Mind and Health Series. The Influence of Joy.
By George Van Ness Dearborn. Pp. xviii+223. (London: William Heinemann, 1916.) Price 5s. net.

PROF. PAVLOV of Petrograd has shown in famous experiments that digestion is affected favourably or unfavourably by emotional conditions, and his work has been followed by Cannon, Carlson, Crile, and others. The author of this volume has studied the influence of joy on blood pressure, and has devoted some attention to the psycho-biology of the emotions. His thesis is that joy is an important factor in the health of the body, and his illustrations refer to the influence of joy (1) in stimulating secretion, the movements of the food canal, and the process of absorption; (2) on the circulation; and (3) on the general integrative function of the nervous system.

The evidence given as to the influence of joy on secretion and blood pressure is more convincing than that under the third head. Much attention is given to the influence of emotion on the secretion of adrenalin and all that follows even a slight increase in the amount of that powerful substance.

The author writes with enthusiasm and occasionally with exuberance, but it is with good science that he confirms the good sense of the cheerful-minded in all ages, who have realised that "a merry heart is the life of the flesh." There is much salutary counsel in what Prof. Dearborn has to say regarding the cultivation of the will to be glad, and he has made a very useful contribution to psycho-biology.

Manual of Russian Commercial Correspondence.
By Mark Sieff. Pp. xx+232. (London: Kegan Paul, Trench and Co., Ltd., 1916.) Price 3s. 6d. net.

THIS is a welcome addition to the student's library. Admirably qualified for the task, the author has compiled a veritable *multum in parvo*, and the student who masters its contents will have little to apprehend when called upon to deal with Russian correspondence. A valuable feature is the section, modelled on the plan adopted by N. A. Blatov in his "Manual of Russian Commercial Correspondence," setting forth with admirable clearness the general plan on which letters on various subjects should be constructed. It constitutes a lesson in orderly arrangement and concise statement which might be profitably studied by correspondents in any language. Where so much is excellent it seems almost hypercritical to point out that the English phraseology is in places somewhat cumbersome and might with advantage be simplified, and also that here and there the English idiom is not quite correct. But these are minor blemishes which in no way detract from the utility of the work. As it is one thing to read print and a very different matter to decipher handwriting, we would suggest that it might be of assistance to students if a future edition contained a few facsimile specimens of actual Russian letters.

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LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

Optical Deterioration of the Atmosphere in July and August, 1916.

DR. MAURER, director of the Swiss Federal Meteorological Institute, has forwarded to me a note on the optical deterioration of the atmosphere noticed in the Alps in the summer which has just passed. At his request I enclose a translation of his note, as the subject is likely to interest your readers.

NAPIER SHAW.

Meteorological Office, South Kensington,
London, S.W., September 21.

Remarkable optical deterioration of the atmosphere became apparent in the Swiss Alps during the last ten days of July by the persistently abnormal magnitude and unusual intensity of the bright patch round the sun, to which the name aureole is sometimes assigned. Observations in previous years have established a well-defined minimum during the summer months, both in the diameter and the intensity of the solar aureole, but during the present year, from July 23 until the middle of August, the diameter generally attained 120° to 130°, and on August 25 even 140°, with relatively great intensity. Abnormal extension of the aureole was also observed after July 21 at high levels on the Alps, above 3000 metres, and a true brown Bishop's-ring was seen on August 3-4 on the high peaks of the Upper Engadine.

On August 6 twilight phenomena were very abnormal. The "purple light" was entirely absent; the westerly earth-shadow was very indefinite, and the eastern twilight-arch of the zodiacal light was similarly affected. The western sky, at first of a homogeneous pale yellow colour, showed a peculiar cirrus-like structure for some time after sunset. At first the stratification was strictly horizontal, but later on it appeared undulating, or in flaky form. It did not disappear until darkness set in. Similar phenomena were observed in 1883-4, 1902-3, and 1912, in connection with the much-discussed optical deterioration of the atmosphere in these years. After the end of July this remarkable cirrus-like layer could be seen best in the higher Alpine regions, but a bright "purple light" was not seen there either in July or August. The cause of the deterioration is for the time being still in doubt. Up to the present no reports of volcanic eruptions have come to hand from any part of the globe.

Zürich, September.

Science in Education.

IN reply to "F.R.S.; F.B.A." (NATURE, September 28, p. 69), may I express the hope that, whatever may be the custom in France, those who discuss the place of science in education, when they say science will mean science, and not "Egyptology, classical archaeology, history, art, linguistics, Indics, Sinics, Hellenics, philology (Latin and Celtic), French language and literature, Italian, Spanish, English, German, law, and economics"? No one wants to deny that the study of man holds as large a place as the study of Nature. Man has never yet tired of studying himself, and needs little encouragement to continue doing so. But the progress of the modern world is due to the fact that an increasing number of minds have escaped the vicious circle of these introspective examinations and begun to study the realities of external Nature.

Mr. Carnegie in 1901 gave a million pounds to provide funds "for improving and extending the opportunities for scientific study and research in the Universities of Scotland, my native land," to quote from his trust deed. In the University of Aberdeen, of which I have the honour to be a member, out of 132,000*l.* allocated from this benefaction in the period of 15 $\frac{3}{4}$ years, a bare one-quarter has gone to science; 52,118*l.* has gone to endow one professorship in history and five lectureships in French, political economy, German, education, and constitutional law and history; 24,750*l.* has been assigned to provide new buildings for teaching arts subjects, a new examination hall, and an extension of the library; 26,750*l.* has gone, 15,750*l.* to maintenance of the library and 11,000*l.* for provisional assistance in teaching, science being represented in this to an indefinite extent. The remaining 28,382*l.* has gone to science, 15,750*l.* for the equipment of laboratories, and 12,632*l.* as an endowment for a lectureship in geology. With reference to the latter, the Geological Department, taking the figures for the year before the war, was entirely supported by the fees paid by the students, and geology got the interest of the 12,632*l.* in the same sense as the Postmaster-General gets the sovereign when you purchase a 20*s.* postal order. Personally I think calling science what is not science needs to be watched and checkmated.

FREDERICK SODDY.

University of Aberdeen, September 30.

AN IMPERIAL DEPARTMENT OF MINERAL PRODUCTION.

THE presidents of the technical institutes most closely connected with the production and utilisation of our mineral resources have addressed to the Advisory Council for Scientific Research a memorandum advocating the establishment of a central Government Department, the duty of which should be to foster the development of the mineral resources of the British Empire. Whatever form such a department may take, the need for its creation is very obvious. In Great Britain no such department exists. The Geological Survey, under the Board of Education, records the existence of mineral deposits, but always from the point of view of the geologist, whose main interest lies in their mode of occurrence and not in their exploitation. The Inspectorate of Mines under the Home Office is concerned only with the due policing of mines from the point of view of safety; its ideal would be a state of affairs in which mining accidents were reduced to zero; and even though this were brought about by the cessation of all mining, the Inspectorate of Mines would have fulfilled the object for which it exists. The Board of Trade, the Imperial Institute, and many other departments of the Government take a more or less desultory interest in mineral production, but there is no one department the special duty of which it is to watch over the development and proper utilisation of our mineral resources.

What is needed is a Ministry of Production, or something equivalent thereto, which should have for its particular object the care of developing all the natural resources of the Empire. All natural products may be divided into three groups: they are produced by the cultivator, by the hunter or fisherman, or by the miner. Of

all these the last-named needs the most careful attention, because minerals alone constitute a wasting asset; unlike the other products, they are not renewed, and, once exhausted, are gone for ever. The cultivation of a field on wrong principles will entail losses for a year or two, but these are quite remediable, and the application of proper methods will restore it to fruitfulness; but a mine worked on wrong principles is ruined for ever, and mineral not properly wrought is in the vast majority of cases lost irrecoverably.

It is this consideration that renders the need for a Ministry or Department devoted to the administration of our mineral resources so very urgent. In most Continental countries the minerals have remained the property of the State, and the State has therefore a direct pecuniary interest in seeing to their development as an integral part of the national revenue. In this country and in America the State has found it advantageous to relinquish the State ownership of minerals, it being held that the development of the national mineral resources is thus facilitated, and that such free development is of more benefit to the nation than the revenue which might be derived from its mineral concessions. As regards purely fiscal reasons, these two nations are accordingly not directly concerned in the development of their mineral wealth, but it by no means follows that they should treat the subject with indifference. In the United States there is a Department of Mines that takes a very active interest in encouraging the mineral output. In Canada there is a Department of Mines upon somewhat similar lines, which is doing excellent work, and under the fostering care of which the mineral output of Canada is making rapid advances.

There was a time when Great Britain stood at the head of all nations as a mineral producer, at any rate as regards a considerable number of important minerals and metals; that we have fallen far behind to-day is due no doubt in great measure to natural causes, but their effect has been and is being accelerated by the fact that it has been nobody's business to see to it that our mineral resources were worked to best advantage; whenever legislation has touched mining, it has been to hinder, not to help, mining operations, mainly because there was no great Department of State to look after our mineral interests. Wastefulness in the production and utilisation of our mineral resources has gone on and is going on unheeded and unchecked, mainly again for the same reason. The need for a State Department administered on sound economic lines, as free from political bias as our national methods admit of, is perhaps more urgent for the British Isles in the first instance, but together with this and above this, there should be an organisation for protecting the mineral industries of our whole world-wide Empire, for consolidating the resources of the Empire, and for rendering it impossible that in the future the control of any portion of the Empire's mineral production should ever pass into alien hands.

HENRY LOUIS.