Wyoming, Texas and elsewhere, have been wonderfully successful, important finds being made each year. This year the exhibition included a series of fine skeletons of Pleistocene horses and the mammoth, the skull and tusks of a Miocene mastodon and skeletons of the saber-toothed tiger and other carnivorous animals from the Tertiary. In this section the geological department of the museum displayed a portion of the recently acquired Jay Terrell collection of Devonian fishes, showing their heavy construction and the formidable teeth with which they are provided. Passing to the section of zoology, in charge of C. L. Bristol, one of the features of special interest seemed to be the series of anatomical preparations from the morphological museum of Princeton University, including the circulatory systems of several animals, and a series of specimens showing the growth of the young opossums while still in the mother's pouch, Prof. B. Dean showed the last feature for the kangaroo of Australia, also. A fascinating exhibit was that of R. L. Ditmars, and consisted of a number of preparations of the heads of snakes, both venomous and harmless. A series of photographs showed the progress of the Zoological Park in Bronx Park and characteristic poses of many of the animals within the inclosure. The Kny-Scheerer Company made a large exhibit of formaldehyde and other preparations in various branches of natural history, and there was a fine series of corals, sponges, and mollusca which had been collected at Nassau by R. P. Whitfield.

The mineralogical section, with L. Mc.I. Luquer in charge, had about two hundred specimens on exhibition, ranging from the large showy pieces of calcite, fluorite, etc., to the crystallographic treasures of tellurium and other minerals shown by Prof. A. H. Chester. One noteworthy specimen exhibited was a diamond crystal, weighing 4⅓ carats, from North Carolina. The mineralogical department of Columbia University displayed some new apparatus and many rare or new mineral forms.

The department of metallurgy, in charge of H. M. Howe, had models of blast and Bessemer furnaces on exhibition, together with many diagrams and specimens showing the ductility of steel, the evolution of gas by metals during solidification and the effect of aluminium in preventing blowholes, the metallography of steel, etc. A series of specimens showed the alloys made by adding various substances to the molten steel, such as tungsten, manganese, molybdenum and chromium. Special stress was laid on the enduring hardness of tungsten steel. The experimental psychologists have not been idle during the year, as was proven by the exhibit under the care of E. L. Thorndike. The apparatus exhibited showed the improvements which have been recently made in the means for detecting and preserving a record of the various mental phenomena under investigation, and also for projecting the actual records onto the screen for class purposes.

The department of physics and photography, this year in charge of William Hallock, can usually be depended upon for something of interest. P. H. Dudley has continued his work with his stremmatograph, showing graphically the high economy of solid railroad beds, heavy rails, and certain types of locomotives and cars. The assistance which photography can give to physics in certain lines was shown by photographs of manometric flames and of sound waves. The kinetoscope, too, has been called in by R. W. Wood, of Wisconsin State University, to unite in a striking manner successive views of wave motion to produce a harmonious and instructive whole. Apparatus illustrating his diffractive color photography process was also exhibited. Some excessively thin films of metals produced by A. C. Longden, of Columbia University, explained how the colors of certain metals appear by transmitted light. Gold is greenish-blue, silver bluish-gray, and copper yellow in these films.

The officers of the Academy of Sciences for the current year are: President, Robert S. Woodward; first vice-president, Franz Boas; second vice-president, Charles A. Doremus.

FLOATING DRY DOCKS FOR NEW YORK CITY.

In connection with the article which appeared in the SCIENTIFIC AMERICAN, April 21, on the large dry dock accommodation which is to be provided in South Brooklyn, it will be of interest to our readers to learn that the Tietjen & Lang Dry Dock Company have under construction a large sectional dry dock built on the same system as the one illustrated in that issue. The credit for the designing of this type of dock is due to Mr. Frederick C. Lang, whose name has for many years been prominently associated with dry dock construction in New York harbor. The new dock, which is being constructed at the Hoboken yard of the company, is of approximately the same size as the new dock at South Brooklyn. It is being built in 80-foot sections, with a clear opening between the wings of 90 feet. Three sections have been completed and are in place at the yard, and two other sections are well under way. The length of the dock will be 468 feet, and it will be equal to the accommodation of a 500-foot vessel. Another dock of four sections is to be built adjoining the five-section dock, and when it is desired to dock vessels of 700 feet or over, the whole nine sections will be coupled up, making a total over all length of about 800 feet.

THE HEAVENS IN MAY.

BY HENRY NORRIS RUSSELL, A.M.

All other astronomical events of May are incomparably surpassed in importance by the total eclipse of the sun on the 28th, which is of additional interest to us because it is visible in the United States. Though such eclipses occur at some part of the earth's surface rather oftener than once in two years, on the average, the path of the moon's shadow is so narrow that it passes much more rarely through any given region. Only three other total eclipses have been visible in the Eastern States during the present century—in 1806, 1834 and 1869.

The path of totality in the present eclipse begins in the Pacific Ocean, crosses Mexico and the extreme southern corner of Texas, passes out into the Gulf, and enters the United States again near New Orleans, whence it passes in an almost straight line to Norfolk, Va., and out to sea, as may be observed in the map published in the SCIENTIFIC AMERICAN of April 21, 1900.

Crossing the Atlantic almost on the track of the Mediterranean steamers, it transverses the Spanish peninsula, crosses to Algiers, and follows the north coast of Africa into the Tibyan desert.

The shadow-path in the United States is about 50 miles wide. Its central line passes about 10 miles north of New Orleans, 25 miles north of Mobile, Ala., 10 miles north of Columbus, Ga., 5 miles south of Greensboro, Ga., Newberry, S. C., and Wadesboro, N. C., and 15 miles south of Raleigh, N.C., and Norfolk, Va.

These details are given in order to enable the approximate construction of the eclipse track on any convenient map. The duration of totality in the United States varies from 1 minute 10 seconds at New Orleans to 1 minute 40 seconds at Norfolk.

Numerous astronomical expeditions will, of course, be sent to observe the eclipse, and the chances of fair weather at different stations have been carefully considered, and the most favorable ones chosen. The principal work will consist of photographs and drawings of the corona and prominences, and observations of the spectra of the corona and the lower layers of the solar atmosphere.

For those to whom the eclipse is a magnificent spectacle, rather than an occasion for scientific work, the most striking phenomena will be the onrush of the moon's shadow with the tremendous velocity of 2,000 miles an hour, the sudden darkness, and the appearance of the corona surrounding the black disc of the moon.

At the time of eclipse Mercury is about 2° west of the sun, and Aldebaran about 6° S.S.E. Both should be visible during totality. Venus will be too near the eastern horizon, as seen from stations in this country, to be conspicuous.

For those outside the track of the shadow, the partial phase of the eclipse will still be well worth looking at. Along the coast near New York about nine-tenths of the sun will be hidden, and the decrease of light will be conspicuous, the sun appearing through smoked glass as a narrow crescent.

However, since even one-tenth of sunlight is some 60,000 times as bright as the strongest moonlight, day will by no means be turned into night for New York, even at the time of greatest eclipse.

THE HEAVENS.

At 10 P. M., in the middle of May, the splendid constellations which make the evening sky of April the most brilliant of the year have all set except Gemini in the west and Auriga in the northwest. Before the brightest star, Capella, of the latter constellation, is lost from the evening skies, it is worth while to note that it has recently been shown by spectroscopic evidence to be double, consisting of two components of almost equal brightness which revolve about one another in an orbit comparable in size with the earth's in a period of about 100 days.

This "spectroscopic binary" is unusually interesting since on account of its relative nearness to the earth there is reason to hope that its components may be separated visually with the aid of the greatest of present-day telescopes, thus giving us an accurate knowledge of its mass and distance.

Leo is high in the west, and the Great Bear between him and the pole. Almost overhead shines Arcturus, and on the east is the semicircle of the Northern Crown, while further south, and near the meridian is Virgo, marked by the white star Spica.

The Milky Way lies low along the eastern horizon, with several fine constellations near its course.

In the northeast is the cross of Cygnus, now prone upon its side, and above is the blue-white Vega. Just rising in the east is Altair and in the southeast Scorpio lifts his claws well above the horizon, and the red Antares blazing in his heart, though his long curving tail is still out of sight.

THE PLANETS.

Mercury is morning star during the earlier part of the month, but too near the sun to be well seen. It passes superior conjunction on the 29th, and changes from morning to evening star. During the eclipse of the 28th it will be conspicuous some 2° west of the sun. Observations of its brightness at this time are planned by some observers, who will take advantage of the eclipse to observe it much nearer the full phase than has ever been done before.

Venus is evening star in Gemini, setting nearly four hours after the sun on the 1st, and about two and a half hours after sunset on the 31st. It is apparently approaching the sun, and is in reality rushing forward to come almost between the earth and sun next July.

Its greatest brightness occurs on the 31st, when it is fully one hundred times as bright as an average first magnitude star. Toward the end of the month its crescent phase will be visible in a good field-glass, especially during twilight, when the glare of the planet is diminished.

Mars is morning star in Pisces and Aries, rising about an hour and a half before sunrise, and very unfavorably placed for observation.

Jupiter is in Ophiuchus, north of Antares, and moves westward about 5° during the month. It comes into opposition on the 27th, rising about 7 P. M., but is in an unfavorable position on account of its great south declination.

The same statement applies with even greater force to Saturn, which is in Sagittarius, some 30° east of Jupiter, and about as far south as it can possibly get. It rises about 11 P. M. at the beginning of the month, and 9 P. M. at the close.

Uranus is in the Scorpio, about 2½° east and 1° south of Jupiter on the 1st. It is in opposition with the sun on the 31st, and may be distinctly seen with the naked eye on a clear moonless night, but is hard to distinguish from faint stars. By making two or three sketches, at intervals of a few days, of the stars visible with an opera-glass southeast of Jupiter, the planet may be identified by its slow westward motion. Its greenish color, visible in a field-glass, aids the search. Neptune is in Taurus, too near the sun to be observed.

THE MOON.

First quarter occurs on the afternoon of the 6th, full moon on that of the 14th, last quarter on the evening of the 21st, and new moon (accompanied by the solar eclipse) on the 28th. The moon is farthest from the earth on the night of the 8th, and nearest on the afternoon of the 24th.

The moon is in conjunction with Venus, though not closely, near noon on the 2d, with both Jupiter and Uranus on the afternoon of the 15th, with Saturn on that of the 17th, Mars on the morning of the 27th, Mercury on that of the 28th, a few hours before the eclipse, and finally with Venus again on the afternoon of the 31st.

Princeton University Observatory, April 21, 1900.

PARIS EXPOSITION NOTES.

The portion of the Paris Exposition at Vincennes is even more backward than the sections in Paris proper. Some of the buildings were only recently begun. The "Pauillac" accident interfered greatly with the American Machinery Hall.

The new hotels which have been built near the Trocadero have metamorphosed the entire quarter of Paris, and have very much improved it. One group of hotels has 1,800 rooms, and at least three times that number of guests can be accommodated.

The gates of the Paris Exposition are now closed at six o'clock in the evening. Then freight cars and wagons loaded with exhibits enter the grounds. Work is not interrupted during the time that visitors are on the grounds. The moving sidewalk is now in good working order and is crowded all day long. It makes a complete tour of the Exposition and will take the place of the Eiffel Tower, and of the Ferris Wheel of our own last Exposition.

We have already referred to a unique map of France made of precious stones which illustrates the enormous mineral wealth of the Ural district. The 106 chief towns of France are represented by precious stones set in gold. Thus, Paris is indicated by a rubellite of pink color. Other places are represented by such stones as emeralds, sapphires, tourmalines, chrysolite, beryls, aquamarines, amethysts, and chrysoberyls. The names of the towns are in gold and the rivers are made of platinum.

DEATH OF THE DUKE OF ARGYLL.

George Douglas Campbell, Duke of Argyll, died on April 24, after a long and active life as statesman and scientist. He was born in 1823, and succeeded to his father's titles in 1847. He took an active part in politics, and was well known as a theologian and public speaker. His works of a scientific nature dealt to a certain extent with theology. They include: "The Reign of Law," "Primeval Man," "The Unity of Nature," a work on religion and a sequel to "The Reign of Law;" "What is Science?" "Organic Evolution Cross-Examined."