

The Frog belongs to the Batrachian order *Anoura*, to the family *Ranidae*, and to the genus *Rana*.

The order *Anoura*, to which all frogs and toads belong, is a remarkably homogeneous one, consisting as it does of a multitude of species, all differing from each other by comparatively trifling characters.

Altogether there are about 600 species of frogs and toads, arranged in about 130 different genera.

ST. GEORGE MIVART

(To be continued.)

JEAN CHACORNAC*

THIS eminent French astronomer died on the 6th of last September, having been born at Lyon, June 21, 1823. Chacornac is chiefly known for his discoveries among the planetoids whose orbits are contained between those of Mars and Jupiter. In his earlier years he devoted himself to commerce, but having, in 1851, made the acquaintance of M. Valz, Director, of the Marseilles Observatory, Chacornac became an enthusiastic student of astronomy, devoting himself to research in connection with the solar spots and to the assiduous exploration of the heavens. On his discovery of a new comet on May 15, 1852, he made up his mind to abandon commerce and devote himself entirely to astronomy.

In 1852, M. Valz, following the example of Mr. Hind, had drawn some charts of the region of the heavens in which the small planets were likely to be met with, and on Chacornac taking the above decision, Valz entrusted to him the construction of the "Atlas éclipse." Chacornac commenced his observations on the region of the small planets on June 1, 1852, and on September 20 he discovered *Massalia*, and on April 6, 1853, *Phocæa*, and that with an equatorial telescope of only thirteen centimetres aperture.

The poor resources which were at the disposal of the Marseilles Observatory did not permit of M. Valz's undertaking the publication of the ecliptic charts; and for this purpose he addressed the Academy of Sciences, which had appointed a commission to examine the question. M. Le Verrier, who at this time sought to reform the *personnel* of the Paris Observatory, called to his aid M. Chacornac, who, on March 4, 1854, was appointed Adjoint Astronomer.

At the Observatory of Paris, Chacornac had at his disposal an equatorial of 7 in. aperture, equal to that of Mr. Hind; he set down in his charts stars up to the 13th magnitude, and the limits which they embraced were at the same time somewhat extended. The publication commenced very soon after, and from 1854 to 1863, thirty-six charts, of which some contained not less than 3,000 stars, were put into the hands of astronomers.

During the construction of these charts, Chacornac discovered many small planets—*Amphitrite* (March 3, 1854), *Polymnia* (October 28, 1854), *Circe* (April 6, 1855), *Lydia* (January 12, 1856), *Lætitia* (February 8, 1856), *Olympia* (September 12, 1860). At the same time he observed all the comets which were then visible and defined, with the telescope of Foucault, of 80 centimetres, many spiral nebulae, previously studied by Herschel. The drawings of M. Chacornac are among the most careful we possess, and appear to show that nebulae of this kind undergo in time slight variations of form.

This collection of remarkable works brought to the Astronomer of the Paris Observatory many academic and honorary rewards: thus, he obtained the Lalande Prize in 1852, 53, 54, 55, 56, 60, and 1863, became titular astronomer February 22, 1857, and Chevalier of the Legion of Honour, August 15, 1857.

* From an article in *La Revue Scientifique*, by M. G. Rayet, Chief Astronomer of the Meteorological Service at the Paris Observatory.

His labours, however, and their attendant anxieties, told upon his health. After going to Spain, where he went to observe the total eclipse of the sun of July 18, 1860, the ecliptic charts were issued less frequently, and in June, 1863, he quitted the Observatory to retire to Ville Urbanne, in the suburbs of Lyon.

In his country retirement, M. Chacornac, whose spirit had preserved all its activity, constructed with his own hands a telescope of three metres focus, by means of which, until within the last few months, he assiduously observed the solar spots and their manifold transformations. In the description of their incessant changes he sought new proofs of the gaseous nature of the sun, an idea which he was one of the first to announce.

SCIENCE LECTURES AT CAMBRIDGE

THE following Lectures in Natural Sciences will be given at Trinity, St. John's, and Sidney Sussex Colleges during Michaelmas Term, 1873:—

On General Physics and Mechanics. By Mr. Trotter, Trinity, in Lecture Room No. 11 (Monday, Wednesday, Friday, at 11, commencing Wednesday, Oct. 15).

On Elementary Organic Chemistry. By Mr. Main, St. John's (Tuesday, Thursday, Saturday, at 12, in St. John's College Laboratory, commencing Thursday, Oct. 16). Instruction in Practical Chemistry will also be given.

On Palæontology (the Protozoa and Coelenterata). By Mr. Bonney, St. John's (Tuesday and Thursday at 9, commencing Thursday, Oct. 16).

On Geology for the Natural Sciences Tripos. Preliminary matter and Petrology. By Mr. Bonney, St. John's (Monday, Wednesday, and Friday, at 10, commencing Wednesday, Oct. 15.) A Course on Physical Geology will be given in the Lent Term, and on Stratigraphical Geology in the Easter Term.

Papers will be given to Questionists every Saturday at 11, but the first paper will be set on Wednesday, Oct. 15, at 11, when arrangements will be made for further instruction should it be required.

On Botany, for the Natural Sciences Tripos. By Mr. Hicks, Sidney (Tuesday, Thursday, Saturday, at 11, in Lecture Room No. 1, beginning on Thursday, Oct. 16). The Lectures during this term will be on the Morphology of Phanerogamia.

A Course of Practical Physiology and Histology. By the Trinity Prælector in Physiology (Dr. Michael Foster) at the New Museums. Lectures on Tuesday, Thursday, Saturday, at 12, commencing Saturday, Oct. 25.

This course is intended for those who have gone through a course of Elementary Biology similar to that given last Easter Term.

THE AMERICAN ASSOCIATION

THE Portland Meeting of the American Association for the Advancement of Science was in almost every respect an exceptional success. Its general attendance was very large, and there was an unusual number of the older members, whose presence insures consideration of the more important topics, and gives dignity and force to the discussions. An especial effort had been made to exclude all inferior communications. A regulation had been adopted, compelling the presentation of an abstract of each paper before it was read; and the examining committee in determining from abstracts what papers should be read, exercised in general a rigorous but wise discretion. It will not be the case after this, as after previous meetings, that a considerable proportion of the communications actually read will have to be ignored in the printed proceedings. But even under such restrictions, the number of papers actually read was unusually