wards of 1700 titles (with, in many cases, comments) of books in the following subjects: botany, agriculture, early medicine and surgery, forestry, fruit-culture, gardens and gardening, herbals, and tobacco. As usual, many choice and rare volumes are included.

No. XI. of the "Publications de la Societe de Chimie Physique" is a short monograph of 15 pages on isotopes, by M. Maurice de Broglie, which was delivered as a lecture in November 1920. The previous publication was a lecture on Bohr's theory of the constitution of the atom. The monograph is published by Hermann et Cie at the price of 2 francs. Two series of somewhat similar monographs are being issued by the Libraire Scientifique Albert Blanchard. One of these, of which seven parts are announced, consists of groups of two or three lectures on physical subjects. In addition to these a series of foreign scientific monographs is being issued. The third of these, which has recently come to hand, is by Prof. Kossel, and bears the title "Les Forces de Valence et les Spectres de Röntgen." The monograph covers 70 pages, and is issued at a price of 4·50 francs.

THE Society of Glass Technology, which has its headquarters at the University of Sheffield, has issued a useful handbook, a "Directory for the British Glass Industry," price 7*s*. 6*d*. to non-members of the Society. The volume is divided into sections providing lists both alphabetical and classified of glass manufacturers and craftsmen, with particulars in most cases of the class of work produced, and lists of firms supplying material and machinery required in glass making and working. The concluding short sections give useful information concerning industrial associations, trades unions, City Companies, educational institutions, and research associations, and publications dealing with glass technology. It is difficult to understand on what principle the selection of a group of publications, mentioned in the last section, which are referred to as "Periodicals in which articles on glass and ceramics occasionally appear," has been made.

Our Astronomical Column.

A SUPPOSED METEORITE AT QUETTA.—The *Pioneer Mail* for February 23 reports the fall of a supposed meteorite at Quetta on January 25, which, if confirmed, will for the first time establish the power of a meteorite to cause a conflagration. The fragments of the meteorite collected are said to weigh 6 tons, with a volume of 500 cubic feet! Hence the material must be abnormally light for a meteorite. It struck a large stack of closely packed straw 30 feet high, and penetrated it nearly to the ground. The "meteorite" is said to consist of materials like slate-grey igneous rock, volcanic glass, and coke. Possibly the stack was struck by lightning and the fused residue of the straw has been mistaken for a meteorite. The Geological Survey of India will doubtless settle the nature of this phenomenon.

SOLAR ECLIPSE INVESTIGATIONS.—At the meetings of the Australasian Association for the Advancement of Science held at Wellington, N.Z., two papers dealing with observations of the total solar eclipse at Wallal were communicated by Prof. A. D. Ross, who was a member of the Crocker Eclipse Expedition of the Lick Observatory. Shadow bands were observed for two minutes before and for one minute after totality. They altered in appearance, but the most persistent type was indistinct dusky bands about 6 inches wide, at 17-inch intervals, moving in a direction 30° S. of E. at 6 or 7 miles per hour. The bands at times came in groups and developed from a general shimmering effect. Their appearance was inconsistent with a diffraction theory, but suggested irregular refraction due to atmospheric temperature inequalities. The wind was from N.N.W. to N.W. at about 4 miles per hour, and there was a temperature drop of about 8° due to the eclipse. By comparison of six photographic plates exposed to a region surrounding the south celestial pole about mid totality and during twilight the same evening, it was found that the eclipse illumination corresponded to twilight with the sun $7\frac{1}{2}$° below the horizon. Wellington Anti-screen plates were used. The humidity was about 45 per cent. at the time of totality and about 50 per cent. at twilight, so that it is unlikely that the estimate of brightness was much affected by variation in the transparency of the atmosphere. Determination of the brightness of the corona was attempted with a specially designed integrating photometer, but the measurements of the plates had not been completed.

PLANETARY RADIATION.—No. 460 of the Scientific Papers of the Bureau of Standards, Washington, contains an account of researches made at Flagstaff by W. W. Coblentz on the thermal radiation from planets and stars. A cell of water 1 cm. thick is used to separate the long heat-waves from planets (due either to inherent heat or to warming of the surface by the sun) from the reflected solar radiation. A vacuum thermocouple made of bismuth wire was used to measure the radiations, the instrument being mounted on the 40-inch reflector. Observations on the moon are stated to confirm Very's results, but are not described in detail.

The observations lead to the conclusion that the planetary (long wavelength) radiations, expressed as percentages of the total radiation received from them, are Jupiter (0), Venus (5), Saturn (15), Mars (30), the moon (80). The high figures for the moon and for Mars indicate that rarity of atmosphere increases the warming of the surface; further, the northern hemisphere of Mars, which was in autumn, and more cloudy than the southern hemisphere, indicated a lower planetary radiation. It is hoped to compare the radiation from the orange and dusky regions of Mars, which might give a clue as to the conjectured interpretation of the latter as regions of vegetation.

The zero figure for Jupiter is concluded to be due to the enormously thick atmosphere, which acts as an opaque screen to the radiations from the (supposed) heated interior. The instrument is restricted to wavelengths 7 to 12 μ. Hence nothing can be stated about radiation between 4 and 7 μ, or from 12 to 15 μ.

The star temperatures are given as 3000° for type M, 5900° for Capella and sun (type G), and 12,000° for type B, in close accord with previous results.