

Six New Variable Stars.

Lists of suspected variable stars are published in the Results of the National Argentine Observatory, vol. xvi, p. xxxii, and vol. xvii, p. xi. These lists contain 527 and 232 stars, respectively, in which the magnitudes were found to be discordant in the observations of the Corboda Durchmusterung. Especial attention is there called to 26 stars which are indicated by exclamation marks. These stars have been looked for on a number of Draper memorial photographs by Miss E. F. Leland, and the results confirmed by Mrs. Fleming. From this examination, confirmation of the variability of the stars —24° 12600, —27° 15203, —33° 185, —34° 224, —38° 138, and —38° 13089 has been obtained, the change exceeding one magnitude in all cases. The variation of —22° 13401, —22° 13700, —23° 8083, —24° 13621, —25° 1197, —30° 12799, —33° 13321, —35° 11936, —35° 14568, —37° 11462, —38° 2639, and —41° 12260 on from 8 to 25 nights did not exceed two or three tenths of a magnitude, and the variation of these stars is accordingly not as yet confirmed. In each of these cases two comparison stars were selected, differing about half a magnitude in brightness, one a little brighter and the other a little fainter than the suspected variable. The star —22° 15937 does not appear on photographs taken on 16 nights, although the adjacent star —22° 15939 is well shown on all. The confirmation by Miss Leland of the variation of —24° 7693 has already been announced (H. C. O. Circular No. 7). The confirmation by Mr. Robert H. West of the variation of —25° 1602, —26° 892, and 30° 375 has already been announced by him (Astron. Jour., xvi, p. 85). —25° 1602 and —30° 375 have also been confirmed here from the examination of the photographs. —30° 19092 is R Piscis Austrini. The variation of —33° 13234 was discovered independently by Mrs. Fleming (H. C. O. Circular No. 6). The star in the Bonn Durchmusterung —22° 4346 and not found by Thome does not appear on photographs taken on 8 nights.

It therefore appears that of these 26 stars, 12 are variable, the variability of 12 is not confirmed, and 2 do not appear on the photographs examined.

The laborious work of taking out all the photographs of the regions containing these six new variable stars, measuring the brightness, the magnitude at maximum and minimum, the period and form of light curve, as has been done for other variable stars discovered here, is now in progress. EDWARD C. PICKERING.

Harvard College Observatory, August 13, 1896.

Princeton's New Library.

Ground has been broken for the new university library of Princeton, N. J. The building will be about 200 by 180 feet, and will cover all the ground now occupied by the old chapel, most of that occupied by East College, and a big piece of the lawn back of East College. The new building is to be almost square, with a large court in the center. The plans and contract filed in the county records show that the new structure will be four stories high and will cost \$598,000. Henry M. Potter, of New York City, is the architect, and the style of architecture is to be Gothic.

Besides the new library, a huge dormitory soon will be erected on the western part of the campus, and the faculty is to receive distinguished accessions. New fellowships and scholarships are to be founded. The old chapel has been torn down, and many of the ancient elms have also been removed to make room for the foundations.

Eclipse of the Moon.

Director E. S. Holden, of Lick Observatory, sends the following report of the partial eclipse of the moon on August 22. The observations were made by Professor C. D. Perrine:

"Light clouds partially obscured the first contact of the shadow, but they soon cleared away, and the sky was clear during the remainder of the eclipse. The first certain darkening by the penumbra was at 8:35.

"The first contact with the shadow was at 9:23:31. The last contact with the shadow was at 12:31:50.

"The obscured portion of the moon was quite bright, the more prominent markings being easily visible. The earth's shadow was a copper color near its center, shaded to a somewhat greenish tinge at the edges, the penumbra being of a light pink tinge."

A Bibliography of Power Locomotion on Highways.

Mr. Rhys Jenkins, M.I.M.E., has conferred a real favor upon those interested in horseless carriages and traction engines by the publication of a guide to the literature relating to traction engines, steam road rollers, horseless carriages of every description, including books, papers read before technical and scientific societies, and periodical literature.

The latter is of the utmost value, the horseless carriage being so comparatively new. We note that the SCIENTIFIC AMERICAN and the SCIENTIFIC AMERICAN SUPPLEMENT are referred to many times.

DISCOVERY OF A BRONZE STATUE AT DELPHI.

In the beginning of May, the lower portion of a bronze statue of natural size was discovered to the north of the temple of Delphi, behind a thick wall, at a depth of about thirteen feet, and above a sewer, as shown in our first engraving. The legs were covered with a long skirt, girt very high and extending to the ankles in symmetrical folds. The arrangement of the garment and the form of the elongated feet, with bony toes and projecting heels, indicate a work of the fifth century still marked by archaism. A break had occurred along the girdle at the point where the two halves of the statue were formerly joined, they having been cast separately and then soldered together. Aside from a small hole in the right side of the body, the piece was intact and in all the freshness of its patina.

The interior of the bronze was completely filled by a



FINDING OF THE STATUE.

compact core of blackish color that resisted the action of the knife as well as that of water, like earth that had been submitted to the action of fire at a very high temperature. The feet had been cast separately and affixed to this central core. Upon the researches being continued at this same place, there were met with in succession in an interval of a few days the following pieces: (1) A torso clad in a short-sleeved chiton, intact like the lower part of the body, and fitting accurately upon the waist. The composition of the fabric and naked parts and the proportions of the face agreed in style with the fragment already discovered and confirmed the hypothesis emitted as to the date of the work. The arms were discovered toward the middle of the biceps at the level of the sleeve, the folds of which concealed the joints of the forearms. A slight puff in the garment



BRONZE STATUE RECENTLY DISCOVERED AT DELPHI.

above the girdle served to hide the joints. (2) A forearm bent at the elbow and extending forward. The hand still held three loose bronze reins. This detail, along with the costume of the figure, which is that of the drivers of chariots, left no doubt as to the interpretation of the work. The statue represented an auriga—a conqueror in chariot races, one of the principal attractions of the Pythian games. (3) Several pieces of a chariot pole, around which the reins were wound; and of a yoke which rested upon the necks of the horses, along with the pads that supported it. (4) Three hind legs of horses and a shoe of a forefoot. (5) A right arm of the same work, but derived from a smaller statue.

There is no doubt that all these bronze pieces, found united, and all belonging to one and the same subject (the chariot race), all treated in the same spirit, at the same epoch, by the same processes and apparently by

the same hand, relate to one and the same work. Such work is easy to restore in thought from the descriptions that Pausanias gives of the ex-voto addressed at Delphos or at Olympia by the rich trainers—the powerful princes who raced in the hippodromes and won the Pythian and Olympian crowns with so great honor. Standing in his chariot, not in the heat of the contest, but in the pride of triumph, the conqueror defiles at a slow pace. Above him floats the Victory that crowns him. At the sides of the chariot very young ephebes restrain the impatient horses.

This is the way in which we should figure the group, the auriga of which has been preserved to us. An attentive study of the figure and a comparison of the work with the Greek sculptures of declining archaism will permit of recognizing therein (1) traits common to the various schools that flourished between B. C. 480 and 460, such as the rounded form of the contours, the partly open mouth, the form of the feet, etc.; and (2) characters proper to the Peloponnesian studios. Whence the following conclusions: The work belongs to the fifth century B. C. (between the years 480 and 460), is of the Peloponnesian school and represents a group commemorative of a victory in the chariot races at Delphi. For our figures and description we are indebted to Tour de Monde.

A Neglected African Island.

Napoleon effectually prevented St. Helena from ever sinking into obscurity. Nevertheless, for some years past the island has been getting deeper and deeper into financial straits, while the population has been steadily diminishing. St. Helena is only some 1,600 miles distant from Capetown, and yet the island is comparatively unknown to South African colonists, as the outward and homeward steamers to and from Capetown only call there once in three weeks and make a very brief stoppage. And yet this historic island is well worthy of a visit, not only from its associations with the great Corsican, but also because it possesses, probably, the finest climate in the world. A constant southeasterly trade wind, straight from the pole, blows over the island, and sweeps away those germs of disease which lie latent in less favored spots. As a consequence, the longevity of the inhabitants is probably much greater than in any other portion of the globe. In spite of all this, and proximity of the island to the Cape, hardly a solitary African finds his way there from one year's end to the other.

So much in reference to St. Helena as a health resort. Now let me briefly refer to a matter that is of more vital importance. The strategical advantages of the island have been fully recognized by both naval and military experts, and the Royal Commission which was presided over by the late Lord Carnarvon recommended that it should be strongly fortified and constituted an important naval and coaling station for the vessels of the squadron within the Cape command. These recommendations have, however, not been carried into

effect. Certainly something was done to improve the fortifications ten or twelve years ago, but the guns are now of an obsolete type, and the diminutive garrison maintained in the island is utterly inadequate to defend it. Moreover, though St. Helena is supposed to be a naval coaling station, the Admiralty maintain no coal supply there, the coal for the ships on the Cape and west coast of Africa stations being kept at Ascension, which does not possess even a solitary gun, but is a cinder heap upon which many thousands are annually wasted.

The defenseless condition of St. Helena is a matter that intimately concerns the South African colonies, and should engage their attention. The island is utterly unable to help itself. The opening of the Suez Canal ruined its prosperity; and ever since it has been drifting nearer and nearer to bankruptcy. The greater portion of its adult male population has migrated to the Cape, and the whole revenue of the island is now only some £6,000. There are only half a dozen officials, and the governor fills innumerable other offices, including that of chief (and only)

justice. It is deplorable that Great Britain should allow one of its possessions to sink into such a condition of decrepitude, and especially an island which, lying in the direct route to the Cape, must ever be of considerable importance.—African Critic.

End of an Old Steamship.

The old steamship Dessoug, which was made famous by successfully transporting hither from Egypt the obelisk that now stands in Central Park, has been towed around to Cow Bay, Long Island, to be broken up for the metal that is in her. She was originally the British steamship Denton, and was built at Hartlepool, England, in 1864. She was 1,367 tons gross measurement and was an iron vessel. She had been in the Savannah line of the Ocean Steamship Company in late years, but had been laid up for some time and her class expired last autumn.