COMMUNICATIONS FROM THE OBSERVATORY AT LEIDEN.

List of stars nearer than 5 parsecs, by Ejnar Hertzsprung.

The great progress made in the determination of stellar parallaxes in recent years makes it desirable at intervals to bring the list of the nearest stars up to date. My first list of this kind (Zeitschr. für wissensch. Photographie 5, 87; 1907) contained all the stars, for which at that time a parallax of more than 6" was had been found. As the number of stars with measured parallaxes has since increased considerably, the main feature of such a list is already shown, when only the very nearest stars with distances below 5 parsecs are included. Counting the components of multiple systems as separate stars, I find at present 29 stars with a parallax above 6". These have been listed in the accompanying table. The spectra of Lac 8760 and Gou 32416 have been kindly communicated by Professor S. J. Bailey in advance of publication.

It will be noted that out of the 29 stars in the list 15 are members of double or multiple systems. Kapteyn and Van Rhijn give the number of stars, counting double stars as one star, pro cubic parsec in the vicinity of the sun as ’0451 (Contrib. from the Mount Wilson Obs. N. 101, Ap. J. 42, 111; 1915) and its spectrum is of class Ao according to Adams (Publ. of the Astron. Soc. of the Pacific 26, 198; 1914). Recently F. C. Leonard found the spectrum of the fainter component of $\Sigma$ 518 to be Md (Publ. of the Astron. Soc. of the Pacific 33, 272; 1921). The absolutely faint white stars seem to be even more frequent per unit volume than the absolutely bright yellow stars.

For the fainter components of $\Sigma$ 2398, Groombr. 34 and Krüger 60 no spectrum is available, but the effective wavelengths (l.c.) indicate a yellow colour for these three stars corresponding to class M. This has been indicated in the table by [$M$]. The same notation is used for Innes’s companion to α Centauri, where the colour has been estimated from the difference between photographic and visual magnitude.

The relation between absolute brightness and colour of the very faintest stars deserves further attention. The effective wavelengths of absolutely faint stars

*) According to Seares (Publ. Astr. Soc. Pacific 90, 192, 1918), the colour index of this star is +3.57, corresponding to +.42 on the scale $I_H$ of the Göttingen Actinometry.