SCIENCE.

FRIDAY, AUGUST 1, 1884.

COMMENT AND CRITICISM.

With all the applause bestowed on Lieut. Greely and his comrades for their self-sacrifice and heroism, we hear continually the remark, 'I hope this is the last of arctic explorations.' This is not a strange utterance to proceed from those who have given no thought to the magnitude of the problems involved in modern polar research. One can even smile when a person who has never considered the subject says with spontaneous humanity, "Such expeditions may be very good for science, but they are very bad for men." But it is astounding to read the words which are attributed by the interviewer to the president of the United States when he heard of the rescue of the Greely party. He is reported by the New-York *Herald* (July 18) to have said that he "had never favored these explorations, as the geographical and scientific information secured could not compensate for the loss of human life. He could not see what had been gained, so far, that would justify any men, however ambitious and daring, in making another attempt."

For the following reasons, we take a very different view of such expeditions. The public need to be reminded, to begin with, that science is not a person, a party, or a society, that has 'interests' to promote. Science is accurate knowledge, systematically arranged by men for the good of men. To promote science is to promote an understanding of the world in which man dwells. Every great discovery in science sooner or later proves to be for the good of man. A great philosopher once said, 'There is nothing so prolific in utilities as abstractions;' and, if this be true, the intimations that discoveries may be 'good for science, and bad for mankind,' are based upon a fundamental error, which should always be met with a protest.

Again: there is a strong presumption when ten of the most enlightened governments in Christendom (England, France, Germany, Austria, Russia, Denmark, Sweden, Norway, Holland, and the United States) are persuaded by men of the greatest wisdom and knowledge, at the suggestion of one who knew by personal experience the hardships involved (the explorer Weyprecht), to engage simultaneously in a certain line of investigation — we say there is a strong presumption that the investigation thus proposed is of profound importance to the world. In this case the problem is one which every intelligent man can appreciate: it is nothing less than to increase our knowledge of the physics of the globe; to gather such facts, from so many places and by such careful methods, as will throw light upon the fundamental laws of terrestrial magnetism, and upon all the forces which govern the winds, the currents, and the ice-floes of the northern hemisphere. The chief result in view is not that which attracts the most applause; it is not the indication on our maps of a few more miles of land, nor the carrying of our flag to a point a little nearer the pole than any flag has ever been: it is the addition to science of observations made daily during a period of well-nigh two years, in a station most inaccessible, but most wisely chosen for comparison with a dozen other stations where like observations have been in progress.

This contribution to human knowledge may, as the decades roll on, and it becomes a part of the capital of the world, yield the most abundant fruits. It was obtained, it could only be obtained, by the bravery, the intelligence, the self-sacrifice, of heroic men, sustained by governmental aid, strengthened by the consciousness that other men were else-

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