

great accession to our knowledge of the nature of light was made, if we except one, which, from its invaluable practical application, must ever hold a prominent place in the annals both of art and science : we mean, the discovery of the principle of the achromatic telescope, which originated in a discussion between the celebrated geometer Euler, Klingenstierna, an eminent Swedish philosopher, and our own countryman, the admirable optician Dollond, on the occasion of certain abstract theoretical investigations of the former, which led him to speculate on its *possibility*, and which ultimately terminated in its complete and happy *execution* by the latter ; a memorable case in science, though not a singular one, where the speculative geometer in his chamber, apart from the world, and existing among abstractions, has originated views of the noblest practical application.*

(282.) The explanation which our knowledge of optical laws affords of the mechanism of the eye, and the process by which vision is performed, is as complete and satisfactory, as that of hearing by the propagation of motion through the air. The camera obscura, invented by Baptista Porta in 1560, gave the first idea how the actual images of external objects might be conveyed into the eye, but it was not till after a considerable interval that Kepler, the immortal discoverer of those great laws which regulate the periods and motions of the planets, pointed out distinctly the offices performed by the several parts of the eye in the act of vision. From this to the invention of the telescope and microscope there would seem but a small step, but it is to accident rather than design that it is due ; and its re-invention by Galileo, on a mere description of its effects, may serve, among a thousand similar instances, to show that inestimable practical applications lie open to us, if we can only once bring ourselves to conceive their possibility, a lesson which the invention of the achromatic telescope itself, as we have above related it, not less strongly exemplifies.

* There seems no doubt, however, that an achromatic telescope had been constructed by a private amateur, a Mr. Hall, some time before either Euler or Dollond ever thought of it.