coalfield. This pamphlet is on precisely similar lines to those previously published, and gives a mass of valuable information concerning the coal seam under discussion.

MESSRS. J. J. Griffin and Sons and Baird and Tatlock have issued a joint catalogue, No. 50, of scientific apparatus mainly for physics. It is well printed and bound and has 735 pages, 14 of which are devoted to the index. In the section on light, an X-ray spectrograph, neon lamps, and a number of new optical benches are described. Under electricity, several new forms of galvanometers, resistance boxes, selenium cells, and electric furnaces are to be found.

THE latest catalogue (New Series, No. 19) of Messrs. Wheldon and Wesley, Ltd., 2 Arthur Street, W.C.2, deals with upwards of 3000 works relating to astronomy, classified as follows: History, biography, bibliography; origin and development of astronomy from Aristarchus to Sir W. Herschel; periodicals, publications of societies and observatories; elementary works, treatises, dictionaries; spherical and theoretical astronomy; celestial mechanics; practical astronomy; spectroscopy, solar and stellar spectra, photometry, photography; astrophysics, cosmogony; the sun, transits, sunspots; eclipses; Mercury, Venus, minor planets; the earth; the moon; Mars; Jupiter; Saturn, Uranus, Neptune; comets and meteors; stellar astronomy; double and multiple stars; variable stars, red stars and nebulæ, clusters, Milky Way.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—Demonstrators in civil and mechanical engineering in the University of Leeds—The Registrar (July 28). An assistant lecturer in philosophy at the University College of Wales, Aberystwyth—The Secretary (August 3). An assistant in the department of physics of University College, London—The Secretary, University College, Gower Street, W.C.1 (August 7). A lecturer in biology and chemistry at the Municipal Technical College, Swansea—The Director of Education, Education Office, Dynevor Place, Swansea (August 9). A chemical pathologist and lecturer on chemical pathology (jointly) at St. Bartholomew's Hospital Medical College—The Dean of the College, E.C.1 (August 16). A professor of music at the University College of Wales, Aberystwyth—The Secretary (August 25). A lecturer in moral philosophy in the Queen's University, Belfast—The Secretary (August 31). An assistant master at the Kingston-upon-Thames Technical Institute, to teach engineering workshop practice—The Principal.

Our Astronomical Column.

KOPFF'S PERIODIC COMET.—This short-period comet was discovered by Kopff in 1906, and was detected again after two revolutions in 1919. It passed perihelion last January, when ephemerides were published in the *B.A.A. Handbook* and elsewhere. However, the comet was then badly placed for observation, being nearly behind the sun; it escaped observation for six months after perihelion. Prof. M. Wolf succeeded in photographing it on July 13 at $1^h\ 5{\cdot}2^m$ U.T. in R.A. $1^h\ 17^m\ 12^s$, N. Decl. 18° 14′, the magnitude being 16. The observation indicates Jan. 27·15 as the date of perihelion. The other elements are taken from the *Handbook*:

ω	19°	43′	29″	log q	0·232113
Ω	263	55	10	e	0·51422
i	8	41	30	Period	6·5842y

The comet is probably only observable with large reflectors; the following ephemeris is for 0^h U.T.:

	R.A.	N. Decl.	log r.	log Δ.
July 26.	$1^h\ 27^m\ 48^s$	19° 55′	0·3680	0·3060
Aug. 3.	1 32 24	20 47	0·3761	0·2949
11.	1 35 33	21 31	0·3839	0·2828
19.	1 36 48	22 3	0·3917	0·2715

THE CONSTITUTION OF THE INTERIOR OF THE EARTH.—Dr. H. Jeffreys read a paper on this subject at the June meeting of the Royal Astronomical Society which is printed in vol. 1, No. 7, of the Geophysical Supplement of the *Monthly Notices, R.A.S.* It has hitherto been supposed that the rigidity near the earth's centre is very great, but since it was discovered that secondary seismic waves are (apparently) not transmitted through this region, Dr. Jeffreys reinvestigated the data for rigidity in the interior, including that based on the tides, and finds that they are quite consistent with the interior being composed of liquid iron, possibly with an admixture of nickel. The depth of the outer boundary of this liquid core is given as 2900 km. or 0·455 of the radius, this being the surface of discontinuity of seismic waves found by Gutenberg. Though mainly geophysical, the paper has also an astronomical bearing.

LARGE SOLAR PROMINENCE.—The recent appearance of a very large prominence has been reported by Mr. Newbegin observing with his solar spectroscope at Sutton. On July 16 at $10^h\ 25^m$, it extended 40° around the sun's west limb—from position angle 276° to 316°—and its height was then 85 seconds of arc. Probably it is the largest prominence observed as yet during the present cycle. Its character was of 'massive' formation and quiescent in type. An amount of fine detail is indicated by Mr. Newbegin's sketch, the prominence appearing to be composed of a number of tree-like structures rising at more or less equal distances from the chromosphere and connected together by branching filaments.

As a class, the large massive prominences last for some time—frequently for several weeks—and although usually found within the sunspot zones they are rarely, if ever, seen above a spot. In the present instance there was no spot in the vicinity, but there were faint patches of faculæ which were the remains of the extensive area connected with the great spot of December and January last. Indeed, the position of the prominence, at least for a portion of it, is almost identical with that of this spot. The mean position of the spot during its two transits in December and January was longitude 32°, latitude 22° N. Allowing for the average polar retardation at latitude 22°, the longitude of the place originally occupied by the spot was 0° on July 16, while the longitude of the sun's western limb on the same day at the time of Mr. Newbegin's observation was 2°.

Spectroheliograms showing disc markings and limb phenomena have doubtless been secured at several observatories equipped with spectroheliographs and should give additional information of great value as to the life-history of this large prominence, which is evidence of a recrudescence of activity in the chromosphere above an extinct sunspot. It may be added that no unusual magnetic disturbance has recently been recorded in this connexion.