

Experimental Investigation of a New Force.

The following extracts are taken from an article contributed to the London Quarterly Journal of Science, by Wm. Crookes, F.R.S., &c. Coming from so high a source, and written by a man so long known as a scientist, whose reputation is too valuable to himself to be rashly risked, the statements made command attention.

"The meetings took place in the evening, in a large room lighted by gas. The apparatus prepared for the purpose of testing the movements of the accordeon, consisted of a cage formed of two wooden hoops, respectively 1 foot 10 inches and 2 feet diameter, connected together by 12 narrow laths, each 1 foot 10 inches long, so as to form a drum shaped frame, open at the top and bottom; round this 30 yards of insulated copper wire were wound in 24 rounds, each being rather less than an inch from its neighbor. These horizontal strands of wire were then netted together firmly with string, so as to form meshes rather less than 2 in. long by 1 in. high. The height of this cage was such that it would just slip under my dining table, but be too close to the top to allow of the hand being introduced into the interior, or to admit of a foot being pushed underneath it. In another room were two Grove's cells, wires being led from them into the dining room, for connection if desirable with the wire surrounding the cage.

The accordeon was a new one, having been purchased for these experiments at Whiston's, in Conduit street. Mr. Home had neither handled nor seen the instrument before the commencement of the test experiments.

In another part of the room an apparatus was fitted up for experimenting on the alteration of the weight of a body. It consisted of a mahogany board, 36 in. long by 24 in. wide and 1 in. thick. At each end a strip of mahogany 1 in. wide was screwed on, forming feet. One end of the board rested on a firm table, whilst the other end was supported by a spring balance hanging from a substantial tripod stand. The balance was fitted with a self-registering index, in such a manner that it would record the maximum weight indicated by the pointer. The apparatus was adjusted so that the mahogany board was horizontal, its flat resting flat on the support. In this position its weight was 3 lbs., as marked by the pointer of the balance.

Before Mr. Home entered the room, the apparatus had been arranged in position, and he had not even had the object of some of its experiments. He sat down, and, perhaps, he was waiting for some critical remarks which were likely to be made, that in the afternoon I called for Mr. Home at his apartments, and when there he suggested that as he had to change his dress, perhaps I should not object to continue our conversation in his bedroom. I am, therefore, enabled to state positively that no machinery, apparatus, or contrivance of any sort was secreted about his person.

The investigators present on the first occasion were an eminent physician, high in the ranks of the Royal Society, Dr. Huggins; a well known surgeon, Mr. E. W. Cox; my brother; and my chemical assistant.

Mr. Home sat in a low easy chair at the side of the table. Close in front, under the table, was the foreman, one of his legs being on each side of it. I sat close to him on his left, and another observer sat close on his right, the rest of the party being seated at convenient distances round the table.

For the greater part of the evening, particularly when anything of importance was going forward, the observers on each side of Mr. Home kept their feet restlessly on his feet, so as to be able to detect his least movement. The temperature of the room varied from 65 to 70 degrees F.

Mr. Home took the accordeon between the thumb and middle finger of one hand at the opposite end to the keys. Having previously opened the bass key myself, and the cage being drawn from under the table so as just to allow the accordeon to be passed in keys downwards, it was pushed back as close as Mr. Home's arm would permit, but without hiding his hand from those next to him. Very soon the accordeon was seen by those on each side to be waving about in a somewhat curious manner; then sounds came from it, and finally several notes were played in succession. Whilst this was going on, my assistant got under the table, and reported that the accordeon was expanding and contracting; at the same time it was seen that Mr. Home's hand held it was quite still, his other hand resting on the table.

Presently the accordeon was seen by those on either side of Mr. Home to move about, expanding and going round and round, the cage, and playing at the same time. Dr. Huggins now looked under the table, and said that Mr. Home's hand appeared quite still, while the accordeon was moving about emitting distinct sounds.

Mr. Home still holding the accordeon in the usual manner in the cage, his feet being held by those next him, and his other hand resting on the table, we heard distinct and separate notes sounded in succession, and then a simple air was played. As such a result could only have been produced by the various keys of the instrument being acted upon in harmonious succession, this was considered by those present to be a crucial experiment. But the second was still more striking, for Mr. Home then actually let go the accordeon, removed his hand quite out of the cage, and placed it in the hand of the person next to him, the instrument then continuing to play while no one was touching it.

I was now desirous of trying what would be the effect of passing the battery current round the insulated wire of the cage, and my assistant accordingly made the connection with the wires from the two Grove's cells. Mr. Home again held the instrument inside the cage as before, when it immediately sounded and moved about vigorously. But whether the electric current passing round the cage assisted the

manifestation of force inside, it is impossible to say.

The accordeon was now again taken without any visible touch from Mr. Home's hand, which he removed from it entirely; I had two of the others present not only seeing his released hand, but the accordeon also floating about with no visible support inside the cage. This was repeated a second time, after a short interval. Mr. Home presently re-inserted his hand in the cage and again took hold of the accordeon. It then commenced to play, at first chords and runs, and afterwards a well known sweet and plaintive melody, which it executed perfectly in a very beautiful manner. Whilst this was being played, I took hold of Mr. Home's arm, below the elbow, and gently slid my hand down it until I touched the top of the accordeon. He was not moving a muscle. His other hand was on the table, visible to all, and his feet were under the feet of those next him.

Having met with such striking results in the experiments with the accordeon in the cage, we turned to the balance apparatus already described. Mr. Home placed the tips of his fingers lightly on the extreme end of the mahogany board which was resting on the support, while Dr. Huggins and myself sat on each side of it, watching for any effect which might be produced. Almost immediately the pointer of the balance was seen to descend. After a few seconds it rose again. This movement was repeated several times, as if by successive waves of the psychic force. The end of the board was observed to vibrate slowly up and down during the time.

Mr. Home now of his own accord took a small hand bell and a little card match box, which happened to be near, and placed one under each hand, to satisfy us, as he said, that he was not producing the downward pressure. The very slow oscillation of the spring balance became more marked, and Dr. Huggins, on watching the index, said that he saw it descend to 6 lbs. The normal weight of the board as so suspended being 3 lbs., the additional downward pull was therefore 3 lbs. On looking immediately afterwards at the automatic register, we saw that the index had at one time descended as low as 9 lbs., showing a maximum pull of 6 lbs.

In order to see whether it was possible to produce much effect on the spring balance by pressure at the place where Mr. Home's fingers had been, I stepped upon the table and stood on my foot at the end of the board. Dr. Huggins, as he was observing the index of the balance, said that the whole weight of my body (140 lb.) so applied, only sank the index 1 lb. or 2 lbs. when I raked up and down. Mr. Home had been sitting in a low easy chair, and could not, then, there, had he tried his utmost, have exerted by material influence on the results. I feel strongly that his feet as well as his hands were closely watched by all in the room.

This experiment to me appears, if possible, more striking than the one with the accordeon. The board was arranged perfectly horizontally, and it was particularly noticed that Mr. Home's fingers were not at any time advanced more than 1 in. from the extreme end, as shown by a pencil mark, which, with Dr. Huggins's aid, I made at the time. Now the wooden foot being also 1 in. wide, and reaching to the table, it is evident that no amount of pressure exerted within this space of 1 in. could produce any action on the balance. Again, it is also evident that when the end furthest from Home sank, the board would turn on the further edge of this foot as on a fulcrum. The arrangement was consequently that of a seesaw, 36 in. in length, the fulcrum being 1 in. from one end; were he, therefore, to have exerted a downward pressure, it would have been in opposition to the force which was causing the other end of the board to move down.

The slight downward pressure shown by the balance when I stood on it, I board was owing probably to my foot extending beyond this fulcrum.

Regarding the cause of these phenomena, the nature of the force to which, to avoid periphrasis, I have ventured to give the name of "psychic," and the correlation existing between that and the other forces of Nature, it would be wrong to hazard the most vague hypothesis. Indeed, in inquiries connected so intimately with rare physiological and psychological conditions, it is the duty of the inquirer to abstain altogether from forming theories until he has accumulated a sufficient number of facts to form a substantial basis upon which to reason. In the presence of so strange phenomena as yet unexplored and unexplained, following each other in such rapid succession, I confess it is difficult to avoid clothing their record in language of a sensational character. But to be successful, an inquiry of this kind must be undertaken by the philosopher without prejudice and without sentiment. Romantic and superstitious fancies should be entirely banished, and the steps of his investigation should be guided by intellect as cold and passionless as the instrument he uses. Having once satisfied himself that he is on the track of a new truth, that single object should animate him to pursue it, without regarding whether the facts which occur before his eyes are "naturally possible or impossible."

GREAT BRITAIN.—The report that Chief Justice Cockburn has been appointed an arbitrator for Great Britain, under the Treaty of Washington, is confirmed. The drawing up of the case for the British Government has been entrusted to the Lord Chancellor, with Lord Tenterden and Professor Montague B. R. as assistants, and Sir Roundell Palmer will act as counsel for Great Britain before the Board of Arbitration.

The meeting in Hyde Park to day to protest against the suppression of the Phoenix Park meeting in Dublin on Sunday last was an immense affair. Twenty thousand people attended, and speeches were made from six different stands. Communist and American

flags and banners with the Irish harp and suitable mottoes were displayed. Among the speakers were Messrs. Bradlaugh, Odger and other well known radicals. The crowd was of a better class than usually assembles on such occasions. It was very quiet and orderly and made few demonstrations of sympathy with the speakers.

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The Standard.

SAINT ANDREWS, AUG. 16, 1871.

NEW HOTEL.—The voting to authorize the Town of St. Andrews to aid the "St. Andrews Hotel Company," took place on Thursday last in the Court House, and resulted in a large majority, to assess the Town \$5,000 for that purpose. We have been furnished with a correct statement of the vote, viz:—

93 years representing property	valued at	\$238,056 00
13 days	"	22,960 00

It is only fair to state that owing to the absence from Town of several property holders known to be favorable to assessment, the number of yeas is not so great as it otherwise would have been; but the vote is sufficiently large (nine to one) to show that the majority are in favor of the Hotel being erected. We may mention with reference to hotels—that the influx of visitors to St. John since the opening of the "Victoria Hotel" is so great, that the want of another hotel will soon be felt, as seriously as was the need of that first class establishment. A correspondent from the States writing to one of the leading Massachusetts journals, says:—"The new hotel is likely to give a new impetus to the prosperity of St. John. It gives character to the City and will enable it to monopolize provincial visitors, of whom there are now 1000 arriving in St. John weekly by the International steamers."

These statements apply with equal force to our own beautiful town, which is so universally and deservedly admired by all who visit it. Let us have the hotel ready for visitors early next summer. Nature has done all that is necessary, let us now apply art and skill.

St. George at this season of the year is one most picturesque and pleasant place in New Brunswick. The scenery from the mouth of the river to the town is of the most diversified and romantic description; on either side are well cultivated farms with neat cottages, forming a pleasing contrast with the rich green verdure of the meadows and fields, dotted here and there with grazing even to verge of the river. Some improvements are going on in the town. A H. Gillmore, Esq., is erecting a large and handsome dwelling which is rapidly approaching completion and is intended for his own residence; and there are other evidences of progress and thrift which are creditable to its hospitable inhabitants. The hotel conducted by Mr. Frisbie, gives general satisfaction to the travelling public. Its landlord is attentive, the rooms are plainly but neatly furnished and scrupulously clean. The table is abundantly supplied with all delicacies of the season, and those visiting the house, will leave it with pleasant recollections. During a short stay of a few hours the other day, we gleaned several items of local intelligence, which will be published in future issues.

ARRIVALS.—During the week the Hon. Dr. Tupper and family, Sir Francis Hinks and Lady Hinks, and Rev. C. P. Bliss, Sec. to Minister of Customs, arrived here.

SALE OF REAL ESTATE.—Mr. Williamson has purchased the large corner house and lots formerly owned by the late John Irwin, on Water St., and Mr. Mulligan the house and store owned by the late James McMaster.

We are happy to announce that the Hon. Mr. Tilley, is progressing favorably, although still confined to his room.

STEWART'S QUARTERLY for July fully sustains the high literary reputation it has heretofore enjoyed. As a provincial Magazine New Brunswickers have just reason to be proud of it. All the articles are original and from the pens of our ablest writers.

The "Carleton Sentinel" is glad that Mr. Tilley has declined the Governorship of British Columbia.

"Because he cannot well be spared just now, and this conclusion is not formed out of party or personal predilections. (Such men as he are wanted for New Brunswick, no matter to what party or side they belong. The whole country requires his continued services. Then we are glad because of the moral firmness and courage his decision attests to—not merely in enabling him to resist strong inducements, not the least of those being the evident satisfaction which the proposed appointment gave all classes in British Columbia— it shows that Mr. Tilley is prepared to maintain before his constituents and the country, whatever we or others may think, that his course has been directed by a conscientious desire for the good and advancement of the whole. That he is prepared and willing to meet at the end of the first five years of Confederation all the charges that may be brought against him, and give a full account of his stewardship in connection with that political change in bringing about which he was so active an instrument."

Then, again, it proves, and this to his personal friends is a great triumph, while to his opponents

it is an unanswerable argument, against those who stated at the beginning, and have not ceased to urge, that all the promoters of confederation desired was to advance their own personal ambitious views and gain place and power, does not apply in his case. While it is not fair to attribute to all those gentlemen who have found, through confederation, rest from political life, unworthy or more interested motives in their original support of the scheme, Mr. Tilley has conclusively acquitted himself of having been influenced thus far."

An American exchange says:—"The Prince of Wales has shown that his boldness is greater than his discretion by trying to defend his lordships from a charge of uselessness. The whole royal family is of no more use than the swindles of the New York City government ring."

How about President Grant's four father-in-law, six brothers-in-law, thirteen cousins, fifteen uncles? We Britishers know what we pay for, and what we get; our cousins are not so fortunate.

Cheap Postage in England.

New and still cheaper rates postage went into operation in England, August 1st. Letters and parcels of all sorts, closed or open, without any distinctions, are charged as follows:

Not exceeding 1 oz.	2 cents.
Above 1 oz. but not exceeding 2 oz. 3 "	
2 oz. " " " 4 "	
4 oz. " " " 6 "	
6 oz. " " " 8 "	
8 oz. " " " 10 "	
10 oz. " " " 12 "	

12 ounces is the limit of weight for letters. In the U. S. the rate for letter postage continues to be 3 cents for each half ounce, or six times an ounce, which is just three times higher than the new English rate for an ounce, and nine times more than the English rate for twelve ounces.

The Great Rice-Fields at the South.

A Southern correspondent of the "Syracuse Courier" writes of the rice lands:—"There is a belt of land stretching from Virginia down the coast to the Gulf of Mexico, and most of the distance it lies low, very little above the level of the ocean, and some of it is covered with water by every high tide. The greater portion of this land may properly be called swamp land—not altogether given up to the domain of the water, but always damp, and too wet for any grain except rice. It is not every swamp or wet piece of land that is fit for the cultivation of rice. The alluvial swamps lying along the banks of rivers, having a deep soil, composed of decayed vegetables, is best fitted for the purpose, but it must be so located that it can be overflowed at high tide, or it is useless for the purpose. The lands must also be protected from the salt water, and from the rapid currents occasioned by freshets."

South Carolina is the great rice State, more being cultivated than in all the United States beside. The rivers flowing down from the table land of the interior reach this low land, and force themselves to the sea, spreading and forming a broad deep channel. There is volume of water sufficient, so that the tide will cause it to set back for many miles. Along many of these ravines, the lands as level as the sea, and it can be flooded at pleasure. Gates are constructed through artificial embankments along the banks of the river, and when the tide is high the water is let in, and the land flooded and the gates closed. When it becomes necessary to draw the water off, the gates are opened at low tide. Some of these fields are very large and interesting when being prepared for a crop, and are very beautiful when the rice comes up through the water and shows its needle-like spears. These fields must have a secure embankment along the river, and must be thoroughly drained by artificial channels, so as to take the water entirely away when necessary. In large fields some of the channels have capacity enough to float a flat bottomed boat, which is used to convey the harvest to the place of storage.

The land is plowed in winter, and in the first warm days of spring is flooded. The preparation of the ground commences in March. The ground is made as mellow as a garden. The seed is sown in trenches about fifteen inches apart. It requires about three bushels of seed to an acre. The rice is tightly covered with the soil, and the water let in, to remain about a week, by which time the grain sprouts, when the water is drawn off; but when the grain is a few inches above the ground, it is again flooded for four or five days, and then drawn off, and the grain is then allowed to grow for four or five weeks, when it is cultivated and the ground thoroughly stirred; and then the water is let on, and it is flooded for a few days, and then gradually drawn down and again cultivated; and after the second cultivation the water is again let on to remain till the crop matures, which takes about two months, when the water is drawn off, and it is harvested very much as we harvest buckwheat. The crop in a favorable season is a profitable one. The grain is threshed and cleaned in a mill. It is frequently sent to market before the hulls are removed. There are extensive mills at Liverpool and New York for hulling the rice, and they enable the dealer to put it on the market fresh and white. There are mills at Savannah and Charleston, where the rice is hulled for the local market. The best hulling machines cost from \$15,000 to \$18,000, and have very intricate machinery. The rice, before being hulled is called paddy. The machines take off the hulls and assort the grain. After the hulls are removed, it is moved out on inclined screens, which are fine at first, and all the small and broken rice passes through, and then a little coarser, and the rice called "middling rice" drops through, and last the "Prince rice." The latter quality is passed

through another screen, which is called potash, and in that process is swept clean and bright. Rice is cultivated in all the warm countries of the world, and is used for food by more people than any other cereal except wheat. It is cultivated very extensively in the East Indies; and along the coast, where the lands are marshy, it is the only crop raised. It is a staple crop in Africa, the south of Europe, North and South America. Ceylon produces a large quantity in excess of consumption. There are several varieties, some of which grow on dry land, but the Carolina or water-rice, as it is called, is as fine as any in the world. It grows very rapidly, and is often six feet high. When it is sufficiently high to cover and hide the water, it presents a beautiful sight."

SUMMARY.

—The annual picnic of the Scotch Church Sabbath School is to take place to-morrow, weather favourable, in Col. Mowat's Grove. We wish them a pleasant time.

—A lecture on temperance is to be delivered to-morrow evening, in the Methodist Church, by Mr. Geo. Milo Dutcher, from the text from the United States. The lecture is to commence at eight o'clock; admission free.

—The New Hampshire Legislature compels the attendance at school of all children between the ages of eight and fourteen, for three months in the year.

—In the Carleton County Grammar School are taught English, French, Latin, Greek, Ancient and Modern History, Physical and Political Geography, Astronomy, the use of the Globes, Book-keeping, Arithmetic, Algebra, Geometry, Trigonometry, Plain, Spherical, and Analytical, Mensuration, Land Surveying, Civil Engineering, Navigation, Natural Philosophy, Chemistry, Physiology, Geology, Natural History, Music, drawing, and "Xc." What can the last mentioned be?

—The Paris correspondent of the St. John "Globe" says, that a doctor there examines his patients in "puns" a naturalist. Are those French puns?

—The "Scientific American" says that a "train recently ran 132 miles in two hours and fifty minutes on the Pennsylvania Railroad, recovering fifty minutes of lost time."

—A Calais paper says that two-thirds of the wealth of that city is to be inherited by young girls. What an attractive place one would suppose it to be for the young men of the neighbouring towns.

—The Philadelphia Baldwin Locomotive works, the largest in the world, employ 1800 men, and takes just that number one day to complete, set up, and make ready for service a locomotive.

—General Rodman, the inventor of the famous guns, bearing his name, is dead.

Ship News.

PORT OF ST. ANDREWS.

ARRIVED.

Aug 10, schr Olive Matilda, Simpson, Boston flour &c. D. Clark & others.

11—Sen Pilgroun, Agnew, Portland, tea &c., R. Ross.

Matilda, Simson, St Stephen, gen. cargo, CLEARED.

Aug 9, schr O'pray, Sprague, Boston, 2100 sleepers, Robinson & Glenn.

10—Albert, Maloney, St Stephen, ballast.

12—Sen Pilgroun, Agnew, Calais, ballast.

Jane, Clark, Boston, St Stephen, ballast.

14—Elizabeth D. Clark, Boston, 2450 sleepers, R. Ross.

Harriet, Sheehan, Boston, 2540 sleepers, J. Leighton.

Ether, Maloney, Boston, 2805 sleepers, Robinson & Glenn.

GOVERNMENT HOUSE, OTTAWA, Monday, 31st day of July, 1871.

His EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL.

ON the recommendation of the Minister of Customs, and under sanction of the Act 34th Vic. Cap. 6, intitled: "An Act respecting the Customs," His Excellency has been pleased to order, and it is hereby ordered, that, on and after the 1st day of September next, Muskeg and Quack, in the Province of New Brunswick, and the same are hereby constituted and erected into Out Ports of Entry, and it is further ordered that Muskeg be placed under the survey of the Port of St. John, and Quack under the survey of the Port of St. John, the northern limits of this port to be the line of demarcation between the Counties of St. John and Albert.

WM. R. LEE, Clerk Privy Council.

NOTICE.

Customs Department, Ottawa, 3rd August 1871.

NOTICE is hereby given that His Excellency the Governor General, by an Order in Council bearing date the 29th July last, and under the authority vested in him by the 3rd Section of the 24th Victoria, Cap. 10, has been pleased to order and direct that the following articles used as materials in Canadian manufactures, be transferred to the list of goods which may be imported into Canada, free of duty, viz:—"Canvas," for the manufacture of floor cloth, not less than 18 feet wide, and not pressed or calendered.

"Heavy Oil" or "Carbolic Oil," a product of coal tar, used in the manufacture of wood block pavement, and of wood for buildings, and railroad ties.

By Command, R. S. M. BOUCHETTE.