of 8 or 9 to 1 is not exceeded in naval practice of moderate and high power. Of the 556 sets in service, some extending up to nearly six years, it has only been necessary to remove three for refit due to misalignment; no actual breakdown occurred, and the gears, after dressing up, were afterwards re-utilised. Two cases of fractured teeth occurred; the broken or cracked portions were removed and the damaged teeth were smoothed up. There is a great saving in the blading of the turbine by the adoption of mechanical gearing, amounting in the case of a destroyer to 70,000 ft. of blading in a direct drive, against 7720 ft. in the geared drive. The increase in efficiency is 16·1, 17, and 20 per cent. respectively for light cruisers, flotilla leaders, and torpedo-boat destroyers at full power; at one-fifth power the increases in efficiency are 16·5, 20, and 20 per cent. respectively.

MESSRS. THOMAS MURBY AND CO. are publishing shortly two books likely to interest geological readers, viz. "An Introduction to Palæontology," by Dr. A. Morley Davies, and "Petrographic Methods and Calculations," by Dr. A. Holmes. In the first-named work the "type-system" of Huxley is applied. A limited number of fossil species are described in detail, the relation of the structure to the animal's mode of life being pointed out, as well as the effects of fossilisation. Each such description is followed by a general account of the group of which the "type" is representative. The volume will contain appendices dealing with rules of nomenclature and methods of extracting and preserving fossils. In Dr. Holmes's volume the following subjects receive attention: Specific gravity and porosity of rocks—examination of crushed rocks and loose sediments- mineral analyses by heavy liquid, magnetic, and electrostatic methods—mechanical analysis of sands—preparation of thin sections and their examination by staining, micro-chemical, and other methods —chemical analyses of rocks and their interpretation —representation of analyses by diagrams—suggestions for the description of rocks.

MESSRS. W. HEFFER AND SONS, LTD., Cambridge, have just circulated a miscellaneous catalogue (No. 186) of secondhand books which will doubtless be of service to many readers of NATURE. The more strictly scientific portion contains 100 items ranging over most of the branches of scientific knowledge; a lengthier section gives particulars of works on folk-lore, mythology, psychical research, comparative religions, etc. The Sanskrit collection of the late Dr. A. F. R. Hoernle, comprising about 400 volumes, is also listed. The catalogue may be had upon application.

READERS of NATURE interested in biography and desirous of obtaining books relating to this subject at small cost should obtain a copy of Catalogue No. 400 just issued by Mr. F. Edwards, 83 High Street, Marylebone, W.1. The list is not particularly strong in science, but it contains lives of Charles Darwin, Sir Joseph Banks, J. J. Audubon, Thomas Bewick, Sir Colin Scott-Moncrieff, and others. There is also a section of works on genealogy and family history. The catalogue will be sent on request.

Our Astronomical Column.

APRIL METEORS.—Of April generally and its special meteoric display it can scarcely be said that they often possess features of striking interest from a spectator's point of view. The fact is that the spring months are usually all deficient in abnormal phenomena of this kind, and observers are sometimes sadly disappointed with the result of their observations; for if meteors from Lyra are absent or few, there is little else to engage the student, as meteors may fall not more abundantly than three or four in an hour.

There are periodic returns of grandeur attached to the Lyrids, but the uncertainty of the periodic time renders it a non-predictive feature. Hence the observer must needs take up his stand with a very doubtful prospect before him.

But the stream of Lyrid meteors has important historical associations, and the shower can boast of a known cometary parentage. These facts, combined with the possibility of a bright and abundant display in any year, lure observers to look for it with an interest and anticipation sometimes amply justified.

SPECTRUM OF η ARGÛS.—As Mr. Baxandall and Miss Cannon suspected changes in the spectrum of this interesting star, Dr. Joseph Lunt took two photographs in February and April, 1919. Each was exposed on three nights with a total exposure of nine hours. The spectrum consists mainly of bright lines; there are dark lines, but they cannot be identified with known lines, and may be merely interspaces between bright bands. The results for radial motion differ according to the lines employed. The enhanced iron lines give $-30·7$ and $-28·2$ km./sec. from the two plates. The chromium lines are in fair agreement with this, but the hydrogen bright lines give $+46·5$ and $+48·7$ km./sec., a difference of 77 km./sec. from the other lines. On the other hand, hydrogen dark lines give -19 excluding H_β, or -33 including it.

Dr. Lunt suggests in explanation the settling down of an extensive outer hydrogen atmosphere on to the central body. He refers to Mr. Innes's discovery of a faint companion, and notes that hitherto no certain sign of variable radial velocity has been detected. He emphasises the importance of keeping the star under constant watch, both visual and spectroscopic, as the light curve gives expectation of another brightening about the present time. The star is a curious link between novæ and variables, Miss Cannon noting a strong resemblance between its bright-line spectrum and that of Nova Aurigæ on 1892 February 17 (Monthly Notices, vol. lxxix.).

INFRA-RED SPECTRA OF NEBULÆ.—Investigations are being carried out at the Lick Observatory by Dr. K. Burns with the object of securing photographic plates of great sensitivity to infra-red radiations, and some plates prepared by him have been utilised by Mr. W. H. Wright for exploring the spectra of nebulæ in this region. In the Publications of the Astronomical Society of the Pacific, No. 185, Mr. Wright gives an account of his preliminary attempts in this direction, with the results obtained in the case of the planetary nebula N.G.C. 7027. The 36-in. refractor of the Lick Observatory was used with a single-prism spectrograph giving the rather small dispersion of 1 mm. to about 600 Å.U. on the plate. The focus was not good in the region required, but fair definition was obtained between λ 6700 and λ 8500, and his photographs show four lines in the extreme red not previously reported. The corrected wave-lengths are given as approximately 7009, 7065, 7138, and 7325, and in addition to these lines there are others at λ 6678 and λ 6730 which have been measured previously with other apparatus.