need for improvement in this matter. It is, of course, impossible for Government to interfere in squabbles about disputed boundaries, &c., and hence jealousy and stubbornness will continue to put considerable areas of coal beyond the chance of being "won." But surely something might be done towards increasing the number of our mining schools; and, as Prof. Hull suggests, the Legislature might establish some educational test without which no one should be allowed to have the supervision of colliery workings. With well-educated managers the waste of coal arising from ignorant methods of working would be checked, and we should hear less frequently of those frightful accidents which ever and anon throw whole mining communities into mourning. J. G.

The Natural History of Plants. By H. Baillon; translated by M. M. Hartog. Vol II. (London: L. Reeve and Co., 1872.)

PURSUING the somewhat erratic arrangement to which we alluded in our notice of the first volume of this work (see NATURE, vol. iv. p. 199), Prof. Baillon proceeds to an account of the small order of Connaraceæ, the three sections of the large order Leguminosæ, viz., Mimoseæ, Cæsalpinieæ, and Papilionaceæ, and then goes off at a tangent to four orders of Incompletæ, viz., Proteaceæ, Lauraceæ, Elæagnaceæ, and Myristacaceæ. The same plan is pursued as in the first volume, of giving first of all a general sketch of the characters of the order, and then dividing it into a number of "series," each containing one or more genera. An immense mass of information is thus collected, though wanting in convenient arrangement. The references to original authorities are, however, commendably copious. The illustrations, as before, are excellent, the translation apparently well and carefully done.

Memorandum des Travaux de Botanique et de Physiologie végétale qui ont été publiés par l'Académie Royale de Belgique pendant le premier siècle de son existence, 1772—1871. Rapport Séculaire per E. Morren. (Bruxelles: Hayez, 1872.)

THOUGH Belgium has not produced any botanical star of the first magnitude, yet a large amount of excellent work has been done in the little kingdom, especially during the period of its independent existence, since 1830, as shown by the labours of Decaisne in the flora of Japan, and of Galeotti in that of Mexico, of Jean Kickx in cryptogamic botany, of Charles Morren in teratology and general morphology, and of Quetelet in the periodic phenomena of vegetation. M. E. Morren's short abstract of the service done by his countrymen in each department of botany, with a list of the dates of publication of the various memoirs, is a useful contribution to the history of the science.

Results of Five Years' Meteorological Observations for Hobart Town.

WE are here presented with carefully constructed tables and valuable remarks on the climate and vital statistics of Tasmania. It includes the results of observations for the five years ending in 1870, with which are incorporated the statistics for the previous twenty-five years, so that it presents us with a complete set of statistics of meteorology for thirty years. That the observations have been carefully and correctly made is proved by the fact that the results of thirty years' observations agree very closely with those of the twenty-five years, the difference in many cases amounting to only a second or third place of decimals. The observations for the five years ending 1870, have been made gratuitously at the Toronto Observatory, by Mr. Francis Abbott, the tables having been constructed by Mr. T. Roblin, Curator of the Museum, and revised by Dr. E. Swarbeck Hall, who appends an elaborate and carefully drawn up health report for Tasmania. The introduction, among other matters, contains a descriptive list of the various instruments used; the set seems to be complete, and all the apparatus trustworthy. The following are the mean resultants from the thirty years' observations for Hobart Town from 1841 to 1870 inclusive:—Barometer (at temperature 32°), 29·580. Thermometer, mean temperature, 54·72; mean diurnal range, 17·91; mean solar intensity, 93·39; mean terrestrial radiation, 43·01. Humidity of air—Dew point—mean position, 45·49; humidity of air, ·75; elastic force of vapour, ·316; condensation, rain in inches, 1·89; number of days on which rain fell, 11·66; Ozone, mean daily amount, 7·24; prevailing direction of wind, N.W., S.E.; prevailing force of wind, 58·37 lbs. per square foot.

Jahrbuch der k. k. Geologischen Reichsanstalt, xxii. band, No. 2. (Wien.)

FRANZ RITTER V. HAUER gives, in this number of the Year-book, an outline sketch of the sedimentary formations met with in Austria. He arranges his materials somewhat after the manner of Studer's "Index der Petrographie," the names of the various deposits following in alphabetical order. The geological horizons are briefly indicated, and copious references to authorities are given. The descriptions are necessarily brief, but they are clear and comprehensive, and the paper will be invaluable to those who may desire to widen their acquaintance with Austrian geology. Among the mineralogical contributions, we notice the description of a new mineral from Mexico—*Guadalcazerite*, the composition of which is given as $6\,Hg\,S + Zn\,S$. From the laboratory of Prof. Bauer come several useful rock-analyses, chiefly ironstones. Professor Tschermak gives a description of sundry meteorites, and some account of basalts, metaphyres, and other eruptive rocks from the Caucasus. There is also an interesting paper by Professor Inostranzeff on the Vesuvian lavas of 1871 and 1872.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. No notice is taken of anonymous communications.*]

Prof. Balfour Stewart on the Spectroscope

I BEG to say a few words in reply to some statements in the letter of Prof. Balfour Stewart in NATURE, February 20.

1st. I wish to state that I had no knowledge of Mr. Proctor's letter in the *English Mechanic* until I saw it by accident in a copy of that journal which had been sent to me for another matter. I have never made the claim to which Prof. Stewart refers.

2nd. The note in Schellen's "Spectrum Analysis," of which Prof. Stewart asks an explanation, consists of three statements of fact.

α "Though to Mr. Lockyer is due the first publication of the idea of the possibility of applying the spectroscope to observe the red flames in sunshine, as a matter of history it should not be passed over that about the same time the same idea occurred independently to Mr. Stone, of Greenwich, and to Mr. Huggins." I wish to remark that I made no claim on Mr. Stone's part or on my own. On the contrary I said expressly "*as a matter of history*" these facts should not be passed over. I conceive that this statement of facts ought to have a place in a book which professes to give the history of the subject.

β "These observers were, however, unsuccessful in numerous attempts which they made to see the spectra of the prominences, for the reason probably that the spectroscopes they employed were not of sufficient dispersive power to make the bright lines of the solar flames easily visible." Prof. Stewart remarks that he "cannot yet understand" why I failed. The reasons can now be a matter of conjecture only. All workers in science know how much more difficult it is to discover the unknown than to recognise the known. It may be that I passed over too carelessly the deep red (C) and the blue (F) where the brightest lines occur. The observation of the bright lines in the star in Corona B (May 1866), in which the same sifting principle of the prism came into operation, should have suggested to me to look for the lines of