H^2, and have studied nuclear disintegration by the ion H^1H^2+. This ion behaves as a combination of a proton with an H^2 nucleus which the authors call a deuton. Striking results were obtained from lithium and from nitrogen used as NH_4NO_3. From lithium, particles were obtained with a range of 14·5 cm. corresponding to an energy of $12{\cdot}5 \times 10^6$ volts. A possible formulation of the process is $Li^6 + H^2 \rightarrow 2He^4$ —this giving an approximately correct energy balance. An alternative possibility is that the process involves Li^7 with the emission of a neutron. Nitrogen yielded α-particles for which no satisfactory explanation was found. From beryllium, particles were obtained with range similar to those excited by protons, though the ion efficiency was much higher. The authors suggest that the processes in these cases may be the disintegration of the unstable Be nucleus without capture of the bombarding particle. The authors also observe the production of protons of about 18 cm. range when their molecular ions strike any target whatever, and they suggest that the H^2 nucleus may break up into a proton and a neutron. If this is correct, the energy balance requires a lower mass for the neutron than that estimated by Chadwick.

The Molecular Weight of Erythrocruorin. The investigations of Svedberg and his collaborators by the ultra-centrifuge method have, as has been reported from time to time in NATURE, shown that stable native proteins can be divided into two large groups: (i) the hæmocyanins with molecular weights of the order of millions, and (ii) all other proteins, with molecular weights of 35,000–200,000. Preliminary investigations on the respiratory blood protein chlorocruorin of marine worms showed that it, like the hæmocyanins, has a molecular weight of the order of millions, so that the high molecular weight is not conditioned by the presence of the copper-containing active hæmocyanin group in the protein molecule. In a further paper (*J. Amer. Chem. Soc.*, July) the hypothesis is put forward that a very high molecular weight may be characteristic of respiratory proteins in the blood of invertebrates. The red blood proteins of some marine worms (*Arenicola marina*) and also of *Lumbricus terrestris* are found to have molecular weights of the order of $2\frac{1}{2}$–$2\frac{3}{4}$ millions, the two proteins being distinct. The name erythrocruorin, proposed by Ray Lankester in 1868 for the red blood pigments of invertebrates, is revived, Ray Lankester's later name hæmoglobin, suggested by Hoppe-Seyler in 1864 for the blood pigment of vertebrates, being obviously inappropriate. The name cruorin was suggested by Stokes in 1864 for respiratory blood pigment in general. Preliminary investigations show that several varieties of erythrocruorin exist in the blood of invertebrates, some with low molecular weights, but true hæmoglobin has not been met with (compare NATURE, 131, 325, March 4, 1933).

Astronomical Topics

The Sky in September. There is only one planet conveniently situated for observation this month, and that is Saturn, which is a conspicuous object rather far south in the heavens. Apart from its southerly declination, it is well placed for observation this month as it crosses the meridian about an hour before midnight. Saturn is an object of great beauty on account of its singular rings, which can easily be seen with a small telescope: it has become of particular interest at the present time by developing a large white spot, which can easily be seen with a modest telescope. The spot rotates with the planet and accordingly becomes alternately visible and invisible, the period of rotation being about ten hours. It is not known how long the spot will persist, but it may remain for a matter of a few weeks.

Dynamical Parallaxes of Stars. This method is based on the amount of curvature deduced from measures of double stars extending over some years; this, combined with the apparent magnitudes of the components, enables estimates of their distance to be made, assuming the mass-luminosity law. Lick Obs. Bull. No. 451 contains dynamical parallaxes of 323 of the double stars discovered by Prof. Aitken; they were deduced by R. G. Aitken and Miss C. E. Moore. The parallaxes are mostly small, but for 36 of the 323 stars they exceed 0·02″. It is chiefly for the more distant stars that the method is valuable; it cannot compete with direct measures of parallax for the nearer stars.

Wolf's First Periodic Comet. This comet was discovered by the late Prof. Max Wolf in 1884; it has been observed at every return since then, with the exception of 1905; it made a close approach to Jupiter about 1921, which moved the orbit farther from the earth, and made it a very difficult object. Nevertheless it was detected in 1925, and now again in 1933, thanks to the very accurate calculations of Prof. M. Kamienski, the director of Warsaw Observatory. Dr. Jeffers found it at the Lick Observatory, July $25^d\ 6^h\ 27{\cdot}9^m$ U.T., in R.A. (1933·0) $20^h\ 7^m\ 57{\cdot}2^s$, N. Decl. 20° 40′ 6″, magnitude 18. Prof. Kamienski's predicted elements are as follows:

Epoch 1933 Sept. 28·5 U.T.		
M	341° 57′ 44·1″	
ω	160 49 23·8	1933·0
Ω	204 10 18·8	1933·0
i	27 15 50·0	1933·0
φ	23 48 17·0	
n	426·0658″	

The deduced date of perihelion is 1934 February 27·908 U.T. The above observation indicates that perihelion will be about 0·1 day earlier than predicted. Though perihelion is in 1934, the comet will be chiefly observed this year, as it is too near the sun for observation after the beginning of January.

A prediction for this comet was also given in the B.A.A. Handbook for 1933, calculated by W. P. Henderson and J. D. McNeile. It was not computed with the same rigour as that of Kamienski, but does not differ greatly from it; it gave the time of perihelion 0·7 day later than Kamienski. In view of the faintness of the comet it will be better to use Kamienski's ephemeris, which is given in *Acta Astronomica*, vol. 2, series C, July 21, 1933. A portion of it is reproduced in *U.A.I. Circular* 445. The comet is well situated for observation, being on the meridian before midnight in N.Decl. 20°. But as it is too faint for ordinary instruments, the ephemeris is not given here.