1892 to enrich the extensive national collection of *inclusa*; but he left to his heirs a still larger collection containing many specimens of historic importance. We are glad to learn that this collection has not been dispersed, but that it has been found possible to purchase it for the Geological Institute of the University of Königsberg, which already possesses a famous cabinet of these objects. Properly qualified research workers will now, as in the past, be accorded the utmost facilities for the study of these great collections.

MESSRS. Harold C. Urey and Arthur E. Ruark, writing from the Johns Hopkins University, Baltimore, Maryland, state that they are preparing a book of about 700 pages on atomic and molecular structure, embracing both the theoretical and experimental aspects of the subject, and that they will be glad to receive reprints of private communications as to results not yet published.

MESSRS. C. Baker, 244 High Holborn, London, W.C.1, have prepared a new issue (No. 88) of their Classified List of Second-Hand Scientific Instruments. The catalogue is divided into sections dealing with microscope apparatus, surveying, astronomical and other instruments, spectroscopes, physical apparatus, and so on. The present list contains offers of a number of students' microscopes and accessories, while the astronomical telescope section is also large and its contents varied. Among the larger instruments is an 8-in. Cooke equatorial which was the property of the late Dr. W. H. Maw. Surveying instruments, and field glasses and small telescopes are let out on hire. Nine volumes of NATURE (1885–1890) are also offered for sale.

MR. GEORGE C. SHERRIN has designed, and Messrs. George Philip and Son, Ltd., have produced, a set of apparatus for demonstrating popular experiments in dynamics (20*s*. net). The set is supplied in a wooden box and is accompanied by an illustrated handbook. The apparatus consists of nothing more than a series of small steel rods of varying thickness, of weights, pivots, and collars, the parts being assembled in much the same way as the parts of a 'meccano' outfit. The result is to produce a toy capable of demonstrating—and that very effectively—the relative movements of earth, moon, and sun, the action of centrifugal force, various gyroscopic effects, and the principle of Foucault's pendulum. In itself, this is no mean achievement for such a simple toy, but in reality its 'star' turn is intended to show the action of the Flettner rotary cylinder. If a criticism might be levelled against such a delightful toy for grown-ups, it is that the last demonstration fails to carry complete conviction, first because an artificial wind created by blowing from the mouth cannot be relied on to strike a moving rotating cylinder accurately in a specified direction, and secondly, the deviations from accuracy in this respect may themselves produce the actual effects to be observed. If the toy is to rank as a piece of scientific apparatus, certain of the parts will require to be more delicately made.

Our Astronomical Column.

OBSERVATIONS OF PROXIMA.—Union Observatory Circular, No. 70, contains some interesting notes on this star by Mr. Innes and Dr. van den Bos. The colour is orange or orange-red, the spectrum probably *K*, the visual magnitude 11·2, the photographic 13·0. The parallax is given as 0″·90, which is larger than that deduced from the assumption that parallaxes and proper motions are proportional when compared with α-Centauri. Dr. van den Bos makes the interesting, but rather improbable, suggestion that the sun, Proxima, and α-Centauri form a straight-line solution of the three body problem. The parallax of the centre of gravity of the system would be 1″·14. It is satisfactory that Dr. Alden will investigate the parallax of Proxima with the Yale Telescope at Johannesburg.

THE SOLAR PHYSICS OBSERVATORY, CAMBRIDGE.—The thirteenth annual report of the Director of the Solar Physics Observatory, Cambridge, has recently been received, describing the stellar and solar work carried out at the observatory during the preceding year. Amongst the published work on stellar spectroscopy, mention may be made of a paper by Mr. Baxandall on absorption lines in spectra of types *G*, *K*, and *M*. The wave-lengths, intensities, and probable origins of lines in typical spectra of these classes have been determined and compared, in order to investigate the nature of the changes that occur in this region of the stellar sequence. Preliminary experimental work is being done by Mr. Carroll on the photography of the extreme red region by means of hypersensitised panchromatic plates, and also in testing the theoretical effect of stellar rotation upon absorption lines by studying the same effect in the solar spectrum. In the department of solar physics, an important piece of work (begun in 1916) has now been completed by Mr. Baxandall in revising the chemical origins of Fraunhofer lines in Rowland's tables. This work has been completed for the region λλ3900-5900, and the results sent to Mount Wilson for incorporation in a revision of Rowland's tables by the International Astronomical Union. Spectroheliograms of the sun's disc have been obtained on 118 days, and these, augmented by 326 spectroheliograms from Kodaikanal, have been studied by Mr. Butler. An investigation by the Director, assisted by Mrs. Beech, on the distribution of outbursts of sunspots, now covers four complete 11-year cycles, and a summary of the results is being prepared.

THE DISTANT COMPANION OF CASTOR.—An interesting article in the *Scientific American* (December) by Prof. H. N. Russell, describes recent researches on this star. A few years ago Messrs. Adams and Joy at Mt. Wilson found that it is a spectroscopic binary (as are the bright components of Castor) with a period of 19 hours 32 minutes. Dr. van Gest, of Leyden, finds that partial eclipses of each component by the other occur at intervals of $9^h\ 46^m$. Their distance apart is 1,600,000 miles, and each is 520,000 miles in diameter. The mass of each is 0·52 sun, and the density 2·5 sun, or 3·5 water. It is the greatest density found for a spectroscopic binary. The total light of each is $\frac{1}{60}$ of the sun's, and the surface brightness $\frac{1}{21}$ of the sun's. The concluded surface temperature is 3500° C., in good accord with the *M* type of spectrum which was found for them. It is of great interest and importance to have these accurate details of a pair of typical dwarf stars.