CORRESPONDENCE.

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

PYROLOGY.

To H. C. Sorby, Esq., F.R.S., LL. D., etc.

My Dear Sir,—As you are the only scientific Englishman of note who seems to have studied blowpipe crystallizations with the view of applying your observations geologically, I will not apologize for addressing you on this interesting subject, and I do so publicly for the following reason, which I think ought to be made public:

The last ten years of my life have been wasted in vainly trying to show that blowpipe chemistry, if studied on the rational basis of ordinary chemical analysis, *i. e.*, employing acids or alkalies and not salts, in the first place, as weapons of attacking substances, will inevitably lead to new discoveries and most interesting results in what scientific men of all branches are agreed to term their common pursuit—the revelation of Nature's secrets,—but my humble efforts have been met, in England, not merely with what Mr. Crookes has called "the conspiracy of silence," but with the most determined, if not underhand, opposition. Indeed, a foreigner considering the circumstances related to him, in which neither my purse, nor time, nor mental efforts, have been spared—hitherto, only to my own disadvantage—said "it appeared more as if I had been trying to commit a felony in England than to advance science there." I readily admit that the three exceptions to this category of eminent scientific enemies constitute a trinity of talent not easily found elsewhere, but then there are only three, if three of the leading men of science in Britain, and I fear therefore, that it was rather unadvised of me to forward my paper on this subject to you for presentation to the British Association, lately assembled at Swansea, and which was returned to you by the Secretary of the Chemical Section (to whom you seem to have forwarded it) as being "Unsuitable."

It will therefore afford you some consolation to learn that this paper, so ignominiously rejected at Swansea, was read before the German Association at Dantzic, on the 23d of September, by one of the chemists on the Swansea Committee, Professor Gilbert Wheeler, of the University of Chicago, United States of America, who had it translated into German for the purpose, and he informed me that one of the learned gentlemen there expressed "his astonishment" that the paper (a very brief one) had not been read in England;—adding, "in *our* country, when anything is objected to in a paper, *that* constitutes the greater reason for reading and discussing it."

So much for personal matters, and now, putting individual injustice or recognition aside, does it not appear to you that the rejection of any contribution, however feeble, towards the advancement of science "by a section of an association originally organized for that purpose by two Scotsmen—Sir David Brewster and Sir Roderick Murchison—shows a lack of what Sir John Herschel terms "that central thread of common sense on which the pearls of analytical research are invariably strung?"

The question seems to me not to be "Has England as many learned professors as Germany or France?" but have the masses of the people—the people, for instance, whom we may see so devoutly thronging the public houses and gin palaces in London on Sunday evening, when anything in the shape of scientific instruction would be considered "a desecration of the Sabbath"—have these poor religious people as much opportunity and possibility, within their little means, afforded them of acquiring practical scientific knowledge (which after all, underlies all art and labor) as the same classes have in Germany, France, or America?

The following little anecdote, among many other similar ones, shows that they have not. The other day, passing a book stall in the West of London, I asked a youth of 19 or 20, in charge, "if he had any books on chemistry?" "Chemistry," said he—"what's that?" I rejoined to this rather startling question—"I suppose you are a pupil of the London School Board?"—to which he replied "yes." I then said "what did they teach you, if they didn't teach chemistry?"—whereupon, to my grave satisfaction, he said "Oh, we learnt all about placental mammals, and vertebrata and all that"—an answer which shows that Mr. Huxley's remonstrances with the London School Board have not been altogether in vain.

With this little illustration of the state of things scientific at our very doors I will conclude this letter, and propose, with your leave, to consider in my next, the subject of your admirable address to the geological section at Swansea, of which you are President.

W. A. Ross, Lieut.-Col., R. A.

CHEMICAL NOTES.

The Sun has a Sensible Inductive Action on the Earth, even when its Magnetic Power is simply equal to that of our Globe. Induction of the Moon by the Earth and Diurnal Lunar Variation of the Terrestrial Compass.—M. Quet has shown that the sun induces the earth in various manners; by its rotation, by the speed of the earth in its orbit, by the rotation of the earth, and by the variations which it experiences in its electric constitution. The electromotive forces due to the three first-mentioned causes are:—The first 14 times greater than the second, and the second 72 times greater than the third.

The Variations of the Coefficient of Expansion of Glass.—J. M. Crafts has summed up, in his former papers, the most important theories on the variation of the fixed points of thermometers, but the variation of the coefficient of expansion of glass, which presents a much more serious inconvenience, has hitherto escaped notice. If this coefficient varies, the interval between two fixed points varies, and the graduation becomes inexact. In thermometers heated for a long time to 355°, the coefficient of expansion decreases, so that whilst the zero-point is raised by t degrees, the point 100° is raised to $100° + t + l$.

Tungstoboric Acid.—According to D. Klein, this acid differs in its constitution from various other borotungstic acids which have been prepared, and is the analogue of the unknown decatungstic acid. It is formed by the union of 9 mols. tungstic acid, 1 mol. dimetaboric hydrate, with elimination of 6 mols. water. Its composition is—

$$9WO_3, B_2O_3, 4H_2O.$$

Products of the Distillation of Colophonium.—Ad. Renard has isolated a carbide, which he names heptene, of the sp. gr. 0.8031 at + 20°. It is without action upon polarized light, and boils at 103° to 106°. He examined its behavior with reagents.

Dilatation and the Compressibility of Gases under Strong Pressures.—E. H. Amagat concludes from his researches that the coefficient of expansion of gases for temperatures above the critical temperature increases with pressure up to a maximum, on passing which it decreases indefinitely. The maximum diminishes for the more elevated temperatures, and finally disappears. For pressures lower than the critical pressure the deviation, which is at first positive at a temperature sufficiently low, becomes null, and then negative as the temperature increases; but, proceeding from a certain negative value, it diminishes indefinitely without changing its sign. For the pressures comprised between the critical pressure and a superior limit, special for each gas, the period during which the deviation is positive is preceded by a period where it is negative, so that the deviation changes its sign twice.

New Results of the Utilization of Solar Heat Obtained at Paris.—M. A. Pifre's improved apparatus enables him to utilize 80 per cent. of the solar heat, thus obtaining, at Paris, 12.12 cal. per minute and per square metre of surface exposed to the sun.

Remarkable Instance of Lightning Ascending Vertically.—A. Trécul perceived, during the storm of the evening of August 19th, lightning ascending perpendicularly behind the trees of the Place Jussieu, apparently from the conductors of the wine magazine.