forms altogether a most attractive gift-book for an intelligent child.

Annual Record of Science and Industry for 1871. Edited by Spencer F. Baird, with the assistance of eminent men of science. (New York: Harper and Brothers, 1872.)

THE Americans are more fortunate than ourselves in possessing a Year-Book of Science edited by a scientific man whose name is a guarantee for the accuracy and value of its contents. The various items of information are arranged under thirteen heads, viz. (1) Mathematics and Astronomy; (2) Terrestrial Physics and Meteorology; (3) Electricity, Light, Heat, and Sound; (4) Chemistry and Metallurgy; (5) Geology and Mineralogy; (6) Geography; (7) General Natural History and Zoology; (8) Botany and Horticulture; (9) Agriculture and Rural Economy; (10) Mechanics and Engineering; (11) Technology; (12) Materia Medica, Therapeutics, and Hygiene; and (13)—a very small one—Miscellaneous, with a very brief Necrology appended. To each paragraph is added the indispensable reference to the authority. Prof. Baird's position as Secretary of the Smithsonian Institution at Washington has given him unusual facility for consulting all the leading magazines, and other scientific publications of Great Britain, France, Germany, Holland, and America, of which he has availed himself to the full. An account of the discoveries made in Italy, Sweden, Russia, and other countries of Europe, some of which are daily rising into more and more importance, has been obtained only second-hand. The whole is prefixed by a general Summary of Scientific and Industrial Progress for the year 1871, occupying sixteen pages, wherein the more noteworthy incidents in each department of science are briefly chronicled. The work is the result of great labour; and, as far as we have been able to test it, presents a very fair and accurate record of the progress of science during the year. To those who desire to possess such a record for handy reference, we can confidently recommend Prof. Baird's Year-Book as the best and most complete work in the language, and decidedly preferable to anything published in this country.

LETTERS TO THE EDITOR

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

Atmospheric Effect

AN atmospheric effect, which is sometimes observed in England, displayed itself here in great beauty yesterday. The western sun had been cut off from us by an intervening ridge, while the upper atmosphere was still filled with his light. There was a good deal of opalescent haze in the atmosphere, which, had the sun shone upon it uniformly, would have presented a tolerably uniform hue. But besides the haze, small detached clouds floated in the air, and behind each of them was a sheaf of shadow, drawn through the haze. The density of these shadows varied with that of the clouds which produced them, nor was the density uniform for all parts of the transverse section of the same shadow. The parallel bars of graduated shade thus produced converged, through an effect of perspective, to a point *in the east*, exactly as if the sun were going to rise there. The display of the convergent glory was strikingly beautiful.

The same effect showed itself at Oran during one of the evenings spent there by the Eclipse Expedition. I have seen it two or three times in England (always, I think, near the coast), the last occasion being in company with Mr. Hirst at Margate.

Faraday, if I remember aright, has described this effect. There was also, I believe, a question asked regarding it some months ago in NATURE. This brief account may interest the questioner.

Bel Alp, July 22 JOHN TYNDALL

Spectrum of Aurora

IN the article on the Aurora Borealis of Feb. 4, a translation of which appears in your issue of April 25, Prof. Respighi mentions having noticed the green line of the aurora when observing the zodiacal light; also, that this line was visible—more or less defined—from horizon to zenith, in every part of the heavens.

In 1867, when Angström observed the green line in the spectrum of the zodiacal light, he also detected its presence in all parts of the sky. From his own and Angström's observations, the Professor demonstrates the identity of the zodiacal light and the aurora. This appears to me, at the least, premature. Had the spectrum appeared only where the zodiacal light was perceptible to the naked eye, there would have been reason for believing it due to that light; but, be it noticed, the green line is everywhere seen as bright as in the zodiacal light itself. We have only to suppose that in both cases auroral phenomena, imperceptible to unaided vision, were present, and the spectra seen by Angström and Respighi are at once accounted for.

With all due deference to the great authorities just named, I may state that at Mr. Lockyer's request I have been observing the zodiacal light with a spectroscope since last December, and brilliant as the phenomenon has frequeently been, I have hitherto failed to detect the slightest appearance of bright lines or bands. A faint diffuse—to use Capt. Herschel's nomenclature—spectrum, about as intense as that of a bright portion of the "milky way" is all I have yet obtained.

The spectroscope used is one of Browning's 5 prism ones.

G. H. PRINGLE

Camp Charmadi, South Canara, June 23

Kinetic Energy

IF the loss of kinetic energy in water which has flowed from lower to higher latitudes is due to friction, and represents work consumed in overcoming friction, as Mr. Croll maintains, how is the gain of kinetic energy in water which has flowed from higher to lower latitudes to be accounted for?

Mr. Croll's answer to this question will be awaited with interest. J. D. EVERETT

Belfast, July 27

Bree on Darwinism

I AM very much obliged to Mr. Alfred R. Wallace for pointing out some errors of the press, and some of hasty writing which were not corrected in the proofs, of my work upon the "Fallacies of Darwinism."

I do not think, however, he has adduced anything which justifies his virulent condemnation of a work which he has not ventured to criticise, and I do not, however, write for the purpose of making any complaint. I hope to have the opportunity of answering his remarks upon another occasion.

My object in writing is, however, to request you will give me the opportunity of pointing out that no blunder which I have made is so great as that committed by Mr. Wallace himself, when he states that Darwin's imaginary human ancestor with cocked ears and a tail should have been evolved after the incoming of catarrhine monkeys, which creatures, by what I presume some might call anticipatory retrogression of development, have actually been placed by Mr. Darwin in the human pedigree, and separated from their congeners the platyrrhine or new-world monkeys, because they had so far reached the human goal to which they were tending as to lose their tails.

Also according to Mr. Wallace the cocked-eared creature must have not only re-evolved a tail, but have gone so far backward as to lose the human-shaped, and gain the canine-like "cocked ear." C. M. BREE

Colchester, July 27

Volcanoes and Earthquakes

IT is generally admitted that an earthquake is due to the passing of a sensible wave through the earth's crust. It has also been observed that the occurrence of earthquakes is generally associated with eruptions from volcanic vents, usually in the neighbourhood, but not unfrequently at considerable distances. Now it is evident—and it has struck all observers—that there