The spectrum of the Nova suggested that it might display the same peculiarity of focus: hat we find in regard to planetary nebulæ, but a series of observations made between August, 1901, and January, 1902, failed to give any indications of this phenomenon.

The determined position of the Nova with regard to fourteen stars in its immediate vicinity—of which Prof. Barnard gives a chart—agrees fairly well with that already published by Prof. Aitken (Lick Observatory *Bulletin*, No. 8), and a comparison of the two sets of observations confirms no real motion of the Nova.

The observations of brightness, which extend from July 30, 1901, to April 15, 1902, show a gradual decrease in the magnitude of the Nova, with occasional brightenings in which, however, there appears to be no definite periodicity. After special measurements, Prof. Barnard disagrees with the Potsdam magnitude of the reference star B.D. 43° 270 and uses his own estimated value, which is about 0·2m. fainter than that of Potsdam, *i.e.* it is 7·56m.

Careful observations with the great telescope have failed to reveal, visually, the nebulosity surrounding the Nova, the light of which is probably mainly photographic, nor has Prof. Barnard been able to discover the 12·0m. star recorded by Prof. Ceraski as being 0·3is. following and 7″ south of the present position of the Nova (*Astronomische Nachrichten*, No. 3755).

NEW VARIABLE STARS.—The two new variables, as given below, are recorded in No. 3796 of the *Astronomische Nachrichten*.

11, 1902, *Lyrae*.—Mr. Stanley Williams reports the variability of the star, the position of which, as measured on various negatives, is 19h. 7m. 37s.·4 +41° 3′·7 (1855); its magnitude ranges from 11·10 to 12·20. Examination of the various records shows that the brightness of this star was approximately the same, in September, in 1899, 1900 and 1901, so that its period is probably exactly one year, or possibly one half-year.

12, 1902, *Pegasi*.—Herr K. Graff reports the variability of the star, the position of which is 22h. 7m. 30s.·15 +14° 4′ 10″·0 (1902), its range of variability being from 8·7m. to 9·4m.

DELAY OF THE MINIMUM OF U CEPHEI.—In No. 3796 of the *Astronomische Nachrichten*, Mr. J. Plassman records a delay of about 2h. 27m. in the minimum of U Cephei, on April 27, after the time of minimum recorded at Münster.

EARTHQUAKE NOTES.

THE seventh and eighth numbers of the new series of publications issued by the Earthquake Commission of the Kaiserlichen Akademie der Wissenschaften in Wien respectively refer to earthquakes which have been noted in certain parts of the Austrian Alps and in the Carpathians. The first of these, by Dr. R. Hoernes, is a register of 208 shocks observed in Styria between the years 1000 and 1870. Many of these disturbances are described in detail, and to each description there is appended a criticism of the various sources from which the author has derived his information. To complete this work, earthquakes which shook Styria, but originated beyond its borders, have to be considered, and, lastly, the districts shaken and the lines along which shocks have been distributed have yet to be determined. In short, what E. Suess has done for lower Austria and H. Hoefer for Carinthia is to be done for Styria. The second publication, by Prof. W. Láska, is an historical account of the earthquakes of Poland. It refers to a period practically identical with that considered by Dr. Hoernes. The author commences by saying that "earthquakes in Poland are rare," but as reference is made to earthquakes of distant countries which were synchronous with observations made in Poland, the description of Galician shocks extends over thirty-six pages. As an example of these references we read that the first earthquake in 1834 occurred on January 23 at 8h. 45m. and was observed in Tarnopol. On the same day there was an earthquake in England, the epicentrum of which was five miles north of Chichester, and it is worthy of note that there was a similar coincidence in 1666. The probability, however, is that if we had before us a register of all the earthquakes of the world, a coincidence might be found for each of the Carpathian records. In the general remarks attached to these registers we find several interesting notes on the emotional effects produced by those who have predicted the occurrence of earthquakes on specified dates. An accidental realisation of a widely published prediction took place on February 27, 1786, with the result that processions were organised and prayers were offered that earthquakes should not only shake Poland, but that a few should be arranged for Prussia.

In November, 1900, Prof. E. Ōdone gave an account in the *Bollettino della Società Sismologica Italiana* (vol. vi.) of forms of apparatus he proposed to introduce into seismometry which did not have the character of pendulums. The object of the first piece of apparatus was to measure the relative motion of two points of ground separated by a short distance. A seismographic arrangement identical with that proposed by Prof. Ōdone was used in Japan in the years 1884 and 1885. It showed that for fourteen earthquakes the relative motion of the heads of two stakes 3 feet from each other varied between 1 mm. and ·08 mm. (*Trans. Seis. Soc.*, vol. xii. pp. 63–66). The second piece of apparatus has the character of a manometer, and in its improved form as now constructed is described in the *Rivista di Fisica* (Pavia), December, 1901. It consists of a chamber about 2 m. in height and holding 200 l. of water, embedded in the foundations of a wall. At the upper and lower ends of this chamber are two passages closed by sheets of iron. On one side these sheets are in contact with the soil in which the foundations are buried and on the other side with the water of the manometer. Should a shock be transmitted through the soil, these metal diaphragms are deflected, with the result that the water from the chamber rises in a small tube 0·85 cm. in diameter, which is attached to the upper end of the manometer. The effect of vibrations due to explosions of powder in mines—in one instance amounting to 10,000 kgr., the apparatus being at a distance of 1 km.—have been studied, and it is seen that the changes of level in the manometric gauge are such as can be easily measured. From this apparatus it is expected to obtain certain direct measurements of earthquake energy, and from a manuscript note attached to the copy of the paper describing the same it is also anticipated that it may record volcanic sounds.

STATISTICAL METHODS IN BIOLOGY.

THE third part of *Biometrika*, published in April, contains several important contributions, the first of which is by Prof. Karl Pearson, who describes "a systematic method of curve-fitting by moments." For practical purposes it is found that if good quadrature formulæ are used this method is as good as the well-known method of least squares, and in some cases is applicable where the older method fails. Examples of the application of the new method are given. A communication on the sources of apparent polymorphism in plants comprises an editorial introduction and four papers by Messrs. G. Udny Yule, W. L. Tower, Dr. Alice Lee and Prof. Karl Pearson, and Mr. Yule respectively. Those who have considered the "multimodal" character of many botanical distributions as furnishing evidence of the existence of subspecies or local races will find reasons for reconsidering their views in these papers. In this part also Prof. Pearson contributes a controversial paper under the title "On the Fundamental Conceptions of Biology," in which he deals with discontinuity, differentiation and variation, and replies to Mr. Bateson's criticism of his memoir on the principle of homotyposis published in the *Philosophical Transactions* (vol. cxcvii. pp. 285–379). Another controversial paper by Prof. Weldon deals with Prof. De Vries's first volume on the theory of the mutation of species ("Die Mutationstheorie," &c., Bd. 1, 1901). The facts adduced by De Vries in favour of this intermittent and apparently anomalous mode of evolution are considered by Prof. Weldon to be inconclusive, and he comes to the conclusion that the evidence is insufficient to warrant the acceptance of this theory in preference to the selection theory of Darwin.

Among other contributions we may call attention to Mr. Blanchard's paper on "grandparental inheritance," in which he emphasises the need for further experimental work on "blending" as distinguished from "alternative" inheritance, and suggests for this purpose insects and some of the smaller mammals. Miss Lewenz publishes the completion of an investigation first started by Miss Whiteley and Prof. Pearson on the variation and correlation of the bones of the hand in woman. The conclusion is suggested "that if efficiency depends on high correlation, it is not to external measurements of the skull that