

## SCIENTIFIC AND SANITARY.

A COMPANY has recently been formed in Hamburg for the purpose of putting into practical working shape a novel plan for the transportation of passengers and freight in pneumatic tubes. The line consists of a pneumatic tube large enough to take a car 40 inches in diameter and about 6½ feet long. This car is divided into three compartments, each of which will accommodate a passenger. Each compartment is to contain an apparatus filled with compressed air, so that passengers can have an ample supply of pure air as long as they remain boxed up. This car is to shoot through the tube at a high rate of speed, but with a gentle sliding motion. One of the foreign papers, in referring to this railroad, remarks: "Travellers will be allowed a limited amount of baggage, but smoking will be strictly prohibited." An experimental line is to be built on this principle between Hamburg and Buchen, a distance of about fifteen miles, which the cars are expected to traverse in eleven minutes.

DURING the nine years and six months preceding December, 1884, there had occurred in Japan, according to statements published in the *Illustrated American*, five hundred and fifty-three earthquakes, averaging one earthquake for every six days and six hours. Professor Milne was able to make the average even greater than this. He could trace an average of an earthquake per day in Nagasaki, in the extreme south of the Japanese Archipelago. Probably the official statistics were compiled from the returns of officials from all over the country, in which case only those shocks which caused loss of life or damage to property would be included. If this hypothesis be correct, we should have an average of more than one earthquake per week, which was so violent that it caused injuries to life or property sufficiently serious to attract the attention of the local authorities, and, in their judgment, to require a report to the central government. Earthquakes being so common, people scarcely notice them unless they be extraordinarily severe ones. For instance, Miss Bird, in her "Unbeaten Tracks," thus summarily dismisses two: "While we were crossing the court there were two shocks of earthquake; all the golden wind-bells which fringe the roofs rang softly, and a number of priests ran into the temple and beat various kinds of drums for the space of half an hour." As every one knows, Japan is the very hearth of earthquakes; in 1854 more than sixty thousand people lost their lives in consequence of one of these great terrestrial catastrophes, and it has been calculated that from ten to twelve earthquakes, each lasting several seconds, occur every year, besides numerous others of too light a nature to be worthy of remark.—*Science*.

# "German Syrup"

**A Cough and Croup Medicine.** For children a medicine should be absolutely reliable. A mother must be able to pin her faith to it as to her Bible. It must contain nothing violent, uncertain, or dangerous. It must be standard in material and manufacture. It must be plain and simple to administer; easy and pleasant to take. The child must like it. It must be prompt in action, giving immediate relief, as children's troubles come quick, grow fast, and end fatally or otherwise in a very short time. It must not only relieve quick but bring them around quick, as children chafe and fret and spoil their constitutions under long confinement. It must do its work in moderate doses. A large quantity of medicine in a child is not desirable. It must not interfere with the child's spirits, appetite or general health. These things suit old as well as young folks, and make Boschee's German Syrup the favorite family medicine.

"ATHLETIC lung" is a medical term used to designate the abnormal development of lung possessed by some athletes. The condition is produced by those forms of exercise that call for the constant use of the lungs at their highest power. The result is an enormous development of lung capacity. Such men, upon giving up their active athletics and taking to sedentary pursuits, are peculiarly subject to pulmonary complaints. The over-developed lung is only used in part, and the unused cells easily fall prey to disease when once an athletic lung has been restored to health. The wise physician forbids any violent athletics on the part of the patient, for a second attack is likely to be followed by collapse. The term athletic heart is applied to a similar condition of the heart produced by like causes.—*New York Sun*.

A NEW dynamo regulator for constant current machines has just been patented by Mr. Royal E. Ball, and the device is being attached to the new Ball dynamos now being manufactured. The device consists of a disc of magnetic metal working in a cavity left in the yoke between the magnets, the disc being mounted on the shaft, where it is provided with ball bearings, so that there is little friction to speak of. Attached to the disc is the yoke carrying the brushes, which are held in the required position by the action on the disc of the magnetism of the field magnets. A number of grooves are cut in the disc to remove a portion of the metal, so that as the magnetism of the fields increase, the thicker parts of the disc are drawn more nearly into the centre of the field. The lack of equilibrium in the disc is the only device used to revolve the disc and carry the brushes into the region of the highest potential on the commutator. As the current of the machine increases, the increased magnetism of the field attracts the disc and moves the brushes on the commutator, thus cutting down the current to the required amount. The Ball dynamo possesses such good practical qualities as show it to be a very efficient machine; and the convenience with which it can be handled by itself, or when coupled with dynamos of a different make, have gained for this machine considerable praise from those who have used it for lighting purposes. The only particular objection that we have ever heard offered to the machine was that it was not automatic in its regulation, although it can be perfectly regulated by movement of the brushes. Now that the new regulator is being applied to all machines built, the last lingering objection to this dynamo will have been overcome.—*Practical Electricity*.

THE very latest safe is a globe within a globe, locked and unlocked by a combination, the turning of a small lever and the working of a large crank. The Boatmen's Bank has two of these. Cashier W. H. Thomson selected them after examining everything else, and he is satisfied that they have really got burglar, mob and fire-proof safes and vaults. The safes each weigh eighteen tons, and are made of chilled steel, or of some material known only to the manufacturer and inventor. When locked this globe looks like a screw door contrivance. It is anything but that, however. First, there are two combinations. Then a little lever is turned, which acts with it, pressing a spring into the portions of the lock operated by the combinations, just as you would place the ends of three fingers together and press them apart by inserting a finger of the other hand between them. Then there is a large crank which must be turned to make all these parts work together. Any one of these operations may be gone through with separately and to the letter, but they will not budge the door. Fully unlocked, the inside globe is swung on a pivot, turning to different compartments, including one in which the lock works are placed. In this is clearly seen the mechanism which might have been thought of in the days when the watch-dog was safer than the safe, but which was not then even dreamed of. Then the globe is turned around to the different compartments, showing a most surprising amount of space. In one compartment, when seen by the writer, there was about \$1,250,000 in currency, largely \$5 and \$10 bills, and there was room for twenty times as much. And yet that was but one compartment.—*St. Louis Globe-Democrat*.

Minard's Liniment Cures Garget in Cows.

FATHERS HAGEN AND FARGIS, astronomers connected with the Georgetown, D. C., Observatory, have just published a paper entitled "The Photochronograph and its Application to Star Transits." The aim of these gentlemen has been to secure an instrument that would photograph the transit of a star across the meridian. A reproduction of the transit of Sirius, as photographed, is given as an illustration of the work performed. In brief, the instrument these gentlemen have contrived consists of an electro-magnetic shutter, or "occluding bar," which is secured to the eye-end of the transit instrument. The apparatus is so formed that the current pressing through a break circuit clock moves the occluding bar every second in such a way that the image of the star is for the instant allowed to form on the photographic plate behind this bar. The impression left by the star in transit is a row of dots, which are afterwards developed in the usual way. These dots are referred to the collimation axis of the telescope by means of a glass reticule plate, ruled with one verticle line. This plate is permanently fixed in the tube, directly in front of the sensitized surface, and touching it. After the star transit is over, the light from a lantern is allowed for a few seconds to fall upon the photographic plate, which gives an impression of this reference line. The row of dots which have just been photographed can not be "fogged" by this light, as they are shielded behind the occluding bar. After the plates are developed they are measured by the aid of a micrometer.

PLACE a guard on your lips, but in a pen-holder place one of Esterbrook's smooth writing pens.

THE right way to cure catarrh is to eradicate the poisonous taint which causes the disease, by taking Hood's Sarsaparilla.

A NOVEL lamp for light-houses is a French invention. The regulation is exceedingly sensitive, being made by a beam of light refracted from the arc on a thermal regulator, by means of a special lens placed in the focal plane.

IF YOUR HOUSE IS ON FIRE you put water on the burning timbers, not on the smoke. And if you have catarrh you should attack the disease in the blood, not in your nose. Remove the impure cause, and the local effect subsides. To do this, take Hood's Sarsaparilla, the great blood purifier, which radically and permanently cures catarrh. It also strengthens the nerves. Be sure to get only Hood's Sarsaparilla.

ISAAC NEWTON is said to have carried in his ring a magnet weighing but three grains, which could raise 746 grains, or 250 times its own weight. Sir John Leslie's famous 3½-grain magnet had a carrying power of 1,560 grains.

DR. T. A. SLOCUM'S

OXYGENIZED EMULSION OF PURE COD LIVER OIL. If you have a cold—Use it. For sale by all druggists. 35 cents per bottle.

Office of United States and Pacific Express Co.'s, Detroit, Mich.

NATIONAL SHOE REST CO.,

DEAR SIRS,—The large number of Shoe-Rests being sent out by you through this office is conclusive evidence of its popularity. It, doubtless, is the best thing of its kind now before the public, and it affords me pleasure to see that your efforts are being rewarded. Yours truly,

JNO. MCFALL,  
Agent.

See advertisement in another column.

C. C. RICHARDS & Co.

Gents.—We consider MINARD'S LINIMENT the best in the market and cheerfully recommend its use.

J. H. HARRIS, M.D.,  
Bellevue Hospital.  
F. U. ANDERSON, M.D.,  
L.R.C.S., Edinburgh.  
M.R.C.S., England.  
H. D. WILSON, M.D.,  
Uni. of Penn.

AMONG the many applications of electric welding is that for welding broken teeth in band saws, thus saving the cost and labour of re-setting the saws.

## If You Wish

To overcome that extreme Tired Feeling, or to build up your appetite and purify your blood, take

### Hood's Sarsaparilla

Possessing the best known vegetable tonic and alternative properties, it builds up in a perfectly natural way all the weakened parts, purifies and promotes healthy circulation of the blood, and makes you feel real hungry.

For the Blood.

"Toronto, April 18, 1891.

"Having tried Hood's Sarsaparilla I wish to state that I have found it excellent. I have used about 4 bottles and have proved the virtue of it for the blood and appetite. I have found no equal to it and cheerfully recommend it to others." F. LOACH, Engineer for W. H. Banfield, No. 80 Wellington St. West, Toronto.

Believes it Unsurpassed.

"Toronto, April 17, 1891.

"From my own experience and from the experience of others to whom I have recommended Hood's Sarsaparilla, I have proved to be one of the best blood purifiers and Spring medicines extant. I believe

## Hood's Sarsaparilla

to be unsurpassed by any other remedy on the market." D. L. JONES, 345 College Street, Toronto.

CANADIAN PACIFIC RY.

## CHRISTMAS

### AND NEW YEAR'S

WILL ISSUE TO

## STUDENTS and TEACHERS

Round Trip Tickets at FARE AND A THIRD, good going December 9th to 31st, 1891, and to return up to January 31st, 1892.

### GENERAL PUBLIC

Round Trip Tickets at FARE AND A THIRD on December 24th and 25th, and December 31st and January 1st, 1892, inclusive, good to return until January 4th, 1892, and at

### SINGLE FARE

On December 24th and 25th, good to return up to December 26th, and on December 31st, and January 1st, good to return until January 2nd, 1892.

MAKE A

## Christmas Present! "Brown's Perfection Shoe Rest."

Holds Brush, Dauber, Blacking and Ladies' Dressing. A perfect rest for the foot while polishing the shoe. "Always ready and out of the way."

For Homes, Offices, Stores, Banks, etc.

Description.—This Shoe-Rest is made of solid cast-iron, weighs 12 lbs., and is beautifully finished. It screws to any wall or door-case and swings entirely out of way when not in use. No dirt, and unnecessary to touch blacking while using it.

LADIES, GENTLEMEN AND CHILDREN USE IT.

Warren St. Savings Bank, Peabody, Mass.

Gents.—The Shoe-Rest purchased of you recently just fills the bill: It is neat and tasty, takes up but little room and answers its purpose admirably. It is the most complete blacking arrangement I have ever seen. Yours truly, A. H. MERRILL, Treasurer.



Price by Express, \$2.50. Customs paid. Sent, neatly packed, on receipt of price, address—

NATIONAL SHOE REST CO., DETROIT, MICH.

Dealers write for circulars and prices. Salesmen Wanted.

Minard's Liniment Lumberman's Friend.