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

**Halifax, 1848**

To produce beautiful Fire Works in miniature

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form of the worm of a still; let the other end of the worm be thrust through a cork. You then pour spring water into a phial or decanter, to which you add a small quantity of sugar of lead; thrust the zinc into the bottle, and with the cork at the end of the wire fasten it up. In a few days the tree will begin to grow, and produce a most beautiful effect.

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*To produce beautiful Fire Works in miniature.*

Put half a drachm of solid phosphorus into a large pint Florence flask; holding it slanting, that the phosphorus may not break the glass. Pour upon it a gill and a half of water, and place the whole over a tea-kettle lamp, or any common tin lamp, filled with spirit of wine. Light the wick, which should be almost half an inch from the flask; and as soon as the water is heated, streams of fire will issue from the water by starts, resembling sky-rockets; some particles will adhere to the sides of the glass, representing stars; and will frequently display brilliant rays. These appearances will continue at times till the water begins to simmer, when immediately a curious aurora borealis begins, and gradually ascends, till it collects to a pointed flame; when it has continued half a minute, blow out the flame of the lamp, and the point that was formed will rush down, forming beautiful illuminated clouds of fire, rolling over each other for some time, which, disappearing, a splendid hemisphere of stars presents itself: after waiting a

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minute or two, light the lamp again, and nearly the same phenomenon will be displayed as from the beginning. Let the repetition of lighting and blowing out the lamp be made for three or four times at least, that the stars may be increased. After the third or fourth time of blowing out the lamp, in a few minutes after the internal surface of the flask is dry, many of the stars will shoot with great splendour, from side to side, and some of them will fire off with brilliant rays; these appearances will continue several minutes. What remains in the flask will serve for the same experiment several times, and without adding any more water. Care should be taken, after the operation is over, to lay the flask and water in a cool secure place.

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*To procure Nitrous Oxide, or Laughing Gas.*

Take two or three ounces of nitrate of ammonia in crystals, and put it into a retort, then apply the heat of a lamp to the retort, taking care that the heat does not exceed 500 degrees. When the crystals begin to melt, the gas will be produced in considerable quantities. The gas may also be produced, though not so pure, by pouring nitric acid, diluted with fire, or six times its weight of water, on copper filings or small pieces of tin. The gas is given out till the acid begins to turn brown; the process must then be stopped.