four pages, and are chiefly devoted to physics. Amongst the most important are Prof. Tommasina's contributions to theoretical physics, mainly criticising the theory of relativity, and the measurements of the electronic charge by MM. Schidlof and Karpowicz. Using drops of mercury of radii between 10^{-4} and 10^{-5} centimetre produced by an atomiser, they find that the light falling on the drops causes an appreciable amount of evaporation, and in consequence a variable speed of fall in a constant electric field. They also find that Cunningham's expression for the speed of fall of drops is not applicable to drops of the size used. The experiments, which are not yet complete, lend no support to the contention of Ehrenhaft that electrical charges exist, not integral multiples of the electron.

AN important paper on the preparation and digestive properties of papain is communicated from the laboratory of organic chemistry, Bureau of Science, Manila, by Mr. David S. Pratt; it is published in the *Philippine Journal of Science* (vol. x., p. 1). Papain is the name given to the proteoclastic enzyme elaborated by *Carica papaya*, L., and is secreted in the milky latex that forms a prominent characteristic of the plant. The methods in use for preparing and drying the latex are described in some detail, and its digestive activity studied; suggestions are made for standardising the methods of evaluation. Although the market is in a way a limited one, the possibility of establishing a papain industry in the Philippine Islands should receive attention, as it does not necessitate a large investment of capital, and the time required is short before returns may be expected.

Science Progress for July contains papers on the structure of the universe by Mr. H. Spencer Jones (see NATURE, July 15, p. 548), on the molecular structure and mode of oxidation of carbon, by Mr. Maurice Copisarow; on the *rôle* of reductase in tissue respiration, by Profs. D. F. Harris and H. J. M. Creighton; on some eugenic aspects of the war, by Mr. A. G. Thacker; and on the spinning properties of cotton, by Mr. W. Lawrence Balls. A short paper by Mr. S. C. Bradford gives the history of adrenalin, the active principle of the suprarenal capsules; the story of the discovery of their function, followed by the isolation of the active principle, the determination of its structure, and its subsequent synthesis, is one of the most fascinating chapters in the history of biochemistry and in the application of modern organic chemistry to therapeutics. The present number of *Science Progress* contains a novel feature in the form of short reports by various specialists on recent advances in science. These reports are to be continued every quarter, and should prove not one of the least valuable features of our contemporary.

OUR ASTRONOMICAL COLUMN.

ASTROGRAPHIC CATALOGUE, PERTH SECTION.—The Perth Observatory of Western Australia was assigned a region of the sky for the construction of the great Astrographic Catalogue distributed among observatories situated all over the world. The section which was undertaken was that lying between 31° and 41° of south declination. The publication of the volumes containing the measures will be issued in thirty-six volumes, each containing six hours of right ascension for one degree of declination, but the volumes will not necessarily be published in numerical rotation. Under the direction of the Acting Government Astronomer, Mr. H. B. Curlewis, four volumes of measures have recently been issued, and these cover the regions summarised in the following table:—

Vol.	Right Ascension h. h.	Dec. of centre of plate	Number of stars
IX.	0–6	−34	6,262
X.	6–12	−34	22,475
XI.	12–18	−34	20,498
XII.	18–24	−34	14,793

Issued with these volumes is vol vi. of the meridian observations containing a catalogue of 2025 stars between 37° and 39° south declination. These stars were selected as reference points for the Astrographic Catalogue, and are distributed approximately at the rate of three per square degree. Another volume consists of tables prepared for use in connection with zones 32° to 40° south declination. These tables are published in order that they may be readily accessible to those who are working in these zones. They are for the conversion of R.A. and declination, into standard conductors and of standard co-ordinates into R.A. and declination for plates having their centres in each of the above-mentioned degrees.

THE SCINTILLATION OF STARS.—A valuable article on the scintillation of stars and the unsteadiness ("boiling") of the instrumental image is contributed by M. G. Bigourdan, of the Paris Observatory, to the Bulletin of the French Astronomical Society (June). M. Bigourdan attempts to demonstrate their identity. In comparing the two phenomena the effect of stellar type, aurora borealis, and magnetic perturbations, barometric pressure, proximity of clouds, influence of azimuth, and of twilight, are separately considered. There are no data regarding effect of azimuth on tremor of image, and the effect of twilight appears to be to *increase* scintillation and decrease boiling, otherwise the two phenomena, it is concluded, present a true parallelism. Double-star observers are recommended to keep records of the degree of scintillation.

THE UNIVERSITY OBSERVATORY, OXFORD.—The fortieth annual report of the Savilian professor of astronomy shows that the activity of this institution has been well maintained during the period 1914–15. The analysis of meteorological statistics in pursuit of periodicities has been continued, and a cycle of 41–2 years has been traced in rainfall, etc.; in this direction there has been opened up an unlimited vista of work. The director has continued to control the earthquake station at Shide, and very pertinently suggests that the work of the Oxford University might well be extended in the direction of geophysics. In connection with the International Chart several Belgians resident in Oxford have rendered assistance in the measurement of star photographs. The distribution of stars according to magnitude has been determined for the Oxford, Bordeaux, Algiers, Cape, and Perth zones. Regional differences in the ratio of faint to bright stars thus revealed suggest the local presence of obscuring matter, and, when due allowance is made for this phenomenon the ratio seems to vary to a slight extent with galactic latitude.