

# Science and Invention

The liquefaction of gelatin in old canned meats has been found by Dr. Prinson to be due to bacteria. As animals were poisoned both by injection and feeding, he concludes that canned meats that splash on being shaken are dangerous unless boiled before use.

The Harvard Observatory announces the discovery, by Professor Wendell, that the asteroid Iris, which was first seen in 1847, exhibits a variation of light resembling that of the new asteroid Eros, which was discovered in 1898. The periodic change in the light of Iris takes place in about six hours, and amounts to two or three-tenths of a magnitude, which is much less than the amount of change exhibited by Eros.

A new method of producing artificial respiration is claimed by Professor Shafer, of Edinburg, to be much more effective in cases of drowning and asphyxiation than any other. Placing the subject in a prone position, the operator applies pressure with his hands to the lower ribs, and repeats this about thirteen times a minute by twisting himself backward and forward. The common moving the subject's arms is condemned as of little value.

This descriptive phrase is suggested by the grotesque appearance of an animal recently added to the collection of the New York Zoological Park, the blue gnu. It has been said to have the tail and hind quarters of a horse, the legs of a deer, the neck and horns of a buffalo, and a nondescript head which gives it a most fantastic look. The oddity of its appearance is increased by the extraordinary postures it assumes when disturbed. It comes from South Africa.

The old question of the origin of the extreme saltness of the Dead Sea has received a new answer. William Ackroyd, after showing that the soil and rocks can have furnished but a fraction of the quantity of salt that has collected in the Dead Sea basin, proceeds to argue that the most important source of supply of this salt is atmospheric transportation by winds from the Mediterranean. This view he thinks is confirmed by the fact that the ratio of chlorine to bromine in the Dead Sea is the same as in the Mediterranean.

The perspectivegraph is an ingenious instrument with which Otto Eichmberger, of Geneva, makes it easy for the amateur artist to give accurate perspective to landscapes or drawings of any objects. A folding box opens to form a table, and near the top of its extensible sides a telescope is, so mounted that as it is moved about in following the details of any view a pencil is made to draw a corresponding line on a sheet of paper beneath. Crossed hairs in the telescope give precision, while the pencil is kept upon the paper by sliding up and down in a suitable holder. Beautiful drawings are made with little or no practice, and specimen work exhibited includes a panorama of the Alps and a view of Geneva.

It is reported from Canadian sources that the government of the Province of Ontario is considering the advisability of withdrawing from sale or lease the as yet unsold nickel lands within its territory, and reserving them for the use of the British imperial government in the manufacture of armor plate and guns. The Ontario nickel deposits, and those of the island of New Caledonia, a French penal colony in the South Pacific Ocean, are at present the world's most prolific sources of nickel. The metal is not widely distributed. But in Austria a process has been discovered for the manufacture of bronze, which is said to be equal to nickel-steel for making great guns, and the Austrian government has decided to continue the use of bronze instead of nickel-steel for that purpose.

## STORY OF STRANGE BATTLE.

**Runaway Slaves Resist Attempt to Capture Them by Soldiers.**

On Aug. 24, 1816, occurred a unique and but little known battle, in which within the Spanish boundary, United States forces, with Indian allies, after the conclusion of our war with Great Britain, which we call the war of 1812, fought against negroes using British ammunition and having, like us, Indian allies, says the Chattanooga Times.

Colonel Nichols, a British commander, had built on the east bank of the Apalachicola River (where Fort Gadsden afterward stood) a fort for a refuge for runaway negroes, that they, with Indians, might attack the frontier settlers. It was garrisoned with British and became an Indian rendezvous and fugitive negro slaves settled for some fifty miles along the river, defying the governments of Spain and of our country, but it does not appear that they ever attacked the frontier.

After the war of 1812 closed the British withdrew their garrison, but left the fort in possession of the negroes. These had Indian allies, and a Chatahochee, was their leader. The Chatahochee and Flint form the Apalachicola and the Florida and Georgia boundary, and the fort commanded the Apalachicola and Flint and was a refuge for runaway slaves and a menace to the border settlers. It was in a high bluff projecting into the river, a deep swamp in the rear, and a creek above and below. A parapet fifteen feet high and eighteen feet thick and nine pieces of artillery supplemented the natural advantages. There was plenty of ammunition in the two

magazines and the British had left 3,000 stands of arms. But the result showed how feeble are such defenses in the hands of men who do not know how to use them.

Who were the aggressors may never be positively known. We have only our own side of the story. Colonel Clinch, United States army, at Camp Crawford, above, on the Chatahochee, was expecting provisions, stores and artillery from Apalachicola Bay, and had instructions to reduce the fort in case it opposed their passage. He started down stream in boats with 116 men, in two companies, under Major Muhlenberg and Captain Taylor, encountering on the way a slave-hunting party of Creek Indians under Major McIntosh, on their way to capture the negroes for their owners. These were joined by another party, and the Indians agreed to co-operate with Clinch. Information was received that Garcia and a Choctaw chief had been down the bay and claimed to have killed some Americans and captured a boat. Clinch's force landed near the fort, the Indians were placed to prevent communication and an irregular fire kept up, to which the besieged replied ineffectively with artillery. It is said that some days before some Indian chiefs had demanded the fort's surrender, and that the commander said he had been put in command by the British and intended to sink any American vessels trying to pass, and would blow up the fort when unable to hold it, after which he had hoisted the red flag with the British Jack above. This story may have been invented or enlarged, for Americans under the circumstances would be disappointed at lacking an excuse for attack, and McIntosh was on a slave hunt.

The vessels below came up within four miles, a place was chosen for a battery opposite the fort, the forces of Muhlenberg and Taylor were also placed on the west bank, McIntosh and the Indians with some Americans invested the rear and on the morning of the 24th two gunboats took position in front of the battery and fire was opened on them from a thirty-two pounder in the fort, the reply to which was so successful that speedily a hot shot exploded one of the fort's magazines, after which the defense was impracticable. The garrison of about 100 effectives included about twenty-five Choctaws. Of the women and children, over 200 in number, not more than fifty escaped the explosion. The besiegers suffered no loss. The affair reads like a fight in the Philippines.

A council of Indians condemned Garcia and the Choctaw chief to death for the previous murder of the Americans. The Spanish negro fugitives were delivered to the Spanish agent, the American to Colonel Clinch for their owners. A Seminole party coming down the river to help the fort heard of its fall and went home.

## "Don't Forget."

Many years ago, writes Thomas Bailey Aldrich in "Pongapog Papers," a novel, Boston publisher used to keep a large memorandum book on a table in his private office. The volume always lay open, and was in no manner a private affair, being the receptacle of nothing more important than hastily scribbled reminders to attend to this thing or the other.

It chanced one day that a very young, unfledged author, passing through the city, looked in upon the publisher, who was also the editor of a famous magazine. The unfledged had a copy of verses secreted about his person. The publisher was absent, and young Milton sat down and waited.

Presently his eye fell upon the memorandum book, lying there spread out like a morning newspaper, and almost in spite of himself he read, "Don't forget to see the binder." "Don't forget to mail E. H. his contract." "Don't forget H.'s proofs," and so forth.

An inspiration seized upon the youth. He took a pencil, and at the tail of this long list of "don't forgets" he wrote, "Don't forget to accept A.'s poem."

He left his manuscript on the table and disappeared. That afternoon, when the publisher glanced over his memoranda, he was not a little astonished at the last item; but his sense of humor was so strong that he did accept the poem—it required a strong sense of humor to do that—and sent the lau a check for it, although the verses remain to this day unprinted.

## The Plea and the Evidence.

Almost any clerk will take his hat in hand when approaching his employer, but the native clerk in India is deferential by nature. Tit Bits gives a characteristic bit of baboo English written by one who wanted a holiday:

"Most Exalted Sir—It is with most habitual devout expression of my most sensitive respect that I approach the clemency of your masterful position with the self-depraising utterance of my esteem, and the also forgotten-by-myself assurance that in my own mind I shall be freed from the assumption that I am asking unpardonable donations if I assert that I desire a short respite from my exertions—indeed, a fortnight's holiday, as I am suffering from three boils, as per margin.

"I have the honorable delight of reverberating myself your exalted reverence's servitor. X."

Apparently the young man feared that his humble and touching epistle would not suffice. In the margin he had drawn a rough but graphic picture, showing the location of the three boils upon his own person.

## Research of Value.

Original medical research of great value has been recently done by Japanese army surgeons upon the influence of insects in spreading germ disease.

## A WONDERFUL WOMAN.

**Ida M. Tarbell, the Most Conspicuous Figure in American Letters.**

Ida M. Tarbell is the most conspicuous figure in American letters to-day. The biographer of Lincoln and Napoleon, of Mme. de Staël and Mme. Roland and the historian of the Standard Oil Company, holds a place unique in literature. Her life and accomplishments are a monument to the possibilities open for woman in the present day.



Ida M. Tarbell, in the present day, she is interested in the mass condition of the world, its desires, its necessities, its social inequalities. To the condition of the laborer, the advancement of women and the protection of children she is devoting much of her thought. Her leisure time is devoted to working up such historical, biographical and literary material as will best serve to influence the world in the direction which she thinks will be most beneficial.

Although born of parents who were thoroughly able to support her and who were opposed to her working, she was nevertheless convinced that personal freedom and individuality were to be obtained by her own efforts, and consequently early set herself the task of earning her own living.

From a farm in Erie county, Penn., she went to Titusville, where her father was engaged in the oil industry, and she decided that she wished to fit herself to be a teacher. She graduated from the Titusville high school with that intention.

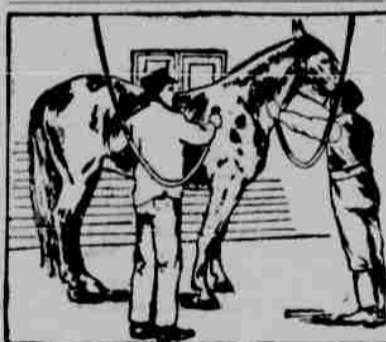
Thus the historian of the Standard Oil Company was a youthful witness of its operations. Titusville was in the very heart of the oil region. Great "strikes" made great fortunes there in amazingly short time. All the hardships of the prospectors, all the struggles of the producers, the troubles with the refiners and the dealings of the Rockefeller interests with the railroads were here spread dramatically before her.

She spent four years at college and then went to act as preceptress of a seminary at Roland, Ohio. She did not remain long. She did some writing for the Chautauquan and finally became its managing editor. After six years in this work she took up historical writing.

## ELECTRIC CURRYING.

Electric currying is said to be the latest thing in exclusive equine circles, and leaders of the most pronounced "horsey" notions and conceits are said to have decided to use no other method of cleaning in the future.

"Why, look a-here, young feller," said an old horseman the other day, as he addressed a New York Tribune reporter, "that there mare o' mine, an' she's about as slick as any in these parts, if I do tell it—she couldn't no



CURRYING BY ELECTRICITY.

more git along without that there currying than she could without oats.

"How does it act? Well, now, here, you just come along with me," and he led the way to the stable where two hostlers were giving a stout roan horse an electric currying.

To the ceiling were secured two small dynamos. From each long, flexible tubes depended, and attached to each of these was a small brush, buzzing around in a dizzy whirl, after the fashion of the buzzers which seem to the victim in the dentist's chair like overgrown sawmills set at liberty. All the men had to do was to keep moving the brushes about, and with the invasion of each new portion of the animal's anatomy dirt and dust were sent flying from the hair of the horse. Both men and animal seemed to be enjoying the experience immensely.

## Educational Problems.

The great difficulty in the business world is to bring supply and demand together. Two advertisements, for example, which have appeared, one in New Zealand and one in London, seem to cry out, each for the other, but there they are, half a world apart. One in the New Zealand Press reads thus:

"A father desires the services of a trustworthy lady to administer corporal punishment to his three girls. State salary, references and experience."

The needs of this Spartan parent are thus met by a paragraph in the Standard:

"A clergyman's widow, strict disciplinarian, gives lessons to unruly boys and girls. Advice, letter, five shillings; home consultation, six shillings sixpence; corporal punishment from eight shillings sixpence. Visits all parts, terms according to distance. Rods supplied, one shilling sixpence each."

## Cold and Sweetness.

In making any mixture for freezing it should be remembered that some sweetness is always lost in the chilling process, and more sugar should be added than the taste would naturally dictate.

Any man who is continually making a fool of himself must be a natural-born tautologist.

# EDITORIALS

Opinions of Great Papers on Important Subjects.

## Official Corruption.

THE great Governments and the great municipalities of the world have a problem before them which as yet they have not fairly faced, but which they must face if they are to make sure in times of emergency of the efficiency of their agents. The growing hunger for money as the one absolute condition of endurable life, the increasing severity of the competition for great contracts, and the decaying abhorrence of all tend to the development of "corruption" in its official sense, that is, of bribe-taking by officials, and of stealing from State and municipal departments. No form of government seems to protect the nations from it. We have less of it than most countries, because under our social conditions the class which really governs has been taught from early childhood to regard bribe-taking as a worse dishonor even than cheating at cards, and because those who suffer are absolutely free to complain; but even here, when the Government is forced to spend millions suddenly, rings are formed to get some of that money, and the taxpayer is fleeced through preposterous charges and illicit commissions.

It is a great blot on modern civilization, which in many respects depends upon efficiency for success. Efficiency and corruption are wholly incompatible. Some think that corruption produces only waste, and that they can bear waste; but that is a false view. Corruption, in the first place, arrests the employment of the best men in leading positions, for the whole energy of the corrupt is devoted to preventing their promotion, or if they are promoted, to rendering their positions untenable. In the second place, corruption makes energetic administration nearly impossible, for no Government ever loses the hope of preventing it, and to prevent it most of them apply an infinity of "checks," every one of which occupies part of the time of the executive officer, and increases the load of responsibility under which at last he dare do nothing without previous sanction. And, in the third place, corruption is not only fatal to the very idea of duty, but to the habit of performing it.

A perfect remedy for corruption is hard to find, because it requires a change in the motives of the corrupt which Governments cannot produce, and which society will not be at the pains to encourage effectively; but two or three palliatives might at least be tried. One is to protect those who complain. Another is to pay all those who have anything whatever to do with contracts at least decently, a rule often neglected in the case of the experienced but subordinate men upon whose judgment their less experienced superiors in matters of business compelled to rely. And a third is to declare bribe-giving and bribe-receiving a form of treason severely punishable whenever it is proved.—London Spectator.

## Social Gravitation.

THE census proves incontrovertibly that the drift of population cityward reached its maximum some years ago, and has begun to recede. Some one has said: "Hereafter the city and the country will march side by side, with even step." Even this is hardly probable. The change of drift is owing to economical conditions that will continue strongly to favor the country. Population will still move out and differentiate from the masses. In fact, the coming deal seems to be rather an evenly distributed suburbanism, covering the whole country; while the cities will remain as ganglia. Following this ideal the city will grow more country-like, while the country will steadily acquire those privileges which have heretofore belonged to the city.

According to a recent census bulletin, 159 towns show an increase of 32 per cent during the last ten years, which is about the average of the increase of the whole country. The relative gain of cities from 1880 to 1890 was from 22 to 29 per cent—or 7 per cent positive increase—but from 1890 to 1900 this increase was only about 2½ per cent. This tells the story with accuracy. It does not warrant us in assuming that cities will cease to grow, but that relatively they will cease to grow as fast as the country. . . . A potent cause for depopulating the country came in with improved machinery. Farm work could be done with fewer hands. A single reaper would replace ten men. Costly machinery could be profitably used only on large farms, yet a single reaper might serve a dozen small farm owners

## GREAT AGRICULTURAL DISCOVERY

Four-fifths of every breath of air which the lungs inhale is pure nitrogen. It is one of the components of the elements. And yet, says a writer in Harper's Monthly, it is the one thing that for the lack of which wheat fields, cotton fields and corn fields are abandoned as "worn out" because it is the most expensive plant food for man to supply to the soil, and one which most plants are unable to absorb in its pure state from the air. To remedy this the Department of Agriculture at Washington is preparing to distribute among farmers a substance resembling compressed yeast, which will raise, not bread, but crops; for when applied to certain plants it will enable them to take abundant nitrogen from the atmosphere. The "yeast" is really a mass of germs, which bid fair to become most efficient gardeners.

It has long been known that clover and other leguminous crops flourish in "worn-out" soil, and when plowed into it partially restore the fertility of it. Studying this phenomenon, scientists have found that in such a soil the plants have nodules, little buncies or swellings, on their roots, which they do not have when grown elsewhere. These nodules are formed by bacteria called radiocolla.

Professor Nobbe, a German investigator, found that lupines which had the nodules would grow in soil devoid of nitrogen. Without the nodules the lupines would not grow. He obtained some of the radiocolla from the nodules and propagated them in gelatine till he had many millions of the germs.

He then put into three jars equal quantities of sterilized sand containing no nitrogen whatever. In each jar he planted beans. The first he fertilized with all the usual plant foods except nitrogen. The second he sup-

co-operatively. So far, the Eastern States were at the greater disadvantage, the deserted farms were common throughout New England. It was wiser to go West with small capital, and leave the homestead to go back to wilderness, rather than to remain and be starved. This state of affairs, in aggravated symptoms, continued until near the close of the nineteenth century. . . . A cause for the reaction which we chronicle, is the splendid increase in the value of farm products, brought about by our having secured the world's markets. Commercial expansion during the last ten years has immensely increased the exportation of nearly everything that the farm produces. Our fruits, our meats, our corn are now found in every market of the globe. There is no longer any fear of overproduction; we have only to insist on the open door principle and free competition. The farmer can apply his whole attention to the increase of products, and the conquest of insect and fungoid enemies. Agriculture is proving itself to be once more what it was in the early part of the last century, the most independent of all the industries.—New York Independent.

## Forts and Naval Attacks.

ONE of the surprises of the Far Eastern war is the failure of the fort guns to do more damage in the attacking fleets. It was a matter of faith among the authorities that not even the strongest modern battleship could safely attack an effective modern fort, armed with long-range heavy guns. England is at present making a number of long-range fort guns for the defense of her south coast, and it is calculated that these guns will easily be able to throw a twelve or thirteen-inch shell across the Straits of Dover, so that it would not seem to be worth while for France even to take her Channel squadron out of port, much less to attempt to land in the face of such an overwhelming attack. But this is mere theory. The truth is, that, although the weight and range of these guns have been steadily increasing the human powers which are to use them have not shown, and are not likely to show a corresponding progress. While a gun can carry a shell across the Straits of Dover, the gunner who could make a hit of twenty miles is yet unborn; neither eyesight nor fineness of hand are equal to the task. Nor would the atmosphere permit it, if they were. Attacks by fleets are made by sea; and the sea is proverbially untrustworthy in the matter of weather. Air currents, mists, uneven radiation, mirage and a dozen similar causes deflect the shot and the vision which directs it. Moreover, no one nowadays is likely to attack a fort at close range in broad daylight. The Port Arthur bombardments were nearly all at night, and some of them in snowstorms. It is intelligible that a ship at sea can more or less locate a position on land, such as the Golden Hill above Port Arthur, over a town where there are certain to be some lights at least; but the fort has no lights to guide it in locating the ship, except the momentary flash of the guns, which give hardly any opportunity for aiming. In the case of the Vladivostok bombardment, it seems that the Japanese fleet were too far off to do any damage, and, therefore, too far off to receive any. It is also likely that the object of that attack was to draw the Russian fire in order to locate their forts; the Russians seemed to have divined this, and naturally abstained from firing. Harper's Weekly.

## No Thought of Annexation.

THE United States regards Canada as under British Imperial suzerainty, an independent sovereign nation, whose title is as valid as that of any nation on the globe. It has no thought of annexing Canada against her will, nor does it, indeed, regard annexation as necessary or inevitable. It is not sitting up o' nights to coax or to coerce the Dominion into union with the Republic. If ever Canada should at her own will seek such union, the United States would probably be cordially responsive. But, if Canada never does seek it, the United States will regard with entire unanimity and satisfaction the prospect of continuing for all time to share this continent with another great English-speaking commonwealth, and will only hope for constantly increasing sentiments of mutual esteem and constantly strengthening bonds of friendship between these two sovereign nations.—New York Tribune.

upon the "compressed yeast cake plan" as simple and satisfactory.

## Comrades.

Bobby was ten years old and an alarmingly light-hearted and careless young person. It was supposed, however, that he would be capable of escorting his grandmother to the family Christmas dinner, one block away from her home, without mishap.

He was tall for his age, and he offered his arm to his grandmother in a gallant and satisfactory manner as they started off together.

"I hope he will remember that she is almost ninety, and not try to hurry her. I'm sure I've cautioned him enough," said Bobby's mother, as she began to dress her younger children. But when she arrived at the family party it appeared that grandmother had turned her ankle and was lying on the lounge.

"Bobby," said the mother, reproachfully, "where were you when grandma slipped?"

"Now I won't have that boy blamed," said grandmother, briskly, smiling up into Bobby's remorseful face. "We came to a fine ice slide, and he asked me if I thought I could do it, and I told him I did. And I want you children to remember one thing: when you get to be most ninety you'll count a turned ankle a small thing compared with having somebody forget that you've outlived everything but rheumatism and sitting still. Anybody that likes can rub this ankle a minute or two with some liniment, but I want Bobby next me at dinner, mind!"

## He Had Twenty-seven Wives.

In the course of a murder trial at Cape Town recently the defendant, an aged Malay trader, admitted that he had twenty-seven wives.

Our idea of a mean man is one who spends two-thirds of his time in getting money and the other third in keeping it.