nometer, that, as no chemical action took place, so no electric current was produced; yet the apparatus thus arranged could transmit a very feeble thermo-electric current, excited by slightly raising the temperature of the wires at either of their points of contact. Hence, the inference may be drawn, that the contact of iron and platinum is of itself productive of no electromotive force. On the other hand, the author shows, that the interposition in the circuit of the smallest quantity of an electrolyte, which acts chemically on either of the metals, the arrangement remaining in all other respects the same, is immediately attended with the circulation of an electrical current far more powerful than the thermo-electric current above-mentioned. A great number of combinations of other metals were successively tried in various ways, and they uniformly gave the same results as that of iron and platina. Similar experiments were then made with various metallic compounds, and also with other chemical agents; and in all cases the same general fact was observed; namely, that when no chemical action took place, no electrical current was excited; thus furnishing, in the opinion of the author, unanswerable arguments against the truth of the theory of contact. The only way in which it is possible to explain these phenomena on that theory, would be by assuming, that the same law of compensation as to electro-motive power is observed by the sulphuret of potassium, and the other fluids of corresponding properties, as obtains in the case of the metals, although that law does not apply to the generality of chemical agents; and in like manner, different assumptions must be made in order to suit the result in each particular combination, and this without any definite relation to the chemical character of the substances themselves; assumptions, which no ingenuity could ever render consistent with one another. At the conclusion of the paper, the author describes some remarkable alternations in the phenomena which occur, when pieces of copper and silver, or two pieces of copper, or two of silver, form a circle with the yellow sulphuretted solution; and which lead to the same conclusion as the former experiments. If the metals be copper and silver, the copper is at first positive, and the silver remains untarnished; in a short time the action ceases, and the silver becomes positive, at the same time combining with sulphur, and becoming coated with sulphuret of silver; in the course of a few minutes, the copper again becomes positive; and thus the action changes from one side to the other in succession, and is accompanied by a corresponding alternation of the electric current.

February 20, 1840.

The MARQUIS of NORTHAMPTON, President, in the Chair.

John Caldecott, Esq., was balloted for, and duly elected into the Society.

A paper was read, entitled "On the Wet Summer of 1839." By Luke Howard, Esq. F.R.S. &c.

The observations of the author were made at Ackworth, in Yorkshire; and the following are his results with regard to the mean temperature and the depth of rain, in each month, during 1839.

	Mean Temp. °	Rain. in inches.		Mean Temp. °	Rain. in inches.
Jan.	37·04	1·13	July	59·30	5·13
Feb.	39·64	2·14	Aug.	58·09	2·94
March	39·08	3·21	Sept.	54·49	3·43
April	44·09	0·58	Oct.	48·39	3·40
May	49·94	0·38	Nov.	43·14	4·54
June	56·35	4·89	Dec.	37·29	1·85

Mean temperature of the year 47·24°.

Total depth of rain in 1839, 33·62 inches.

He states that the climatic mean temperature of the place is about 47°, and the mean annual depth of rain about 26 inches. The excess of rain during the year 1839 was therefore very great.

The author describes the effect of the hurricane of the 7th of January, and follows the changes of the weather during the remainder of the year.

A paper was also in part read, entitled "On the chemical Action of the Rays of the Solar Spectrum on preparations of Silver and other substances, both metallic and non-metallic, and on some photographic processes." By Sir John F. W. Herschel, Bart. V.P.R.S. &c.

The President informed the Meeting that the Council had voted the following Address of Congratulation to Her Majesty, the Queen, on the occasion of Her marriage, and that he had presented it at the Levee yesterday.

"*To the Queen's Most Excellent Majesty.*

"The humble Address of the President, Council, and Fellows of the Royal Society of London for improving Natural Knowledge.

"Most Gracious Sovereign,

"We, Your Majesty's most dutiful and loyal subjects, the President, Council, and Fellows of the Royal Society of London for improving Natural Knowledge, beg leave to approach your sacred person, and to offer most humbly to Your Majesty our sincere and heartfelt congratulations on the present joyful occasion of the marriage of Your Majesty with His Royal Highness Prince Albert of Saxe-Coburg and Gotha; an event, which, in unison with all loyal subjects throughout Your Majesty's dominions, we cordially hail as the auspicious omen of lasting happiness to Your Majesty, and of permanent blessings to the British Empire. We venture to hope, that, amidst the universal felicitations of a free, affectionate, and grateful people, Your Majesty will condescend favourably to receive this tribute of the deep respect and devoted attachment of the Members of our Society; a Society which, under the fostering protection of the successive Sovereigns of these realms during a period of

nearly two centuries, has exerted itself to extend the boundaries of scientific knowledge, and of those arts which augment the power and ameliorate the condition of the human race; objects to which Your Majesty, following the steps of Your Illustrious Predecessors, has already been graciously pleased to extend Your Royal patronage and encouragement.

"That Your Majesty's reign may be long, happy, and glorious, and that it may be especially distinguished in the annals of history as the pacific era in which the greatest advances were made in Science, Literature, and the useful Arts, and in which the deep foundations of prosperity to this great empire, and of improvement in the condition of mankind, were consolidated, is the earnest wish and fervent prayer of the President, Council, and Fellows of the Royal Society of London."

The President also stated to the Meeting, that the Council had adopted the following Address of Congratulation to His Royal Highness Prince Albert, of Saxe Coburg and Gotha.

"*To His Royal Highness Prince Albert of Saxe-Coburg and Gotha.*

"The humble Address of the President, Council, and Fellows of the Royal Society of London for improving Natural Knowledge.

"May it please Your Royal Highness,

"We, the President, Council, and Fellows of the Royal Society of London for improving Natural Knowledge, beg leave humbly to present to Your Royal Highness our sincere and most cordial congratulations on the happy occasion of Your Royal Highness's marriage with Her Majesty, the Queen of these realms; an event which, from the known virtues and high endowments of Your Royal Highness, we confidently anticipate will prove the abundant source of domestic happiness to Her Majesty and to Your Royal Highness, as well as of important advantage to the interests of this great and united empire.

"The Royal Society, more especially, has reason to rejoice in beholding the exalted station now occupied by Your Royal Highness, filled by an enlightened and liberal Prince early imbued with the principles of virtue and religion, and whose mind, already expanded, invigorated, and refined by the assiduous cultivation of literature, science, and philosophy, is qualified justly to appreciate the importance to mankind of those pursuits to which the Royal Society has directed its constant attention.

"That Your Royal Highness may, under the blessing of Providence, long enjoy every happiness, is the ardent wish and prayer of Your Royal Highness's humble and devoted servants, the President, Council, and Fellows of the Royal Society of London."