

proposed work during the coming season will, we presume, be shortly made known, or at least such portions of them as have been decided on. Get to business, gentlemen. You have facilities and advantages such as few communities possess, and if you fail to use them as you ought, or to make them profitable to their full capacity, you have only yourselves to blame.

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## HISTORICAL DIARY.

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### AUGUST.

1st.... Trial of Louis Riel concluded; sentenced to be hanged September 18th.

2nd.... Fire on Toronto Esplanade=54 persons killed by an earthquake in Asiatic Russia=Tornado along the Atlantic coast.

4th.... Services held in Westminster Abbey in honor of the late General Grant=Russian prince, Alexander Gagarine, commits suicide.

5th.... Mr. Thomas White sworn in Canadian Minister of the Interior=Cholera on the increase in Spain; nearly 5000 new cases.

6th.... The Emperor William, of Germany, and Emperor Francis Joseph, of Austria, meet at Gastien.

8th.... Funeral of General Grant, in New York.

9th.... Ontario Press Association visits New York.

10th.... Blackflages, in China, massacre five missionaries and a large number of Christians=A G. T. R. passenger train plunges into the Welland canal, at Merriton, Ont; two lives lost.

11th.... Lord Houghton, the veteran philanthropist, dies=12 men suffocated by gas in a Pennsylvania coal mine.

12th.... Cholera still raging in Spain; thousands of new cases daily.

14th.... British parliament prorogued until Oct. 31st.

16.... Germany annexes the Caroline Islands, which are claimed by Spain.

18th.... Death of Sir Francis Hincks from small-pox, at Montreal=Poundmaker, sentenced to three years imprisonment in the penitentiary, asks that he may be hanged instead=A congress for the codification of international law meets at Hamburg.

19th.... Mr. Gladstone visits Norway.

21st.... Riot in Londonderry.

25th.... The Czar of Russia and the Emperor of Austria meet at Kremsier=One hundred pilgrims perish in a shipwreck in the Gulf of Aden=Terrible cyclone in the Southern states.

26th.... Steamer Francis Smith sticks fast on a rock near Port Arthur=General Middleton and Hon. A. P. Caron, Canadian Minister of Militia, knighted.

27th.... Mr. Thomas White elected M.P. for Cardwell, Ont.

28th.... Admiral Courbet buried at Paris = A \$250,000 fire in London, Eng.

29th.... Snow falls on Mt. Washington=Mr. Gladstone leaves Norway, in the yacht Sunbeam, for the Shetland Islands=The decoration of the Order of Saint Michael and Saint George conferred on Colonel Denison for his services in Egypt.

31st.... Cholera obtains a foothold in Italy.

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## LETTERS AND QUESTIONS.

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Editor TRIP HAMMER—

Will you please explain the term "Hydrostatic Paradox," and oblige  
INQUIRER.

Hydrostatics is that department of Natural Science which treats of the motions and pressure of fluids. The perfect mobility with which particles of a fluid slide upon each other without the slightest apparent friction gives them the peculiar mechanical properties considered in hydrostatics. The fundamental property of fluids is thus stated: "When pressure is exerted on any part of the surface of a liquid, that pressure is transmitted undiminished to all parts of the mass and in all directions." For instance, take a strong metal box, have two strong tubes of equal diameters securely fastened in the top of it, so that both communicate with the inside of box. Pour water through one tube until the box is full and it rises some distance in the tubes. Fit a piston into each tube so that it will work up and down, but not sufficiently loose to allow the water to pass. Have a plate secured to the upper end of each piston rod, and you have a hydrostatic balance. If the fittings are perfect and the weight of the pistons equal, they will balance each other if placed in position, and a pound weight on one will be balanced by a pound weight on the other, and so on the same as an ordinary counter scale. But supposing we similarly fix a third tube of equal size near one of the others and put a pound weight on each of the two pistons near together, how many pounds must we put on the other piston to balance them? Two? No. Only one. That is where the *paradox* comes in, and the peculiar principle mentioned above states why. If the area of each tube be one inch then a pound weight placed on one of the pistons exerts a pressure of one pound on every square inch of surface with which the water comes in contact, and consequently there would be an upward pressure of one pound on the piston of each of the other two tubes. Now it can readily be seen that if instead of two tubes having a sectional area of one inch each, we have one tube whose area is two square inches fitted with a piston the same as the others, the result will be the same; and whether the area of the larger piston be two, or two hundred, inches, one pound pressure downward on the small piston, will produce a pressure upward of one pound upon every square inch of surface on the larger one. Hence if the area of the small piston be one inch and that of the larger be a thousand inches, one pound pressure on the smaller piston will raise half a ton on the larger one.

LETTER EDITOR, TRIP HAMMER :

We have heard a great deal during the last two years, about the ravages of earthquakes in various sections of the globe, also about the eruptions and threatened eruptions of volcanoes. If the letter editor would give us one or two articles on the theories of earthquakes and volcanoes, they would no doubt be of general interest to all the readers of TRIP HAMMER.

M. H. E. RETLAW.

EDITOR TRIP HAMMER :

Suppose I receive a letter, the stamp of which has by chance not been defaced by the postmaster, would it be wrong for me to use the stamp a second time?  
S. M. D.