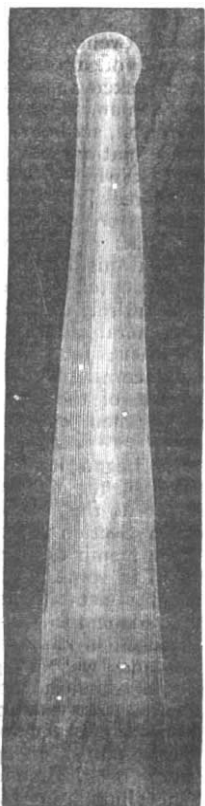


nucleus and circular coma. The tail was to be seen, but was quite faint, and as before was less at the base than the width of



Sketch of Schaeberle's Comet, August 24, 8h. 40m. in 6" Cooke equatorial.

the coma. Dr. de Konkoly has examined the spectrum of this comet, and found it a faint continuous one, with three tolerably bright lines, at following positions:—

				Estimated brightness.
I.	5601	± 2.5	...	0.4
II.	5161	± 0.9	...	1.0
III.	4753	± 0.6	...	0.8



Schaeberle's Comet, August 28, 8h. 32m.

The appearance of this comet throughout has been peculiarly distinguished from that class in which jets of light streaming

from the nucleus in front fall back to form the tail or a bright margin to it. These, as far as I have seen, have been absent.
Guildown, August 31

J. RAND CAPRON

Comet δ 1881

M. CH. FIEVEZ, the Astronomer adjoint at the Royal Observatory, Brussels, has been good enough to send me a copy of his note on the analysis of the light of this comet, made with the 15-inch Merz-Cooke equatorial, provisionally installed at the Avenue Cortenberg. The polariscopic observations demonstrate that the polarisation of the nucleus was strong (*très nette et bien accentuée*), while that of the tail was very weak. These observations were made at several days interval, from 11h. till midnight. Sky polarisation was scarcely sensible. The spectroscopic observations proved the spectrum of the comet to consist of four bands of intensity in the following order: green, blue, violet, and yellow, with wave-lengths 5160, 4780, 4200 (about), and 5620. The original appearance of these bands was modified as the comet receded from the sun, their edges towards the red then becoming more and more defined. The nucleus presented a brilliant continuous spectrum, in which however the Fraunhofer lines were not recognised. The conclusions arrived at by M. Fievez were as follows:—That a great part of the light of the comet was inherent to it, while the other part was reflected solar light. That the strong polarisation of the nucleus indicated a marked state of condensation of the matter composing it. That the spectrum differed little from that of other comets. Lastly, that the marked modifications in the brilliancy of the continuous spectrum, and in the appearance of the spectrum bands indicated a progressive diminution in the comet's temperature. The chief interest in the above observations attaches to the feeble polarisation detected in the tail as compared with that found by Prof. A. W. Wright and Mr. Cowper Ranyard, and in the absence of the Fraunhofer lines, which were measured by Dr. N. de Konkoly, and also photographed by Dr. Huggins. Whence, we may ask, arises the divergence of conclusions arrived at by M. Fievez and Prof. Wright respectively, the one considering that the principal part of the comet's light is from itself, the other that it is reflected sunlight, and why were the Fraunhofer lines seen in the one case, and not in the other? The answer lies, I think, not with the instruments employed, but rather in the interesting probability of change in the comet's structure or condition during the time of its examination. A comparison of the many observations recorded during its stay with us may possibly lead to important discoveries in this direction. I am much interested to see that Prof. C. A. Young informs us that the green band was seen by observers at Princeton split up into fine sharp lines coinciding with those seen in the flame spectrum, a result to be expected, but hitherto not attained.

J. RAND CAPRON

Guildown, September 3

THE comet at present visible was examined by me with the spectroscope on the 8½-inch refractor on Saturday evening, August 27. The three principal hydrocarbon bands were plainly visible, the central one being the brightest, and on comparing them with the spectrum of a spirit-lamp flame the coincidence of the least refrangible sides of the bands in the two spectra was sensibly complete. The nucleus gave a narrow continuous spectrum, and I could see no trace of such a spectrum except from that point. I could see no other band in the spectrum except the three above mentioned, but the proximity of the comet to the horizon may have something to do with this.

GEORGE M. SEABROKE

Temple Observatory, Rugby, August 29

A Pink Rainbow

I SPENT Sunday, August 21, at Mr. Tennyson's house, Aldworth, near Haslemere. The house stands on an elevated ledge of the Blackdown range, looking over the Weald towards the Brighton Downs, between east and south-east. About sunset the deep red of the south-eastern sky attracted our attention, and while we were looking at it we saw stretching across it a well-marked rainbow, but of a uniform red or pink colour, which Mrs. Tennyson compares, in a note I have just had from her, to a "pink postage-stamp"—not the one now in use, but the last discarded one. This was seen distinctly by Mrs. Tennyson, Mr. Hallam Tennyson, and myself for, I think, more than a minute. Mr. Hallam went to call his father, who was in another room,

but before he came, "the bow," to quote Mr. Tennyson's words, "had assumed its usual colours, which were, however, very faint." Mrs. Tennyson says the pink colour "was visible for a very little time just at sunset, and then I saw a dull olive green at the lower edge." After that, as Mr. Tennyson says, we all saw the vanishing ghost, as it were, of an ordinary rainbow. The actual uniform redness came just at sunset, as marked in the almanac we consulted—ten minutes past seven. A. M.
August 26

The Glacial Period

PLEASE correct an error in the notice of my paper on the Glacial Period (NATURE, vol. xxiv, p. 364). It is on the western slope of New Zealand that the glaciers reach to the highest mean annual temperature (10° C., or 50° F.) as well as to the lowest level. *Apropos* of my studies on this subject, I should be very glad to meet some of the British glacialists at Venice, at the third International Geographical Congress, and discuss some points of interest with them. As there is, a few days later, an International Geological Congress at Bologna, it will be the easier for geologists to make a short stay at Venice before. The Geographical Congress begins on September 15.

St. Petersburg, August 13-25

A. WOEIKOF

THE BRITISH ASSOCIATION

THE Jubilee Meeting of the British Association has come to a close, and whether we take the test of work done, or of the numbers present as members or associates, it must be admitted that it has been a great success. While in 1879, in the densely populated town of Sheffield, the total was 1404, and at Swansea last year 915, the number has risen this year to 2533, which includes 22 foreign members, 510 ladies, and 1173 associates. Of course York does not supply the whole of the latter; many come from Leeds, Sheffield, and Scarborough, and the surrounding towns. Seven times previously has the number been greater; the maximum (3335) having been attained at Newcastle-on-Tyne in 1863. As regards work done, it may be mentioned that on Friday nearly a hundred papers were announced for reading in the various sections. One of the laws of the Jewish jubilee festival was that the land should remain untilled for a year; but we have reversed this, and only cultivated our scientific soil the more. Sir David Brewster, in the original letter which laid the foundations of the society, suggested York as the most central city of the three kingdoms, but he first inquired "if York will furnish the accommodation necessary for so large a meeting, which might perhaps consist of 100 individuals." Apparently therefore he did not contemplate the admission of associates, or the use of the Association as a means of scattering broadcast the results of the scientific year, but rather regarded it as a means whereby the cultivators of science might become better acquainted with each other at a time when communication with London was far more difficult, and intercourse through scientific publications far more restricted than now. But the first meeting numbered 350 members, and included some of the most representative men of science of the day. On this occasion the presidential address lasted five minutes.

The proceedings commenced on Wednesday, August 31, by the reading of the Report of the Council, in which it was announced that Mr. P. L. Selater had resigned the office of general secretary, and that he would be succeeded by Mr. F. M. Balfour of Cambridge. Mr. G. E. Gordon has also retired from the assistant secretaryship, and is to be succeeded by Prof. Bonney, with the title of secretary and a salary of 300*l.* per annum, with 25*l.* for travelling expenses. Mr. Spottiswoode succeeds Sir Philip de Malpas Grey Egerton as trustee.

The new members of council are Messrs. Warren De La Rue, A. Vernon Harcourt, G. W. Hastings, J. C. Hawshaw, and G. Prestwich.

Sir John Lubbock's address was listened to by a very

crowded audience. The Exhibition Hall is a fine building, and was prettily decorated, but its acoustic properties are somewhat deficient, and the unsteady electric light was painful to the eyes. The address occupies fifty octavo pages, of which nearly twenty were omitted during delivery. On the subject of education the President expressed himself strongly; he asked that more time should be given to French, German, science, and mathematics. "What we ask is that, say, six hours a week each should be devoted to mathematics, modern languages, and science, an arrangement which would still leave twenty hours for Latin and Greek"; and he added, "we cannot but consider that our present system of education is, in the words of the Duke of Devonshire's Commission, little less than a national misfortune."

Sir John Lubbock adopted a judicious mean between the address devoted entirely to one subject on the one hand, and giving a general *résumé* of the progress of all the sciences on the other; for while he spoke in detail and authoritatively concerning the biological sciences, he also furnished accounts of the progress of the physical sciences, prepared by men well competent to discuss them.

The Section work began in earnest on Thursday morning. Some idea of the number of representative men who were present at the meeting may be gathered from the fact that in Section A there are ten vice-presidents and fifty-seven members of committee, and these numbers are exceeded in some of the sections; so that there are more than fifty vice-presidents of sections, and more than three hundred members of sectional committees. The sections were housed in capacious and very suitable rooms, and the attendance was very good.

The loan collection of scientific apparatus, although it contained some very interesting examples, was by no means a collection which represents the experimental progress of the last fifty years, and the appeal for historical apparatus has scarcely been responded to. The exhibition was shown at the Thursday *soirée*, and remained open till the end of the week of meeting. A good catalogue of thirty-two pages was prepared. We may particularly notice some beautifully-finished telescopes and transit instruments, and an electric chronograph exhibited by Messrs. T. Cooke and Sons; a model of the Vienna 27-inch refractor and its dome by Mr. Howard Grubb; and a very old telescope constructed by Abraham Sharp. The Manchester Literary and Philosophical Society exhibited some of the apparatus used by John Dalton in his researches; and the Science and Art Department sent astrolabes and sun-dials of the sixteenth, seventeenth, and eighteenth centuries. A few instruments were sent by foreign makers. Dr. Stone exhibited a large syren fitted with a key-board and worked at an uniform rate by clockwork. A quantity of physiological apparatus was exhibited by Dr. Burdon-Sanderson and Mr. G. B. Thistleton. Mr. Francis Galton exhibited and explained his composite photographic process, "a method of superposing the images of separate portraits and thence creating a face, the sum of all the components employed; it has a curious air of individuality about it, but is a perfectly ideal face, like all, but exactly resembling none." Dr. Tempest Anderson, one of the local secretaries, exhibited some ophthalmic appliances. The North-Eastern Railway Company exhibited an interesting meteorite which fell on March 14 last between the Middlesbrough and Ormesby stations of the Guisborough line. It is of the stony tufaceous type, and weighs three and a half pounds.

On Friday afternoon several manufactories were visited, also the gas-works and water-works. Messrs. Cooke's works were of especial interest, particularly the processes connected with the grinding of lenses and the graduation of circles by means of a large dividing-engine, the great circle of which is marked with divisions, each of which is