Germany. But in the matter of health, as well as of economy, advantages are to be gained by substituting dried coltsfoot leaves (either smoked in a pipe or made into cigars) for the more insidious narcotic. Mr. Robinson's diagrams do not include fungi, but judging from the British species, these would fill many pages of the *Illustrated London News*. Instead of pitying our "ill-fed foes," we might learn a good many interesting lessons from their dietary.

THE Board of Agriculture has issued a leaflet (Food Production Leaflet, No. 34) on the canning of fruit and vegetables which should be very useful to the large number of growers and others who are desirous of preserving the largest possible quantity of fruit and vegetable food for winter use. The leaflet deals specially with the use of small canning plants suitable for domestic use by amateurs or small fruit-growers. The instructions given for every stage of the process are sufficiently detailed to ensure a reasonable prospect of success for the veriest tyro. Demonstrations are given daily at 11.30 a.m. in the Canning Kitchen, Food Production Department, 72 Victoria Street, S.W.1, and, in addition, periodical demonstrations are arranged in provincial centres. The necessary outfit of steriliser and cans can be obtained from the Department on terms which are explained in the leaflet.

A SOMEWHAT original method of reinforcing metals is described in the *Engineer* for April 12. The process has been devised by Mr. C. W. Denny, and lends itself to the manufacture of tubes and plates. It consists in reinforcing with perforated steel, of suitable thickness, weaker metals such as copper and lead. In making reinforced copper sheets, the perforated steel plate is prepared by any well-known method for electro-deposition, and, finally, copper-plated to any required thickness, the deposition of copper going right through the holes and forming a sheet of copper with the steel core inside. It is claimed that a plate so formed will stand bending and pressing without the copper leaving the steel. In some cases the copper can be rolled on hot. In producing reinforced lead plates it has been found practicable to roll or press the lead into the perforations.

MESSRS. HENRY FROWDE AND HODDER AND STOUGHTON have in the press "The Medical and Surgical Aspects of Aviation," by H. Graeme Anderson.

MESSRS. WITHERBY AND CO. announce an important book which should be of interest to ornithologists, viz. "A Monograph of the Pheasants," by W. Beebe. The work, which is being published under the auspices of the New York Zoological Society, embodies the author's own observations and information from other sources, and will contain many coloured plates and maps; also photographs showing the pheasants of the world, their haunts, changes of plumage, nests, and eggs. There will be four volumes, the first of which is to be issued next month.

A USEFUL catalogue (New Series, No. 82) of books of science has just been issued by Messrs. J. Wheldon and Co., 38 Great Queen Street, Kingsway, containing 1328 titles of works relating to astronomy, chemistry, electricity, engineering, mathematics, meteorology, and physics, and, in addition, particulars of sets of many scientific journals. The catalogue will be sent to any applicant for the sum of twopence.

MESSRS NEWTON AND CO., 72 Wigmore Street, W.1, are offering for sale the collection of microscope slides (some 650 in all) formed by the late Mr. Lewis Wright. A classified list, with the prices asked, will be sent by Messrs. Newton upon application.

OUR ASTRONOMICAL COLUMN.

THE APRIL METEOR SHOWER.—There is reason to believe that this display may be more abundant than usual at the ensuing return on about April 21. Of late years it has been very disappointing, and very few true Lyrids appear to have been seen since 1901. The radiant point is like that of the August Perseids, for it exhibits a diurnal shift of 1° to the eastward, the positions on successive nights being:—

		° °				° °
April	17	...	265+33	April	23	...	274+33
	18	...	267+33		24	...	275+33
	19	...	268+33		25	...	276+33
	20	...	270+33		26	...	278+33
	21	...	271+33		27	...	279+33
	22	...	272+33		28	...	280+33

The stream has been observed with certainty between April 16 and 26, but it has very probably a longer duration than that.

This meteoric shower has a cometary connection, for the first comet of 1861 shows a suggestive similarity of orbit, but the periodic time of revolution, either of the comet or meteoric shower, is not exactly known. There were rich displays of Lyrids in 1803, 1851, 1863, and 1884. This year moonlight will interfere somewhat with the phenomenon, as, at the time of the maximum, our satellite will be a little past the first quarter, and above the horizon until between 2h. and 3h. in the morning.

TEMPEL'S COMET.—The following ephemerides of Tempel's first periodic comet have been constructed by Dr. A. C. D. Crommelin on three assumptions of the date of perihelion passage in 1918: (A) May 9·37; (B) May 17·37; (C) May 25·37. The ephemerides are for 9 p.m.

Date	A R.A. h. m. s.	A S. Dec. °	B R.A. h. m. s.	B S. Dec. ° ′	C R.A. h. m. s.	C S. Dec. ° ′
April 17	16 51 18	16 30	16 32 4	14 48	16 12 36	12 55
25	16 52 6	17 9	16 31 44	15 25	16 11 4	13 26
May 3	16 50 54	17 55	16 29 20	16 [illegible]	16 7 39	14 2
11	16 47 52	18 43	16 25 5	16 48	16 2 33	14 40
19	16 43 26	19 34	16 19 41	17 36	15 56 28	15 25

Search should be made along a line through positions A, B, C, or this line produced. The values of log Δ on hypothesis B are 0·0959, 0·0749, 0·0574, 0·0440, 0·0357 for the five dates. This comet has not been seen since 1879, so there is considerable uncertainty as to its position.

ABSORPTION AND RADIATION OF THE SOLAR ATMOSPHERE.—A paper by Prof. Shin Hirayama appears under this title in the Proceedings of the Tokyo Mathematico-Physical Society, second series, vol. ix., p. 236. Utilising observations of the radiation from different parts of the solar disc which have been made by Abbot, Prof. Hirayama computes the transmission and radiation of the solar atmosphere, on Schuster's supposition that a great part of the solar radiation comes from an absorbing and radiating layer above the photosphere. It is shown that the observations are better represented in this way than by the previous calculations of Biscoe, in which the radiation of the atmosphere was not considered. The coefficient of transmission increases gradually with the wave-length, and the radiation due to the atmosphere ranges from one-third of the whole radiation for the shorter wave-lengths to nearly one-half as the wave-length increases. Assuming the effective temperature of the sun to be 6000° Abs., it is calculated that the temperature of the photosphere is about 7040°, while that of the absorbing layer is 5210°.