

## AIRPLANES TO HAVE WONDERFUL SPEED

### Scientists Promise Great Things for the Future.

Our new air age promises to be a high-flying age. The 100 miles an hour of present type airplanes will, it is considered, be exceeded greatly by adapting machines so that they can take full advantage of the lessened resistance of the air at high altitudes.

Before long we may look back on flying machines of today, driving a labious way through retarding lower air, with that same pity which a traveler in the blue and gold Riviera express would let his thoughts wander back to the times when, sitting in open trucks, the first railway travelers jolted along with cinders from the engine blowing into their faces. Wonderful results are rewarding an eight-years' research in sending airplanes up to high altitudes and there making them fly miles an hour faster than would be possible in dense air near the world's surface, writes Harry Harper in the London Contemporary Review.

What science is profiting by now are experiments, prosecuted assiduously, in perfecting a "turbo-compressor," or light, small, high-speed turbine, the function of which is to "supercharge" the engine of a high-flying plane.

What latest triumphs imply is a virtual abandonment of flying near the earth's surface, and an elevation of regular aerial movement miles above our heads. Hitherto planes flying at great heights have failed to profit in speed from the lessened air resistance of high altitudes because their motors have fallen away in power. But the "turbo-compressor" supplies the engine with high altitude air at such pressure that the thinness of this air, as compared with low altitude air, is compensated for, and the engine preserves its power even at great heights.

In recent experiments remarkable results have been achieved, not only with supercharged engines, but also with propellers having variable angle blades designed to function efficiently at immense altitudes. Sending up planes till they have been miles high, experts have been able lately to increase their normal speed by more than thirty miles an hour.

Scientifically, the quest now proceeds along the following lines: Experiments are to be made in increasing still farther the height of "supercharged" flying, while another research will be to design and perfect saloons in which passengers can be carried through the air at enormous heights and speeds. Such saloons will be supplied automatically, under pressure, with air rendered just as breathable as that at low altitudes.

Scientists, enthusiastic as to the possibilities of immensely rapid flying through thin air at vast heights, now predict that researches will culminate in the institution of regular "super-express" airways, miles high, along which globe-girdling craft will hurtle at 250 and 300 miles an hour.

**That Was the Trouble**  
A stranger on the main street of Hornsville, Ariz., came upon a battered individual with both eyes blackened and face swollen with bruises, lying in a heap against the curb at the principal corner.

"What happened to you?" asked the stranger with some agitation.  
"A feller beat me up," was the reply, "for not payin' a bill."  
"Why don't you send for a doctor?"  
"The doctor was here about a minute ago, pardner."  
"Oh, you're all right, then?"  
"Why, pardner," said the wounded citizen, "it was the doctor's bill I didn't pay."—Hygeia.

**Beech for Fuel**  
Beeches are beautiful throughout the year. From the ground to their polished slender twigs the gray to brown bark is clean and smooth, and both bark and twigs are so distinctive that they are not to be confused with other trees of the forest. These trees are famed not only for their beauty but for their many useful products as well, says "Tree Habits" by the American Nature association. Their wood is valuable for lumber and is made into floorings, furniture, tool handles, brush backs and kitchen utensils. As fuel it has no superior.

**Testing the Pay Envelope**  
A writer in a recent number of Printers Ink asks this question, in substance: "Would you rather receive \$200 a month and know you were worth more than receive \$300 with a staking conviction in your heart that by the standard of wages paid to others you were being overpaid?" There are probably quite as many people overpaid in the business world as there are those who are underpaid. When business slumps the overpaid ones are headed for a fall; the underpaid ones keep what they get and perhaps a little more.

**Christians in Minority**  
When any one questions why the Christian churches send out foreign missionaries, members of the church can readily explain by pointing to the proportion of Christians and non-Christian peoples in the world. There are, in fact, more than twice as many non-Christians in the world as Christians, and although Christianity has made steady strides, many of the non-Christian races are prolific and the ratio is not changing very rapidly.

## Riches Garnered From Great Chilean Desert

Chile has many thousands of square miles of land capable of cultivation, yet its most valuable asset is a desert where the rainfall is seldom more than half an inch per annum. It does not grow a single tree, or even a blade of grass, except where patches of imported soil have been laid. This is the nitrate country, which employs 50,000 people directly and indirectly five times as many, and in which something approaching \$200,000,000 is invested.

There are over one hundred and seventy separate workings, each of which is the center of a busy population. Yet every ounce of food, every yard of clothing, every cog and shaft of its huge machinery, every pint of water even, has to be brought from a distance. For many miles around the country produces nothing but nitrate of soda.

It is an amazing fact that the most valuable fertilizer of commerce comes from a region where nothing will grow, but it is a case of all fertilizer and no soil and no rain. In earlier days water was so valuable that it was a saying that it was cheaper to drink champagne, but now water is carried by pipes from far-off sources, some of which are 200 miles distant.

## Father Picked Moral From Youngster's Joke

A prominent Los Angeles attorney told the following story in a recent address to the graduates of a grammar school. He said that his son, a high-school graduate, came home one day and asked him if he were a good mathematician.

"Yes, my boy, I think I'm pretty good," the father replied.  
"Well, then, I have a problem I'd like to have you solve. There were three frogs sitting on a log—a bullfrog, a tree frog and a toad frog. The bullfrog decided to jump off. How many were there left?"

The father smiled. "Why, that's an easy one. Two frogs were left."  
"And that's where you are all wrong!" exclaimed the boy, grinning. "Three frogs were left, because the bullfrog only decided to jump off. He didn't jump."  
Then the lawyer impressed upon his audience that a person who would win success must act promptly on his decisions.

**Primitive Water Clocks**  
In the Malayan peninsula travelers recently found the natives using a most primitive method for measuring time, which has probably been in vogue for 5,000 years. It is called the water clock and is simply a small dish or round bowl with a small hole in the bottom. When this is placed in a tub of water it gradually becomes full and sinks, which always happens in the same period of time. On the Malay junk it is a common thing to see a coconut shell floating in a bowl of water to tell off the time away from the home port. The ancient Egyptians used the water clock. The sand glass or water glass has two uses all its own at the present time—for boiling eggs, and in the English house of commons to time the bells that ring to notify members that a division is at hand.

**Why Clergy Fought Light**  
When the more progressive spirits in the British metropolis, years ago advocated the installation of municipally operated street lights, they encountered much active opposition. The clergy were especially loud in their denunciation of the proposition. They advanced the following three stupendous claims against street lights: 1. Artificial lighting is an attempt to interfere with the divine plan which has preordained darkness during the night time. 2. Illuminated streets will induce people to remain later out of doors, leading to an increase in ailments caused by colds. 3. Horses will be frightened and thieves emboldened.

**Why Rooster Didn't Come**  
Martin Simonds of Rodman, N. Y., went to his henhouse to feed his poultry one day during the winter. His flock responded to his call, except his favorite rooster. In the afternoon Simonds had occasion to go to the rear of the house and there, perched upon the rim of the rain barrel, was his lost rooster. His tail feathers were frozen into the water. Simonds had to chop away five inches of the ice before he could liberate the rooster.

**Keeps on Keeping On!**  
When last I went West by way of the "Broadway Limited," I was sitting on the observation platform watching the scenery dash by, when the porter came out to straighten the chairs which had been left in some disorder by a group of young folks.

"We don't seem to be going so much faster than an ordinary local train, George," I commented. "How, then, can this be the fastest train on earth?"  
"Well, sub," replied the African with a grin, "de fac' is we all doan go no faster'n lots of them pesky locals, but we gits dar in quick time because we jist keeps on keeping on."—W. L. Barnhart, in Forbes Magazine (New York.)

## Complex and Varied Is the Human Soul!

I never cease to admire the indelibility of human nature. It does not wear off. Whatever they may do, men are and remain what they are. They may deceive themselves; they may deceive others, especially the short-sighted ones, those who cannot look from the proper distance. Thus the surface of the sea seems quite dark when you are very near to it, but if you climb into the crow's nest you will see how clear the water is, and the higher you go the deeper you see, George Sarton writes, as quoted from "Transparency," in Scribner's Magazine.

If you have learned to contemplate life in its true perspective, how transparent, how beautiful it becomes. This transparency is, indeed, the very spice of life. Among the many splendors of nature, what could be more impressive, more delightful than the infinite variety of the men and women who birds, mix and play before our eyes? Birds are pretty enough, and there seems to be no end to the beauty and fantasy of their plumage, but what of women! what of men! Can there be anything under the sun more complex, more varied, more full of problems and enigmas of all kinds than the soul of man? The mystery seems bottomless, for even if we were to understand each soul in itself, we would still but be at its threshold. For we would not yet know how each of these souls would react upon the others. Each possible combination, each pair of souls opens a new vista of endless secrecy.

**Many Names Bestowed on Species of Duck**  
A study of the local names of American birds leads one to believe that our citizens delight to invent names for the species in which they take interest. In almost any region names for certain birds can be found that are not used elsewhere. Hence it is possible to collect rather long lists of names for birds that attract popular attention. For instance, 92 local names are known for a single species of wild duck, the ruddy. In this case, as in others, some of the names have a touch of humor or local color that renders their study a pleasure.

The ruddy duck, for instance, gets such appellations as booby, dumb bird and sleepy head, because it is slow to take alarm; and others like hard head, leather breeches and shot pout, because so often it safely emerges from a perfect rain of shot. It has various derogatory nicknames, among the mildest of which are dinky, blather-skite and fool duck, says Forest and Stream.

**Snail's Pace?**  
"He moves at a snail's pace," is a remark frequently heard, especially when the subject is a youngster going to school or an office-boy who has been sent on an errand.

But even of the slowest of the younger generation the statement is, to say the least, slightly exaggerated. A recent experiment proved that a small progresses at the rate of one mile in a fortnight.

If you place a snail on a sheet of glass and watch the underside, you will see a series of ripples along the animal's foot. This foot is a network of muscles, and the rippling is produced by these muscles lengthening the foot in front and shortening it behind, which is the snail's mode of progression.

**Composition of Yeast**  
Yeast, strictly speaking, is a substance consisting of the cells of certain minute fungi. It appears as a surface froth or as a sediment in fruit juices and other saccharine liquids in which it induces alcoholic fermentation. Yeast is made of millions of minute, simple plants. What is popularly called yeast is a culture of such fungi or plants. Manufacturers cannot "make" yeast in the sense that they can mix chemicals and produce it. Yeast increases only by the multiplication of the fungi cells. In other words, you must have seed yeast to start with. Ordinary cake yeast sold on the market is composed of yeast cultures in other substances pressed into cakes.—Pathfinder Magazine.

**Two Howlers**  
Special notice has just reached me of two excellent schoolboy howlers. The first is the most idiomatic translation of "Pax in bello," which was rendered "Freedom from indigestion." The second relates to the well-known historical incident of Queen Elizabeth and Sir Walter Raleigh's chak. After describing the scene, the pupil made the queen say:

"Sir Walter, I am afraid I have dirtied your cloak."  
"Dieu et mon droit," replied Sir Walter, which means in English, "My G—d, you are right!"

**Why Felines Purr**  
The purring sound made by cats is made by throwing the vocal cords into vibration measured and regulated by the respiration, and this vibration is strong enough to make the whole larynx tremble so that it may be felt or seen from the outside. Purring is highly characteristic of the cat tribe, though probably not confined to it. It is usually the means by which these felines show contentment.

## WHY Dam in Upper Egypt Is Engineering Wonder

One of the greatest engineering wonders of the world is the great Sennar dam in Upper Egypt, where 120 white men and 19,000 natives are racing against time in an effort to harness the waters of the Blue Nile.

The agricultural possibilities of the great Libyan desert are tremendous. The heat there is intense, at times as much as 125 degrees in the shade; so hot, indeed, that sick men have to be taken down into ice-packed cellars to be treated, the clinical thermometer being useless above ground.

The masonry put in to hold back the waters is roughly 450,000 cubic yards, and its total weight a million tons. Every day 2,000 tons of masonry are added to the structure.

Once a year there comes an exciting time for the engineers and all concerned—the period of the annual Nile flood. As a result of the heavy African rains at the source of the Nile, the river becomes swollen and rises considerably. The floods are so regular that they can be fixed almost to a day.

At Khartoum the Nile is in flood in June and at Assuan in August. By September the floods have reached Cairo, where the waters rise 32 feet above normal at Kaser-el-Nil bridge. It is these floods that cause the greatest anxiety to the engineers, and they watch carefully for any signs of weakness, although if disaster set in, little could be done to avert it.

**Why Physicians Have Faith in Antitoxins**  
Toxins are the poisons of disease and produce the symptoms common to the disease after circulating through the blood, explains Dr. Walter B. James in Outlook Magazine.

Antitoxins are substances that work against or neutralize the toxins in any given cases, and they are produced by the use of the bacteria or the toxins. These are injected into an animal, usually a horse, in increasing doses, until it becomes habituated to them and is no longer made ill by them. The immunity or resistance resides in the blood, which has now developed a defense mechanism against the poison.

The animal's blood is then drawn off in small quantities, filtered and purified. This blood is in turn injected into the blood of a man, where it exerts the same protecting influence against the particular toxin by which it was produced as it did in the horse.

This is, very briefly, the nature and mode of operation of antitoxic serums. The use of an antitoxin in diphtheria has already saved countless lives and has changed the once-dreaded and fatal disease to a rather simple complaint if diagnosed early and treated with antitoxin.

The discoveries of the Dick and of Dochez promise to give the same relief from scarlet fever when methods, originated only in 1924 are perfected for this particular disease.

**Why Collectors Worry**  
Look what is happening to the antique furniture business. Here comes an expert from London, says Dry Goods Economist, who says there is no such thing as a Queen Anne walnut dining table, even though many of them are sold. Chippendale washstands are all bunk. People didn't use washstands in the days when Chippendale lived. Neither did they use sideboards.

As for real Gothic furniture, well, he has his doubts, whether there is any real Gothic furniture in this country.

If this thing continues thousands of Americans will have to refurbish their homes entirely. They will have to buy new furniture whether they want to or not. They cannot be made the laughing stock of the nation, or even of furniture reports.

**His Decision**  
"Say, what the dickens is all that yelling about, out back of the smoke-house?" demanded Gap Johnson of Rumpus Ridge, aroused from his dose on the porch.

"Maw was making soft soap and got her dress afire," replied Banty, one of Johnson's offspring. "She's rolling on the ground now, trying to put it out, and the children are watching her and hollering about it."

"Aw, well, if I want any dinner I reckon I'd better go and help her."—Kansas City Star.

**In the Edible Class**  
"Yes," said the teacher, "we have several plants and flowers named with the prefix 'dog.' Of course, the 'dog-rose' and 'dog-violet' are well known to you all. Can any of you tell me others?"

## Creatures That Take the Palm for Ugliness

A writer describes the two earth pigs, or aard varks, at the zoological gardens, London, as nightmares, says Christopher Bark in the Family Herald, and certainly, for sheer hideousness they can give points and a beating to almost any other four-legged animal. Their nearest rival is probably the wart hog, with its fantastic tusks and huge wen or wart underneath each eye. Another mammal which is so utterly ugly that it makes one feel uncomfortable to look at it is the so-called naked bat (chirosele torquatus). The body is stark naked, with a hideously greased black skin. Head and face are also naked except for a few scanty clusters of stiff hairs which grow out of wart-like excrescences. Around the neck is a collar of dingy brown hair resembling a mangy fur tipper.

The creature is not only repulsive to sight, but also to the sense of smell. It is a sort of winged skunk, the odor of which is literally sickening.

Among reptiles there are a number so fantastically hideous that no mere description can do justice to their looks, or lack of them.

The palm in this respect belongs to the horrid moloch of Australia, commonly known as the "Thorny Devil."

This is a stumpy lizard about eight inches long, of a dirty yellow color, with muddy brown patches. From the tip of its nose to the end of its tail it is covered with spines which are of all shapes and sizes. The largest grow upon its head and show up like two curved horns. Its feet are armed with strong, sharp claws.

The frilled lizard, another Australian reptile, lives on its looks. If alarmed, it gets upon its hind legs and instantly spreads an enormous ruff. It lashes its snake-like tail and opens a mouth full of needle-like teeth.

The octopus, incarnation of horror, is as dangerous as it looks. The sting ray, a hideous creature, has a powerful tail armed with a sharp spine which exudes poison like a snake's fang. Tropic seas are full of fish of fantastic shapes armed with terrible spines and long threatening teeth. Not all these are bad as they look, yet as a general rule an ugly fish is also a dangerous one.

**Selling Children in Peru**  
Legalized child slavery still exists in Peru—even in Lima, the modern capital city. Indian peons frequently sell their children to well-to-do families for sums equivalent to about \$425.

The sales are made usually when the children are about eight years old, and the purchasers have exclusive use and control of the children until they are sixteen years old in the case of a girl, or eighteen years if a boy. As long as the owner feeds and clothes the child no one can take it away. There have been recorded cases in which, when one woman sought to buy a child from another by offering the father of the child more money, the courts upheld the rights of the first mistress. Girls are sold more often than are boys, inasmuch as the Indians regard girl children as liabilities.

**Airplane Still Novelty**  
"I tried recently in a Cleveland hotel to buy an airplane postage stamp for a letter to San Francisco," writes Fred Kelly in the Nation's Business. "The stamp seller had none and said it was the first time he had had such a request. Out of curiosity I then went to another leading hotel and tried to buy stamps for airplane mail. They not only didn't have such stamps, but evidently had never heard of them. I next tried the experiment of asking business men for information about the cost of sending a letter by airplane from Cleveland to New York. Of course I asked not one knew! The fact is that the airplane mail service, notwithstanding the marvel of it, is still too new to be popular. It takes a long time for a novelty to sink into the public mind."

**Designed for Convenience**  
The position of the hands of a clock is one which has been selected for the reason that it furnishes the greatest facility to meet the requirement for painting the longer name above the hands and the shorter word below.

The minute hand has been varied in position from 17 to 25 minutes after 8. Sometimes the longer name requires to be written in a semi-circle above the hands. There have been stories connected with the death of Lincoln, that the position of the hands is commemorative of the hour of the death but this is not true.

**Not Really Profanity**  
It is perfectly correct when you say that "damn" got into bad company and took some of the color of "jama." But what is the origin of the word? "Damn" is not an intensive adjective meaning "very most," as you assume, but is an offspring of the Shakespearean word "dearn, tern" which signified "terrible," originally "darkened, soiled." A cognate verb is "tarnish" (to soil).—New York Herald Tribune.

**Tracing Use of Gas**  
Natural gas was used in a practical way by the Chinese shortly after the opening of the Christian era, for such purposes as the evaporation of salt from brine. It is said that certain houses in Peking were heated—if not lighted—with the gas.

In Europe the first use of gas for commercial purposes dates back to the experiments made by Murdoch, who lighted his home with it in 1792, and to the work carried to a more practical conclusion by Winsor. In the United States the first gas plant was established in Baltimore in 1816, which was followed by one in Boston in 1823 and one in New York in 1825.

## Hard to Get French to Leave Homeland

Vigorous attempts continue to be made by the colonial ministry to encourage French emigration to the colonies. But in spite of colonial expositions and a deluge of literature and motion pictures descriptive of life in those parts of the world where France has territorial possessions, few French people have been induced to leave their beloved homeland. The attachment of the French to their soil is, indeed, well known. They prefer making a mediocre living in their own country to prospects of wealth abroad. And not only is the average Frenchman loath to leave his country, but seldom does he abandon his native town or village.

There are peasants whose families have been on the same farms or in the same districts for hundreds of years. A French writer has started investigating how long certain peasant families have been in the same place and has found some interesting examples. Thus in the village of Jannet, in Burgundy, a farmer named Saclier has authentic records showing that the first Saclier began to till the soil of the farm in 1672 and it has been in his family ever since.

Following is a summary of the points in which pure breeds excel:  
Based on utility alone, pure bred live stock has an earning power from a third to one-half greater than scrub stock. Pure breeds excel other stock in: Superiority and uniformity in conformation and type, greater sale value, early maturity and economy in the conversion of feed into meat, milk, wool and work.

Surplus pure breeds are salable at satisfactory prices in a majority of cases.  
The progeny of pure bred sires has practically a 50 per cent greater sale value than the progeny of sires not pure bred.

Better breeding, combined with proper and adequate feed, practically prevents runty live stock, of which the average farm has about 7 per cent.

Well-bred beef cattle, sheep and swine yield from 5 to 10 per cent more meat than inferior animals of the same live weight, and the meat is of better quality.

Profitable Use of Feed.  
Improved live stock makes about 40 per cent more profitable use of feed than common stock. Pure breeds excel grades, and grades excel scrubs.

The use of pure bred sires leads to the ownership and use of fully sired males as many pure bred female sires.

The foregoing brief conclusions are based on thorough analyses of large numbers of reports. The movement for better live stock which the department is conducting, in co-operation with the various states, has resulted in a gradually increasing recognition of the many points in which well-bred animals are superior to ordinary live stock. The study and control of animal breeding are among the most important and practical means of making live stock enterprises more profitable to farmers and also of improving the quality of meats.

**Barley Is Superior for Fattening Farm Stock**  
Barley is unsurpassed as a nurse crop for clovers and alfalfa; it is a better feed than oats for fattening hogs, sheep and cattle; and since it is one of the best substitutes for corn, its early maturing quality will make this grain doubly valuable in a short-corn summer.

The early maturing quality of barley gives it a distinct advantage over oats. This is especially true during the present corn shortage. The grain can be threshed about the same time as wheat, eliminating two threshings and making available a midsummer grain feed.

Barley is decidedly superior to hays and alfalfa because it shades the ground less, and, by its early maturity, leaves more moisture in the ground for the young clover.

Chiefly because of its lower percentage of hulls, barley is a better feed than oats for fattening hogs, sheep and cattle. Barley contains more carbohydrates than either wheat or oats, has less fat, and contains only one-third as much crude fiber as oats.

**Football on the Roof**  
Within a stone's throw of that cathedral dome the preservation of which is now the business of the whole world, there is a sports ground on which cricket and football have been played regularly for the last 50 years.

You might search for this a long time without finding it—it is on the roof of St. Paul's choir house. There, on almost any day in the week, you may find half-a-dozen youngsters in football shorts or flannels exercising in a wire-netted cage which is about the length of a cricket pitch.

When the choir house was built it was realized that it was necessary for the boys to have some place where they could play games, and, this being impossible in the crowded city streets, a sports ground was laid out on the roof.—London TH-Bits.

## Pure Bred Live Stock in Favor

### Experience of Owners Who Are in Position to Make Comparison.

(Prepared by the United States Department of Agriculture.)  
A report just issued by the United States Department of Agriculture on the progress of the better stock campaign for the improvement of domestic animals states briefly why pure bred animals excel other kinds. The information is based on the average experience of hundreds of stock owners who have been in a position to make comparisons. It thus points to the results which other farmers who are considering the improvement of their live stock may expect from pure bred sires and also from the combined use of pure bred sires and pure bred dams.

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