## I. S. Plaskett

of equatorial mounting and is well shown in the photograph (Plate Xt,), has a long polar axis supported at its north and south ends by learnings, in a direction parallel to the earth's axis. The declination axis, to which the tule is attached at right angles, passes rectangularly through the central cubical portion of the polar axis, the weight of the tube on one side leing counterpolsed by the declination gearing and housing on the other.

The polar axis is composed of three sections, all of the best steel castings, firmly bolted together, namely, the central cubical section above mentioned and north and south conical tubular sections. It is nearly 23 feet long and weighs about ten tons. The declination axis is a steel forging,  $5\frac{1}{4}$  tons in weight,  $14\frac{1}{2}$  feet long,  $15\frac{1}{2}$  inches in diameter, with a flange 41 inches in diameter and 4 inches thick, to which the tube is Lolted. The tube is also in three sections, the central cylindrical steel casting, about  $7\frac{1}{2}$  feet in diameter and 6 feet long, weighing 7 tons, being attached to the flange of declination axis; to its bottom flange is bolted the steel mirror cell, weighing, with mirror counterpoises and mirror, 6 tons; while to its upper end is firmly attached the skeleton tube, a beautifully designed and extremely rigid piece of structural work, upwards of 23 feet long,  $7\frac{1}{2}$  feet in diameter, and weighing, with attachments, al out 2 tons.

Below the mirror cell the spectrograph and visual appliances for use at the Cassegrain focus are attached. At the upper end of the skeleton tube an exceedingly ingenious arrangement, avoiding the use of several heavy and awkward extensions of the skeleton tube which were necessary with all previous reflectors, enables either the prime focus. Newtonian or Cassegrain attachments to be used at will and with the minimum of trouble and delay in changing from one to the other.

The driving clock, similar in design to that which has been so successful in the Lick and Yerkes telescopes, moves the telescope in right ascension by means of an accurately cut worm-wheel, 9 feet in diameter, mounted on the polar axis by ball and ball thrust bearings, and clamped to it when required by an electric motor.

278