should have occurred to a depth fully 100 feet below tide-level, and that, too, directly along the line of the great Appalachian axis, is certainly remarkable. It is further singular, that while the ledges along the shores of the lake are covered with glacial striae, corresponding generally with the course of the depression at the point where they occur, the transportation of bowlders has been largely to the north, blocks of fossiliferous limestone from the beds of Mount Wissick being abundantly scattered about the upper end of the lake, but not to the southward. The country between the head of the lake and the St. Lawrence has not yet been examined, but along certain lines is believed to be low. The Madawaska, on the other hand, flowing almost due south, occupies a drift-filled valley, bordered by high and steep hills similar to those of the lake, and probably marks its former extension in this direction. It would seem as if lake and river formed together a great transverse channel of erosion, the result of sub-aerial action, from the St. Lawrence to the St. John, at a time when the entire region stood several hundred feet higher than now, and that the movement of the ice was in the direction of the former. The fact that the direct northward extension of this depression is coincident with the famous gorge of the Saguenay gives additional interest to the observations mentioned.

L. W. BAILEY.

Fredericton, N.B., Oct. 23.

Coloring geological maps.

Professor Branner has issued a neat little card containing a colored geological map of the state of Indiana, on a scale of 1:4,878,720, or 77 miles to the inch! In a letter, which, from its having been written in French, is probably designed to be widely distributed in Europe as well as this country, he complains, 1°, that, with the scale of colors provisionally adopted by the International congress, it is not possible to employ a color which shall indicate the Devonian without specifying whether the area be upper, middle, or lower. Professor Branner will be convinced that he is mistaken if he will look at the report of the committee on the geological map of Europe (Amer. com. rep., p. 43, *b*), where in such a case it was suggested (and later approved by the congress) to use the medium shade of color accompanied by the characteristic letter of the system (in this case, *d*), but without any one of the indices 1, 2, or 3 (see Amer. com. rep., p. 103, for the conclusions of the map committee, arrived at after the meeting of the congress).

Professor Branner complains also that the difficulty of indicating four or five divisions in the carboniferous is greater still. This is not surprising on a map-scale of closely one-five-millionth. The congress never contemplated such a problem, though even here the individual geologist is expressly left free to employ his ingenuity to differentiate by means of tints and symbols, the only restriction laid upon him being that the base of the tint used shall be gray. This certainly opens the way to any method of differentiation which he may desire to try.

Professor Branner misunderstands the object of the congress if he supposes that the color-scale was adopted only for the geological map of Europe, and not for the use of all the geologists of the world. The fact is, that the geological map of Europe was simply selected as a lay figure on which to display the present 'provisional system.' If it be found that this system is bad, another will be substituted for it; but it will require more proof than Professor Branner furnishes to convince geologists of this.

If the 'carbonic' of Europe can be adequately represented by the proposed system, there is good ground to hope that the carboniferous of Indiana will not present insuperable difficulty; but not while the human eye remains what it is can any one succeed in displaying geological details at a scale of one-five-millionth and on a paper surface already one-third covered with printer's ink, representing names of towns and counties and railroad lines.

It is only fair to add that the system proposed by the congress will come as near to satisfying this impossible demand as any other.

PERSIFOR FRAZER.

Air from a cave for house-cooling.

I wish your opinion upon a matter in which I am much interested. Grand Avenue cave, situated four miles from Mammoth cave, contains some nine miles of avenues filled with delightfully cool, pure, dry air; temperature 55°. I propose to erect a house immediately over this cave; make the outside walls and partitions all hollow, so that they may communicate with a cellar, which shall be connected with the cave by a large shaft, say, eight feet square. The question is, will the air between the house and cave take the temperature of the cave by diffusion or otherwise, or will it be necessary to use mechanical means to get the air into the building? I have seen and spoken to several scientific men on the subject, who agree with me that an interchange of air will take place. and continue until equilibrium is restored by making the temperatures the same.

It is proposed to erect a hotel for a cool-air summer resort, and also for a sanitarium. If you think proper, I would like you to put this before the readers of your valuable periodical, and get the benefit of their opinions. It is a matter of some scientific interest, in which physicists, geologists, and sanitarians may be interested.

M. H. CRUMP.

Ogden college, Ky., Oct. 26.

Zinc in Moresnet.

In your issue of this date, on p. 383, you speak of tin ore being found at Moresnet. This is a mistake. The county contains, however, some of the most important zinc-mines of Europe. Almost every collection of minerals contains some specimens of zinc taken from these very interesting and important mines.

THOS. EGLESTON.

New York, Oct. 29.

Ely's Labor movement in America.

A newspaper discussion in criticism of any particular article or review is rarely profitable, but it seems necessary to make a brief reply to the communication of Professor Ely published in *Science* for Oct. 29.

Professor Ely charges that his reviewer, while apparently neither an untruthful nor malevolent person, failed to read the book in question before noticing it. Inasmuch as every statement of Professor Ely's which is mentioned in the review is accredited to the page on which it occurs, his allegation is of

course groundless. As a matter of fact, the present writer read Professor Ely's book with more than usual care, not only because it dealt with a question in which he feels a deep personal interest, but because of its general attractiveness of style. When, therefore Professor Ely denies that his reviewer read the book, he evidently is writing in a Pickwickian sense — or else he must mean that his reviewer did not read the book with the author's eyes, which is not beyond the bounds of possibility.

Professor Ely's attention is called to the fact that it is not usually considered candid to eliminate from a quotation any word or clause that distinctly modifies its import. When, therefore, his reviewer wrote, that "while not over-clear on this point, yet he [Professor Ely] seems to uphold the extremists in their contention that all the evils of the present state of society are due to private property and the lack of proper co-operation in production and distribution," he expressed an opinion which the freedom of the press will probably permit him to continue to hold. Professor Ely should have read and quoted it in full. Professor Ely dissents from that opinion, but his reviewer repeats it just as it was first stated. An honest difference of opinion is often serviceable rather than otherwise.

As a further instance of what his reviewer intended by the modest statement that Professor Ely seemed to him to have "committed the not uncommon scientific error of reading his theory into the facts, instead of deducing it from them," may be cited Professor Ely's majestic waving away of one or two well-known facts regarding workmen without grievances striking because of the interference of some walking delegate or other, with some rather eloquent references to a knowledge of human nature.

In fact, it is altogether to be regretted that Professor Ely should consider one of the most favorable notices of his book, that has appeared in any journal of authority, to be 'grossly careless.' Such an attitude seems to ascribe, perhaps, more honor than is their due, to the reviewers for the *Nation*, and for that organ of the socialistic party of which Professor Ely speaks. So we feel doubtful as to just what opinion Professor Ely entertains regarding his book. The general tone of his communication to *Science* would seem to indicate that all criticism of the book, to be just, must be laudatory: the 'grossly careless' phrase inclines us to the belief that the reviewers of the *Nation* and of the organ of the socialistic labor party may have most accurately reflected the judgment of the author. In either case, the present writer must crave Professor Ely's permission to disagree with him.

The published expression of the train of ethical thought to which the same notice of Professor Ely's book gave rise in the mind of 'One of the agitators,' at least calls for the recognition of the honor done your reviewer in coupling his humble initials with the great name of Aristotle. N. M. B.

A manual of lithology.

A critic should carefully inform himself concerning the contents of a book before he attempts to review it, and should criticise the stand-point taken, or adapt his review to that stand-point. This is my excuse for noticing the prodigious mauling of so small a corpse as my 'Lithology.' It is allowable to object to the plane from which a subject is viewed; but, if it be premised that a certain method is to be followed, a criticism of the faults imposed by that method show that the critic failed to familiarize himself with the necessary facts. Had he acquired such a familiarity, he would have seen that it was designed, not for specialists, but for the very classes to whom he says it may be of value; that a knowledge of mineralogy was presupposed (see preface), and that the treatment of that science was in the shape of a brief review of a few of the more common minerals; that the discarding of the microscope swept away all facts dependent upon that instrument for verification, required the use of old-fashioned terms existing before that instrument changed the nomenclature, and opened the doors for many 'blunders' as viewed by the microscopist. While it may be debated whether it be worth while to attempt to impart so brief an idea of the commoner rocks, it is a fact that such a method has been employed here for a score of years in the regular technical and scientific courses, and that the work is to be covered in twenty exercises. Looking at the criticism from this stand-point, it has overshot its mark, and shows that the writer has mistaken the book for a pretentious claimant for recognition on the score of novelty or advanced method of treatment, while, in fact, it is designed for those who would acquire, in the shortest possible time, an idea of the rocks most commonly met with in the field. EDWARD H. WILLIAMS, Jr.

Bethlehem, Penn., Oct. 30.

The abuse of dispensaries.

Your editorial on 'The abuse of dispensaries' (*Science*, viii. 380) gives occasion to call attention to the charity organization societies and their function. Such societies exist in the cities you mention, at least in London, Boston, New York, and Philadelphia. These societies are clearing-houses of information in relation to the people who beg or accept gratuitous relief. They keep registries, both alphabetic and geographic (at least, this is the case in New York and in Washington), of such persons, and make it their business to ascertain the condition and needs of all persons about whom inquiry is properly made. The principle upon which they work is the following: every church, institution, or person dispensing relief is invited to report to the society the name and residence of and pertinent information about persons aided; they are advised to dispense no relief before ascertaining from the society what it already knows about these persons. If report is made that relief has been extended to any person who is known by the society to be receiving aid from other sources, all parties giving aid are informed of the duplication. If it is known that any person is not receiving adequate relief, the society directs the attention of some appropriate relief-giving agency to the need, or directs the needy to the appropriate agency. This is the application of scientific methods to the solution of the social problems of pauperism and fraudulent and unnecessary solicitation of alms, and is destined to succeed. The dispensaries could well afford, as could all other relief-giving agencies, to apply a large percentage of their funds to the support of the charity organization societies, for the sake of the economy which would therefrom result in their other expenditures. B: PICKMAN MANN.

Washington, D.C., Oct. 29.