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**The young man's book of amusement**

**Halifax, 1848**

The Illuminated Cylinder

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the appearance is astonishingly different; instead of streams of fire, nothing is seen but one uniform luminous appearance, like a white cloud, or the *milky way* in a clear star-light night. It seldom reaches the whole length of the vessel, but generally appears only at the end of the wire, like a lucid ball.

If a small phial be inserted in the neck of a small receiver, so that the external surface of the glass be exposed to the vacuum, it will produce a very beautiful appearance. The phial must be coated on the inside, and while it is charging, at every spark taken from the conductor into the inside, a flash of light is seen to dart at the same time from every part of the external surface of the phial, so as quite to fill the receiver. Upon making the discharge, the light is seen to run in a much closer body, the whole coming out at once.

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#### *The Illuminated Cylinder.\**

Provide a glass cylinder, three feet long, and three inches in diameter; near the bottom of it fix a brass plate, and have another brass plate, so contrived that you may let it down the cylinder, and bring it as near the first plate as you desire. Let this cylin-

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\* To shew this and the other electrical experiments of a like nature, the room in which they are exhibited ought to be completely darkened; the illuminated water, eggs, &c. will then appear to great advantage;—the discharge even of the Leyden Phial will appear with greater brilliancy under such circumstances.

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der be exhausted and insulated, and when the upper part is electrified, the electric matter will pass from one plate to the other, when they are at the greatest distance from each other that the cylinder will admit. The brass plate at the bottom of the cylinder will also be as strongly electrified, as if it were connected by a wire to the prime conductor.

The electric matter, as it passes through this vacuum, presents a most brilliant spectacle, exhibiting sparkling flashes of fire the whole length of the tube, and of a bright silver hue, representing the most lively exhalations of the aurora borealis.

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#### *To Illuminate Water.*

Connect one end of a chain with the outside of a charged jar, and let the other end lie upon the table. Place the end of another piece of chain at the distance of about one quarter of an inch from the former; then set a decanter of water upon these separated ends, and on making the discharge, the water will be illuminated.

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#### *The Electrified Cotton.*

Take a small lock of cotton, extended in every direction as much as can conveniently be done, and by a linen thread about five or six inches long, or by a