

Marvels of Everyday Science

Competent Scientists Apply Their Skill to Problems of Agriculture, Houskeeping, Schools, Business and Governmental Activities.

A DOOR fastened with the ordinary door chain, which is often relied on as an additional protection against thieves, is easily picked by the skillful use of a big gimlet and a piece of stout wire. A hole is bored through the door immediately above the chain, the wire, properly bent, is inserted and the button at the end of the chain is moved in the slot by twisting the wire like a key. If the slotted casting is put on obliquely, at an angle of about 45 degrees, so that the chain must be not only slid back but raised in order to get it out of the slot, it cannot so readily be tampered with.

Fish Frozen by New Method.

A novel way to freeze fish for shipment has been invented in Denmark, which consists of dipping the fish in fresh water and then thrusting it into a vessel containing refrigerated brine. The fresh-water film around the fish congeals instantly, preventing the access of the salt from the brine. So quickly does this method work that a live codfish 18 inches long was frozen hard enough to be sawn in 15 minutes.

Towerless Windmill Tireless Worker.

A novel windmill manufactured in Portland, Ore., is supported by a tubular column, instead of the usual tower. The fans are arranged in two sections, four in each, and are of galvanized iron, concave, and so adjusted that they quickly receive the full propelling force of the wind, while on the return they are shielded behind a movable screen of canvas. The shield is kept in the correct position by the tail



vane, moving about as the wind shifts. Ball bearings are used on all wheels. The steel tubular column is kept in rigidly upright position by guy cables attached to the top of the column, trussed and anchored, and by a secondary set of cables guyed beneath the revolving wheel. Steel spikes set into the column form steps by which the machinery is reached for lubrication and repair.

Remarkable Tunnel Under Mississippi.

The city of St. Louis is safeguarding its water supply by a tunnel blasted out of solid limestone, 64 feet beneath the Mississippi river. When this new intake tunnel is completed it will be 2,766 feet long, 516 feet extending beneath the land and 2,250 feet under the river. The tunnel is tubular, 8 feet in diameter, and will be lined with concrete when finished. Three shifts work consecutively, and dynamite is exploded three times a day. A new intake tower with a modern arrangement for the inflow of water, is provided, and the menace from slush ice will be reduced to a minimum.

Cactus Plant New Source of Eosin.

A fruit-bearing cactus, known as the

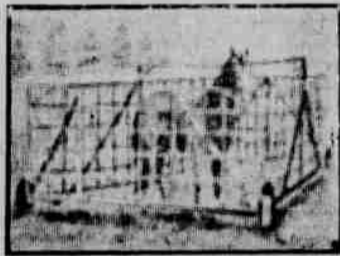
pitahaya, growing in Lower California, has been found to contain valuable resin in its bark. The plant grows wild, is from 6 to 12 feet in height and bears a fruit that is very sweet and palatable. The resin is found only in mature plants which have died naturally and remained some time in the sun. The resin is dark in color, with a smooth surface and hard texture. When heated it is very adhesive and could be used to advantage in the manufacture of varnishes, electric insulators, and the like.

Effect of Wireless Waves on Birds.

Observations made in sections of the world where there are many wireless waves indicate that birds are disturbed in a singular way by the wireless waves. It is stated that gulls are apparently the principal sufferers, but that also large numbers of doves are in some way prevented from finding their way home when there are wireless stations in the line of flight. This strange phenomenon is attributed to some effect of the ether waves not yet understood.

Pasture Fence on Wheels.

A portable pasture fence, made out of the framework of set pieces of fire-works, is the interesting solution offered by an Illinois farmer to the problem of caring for a spirited horse which runs itself out in a large meadow. The little pasture is 16 by 20 feet and the fence is mounted on wheels. One



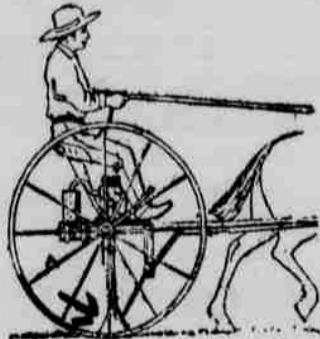
man can move it easily. The horse seems quite contented, and when one piece is grazed sufficiently, the fence is moved to a fresh piece.

Wireless Message to Arctic Explorer.

Through Canadian government channels a wireless message was sent to Donald B. MacMillan and his fellow explorers at Etah, Greenland, from the American Museum of Natural History. It was a "cheer-up" message of Christmas greeting, and while no response was received or expected, it is believed the message reached its destination. Doctor MacMillan's party is equipped with wireless apparatus, although it is not able to send messages over the 1,600 miles which separate it from New York.

Gathering Plant Destroying Insects.

Mr. Farmer! You can now gather up the bugs and worms that infest your fields by an improved process. Reed C. Bartlett of Maupaca, Wis., has patented a machine to which you hitch your horse and drive about the infested



The Arrow Points to the Hood Through Which the Insects Are Drawn.

territory. On the shafts is a crossbar which supports a small engine, preferably of the internal combustion type. This engine is provided with a shaft which extends through a fan casing. At the end of the shaft is a suction apparatus, and the suction caused by the pumping of the engine draws the vermin to their doom. Alongside the engine is a drawer which is arranged to hold the insects which have been caught. The machine is driven over the field under cultivation in such a manner that the growing plants pass

Health and Sanitation

SUGAR is a highly concentrated food, representing the principal food elements of bread, rice, potatoes and, in fact, of all grains. It represents the starch of these foods, and starch is a very necessary food material.

Soldiers have been able to endure long marches on the ready fuel supplied by sugar, but regardless of this fact sugar, like all other concentrated foods, should not be used as a constant article of diet, except in very limited quantities.

One of the important reasons for avoiding sugar is that when it is present in a meal in any appreciable amount, it checks the secretions of the digestive juices in the stomach and thus reduces the amount of all the digestive fluids, from the stomach down. This means that there is going to be an interference with the digestion of the meal. If you eat a considerable amount of sugar with a meal containing, for instance, meat, you prevent the secretion of sufficient digestive fluid to digest the meat; hence the meat will decompose and poison you. When sugar is present in the stomach alone, no digestive fluid whatever is secreted, so when you eat candy between meals it is not digested.

Another reason for avoiding sugar is that it ferments very easily, and in the process of fermentation it becomes more of a poison than a food. Furthermore, as the sugar ferments it sets up the same process in other foods, and thus can change a meal from food to poison.

Sugar is frequently the cause, direct or indirect, of many of our digestive disturbances. Sugar is an irritant to the mucous membranes of both the stomach and the bowels, and much more irritating are the substances formed as the undigested sugar ferments in the bowels. In this way sugar may cause directly catarrh of the stomach and intestines, and indirectly it may cause constipation, biliousness, and the "sluggish liver." Nervousness, rheumatism, catarrh, too much flesh and too little flesh are some of the disorders that may be caused by eating sugar in considerable amounts.

SCREEN up your home to keep out disease-bearing marauders.

Keep articles of food covered in your pantry, kitchen and dining room so that if an occasional fly runs the gauntlet and gets in, it will not befoul the food you eat.

Watch your garbage can and see that it doesn't become a fly magnet. Garbage cans are ideal breeding places.

Watch the stables. Manure should not be left lying around because it is the best of breeding places for typhoid and infantile paralysis flies.

Keep flies out of the sick room. They may bring complications or carry disease to others.

See that the deadly fly doesn't get near the baby. Infant mortality traceable to flies is heavy. They are liable

through openings in a conical-shaped hood to which the arrow in the picture is pointing. When the engine is put in operation a strong suction is created and the insects which may be knocked off by the hood in its passage over the plants are drawn up the shaft, from which they are discharged through the gooseneck into the perforated cylinder and then into the drawer for destruction.

Street-Railway Transfers Counted by Weighing.

In many street-railway offices transfers are now counted by the simple and rapid method of weighing. All three transfers in the two batches is thus the main pan of the scales. In place of the usual weight, a pan containing a given number of transfers, usually 25, is slid along the bar for securing a balance, the relative weight of the transfers in the two batches is thus determined, and from this the number of transfers in the batch being weighed is secured.

to give the little one cholera infantum and dysentery.

If your neighbors are not cleanly and are inclined to harbor flies, speak to them about it; or notify the Health Officer.

Do not buy your foods where flies are permitted to thrive.

Do not allow fruits and confections to become exposed.

Eternal vigilance is the price of ridance from this dangerous pest.

The fly season is now hard upon us. An ounce of prevention is worth a pound of cure.

HERE are a few hints to impress on school-children:

Keep your faces and hands clean; at no time put your fingers in your mouth unless you have just washed them.

Never touch pencil points nor pens to your tongue, for you don't know whose mouth they were in before.

Insist upon fresh air at all times; stuffy rooms are a menace to health, by breeding germs and affecting the respiratory system. They stunt growth and stifle study.

Fresh air contributes in a large degree to a healthy body; if the body is healthy and strong it is more capable of resisting disease.

Avoid the boy or girl who has a "little sore throat," for fear it is diphtheria.

The best germ destroyer is sunshine; the teacher should not shut it out.

The mind is brighter and learning is easier, if you have an abundance of fresh air.

It lies within the province of you school children to act as instructors to your parents on sanitary matters. The prevention of unnecessary sickness can be effectively accomplished.

The first lesson should be: How to keep well.

Protect the health of the school child first, last and all the time.

212,000 Acres of Land Made Usable.

Three hundred and thirty-two sections, or 212,000 acres, under the old Yakima high-line survey are restored to entry by an order received by the North Yakima land office. The restoration does not include any of the lands under the Northern Pacific high-line nor any lands for about half a mile above the Northern Pacific survey. This is taken to mean the government does not expect construction of the old high-line, but does expect the Northern Pacific project to be constructed. The latter includes 174,000 acres above the Sunnyside canal in the Yakima and Columbia river valleys.

The land restored is open to settlement after May 20, and for entry on June 19. It is subject to nine preference rights.

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