because of this fact it is important that some attention be given to weeding out the cows not worthy to be maintained in a herd. Quite often it is not the fault of the cow but the fault of the farmer to make the values of the feeds given her. Sometimes she is underfed, even though the feeds used are of desirable kind and proportion. A cow weighing 1,000 pounds, capable of producing 500 pounds of 4.5 per cent. milk daily, if fed to produce not more than 15 pounds of milk daily, would make the following percentage division of the nutrients supplied. For maintaining her body she would use 59.6 per cent. of the nutrients supplied and only 40.4 per cent. would be used for making milk. This same cow adequately fed to produce up to her ability would use 30.7 per cent. for maintenance and 69.3 per cent. for making milk.

This startling comparison indicates clearly one of the ways of increasing the value of the feeds used. Cows must be adequately fed. May it be said that this should be done before any cows are eliminated from the herd because it is clearly unfair to any cow to place upon her the indictment of "poor producer" until she has had a fair chance, and this means an adequate ration. It is not enough to feed cows plenty of feed in quantity without giving some consideration to the kinds of feeds used. A cow producing 10,000 pounds of average milk a year produces 350 pounds of protein, 360 pounds of fat, 480 pounds of milk sugar, and 70 pounds of mineral matter. She not only must have enough nutrients to make the quantities of products above indicated but she must also have them in the right proportion to make milk. Neither cow nor man has the ability to change the composition of milk very materially and if it is made at all it must be made according to nature's formula. Let us feed to a 1,200 pound cow, capable of giving 30 pounds of 3.5 per cent. milk daily a ration composed of 36 pounds of corn silage, 12 pounds of timothy hay, 4 pounds of ground corn, and 4 pounds of ground barley. In quantity, succulence, bulk, variety, and total nutrients this ration meets the requirements of this cow to produce 30 pounds of milk daily. But she can only produce about 10 pounds of milk daily. Why? Because there is too much of one kind of nutrient and not enough of another kind. The limiting factor in this case is a kind of nutrient called protein. Of the total amount of digestible that which the cow can use, protein in the above ration, the cow uses: 0.34 pound for maintaining her body and has remaining for milk making 0.53 pound. The question now comes as to how much milk testing 3.5 per cent. fat will this 0.53 pound of digestible protein make. It will make a little over 10 pounds. What does it cost to make 100 pounds of milk on this basis? With silage at \$6 per ton, hay at \$15 per ton, corn at \$1 per bushel, and barley at 80 cents per bushel, the feed cost will be \$3.26 to make the 100 pounds of milk. Let us take the same cow, feed her the same quantity of feed at the same cost, and see what happens. Let us make only one change in the ration by substituting 12 pounds of red clover hay for the timothy. From this ration the cow will have sufficient nutrients to produce 30 pounds of milk and the feed cost per 100 pounds will be \$1.63. Again taking the same cow, the same quantity of feed at the same cost, and substituting the red clover with alfalfa hay, what is the result? The

cow will produce 27 pounds of milk daily at a feed cost of \$1.21 per 100 pounds.

But this cow is capable of producing 30 pounds of milk daily. By substituting one pound of wheat bran for one pound of corn and by substituting one pound of the linseed meal for one pound of the barley, the cow has sufficient nutrients to produce 31 pounds of milk daily. With bran at \$30 and linseed meal at \$45 and the silage, hay, corn, and barley priced the same as in the other cases cited, the feed cost of 100 pounds of milk is \$1.13. The milk from the first ration given, if sold for \$3.26 per 100 pounds, would just pay the feed cost at the prices given. The milk produced from the ration in which alfalfa was substituted for timothy, if sold for \$3.26 per 100 pounds, would return \$10.20 per ton for silage, \$49.50 per ton for hay, \$2.70 per bushel for corn, and \$2.16 per bushel for barley. Remember that the same number of pounds of silage, hay, and grain were fed in each of the rations just discussed. What made the difference? One ration contained 1.42 pounds of total digestible nutrients; the other ration contained 2.34 pounds of digestible protein and 19.17 pounds of total digestible nutrients. It is seen from this if our cows are to return good prices for the feeds they consume, a wage for our labor, something with which to pay the other costs and a profit besides, they must have the right kinds of materials to work with.

CORN CULTIVATION

During the last 15 years or so, the majority of farmers have come to the conclusion that deep cultivation of corn is harmful rather than beneficial. The idea of shallow cultivation was first advocated by some of our experiment stations that carried on tests for several years comparing deep with shallow stirring of the soil. Some years ago a farmer in Illinois had a field of an average of 16 tests in eight years, killing weeds without cultivation produced a gain of 17.1 per cent. or 6.7 bushels per acre, over ordinary cultivation.

Prior to that time the theory was that maintaining a crust on the surface prevented evaporation and therefore conserved the soil moisture. This theory was undoubtedly correct and still is, but as a matter of fact, by the time corn is five weeks old the root system has spread through a space two and a half feet in diameter. The corn plant but only to a depth of six or eight inches from the top and by the time corn has reached maturity the roots have spread over a radius of four feet and to a depth of seven or eight feet, depending upon the consistency of the soil. In a corn field so full of roots comparatively little moisture gets a chance to evaporate from the surface. More moisture is taken up by the roots and is then pumped out through the leaves.

The main object in cultivating corn, therefore, is not to conserve moisture but to destroy the weeds and prevent them from pumping water out of the soil and of appropriating plant food. Weeds also shade the corn thereby preventing it from getting the full benefit of the sunlight, which is the active agent in converting into plant substance the elements absorbed from the air through the leaves and the mineral matter taken up by the roots from the soil. In a nine-year test conducted at one experiment station, corn cultivated to a depth of one and one-half inches yielded an average of four bushels more per acre than that cultivated to a depth of four inches. In a three-year test, at the same station, ordinary cultivation brought a crop of 94 bushels per acre, while shallow cultivation produced an average of 95 bushels per acre.

During the last few years the rotary hoe, which merely cultivates the soil at the surface, thus insuring shallow cultivation, has become very popular in some sections. No doubt its popularity is due to the fact that there is no danger of injuring the root system of the corn with this machine, yet it destroys the weeds while they are small. Then, too, one can cover more ground in a given time with the rotary hoe than with a two-way cultivator and do it with much less work. Shallow or two-inch cultivation gives the roots of the corn a lot more feeding space and leaves them undisturbed to do their utmost in absorbing moisture and plant food. One cannot cultivate all soils alike, of course, a stiff clayey soil that tends to form a crust over the surface after rains must necessarily be cultivated deeper than a loose, friable soil that does not form a crust.

The aim should be not to cultivate deeper than is necessary to destroy the weeds and to keep the soil in a friable condition so that air may circulate freely between the soil particles. When roots are cut and broken the corn is injured to that extent. The practice of working corn with a cultivator three or four times is a well established custom and one that should not be abandoned without the most careful consideration.

MATING RATIO

The proportion of males to females depends on the activity of the breed, the size of the flock, the season, the vitality of the male, the age of the breeding stock, and whether the birds are penned or on range.

With small, active breeds such as Leghorns, 20 females when on range and 15 females when penned may be mated to one male. With the heavier breeds, 15 females on range and 8 or 10 females when penned may be mated to one male. When mated out of season, or with old stock, fewer females can be mated with one male. More females can be mated with one male in large flocks than in small flocks.

A PRE-NATAL INFLUENCE

One way to insure a healthy litter of pigs is to feed alfalfa hay to the brood sows up until farrowing time. Let the sows eat hay directly from the rack, or add from five to ten pounds of chopped alfalfa or alfalfa leaves to 100 pounds of grain mixture.

HARD FOOD FOR TURKEYS

Soft food, by which we mean ground grains mixed with milk or water, should never be fed to turkeys, because they cause digestive troubles, which will sooner or later lower the vitality of the birds and cause heavy losses.

"Sunny Spain" Country of the Imagination

We are always hearing of "sunny Spain." Southern coastal Spain is naturally sunny and semitropical, but a large part of Spain is a high tableland, flanked by lofty mountains, and the people know what it is to suffer from cold—especially since fuel is exceedingly scarce.

It is difficult to write of Spain in general terms because not all Spain is alike. There is scarcely a statement that can be made about southern Spain which would also hold true for northern Spain. The Spain of the mountains is one Spain and the Spain of the coasts another. The Spain of the stage and the movies is a wholly fictitious Spain. All Spain is rapidly changing—trying to snap out its old lethargy, trying to live down its reputation for laziness, etc.—Pathfinder Magazine.

"Lucile is the Happiest Girl"

So many mothers nowadays talk about giving their children fruit juices, as if this were a new discovery. As a matter of fact, for over fifty years, mothers have been accomplishing results far surpassing anything you can secure from home prepared fruit juices, by using pure, wholesome California Fig Syrup, which is prepared under the most exacting laboratory supervision from ripe California Figs, richest of all fruits in laxative and nourishing properties.



It's marvelous to see how bilious, weak, feverish, sallow, constipated, under-nourished children respond to its gentle influence; how their breath clears up, color flames in their cheeks, and they become sturdy, playful, energetic again. A Western mother, Mrs. H. J. Stoll, Valley P. O., Nebraska, says: "My little daughter, Roma Lucile, was constipated from babyhood. I became worried about her and decided to give her some California Fig Syrup. It stopped her constipation quick; and the way it improved her color and made her pick up made me realize how run-down she had been. She is so sturdy and well now, and always in such good humor that neighbors say she's the happiest girl in the West."

Like all good things, California Fig Syrup is imitated, but you can always get the genuine by looking for the name "California" on the carton.

When Benjamin Franklin recommended a plan for daylight saving, more than 150 years ago, the idea was ridiculed.

For Colds -



How many people you know end their colds with Bayer Aspirin! And how often you've heard of its prompt relief of sore throat or tonsillitis. No wonder millions take it for colds, neuralgia, rheumatism; and the aches and pains that go with them. The wonder is that anyone still worries through a winter without these tablets! They relieve quickly, yet have no effect whatever on the heart. Friends have told you Bayer Aspirin is marvelous; doctors have declared it harmless. Every druggist has it, with proven directions. Why not put it to the test?

Aspirin is the trade mark of Bayer Manufacture of Monocetacidester of Salicylicacid

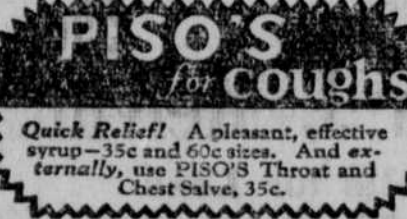


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THE Soap, pure and fragrant, to cleanse the skin; the Ointment, antiseptic and healing, to remove pimples, rashes and irritations; and finally the Talcum, smooth and pure, to impart a pleasing fragrance to the skin.

Soap 25c. Ointment 25c. and 50c. Talcum 25c. Sample each free. Address: "Cuticura," Dept. B6, Malden, Mass. Cuticura Shaving Stick 25c.

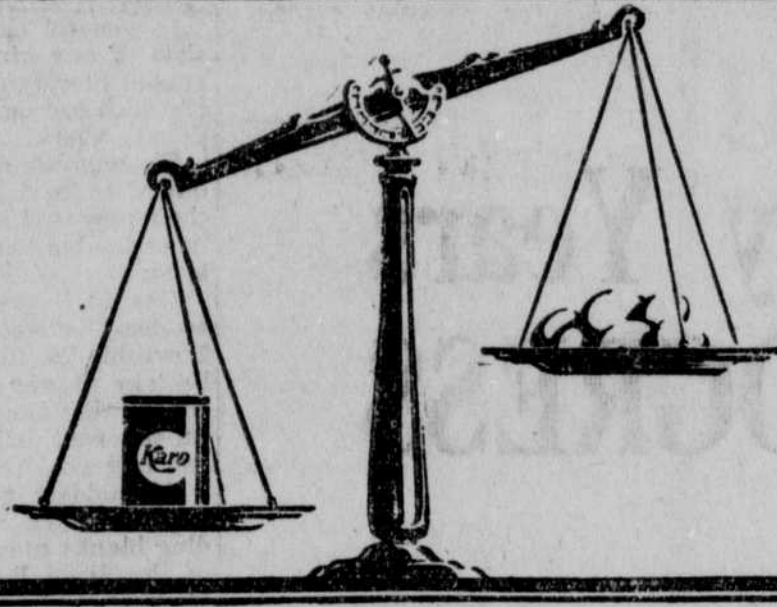


Drop a nickel in the toy bank today and have 5 cents' worth of exercise trying to get it out tomorrow.



FLORESTON SHAMPOO—Ideal for use in connection with Parker's Hair Balsam. Makes the hair soft and fluffy. 50 cents by mail or at druggists. Hiscoc Chemical Works, Patheons, N. Y.

Today is yesterday's pupil.—Franklin.



...KARO contains almost twice the energy value of eggs...pound for pound

There are 120 calories per ounce in Karo—almost twice the energy value of eggs and lean beef, pound for pound—

And, of course, this means that Karo is not only a delicious syrup but a great energy-giving food.

The energy Karo gives is supplied immediately—without taxing the digestive system—as in the case of many other foods.

Convince yourself that Karo is very economical too—compare the price of Karo per pound with other staple foods.

Serve lots of Karo to the entire family—especially the children, who like Karo and who thrive on it.

Keep them strong, healthy and happy.



DELICIOUS on PANCAKES HOT BISCUITS and WAFFLES