where engaged on the same humane service. Greely and his associates took their lives in their hands for the good of humanity, as the soldier does when he enters the army, as the physician when he studies the scourge, as the missionary when he penetrates the dark continent, as the navigator when he enters unknown seas. Some of the number have fallen without reaping the rewards of their enterprise; some are returning with emaciated forms; all bravely did their part, and will be honored by their countrymen. 'Peace has its victories as well as war;' and those who have fought frost and famine, who have endured the hardships of three polar winters, that they might add to human knowledge, deserve the lasting gratitude of all thoughtful men. In days when luxury and comfort chain so many people to the fireside, and when the occasions for heroic action are so rare, it is good for human nature to witness fresh examples of heroism, all the better that these examples are for the sake of advancing science. All honor, therefore, to Greely and his brave companions, living and dead; and honor, too, to Schley and his crew for the rescue they effected with so much skill. Now that these men have reached the ports of their native land, there should be a better welcome for them than disparaging remarks, and the hope that there will be no more such efforts. 'Let knowledge grow from more to more,' and let those who extend its boundaries by hardships and bravery have their honorable places in the annals of science, and be welcomed without reserve when their arduous exploits are concluded.

AS THE season approaches when our scientific men congregate for consultation upon matters of common interest, it may be well to call their attention to a small matter, which is really of more consequence than would at first appear; namely, to the practice of repaging authors' extra copies of articles published in journals and transactions of learned societies. The practice here complained of must occasionally be annoying to physicists, and, indeed, to every one who wishes to cite correctly, or to look up the references of previous writers; but it is severely felt by naturalists, who have so many names to cite or refer to, and to whom correct bibliography, and prompt and right reference, are essential. In the case of an actual reprint in an independent form, there may be good reason or necessity for repaging; yet even then the original pagination should be indicated. But in printing extra copies from the original type, there is no such necessity, and no real advantage: on the contrary, much disadvantage and confusion arises when a paper is cited from the journal or transactions of a society to which it was contributed, but under wrong pages. Some societies and journals refuse to have the original pagination removed; and, in our opinion, all should do so. Separate paging in addition may be permitted; but it were better to dispense even with this.

LETTERS TO THE EDITOR.

**** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

Light in the deep sea.

PROFESSOR Verrill's article in *Science*, No. 74, suggests the inquiry whether the faint light that he supposes to penetrate the deep seas may not have some rays of nearly all colors, and appear greenish to the deep-sea dwellers merely from an excess of rays of more rapid vibration, just as the sky appears blue from an excess of blue rays, not from the absence of other colors; and, further, whether the light reflected from the bright red or orange-colored animals that have been dredged from great depths does not give a many-colored spectrum, as is often the case with colored objects, so that, even when illuminated by greenish light, such animals would not necessarily be dull or black or invisible, but might be distinctly colored. If these questions were answered affirmatively, the explanation of the colors of deep-sea creatures by the operation of protective imitation would not be simple. W. M. DAVIS.

Cambridge, July 12.

The long-continued 'bad seeing.'

'A fellow of the Royal astronomical society,' in the *English mechanic and world of science*, vol. xxxix. p. 345, writes, —

" . . . As to the bad definition incident on the visibility of the afterglow, I should like to remark, that, for some time past, *daylight* definition of celestial objects has been worse than ever I remember it during my tolerably long observing experience. Transit-taking in daylight, save with the larger stars, has been quite impracticable, and over and over again I have looked in vain for Mercury. Of course, every one who is in the habit of using a telescope in the daytime is familiar with the fact, that on many seemingly cloudless days there is an otherwise invisible kind of haze, which impairs or destroys definition, and that the best or brightest vision is obtained in the blue sky visible between large, floating annuli; but this curious obscuration has

been just as apparent during the latter condition of the atmosphere as during the former. Hasn't the Krakatoa dust all settled down yet?"

Another observer (p. 322) bears witness to this 'continued and oftentimes peculiarly bad definition;' and Mr. W. S. Franks, in writing to the same journal (p. 416), attributes it 'to the unusually dry season.' Perhaps those who are working upon the subject of the 'Krakatoa dust' can give some explanation of this exasperatingly persistent *bad seeing*. For months past it has been noticed here by all who have had occasion to observe in the daytime, and, indeed, I noticed it myself in the autumn of 1883; but I was not particularly struck with it at the time, as at certain seasons of the year we are in the habit of expecting a smoky atmosphere and poor definition, on account of forest-fires or other causes. As the bad seeing has continued even down to the present date, we cannot account for it in this way.

The haziness is usually confined to the south of our zenith (I am speaking more especially of meridian observations), and is most marked in the neighborhood of the sun. The sky is white, though this whiteness is sometimes barely perceptible, and the stars are unsteady. Stars of the third or fourth magnitude, which have frequently been seen on a good observing day in other years, it is almost useless to try for now. That the phenomenon is not local seems evident from the remarks of the English observers quoted above; but has it been noticed by others in widely different latitudes?

WILLIAM C. WINLOCK.

Washington, D.C., July 22.

AN IDEAL UNIVERSITY FROM AN ENGLISH POINT OF VIEW.

AN article in a recent number of the *Contemporary review*, by James Bryce, on 'An ideal university,' is well deserving the attention of Americans, all the more because its author is an Englishman, writing with immediate reference to the wants of the city of London. He has, however, by repeated visits to this country, become familiar with what we are doing, and he possesses that truly philosophic mind which is quite as ready to gather suggestions from the experiments of a new state of society as from old-world experience. An active member of Parliament, a professor of Roman law in the university of Oxford, the writer of an historical work of remarkable power, accustomed in his wide range of travels to observe th discrimination the influences of different religions, laws, and educational systems upon the life of the people, he combines in an exceptional way the wisdom of a scholar with that of the man of affairs. His plea is for an organization in the city of London which shall be a true university, not a corporation holding examinations and conferring degrees, like the actual university of London, not a fellowship of colleges, not a group of museums and libraries; for all these are in existence. His plea is for something different from, if not higher and better than, any or all these agencies: it is a plea for that higher and better organization which thoughtful Americans in all parts of this country are trying to develop.

'What is an ideal university?' asks Mr. Bryce. The answer which he gives has in it nothing of novelty, nothing of eccentricity, nothing beyond the reach of a wealthy community. It is the answer of common sense, directed by experience, to the solution of a very important problem. It is the answer which has often been given before, but rarely in such persuasive and intelligible phraseology. Assuming that a university is a body of men engaged in teaching the highest knowledge, and is therefore something very different from Carlyle's 'true university, a collection of books,' he claims that breadth is the first essential,— catholicity, universality. He would have it include not only the subjects which are traditional (languages, mathematics, and theology), but the social sciences (politics and comparative jurisprudence), the sciences of observation and experiment, and even the applied sciences. In this last suggestion he is broader than most Germans, for they have hitherto inclined to teach the applied sciences away from the universities, in polytechnic and *real* schools. Americans have often, though not always, inclined to follow this German precedent; and those who hold the opposite view will be fortified in it by this word of Mr. Bryce.

The next essential of the ideal university is freedom. The writer plants himself firmly, and without reservations, on the doctrine that any one who comes may study any subject he pleases, whether or no he studies any other subject, or enters for a regular course. He would let the university prescribe its course or courses, and give its honors and degrees in accordance with such restrictions. "Place