

MINING IN THE ATMOSPHERE

If scientific discoveries go on at their present rate, we may soon find that the things we now hold most cheaply are those of the greatest value!

Who, for instance, would have thought that the air we breathe holds a store of elements which realize many millions of dollars annually? It is a fact, amazing as it may seem; and as a result a new industry is springing up in connection with this mining of the air.

The atmosphere consists, roughly speaking, of a mixture of the gases nitrogen and oxygen, as well as quantities of argon and neon, among other things.

Since the discovery of a method of liquefying air by extreme cold, it had been found possible to separate these constituents in the same way. And all these elements have now assumed a great commercial importance.

As everyone knows, oxygen is often used to maintain life in invalids, yet the amount consumed in hospitals and laboratories is a very small portion of the total output. In the United States alone it is estimated that the annual output of oxygen is a thousand million cubic feet. The present value of that is nearly fifteen million dollars.

Oxygen is used in many different ways in the engineering world. It is combined with acetylene to make the intensely hot flame which cuts through steel rails with the greatest of ease. Workmen are often to be seen in the streets using the flame in repairing tramway tracks. The oxy-acetylene process is one of the most important labor-saving devices ever invented, and it was theming of the air that made it possible.

The oxygen is market in steel cylinders, which may often be seen loaded on motor-tories in any bid town.

Once the oxygen has been removed from the air, attention is turned to nitrogen, which is trapped for the air for the manufacture of fertilizers—an industry carried on in Norway on an enormous scale. It is used also for the manufacture of explosives, for the filling of so-called nitrogen lamps, while it is sometimes employed for the putting out of oil fires.

Nitrogen is obtained by driving the air over an intensely hot electric arc flame, six feet in diameter, known as the "electric sun." The nitrogen is trapped as nitric oxide, from which the nitrogen itself is ultimately combined to form nitric compounds.

Two of the remaining gases in the air are argon and neon, recently looked upon as rare and costly, but now sold at a dollar or two a cubic foot.

Both these gases are used for filling incandescent electric lamps, while small glass tubes of neon are used for testing sparking plugs in motors.

Electric lamps are often rendered useless by something going wrong with their fragile tungsten filaments, but neon has now made filamentless lamps possible. An intense pink glow is produced between two neat metal surfaces in an atmosphere of neon.

With all these uses for the gases from the atmosphere, it will be seen that the air is providing a new and valuable industry. The raw material is countless and boundless. It is there for everyone and anyone to use. There are thirteen trillion tons of it available, and the supply is inexhaustible, for it is constantly being replenished.

How insignificant, both in size and value, our great collieries appear when compared with this vast new "mine" which abounds all around us!

Measuring a Continent.

Until recently no great continent had ever been measured by means of the surveyor's chain.

Maps are usually made by means of astronomical calculations similar to those used by the sailor in fixing his position at sea. These calculations are found to be amazingly accurate when they are checked by the measure.

When, more than a century ago, the French instituted the metric system, they were very anxious that the metre should be an exact fraction of the earth's circumference—which the yard is not.

They checked the astronomer's calculations by actually measuring the distance in a straight line from the north to the south of their country. When the work was finished it was found that the two sets of measurements differed by only a few feet!

To-day a far greater piece of measuring is being undertaken. Thanks to the construction of the Cape-to-Cairo railway, the whole length of the great African continent is being worked out by surveyors.

Considerable portions have been finished, and these show that up to the present, at any rate, there is no need for us to revise our maps.

An error has been disclosed, it is true, but it is hardly of the kind to affect the Atlas. It amounts, as a matter of fact, to rather less than one inch for each hundred miles. Not a very serious mistake!

When the measurement is completed it is expected that astronomers and surveyors will differ by about fifty yards for the entire length of this immense continent.

Canada possesses nearly half the water power of the world.

Your clothes if hung up carefully will wear much better than if flung upon the chair.

RHEUMATIC TREATMENT

This Trouble Can Only be Got Rid of by Enriching the Blood.

In no disease does the blood become thin so rapidly as in rheumatism. Not only does it become thin, but it is loaded with rheumatic poisons. Without proper treatment these poisons increase, the general health is undermined, the inflamed joints swell, and are very painful, and often the sufferer becomes crippled.

Dr. Williams' Pink Pills build up the blood and enable it to cast out the rheumatic poisons with the natural secretions of the body, thus driving out the pains and benefitting the general health. Sound proof of these statements is offered by Mrs. George Stanley, Sparta, Ont., who says:

"For a number of years I was troubled with rheumatism, which at times was very painful. My general health was also affected, and I could scarcely drag myself around. I had been doctoring a good deal, but did not get any better, until one day my daughter brought me a box of Dr. Williams' Pink Pills. By the time these were used I could notice a slight improvement and I continued taking the pills until I had used about a dozen boxes, by which time I felt like a new person—and looked like one. I could do my work with ease, and have since enjoyed the best of health. I have since recommended Dr. Williams' Pink Pills to several others who received the same benefit as myself."

The best time to begin taking Dr. Williams' Pink Pills is the moment sooner you do so the sooner you will get your old time energy. You can dealer or by mail post paid at 50 cents a box or six boxes for \$2.50 from The Dr. Williams' Medicine Co., Brockville, Ont.

Visible Sound.

One of the strangest of volcanic phenomena is the "flashing arcs"—thin luminous rings—which, when an eruption is in progress, are sometimes seen to rush out and up from the crater and disappear in space. They have been observed on Mount Vesuvius and also on Mount Etna.

Each successive ring follows immediately upon an explosion, and there seems to be no doubt of the fact that these "arcs" are sound waves made visible.

During the war observation was frequently reported of mysterious curved bands of light and shade that swept across the sky or over the ground near places where cannon were being fired. They were described as resembling the concentric ripples produced by dropping a pebble into water. One ab-

server told of hearing the explosion of a distant gun at the precise instant when the moving light band reached his feet.

These also are believed to have been visible sound waves. In either case, gun or volcano, an explosion gives rise to a steadily expanding "shell" of condensation in the air, which, followed by a shell of rarefaction, spreads out from the source at a speed of a little more than 1,000 feet a second. Under favoring circumstances we may see it in outline. When it reaches our ears the vibration it imparts to our ear drums enables us to hear the explosion.

The spreading spherical shell in the air is made visible by its effect upon the paths of light rays coming to our eyes. We say that air is invisible, but it is not always so necessarily. Everybody has seen air shimmering over a hot stove or other heated surface.

The spreading shell may be aptly compared to a soap bubble in process of blowing, and the "flashing arcs" to the circular outline of the bubble.

"Copyright Law" of the Northwest Indians

That a "copyright law," very similar to that in force among the civilized nations of the world, existed among the primitive Indians of northern British Columbia and Alaska long before the white man came, is a remarkable fact which a writer discovered recently while traveling through the northern wilderness region of British Columbia in company with William Beynon, of the Canadian ethnological research.

The strange thing is that though much has been written of totem poles and some pictures of them shown, the existence of copyright has been entirely overlooked. In fact, the meaning of these poles, and the strange ceremonies attaching to them, have never been made known to the general reading public.

Herewith is given for the first time the story of how these primitive peoples of North America instituted a copyright law along exactly the same lines as followed by the white men to-day.

To be the owner of a totem pole was a sign of social position, rank, wealth, and power. Every native one some day. In the erection of the pole a great amount of wealth had to be lavished; the more wealth lavished, the greater the owner's standing in the community.

When a native decided he would have a totem pole, he and his family, and sometimes in the case of a great chief, the whole clan, set about gathering raised straight up when a ship has to pass.

The Runcorn bridge over the Mersey is in the nature of a suspension railway, the passengers being carried across in a remarkable cage-like contrivance.

Wonderful Bridges of Modern World

The Last Word in Engineering Feats.

Two Decks for Traffic on the Great Structure That Will Span the Hudson River.

In various parts of the world—in Australia, Canada, and the United States—plans are going ahead for the construction of four massive bridges which, when completed, will be among the greatest engineering feats in history.

Childhood Ailment

The ailments of childhood—constipation, indigestion, colic, colds, etc.—can be quickly banished through the use of Baby's Own Tablets. They are a mild but thorough laxative which instantly regulate the bowels and sweeten the stomach. They are guaranteed to contain no harmful drugs and can be given to the youngest baby with perfect safety. Concerning them Mrs. Alcide Lepage, Ste. Beatrix, Que., writes:—"Baby's Own Tablets were of great help to my baby. They regulated her bowels and stomach and made her plump and well." The Tablets are sold by medicine dealers or by mail at 25c a box from The Dr. Williams' Medicine Co., Brockville, Ont.

WONDERFUL BRIDGES OF MODERN WORLD

THE LAST WORD IN ENGINEERING FEATS.

The monuments for Rear Admiral Robert E. Peary is a huge stone sphere on which the continents of the earth are outlined. At the North Pole is set a bronze star, symbol both of his discovery and, as some one has suggested, "of the star of unconquered will." His epitaph is his own favorite quotation from the Latin—I will find a way or make one.

While not to be compared with either of these structures, the bridge to be erected over the Detroit River between Detroit and Windsor will be none the less remarkable. It will have two decks. The upper deck will have two 28 foot roadways, two 7 foot side-walks, and a double trolley line; while the lower deck will be devoted to four railway lines.

About 3,703 feet in length, with a main suspended span of 1,893 feet, the bridge will be over 400 feet longer than the Quebec bridge, the famous structure, the hoisting of whose central span was accompanied by two disasters involving a total loss of eighty-eight lives.

Last, but not least, is the new suspension bridge to be built across the Delaware River. It will connect the cities of Philadelphia and Camden. It is to cost more than twenty-five million dollars, and will have a central span of 1,750 feet. Roadways, tramways, and pathways are to be included. A total of 33,000 tons of metal will be required, whereas a cantilever bridge would have needed 47,000 tons.

When these bridges are erected—and that at Philadelphia will take five years to complete, or eight years less than the famous Brooklyn structure—Britain will be outclassed in the matter of great bridge-building feats, says an English writer. It is hoped, however, that the armament firms deprived of work under the disarmament scheme will turn their attention to the matter, and proposals have already been put forward for various bridges—one over the Tay; another at Berwick-on-Tweed; two over the Thames, one between Barnes and Kew and one at Richmond; and one over the Severn.

As for remarkable bridges, the United States still leads the way with the one at Chicago. This work, exactly like a lift, the central span be-

SAYS SHE HAD ACTUAL DREAD OF MEALTIME

Montreal Woman Was On Verge of Breakdown But Eats Anything Now, and Nervousness is Gone, Too.

"Tanlac is wonderful. It has simply made me feel like a different person," said Mrs. Wm. Allen, 1515 Wellington St., Verdun, Montreal, Quebec.

"For five years I never knew what it was to be free from stomach trouble and finally was on the verge of a breakdown. I actually dreaded for mealtime to come as I knew no matter how careful I was about my diet I would be sure to suffer afterwards.

"Tanlac has just changed things all round for me. For a long time I had been going without any breakfast altogether and now I get up in the morning so hungry I can eat bacon or most anything else I want and enjoy it. I have gotten over the nervousness, too, and am able to sleep all night long, without waking up once and I get up mornings feeling thoroughly refreshed. I am still taking Tanlac and improving steadily. In fact, it just seems that every dose increases my strength and energy."

Tanlac is sold by all good druggists. Advt.

COARSE SALT LANDSALT

Bulk Carlots TORONTO SALT WORKS C. J. CLIFF - TORONTO

TO ENJOY PERFECT HEALTH

Every Woman's Wish—Read Mrs. Cassidy's Experience

Paris, Ontario—"For five years I suffered with pains in my back and from other troubles women often have. All of this time I was unable to work and was taking the most different medicines that I thought were good. I saw the advertisement in the papers of Lydia E. Pinkham's Vegetable Compound and have taken it faithfully. I am now in good health and do all my own work. I recommend it to all others and give you permission to publish this letter in your little books and in the newspapers as a testimonial."—Mrs. D. Cassidy, Box 461, Paris, Ontario.

STOMACH TROUBLES ARE DUE TO ACIDITY

Tells Safe, Certain, Speedy Relief For Acid Indigestion.

So-called stomach troubles, such as indigestion, gas, sourness, stomach-ache and inability to retain food are in probably nine cases out of ten, simply evidence that excessive secretion of acid is taking place in the stomach, causing the formation of gas and acid indigestion.

Gas distends the stomach and causes that full, oppressive, burning feeling sometimes known as heartburn, while the acid irritates and inflames the delicate lining of the stomach. The trouble lies entirely in the excess development or secretion of acid.

To stop or prevent this souring of the food contents of the stomach and to neutralize the acid, and make it bland and harmless, a teaspoon of Bisulphate of Magnesia, a teaspoon of Epsom's Salts, or a glass of hot or cold water after eating or whenever gas, sourness or acidity is felt. This sweetens the stomach and neutralizes the acidity in a few moments and is a perfectly harmless and inexpensive remedy to use.

An antacid, such as Bisulphate of Magnesia, which can be obtained from any druggist in either powder or tablet form, enables the stomach to do its work properly without the aid of artificial digestants. Magnesia comes in several forms, so be certain to ask for and take only Bisulphate of Magnesia, which is especially prepared for the above purpose.

Simcoe County Municipal Forest.

Work was begun this spring in planting up the area in Vespra township, Simcoe county, Ontario, which the county council has acquired for a municipal forest. It will take several years to plant up the whole area of eight hundred acres but the work will proceed year by year till it is done. It is possible that a nursery to grow part of the planting stock required will be started on the site.

When the Brakes Are of First Importance.

In the West, logging camps are mostly situated in the hills, and the heavy loads of logs have to be hauled out, always downhill. Often that helps to make the hauling easy, but sometimes the grades are so steep that it makes it too easy—so easy that it entails difficulty. Indeed, in these instances the term hauling is a misnomer, for that implies pulling the load, and the operation actually consists in pushing against the load instead of pulling it. Two and a half miles of specially constructed track is used at one western logging camp for transporting heavy loads on a large motor truck down a very steep grade. The truck is six-wheeled, and has powerful brakes on its four rear wheels. These brakes are controlled exclusively by one man, while another takes care of the driving and steering.

Longer Than Quebec Bridge.

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Classified Advertisements
Couples want board, farm or...
Nurses wanted for training...
Wanted persons to grow...
Belting for sale...
Wood may become important as fuel.

Montreal Woman Was On Verge of Breakdown But Eats Anything Now, and Nervousness is Gone, Too.
Tanlac is wonderful. It has simply made me feel like a different person.

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Feed the body well
Right food for the body is more important than right fuel for the engine.

Grape-Nuts
is a scientific food, containing all the nutriment of wheat and malted barley. Grape-Nuts digests easily and quickly, builds toward health and strength—and is delightful in flavor and crispness.

There's a Reason for Grape-Nuts

Have Good Hair and Clean Scalp
Frees from dandruff and itching. It's easy. On retiring rub Cuticura Ointment, getting Ointment well on scalp.

Aspirin
Genuine Bayer Aspirin

WARNING! Say "Bayer" when you buy Aspirin.
Unless you see the name "Bayer" on tablets, you are not getting Aspirin at all.

Headache, Neuralgia, Rheumatism, Pain, Pain

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