

lar eclipses visible in accessible parts of the world are not frequent. Fortunately, there will be one visible on the shores of the Mediterranean Sea next December. After that there will be no more for some years. When we remember that nearly all we know concerning the nature of the sun has been learned by watching it with the spectroscope and polariscope during the last two total eclipses, we shall be able to participate in the interest with which astronomers look forward to the eclipse next December. The European savants, aided by their Governments, had made extensive preparations to observe it, but their arrangements will probably be to a great extent frustrated by the war between France and Germany.

#### THE LAST GREAT ECLIPSE.

In order to have the eclipse which was visible in this country in August, 1869, properly observed, the United States Government sent out three sets of parties. One set was under control of the United States Naval Observatory, another set belonged to the Coast Survey, and the third set belonged to the Nautical Almanac. As yet the official reports of the Coast Survey and Nautical Almanac parties have not been published.

With the Naval Observatory's parties the case is different. Their detailed reports were given to the public last January, and were so highly appreciated, not only by scientific men, but also by the people, that Congress was obliged to print an extra edition of 3,500 copies to supply the demand.

#### AN IMPORTANT QUESTION.

Some of the officers attached to the United States Naval Observatory have given much attention to solar physics, and have had as much experience in observing total eclipses with the modern instruments as any men living. As they have all the necessary instruments, why should not they be sent to Sicily to observe the eclipse of next December? Being officers of the navy, they and their instruments could be transported to the most convenient point by our ships of war, at almost no expense to the nation. It is rarely that an opportunity offers of doing so much for science at so slight an expense, and as the United States has always been foremost in its endeavors to advance knowledge, the people will scarcely forgive the Navy Department if this chance is allowed to slip.

#### ACTION OF CONGRESS.

The Secretary of the Navy asked Congress during its last session to make an appropriation to enable the Observatory to send out a large and thoroughly-equipped party, but the question was put off till the close of the session, and then \$29,000 was given to the Coast Survey, and by some oversight the Observatory got nothing. We understand that in these observations of the eclipse of 1869, the Coast Survey parties confined their attention exclusively to photography and observations of times of contact, and we presume that they intend to pursue the same course next December. At all events, they have had no experience in the use of the spectroscope, and consequently could scarcely be expected to be so successful as the officers of the Observatory in making the physical observations which are now considered to be of so much importance. Hence, it will be seen that whatever the Coast Survey may do, the necessity will still exist of sending one party from the Observatory thoroughly equipped with spectroscopes and polariscopes.

DUDDINGTON.

#### Popularity of the Registered Bonds—French Patriotic Aid Meeting—A Masonic Ceremony of Sorrow.

Special Dispatch to the New-York Times.

WASHINGTON, Aug. 21.—The frequent losses to which holders of coupon bonds are liable, through robbery or otherwise, are steadily increasing the popularity of the registered bonds, and the Treasury is constantly called upon to exchange large amounts of the former class for the latter. These exchanges, since Jan. 1, have amounted to about \$78,000,000; after each great robbery the demand for an exchange largely increases, and it is believed at the Treasury that eventually almost the whole bonded debt will be changed from coupon into registered bonds. Of the \$2,000,000 of bonds purchased by the Department last week, only about \$200,000 were registered. It is also remarked that by far the largest amount of the bonds purchased are of the smaller denominations, some weeks the purchases being almost wholly made up of fifties and hundreds.

#### AID FOR THE FRENCH WOUNDED.

A rather thinly attended but enthusiastic meeting of Frenchmen was held here last night to open subscriptions for the French wounded and orphans. The speakers referred with some bitterness to the apparent sympathy of the American people with Prussia in the present contest. A considerable sum was subscribed to the spot, and committees appointed to continue the work. The singing of the "Marseillaise" in an impassioned manner by the entire audience was the principal feature of the occasion.

#### A MASONIC CEREMONY.

The Masonic order of this vicinity are making great preparations for the unusual ceremony of a lodge of sorrow, which is to be held at the Metropolitan Church, on Tuesday evening, in memory of the late B. B. FRENCH, under the auspices of the Grand Consistory of the Scottish Rite for the State of Maryland. ALBERT PIKE, A. G. MACKAY and other Masonic dignitaries participate in the ceremonies.

#### FEVER IN LIVERPOOL.

In his dispatch to the Department, of the 6th inst., the Consul at Liverpool reports that in consequence of the continued increase of fever in Liverpool, he has deemed it his duty to suspend the issue of certificates to bills of health at present. He further stated that during the past five days (previous to Aug. 6) over 160 cases were received into the parish hospital; which is full to overcrowding. There are 210 cases more than there were a month ago under treatment.

#### TREASURY BUSINESS.

The following is the official statement of transactions of the United States Government from Jan. 30, 1869, to June 30, 1870, and is so certified by the acting Secretary of the Treasury:

Net balance in the Treasury, June 30, 1869.	\$155,680,340 85
Net receipts from Customs.....	194,638,374 44
Net receipts from internal revenue.....	184,899,758 49
Sales of public lands.....	3,350,481 78
Miscellaneous sources.....	28,466,804 94
Total.....	\$568,933,318 48
Less in the Treasury.....	156,680,840 83
	\$412,252,477 65
From excess in conversion, &c., over the redemption, &c., of bonds, Treasury notes and fractional currency.....	1,270,213 87
Total net receipts for 1870.....	\$568,206,032 35
Net expenditures for civil and miscellaneous.....	\$63,237,668 56
War Department.....	57,655,675 40
Navy Department.....	21,780,229 87
Indians and Pensions.....	31,748,140 32
Interest on public debt.....	127,702,338 03
Total.....	\$292,124,052 18
Purchase of bonds for Sinking Fund.....	124,579,508 57
Total.....	\$418,703,560 75
Net balance in the Treasury June 30, 1870.	\$149,502,471 60
The above statement shows the amount of bonds purchased for the Indian fund at par value to be.....	\$109,050,000 00
Amount of premium and accrued interest.	17,529,508 07
Total.....	\$126,579,508 57
Net balance in the Treasury June 30, 1869.	155,680,340 35
Net balance in the Treasury June 30, 1870.	149,502,471 60
Difference.....	\$6,177,868 75
Actual gain in 1870.....	119,131,425 45
Coin in Treasury today.....	102,335,020 05
Coin certificates.....	33,813,500 00
Currency in Treasury.....	37,897,596 46
Internal revenue receipts today.....	615,868 00
For fiscal year to date.....	34,285,989 75
THE CIRCULATION.	
Amount of bonds held by the Treasurer as security for public deposits.....	\$342,270,300 00
As security for public deposits.....	16,330,500 00
Fractional currency received from the printers during the week.....	418,000 00
Shipments of notes.....	1,976,183 00
Shipments of currency.....	779,406 00
Fractional currency redeemed and destroyed during the week.....	495,600 00
National bank notes burned during the week.....	338,250 00
Total amount burned.....	27,286,088 00
Amount issued for bills destroyed.....	257,475 00
Total amount issued therefor.....	28,050,275 00
Balance due.....	635,813 00
Circulation outstanding at this date.....	299,390,529

## WASHINGTON.

### The National Observatory—Its Equipment of Instruments—Importance of a Generous Policy—Solar Physics—Eclipses.

From Our Own Correspondent.

WASHINGTON, Saturday, Aug. 20, 1870.

One of the pleasantest resorts for the Summer visitor or sojourner in Washington is the Observatory Grounds, which command a picturesque and extensive view of the lower and eastern part of the city, of the Virginia shore, and of the river winding away many miles to the southward. From conversation with some of the accomplished Professors who have been devoting themselves to astronomy and its kindred sciences, or solar physics, as I believe scientists would call it, during recent visits, I have gathered some facts which seem to be of public interest.

#### THE NATIONAL OBSERVATORY.

For some years past the United States Naval Observatory, better known as the National Observatory, has been laboring under great disadvantages, owing to the imperfect state of its instrumental equipment. When it was founded, a quarter of a century ago, it was provided with the best instruments that were to be obtained, but, although vast improvements have been made in the optical and mechanical arts, up to a very recent date no change had taken place in the apparatus belonging to the Observatory. While the late Capt. JAS. M. GILLIS was superintendent, the need for a transit circle became so urgent that he ordered one of the largest size from PISTOR & MARTINS, of Berlin. This instrument, which was not received till after Capt. GILLIS' death, has now been in successful use for the last four years, and is in every respect creditable to the institution, as it is one of the finest pieces of mechanism in the world. It is employed for determining with the greatest possible accuracy the places of the sun, moon, planets, asteroids, and a certain number of the fixed stars.

#### THE TELESCOPE.

When a stranger visits an observatory he naturally looks first of all for a large telescope, and in the National Observatory he would, of course, expect to find the largest and finest instrument of the kind in the country. But he would be doomed to disappointment. The telescope is the one which was bought in 1844, and has an object glass only nine and six-tenth inches in diameter. Many colleges and several private individuals are provided with better ones. LOUIS M. RUTHERFORD, Esq., of New-York, and JACOB CAMPBELL, Esq., of Brooklyn, have each telescopes at least fifty per cent. more powerful. In his last two annual reports to the Navy Department, Commodore B. F. SANDS, Superintendent of the Observatory, had urged the great necessity for the purchase of a telescope which should be equal to the wants of the institution, but Congress failed to make any appropriation for the purpose. However, during the early part of the present Summer the leading scientific men of the country took the matter in hand, and, upon their petition, Congress appropriated \$50,000 for the purchase of a large telescope, with the proviso that the instrument should be constructed in the United States. Such a proviso was in reality needless, for ALVAN CLARK & SONS, of Cambridgeport, Mass., are acknowledged to be the best makers of telescopes in the world, and when orders are sent from Europe to them it is not likely that any American would think of applying to a European maker for what he could get much better in his own country. Accordingly ALVAN CLARK & SONS have contracted to furnish the Observatory with a telescope having an object glass twenty-six inches in diameter, but the labor involved is so great that it will be four years before the instrument can be completed. When it is mounted it will be by far the noblest glass in the world, and the nation may well be proud of it. At present the largest known to perform satisfactorily is the one by the same makers, belonging to the Dearborn Observatory at Chicago. It is eighteen and three-quarter inches in diameter. There is a glass in England, made by COOK & SONS, of York, which is twenty-five inches in diameter, but no information has reached this country as to its quality. With the exception of these glasses, no others are in existence of a greater diameter than fifteen inches. Thus, although our National Observatory has long been thrown into the background by reason of the contemptibly small size of its telescope, in four years from now it will have a glass whose size and power will stand unrivaled. Of course it is well known that there are much larger reflecting telescopes. Lord Rosse has one six feet in diameter, but for observatory purposes they cannot compete with achromatic refractors, which alone are referred to above.

#### SOLAR PHYSICS.

The subject of solar physics has recently attracted a great deal of attention, not only on account of the intrinsic interest of the subject, but also because it seems to promise a solution of some of the most perplexing problems of the natural sciences. Among these problems may be mentioned that of the weather. Any one can see that if we were able to predict the general state of the weather for a few days, or months, in advance, millions of dollars would be saved annually to the agricultural interest of the country. Yet if we are able to do this it will probably be in consequence of discoveries flowing from the study of solar physics. The sun is the source of all light, heat, and we might almost say all life, that exists on the earth, and a perfect knowledge of its physical constitution cannot but be of interest to mankind. There are some questions connected with the sun which can only be studied during a total solar eclipse. Among these questions is that of the corona. What is it? What causes it? What influence does it exert on the earth? Astronomers are very anxious to obtain answers to these queries, but total so-