

THE Sebastopol Biological Station, under Dr. Sophie Pereyaslavtseva, continues to bring out important biological works. In the last number of the *Bulletin* of the Moscow Society of Naturalists (1888, No. 2), Mrs. Pereyaslavtseva publishes (in French) the first instalment of a most valuable work which she has written in association with Miss Marie Rossiiskaya, on the embryogeny of the Amphipods, being a continuation of her previous studies in the embryogeny of Rotifers. The development of *Gammarus pascilurus* is described in the first part of the work, and an idea of its detailed character may best be given by mentioning that the various stages of development of that one species are illustrated by no less than one hundred and twenty microscopical sections beautifully printed in colours. Two more representatives of Amphipods (*Caprella* and *Orchestia*) have been studied in the same way, while the lady students who work at Sebastopol under the learned lady-director of the station are now studying other species of Amphipods, and especially of *Gammarus*; so that a complete work on the embryogeny of that important zoological division is expected to be ready by the end of the autumn. For the present, Mrs. Pereyaslavtseva refrains from suggesting general conclusions, but at the end of her monograph she points out that throughout the embryonal development of *Gammarus pascilurus* the cells of its tissues are endowed with amoeboid movements. Those movements are less pronounced in the ectodermic and mesodermic layers, and yet the cells of the former are moving and protruding pseudopods even when the endodermic layer has taken the shape of a fully formed pouch, and its constitutive cells may be considered as epithelium. As to the cells of the mesoderm, they maintain the capacity of both locomotion and overlapping (*chevauchement*) even at very advanced stages of the development of the embryo—that is, until the elaboration of the muscular tissue has been completed. These phenomena have been noticed in all the three genera of Amphipods already studied, and most probably they are common to all Amphipods.

MESSRS. MARION AND Co. send us an account of a "detective camera" which has been planned to meet the requirements of the inexperienced as well as the experienced in photography. It has the appearance of a leather dressing-case or despatch-box, and has the special advantage that the person using it sees the exact picture he is to get on his plate, the same lens giving the image on the screen and taking the negative. Another "detective camera" of which Messrs. Marion and Co. have issued a description is in the form of a book, and can be used secretly, since there is nothing to indicate its real purpose.

IN an article on "Irregular Star Clusters" (*NATURE*, November 1, p. 13), it was stated, with regard to an apparent member of a scattered group in Ophiuchus, that its position "was found, by the comparison of photographs taken by M. von Gothard in 1886 with Vogel's measures of eighteen years previously, to have changed to the extent of 45", or at the rate of 2½" annually (*Astr. Nach.*, No. 2777)." Dr. H. Kreutz, of the Kiel Observatory, writes to us to say that more recent measures of Dr. B. von Engelhardt (*Astr. Nach.*, No. 2859) have proved this to be incorrect. The difference between Gothard's photographs and Vogel's measures was due to an error in Vogel's work.

THE additions to the Zoological Society's Gardens during the past week include two White-tailed Eagles (*Haliaetus albicilla*), British, presented by Mr. R. H. Venables Kyrke; two Short-eared Owls (*Otus brachyotus*), captured in the Red Sea, presented by Captain John Marr; a Little Grebe (*Tachybaptus fluviatilis*), British, presented by Mr. Howard Bunn; two Spotted Ichneumons (*Herpestes nepalensis* ♂♂), an Indian

Otter (*Lutra nair* ♂) from India, a Slavonian Grebe (*Podiceps auritus*), British, deposited; four Knots (*Tringa canutus*), European, purchased.

OUR ASTRONOMICAL COLUMN.

THE TOTAL SOLAR ECLIPSE OF AUGUST 29, 1886.—Part 5 of vol. xviii. of the *Annals of the Harvard College Observatory*, contains an account by Mr. W. H. Pickering of his expedition to Grenada in 1886 in order to observe the total eclipse of August 29; and some points in his report have recently been commented on by Mr. W. H. Wesley (*Observatory*, October 1888) and Mr. Ranyard (*Knowledge*, November 1888). Mr. Pickering's original plan of work had been a very wide one, and he took out a great variety of instruments with him, but no assistants besides his wife and a lady friend. It was very late in August before he arrived at Grenada, and this circumstance and the frequent obscuration of the sun before totality on the day of the eclipse caused several items of his programme to result in complete failure. The long focus photoheliograph and the actinometer under Mr. Pickering's own superintendence gave no results, but Mrs. Pickering secured three photographs with a couple of short-focus cameras, and Mr. Glean one with a telescope of 4 feet focus. One of Mrs. Pickering's photographs supplies some very curious features in the shape of some very faint extensions of the corona on the western side of the sun. One of these is a prolongation of a bright synclinal mass, and rises in a narrow jet to a height of 48' from the limb, and then divides into three parts, two falling back towards the sun right and left of the centre ray, which attains a total height of 60', then to bend over in a precisely similar fashion. Another extension further to the north rises to about the same height, 60', and then curves downward again.

Mr. Pickering's spectrum photographs afforded little fresh information, but confirmed Prof. Tacchini's observation of "white" prominences; and two of his small coronal photographs were used to give a determination of the brightness of the corona. These gave the total actinic brilliancy of the corona with the surrounding sky as 700 units, or ten times that of the full moon with surrounding sky. But the intrinsic actinic brightness of the brightest part of the corona was only 0.03, whilst the average intrinsic brightness of the sky 1° from the sun on a fine day was determined to be 1200 times as great.

COMET 1888 f (BARNARD).—Dr. R. Spitaler has computed the following elements and ephemeris for this comet from observations made at Mount Hamilton, October 30, at Vienna, November 2, and at Hamburg, November 5:—

T = 1888 September 10.82914 Berlin M.T.

$$\begin{aligned} \pi &= 65^{\circ} 0' 12'' \\ \varrho &= 137 34 17. \\ i &= 55 17 10 \end{aligned} \quad \text{Mean Eq. 1888.0.}$$

log q = 0.16873  
Error of middle place (O - C).  
 $\Delta \lambda \cos \beta = -4''$ ;  $\Delta \beta = 0$ .

Ephemeris for Berlin Midnight.

1888.	R.A.	Decl.	Log Δ.	Log r.	Bright-ness.
	h. m. s.	° ' "			
Nov. 16 ...	10 5 37 ...	12 25.4 S. ...	0.2197 ...	0.2414 ...	0.96
20 ...	10 9 56 ...	11 34.3 ...	0.2141 ...	0.2487 ...	0.95
24 ...	10 13 50 ...	10 39.0 ...	0.2081 ...	0.2561 ...	0.94
28 ...	10 17 46 ...	9 38.2 S. ...	0.2018 ...	0.2636 ...	0.94

The brightness at discovery is taken as unity.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1888 NOVEMBER 18-24.

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on November 18

Sun rises, 7h. 26m.; souths, 11h. 45m. 26'os.; sets, 16h. 4m.; right asc. on meridian, 15h. 37.2m.; decl. 19° 25' S. Sidereal Time at Sunset, 19h. 57m.  
Moon (Full on November 18, 15h.) rises, 4h. 32m.; souths, oh. 5m.\*; sets, 7h. 49m.\*; right asc. on meridian, 3h. 59.3m.; decl. 16° 30' N.