it is. The figure is of full size, but, until scrutinized, appears smaller, being dwarfed by the magnitude of the rock on which it is depicted. . . . The Indians look upon it as great or strong 'medicine.' Beads and broken arrows are still to be found below it and in the crevices near by, apparently placed there as propitiatory offerings. Deep gashes in the subjacent sandstone show where the savages have for a long period sharpened their knives in its presence, while rudely carved, not painted, figures on the rocks are apparently the autographs or totems of individuals or bands. The popular explanation among the white settlers is, that it has been painted by the Indians. This is inconceivable by those having any intimate knowledge of them, from the utter absence of artistic skill among the savages, as shown by the almost unintelligible hieroglyphics near at hand, and from their want of familiarity with paint as durable as this pigment. The fidelity to nature of this figure is utterly beyond any ability ever known to be exhibited by them. It has been suggested that it was painted by the Spaniards, who explored this region, and described this river as Rio del Animas in what is now nearly a traditionary period. But, if a conceivable motive could be supplied, there are local reasons why no artist would place a picture just where this is found.

The surface on which it is depicted is slightly irregular and roughened, while an absolutely smooth one can be found a few feet above; and, as the existing figure is so far from the ground as to require a staging from which to be painted, the same staging could easily have been carried up the small additional height required. There is no reason why the figure should be slanting, in the absence of the accessory of sloping ground. An artist who had the skill to create this could have made a much more effective picture by giving it a somewhat different posture, or by adding a figure or two. A deep-yellow stain or vein in the stone runs longitudinally through the figure, marring it as a work of art. This would have been avoided by placing it a little higher up, or it might have been obscured by the use of more color directly upon it. A small portion of the rock, where the color is deepest, was removed some time ago; and, having been carefully ground to powder, it was burned without the smell or any sensible sign of paint being elicited.

To the mind of the writer it is clear that the object is not artificial; but these details are mentioned that those who have no opportunity for personal inspection may have some basis of judgment. If this reasoning is correct, of course the figure has been placed there by some natural cause, and the most probable seems to be lightning. . . . It would appear that a bear had taken shelter under the somewhat overhanging ledge, or had simply stopped near by at the time, and, while startled at the close display of lightning, was by that agency depicted upon the solid wall. If not, what is the explanation? At places where the rock has scaled, the color shows to the depth of one-sixteenth to one-eighth of an inch, according to the closeness of its texture. White barbarians are already destroying this natural curiosity. It affords a tempting mark to passing ranchmen, and it is fast being destroyed by their well-aimed shots. Others, in sympathy with that vandalism that befouls the fairest monuments of civilization, chip off convenient projections, and pencil their little names on the fresher rock beneath. What the superstition of the red savage has preserved, the irrational iconoclasm of his white brother destroys. The writer, since preparing this paper, has been told that a scientific party visited the Bear Rock in 1867, and attributed the picture to electricity.

The light spots in the reduced print from Captain Anderson's photograph show the scaling due to violence. The original picture, of which I have a copy, shows many bullet-marks not reproduced in the reduction. The outline of the upper part of the neck in the reduction does not closely follow the curve of the original, and the comparative coloring of the fore-quarters is too intense. It is said that there is a somewhat similar picture of another animal about fifty miles farther up the Purgatoire; but this I have not seen, nor have had definitely described.

I am not prepared to defend the suggestion of electrical agency made above, and I believe scientific opinion would not accept it. But a careful study of the object *in situ*, on more than one occasion, convinces me that it is not the result of human agency, and it certainly is the accurate outline of a bear.

Davids' Island, N.Y., Jan. 30.

ALFRED A. WOODHULL.

A scientific corps for the army and navy.

In the army, as well as in the navy, we have several corps or departments which have a greater or less claim to being called scientific. Since the earliest days in the history of our army and navy, we have also had men of the highest scientific attainments appear in the line of these two organizations. But the question may be asked now, Is not the time approaching when we should have, strictly speaking, a scientific corps for these two institutions of the public service? Their past history goes to show that every twenty or twenty-five years, either one, produces a limited number of men, who, through their writings and influence, compel us to recognize them as scientific leaders in certain lines of research, and among the ablest of those concerned in the progress of learning and the advancement of knowledge.

It is not the object of this letter, nor will the space admit of it, to refer, either by name or deed, to any of these persons. A moment's reflection on the part of any scientific man will recall to his mind whom they are, both the living and the dead, many of the works of either are imperishable. Our country does not stand alone in this matter, for we find the same applies to the military organizations of other nations. With ourselves, however, it seems to me that without any particular legislative violence, much might be accomplished whereby the country would derive a greater amount of benefit from such men, and the national credit for wise and sound legislation be considerably augmented.

The formation of a scientific corps, open to the recognized scientists of either army or navy, would remove many of the present existing disabilities that these persons have now to contend against. Then should the scientific bureaus of the government ever be grouped as a department of science, the way will be properly opened for the work of these men, and they will naturally gravitate to their proper spheres of action, without conflicting with laws that can easily be construed to send them elsewhere.

To better show the wisdom of the step proposed, and the reasons why science should recommend it for

her own sake and good name, let me lay before you one or two examples demonstrating how the disadvantages I refer to, are due entirely to existing laws, and what we would gain by the change in them. A very excellent procedure on the part of the government is now in force, which consists in sending, at stated times, a certain number of midshipmen of the navy to the Smithsonian institution. Here steps are taken to instruct them in marine zoölogy or other matters from which science may be furthered some day, as the opportunities of these young men may afford. Those only are chosen who appear to promise the most, so far as the object in view is concerned. In the long-run, and after all degrees of success of this scheme have revealed themselves, we may obtain, sooner or later, in this way, a man who is really a naturalist in every sense of the word. If I am not mistaken this has already been done, for I have sufficient acquaintance with the young man to say so. He has produced excellent work, published some creditable things, and described several new species. Now no law strictly defines the disposition that shall be made of this one success, in a hundred perhaps, but worse than this, it is more than likely that the operation of the ordinary military impedimenta will defeat, in a very short space of time, what is really a splendid investment on the part of the government. If it falls to his lot to be placed aboard of a man-of-war, under some one who has no appreciation of the importance of such things, and he makes the attempt to utilize his knowledge, it is again more than likely that he will be told that if he wishes to follow such pursuits he had better resign. This proposition is discreditable, I think, any way we look at it, for surely the navy will gain a greater degree of respect for having among their number one who shows ability in any particular line of research, and it certainly seems that the government fails in its duty in not turning such a person to the best account, to say nothing of the interest it would pay her on the original investment.

Precisely the same impedimenta constantly confront the scientific investigator in the army, and my observations upon all that such workers have to contend against in civil life, lead me to believe upon comparison, that they can never entertain any conception of the thousand and one contrivances that surround him, to defeat, and in no way further, his efforts. Not that such persons would object to any thing that the struggle for existence might impose in the natural order of things, when one grows the wiser and the better for the test, but the distractions I refer to, are exceedingly pernicious, and of a far more serious character. Say, however, an ordnance officer wins his reputation as a pathologist, and just such parallel cases have occurred, and always will occur, what happens? — why in some roundabout way we soon find him in the laboratory, but unfortunately with an order over his head directing his return to the arsenal. Now this is bad, for if he goes back to the arsenal the habit of his mind, in spite of his personal integrity, will prevent him from being a good ordnance officer, while on the other hand, the government has abundant need of efficient pathologists, and here is one perhaps whose fame is world-wide. If he be retained in the laboratory the present law demands that he *do good work by stealth*, which is very bad for the investigator. and not a creditable thing for the country, for we should be enabled to do such things entirely above board. and be able to express our pride in them as a people, without apology, besides.

It would be superfluous in me to attempt to point out the least part of the incalculable benefit that the work of these scientists has been to their country, in the vast majority of instances, nay, to the world at large, and I must believe that the establishment of the scientific corps, that I suggest, would be a step in the right direction.

To say one of the smallest things in its favor, it would obviate the necessity of the recurrence of the ridiculous farce we were, as a nation, unavoidably guilty of, in offering Lieutenant Greely after his arduous expedition, a position in the quartermaster's department,— or such things happening, as occurred only a short time ago, an officer being reported to his department commander, because he was found guilty of pursuing lines of research foreign to his duties, and publishing the results of his investigations, notwithstanding the fact that it was proven that said duties had not been neglected in consequence.

The number of officers composing this corps should be limited to thirty, and transfers to it from other departments or the line, should be made only upon the consent of the officer. Officers should be allowed, however, to apply for such a transfer, and such application should be given due consideration by the National academy of sciences, which constitutes the highest advisory body to the government we have to decide such matters.

If the individual is found worthy of such distinction, and his work passes the required test as now applied by the academy, and he be willing, then the transfer should be effected at the earliest practicable date.

R. W. SHUFELDT.

Fort Wingate, N. Mex., Jan. 25.

Science and Lord Bacon.

A year ago the honorable Ignatius Donelly appeared in Washington with a documentary proof that the plays of Shakspeare were written by Lord Bacon. I did not hear Mr. Donelly's lecture, but several ladies informed me that they believed there was 'something in it.' As 'Bacon's essays' was one of the first books I bought and read, it occurred to me to examine his scientific work; but there is very little, and his single experiment appears to have been the stuffing a fowl with snow, which brought on the chill that caused his death. It seems to me that Bacon's services to science have been greatly overestimated, and that Macaulay's declamation on this point is as absurd as Mr. Basil Montague's arguments to prove that his hero never took bribes. A writer of so much intelligence as Bacon, and yet one who ridiculed the Copernican theory after the discoveries of Galileo, could have had but little scientific spirit; although it is to be remembered that the England of his day was far behind Italy and France in scientific knowledge. Can it be that in this matter we have been imposed on by the fustian of English writers, of cyclopedias and schoolbooks?

ASAPH HALL.

The competition of convict labor.

In his reply to my criticism of his views on the convict-labor problem, Mr. Butler denies that he consciously stands on the grounds of the ruling order of political economy. He holds that his stand-point is that of 'practical ethics' (*Science*, vii. No. 157).