SCIENCE:

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THE SIGNAL SERVICE.

The question of the appointment of a Chief Signal Officer in the room of the late General MYER is immediately interesting. It is a question which has a direct bearing upon the scientific activity of the country, as well as upon the more important and more practical matter of making accurate weather forecasts, and displaying storm signals for the benefit of commerce.

The first and greatest use of the Weather Bureau is to make itself valuable to every individual in the United States, through accurate and prompt predictions, and thus to justify the annual expenditure of nearly $1,000,000. At present about 80 per cent. of the predictions are fulfilled, which is a fair showing—indeed, a very creditable one. Most unprejudiced persons, familiar with the routine of the Signal Service, will admit that General MYER had carried the efficiency of the service about as far as it could have been carried under an organization like his own; and the country may feel confident that, whoever is appointed to succeed him, the use fulness of the Signal Service as a Weather Bureau, that is to predict storms for the benefit of commerce, agriculture, etc., will not be greatly diminished. The present routine is so well established that we may be sure for some time at least, of the same proficiency.

But meteorologists know that this percentage can be increased. To do this, scientific investigation must be carried on in various ways, and by competent persons. The vast material now accumulated by the Bureau must be examined, discussed, and the laws—empirical and other—deduced. This can only be done under intelligent and sympathetic direction, by men trained in the methods of physical and mathematical science. This is the first great want. But again, the Signal Bureau has grown, under General MYER'S vigorous administration, to be a vast machine, composed of many parts—officers and men—and controlling many instruments. For example, the many military telegraph lines of the West, several thousands of miles in length.

Again, the service must look not only to the continuance of peace at home and abroad, but to the contingency of a war in which trained signal men may be wanted. The military post of Fort Whipple, Virginia, is entirely devoted to the training of the enlisted men of the signal service for their varied duties as meteorological observers, signal men and military telegraph men, directly under the charge of officers of the army, who themselves become familiar with these varied and important duties.

These and other obvious reasons make it plain that, if the proper scientific efficiency of the Weather Bureau can be maintained it will be highly advantageous to keep the Signal Office where it now is, *i. e.* as an important Bureau of the War Department.

At present three different plans are advocated for the filling of the existing vacancy:

FIRST, The appointment of a colonel of the line who has had experience in the plains, and to whom the Brigadier General's commission would be a fitting reward; Generals HAZEN and MILES are mentioned in this connection.

SECOND, The appointment of some officer who has learned the art of administration during our war, by commanding large bodies of troops, and whose duties and studies since the war have been of a sort to fit them for this position: Generals ABBOT, PARKE, COMSTOCK, WARREN and POE, of the Engineers, are of this class.

THIRD, The appointment of a scientific civilian meteorologist, as Prof. Loomis, Prof. Cleveland Abbe or Dr. Daniel Draper.

Two faculties are required in the person to be appointed: First, he must be an able administrator; and secondly, he must be capable of understanding and directing scientific investigations.

If the appointment is made from the first class named above, it is likely that we shall have good administration, and that the present efficiency of the service will be maintained, but that no advances will be made. It is difficult for the necessary forward steps to be made under the direction of men in middle life, now first called upon to examine and approve of the methods of physical science. If the

appointment is made from civil life, it is likely that tne men of great and acknowledged ability then named, while devoting their attention to the many troublesome details incident to the management of a large body of men,—would deprive science of the benefits to be derived from minds which have been engaged for a lifetime upon one branch of research.

The best interests, both of the people, who pay for the bureau, of the army, to which it is a school of instruction, and of science, which looks to it for a thorough reorganization of its old methods (which were often clumsy and antiquated) and for a decided step in the direction of investigation and research,—would probably be most surely advanced by the appointment of one of the accomplished Officers of Engineers named above. Each of these gentlemen is entirely competent to administer the complicated business of the office, as each of them commanded, during the war, a brigade, division, corps, or even army, and as each of them since the war has been engaged in work where strictly scientific ability is required. Each of them has shown in both capacities marked strength, and the appointment could not go wrong if made from their number.

It is not the purpose of this article to advance the personal claims of any one, but to point out the direction in which, after careful thought, it seems the signal service may be led to the maximum of usefulness and efficiency, both to the people and to science.

TO ASTRONOMERS.

The value of the work performed by the astronomers of the United States is now fully recognized, and has become an important factor in the progress of astronomy. They have at their command some of the finest instruments that have been produced, while their power to make good use of them is testified by the brilliant discoveries which they have recently made, forming most important records in the annals of the science.

We are glad to find that the publication of this journal meets an important want which is admitted to exist by astronomers, viz., a ready means of communication. We have received letters from Mr. Burnham, of Chicago, and from others, on this subject, and to-day Mr. Swift, of Rochester, makes the following statement, in a letter to us, enclosing a valuable astronomical paper:

"Of course you are aware that there is not, in this country, a single journal devoted exclusively to astronomy; and for ephemerides of comets we have to depend on the *Astr. Nachr.*, but as it is printed in German no amateur takes it. Now if you would give a prompt ephemeris of all comets so that amateurs can ascertain where they are, or if on the discovery of every new comet a special circular be sent immediately to each subscriber announcing it and giving position, direction and rate of motion, and if everybody knew they could and would be thus informed, hundreds would take it ["SCIENCE"]. It would be a great satisfaction for them to know that they are to be kept weekly posted on a subject not mentioned by a single weekly publication on this continent."

"It is a great consolation to know that there is no comet in the sky, for it relieves him of all suspense, and it is equally so to be told, at so cheap a rate, where it is and all about it. I could immediately notify you of all discovered by me, or telegraphed to me, from the Smithsonian Institution. I shall be pleased to call the attention of my friends, both here and elsewhere, to your JOURNAL, to increase its circulation that it may be liberally sustained."

In regard to the above letter, we beg to announce that it will be our aim in the future to comply with the suggestions so ably expressed, and indeed have partially anticipated them.

We have, by courtesy of a distinguished member of the Naval Observatory at Washington, arranged for a weekly report compiled from their library by a gentleman perfectly familiar with practical astronomy, and in connection with the Smithsonian Institution and all astronomers at Washington. This will embrace a *resumé* of both foreign and home literature, and especially will give immediate notice of astronomical information received at that establishment.

Professor Asaph Hall has recently furnished us with two communications, and we trust will in the future continue to favor us with notes. Professor Edward S. Holden will also occasionally give us the benefit of information coming within his knowledge. Professor Stone, of the Cincinnati Observatory, has already placed us under many obligations for constant communications, and up to date is one of our most esteemed correspondents. Professor Burnham, of Chicago, has also engaged to give us astronomical information in his special department, and is now only delayed, by the condition of the atmosphere, from making some important observations with the great Dearborn Equatorial, to be published in "SCIENCE." Professor Swift, of Rochester, as his letter states, will communicate to us immediate notice of results obtained with his new and