

BUTTERFLY RANCH STRANGEST FARM IN THE WORLD

Lady Naturalist and Her Queer
Business

INCUBATORS FOR CATERPILLARS

There are plenty of sheep farms and poultry farms and cattle ranches in the world, but there is only one butterfly ranch, and that is in the State of Maine, in the United States. It is conducted by a woman, and is growing in size and prosperity every month.

The butterfly ranch is on quite a large scale, and is international in its operations. The farmer is a keen nature-lover who originally kept butterflies and moths for her own interest. Then, finding that there were many schools and other educational institutions, as well as private nature-lovers, all over America who wished for butterflies and moths that they were unable to obtain in their own districts, the woman thought of the idea of starting a butterfly and moth ranch where these creatures could be reared in the same way as sheep and cattle.

Hunting for Cocoons

It began in quite a small way, and at first the farmer used to go out into the woods and hunt for the cocoons from which the butterflies and moths emerge. But, finding as time went on that the supply obtained in this way was far short of the demand, she began to keep breeding-cages, and conducted the business on the same lines as a poultry farm that she ran.

The eggs, laid by butterflies and moths collected first of all in America and then obtained from different parts of the world, were carefully preserved, and in due time hatched out, the caterpillars being fed on the plants on which they lived in their native haunts.

The hatching-boxes used are made on the farm, and are about two feet long by a foot wide and a foot high. The top and sides are of wire netting, and the bottom is covered with moss and earth or sand, according to the nature of the caterpillar that is to be hatched out. A door in the top of the box, or incubator, enables the eggs or cocoons to be placed inside without disturbing those already there, and the caterpillars that may have hatched out can be easily removed.

Training the Caterpillars

To conduct such a ranch as this is by no means a simple task, and it is only after long experience that the business has been brought to a state of perfection and made a financial success.

One great difficulty is the obtaining of sufficient supplies of the food plants of the various creatures that are hatched from the eggs. Then it is not always easy to get the butterflies and moths to lay their eggs in suitable positions where they can be properly hatched out.

But the greatest difficulty is that of inducing a caterpillar to remain on the bark or other substance natural to it, when it is about to change into a cocoon. The difficulty has, however, been surmounted, and that is the great trade secret of the butterfly ranch.

The butterflies and moths are either sold alive or mounted for school and college collections and for museums all over the United States. Quite a big business is growing up on this strange farm in connection with the importation of rare butterflies and moths from all over the world.

TASTELESS MEDICINE Good News for Boys and Girls

The many boys and girls who have to take cod-liver oil will be interested to hear of a new invention by which the oil is turned into a tasteless white powder.

The powder has the same value as a tonic, and it can be mixed with any kind of food and so be completely disguised.

BIG BEN SEEN FROM THE SUN

What the Railway Porters
Thought of Relativity

LORD HALDANE EXPLAINS EINSTEIN'S THEORY

Viscount Haldane lectured the other day in London on Einstein's theory of relativity, and explained that time and space were determined by the velocity of light.

He used a very simple and telling illustration to show what relativity means. If he were looking at Big Ben, he declared, he might see that between the hours of eight and nine the hour hand had moved, say, two inches. But suppose he were observing Big Ben, not from London, but from the sun with a tremendous telescope, what would he see?

The earth was moving round the sun at the rate of 70,000 miles an hour, and he would observe that the hour hand had moved, not two inches, but 70,000 miles plus two inches. That would be very perplexing unless he remembered that while the observer on the earth was at rest the observer in the sun was moving in relation to him at a huge velocity.

The Passenger in the Express

As a passenger stepped across a railway carriage to reach his bag in a train passing through a station, a porter on the platform might notice that it took him about two seconds to go a yard. "But," the porter might reason, "he is going in an express travelling at sixty miles an hour, and therefore he is moving at the rate of sixty miles an hour plus a yard."

Another porter in the sun would say "Ho! That porter said the passenger was going at sixty miles an hour plus a yard. But he was going past me at sixty miles an hour plus a yard plus 70,000 miles."

Then another porter in the Milky Way would say, "That ignorant porter in the sun thought 70,000 miles an hour would cover it. Why, the solar system is going at least 70,000 miles an hour past the point at which I am in the Milky Way."

There was no end to put to the limit of space, added Lord Haldane, for there might be velocity beyond velocity, and all were relative to the observer. The theory of relativity made people critical in the use of their faculties and delivered them from assuming that there was only one way of comprehending things.

WIRELESS ON A LONELY ISLAND

Tristan da Cunha Learns the
News

Ever since it was taken possession of by Britain in 1817 the tiny island of Tristan da Cunha, in the South Atlantic Ocean, has been dependent on passing ships for the news of the world.

It is about 1500 miles from the Cape of Good Hope and a good deal farther than that from Cape Horn.

Now the population of about a hundred will get news every day, and will know as quickly about important events in all quarters of the globe as if they lived in one of the great capitals. They have been presented by the people of Cape Town with a wireless set to keep them in touch with ships crossing the South Atlantic and also with the mainland of South Africa.

Thus the little speck in the vast expanse of sea which served as a watching-station upon St. Helena when Napoleon was a captive there, and where half a dozen British soldiers and whalers started a colony after the garrison had been withdrawn in 1821, will no longer be cut off as it has been. Wireless has abolished its isolation. See *World Map*

AFLOAT ON A SEAPLANE

Grim Adventure of an
Excursion Party

SHIPS THAT PASSED IN THE NIGHT

Could any plight be more pitiful than that of castaways on a wrecked seaplane, tossed by the waves, wet through, weak with exhaustion, who see a ship pass so near that they can read her name but cannot succeed in attracting the attention of anyone on board?

That was the misfortune of six Americans, three men and three women, who were making a trip from Miami, in Florida, to one of the British West Indian Islands, and who fell into the sea through the breaking of the propeller of their machine.

Miami is a fashionable seaside resort for rich people, a place where tropical flowers and fruits flourish and summer reigns all the year round. The passengers were wealthy visitors. They were all washed off the wrecked seaplane, one by one, after clinging to it for more than twenty-four hours.

Their troubles began when they flew into a storm. The violence of the wind buffeted the machine so fiercely that the propeller snapped. For a day and a night after they fell into the sea they kept the seaplane afloat by pumping out the water incessantly. Then a huge wave overturned it. They all managed, however, to keep hold of it.

But after another day and night, having seen nine ships pass without noticing their signals, they were too exhausted to maintain their hold. When at last an oil-tank ship sighted the wrecked flying-boat, only the pilot was clinging to it, and he was in delirium. His rescue came only just in time.

THE HUNGRY OCTOPUS Toilers of the Sea Lose Their Living

So many octopuses and devil-fish infest the sea off the coast of Finistère, in Brittany, that the French fishermen have lost their livelihood.

Not only do these noxious creatures eat and frighten away the fish—they break the fishing-nets and sometimes endanger the lives of the fishermen. Twenty-three years ago, when there was a similar plague of them, the captain of a smack that had been driven on the rocks was seized by the powerful tentacles of a huge octopus and crushed to death.

The French Government have sent experts to Finistère to see whether anything can be done to help the unfortunate inshore fishers. What brings the octopuses in such large numbers in certain years is not known.

GARDEN 2500 YEARS OLD Oasis in a Wilderness of Streets

In a crowded part of the City of London there is one little spot where vegetables and fruit are grown with excellent results, a spot that has never in London's long history been built over, that has never had pipes laid underneath it, and that, as far as records tell, has been a garden for at least 2500 years.

The gardener still occasionally digs up pieces of Roman pottery and brick and relics of an even earlier age.

All round the garden the ground has been dug up over and over again for sewers and gas-pipes and electricity cables to be put down, but the garden itself has never been disturbed. On every side tall buildings hem it in, yet it has always managed to escape the builder.

Down the court in which the garden lies, Nevill's Court, Fetter Lane, people often pause just to see the spring blossoms or the flowering currant bushes or the creeper turning red in autumn.

It is a little oasis of pleasantness amid the great city's bustle and grime.

POWER FOR NOTHING

NATURE TO THE AID OF
FACTORIES

Goods that Come Down by
Gravitation

SAVING MONEY AND WORK

Most of the great natural forces have long been harnessed and made to work for man, especially in connection with the transport of goods.

It is strange, however, that the simplest force of all and the easiest and cheapest to use, the very first force men ever knew of—gravitation—is only now being used on a big scale for transport purposes in industry.

In every other form of transport, when the track is laid and the vehicles prepared, an expensive engine or generating plant is necessary to make the vehicles move on the track. In using gravitation, however, when the track is laid—and a comparatively inexpensive track is all that is needed—no costly engine or plant is required. Gravitation is ready and waiting to do the work, and does not have to be produced like electricity and gas and compressed air and hydraulic power.

Gravitation Railways

Of course gravitation can only be used for transporting from higher levels to lower, but it is being used in this way on an increasing scale everywhere today.

For many years there have been, in a few places, inclined railways up the slope of a hill or the face of a cliff, in which ascending and descending cars on parallel tracks are connected by cable in such a way that when gravitation pulls one car down this assists in drawing the other car up.

Now, however, gravity conveyors are to be found in thousands in factories and other industrial centres all over Britain and America. Factories are almost invariably built in several storeys owing to the high cost of land, and many of the processes of manufacture have to be carried on on the upper floors.

Sliding Down a Spiral Shoot

In properly-organised factories the work is so arranged that the raw material is carried at once by lifts to the top floor, and the earliest operations go on there. Then, by a spiral gravity conveyor, the goods are sent down to the next floor for further treatment, after which, by another conveyor, they go, perhaps, to the next floor, where they are finished and packed ready for dispatch. They are then sent down to the railway-siding or wharf by an inclined roller runway, another form of gravity conveyor.

Inside the factory the gravity conveyor is usually built in the form of a spiral shoot, so as to occupy a minimum of space. A smooth inclined plane of polished metal or wood is arranged round a central axis, and sacks or boxes or other articles are simply placed at the top of the spiral way and given a push, when they slide to the bottom.

From the Factory to the Wharf

Inclined roller runways to carry goods from the factory to the wharf or railway-siding are more elaborate. They are built to the required dimensions, starting from the exit in the upper part of the factory and following a gradually descending course for half a mile or more.

In order to facilitate the passage of the boxes or other goods the whole length of the runway is fitted with smooth steel rollers on ball bearings, and the least pressure or touch will revolve these rollers. Side rollers at the bends prevent the packages halting if they slip to the margins of the runway.

At one very large bottling factory in London three gravity conveyors were installed, with the result that forty people were freed for other work, the output was doubled, and the breakages enormously decreased. Over £1000 a year was saved in wages alone, and yet these conveyors cost only £500.