

THE TRANSIT OF VENUS:

On Wednesday last, at different times for the different observing stations on the globe, but in each case within about four hours, took place the expected astronomical phenomenon, which had not been seen since 1769. The planet Venus, being distant from the sun 66,000,000 miles—above two thirds of the earth's probable distance from the sun—passes around the sun by an interior orbit within the orbit described around the sun by our own planet. It happens, twice in a hundred years, but at an interval of eight years only, that Venus comes directly between us and the sun. The visible effect to spectators in the daytime who can see the sun is that a small black spot, which is the actual body of that planet, seems to travel slowly across the sun's apparent disc. Its size relatively to that of the sun's apparent disc is that of a pea on a cheese-plate. In those parts of the globe where it happened to be day at the time of the transit precise observations were made by the scientific parties sent out here and there from Europe. The result is of some importance, because from a comparison of the exact times at which the successive phenomena occurred at different stations the astronomers will be able to compute the sun's real distance from us, which is not yet certainly known.

The observations made at the cost of the British Government, under the direction of Sir G. B. Airy, Astronomer Royal, are at nine different stations. Captain G. L. Tupman, of the Royal Marine Artillery, is at the head of this service. The persons sent out to the various stations and sub-stations—and now, as far as is known, at their respective posts—are as follow:—Sandwich Islands—At Honolulu, Captain Tupman, assisted by Lieutenant F. E. Ramsden, R.N., and Mr. J. W. Nichol; at Hawaii, Professor G. Forbes, assisted by Mr. H. G. Barnacle; at Atooi, Mr. R. Johnson and Lieutenant E. J. W. Noble, R.M.A. On Kerguelen Island, in the South Indian Ocean, the Rev. Father Perry, Astronomer of Stonyhurst College, who observes at Christmas Harbour, assisted by the Rev. W. Sidgreaves, also of Stonyhurst, Lieutenant S. Goodridge, R.N., and Mr. J. P. Smith; while at Port Palliser, on the same island, Lieutenant C. Corbet, R.N., takes command, his assistant being Lieutenant G. E. Coke, R.N. On Rodriguez Island, east of Mauritius, in the Indian Ocean, Lieutenant C. B. Neate, R.N., has charge, and his aids are Mr. C. E. Burton and Lieutenant R. Hogan, R.N. Lord Lindsay has also set up a station, at his own private cost, in Mauritius. The New Zealand chief is Major H. Palmer, R.E., and his assistants are Lieutenants L. Darwin, R.E., and H. Crawford, R.N. Lastly, in Egypt, at Cairo, Captain C. Orde Brown, R.A., has charge. With him are Mr. S. Hunter and Captain Abney, whose dry-plate photographic process is employed throughout the British stations. Captain Abney has taken his standpoint at Thebes. Each party is supplemented by three non-commissioned officers or privates of the Royal Engineers. Advantage has been taken of the sojourns on Kerguelen Island and Rodriguez to prosecute some natural-history researches. The Royal Society appointed a geologist (Mr. H. Slater, B.A.), a botanist (Mr. Balfour), and a zoologist (Mr. G. Gulliver, B.A.) to accompany the party to the latter island.

The various expeditions, with instruments, houses, and stores, sailed for their respective posts during the past summer and autumn, and are believed to have arrived without mishap. The German, French, American, Russian, Dutch, and Italian Governments have occupied different stations in Eastern Asia, the Pacific Ocean, and elsewhere.

We learnt by telegraph, from several distant places, that the observations had been successfully made. At Calcutta, Roorkee, and Kurrachee, in India, but not at Madras, the weather allowed the sun to be seen, and the moments of contact to be noted. At Nagasaki, in Japan, and at a station in Siberia, favourable results were gained. The British observers in Egypt, at Thebes and Cairo, obtained a most complete success. It is of these stations in Egypt we have now to speak more particularly in connection with our two Illustrations.

Captain Orde Brown, R.A., the chief of the expedition in Egypt, was introduced to the Khedive by General Stanton, her Majesty's Consul-General. His Highness at once furnished the principal station on the Mokattem Heights, 600 ft. above Cairo, with tents, a guard, and a mounted escort. A telegraph line was laid from the Mokattem Heights to the office of the Eastern Telegraph Company at Cairo, to connect that station with Greenwich, through the Submarine, Gibraltar, and Malta cable. The telegraph office at Cairo was also put in communication with the observing station, at Thebes, under Captain Abney, R.E. His Highness sent a steamer to tow the Thebes branch of the expedition to its destination, and caused all the huts and instruments to be brought up by special train from Suez.

We give two Illustrations of the Mokattem Heights station. Our Correspondent at Cairo was favoured by Captain Orde Brown with the following memorandum:—"The Mokattem Heights, above the citadel of Cairo, have been chosen for the primary astronomical station for observing the transit of Venus. This situation possesses several recommendations. The geographical position of Cairo is the best one for establishing electrical communication between Greenwich and the astronomical stations not only in Egypt, but also those in India and Australia. The Mokattem hills are east of all the cultivated country; and, having only desert between them and the horizon, there is little liability to mists. Moreover, the heights have a command of about 600 ft. above Cairo, which places the station above the morning mists which cling to the ground."

One of our Illustrations represents Captain Brown superintending the conveyance of his material up the heights, a service entailing considerable risk of damage to the valuable instruments he had in his charge. Everything, however, reached its destination safely. Our smaller Engraving is a view of the camp and observatories, with the mosque at Cairo in the