# SCIENTIFIC NEWS, &c.

## *Experiment of the Invifible Girl.*

Defcription of the apparatus for the experiment of the Invifible Girl.

MONS. Charles, brother to the well known philofopher of that name, has for fome time exhibited in Leiceſter-ſquare an experiment called the Inviſible Girl, which ſeems to include ſome principle of acouſtics either newly diſcovered, or not hitherto known to the extent there diſplayed. In the middle of a large lofty room in an old houſe, where from the appearance of the wainſcot, the poſition of ſome glaſs caſes of natural hiſtory that occupy one ſide, and from other circumſtances, there does not appear to be any ſituation for acouſtic tubes or reflectors—is fixed a wooden railing about four feet high, and five feet wide, incloſing a ſquare ſpace. From the four corner poſts of this railing there riſe painted wires, or rods, to an eminence of ten or twelve feet, (the cieling being much loftier) and from the upper ends of theſe hangs, by ſtrings reſembling the lines uſed with curtains, a ſquare glazed box, having a mahogany bottom nearly on a level with the top of the railing, and in the middle of this box is ſuſpended an hemiſphere (or larger portion) of tin or pewter, out of which proceed horizontally four tin trumpets at right angles to each other, and about eighteen inches long. The diſk or hemiſphere is covered with a portion of a quickſilvered glaſs globe which completes the ſphere, and cloſes it imperfectly, ſo as not to prevent the inner aperture of one of the trumpets from being ſeen through the place of inſertion. This whole apparatus is ſo far detached from all ſurrounding objects, that it can be ſwung about as far as the railing will allow; that is to ſay, the box can be ſwung by its four ſtrings, and the globe and trumpets by the ſtring that ſuſtains them in the box. The globe may be about ten inches in diameter. In all theſe dimenſions, which I do not ſuppoſe to be material, I ſpeak from the recollection of ſome weeks ago.

Manner in which the voice iſſues from the apparatus.

In the exhibition, the Inviſible Girl is ſuppoſed or pretended to be included in the ſphere, and the converſation is held by ſpeaking into any one of the trumpets, and the reply comes out of them; that is to ſay, it is moſt clearly heard by applying the ear to one of their mouths. The voice is low, as if conveyed

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veyed from a diſtance through a tube, but it is very diſtinct. The lady converſes in ſeveral languages, ſings, deſcribes all that happens in the room, and diſplays a fund of lively wit and accompliſhment, that admirably qualify her to ſupport the character ſhe has undertaken.

Experiment of ſound conveyed to great diſtances by a thread.

I hope to meet my reader hereafter with a little more to ſay on the nature of this experiment. At preſent I can only offer the conjecture that the ſound is conveyed through the ſtrings, and to this I am led by another experiment of the celebrated Dr. Moyes. He ſhewed me, that if one end of a packthread, or even ſewing thread, be wrapped round the finger, and that finger be put into the ear (not forcibly) while the other ear is ſtopped, and at the ſame time an aſſiſtant wraps the other end of the ſtring round the handle of a tuning fork, and (the ſtring being then drawn rather tight) he cauſes the fork to ſound, too low to be heard by himſelf and the byſtanders, it will nevertheleſs be very audible to him who holds the other end of the ſtring. We tried it at an interval of fifty feet, and the Doctor has tried it at upwards of three hundred, without any ſenſible diminution of the effect. I wrapped the ſtring round my wriſt, and put my finger in my ear, and found the effect very nearly as ſtrong. If inſtead of the tuning fork one obſerver bites hold of the ſtring between his fore teeth, while the other applies it as before to his ear by means of his finger, the voice of the former may be tranſmitted; but it is more difficult to manage this experiment with ſucceſs than the other.

Converſation through a ſtring.

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*Aeroſtatic Experiments of* GARNERIN.

Revival of aeroſtation.

A new generation has ſprung up ſince the epoch at which Air Balloons conſtituted the object of aſtoniſhment and ſpeculative reſearch about twenty years ago. They who remember that buſy period as if it were yeſterday, muſt feel a little ſurprized at the viciſſitudes of human affairs, when they find how many of thoſe who are now intirely engaged in ſociety, were then ſcarcely in exiſtence; and how few have ſeen a balloon. The ſpectacle exhibited by Mr. Garnerin, though much leſs impreſſive than the experiments of his countrymen to whom this invention is due, in all their novelty and originality have nevertheleſs been received with much intereſt. The readers of our Journal will recollect him as the firſt adventurer whoſe intrepidity

Garnerin the firſt operator with a parachute.

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A

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## ARTICLE I.

*Description of a cheap and simple Apparatus or Blow-pipe, in which the Flame of Oil or Tallow is impelled by the Vapour of Alcohol. From a Correspondent.*

### To Mr. NICHOLSON.

SIR, *London, July* 9, 1802.

USEFUL as the *blow-pipe* is for the professed mineralogist and chemist, as well as for the amateur of the science, it is, however, liable to the inconvenience of requiring one hand of the operator to be employed; besides, that persons of weak lungs, or not well accustomed to its use, find it laborious, even when they attempt to manage it according to the directions given by Bergman and Engstrom; more especially, when a continued stream of air is required for some time. For this reason, some have recourse to a *bladder* filled with air, and force it out by pressing the bladder between the arm and their body; others use a small pair of *double bellows*, to be fixed upon the table: others again employ a receiver, or rather *gazometer*, in the form of Mr. Watt's hydraulic bellows. But all these means are not always ready at hand, or not easily portable to accom-

Inconveniences of the blow-pipe, and the substitutes commonly used.



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