

Peringuey's complaint of the delay in providing additional buildings. The large whale skeletons that stood so long in the open—to their considerable detriment—have been covered by a T-shaped building of brick with asbestos roof; but for some reason this was not made large enough to include a fin-whale and a male sperm-whale. Counting these, all the cetaceans known to occur along the coast of the Union are represented, except two porpoises. Special mention is made of *Balænoptera rostrata* and *Neobalæna marginata*, which have not long been known to occur in these waters. Owing to the damaged condition of many skeletons, some new ones are required, but so far only one whaling company, and that a foreign one, has befriended the museum. An old iron and wood building was obtained to store some of the other vertebrate skeletons, and, pending the erection of a wing for which 20,000*l.* was voted in 1914, this has also been used for exhibition purposes. One of the wings of the main building has been lent to the Art Gallery, which also waits in vain for the completion of a promised building. Whatever be the cause, it is certainly regrettable that valuable collections should be suffered to decay for lack of halls and cases.

LAST year at about this time we were able to extend a welcome to the *British Journal of Experi-*

*mental Biology*, which was the first periodical in Great Britain designed to cover this important and growing field. Other countries were already served by comparable publications. We now learn that an international journal of general biology, under the title of *Biologia Generalis*, is to be issued shortly under the editorship of Prof. Leopold Löhner, of the University of Graz, Prof. Raymond Pearl, of the Johns Hopkins University, Baltimore, and Prof. Vladislav Ruzička, of the Charles' University, Prague. The list of co-editors, who will presumably form an editing committee, contains the names of biologists from most European countries and also from the United States of America. It is proposed to publish original articles on general morphology, physiology, and ecology, and contributions will be printed in English, French, German, Italian, or Russian. The publishers of the new journal are Messrs. Emil Haim and Co., Vienna 1, Maria Theresienstrasse 10, and Bratislava, C.S.R., or, in the United States, through the Johns Hopkins Press.

MR. H. KIRKE SWANN is publishing, through Messrs. Wheldon and Wesley, Ltd., in 12 parts, a limited edition of "A Monograph of the Birds of Prey (Order Accipitres)." The work will be illustrated in colour by H. Gronvold, and the first part is promised for November 15.

### Our Astronomical Column.

THE ASTRONOMICAL DAY.—In a recent notice in this column of the Brussels *Annuaire*, it was stated, on the authority of the *Annuaire*, that the "Berliner Jahrbuch" for 1925 was not participating in the change of the commencement of the astronomical day from noon to midnight. Examination of next year's issue of the *Jahrbuch* shows that this statement is incorrect; that publication comes into line with all the other national ephemerides, which is a matter of congratulation, as a variety of usage in different countries would be a source of frequent errors. It is not too early to remind astronomers to make the change in any publications relating to next year's work. In a few cases it has been overlooked.

THE STARS OF TYPE O.—An important monograph on these stars by Dr. J. S. Plaskett forms vol. ii., No. 16, of the Publications of the Dominion Astrophysical Observatory. They are the most massive of any type; their mean mass is shown to be some 45 times that of the sun, the probable range being from 10 to 80 times that mass. The mean mass for early B stars (B<sub>0</sub> to B<sub>5</sub>) is 10 times that of the sun.

In spite of the high mass, the O stars have the high average radial velocity (cleared of sun's velocity) of 25.5 km./sec., which is higher than that of any type except the M variables (35 km./sec.). The total space velocity is twice as great.

The close relationship between O stars and planetary nebulae has been indicated before, but is further demonstrated.

The mean parallax of the O stars is difficult to determine, owing to their small proper motions. It is found to be about 0.0011" for 6th magnitude stars, indicating a distance of 3000 light-years and an absolute magnitude of  $-4^{m_{98}}$ , which agrees with Eddington's mass luminosity relation.

The monograph proceeds to discuss the fixed H, K calcium lines, supposed to indicate cosmic clouds between the earth and the stars, excited by their radiation. The Wolf-Rayet or "Emission O" stars are also discussed. Dr. Plaskett adopts the notation of O<sub>5</sub> to O<sub>9</sub> for the Harvard O<sub>a</sub> to O<sub>e</sub>. He proposes that the suffix *e* should be used to denote the presence of emission lines.

Many of the spectra discussed are reproduced in three plates at the end of the work.

STELLAR DISTRIBUTION.—The researches of Mr. K. G. Malmquist on this subject were recently noted in this column. The question of the relative frequency of the different spectral types, and of the giants and dwarfs of the same type, is of such fundamental importance in stellar cosmogony that it is of interest to give for comparison the figures given by Prof. Harlow Shapley (*Scientific Monthly*, May 1924) for the numbers of stars of different types contained in a cube the side of which is 100 parsecs; they are Giant M 22, Giant K 160, Giant B 4.4, Giant A 250, Dwarf F 680, Dwarf G (solar type) 7600. He notes that Dwarf K and M would far outnumber the last, but exact data are not available. He concludes from the small figure for Giant B that extremely few stars have sufficient mass to attain so high a temperature. It may also indicate that stars do not remain in this stage for long. Stages K and A appear to be much longer.

Prof. Shapley concludes that 95 per cent. of the stars in the Henry Draper Spectral Catalogue are within 1000 parsecs of the sun; this region is only one-millionth of that which he believes from his researches on the clusters to be closely populated with stars. The paper also deals with the galactic concentration of different types. This is great for B, A, slight for F, G, moderate for K, M.