and Organiser of Further Education in Rugby, 61 Clifton Road, Rugby (May 8). An assistant in the chemistry department of the Coventry Municipal Technical College—The Director of Education, Council House, Coventry (May 22). A professor of anatomy in the University of Birmingham—The Secretary, The University, Birmingham (May 30). A university student in physiology in the University of London—The Academic Registrar, University of London, South Kensington, S.W.7 (May 31). A temporary lecturer in chemistry at the Huguenot University College, Wellington, Cape of Good Hope—Miss M. S. H. Kilroe, St. Paul's Girls' School, Brook Green, W.6.

## Our Astronomical Column.

**Comets.**—*Pop. Astr.* for April contains photographs of comet Schwassmann-Wachmann before and after the recent outburst, reported in NATURE for April 11. They were taken by Prof. G. van Biesbroeck with the 24-inch reflector at Yerkes Observatory. The first was taken on Dec. 16, 1930, when the comet's magnitude was about 16 : in spite of its faintness, Dr. F. E. Ross has managed to bring out an appreciable amount of coma by making successive photographic copies. The second photograph, taken on Feb. 11, 1931, shows the comet as a small, bright disc of magnitude 12·5. Examination of the original negative showed a little diffused light at the edge of the disc, but the extended coma had vanished. By Mar. 10 the comet had again sunk to magnitude 16, and the outer coma was again visible. On Feb. 11 the comet was 7·05 units from the sun, 6·33 from the earth. Prof. van Biesbroeck is confident that it will remain visible round the whole of its orbit, which will be a new cometary record. It is now within two years of aphelion passage.

Dr. K. Reinmuth, of Königstuhl Observatory, announces, in *Astr. Nach.* 5779, that he has detected images of a comet on plates taken in March 1902. It was 1·5′ in diameter with a faint nucleus and a short tail in P.A. 220° ; magnitude 12·0. He suspects that it may be a periodic comet, but it has not been identified with any known one. The positions are given in the hope that other images may be found on old plates.

| G.M.T. 1902. | R.A. 1902·0. | N.Decl. 1902·0. |
|---|---|---|
| Mar. 4d 10h 19·9m | 11h 4m 37·03s | 1° 13′ 34·3″ |
| ,, 5 9 38·3 | 11 4 13·62 | 1 15 23·5 |
| ,, 5 10 22·2 | 11 4 13·12 | 1 15 27·7 |
| ,, 5 11 5·8 | 11 4 12·32 | 1 15 32·5 |

**Another Interesting Schwassmann - Wachmann Object.**—These two astronomers of Bergedorf Observatory are the joint discoverers of several interesting comets. The latest of their discoveries is probably a minor planet ; it attracted considerable attention from its rapid retrograde motion of −1m 42s daily and its highly inclined orbit. *Circ.* 413 of Astron. Rech. Instit. contains the following preliminary orbit, computed by Dr. A. Kahrstedt :

Epoch 1931 March 24·0 U.T.

| | | |
|---|---|---|
| M | 19·6013° | |
| ω | 134·2787 | 1931·0 |
| Ω | 0·0056 | |
| i | 33·1919 | |
| φ | 21·4017 | |
| Period | 5·524 years | |
| log q | 0·2977 | |

The aphelion is about a unit inside the orbit of Jupiter, so the perturbations will be considerable. The magnitude is 13.

**Parallaxes of Stars at different Galactic Latitudes.**—*Publication* No. 45 of the Groningen Laboratory has a paper on this subject by Dr. P. J. van Rhijn and B. J. Bok. Its object is a re-determination of the mean secular parallaxes of stars of various magnitudes grouped with reference to their galactic latitudes. It is concluded that the distances of the faint stars in high galactic latitudes were over-estimated in the similar research in *Publication* No. 29. The proper motions have been re-investigated, using all the recently published star-catalogues and some special investigations for faint stars by Alden, P. van de Kamp, and A. van Maanen. The effects of galactic rotation have been taken into account, using Oort's formulæ of correction.

The following is a summary of the resulting mean secular parallaxes :

| Mag. | Lat. 0° to 40°. | Lat. 40° to 90°. |
|---|---|---|
| 7·0 | 0·033″ | 0·047″ |
| 9·0 | 0·017″ | 0·027″ |
| 11·0 | 0·0086″ | 0·015″ |
| 13·0 | 0·0045″ | 0·009″ |

Tables are given to facilitate the deduction of absolute proper motions of faint stars from their relative values as derived from photographs. They include the effect of differential galactic rotation.

**The Distant Faint Companion of Castor.**—*Bull. Astr. Inst. Netherlands*, **6**, No. 216, contains a full study of this faint star which belongs to the system of Castor, and is, like the two bright components, a close binary ; it is also an eclipsing variable. The two stars composing it appear to be practically identical in size and brightness ; each of them is 432,000 km. in radius, and of mass 0·593 sun, density 2·468 sun, surface brightness 3·45 magnitudes darker than the sun, total brightness 4·48 magnitudes fainter than the sun. Adopting 5741° as the sun's effective temperature, that of Castor *C* is found to be 3400°, in good agreement with its type of spectrum, which is *M*. Its colour index is 1·52 magnitude. The orbit appears to be circular ; the full period of revolution (that is, double the period of light-variation) is 0·8142822 day, and the radius of the relative orbit 2,701,000 km. The absolute visual magnitude of each component is 9·15 magnitudes. It is noted that the masses and magnitudes accord well with Eddington's mass-luminosity relation.

**The Distances of the Cepheid Variables.**—A recent note in this column described B. P. Gerasimovic's researches on this subject, leading to the conclusion that Prof. Shapley's absolute magnitudes needed to be corrected by +1·0 mag., and his distances reduced in the ratio 0·631 to 1. *Astr. Nach.* 5775 contains a research on the same subject by A. Kipper. It makes use, in addition to proper motions and radial velocities, of the fact that the angular radius of a star of known colour index can be deduced from its apparent magnitude. By applying this to different stages of the Cepheid variation, the change of angular radius can be correlated with the radial velocity. From a combination of all the methods he finds +1·1 as the correction to Shapley's absolute magnitudes. This is so close to the 1·0 of Gerasimovic that it gives ground for receiving both results with some confidence.