a corresponding difference in brightness. In two cases—in ζ Bootis and γ Leonis—which, from their great brightness, can easily be measured by powerful telescopes, even in the daytime, the former consists of two white stars of the third and fourth magnitudes, and the latter of a principal star of the second, and of a companion of the 3·5th magnitude. This is usually called the brightest double star of the northern hemisphere, whereas α Centauri* and α Crucis, in the southern hemisphere, surpass all the other double stars in brilliancy. As in ζ Bootis, so also in α Centauri and γ Leonis, we observe the rare combination of two great stars with only a slightly different intensity of light.

No unanimity of opinion yet prevails respecting the variable brightness in multiple stars, and especially in that of companions. We have already† several times made mention of the somewhat irregular variability of luster in the orange-colored principal star in α Herculis. Moreover, the fluctuation in the brightness of the nearly equal yellowish stars (of the third magnitude) constituting the double star γ Virginis and Anon. 2718, observed by Struve (1831–1833), probably indicates a very slow rotation of both suns upon their axes.‡ Whether any actual *change of color* has ever taken place in double stars (as, for instance, in γ Leonis and γ Delphini); whether their white light becomes colored, and, on the other hand, whether the colored light of the isolated Sirius has become white, still remain undecided questions.§ Where the disputed differences refer only to faint tones of color, we should take into consideration the power of vision of the observer, and, if refractors have not been employed, the frequently reddening influence of the metallic speculum.

Among the multiple systems we may cite as ternaries, ξ Libræ, ζ Cancri, 12 Lyncis, 11 Monoc.; as quaternaries, 102 and 2681 of Struve's Catalogue, α Andromedæ, ε Lyræ: in θ Orionis, the famous trapezium of the greater nebula of

* "This superb double star (α Cent.) is beyond all comparison the most striking object of the kind in the heavens, and consists of two individuals, both of a high ruddy or orange color, though that of the smaller is of a somewhat more somber and brownish cast." (Sir John Herschel, *Observations at the Cape of Good Hope*, p. 300.) And, according to the important observations taken by Captain Jacob, of the Bombay Engineers, between the years 1846 and 1848, the principal star is estimated of the first magnitude, and the satellite from the 2·5th to the third magnitude. (*Transact. of the Royal Soc. of Edinb.*, vol. xvi 1849, p. 451.)

† *Vide supra*, p. 165, 166, and note.

‡ Struve, *Ueber Doppelst. nach Dorp. Beob.*, s. 33. § *Ibid.*, s. 36