ing (in front of the object-glass) a mirror and diaphragms, whose rotation is measured on a ring; telescopes with divided object-glasses, on either half of which the stellar light is received through a prism; astrometers* in which a prism reflects the image of the moon or of Jupiter, and concentrates it through a lens at different distances into a star more or less bright. Sir John Herschel, who has been more zealously engaged than any other astronomer of modern times in making numerical determinations in both hemispheres of the intensity of light, confesses that the practical application of exact photometric methods must still be regarded as a "de-

above-mentioned mode of classification, be compared directly with those which Sir John Herschel made public as early as 1838. (See my *Recueil d'Observ. Astr.*, vol. i., p. lxxi., and *Relat. Hist. du Voyage aux Régions Equin.*, t. i., p. 518 and 624; also *Lettre de M. de Humboldt à M. Schumacher en Fevr.*, 1839, in the *Astr. Nachr.*, No. 374.) In this letter I wrote as follows: "M. Arago, qui possède des moyens photométriques entièrement différents de ceux qui ont été publiés jusqu'ici, m'avait rassuré sur la partie des erreurs qui pouvaient provenir du changement d'inclinaison d'un miroir entamé sur la face intérieure. Il blâme d'ailleurs le principe de ma méthode et le regarde comme peu susceptible de perfectionnement, non seulement à cause de la différence des angles entre l'étoile vue directement et celle qui est amenée par réflexion, mais surtout parceque le résultat de la mesure d'intensité dépend de la partie de l'œil qui se trouve en face de l'oculaire. Il y a erreur lorsque la pupille n'est pas très exactement à la hauteur de la limite inférieure de la portion non entamée du petit miroir." "M. Arago, who possesses photometric data differing entirely from those hitherto published, had instructed me in reference to those errors which might arise from a change of inclination of a mirror silvered on its inner surface. He moreover blames the principle of my method, and regards it as little susceptible of correctness, not only on account of the difference of angles between the star seen directly and by reflection, but especially because the result of the amount of intensity depends on the part of the eye opposite to the ocular glass. There will be an error in the observations when the pupil is not exactly adjusted to the elevation of the lower limit of the unplated part of the small mirror."

* Compare Steinheil, *Elemente der Helligkeits-Messungen am Sternenhimmel München*, 1836 (Schum., *Astr. Nachr.*, No. 609), and John Herschel, *Results of Astronomical Observations made during the Years* 1834–1838 *at the Cape of Good Hope* (Lond., 1847), p. 353–357. Seidel attempted in 1846 to determine by means of Steinheil's photometer the quantities of light of several stars of the first magnitude, which attain the requisite degree of latitude in our northern latitudes. Assuming Vega to be =1, he finds for Sirius 5·13; for Rigel, whose luster appears to be on the increase, 1·30; for Arcturus, 0·84; for Capella, 0·83; for Procyon, 0·71; for Spica, 0·49; for Atair, 0·40; for Aldebaran, 0·36; for Deneb, 0·35; for Regulus, 0·34; for Pollux, 0·30; he does not give the intensity of the light of Betelgeux, on account of its being a variable star, as was particularly manifested between 1836 and 1839. (*Outlines*, p. 523.)