The same consideration leads to a rule which is very simple, and sufficiently exact for ordinary situations. This is to make the curvatures such, that the incident and emer­gent pencils may be nearly equally inclined to the surfaces of the lens. Thus in the eye-piece with five glasses, A and B should be most convex on their anterior sides ; C should be most convex on the posterior side ; D should be nearly isosceles ; and E nearly plano-convex.

But this is not so easy a matter as appears at first sight. The lenses of an eye-piece have not only to bend the seve­ral pencils of light to and from the axis of the telescope ; they have also to form images on the axes of these pencils. These offices frequently require opposite forms, as mention­ed in par. 3, col. 2, p. 162. Thus the glass A, fig. 28, should be most convex on the side next the object, that it may produce little distortion of the pencils. But it should be most convex next the eye, that it may produce distinct vision of the image FG, which is very near it. This image should have its concavity turned towards A, whereas it is towards the object-glass. We must therefore endeavour to make the vertical image *fg* flatter, or even convex. This requires a glass very flat before and convex behind. For similar reasons the object-glass of a microscope and the simple eye-glass of an astronomical telescope should be formed in the same way.

This is a subject of most difficult discussion, and requires a theory for which our limits do not afford room. The artists are obliged to grope their way. The proper method of experiment would be, to make eye-pieces of large di­mensions, with extravagant apertures to increase the aber­rations, and to provide for each station A, B, C, and D, a number of lenses of the same focal distance, but of different forms ; and we would advise making the trial in the way of a solar microscope, and to have two eye-pieces on trial at once. Their pictures can be formed on the same screen, and accurately compared ; whereas it is difficult to keep in remembrance the performance of one eye-piece, and com­pare it with another.

We cannot add any thing to what Dr Smith has delivered on the theory of reflecting telescopes. There appears to be the same possibility of correcting the aberration of the great speculum by the contrary aberration of a convex small spe­culum, that we have practised in the compound object-glass of an achromatic refracting telescope. But this cannot be, unless we make the radius of the convex speculum exceed­ingly large, which destroys the magnifying power and the brightness. This therefore must be given up. Indeed their performance, when well executed, does already surpass all imagination. Dr Herschel found great advantages in what he called the *front view,* not using a plane mirror to throw the pencils to one side. But this cannot be prac­tised in any but telescopes so large that the loss of light occasioned by the interposition of the observer’s head may be disregarded. (b. b. b.)

TELETZKOI, a lake of Siberia, in the government of Kolivan, extending about fifty-two miles from north to south, and ten from east to west. It is supplied by a river which rises in Chinese Tartary, and is bordered by a lofty chain of mountains connected with the Altai.

TELFORD, Thomas, a very able and distinguished engineer, was born in the parish of Westerkirk and county of Dumfries, on the 9th of August 1757. His father, who followed the occupation of a shepherd, died before the close of that year ; and the orphan boy was thus left to the sole care of his mother, whose maiden name was Janet Jackson. She survived till the year 1794, and had the high satisfaction of seeing him already entered upon a very pros­perous career. In his correspondence with her, he is said to have written all his letters in printed characters, that she might be able to read them without assistance. His very limited education he received at Westerkirk school ; and, during the summer season, was employed by his uncle as a shepherd boy. This occupation left him abundant leisure for reading ; and his early and eager love of knowledge he was enabled to gratify by the kindness of some individuals, who accommodated him with the loan of books. At an early age, he quitted Westerkirk school and the care of his uncle’s flock, in order to learn the trade of a mason in the neighbouring town of Langholm. After the completion of his apprenticeship, he continued for some time to work as a journeyman. Langholm bridge, over the river Esk, was partly reared by hands which were destined for more scien­tific occupations.

At this early period of his life, he was remarkable for his elastic spirits and gay humour. In his native district of Eskdale, he was long remembered as “ laughing Tom.” His favourite pursuits were not yet scientific, but literary, and he even aspired at the reputation of a poet. He was a con­tributor to the Weekly Magazine ; and one of his composi­tions, entitled *Eskdale, a Poem,* appeared with the name of the author in a provincial miscellany.@@' It is an imitation of Pope’s Windsor Forest, and at least displays some com­mand of poetical language and imagery. He subsequently wrote many verses ; and from a poetical epistle which he had addressed to Burns, some extracts were printed by Dr Currie.

Telford at length quitted Eskdale, and sought for better employment in Edinburgh, where he is said to have con­tinued, with unremitting application, to study architecture on scientific principles. In the mean time, however, he must have earned his daily bread by the labour of his hands. Here he remained till the year 1782, when he was embold­ened to try his fortune in London. He had now reached the age of twenty-five, and seems to have acquired new confidence in the resources of his own talents. In his de­scriptive poem, two Eskdale families have each received their mead of praise ; and to two individuals belonging to those families he owed many obligations.

Who has not heard of Johnstone's sounding name. Or Pasley’s, shining in the rolls of fame ?

Mr John Pasley, a wealthy merchant, was the brother of Sir Thomas Pasley, and the uncle of Sir John Malcolm. He was remarkable, even in a proverbial degree, for his anxi­ous attention to the welfare of the Eskdale youth who re-

@@@, The Poetical Museum ; containing Songs and Poems on almost every subject, mostly from periodical Publications. Hawick, 1784, 12mo. *Eskdale* occurs at p. 2G7, where it is introduced with this notice of the author : “ Thomas Telford, author of the following Poem, was bred a mason at the village of Langholm, on the banks of the Esk ; a young man of no education but common reading, assisted by some few books lent him by the neighbouring gentlemen." Langholm, it is to be remarked, is not a village, but a market-town, containing about 2000 inhabi­tants. An improved edition of the poem was printed at Shrewsbury. It is inserted in the appendix to the Life of Telford, p. 655. An “ Epistle to Mr Walter Ruddiman,” signed *EMale Tarn,* and dated at Langholm, is subjoined to “ Two Scots Poems ; the Silver Gun, in three cantos, and Hallow-E'en. By John Main.” Glasgow, 1783, 4to. This epistle, which is commendatory of the Dumfries poet, was first printed in the year 1779 in the Weekly Magazine, vol. xliv. p. 151. Telford acknowledged himself to be the anthor. In the last edition of the principal poem, be is mentioned with commendation as a poet as well as engineer. See Mayne's Siller Gun, p. 78, 227. Lond. 1836, 16to.