

“ Sky being overclouded, all the Clouds over the
 “ Hemisphere, turned of a sudden to a deep blood-
 “ red Colour, for fifteen Minutes; then succeeded red
 “ Streamers for half an Hour.”

Tooting, Feb. 16,
 1749-50.

I am your, and the

Royal Society's,

most obedient Servant,

H. MILES.

XV. *A Letter from Mr. William Watson, F. R. S. to the Royal Society, declaring that he as well as many others have not been able to make Odours pass thro' Glafs by means of Electricity; and giving a particular Account of Professor Bosc at Wittemberg his Experiment of Beatification, or causing a Glory to appear round a Man's Head by Electricity.*

GENTLEMEN,

Read Mar. 1. 1749-50. **T**HE Inquiry into the Nature and Properties of Electricity has been, within these few Years, the Pursuit of many excellent and ingenious Persons; and most of its extraordinary Phænomena, which have been made to appear in one Place, have, with proper Attention to the requisite Circumstances, appeared in others: But there

there have happened two very remarkable Exceptions to this Rule. The first is, that the Odours of odoriferous Substances do not only pervade, from Friction, the Glasses which contain them, but that these Odours were carried along with the Current of Electricity into such non-electric Bodies as were destined to receive them, and manifested themselves in those Bodies by communicating to them their Smell, and other Properties. These, and other things yet more extraordinary, were said to have been performed by Mr. *Pivati* at *Venice*, and to have been repeated by Mr. *Winkler* at *Leipsick*; but, though no Care or Expence has been spared, either by Abbé *Nollet* at *Paris*, Mr. *Fallabert* at *Geneva*, Mr. *Bose* at *Wittemberg*, *Pere Garo* at *Turin*, and by myself at *London*, to bring about the same Effects, they have hitherto been unsuccessful. For which Reason the Truth of these Relations has been greatly questioned by many; as Mr. *Buccamare*, in a * Treatise since published, says, that Mr. *Pivati* confessed to those, who addressed themselves to him to see the Experiments, that more especially made with Balsam of *Peru*, that it never succeeded but once, and that he could never repeat it. I likewise received Yesterday a Letter from our worthy Brother Abbé *Nollet*, who is just returned to *Paris* from *Turin* and *Italy*. He says, that his first Care was to inquire into the Truth of those Wonders in Electricity, of which we have heard so much for almost three Years, and which have not succeeded either with himself or me: And he imagines the Royal Society would be glad to

* *Tentamen de vi Electric.* &c. p. 183.

know what they really were: For which Reason he has just now sent a Memoir to the Duke of *Richmond*, in which will be seen the most circumstantial Account he has been able to procure of them at *Turin*, at *Venice*, and at *Bologna*. For his own Part, he thinks that there has been a great deal of Prejudice, Credulity, and Exaggeration; to which may be added, very little Care and Caution in making these Experiments. He is now sorry he has lost so much time in attempting to make them; and thinks Mr. *Winckler* has been too hasty in asserting, that he had repeated these *Italian* Experiments: But why should he call them *Italian*, when the Nation he says will not allow the Appellation, and except three Persons, he finds there no Defender of what has been said to be done; and adds, that there is not a Philosopher of Repute there, who believes them any more than himself?

This Experiment then seems not to arrive at what we have been told; but, for further Information, we must wait till the Reception of *Abbé Nollet's* Memoir.

The other is, an Experiment called by Professor *Bose* at *Wittemburg*, the *Apotheosis* or Beatification. The making this Experiment, in the Manner mentioned by this Gentleman in his Writings, has been attained to by none. He says, if in electrifying you employ large Globes, and place a Man upon a large Cake of Pitch, by little and little a lambent Flame arises from the Pitch, and spreads itself around his Feet; from hence by Degrees it is propagated to his Knees, his Body, and at last to his Head: That then by continuing the Electrification the Man's Head is
fur-

surrounded by a Glory, such a one in some measure, as is represented by Painters in their ornamenting the Heads of Saints: That in this State if the electrified Man is touched by one that is not, the Pain felt by both is very severe, reaches from the Finger to the Shoulder, and remains a long time. Professor *Bose*, in another Part of his * Writings, says, That the Beatification indeed does not always succeed with him; that sometimes, when other Circumstances have been very favourable, a Man will be beatified by one Sphere in two Minutes; at other times, two or three Globes will not do it under six or eight Minutes; and even at sometimes after twenty Minutes, when five or six Globes were made use of, no Light has been visible: That under the same Circumstances, when one Person was capable of being beatified, another was not. This is a short Account of Professor *Bose's* Beatification, given in his Writings, in which, nevertheless, nothing of what he says essential to the Operation is omitted.

This Experiment, which was not only a desirable Thing to be seen, but as it seemed to communicate to non-electric Bodies a greater Quantity of Electricity than any other did, that of *Leyden* excepted, I was very desirous of repeating: But though I omitted no Trouble, and varied not the least Circumstance, that could any ways conduce thereto, I was disappointed. I tried the combined Force of many Globes, of different Machines, in the best Weather, and with different Persons, but no Radiation in the manner before-mentioned. When I underwent this Operation my;

* De Electricit. comment. novus, pag. xvi.

self, supported by solid Electrics *per se* of more than three Feet high, and as much distant from the Sides of the Room as possible to prevent the escaping of the electric Matter, I found in myself, as several others did, a tingling upon the Skin in my Head, and in many Parts of my Body such a Sensation as would be felt from a vast Number of Insects crawling upon our Bodies at the same time; but I constantly observed this Sensation to be greatest in those Parts of my Body which were nearest any Non-electric; but still no Light upon the Head, though to make the Eye more ready to observe it, this Experiment was made in the Dark for some Continuance. The Sensation of the Snaps in this State were very acute. If the Hand of a Bystander was brought near the Back of the Hand of the Person electrified, the Hairs thereupon sent forth a great Number of luminous Points; and if a Bunch of fine Lace Wire was placed upon his Head, you saw a great deal more of the same Appearance; but this was always most brilliant in those Parts nearest the Non-electric, and still more, when the Non-electric was brought to a proper Distance. But this was vastly short of that mentioned by Mr. *Bose*, not only in its Lustre, but as it never was general, hardly ever shewing itself in two Parts of the Body at the same time. This want of Success after many Trials, as I by no means doubted Mr. *Bose's* Veracity, induced me to conclude, that either some very essential Part of the Apparatus had been suppressed by the Author, or that the Air of *Germany*, being upon the Continent, was more dry, and more fit, than that of our Island. It was difficult indeed to allow this
last,

last, as the Experiment had failed here, after the long Continuance of a very dry Season. This want of Success occasioned many Persons here, well versed in these Matters, to conclude, that the Experiments in Electricity had been carried further in *Germany* than in *England*.

However, sometime after, I found that this Experiment, in the Manner before-mentioned, had been made no-where upon the Continent, *Wittemberg* excepted; and our worthy Brother Mr. *Fallabert* at *Geneva*, in his excellent * Treatise upon Electricity, says, That he had likewise attempted it; but instead of Beatification, he saw from the Hair of the Head of the Person electrified, especially from the back Part thereof, a great Number of luminous Points. These, he says, were likewise observable upon his Cloaths, which were made of a Mixture of Thread and Cotton, more especially upon their Borders. When the Person electrified changed his Situation upon the Pitch, upon which he stood, the Place he left appeared luminous. What this Gentleman mentions besides is very near alike to what I myself experienced, and what I have just now related. He says likewise, That he believes Mr. *Bose* had been the only Person, who had made the Beatification succeed.

A Person here however, that we should not even seem to be outdone by our Neighbours, exhibited to the Public the famous Experiment of *Beatification*, found out, as he says, by a *German* Professor. Whether he knew how this Experiment was said to be

* *Experiences sur l'Électricité.* p. 50.

done, or whether it was with him as with many of the Discoverers of the Longitude, and of the Quadrature of the Circle, I do not determine; but thus it is, that his Experiment has been exhibited as Mr. *Bose's* for two or three Years.

I am unwilling to be thought to detract from the Merit of this Experiment, which I think a very beautiful one; but I take upon me to say, that it differs as essentially from every Part of that, said to have been made by Professor *Bose*, as any two electrical Experiments soever.

In a Letter, I wrote the Beginning of last Year, to my Correspondent Mr. *Bose*, among other things, I acquainted him of my not being able to make the beatifying Experiment succeed; and that, as far as I had yet heard, nobody any-where had been able to do it, so that the Power of seeing this extraordinary Phænomenon was yet with himself alone. I desired of him further, that if any material Part of the Process had been omitted in his Writings, he would communicate it; for that some People here were not quite satisfied of its having ever been made. To this he was so obliging as to send an Answer nearly in the following Words, "As to my Beatification, " I am highly obliged to you for writing to me so " freely and candidly about it; and I will discover " to you my whole Artifice without any Retention, " though I concealed the same from all my Friends " and Correspondents: But, Sir, it is true, that I " have embellished a little my Beatification by my " Style and Expressions; but it is also true, that " the Basis of the Phænomenon is constant. I " found in our Armoury at *Leipzig*, a whole Suit
" of

“ of Armour, which was decked with many Bullions
 “ of Steel; some pointed like a Nail; others in
 “ Form like a Wedge; others pyramidal. In the
 “ dark, you well know, that not all, but very many,
 “ of the said Bullions will sparkle and glister with
 “ Tails like Comets: And it is clear, that when the
 “ Electricity is very vigorous, the Helmet upon the
 “ Head of the Person electrified will dart forth Rays
 “ like those round the Head of a canonised Saint;
 “ and this is my Beatification. You are the first, Sir,
 “ with whom I trust my Mystery, which if you
 “ communicate to the *Royal Society*, I hope you
 “ will take care of its being inserted in the *Philo-*
 “ *sophical Transactions*, that the Beatification did
 “ not succeed until I communicated my Method.
 “ Many People have imagined this Experiment
 “ of mine to be extravagant and false. If the
 “ Armour is not ornamented with Steel Bullions,
 “ I believe it will not succeed. If the Armour is
 “ well enriched with Bullions, and well polished,
 “ the Comets appear twice, once in the Air, and
 “ once by Reflexion from the Armour. A Sto-
 “ macher, or a Doublet, set with Nails or Needles,
 “ will exhibit a small Degree of Beatification.”

Thus far Mr. *Bose*, to whom I am very much ob-
 liged, for the Discovery of his Process; I cannot but
 be sorry for his having, as he says, embellished his
 Relation by his Stile and Expressions. The Language
 of Philosophers should not be tainted with the Li-
 cence of the Poets; their Aim in the communicating
 their Discoveries to the World, should be simple
 Truth without desiring to exaggerate; as we con-
 stantly see enough to raise our Admiration every
 Step

Step we take in investigating the Operation of Nature.

The electrifying a Man in polished Armour, with several Globes, must exhibit a very beautiful Phænomenon, by the Electricity running off from several of the Points; but I cannot but say, it must fall greatly short of the general Radiation promised and expected from the preceding Accounts.

This, Gentlemen, is the Information I have been able to procure, concerning these two Experiments, of which we have heard so much, and which I apprehended would not be unacceptable to be laid before you. I am glad of every Opportunity of testifying the Regard, wherewith I am

Your most Obedient

Humble Servant,

W. WATSON.

March 1. 1749.

XVI. *Part of a Letter from Mr. Professor Euler to the Reverend Mr. Wetstein, Chaplain to his Royal Highness the Prince, concerning the Contraction of the Orbits of the Planets. Translated from the French by T. S. M. D. and F. R. S.*

Berlin, Dec. 20. 1749.

Read March 1. 1749. **Y**OU have done me much Honour in communicating an Extract of my last Letter* to the illustrious *Royal Society*, No-

* See *Philos. Transf.* No. 493. p. 203.