

creased expense. * * * Taking into consideration the striking uniformity of conditions which prevail in different years in this region, it is probable that additional observations would not greatly increase our knowledge. It has been decided, therefore, to suspend, at the end of the year 1900, the meteorological observations of all the stations, except those at Arequipa."

RECENT PUBLICATIONS.

C. F. MARVIN: *Anemometry*. U. S. Department of Agriculture, Weather Bureau. Circular D, Instrument Division. 2d Edition. Washington, D. C. 1900. 8vo. Pp. 67.

This is a circular of general information respecting the theory and operation of instruments for indicating, measuring and automatically recording wind movement and direction, with instructions for the erection and care of such instruments of the Weather Bureau pattern.

C. F. MARVIN: *Psychrometric Tables for Obtaining the Vapor Pressure, Relative Humidity and Temperature of the Dew-Point*. U. S. Department of Agriculture, Weather Bureau. Washington, D. C. 8vo. 1900. Pp. 84. Price, 10 cents.

These are the tables for the reduction of the psychrometric observations at the regular and volunteer stations of the Weather Bureau. The use of these tables began Jan. 1, 1901.

NOTES.

DR. H. R. MILL has become the Editor of *Symons's Monthly Meteorological Magazine*, in place of Mr. H. Sowerby Wallis, who has held that position since the death of Mr. G. J. Symons.

ACCORDING to Professor A. J. Henry (*Monthly Weather Review*, Oct. 1900), a conservative estimate of the total loss of property by lightning in the United States during the year 1899 would probably be \$6,000,000.

R. DEC. WARD.

THE NAVAL OBSERVATORY IN CONGRESS.

THE Observatory was discussed in the Senate on January 22d in view of an item in the naval appropriation bill. Mr. Morgan said:

I want to call the attention of the Senate to the fact that this great Observatory is without any real organization in law, and it is a haphazard, piecemeal

sort of arrangement by which it has been put under the Navy Department. It was first called the National Observatory of the United States. It was afterwards called the Naval Observatory of the United States, and was put under the Navy Department. No head or management of the Observatory, as I understand it, has ever been appointed or given the direction of it, but an officer of the Navy is detailed to take charge of the Observatory from time to time, who controls this matter. However, it is not a military office in any sense of the word, and it does not follow that a man educated at Annapolis has any very special training in astronomy. It seems to me that that great institution is very badly crippled for want of a proper organization.

We have here, upon the recommendation of what is called the chief astronomer, a provision by which an assistant spectroscopist is to be appointed, and yet they have made no reports recently of any work of that kind in the Observatory. I suppose there must be work of that kind going on, but the reports ought to show it if they are of any value at all.

Now, this great Observatory, perhaps the largest national observatory in the world—I think it is the largest one in the world—not larger, perhaps, though more costly, than some of the private observatories—has cost the Government of the United States for the site, buildings, grounds, and outfit \$655,845, and the roads, pathways, and gradings, \$95,900, making a total cost of \$751,745.

As I understand it, the Observatory does not have the rank amongst the observatories of the United States that it ought to have. There is very valuable work done there, a great deal of it, no doubt, but simply for the want of proper organization the work has not been conducted in the way it ought to be. I have introduced a bill in the Senate to organize the Observatory, for it has never had any organization.

I wanted to call the attention of the chairman of the committee to this particular appropriation, with a view of drawing out some expression from him, or from some one who is informed particularly on the subject, about certain points. Congress, it seems, has neither defined the objects for which the Observatory was founded, made any provision for its control, or appointed any authority to determine what it should do or to report upon its work, nor assigned to it any public function. What the Navy Department has been able to do is to provide for its government as a naval station, appoint an officer to command it, detail professors in the Navy for duty, give to the senior of these professors the title of astronomical director, and charge him with the duty of determining what astronomical work shall be done. But, as far as known, it has never been able to provide the head of the es-

tablishment, or the astronomical director, with any instructions or suggestions as to what the Observatory should do.

I am willing that this assistant spectroscopist shall be appointed and that he shall have the salary proposed to be paid under this proposed act, at the present time, because it seems that everything which is suggested here by a naval officer who is connected with the Observatory goes without any regulations of law at all. There is no law to regulate the National Observatory.

Mr. Chandler said :

When the naval appropriation bill comes up I hope the Senator will aid myself and the committee in securing some appropriate legislation to improve the management of the Observatory ; but it is not proposed by that bill to take the Observatory wholly away from naval control. It is proposed to establish a permanent board of visitors, on which shall be some of the most eminent astronomers, and also to make the astronomical corps a corps of civil officers, instead of a corps of life officers in the Navy. There are other incidental improvements of administration which are recommended. I hope there will be some legislation on the subject.

There is not, I will add, perfect satisfaction among the astronomers of the country with the work of the National Observatory ; and it was that dissatisfaction which led to the appointment of this board of visitors.

The subject is worthy of the very careful consideration of the Senate and of Congress.

Mr. Allison said in reply to Mr. Morgan :

I agree with the Senator that it may be necessary to reorganize the Naval Observatory. That has been in contemplation for some years.

On January 25th the same question was raised in the House, sitting as Committee of the Whole in connection with an item in the naval appropriation bill, appropriating \$18,000 for the building of three houses for the astronomers of the observatory. Mr. Newlands said :

I would like to ask the gentleman from Illinois whether he has any views in regard to the taking of this observatory out of the control of the Navy Department? My information is that it is really of no scientific value to the country or to the world, and that the observatory would be much better administered by some other department of the Government, with really scientific men at its head, instead of naval officers detached for duty there.

Mr. Cannon. The gentleman asks me a question of policy that is not necessarily connected with the building of these houses. I would say to my friend that no doubt my friend from West Virginia would

not agree with me. I do not believe, to answer his question, that the Astronomical Observatory ought to be under the control of the Navy or the Army or any other department in Washington. I think that we should have better administration and more economic administration if we were rid of that expensive house out there [the superintendent's house] under a direction that does not direct in scientific lines.

Mr. Newlands. I wish to state to the gentlemen that I understand that the naval observatory in England is of great scientific value, not only to that country but to the world, for the reason that the men in charge of the observatory are trained scientific astronomers and not naval officers. Now, I would call his attention to that and ask him whether it is not advisable that this entire department of the Government be placed under scientific control, with a view to the advance of scientific information.

Mr. Cannon. I will say to my friend now, if he will not call on me for names, because I do not like to give these in a city of official direction—I will say to him that men who have been in the service, scientific men, astronomers of this Naval Observatory, and men I apprehend that are in its service now, have protested to me time and time and time again that it was not so efficient as it ought to be ; that it was under a direction that was not in harmony, but that with less expense more efficiency could be had.

Subsequently Mr. Dayton described in some detail the work of the Board of Visitors to the Observatory of which he was a member. He said :

We went over, as far as was possible, as thoroughly as possible, the condition of the Naval Observatory and its management and its cost, and the result of our investigation is embodied in the report which I hold in my hand. We took occasion to investigate its history from start to finish and its management from start to finish. In addition to that, in order that there might be full and complete information presented to Congress and the country, certain questions set forth in this report were sent to almost every astronomer of reputation in the country.

Among those questions was one whether or not this Observatory should be transferred from the Navy Department to some other department, whether its efficiency would be promoted by such transfer, and whether, if such transfer was made, with what Department this Observatory should be connected. The answer to these questions presented an anomalous state of affairs. There was an absolute division of opinion that was nearly equal. For instance, my recollection is that 19 of the prominent astronomers suggested thought it ought to be disconnected from

the Navy Department, and 19 said no; but when it came to their suggestions as to what department it should be connected with, if disconnected from the Navy Department, the disagreement was enough—not to speak too lightly—to make any man's head ache.

There was almost as wide a divergence of opinion as opinions expressed. Some suggested the Treasury Department, some suggested the Geological, some the Interior Department, and some the Smithsonian Institution. Many thought—and I am sure the gentleman from Illinois would not be in favor of it—that it was immediately necessary to establish a new department of the Government, that of a department of science, and for the appointment of a secretary of that department, in order that this Bureau and this Observatory and one or two others might be connected with it and embodied in one institution. Others suggested that it was necessary for the Government in order properly to administer the Observatory to establish a national university.

This board, composed, as I say, of a member of the Senate and a member of the House and these three representative astronomers, after considering the whole matter from one end to the other, reached the conclusion that in the absence of the department of science or of the national university the management of the Observatory could be and would be as properly carried out under the control of the Navy Department as any other and at a probably less expense than any other.

Now, as I stated a moment ago, the Observatory work is done, as far as the executive head is concerned, by an officer detailed from the United States Navy, but who does not have control of the astronomical work. To a certain extent he is the head of the Observatory, but the responsibility for the astronomical work is placed upon the astronomical director.

The question whether or not it would be better for the head of the institution to be an astronomer, either from civil life or from the corps of mathematics, is one which can not in this connection be determined. But, so far as the scientific work is concerned, I am satisfied that it is now being well done; and I want to call attention to the fact that in a two-page article in *SCIENCE* of recent date, criticising Captain Davis's report to the Secretary of the Navy, it is admitted that the work is well done so far as the scientific part of it is concerned.

Therefore, I am sure my friend from Nevada [Mr. Newlands] will not hereafter desire in any way to do injustice to an institution of this country which may stand at the head, and should stand at the head, of all similar scientific institutions throughout the world.

SCIENTIFIC NOTES AND NEWS.

AN American Association of Pathologists and Bacteriologists was formed at a meeting held in New York on January 26th. The following officers were elected: *President*, Dr. W. T. Councilman; *Secretary*, Dr. H. C. Ernst; *Treasurer*, Dr. Eugene Hodenpyl. The first regular meeting of the Society will be held in Boston on April 5th.

ON the occasion of the retirement of Sir Archibald Geikie, F.R.S., of the Geological Survey of Great Britain and Ireland, he will be entertained at a dinner and presented with an address.

AMONG the honors conferred on the occasion of the bi-centenary of the Prussian monarchy is the patent of hereditary nobility to Dr. Emil Behring, professor of hygiene and the history of medicine at Marburg.

WE learn from *Nature* that the Manchester Literary and Philosophical Society has awarded the Wilde medal for 1901 to Dr. Elias Metchnikoff, of the Institut Pasteur, Paris, for his researches in comparative embryology, comparative anatomy, and the study of inflammation and phagocytosis; and the Wilde premium to Mr. Thomas Thorp, for his paper on grating films and their application to color photography, and other communications made to the Society. The Dalton Medal for 1901 has not been awarded.

THE Maximilian order for science and art of Bavaria has been conferred on Dr. Hugo Seeliger, professor of astronomy in the University at Munich.

PROFESSOR R. BLANCHARD, who for twenty-three years has filled the position of secretary to the Zoological Society of France, has presented his resignation to take effect on the twenty-fifth anniversary of the foundation of the Society. On this occasion a commemorative medal will be conferred on Professor Blanchard in recognition of his great services to the Society.

MR. W. H. DINES has been appointed president of the Royal Meteorological Society, London.

PROFESSOR GEORGE E. HALE, of the Yerkes Observatory, gave an address before the Boston