

construction, under the superintendence of Mr. W. Gravatt, F. R. S., for the Rev Mr. Craig, vicar of Leamington. The site, consisting of two acres, has been liberally presented by Earl Spencer in perpetuity, or so long as the telescope shall be maintained. The central tower, consisting of brick, is 64 feet in height, 15 feet in diameter, and weighs 220 tons—every precaution has been taken in the construction of this building to prevent the slightest vibration, but if any disappointment in this respect should arise, (which however, Mr. Gravatt does not anticipate,) additional weight can be obtained by loading the several floors, and the most perfect steadiness will be thus ensured. By the side of this sustaining, tower hangs the telescope. The length of the main tube, which is shaped somewhat like a cigar, is 76 feet, but with an eye piece at the narrow end and a dewcap at the other, the total length in use will be 85 feet. The design of the dewcap is to prevent obscuration by the condensation of moisture, which takes place during the night, when the instrument is most in use. Its exterior is of bright metal, the interior is painted black. The focal distance will vary from 76 to 85 feet. The tube at its greatest circumference measures 13 feet, and this part is about 24 feet from the object glass. The determination of this point was the result of repeated experiments and minute and careful calculations. It was essential to the object in view that there should not be the slightest vibration in the instrument. Mr. Gravatt, reasoning from analogy, applied the principle of harmonic progression to the perfecting of an instrument for extending the range of vision, and thus aiding astronomic research. By his improvements the vibration at one end of the tube is neutralized by that at the other, and the result is that the utmost steadiness and precision is attained. The manner in which these object-glasses are fitted into the tube is a marvel of artistic invention. By means of twelve screws, numbered according to the hours of the day, they can be set in an instant to any angle the observer may require, by his merely calling out the number of the screw to be touched. The object-glasses also move round in grooves to wherever it may be considered that a more distinct view can be gained. The tube rests upon a light wooden framework, with iron wheels attached, and is fitted to a circular iron railway at a distance of fifty-two feet from the centre of the tower. The chain by which it is lowered is capable of sustaining a weight of thirteen tons, though the weight of the tube is only three. Notwithstanding the immense size of the instrument, the machinery is such, that it can move either in azimuth, or up to an altitude of eighty degrees, with as much ease and rapidity as an ordinary telescope, and, from the nature of the mechanical arrangements, with far greater certainty as to the results. The slightest force applied to wheel on the iron rail causes the instrument to move horizontally round the central tower, while a wheel at the right hand of the observer by a beautiful adaption of mechanical powers, enables him to elevate or depress the object-glass with the greatest precision and facility. So easy, in fact, is the control over the instrument in this respect, that a very slight touch on the wheel lifts ten cwt. It may be observed, also, that there cannot be the slightest flexure in the tube; no error or deflection arising from that cause can occur, while the ease with which it can be directed towards any point of the heavens will enable the observer to make profitable use of any patch of clear sky, however transient it may be. The great value of this need not be pointed out to those accustomed to making astronomical observations. With respect to the magnifying power of this novel instrument, it is only necessary to state that, though the focus is not so perfect as it will be shortly, it has already separated the nebulae in the same way as Lord Rosse's. It has also separated some of the double stars in the Great Bear, and shown distinctly a clear distance of 50 or 60 degrees between them, with several other stars occupying the intervening space. Ordinary readers will better understand the extraordinary magnifying power of the telescope when we inform them that by it a quarter-inch letter can be read at the distance of half a mile. The preparations for this really national work have been progressing for the last two years under the superintendence of M. Gravatt.

**Parliamentary Literati.**—A Correspondent of the *Athenæum* furnishes a detailed list of what he designates "the representatives of the literary interest in the Legislature:"—"Mr. Disraeli has hereditary pretensions to lead the literary interest in the Lower House, and I do not think that there could be any 'opposition' to his claim of being the first Novelist at present in the House of Commons..... The only other M. P. whom I can find avowedly contributing to the Fiction interest is Mr. Grantley Berkeley,—whose novel of 'Berkeley Castle,' and its consequences, might furnish a chapter to 'Curiosities of Literature.'..... Lord John Russell, as author of 'Don Carlos,' is the only Dramatist in the Lower House,—and he ranks also amongst Essayists, Biographers, and Historians, by his various publications..... Lord Mahon and Colonel Mure are at the head of the Historical and Critical M. P.'s; and I perceive the name of Mr. MacGregor, Mr. Torrence, M'Cullagh, and Sir John Walsh, as authors of historical writings..... Under the head of Poets, I observe Lords Maidstone and John Manners, and Mr. Mockton Milnes..... The 'Tra-

vellers' are more numerously represented in the Lower House of Parliament than most other departments of Literature:—Amongst Urquhart, and Mr. Whiteside; and I think that Sir George Staunton and Mr. George Thompson may be classed with the Travellers..... In the department of 'Political Philosophy,' I find Mr. Gladstone, Sir W. Molesworth, Mr. J. W. Fox, and Colonel Thompson..... Mr. Cornwall Lewis, Mr. Roebuck, Mr. George Smythe, and Mr. Mackinnon, appear amongst the general Essayists..... Mr. Walter, Mr. Wilson, Mr. Wakely may be ranked with the Editorial interest; and I may add that Mr. Butt—the new M. P. for Harwich—besides being the reputed author of a three-volume novel, was for some years the Editor of *The Dublin University Magazine*..... The Biographers are represented by Mr. Grattan, author of a five-volume work on his celebrated father..... The Pamphleteer department is represented by 'legion'; and I pass it by with the remark that Lord Overstone in the Upper, and Mr. Cobden in the Lower House, are at its head by the importance of their publications..... Turning to the Lords, the Bishop of St. David's (Dr. Thirlwall) is clearly at the head of the Historians in that assembly,—Lord Brougham, of Political Philosophy and Belles Lettres,—and Lord Campbell of the Biographers..... The Novelists are represented by Lords Normanby and Lonsborough..... The 'Editorial interest' of the Peers is of a different kind from that of the Lower House,—and is represented by the Earl of Malmesbury, the Marquis of Londonderry, and Lords Holland and Braybrooke..... Lord St. Leonard's work on 'Powers' shows that he has other than *ex-officio* right to be placed at the head of living English writers on law..... The Duke of Argyll, by his treatise on the Church History of Scotland, has added to the literary works of the Campbells..... The Marquis of Ormonde has published a richly illustrated narrative of a residence in Sicily. In Physical Science, the Earl of Rosse, not merely as P. R. S., but by his accomplishments, distances all competitors in either House..... There is only one autobiographer in the Legislature, Lord Cloncurry..... The Acted Drama, since the removal of Mr. Shiel, Sir N. Talfourd, and Sir Bulwer Lytton from the Lower House, has no other representative in the Legislature than the Earl of Glengall..... Lord Strangford represents the Poets of the Peers;—and of the Belles-Lettres interest in the Upper House, the Earls of Carlisle and Ellesmere are efficient supporters..... In the interest of the Fine Arts we may rank 'Athenian Aberdeen'—and as a musical composer, the Lords have Lord Westmoreland..... A more original author neither House could boast of than the late venerable writer of 'The Wellington Dispatches.'..... I have not the means of ascertaining the number on the Bench of Bishops ranking with the literary interest; but foremost among them, besides the Bishops of Exeter and of St. David's (named *ante*), are, the Archbishop of Canterbury, the Archbishop of Dublin, and the Bishops of London and Oxford. I may add, that the number of Peers is only about two-thirds that of the Lower House,—but on the other hand, the Peers enjoy much more leisure.

**Effect of the Earth's Rotation on Locomotion.**—Mr. Uriah Clarke, of Leicester, has called our attention to an article in the *Mechanic's Magazine* by himself on the influence of the earth's rotation on locomotion. It is well known that as the earth revolves on its axis once in twenty-four hours, from west to east, the velocity of any point on its surface is greater near the equator and less from it in the ratio of the cosine of the latitude.—Mr. Clarke says:—"Some rather important conclusions in relation to railway travelling arise out of the view now taken. The difference between the rotative velocity of the earth in surface motion at London and at Liverpool is about twenty-eight miles per hour; and this amount of lateral movement has to be gained or lost, as respects the locomotive in each journey, according to the direction we are travelling in from one place to the other; and in proportion to the speed will be the pressure against the side of the rails, which at the high velocity, will give the engine a tendency to climb the right hand rail in each direction. Could the journey be performed in two hours between London and Liverpool, this lateral movement or rotative velocity of the locomotive would have to be increased or diminished at the rate of nearly one quarter of a mile per minute, and that entirely by side pressure on the rail, which is not sufficient to cause the engine to leave the line, would be quite sufficient to produce violent and dangerous oscillation. It may be observed, in conclusion, that as the cause above alluded to will be inoperative while we travel along the parallels of latitude, it clearly follows that a higher degree of speed may be attained with safety on a railway running east and west than on one which runs north and south." There is no doubt of the tendency Mr. Clarke speaks of on the right-hand rail, but we do not think it will be found to be so dangerous as he says. It will be greatest on the Great Northern and Berwick lines and least on the Great Western.—[Herapath.]

**Skill of Insect Builders.**—Reaumur states that twenty years he endeavoured, without success, to discover the materials employed by wasps in forming the blue, gray, papery substance, so much used in the