

The Weekly Ontario

Thursday, February 19, 1914

THE SOLID EARTH

It has become known more recently that the Poles move in irregular paths about mean positions, around which they circulate in a period of about fourteen months. The period which this movement would have if the earth were an absolutely rigid body is well-known to be about ten months; one reason why the actual periodic movement, with a fourteen months' period, remained so long undiscovered was that observers sought in their records for traces of a ten months' period. The lengthening of the period from ten months to fourteen is due to the yielding of the earth.

The rigidity of the earth on the whole is great. It is impossible to fit all the observations by treating the earth as a body of one definite rigidity throughout. Being heterogeneous as regards density it may be expected to be so in regard to rigidity as well. It is perhaps not very surprising that it should be possible to fit all the observations by the assumption of a core of greater density enclosed in a crust of smaller density, provided the core be stiffer than the crust.

It is interesting to note that, if the crust be taken to be about 1,000 miles thick and to have the average density of surface rock, whilst the core is taken to have the density of iron, the average rigidity of the core, computed on the hypothesis of incompressibility, must be nearly three times that of steel, whilst the average rigidity of the crust, computed on the same hypothesis, may be much less than that of steel and, indeed, less than that of most hard rocks.

The inference that the greater part of the body of the earth must be solid, and very rigid has been confirmed in a remarkable way by the results of seismological investigations; indeed, the perhaps unexpected conclusion that the inner parts must be more rigid than the outer appears to be required as part of the interpretation of seismic records. The systematic recording by suitable instruments of seismic disturbances transmitted to great distances has been practised for a relatively short time, but the results that have been obtained by means of such records have already proved to be of the highest value for geophysics.

When a great earthquake takes place it affects seismographs all over the world; the records always conform to one type, a series of minute tremors being followed by a series of much larger oscillations which subside gradually. When the distinction between the preliminary tremors and large waves was first noticed, it was supposed by some writers that they were to be classed respectively as longitudinal and transverse waves, in accordance with the well-known physical principle that waves transmitted through an elastic solid body are of two types—waves of compression or rarefaction, characterised by movement transverse to the direction of propagation.

As the records accumulated and the theory of elasticity was improved, it was seen that this simple classification could not be maintained. On the one hand it was found that the preliminary tremors arrived at distant places at such times as to indicate direct transmission through the body of the earth with a nearly constant velocity, whilst the larger waves appeared to be transmitted over the surface of the earth with a smaller nearly constant velocity. Further, it was found that both the preliminary tremors and the large waves were composite.

Concurrently with the accumulation of seismic records and the classification of the types of movement which they disclose, there has been a considerable development of the physico-mathematical theory by means of which an account of such movements can be rendered. The first step was the discovery by Lord Rayleigh of a third type of waves. A disturbance set up in a solid body spreads out in a composite wave, which gradually resolves itself into two waves, one of compression, the other of distortion, with a peculiar type of motion between the two.

The general result that the earth as a whole is a very rigid body, not a fluid body coated over with a thin solid crust, is so well supported by the observations of the fortnightly tide, by the experiments with horizontal pendulums, by the period of the variations of latitude and by the interpretation of seismic records, that it should by now, concludes Prof. Love, be regarded as firmly established.

GROWING FURS TO ORDER.

We no longer have to depend on Nature's uncertain chances and the skill of the hunter and trapper for the finest furs. Better pelts than ever came out of the wilderness are now being produced on farms where some of the more valuable fur-bearing animals are being successfully bred in captivity. It is hoped that the methods of breeding will some day reach a point where furs of a particular fineness or with

any desired marking can be grown to suit the special wishes of each purchaser.

Fur farming was begun as a result of the singular success of the ostrich farmer, and the blue fox was the first animal to be scientifically bred in this way. The results surprised everybody, finer skins being put on the market from the captive animals than had ever been obtained from the wild ones.

There is a curious reason for this. The fur of the blue fox, which is the trade name for Arctic fox, reaches perfection in the winter time, when it is the longest. But the wild animal often very inconsiderately spoils his coat by basking in the midday sun. Not that the sun hurts the fur, but the warmth of the animal's body melts the ice, which speedily freezes again and encloses the tips of the longest hairs, so that when the animal rises these are plucked out and left behind. When kept in the enclosures provided for them on the fur farms, however, the animals do not lose their valuable long hairs.

Attempts are now being made to breed skunk, mink and sable in the same way. Scientists are earnestly in hope that the effort will be successful, for otherwise all three of these animals are doomed to early extinction.

The skunk, as everybody knows, has the power of dispersing a fluid that has a particularly vile odor, and, is possessed of a singular pertinacity, it is ejected with great force and precision from two large glands placed at the base of the tail. This power insures for its owner respectful treatment, both from man and beast. It made skunk farming a very uncertain joy, till some genius hit on the happy idea of removing the glands from the young animals. The skunks are in no wise the worse for the deprivation.

If the experiments with skunk, mink and sable prove successful, breeders plan to add the chincilla and the egret to the list of the fur-bearing animals that can be bred in captivity; but the prospects of success with these are very small indeed.

ABRAHAM LINCOLN—A LEGACY TO YOUTH

Time is a wonderful reviser of human judgments. Once Alexander held the world's imagination as the greatest of the great. What is he now? An almost forgotten name in dusty school books; an egotist who fed his vanity on human blood.

Cæsar, Hannibal, Napoleon in their time loomed large, but to-day our interest in them is only curious—we wonder how such gluttons for the lust of conquest managed so long to hypnotize the millions they butchered or oppressed.

As the fame of these selfish warriors fades, new luster adds to the memory of that commander-in-chief, who battled in earth's greatest war, not to subjugate his opponents, but to make men free.

So many inspirations come out of his career that we are embarrassed in making a choice for use on this, another anniversary of his natal day. But in what Lincoln means to the boys of America we may, perhaps, best find our theme.

Young men, do you realize how far ahead of Lincoln you are in advantages? The poorest among you is a prince in chances compared with him. He raised himself almost incredibly by will power—what are you doing with your more abounding opportunities?

There was no vanity, no bombast, no shirking in his make up. From task to task he made his way quietly, patiently, growing all the while—every day a new education. He did not seek applause or shun understanding, but with feet on earth and heart close to the heart beats of his fellow-men he yet kept his aim high and his spirits soaring.

It is hard to understand the enrichment of a human soul. The mind does not easily grasp this communion with the infinite. But one quality in Lincoln all can see—he thought hard he thought straight.

Are you doing that, Young America; are you trying to get the core of the problems about you?

What Lincoln might have been or done had he been born rich is hard to imagine. He seems big souled enough to have come through even that handicap safely. But the great thing about him is that he was of the 95 per cent, had their point of view, fought for them, suffered for them and is now enshrined in their hearts for all time—America's most convincing proof that service, sacrifice, not selfishness, pays best.

That is the lesson, young men, which Abraham Lincoln left with you.

—Wichita Beacon.

What is called the "multiple shop" in England seems to be playing the same part there that the departmental store is playing here. The term covers a string of shops or stores, spread over a number of centers, and under one ownership. Two firms, Eastman's and Nelson's have over 300 shops each. Three other firms have from 500 to 800 shops each. One of these

big firms, besides its string of shops in England has 14 in Paris. These multiple shops cover all lines of food, clothing, drugs, etc. There are seven distinct trades in which sixteen firms, with a capital of at least £11,000,000, own over 61,000 shops in the United Kingdom. These are but a small part of the total number existent, and they are increasing yearly, not merely in big towns but in every country town which affords scope. The competition is making the lot of the small tradesmen, infinitely harder and less remunerative. Old businesses are either closed down or bought up, especially in the small towns. Thus there has been removed, lessened, or weakened the one class hitherto capable of rendering an eager to render public service. In small towns local affairs suffer from the difficulty of securing persons to serve on public bodies through the decay of the tradesmen. The manager of the multiple shop "cares for none of these things"—is, concerned only with his "returns."

There have been several references of late to an invention perfected by an Italian engineer by means of which he claims to be able to explode a magazine at a distance of miles and without contact. The rays are apparently, transmitted in much the same way as the waves sent forth by the wireless telephone or telegraph. When they strike an explosive they either cause a chemical change or an effect like that of a percussion cap. In any case, the explosive is discharged. If what is claimed for the new invention is based on fact a fortress or a warship can be blown up by a silent agent operated from miles distant. If this is true, modern warfare is at an end, for it entirely depends on the use of explosives.

As an incident of the construction of the Panama canal, the village of Venta Cruz has been submerged by the artificially created Gatun Lake. There were less than sixty native huts and one stone church in the place at the time of its destruction, but when England and Spain began their struggle for maritime supremacy Venta Cruz was one of the most important of the Spanish possessions. When Sir Francis Drake raided the place in 1573, the bank of the Chagres was lined with warehouses and there were handsome stone houses, adorned with carvings, for the governor and king's officers. The place was then on the highway over which was drawn the treasures of Peru for the enrichment of Spain. The old stone church, which still stood when the remains of the village were engulfed the other day, dated back to that period. The building was of stone, measuring 63 feet by 25, and contained some curious carvings and three ancient bells, which perhaps sounded the alarm when Morgan or Drake attacked the port.

That alcohol is death to protoplasm and therefore an effective disinfectant has long been known. According to recent experiments conducted by Alfred Beyer and reported in the Zeitschrift für Hygiene, alcohol reaches its maximum value as a disinfectant at a concentration of 70 per cent. Below that concentration many bacteria survive, and absolute alcohol actually "preserves" the organism, although the reason for this

Beyer tried the effect of a number of other substances in combination with alcohol, such as chloroform, ether, acetone, carbon bisulfid, glycerine, benzol, etc.; but none of these improved the antiseptic properties, of 70 per cent. alcohol. Eau de Cologne, on the other hand, is considerably more effective than the alcohol. This is no doubt due to the volatile oils present in the cologne. This substance as a disinfectant is also reported to improve with age. A small addition of tincture of iodine also augments the antiseptic properties of alcohol. This fact has been known for some time, and the use of tincture of iodine for producing local asepis, as in minor surgical operations, has increased greatly.

What will probably be the greatest step toward safeguarding the lives of coal miners since Sir Humphrey Davy invented his safety lamp has, says the New York Independent, recently been stalled in South Yorkshire colliery in the form of a wireless telephone connecting the works in the levels of the mine with the fixed central station at the foot of the shaft.

The wireless telephone is the invention of a German, Reinecke, and is in use in some German collieries. Each instrument is connected by wires with a piece of metal buried in the ground, or with iron rails or water pipes. Conversation at two points a thousand yards apart, with the use of only twenty yards of wire, has been successfully carried on.

The system also admits of the use of portable instruments weighing about twenty pounds each, by means of which it is impossible to communicate to fixed stations from any part of the mine where the men are working. All that is necessary is for the operator to attach the two wires of the instrument to any metallic substance at hand and embed it in the earth. It is evident that in case of a cave in on any of the

levels, the men supplied with this instrument could keep in continuous touch with the rescuers.

It is curious to hear the Col. Hon. Sam Hughes berating the war office or some other of the many Imperial legislatures by which Canada is governed, because it had decreed against Canadian interest in so small a matter as the use of the Ross Rifles at Bisley. Where irritation is so near the surface, how is the Imperial relation which involves sacrifice and subjection to endure? It is plain that these arrogant Imperial legislatures must be overhauled. Col. Hughes was justly ripping mad because in the Washington and Berlin War Offices he was received kindly and told all about the British weapons, and in London they would tell him nothing.

Thinking Imperially, which the good Duke recommends to our boys may, like the Buddhist meditation, be an exalting exercise, but acting imperially is a different matter.

It is encouraging to see so many international social functions being held in American and Canadian cities at which prominent men from both countries meet together in goodfellowship and to hear addresses on questions of common interest. Its tendency must be toward international peace, closer friendship and better understanding between the people of both countries. These thoughts came to us while reading in Cobourg papers of the cordial receptions given to Mr. Frank M. Field, K. C., of that town, President of the Ontario Bar Association, by the New York State Bar Association at Hotel Astor in New York City Jan. 31 and at several other public functions during his stay in Gotham. When Americans and Canadians come together they find that there is not so much difference in them after all.

Mexico consists of 27 confederated states, and the total area is 763,000 square miles. The country has a coast line on the Atlantic of 1,600 miles and on the Pacific of 4,200 miles or a total of about 6,000. In minerals it leads all the countries of the world, and in the agricultural way produces almost everything that is grown anywhere, its varying altitudes giving it all climates. Its worst product is its people, who are mostly Indians or part Indians and not a very high order of Indians, either. As a people they are incapable of self-government, and what is to be done with them is one of the problems that is up to the civilized nations of the world to solve.

We borrow from the New York Press the following instructive history of a cabbage head.

"The head is grown by a small farmer in Connecticut, who gets a cent and a half for it. It first goes to the commission merchant, who lives on Riverside Drive, pays \$2,000 a year for his apartment, keeps an automobile and spends \$7,000 a year. Next the cabbage is sent to the wholesaler, who lives on West End avenue and in an \$1,800 a year apartment, keeps an automobile, and spends \$6,000 a year. Thence the cabbage goes to the jobber, who lives on upper Broadway, keeps an automobile, and spends \$5,000 a year. From him the cabbage travels to the retailer, who lives in a \$700 apartment on a side street, has a corner store for which he pays \$250 a month rent, keeps two delivery wagons at a cost of \$140 a month, and spends \$2,500 a year on his living. Finally the cabbage head gets to Mr. Ultimate Consumer, who lives in a \$40 a month tenement, rides in the trolley or subway, spends \$11 he can make or a little more, to live and pays for that head a cabbage—the sum of 13 cents."

Puzzle—Find the cabbage head?

The crab claw dance is the latest. It sounds attractive, doesn't it? It ought to draw.

Lord Decies refuses to say anything about the tango and it is to be expected. His wife is with him.

SOUND THE LOUD TIMBREL.

Sound the loud timbrel o'er Egypt's dark sea! Jehovah has triumphed—his people are free, Sing for the pride of the tyrant is broken. His chariots and horsemen, all splendid and brave,

How vain was their boasting!—the lord hath but spoken, And chariots and horsemen are sunk in the wave. Sound the loud timbrel o'er Egypt's dark sea! Jehovah hath triumphed—his people are free.

Praise to the conqueror, praise to the Lord His word was our arrow, his breath was our sword. Who shall return to tell Egypt the story Of those who set forth in the hour of her pride? For the Lord hath looked out from his pillar of glory,

And all her brave thousands are dashed in the tide. Sound the loud timbrel o'er Egypt's dark sea! Jehovah hath triumphed—his people are free.

READY FOR OPENING

Today Sees Reassembling of Provincial Legislatures.

FORECAST OF THE SPEECH

Official Document Will Probably Make Mention of Workmen's Compensation, Provincial Redistribution, Highways Commission Plans and Will Review Past Year—Dr. Pyne to Lead.

TORONTO, Feb. 18.—With all the pomp and ceremony of custom and with the favor of military splendor the Lieutenant-Governor and attendants will sweep up the driveway of Queen's Park this afternoon, unwrapping a long official scroll and proceed in formal style to declare the third session of the thirteenth assembly of the Ontario Legislature convened for business.

Chief item on the program of the first day stands the speech from the throne which will be delivered by Sir John Gibson immediately following his escort to the Speaker's chair by Hon. Dr. Pyne. In the absence of Hon. J. J. Foy, the Minister of Education will perform this function by reason of seniority. A few formal greetings will then occur and the chamber will be emptied until tomorrow afternoon when the debate will begin.

Some very important legislation will be outlined in the official address. The matter of redistribution among the Ontario seats will be made the subject of a bill dealing with altered representation in the House rendered necessary by the recent census. The workmen's compensation bill will come down in due course and will probably provide one of the chief sources of debate. The address will make mention of the Government policy in connection with the road commission and perhaps hint at directions it may take.

The work of the Hydro-Electric Commission during the year will be dealt with and its progress commented upon. An intimation will be given that the Ontario Prison at Toronto will be moved to the new prison farm at Guelph early in the coming autumn and that a large section of the hospital for the insane at Whitby will also be ready for occupation at that time.

The notable business accomplished by the "Minutemen" and Northern Ontario Railway during the fiscal year and the receipt of the federal subsidy will constitute a paragraph and in the same connection the growth of the mineral industry of the north will be remarked. Other statements will refer to the return to Canada of the Governor-General and the Duchess of Connaught, the completion of the Ontario Division, the spread of industrial education and matters of general provincial interest.

Four new members will make their bow to the House for the first time. These are Colin Cameron, of North Grey; Geo. S. Henry, of East York; J. B. Fallis, of Peel, and John McFarlane, of East Middlesex.

ANTICIPATING DANGER.

Australia Will Not Stand Inert Until It Arrives.

LONDON, Feb. 18.—Speaking at a civic reception at Sydney yesterday, Sir Ian Hamilton declared that the nation's powers were arising now that it had got within the range of potential interference, and it might be that the next phase of great military struggles would be in the Pacific.

"Cast your eyes west, north-west and east," he said, "and you will see a ring of armed men and armed nations, with Australia sitting in the middle of that ring. It appears to me that some of those nations are looking in formidable manner at Australia. It is important that the people of Great Britain, South Africa, Canada and India should know and feel that in what I may call the hub of the Pacific, the people are not waiting until danger absolutely arrives, but are taking time by the forelock."

DENIES JINGOISM.

Navy Policy Only a Matter of Safety Says First Lord.

LONDON, Feb. 18.—Hon. Winston Churchill, First Lord of the Admiralty, has sent the following message to Tomman Mosley, Radical candidate for South Bucks, where the poll takes place to-day: "I am very glad to see the strong stand you are making for a sober and solid provision for our navy. We are working for the abatement of naval and military rivalries. Meanwhile what is necessary to maintain the safety of our country and of our empire will have to be done, and will be done and done thoroughly. Heartly wishes for your success."

Slayer of Fragon Dies. PARIS, Feb. 18.—Victor Pott, who shot and killed his son, Harry Fragon, the comedian, last December, after a trivial dispute, died in prison yesterday. He was to have been tried on a charge of homicide. Pott was 84 years of age, and, as there are no relatives living, far as known, and Pott left no will, a large part of Fragon's fortune, which is estimated at \$400,000, will go to the French Treasury.

Train Hit Radial Car.

FORT WILLIAM, Feb. 18.—One of the largest cars used on the Fort William to Port Arthur run was almost demolished yesterday morning when it collided with a G.T.P. switch engine. Luckily no passengers were in the car and the crew jumped clear.

WH Farm
wh
ki
wi
Yo
delicio
Chocol
Anothe
Both w
H
"IN
Enjoyable
Mr. Hor
From
A Japan
Pagoda"
Mr. W. B.
and drew
Mr. Hor
class were
Land of the
occupied t
of the Ori
The pres
lanterns,
music, and
shows in the
of the fall
leading int
bers were
Japanese
Rhoda
P. Allen
Violin S
"The Qu
Sharpe.
Fan Drill
Recitation
"The An
Browning"
"Some
guerite Br
"Down t
Miss Sharp
Internat
Address
Smart Br
Recitati
A Japan