

Institute of Electrical Engineers about a year ago a short paper on the "Universality of Mechanics," tersely showing how this theory is opposed to fundamental physical laws. Professor Sheldon, however, as a former president of the institute, had written a lengthy paper supporting, in a somewhat non-committal way, this theory. Mr. Richmond's finding on this question is as follows:—

"He who delves deeply in the field of scientific truths must, and does recognize in the highest sense that the Creator is an actuality. Accepting, therefore, the Creator as our Arbitrary Zero or starting point in the consideration of the Universe, only two main factors remain. These, respectively, are matter and changing position of matter, the latter being technically termed motion. As far as mortals are concerned, therefore, 'Everything is matter and motion.'

"We all understand that nothing in the universe remains still, and several of us understand that motion has many phases. But it is only a few who have any physical conception of molecular motion, which is one of the two main divisions of motion, the two being:—

"1st. The motion of a mass of matter from point to point. Instances of this class of motion are a moving train, a moving cannon ball and a planet moving in its orbit.

"2nd. The motion of change of position from the normal of the minute particles of which matter is composed. Instances of this class of motion are light, sound, heat, electricity and thought. This class of motion is generally termed molecular motion.

"Tyndal, the famous scientist, wrote elaborately on light and heat being modes of motion, and I, after considerable difficulty, managed to have the view that electricity is also a mode of motion published in the 'Electrical World,' of New York, about four years ago.

"So-called direct current is but a steady abnormal position, in the form of a steady strain of the molecules in a conductor; and so-called alternating current is but the alternating abnormal position, in the form of an alternating strain, of the molecules in a conductor, the alternations being from side to side of the normal position of the molecules and taking place rhythmically."

In regard to the theory of the electrical composition of matter, Mr. Richmond sums up by saying: "Electricity being a phase of motion, and motion being the changing position of matter, how can matter be composed of electricity, or, in other words, how can matter be composed of changing position of matter if matter is non-existent?"

### FOREST FIRES.

September, 1908, will be remembered in Eastern Canada for its forest fires. For weeks the smoke hung in the sky, a banner telling of the destruction of vast forest areas and valuable natural resources. Many lives were endangered and millions of dollars worth of timber destroyed. It is impossible to estimate the damage done, for not only were merchantable trees burnt, but the large areas of young shoots and trees—the timber wealth of the future—were wiped off the face of the great timber areas.

The demand is increasing, the supply diminishing. Almost every trade and industry, and certainly every large construction work will feel the effect of this great waste.

Every autumn this tragedy of the forest is enacted. We seem to gaze at it with awe and wonder, never thinking that it should be stopped—never planning to prevent it.

In Canada our forest wealth is a great source of Government revenue, and one wonders that our Governments give so little thought to forest preservation and spend such small amounts in developing forest areas.

'Tis true fire rangers are scattered here and there to prevent, if possible, the starting of forest fires. These

men may do conscientious work, but fires do start, and when once started they sweep across the country, there being no organized forces to fight them.

A chief is just as necessary in fighting forest fires as fighting fires in cities. A man in the field with knowledge of the country and with authority and men—men who know what may be expected of them and who know the bush.

Our forests should be protected by small armies of trained bush rangers, men under a chief who could be moved quickly from one section to another.

It might cost thousands, but it would save millions.

### THE HUDSON BAY ROUTE.

The announcement of the Hudson Bay Railway survey was made at such a time as would suggest "politics," and, if much of the criticism one reads of this undertaking is politically prompted, it will be hard to judge of the merits of the enterprise as a transportation route.

The West is looking for cheap transportation to tide water. Fort Churchill as a seaport is a possibility. The following table gives the distance in miles to Churchill, via The Pas, the present terminus of the C.N.R. Hudson Bay line:—

	Miles to Churchill.	Miles to Montreal.	Advantage of north route.
Winnipeg .....	945	1,422	477
Brandon .....	940	1,555	615
Regina .....	1,200	1,750	550
Medicine Hat .....	1,500	2,082	582
Calgary .....	1,682	2,262	580
Edmonton .....	1,129	2,247	1,118
Prince Albert .....	717	1,958	1,241

The line will be built by the Dominion Government, but will not be Government operated.

The success of the venture will depend on the possibilities of the sea route. Reports are being circulated that Hudson Straits can only be navigated for some three weeks in the year.

Government exploration parties and Mounted Police parties claim a much longer season.

The Government should be just as certain of the practicability of navigating Hudson Strait as to building to Fort Churchill. They will never enlarge the spout by running it into an ice-field.

### EDITORIAL NOTES.

The design of the new Quebec Bridge is now under consideration. It appears the question of location is settled. The question of height of the bridge is again up for discussion. Every effort should be made to secure a design that will be sufficiently high to permit of the largest steamers passing under it.

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The assurance now obtained of a good crop in the Canadian West is having its effect in various directions. Lumber dealers, heavy metal merchants, cement makers, hardware men, dealers in building materials, such as sand, lime, roofing and building paper, tell the same tale of hurried orders for their goods, which indicate confidence in the future. This is reassuring, since it concurs with intelligence from the United States of a like kind with a like basis. The revival of activity here indicated means much to factory proprietors and workers everywhere in Canada. For the wheels which have been silent for many months will again "go round," and extensions projected a year or more ago, but suspended because of the financial depression, may be expected to be gone on with. The greater liberality of bank credits, of which we learn, here and there, is also a welcome factor in a somewhat expanding trade.