SCIENCE.

FRIDAY, SEPTEMBER 28, 1883.

THE NATIONAL OBSERVATORY.

We call the naval observatory at Washington 'national,' not because we would ignore its recognized official title, but because we wish to emphasize the facts, so often lost sight of, that it is the property of the nation, that it is the only observatory of the first class which the nation possesses, and that its operations should be equally available for every department of the government. Such an institution is a national one, by whatever name it may be called; and the question of its direction and supervision is one of interest to every government office having need of such astronomical observations as can be made only at a fixed observatory. The general principle that it should be under purely scientific control is one that has generally been conceded in the abstract, but has not always been acted upon. Sears Cook Walker, who, thirty-five years ago, was perhaps the most eminent astronomer of America, propounded this principle in a published letter; but Maury was then near the zenith of his power, and little notice was taken of the opinion of the subordinate. From that time to this, the superintendency has remained in the hands of line-officers of the navy. The officers of our navy are of too high a character, and have too much self-respect, to pretend to a knowledge which they do not possess: we may therefore inquire how it happens that they claim the exclusive direction of an establishment most of whose operations are outside the line of their professional qualifications. Secretary Chandler has never given official utterance to his views; but he is understood to have said that he did not feel authorized to deviate from a precedent which had been sanctioned by forty years of usage. Precedent is, in one form or another, the basis of the principal argument on which the present system is sustained: we shall therefore inquire whether it has any real validity.

In order that such a supposed precedent may afford any sound reason for its continuance, the system must have resulted from the matured judgment of his predecessors, whose acts the new secretary followed. Unless this was the case, unless he was doing what they would have done under the same circumstances, the argument could have had no legitimate weight. Now, if one looks more closely at the case, he will see that there is a great deal of precedent on the other side. With one exception, not a superintendent had ever been appointed before his time who was not a professional astronomer, or had not some standing in the scientific world. Maury, Gilliss, Davis, and Rodgers were all recognized as having, in some form, qualifications arising from eminence in science or from a familiarity with scientific affairs; and it was this consideration which prompted their selection, and not merely the fact that they were naval officers. We might therefore claim that Secretary Chandler himself had deviated from precedent in appointing superintendents on the sole ground of naval rank. Indeed, we believe that Secretary Chandler was the first who ever gave any real hearing to what the astronomers of the country had to say on the subject. On all previous occasions, vacancies in the superintendency had been filled so quickly, that they never had had time to give an organized expression to their views at the critical moment, even supposing they had been disposed to find fault with the selection, which certainly was not always the case. A plaintiff whose suit had been postponed from time to time for forty years might well feel dissatisfied, if, when finally heard, the decision of the judge should be, that the defendant had remained so long in possession, that he must now keep possession, no matter what the merits of the case. It should not be forgotten that the theory that the

observatory needs nothing but an administrative officer, whose sole duty it shall be to take charge of the building and grounds, preserve order, and conduct the correspondence, leaving the scientific work to the professors and lieutenants, was never heard of, except when no other argument was available, and is now not likely to be supported even by the line-officers themselves.

The tersest form in which the case is put by these officers is this: "The system has been tried for forty years, and has worked well; let us leave well-enough alone." But has there been any system? Certainly not, unless a total absence of system can be called a system. And in what way has it worked well? This depends on the standard by which we measure it. We may admit that in the eyes of the conservative public every thing which does not lead to utter destruction, or against which nothing is heard, is looked upon as working well. We once heard a popular superintendent highly praised, because, having the professors completely in his power, he did not embarrass them by vexatious interference, but had the forbearance to let them go on with their work without hindrance. Last spring, when the question had given rise to a lively discussion among scientific men generally, one of the most eminent foreign astronomers who has landed on our shores paid us a visit. He was, of course, restrained from any public expression of opinion on the subject, but could respond frankly to all inquiries. When asked for his views, he said in substance that individual astronomers had done important works, and made great discoveries at the naval observatory. But, he added, when we look further, and inquire what the observatory itself has done by organized work, we find a great want. There has been no unity, no continuous plan of work, and few of the results which might have been gained by organized action. He might have stated the case yet more strongly. The published observations of the thirty-five years are of every possible character, from the refined discussions of the accomplished astronomer to the vain efforts of the tyro working in the dark, and the confused records of careless men who did not know what to do, and cared for nothing except to draw their pay, — all put in without discrimination. The astronomer of the future who shall try to make use of the results will be surprised by the kaleidoscopic character of the impression made upon him as he turns from volume to volume. Here a new series of observations suddenly begins. He will follow them through a few months or a few years, and find them as suddenly broken off, right in the middle, perhaps, and just when they might have led to some useful result. New systems of observation and new methods of calculation will be found coming in from time to time without any apparent reason. Every effort he may make to discover a method in the madness will be vain. To find an explanation, he will have to inquire into the *personnel* of the observers. By careful research he will then find, as a curious coincidence, that, when these changes occurred, some observer had died or left the observatory, or there had been a change of observers at the instruments. And this is the so-called 'system,' to the perpetuation of which the country is asked to dedicate the new observatory, to be built at a cost of half a million dollars.

The attitude of the naval officers, under these circumstances, is of much interest, because it depends very largely on them to determine whether this confusion shall continue indefinitely, or whether some permanent plan of work shall be adopted. If the indications of their views and intentions which have reached us since the discussion began are correctly interpreted, they have resolved on a course which cannot but prove equally disastrous to naval and national science. Com mon report credits them with a determination to 'hold the fort' at all hazards, and to vigorously contest every effort that may be made to place the observatory under scientific control. There are even indications that the dismissal of some or all the civilian astronomers is desired, in order that none but naval officers may be left to do the work.

Such a prospect naturally leads us to consider the relations of the navy to science. Scientific organizations have shown on every occasion their high appreciation of the efforts of naval officers to secure a scientific training for themselves, and to advance knowledge by their own efforts. Every thing they have done has met with generous recognition from their civilian co-laborers, and they are received upon terms of perfect equality in every enterprise in which they have taken part. There is no scientific position which would be denied them on the ground that they were naval officers, and therefore to be regarded as inferiors. To maintain this cordial relationship, nothing more is necessary than that the officers should admit the equality, and make no claims except those which are founded upon merit. When they begin to claim precedence and control on the ground of naval rank, they assume a position in which they will meet with the combined opposition of their scientific co-laborers, and render all co-operation impossible.

The application of these considerations to the present case is very simple. Naval officers will not find, in scientific quarters, the slightest opposition to their doing any work at the observatory which will either advance science, or lead to their own professional improvement. It is, indeed, a mooted question, whether the work can really be well performed by any but a permanent staff of trained assistants, and it must be admitted that the observations made by naval officers in the early years of the establishment were not a success. But the officers may justly claim that what they did then is no test of what they can do now, when a better training has been secured, and a scientific spirit has been infused into the service. There is no such question raised on the scientific side as, Shall you or shall we do the work? Shall you or shall we superintend it? What is, then, the ground taken by the general scientific sentiment of the country? Of course, in answering a question of this kind, differences of individual views will be found, and no answer can be given which all will accept without modification. But we are persuaded that there will be no difficulty in reaching some conclusions which will correctly represent the average common sense of the great mass of those who are interested in the subject. We state them as follows: —

Give the naval officers every possible chance, and let them do every thing which they shall prove themselves able to do. Let the superintendent be the man, who, in the opinion of the astronomers of the country, is best fitted for the place, whether naval officer or civilian.

But let the questions, what shall the observatory do, how shall it be done, and is what is done good, be decided exclusively by the highest scientific authority, acting, not privately, and upon the motion of the superintendent, but officially, with the weight and responsibility of legal appointment. Let this authority represent, not merely the navy department or naval science, but the science of the whole country, and let the superintendent, whoever he may be, be responsible for executing its decisions. The shape it would naturally take would be that of a board of control, composed of the leading astronomers of the country.

We state these points, not as forming a definite plan, or even laying a basis for such a plan, but only as indicating the spirit in which we hold that the case should be considered by the two parties. What we ask is as much for the intellectual benefit of the navy itself as for the good of science, and we earnestly hope that naval officers will meet our views in the spirit in which they are put forth.

THE NATIONAL RAILWAY EXPOSITION.[1] — V.

THE postal-car shown by the Harrison postal-bag rack company of Fond du Lac, Wis., appears to be conveniently arranged, and possesses many ingenious but simple devices for facilitating the conveyance and sorting of letters and newspapers. The sorting-tables are not fixed, but are hinged by means of hooks on movable stanchions; and each table, measuring about forty-two inches by eighteen inches, can be detached and stowed away, so that any num-

[1] Concluded from No. 26.