

point the meteor burst out with a great accession to its brilliancy, and there was a vivid flash, though the moon was near. The radiant of this fine meteor was probably near Delphinus at $304^{\circ} + 11^{\circ}$.

On August 10, before midnight, the Perseids were by no means numerous. Only 22 were seen during 1 $\frac{1}{2}$ h., and after the moon rose the display was not critically watched, as observations made during moonlight are not comparable with those obtained under more favourable conditions. There were five meteors now and then, but the phenomenon never developed into an imposing shower. On August 11 the sky was much overcast, and not many shooting-stars were discerned. In 1 hour before 11h. 30m., when the firmament was fairly clear, I counted 21 meteors, of which 16 were Perseids. On August 14 the weather became very fine, and I enumerated 45 meteors in a 4 $\frac{1}{2}$ hours' watch. There were only 8 Perseids, and amongst the meteors I registered were about 5 Aquariads from the same radiant as at the end of July. I also noticed the Aquariad shower at the middle of August in 1877, and in 1879 on August 21, 14 meteors were traced from $339^{\circ} - 10^{\circ}$, so that it would appear this system is prolonged until the end of the third week in August, and without any apparent displacement of the radiant point. The members of the latter stream are widely dissimilar in their visible aspect to the Perseids, and move slowly, often covering considerable arcs before extinction. In its chief richness the shower belongs to the July meteoric epoch, though sometimes, as in the present year, remaining conspicuous until the middle of August or even later than that, as in 1879.

Bristol.

W. F. DENNING.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, August 16.—M. Janssen in the chair.—Note on the work recently carried out at the Observatory of Meudon, by M. J. Janssen. Special reference is made to the many successful solar photographs already obtained, representing the history of the solar disk for the last ten years. The processes are now so perfected that on the same plate the details are taken both of the brighter and less luminous parts, such as the edge of the disk and the penumbrae of the spots. Photographs ten times enlarged were exhibited of the extremely interesting spots taken on June 22, 1885, and last June. The striæ of the penumbra and the faculae surrounding the former consist of granulations, in form and size resembling those constituting the entire solar surface. The same phenomenon reappears on the large round spot photographed last July, so that it seems all but demonstrated that the whole solar disk has a uniform constitution, and that the so-called granulations are in fact the constituent elements of every part of the surface of the sun.—Fresh researches on the relations existing between the chemical and mechanical work of the muscular tissue (continued), by M. A. Chauveau, with the co-operation of M. Kaufmann. Here a determination is made of the coefficient of the quantity of mechanical work produced by the muscles performing useful work in the physiological conditions of the normal state. By translating into absolute measurements the indications furnished by the dynamograph already referred to, it is shown that the muscular work performed may be estimated at about 31 to 35 millionths of calorie.—Some further remarks on the radicular nature of the stolons in *Nephrolepis*, by M. A. Trécul. In reply to M. Lachmann's recent note, the author again shows that these stolons are not stems or stalks, but true roots. No matter what their length, they never produce leaves, have always the structure of roots, and as they alone represent the primary roots of *Nephrolepis*, the expression "radicular stolons," applied to them by the author, is fully justified.—New fluorescences with well-defined spectral rays (continued), by M. Lecoq de Boisbaudran. The author here treats fully the combination of alumina and the earth $Z\beta_2O_3$, which, without being pure, is very rich in $Z\beta$ and poor in $Z\alpha$. Alumina with 1/50 of this earth heated with sulphuric acid and moderately calcined shows a somewhat yellowish-green fluorescence, much more vivid than that of alumina containing the same quantity of $Z\alpha_2O_3$ impure. The fluorescences have also been examined of calcined alumina containing the oxides of Ce, La, Er, Tu, Dy, Yb, Gd, Yt, and U. During these researches several rays were noticed apparently belonging to none of the already determined elementary bodies. Some of these rays may perhaps correspond to the sub-

stances announced by Mr. Crookes; but each case will have to be determined for itself.—Determination of the longitude of the Observatory of Tacubaya, Mexico, by MM. Anguiano and Pritchett. Continuous observations spread over six months show a definite longitude of 6h. 36m. 46.56s. west of Greenwich, which will require a correction of close upon 5s. for the accepted longitude of the capital of Mexico.—Electric excitement of the liver, by MM. Gréhan and Mislawsky. The question is discussed, whether the excitement of the liver by electricity increases the quantity of urea contained in the blood. In opposition to the views of M. Stolnikow the experiments here described show that variations in quantity occur only in the arterial blood, and that the blood of the supra-hepatic veins presents no change in the weight of the urea after electric excitement of the liver.—Dissemination of the Bacillus of tuberculosis by flies, by MM. Spilmann and Haushalter. Observations recently made in consumptive-hospitals seem to show that the virus (Koch's Bacillus) may easily be disseminated by the house-fly.—Note on Hæmatocytes, by M. Fokker. The author recently showed that the protoplasm taken from a healthy animal and protected from microbes survives and may produce fermentations. Here he continues his researches, showing that this protoplasm is capable of generating a vegetable form different from that under which it existed in the animal organism. But the Hæmatocytes thus produced do not multiply themselves in a cultivating medium, and their development should perhaps be described as a case of heterogeny.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

Dijmphna—Togtets Zoologisk—Botaniske Udbytte: Dr. Chr. Fr. Lütken (Kjøbenhavn).—Seven, the Sacred Number: R. Samuël (K. Paul).—University College, Dundee, Calendar 1887-88 (Leng, Dundee).—Qualitative Chemical Analysis: Dr. C. R. Fresenius, 10th edition, translated by C. E. Groves (Churchill).—Notes to accompany a Geological Map of the Northern Portion of the Dominion of Canada: G. M. Dawson (Montreal).—Die Gerddeformationen der Eiszzeit: E. von Drygalski (Berlin).—Proceedings of the Linnean Society of New South Wales, 2nd series, vol. II. Part I (Cunningham, Sydney).—Verhandlungen der Naturhistorischen Vereines, Fünfte Folge, 4 Jahrgang, Erste Hälfte (Max Cohen, Bonn).

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