

Watching the eastern sky between 10h. and 14½h., I counted 50 meteors, and of these 12 were Perseids displaying the normal features. The radiant-point was, at 33° + 55°, not very sharply defined. Some of the best observed paths were slightly discordant, and gave the impression that the focus of divergence was diffused over an area of 3° or 4° diameter.

The following night was cloudy, but August 4 came in very clear, and 58 meteors were seen between 10h. and 14½h. Amongst these were 12 Perseids, and the radiant-point, more contracted and definite than on the 2nd, was now at 37° + 57°, having increased 4° in R.A. in the interim of 48 hours. The shower exhibited no increase in numbers between the 2nd and 4th; indeed, there appeared to have occurred a slight falling off on the latter date. But on the 4th I saw a duplicate shower of Perseids, the companion radiant being at 48° + 43°, between α and β Persei, and this position was accurately indicated from seven paths.

A cloudy period supervened between the 4th and 10th, but on the latter night the sky was very clear throughout, though the moon was up until 13h. 30m. Between 10h. and 14½h. I observed 152 meteors, though the watch was not persistent during that interval. The number seen included 122 Perseids with a radiant at 44° + 57½°. At 13h. 6 meteors were noted within 20 seconds, and after the moon had fallen below the horizon the shower developed into one of considerable activity. Between 14h. and 14h. 15m. I counted 22 meteors, so that they were coming at the rate of about 90 per hour for one observer. Some of them were unusually bright. At 13h. 34m. a splendid Perseid appeared in the northern sky, pursuing a path of 13° from 77° + 67° to 111° + 67°. It lit up the whole heavens with a momentary flash, and left a luminous streak, near the end of its path, that remained visible to the eye for nearly 4 minutes. This was by far the most conspicuous meteor seen during the night, and it will probably have been recorded at many other places.

On August 11 the sky was partly clear between 10½h. and 11½h., and 22 meteors were noted, including 15 Perseids from 47° + 57½°. Thus the position of the radiant showed a still further displacement towards the east. The shower had declined greatly since the preceding night, and offered little attraction in the presence of the bright moonlight.

The shifting radiant of the Perseids forms one of the most curious and important details of its display. I first mentioned this feature in NATURE, vol. xvi. p. 362, and have been much interested in reobserving it on many subsequent occasions. Comparing the four positions determined this year, and one obtained on August 13, 1885 (NATURE, vol. xxxii. p. 415), the character of the displacement is well shown, and corroborates the figures given in the *Monthly Notices*, December 1884, pp. 97-8:—

1886, August 2	...	...	...	33 + 55	...	...	12 meteors
4	...	...	...	37 + 57	...	...	12 "
10	...	...	...	44 + 57½	...	...	122 "
11	...	...	...	47 + 57½	...	...	15 "
13	...	...	...	51 + 58	...	...	6 "

On the whole the recent shower may be justly regarded as one fully answering to expectation. It has been quite equal, if indeed it has not surpassed, the Perseid displays as I observed them in 1869, 1871, 1874, 1876, 1877, 1878, and 1880. It is, however, somewhat difficult to institute perfectly fair comparisons. The circumstances affecting two displays are rarely if ever identical. In some years the shower escapes suitable observation owing to cloudy weather just at the important time. In others moonlight nearly obliterates it. We must also consider that, as the main richness of the stream is limited to a short interval, it will occasionally elude us by occurring in daylight. These varying conditions and hindrances render it unsafe to draw conclusions as to the relative aspect of the annual displays unless the evidence is very complete and satisfactory.

It is well known that an unusually large number of minor systems occur simultaneously with the August Perseids. The positions of many of these are now ascertained with considerable precision. The labours of Heis and Schmidt, ably supplemented by Greg, Alex. Herschel, Zezioli, and others, have furnished a multitude of observations which are satisfactorily accordant as to many of the secondary showers of the epoch. The results obtained in the present year have been extremely productive of tenuous radiants. I select five of these as affording instances of very definite showers:—

No.	1886	Radiant	No. of meteors	Features
1	July 27-Aug. 11	291 + 51	14	Rather slow.
2	July 31-Aug. 11	350 + 51	11	Rather swift.
3	August 2-11	48 + 43	10	Swift, streaks.
4	August 2-4	26 + 42	6	Swift, streaks.
5	July 31-Aug. 2	20 + 58	7	Swift, streaks.

Nos. 1 and 2 I observed also in August 1885 (see NATURE, vol. xxxii. p. 415), when I derived their radiants at 292° + 52° and 345° + 53° respectively. No. 3, between α and β Persei, I observed in July and August 1877, and again on July 23-25, 1884 (*Monthly Notices*, December 1884, p. 107). No. 4, near γ Andromedæ, has also been pre-observed here in August 1877 and 1879; and No. 5 represents the Cassiopeiads, which have long been known as a pronounced companion shower to the Perseids.

The position No. 2 at 350° + 51° lies between Cassiopeia and Lacerta. It was the most prominent of all the minor streams of the August epoch in 1885, and in 1877 I had observed it well both in July and August. It has also been noticed by many others in recent years. Taking an average of fifteen different observations the radiant comes out at 350° + 52°. This particular shower, by its increasing activity during the past few years, appears to have supplanted Mr. Greg's *Lacertids* at 335° + 52°, which have evidently not maintained their former strength. It is probable also that during the period of Mr. Greg's researches this August shower at about 350° + 52° was comparatively quiescent, for there is no reference to it in his catalogue of 1876. The same may also be said of the system of Cygnids at about 291° + 51° (near θ Cygni). Possibly, however, the latter may have been formerly confused with the Draconids (= Greg, No. 78). In the "Annuaire pour l'an 1885, publié par le Bureau des Longitudes" I find that two of the chief showers accompanying the Perseids on August 9-14 are stated as at 345° + 50° and 294° + 52°. My recent observations just described confirm this pair of showers in the most definite manner, and they will doubtless be similarly corroborated wherever systematic observations of the Perseids are conducted.

W. F. DENNING

THE SWISS SOCIETY OF NATURAL SCIENCES

THE annual meeting for this year of the Swiss Society of Natural Sciences opened at Geneva on the 10th instant under the presidentship of Prof. Louis Soret. This precursor of all itinerant scientific societies was founded in 1815 in Geneva, and the present is its seventh meeting in the city of its birth. The members and visitors were received on the evening of the 9th in the *salons* of the celebrated Palais Eynard, which, after being long closed, were opened specially for the occasion. After the presidential address on the 10th, a new committee for the forthcoming period of six years was appointed, with its seat at Berne, the next meeting was fixed to take place at Frauenfeld, in Thurgau, and Prof. Grubenmann was elected president.

Prof. Soret in his address first referred to the advantages offered by Geneva to men who have taken science for their vocation, and then, under the title of "*Des impressions réitérées*," developed a series of new and original ideas on aestheticism analysed by the man of science. The repetition, he said, of the same design, whether in a symmetrical form, or in lined designs, such as we see in tapestry, furniture, or buildings, whether of the same dimensions, or of dimensions regularly decreasing, gives an agreeable impression. It is the same with regular curves, but the aesthetic sensation dwells less in the sensation itself than in the intuition which it gives us of a law. This applies not only to form, but also to sound and to colours. Developing these ideas, M. Soret insisted on the part played constantly by repetitions and similitudes because they evoke by intuition the idea of a law.

M. Marcel Deprez then read a paper on the transmission of force by means of electricity, in which he described his recent experiments between Creil and Paris and the results. M. Riillet, of Geneva, read the report of a commission appointed to investigate the depth to which light penetrates water. Dr. Heim, of Zurich, read a paper on the deformation of fossils in mountains. He described the modifications which rocks undergo in form even after induration. Under the enormous pressure of the rocks above they may become laminated without any visible solution of continuity in the mass, or any rupture.

The effect on the fossils which they contain is similar; these are sometimes enlarged into the most grotesque forms, and hence Agassiz was misled in distributing the fossil fish of the older rocks into eighty distinct species, a considerable number of which were of the same species but deformed in various ways so as to appear different.

Subsequently the members were present at the inauguration of a monument erected to the memory of Gosse, the founder of the Society. Much interest was attracted by the new geological map of the Republic exhibited in the hall. It has just been completed, and is the fruit of twenty-seven years of the labour of a number of geologists under the superintendence of M. Alphonse Favre, who has now the satisfaction of seeing the end of this great task.

On the second day, in the Botanical Section, Prof. Müller, of Geneva, spoke of his systematic researches into the lichens of the *Graphidea* group, of which he is about to make a general revision; Dr. Fischer, of Berne, described a new fungus (*Hypocrea*); Dr. Nuesch, of Schaffhausen, read a paper on the origin of Bacteria; and Prof. Schuetzler described a curious moss which grows at a depth of 200 feet in the sub-lacustrine moraine of Yvoire. It contains grains of chlorophyll perfectly formed, and is probably a variety of *Thamnum alopecurum*. Prof. Magnus, of Berlin, recounted his observations on the fecundation amongst aquatic plants, and more especially species of the *Najas*. M. Pittier spoke of the modifications being slowly made in the Vaudois flora, certain plants having disappeared wholly, while new ones have taken their places. M. Casimir de Candolle described his investigations into the action of low temperatures in germination.

In the Section of Zoology and Physiology Prof. Auguste Forel communicated a written memoir of the perception of violet by ants. He came to the conclusion that they perceived it with their eyes, and not through the skin. The so-called photodermatic sense does not appear to exist in ants, or at least is of small importance compared with ocular vision. M. Goll read a paper recording his observations on the fauna of Lower Egypt, especially of the fishes of Fayoum. There exists a well-marked distinction between the fauna of the desert and that of the Nile, particularly in colour. Dr. Zschokke gave some details on the development of the *Scolex polymorphus*, a kind of parasitic worm which he studied at the Naples Zoological Station. He thinks that Wagener's classification of the Scolices is not a natural one. Prof. Blaue, of Lausanne, continues his studies of the fauna of the Lake of Geneva, and presented a memoir on a new Protozoa which he discovered in a deep part of the lake, and which he names *Gromia brunneri*.

In the Geological Section Dr. Schmidt, of Freiburg in Brisgau, read a paper on the geological and mineralogical nature of the schists of the Grisons, which, it is now demonstrated, belong to the Jurassic. He spoke particularly of the mica which is one of their constituent elements. MM. de Fellenberg and Baltzer described the remains of great vegetable fossils found at Guttanen in the crystalline schists in the mass of Finsteraarhorn. M. Greppin exhibited a beautiful collection of fossils, not yet determined, of the oolite, found in the Jura in the neighbourhood of Basle. Prof. Renevier, of Lausanne, read a report on the excursions made by the Swiss Geological Society in the Vaudois higher Alps during the five days preceding the meeting. M. Schardt described the geological structure of the Dent du Midi. M. Steinmann gave an account of a journey extending over two years in the Cordilleras of South America, between Bolivia and Patagonia. He sketched rapidly the characteristics of this great chain. The fossil fauna and flora are almost identical with those of European formations. The Upper Trias, Rhætian, Lias, Jurassic, and Cretaceous are all represented.

Of the pleasures as apart from the business of the meeting it is needless to speak. The Genevese authorities and people gave the members a hearty reception, and the whole town was *en fête*. Among the honorary members elected was Dr. J. H. Gladstone.

THE BRITISH MEDICAL ASSOCIATION AT BRIGHTON

THE annual meeting of the British Medical Association is anticipated not only as an occasion for the association and communion of medical men of all classes, but as an opportunity for, so to speak, taking stock of the progress of medical science and practice during the past year. From the choice of a locality

near the metropolis, the meeting this year has been very successful, both as to the numbers attending it and the character of the papers read. From the tone of many of the addresses, indeed, it is easily perceived how intimately chemistry, physiology, biology, and even physics are becoming associated with medicine, and how, as a result of this, the special medical departments of pharmacology and therapeutics, pathology and hygiene, are being modified by scientific methods of investigation.

The subject chosen by the President, Dr. Withers Moore, for his address, viz. the higher education of women, was one which, though of interest to all classes of the community, did not lend much scope for the introduction of new matter. The chief argument on the medical aspect of the question brought forward by Dr. Moore was the statement that the extra tax on woman's intellectual faculties produced by this "higher education" leads to bodily degeneration and to unfitness of the individual for a woman's peculiar social duties. This is admittedly so with those who are subjected to over-pressure; still, the questions as to how far these bad effects are general among the class of women who are subjected to severe intellectual training, and how far these bad effects may be counteracted by judicious hygienic surroundings, remain yet to be solved; and the experiments in the higher education of women now being performed in America and England will no doubt yield results which will practically solve the question.

The address in Medicine, which was given this year by Dr. J. S. Billings, of the United States Army, dealt chiefly with medical politics in America, which, like our own country, needs reform in reference to medical education. It is interesting to note, from the remarks of one so well qualified to judge as Dr. Billings, the great progress made in America in the establishment of laboratories devoted to scientific medical investigation; and it may be confidently expected that by this means important contributions will be added to the stores of medical science.

It is in the departments of pathology and pharmacology that the influence of scientific thought and method is most evident. As Dr. Dreschfeld pointed out in his address before the Section of Pathology, there is in the modern study of pathology a great deal more than was comprised twenty or thirty years ago; for, besides the marvellous advances of morbid anatomy due to the improvement in histological methods and knowledge, the stimulus of experimental physiology has initiated important researches on various morbid processes. Indeed it is difficult to draw a hard-and-fast line between experimental physiology and pathology; for, in many instances, the investigation of physiological function proceeds *pari passu* with that of the loss or inhibition of that function. On the anatomical side pathology is seizing the facts discovered by purely scientific investigators, and applying them with good results. Thus, as Dr. Dreschfeld points out, the application of the researches of Flemming, Heuser, Rabl, and others, on the composition of the nucleus, to the study of the cancer-cell, has shown that this is deficient in chromatin and embryonic in character. Again, the selective action of methylene-blue for certain nervous structures when injected into the living body, as described by Ehrlich, indicates a new method of pathological research by which the condition of these structures under the toxic action of substances may be investigated. If, moreover, as Ehrlich thinks, this selective action is due to the conditions of alkalinity and oxidation in the structure, some light may be thrown by future research on the still very obscure reactions of the nucleus and cell, and, more particularly in pathology, on the chemical changes occurring in the nerves in chronic peripheral paralysis due to poisons, such as alcohol and lead. Though a strong advocate of the study of experimental pathology, Dr. Dreschfeld insisted on the necessity of an investigator having a clear idea of the object and, as far as possible, of the methods of the research which he is undertaking. This point, which is of course the basis of all useful experimentation, is very important in experimental pathology, owing to the peculiar conditions under which experiments on animals are performed in this country.

In pathology, which deals more closely with the facts of disease—disordered structure, disordered function—progress has been rapid, but not more so in its scientific aspect than pharmacology and therapeutics. A great deal of attention has of late years been devoted to this subject, as shown by the rapid accumulation of facts concerning old and new remedies. It is on such an occasion as the meeting of the Association that it is well to