for a few years only, but apparently it has been known for a long time in Japan. In order to settle the question whether the rusts affecting other Compositae might give rise to that on the chrysanthemum, Dr. Arthur made many cultures of the rusts on this and other related plants. He found that he could not infect other Compositae with the uredospores of chrysanthemum rust, nor could he infect chrysanthemum with the uredospores of the rusts of other Compositae. No teleutospores have yet been observed in this country or Europe, and this fact is likely to make the disease more easily controllable. Hand-picking the diseased leaves, and spraying with Bordeaux Mixture or sulphide of potassium are recommended.

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THE NATIONAL OBSERVATORY QUESTION.

THE introduction by Senator Morgan last week of a bill to organize the National Observatory of the United States, of which we have not yet seen a copy, and a letter from Professor Bigelow which we published last week, suggest a condensed statement of the points at issue. The grounds taken by SCIENCE are these:

1. The United States, like every other leading government of the world, should have a national astronomical observatory.

2. The special object of this observatory should be to make those observations and calculations on the courses of the stars which are useful in the world's progress, and require to be pursued with greater system and persistence than is possible in any but a national establishment.

3. This purpose requires that the observatory should have a well understood and well defined policy and plan of work, mapped out by the best scientific authorities at command of the nation and obligatory on the scientific staff.

4. No work but the best should be done; of second class work an abundance may be had everywhere. This requires that the instruments should be of the best.

5. To attain these purposes it is necessary that the head of the observatory be an experienced astronomer. This because of the high technical skill and experience required in planning the work, in seeing that the innumerable details necessary to its excellence are attended to, and in so expending the funds of the observatory as to get the best results, and also to inspire the confidence of the scientific public in the high quality of the work.

Every effort on the part of our astronomers to get an observatory of this kind established has been defeated through the impression that we already have one which answers the purpose. In the opinion of every astronomer who has publicly expressed views on the subject this is not the case. So far as we are able to collect published views, while there may be much disagreement on side issues, there is absolute unanimity that the existing observatory fails to perform the required functions in a satisfactory way. Yet, we are quite ready to regard the question as an open one until everything that can be said in favor of the work and results of the existing observatory is brought out. If there is a single astronomer in the land who, after a careful examination of the published volumes of the observatory, draws the conclusion that the objects in question have been satisfactorily gained, or, after having read the annual reports of the past five years, concludes that they describe the class and character of work which should be expected from the most expensively supported astronomical observatory in the world, the columns of SCIENCE are cordially thrown open to him to make known his views, and the facts on which those views are based.

It is a well-known fact that our existing observatory is unique in the main feature of its

organization, that of being governed by a head who is not an astronomer and who has no thread of law to guide him in his administration. Another unique feature, without parallel in the history of astronomical observatories, is the misfortunes with its instruments which we pointed out in our first issue of this year. Here our information was based wholly on the official reports, no weight being given to the possibility that the actual condition of the instruments may be a little worse than made known in the public statement. Is it possible to dissociate in the mind of the scientific public these two unique features?

We commend the reading of what Mr. Bigelow has said on the subject, though he is silent on its main points, and the grounds he takes are not at all clear to us. On one point he labors under a misapprehension. If he will re-read our article he will see that we made no charge against the administration in connection with the Magnetic Observatory, but only inquired how it happened that one of the finest magnetic observatories in existence was set-up in the immediate neighborhood of a trolley line, the electric current of which would necessarily be destructive to the results. Mr. Bigelow informs us, as a 'well-known' fact, that this was done by the united counsel of the astronomical director and a prominent visiting English astronomer and against the arguments of the professor in charge of the work, and all others in Washington interested in magnetic observations. He intimates that other interests than those of science prompted the proceedings. We are thankful for this statement, which, if correct and complete, will enable the reader to draw his own conclusions, but we do not know on what ground he says that the fact is 'well known.' It may be well known to those concerned, or to people in Washington generally, but we never before heard or read of it. We may remind Mr. Bigelow that an unnamed 'visiting astronomer' cannot bear a heavy weight of responsibility, and we hope that he will allow this unfortunate counsellor to state his side of the case.

This summary of views, reasons and arguments, seems to exhaust the case in its present aspects, though we may need to return to it when Senator Morgan's bill and the naval appropriation bill are taken up by the Senate. The question is not of concern to astronomers only, but is probably the most important subject at present before American men of science.

SCIENTIFIC NOTES AND NEWS.

M. Fouqué, professor of mineralogy in the Collège de France, assumed the presidency of the Paris Academy of Sciences at the first meeting of the year on January 7th, succeeding M. Michel Lévy. M. Bouquet de la Grye was elected vice-president, and will consequently assume the presidency next year.

Dr. Grabowsky, of the Natural History Museum at Brunswick, has been appointed director of the Zoological Gardens at Breslau.

Mr. E. J. Butler, M.B., has been appointed by the Secretary of State for India, on the recommendation of the director of the Royal Gardens, Kew, to the post of official botanist to the Indian Government at a salary commencing at £600 per annum.

Mr. William Wallace has resigned the position of superintendent of the building of the American Museum of Natural History.

Terrestrial Magnetism reports that Mr. James B. Baylor has now completed the magnetic survey of North Carolina, which has been carried out at the joint expense of the U. S. Coast and Geodetic Survey and the North Carolina Geological Survey. The first report upon this work, prepared by Messrs. Baylor and Hazard, is ready for distribution.

The British Institution of Mechanical Engineers has presented the first Willan's premium to Captain H. Riall Sankey.