

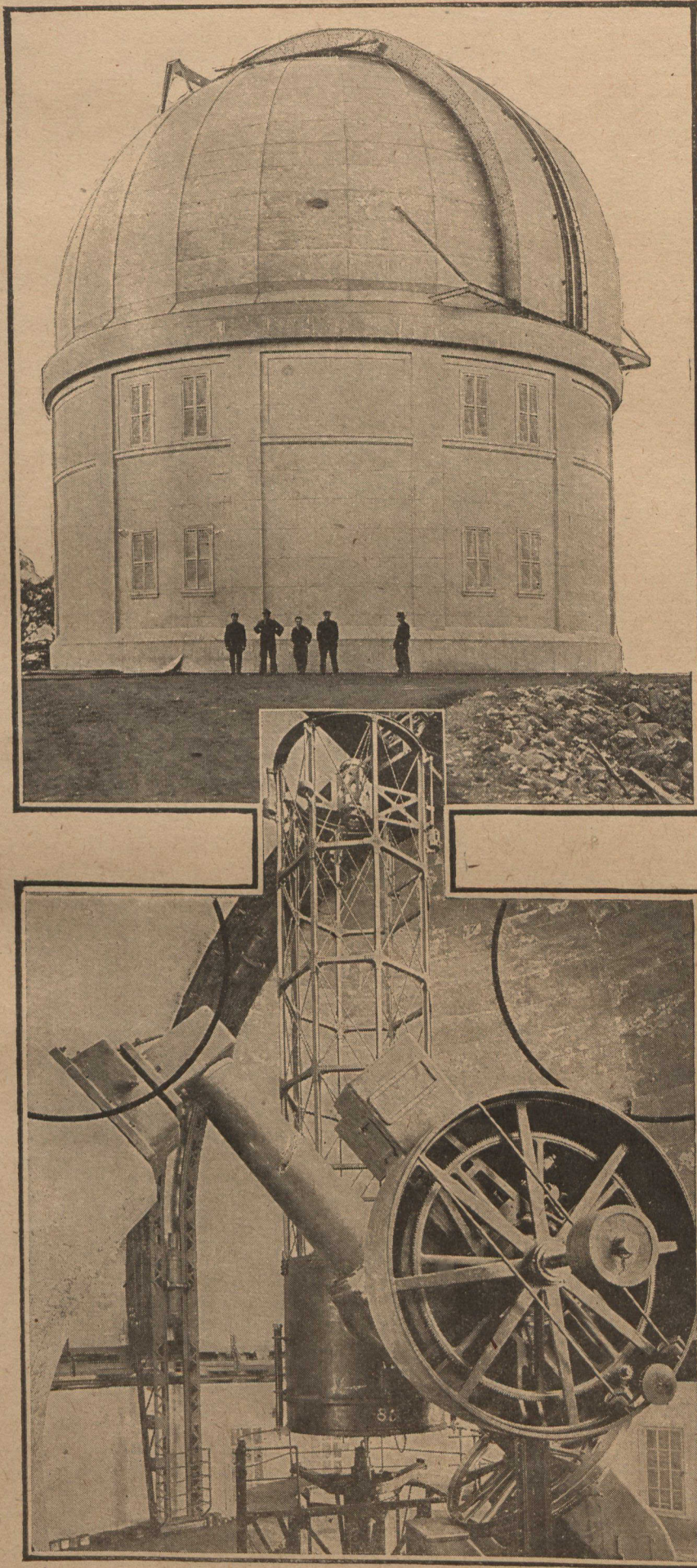
OUR WORLD'S BIGGEST TELESCOPE

*The Shade of Galileo on Saonich Mountain, at
Victoria, B. C., Sees a Heaven-Searching Lens
72 Inches in Diameter*

By FRANCIS J. DICKIE

UNDER cover of the kindly dark the attenuated Shade of Galileo slipped unnoticed out from among the gathered Immortals, whom, as we all know, through the kindly offices of Mr. John Kendrick Bangs, reside in great harmony together in a house boat on the famous stream known for ages as the River Styx. Very quietly did Galileo pass down the river bank, holding close to his breast that famous telescope, the first of its kind, which, in 1564, he had succeeded in putting together after weeks and months of careful toil, studying and experiment. There was a strange febrile light in his eyes, and for one who had so long before left earthly things behind him he seemed strangely perturbed. And he was. Early in October, by the weekly mail from earth, old Charon had brought him the latest books, papers and pamphlets published by the astrological societies of old Terra Firma. And there in a little green Government book he had read how at last, after many months of toil and anxiety, Dr. Plaskett, B.A.D.Sc., Chief Astronomer of the Canadian Astronomical Observatory, and his assistants and the many workers from the firm of Warner and Swasey, of Cleveland, Ohio, had put the finishing touches to the greatest telescope ever conceived and brought to completion by man—an instrument that had a 72-inch telescope; an instrument which weighed 55 tons and swung in a moving tower that weighed another 120 tons! It seemed unbelievable. When the Yerkes and Lick Observatories had been built, all the Associated Shades had cried in unison: "This is the last!"

YOU see the great ones of old, even though they be numbered among the immortal dead—I came pretty near saying immoral—are still very much alive and interested in things mundane. Galileo, however, on this particular day had beat the rest of the boys to the choice of books, and was already deep in the little booklet which told of the completion of the great telescope. Three hundred and fifty years of idling among the merry Shades of Hades had not in the least dulled Galileo's interest in things astronomical. Often at nights he would go out along the bank of the Styx and, bringing his own first invented telescope from his pocket, take a sly peek at the stars. For endless years he had been making up his mind to pay earth a visit. When the Lick Observatory had been finished, and after he had read all the Hades sent reports upon it, he had almost made the trip. Again, when the even greater Yerkes telescope had been erected, the desire came upon him strong, but his courage had failed him at the last minute, and in the intervening time he had spent his time reading wondrously of each fresh doings of earth in the way of star gazing research. But now that a 72-inch telescope had been erected by the Canadian Government upon the summit of Saonich Hill, just outside the beautiful city of Victoria and beside the softly lapping Pacific sea, this ancient astronomer could no longer contain himself. It was unbelievable the things he had read. Why this new telescope—if what the book said were true—was as large as the other two great ones put together, and twice that of the Lick, with its 32-inch instrument! There were so many other things mentioned that, well as he had kept up by reading with the progress of the times, he still failed to grasp. So he had made



World's greatest telescope in position for observing stars near the pole. At this time the great fifteen foot wide shutter is open. The building which houses the great telescope is seen above, the great revolving dome-shutter closed.

decision this time to make the trip to earth and visit Victoria, British Columbia, and view the whole work for himself.

Out of sight and sound of the house boat he found Jason waiting, the Jason of Argonaut fame, who had agreed to steal from the old guardian Charon

for an hour his ancient galley in which he had sailed after the Golden Fleece. All the crew there, too, were assembled by previous arrangement, and quickly the dark waters were put past by the sturdy rowers. Earth's bank touched, Galileo stepped nimbly ashore and went hurrying fast through the darkness of the night, for his time was short and dawn came soon.

Victoria, B.C., know you all, is a very long way from Hades, such is the goodly spirit of the townsmen and the burghers. Even editors there have been known to tell the truth, so Galileo's way was long. But at last, as the full moon rose, he reached the outskirts of the place and saw the high white dome of the wondrous instrument shining under the silvery radiance of the night. By good fortune the night was clear, and the fifteen foot wide shutter opening lay bare, giving full view into the space within, where, crouched upon its cement haunches, was this marvellous 'scope which he had come so far to see. Through the years he had grown full well informed upon the various points, and so now set swiftly about to satisfy himself that all he had read in the latest pamphlet were true. And this is what he saw and found upon that high hill known as Saonich, outside the fair city of Victoria by the sea.

HE saw a telescope six feet in diameter with an equatorial type of mounting, having the polar axis pointing toward the north star and swinging the body of the telescope in a plane parallel to the earth's equator and the apparent path of the stars; and a declination axis at right angles to and passing through the centre of the polar axis to allow movement north and south. In this it follows the general form of the English type of equatorial mountings. The polar axis is composed of three sections, all of the best steel castings, firmly bolted together, namely, the centre cubical section above mentioned, and north and south conical tubular sections. This is nearly 23 feet long, with a weight of some 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 bolted. The tube is also in three sections, the central steel casting, about $7\frac{1}{2}$ feet in diameter and 6 feet long, weighing 7 tons, being attached to the flange 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, about two tons.

The telescope was fitted to be used in three different forms, observations being made at the prime focus, the Newtonian or the Cassegrain. The equivalent focal length reached is 108 feet, giving images of exactly the same size as a refractor with a tube 108 feet long. All these things Galileo saw and noted, and as he did so realized that it was just as the facts had been set down by Dr. Plaskett in the Astronomical report.

He knew that the function of the mechanical parts of any telescope is to hold the optical parts invariably, and at the same time without flexure or strain, in their correct relative positions to enable them to be pointed at any desired object, and to move as a whole delicately and accurately to