

Lake Naivasha is new ground, hitherto untraversed by any explorer. Dr. Fischer in his recent expedition reached only as far as the lake just mentioned.

A NEW ASTRONOMICAL JOURNAL¹

AN astronomical serial, under the auspices of the Observatory of Paris, will be a welcome addition to the literature of the science, and may well be expected to occupy a prominent place on the list of such periodicals.

Admiral Mouchez, in his introductory note, alludes to the great impetus which has been lately given in France to the progress of astronomy by the establishment or resuscitation of observatories, aided as well by national funds as by contributions from the municipal authorities of the places where they are located. In a few years these various observatories will be completely organised, the *personnel* consisting in part of astronomical students who have obtained their acquaintance with the practical branches of the science in the Observatory of Paris. The director therefore aims at providing a medium in the *Bulletin Astronomique* whereby the work of French astronomers may be speedily made known, and where at the same time an analysis of the contents of the principal foreign periodicals, &c., may be available to them.

The *Bulletin* will thus present two distinct sections: the first will be composed of observations of current interest, ephemerides of planets and comets, and memoirs or notices on various questions in theoretical and practical astronomy. The second will comprise as complete a *résumé* as possible of astronomical intelligence and an analysis of the principal periodicals and newly-published works. Further, in a supplementary section it is intended to introduce articles on subjects relating to the sciences allied to astronomy, as terrestrial physics, geodesy, and meteorology, not excluding points of interest in the history of the science: contributions from foreign astronomers are invited.

In the first four numbers of the *Bulletin* are articles bearing upon sidereal, planetary, and cometary astronomy. There is a series of measures of double-stars in 1883, made by M. Perrotin at Nice in continuation of previous series which have appeared in the *Astronomische Nachrichten*. M. Perrotin has habitually used powers of 750 and 1000; objects not too frequently measured of late will be found in his list, which is to be continued. MM. Henry have a note upon the planet Saturn as viewed in the refractor of 0.38 m. at the Observatory of Paris, in which reference is made to a narrow bright ring limited by a dark line, outside the principal division, the breadth equal to that of the division of Cassini, which they consider to be a new feature. It is stated that the Encke division has completely disappeared; notwithstanding extremely favourable atmospheric circumstances, nothing was remarked upon the outer ring except the narrow bright zone just mentioned. MM. Henry invite communications on this subject from other observers provided with large telescopes. M. Baillaud publishes observations of *Mimas* made at Toulouse between October 24, 1876, and December 5, 1883. The telescope employed has an aperture of 0.83 m., the mirror being the work of MM. Henry, the mounting by Secretan. A power of 335 was usually employed; the observations for the most part consist of the times of elongations, but during the opposition of 1882-83 M. Fabre succeeded in observing several conjunctions with the minor-axis of the ring N and S. From these observations M. Tisserand has drawn several conclusions respecting the motion of the satellite, to which he directed attention in a paper submitted to the Paris Academy of Sciences on January 28, and printed in the *Comptes Rendus*. He fixes the mean daily

motion at $381^{\circ}.9934$, and his observations are compared with calculation on this hypothesis, the orbit being supposed circular. But he infers that there is an inequality in the mean longitude, of which the period is about five years, and the coefficient approximately 8° ; further he finds that the eccentricity does not exceed one-tenth. The longitudes of the perisaturnium, deduced from observations during five periods, may be fairly represented on the assumption of an annual motion of 447° . It is intended to observe *Mimas* at Toulouse as frequently as possible, and, so far as circumstances admit, the same observer will undertake them, it having been found that observations made by different persons with the same instrument are not strictly comparable.

In the February number of the *Fulletin* M. Schulhof has the earliest notification of his discovery of the periodicity of the third comet of 1858, upon which he enters into details in the number for April; the most probable period of revolution resulting from the few observations which were secured in America (the comet was not seen in Europe) is 6.61 years, and the limits somewhat insecurely assigned are 5.80 and 7.54 years. As in other cases, this comet approaches very near to the orbit of Jupiter, to which we may attribute the limited dimensions of the orbit, according to M. Schulhof. There are several communications on Pons' comet, physical and otherwise; amongst them a note by MM. Trépied and Rambaud, of the Observatory at Algiers, on the remarkable variation in the head of the comet, observed on January 19, and one by M. Rayet on the *aigrettes*, &c., remarked near the time of perihelion passage. M. Radau treats on the theory of the heliostats, and M. Bigourdan on a means of rendering more convenient the use of the equatorial. We find also in these numbers of the *Bulletin* a description and plan of the buildings of the Observatory at Marseilles, by M. Stephan; and a list of discoveries of small planets and comets made at that establishment: amongst the latter we note that the discovery of the first comet of 1867 on January 25 is attributed to M. Coggia; at the time it was announced to have been made by M. Stephan, at least in a letter from M. Tempel, then residing at Marseilles, to the *Astronomische Nachrichten*; as Mr. Searle has shown that the comet is one of comparatively short period (thirty-three years) and may therefore want a name, it might be well to settle the point as to who was the actual discoverer. There is a note on an Observatory to be erected at La Plata, the recently founded capital of the province of Buenos Ayres; a director has been already nominated in the person of M. Beuf, an officer of the French Marine, formerly in charge of the Observatory of Toulon; 100,000 francs have been allowed for the Observatory and instruments, with an annual subsidy of 24,000 francs. Such liberal encouragement of science does honour to M. Dardo Rocha, the Governor of the Province of Buenos Ayres, and it is due to him to add that he had previously done much for recent progress in the Argentine Republic.

As a specimen of the miscellaneous articles in the *Bulletin*, we may mention M. R. Radau's interesting account of the recent crepuscular phenomena, in which he has availed himself of the numerous facts relating thereto which have been published in NATURE. He does not profess to decide upon the cause of these phenomena, or to make choice between the explanations which have been offered, but we may quote his concluding paragraph: "Ce qui semble prouvé, c'est qu'il s'agit ici, très-probablement, de phénomènes de réflexion, dus à la présence de matières finement divisées dont la nature reste à déterminer; la lumière ainsi réfléchie n'est, sans doute, que la lumière ordinaire du soleil couchant, colorée par transmission à travers les couches basses, chargées de vapeurs."

The typographical execution of the *Bulletin* leaves nothing to be desired. The March number contains a photolithograph of the aspect of Saturn as viewed at the Observatory of Paris on the 4th of that month.

¹ *Bulletin Astronomique*, publié sous les auspices de l'Observatoire de Paris, par M. F. Tisserand, &c. (Paris: Gauthier-Villars, 1884.)