

slit being exposed to the spark. This comparison of terrestrial spectra enables the errors due to temperature and flexure to be determined, and the difference of velocity of the two stars is given by the displacement of the two stellar spectra minus that of the two terrestrial. Evidently the accuracy will depend very largely upon the precision in setting the two stars in the visual telescope; to secure this it is proposed to attach a small photographic telescope to the guiding telescope, and to photograph the two stars, together with a reticule, which will enable the deviation, if any, to be measured and allowed for. To get the absolute velocity of a star, it must be compared with a star of known velocity, or Orbinsky's method (*NATURE*, vol. lii. p. 155) of measuring the contraction or dilatation of the whole spectrum may be applied. In the latter case, the absolute velocity could be determined directly, since effects of temperature, &c., would be eliminated.

A NEW STAR IN CENTAURUS.¹

A NEW star in the constellation Centaurus was found by Mrs. Fleming on December 12, 1895, from an examination of the Draper Memorial photographs. Its approximate position for 1900 is in R.A. 13h. 34^m., Dec. -31° 8'. Attention was called to it from the peculiarity of the spectrum on a plate taken at Arequipa on July 18, 1895, with the Bache Telescope, exposure 52 mins. The spectrum resembles that of the nebula surrounding 30 Doradus, and also that of the star A.G.C. 20937, and is unlike that of an ordinary nebula or of the new stars in Auriga, Norma, and Carina. This object is very near the nebula N.G.C. 5253, which follows 1° 28s., and is north 23°. No trace of it can be found on 55 plates taken from May 21, 1889, to June 14, 1895, inclusive. On July 8, 1895, it appeared on a chart plate, and its magnitude was 7.2. On a plate taken July 10, 1895, its magnitude was also 7.2. On December 16, 1895, a faint photographic image of it, magnitude 10.9, was obtained with the 11-inch Draper Telescope, although it was very low, faint, and near the sun. On this date, and on December 19, it was also seen by Mr. O. C. Wendell with the 15-inch Equatorial as a star of about the eleventh magnitude. An examination with a prism showed that the spectrum was monochromatic, and closely resembled that of the adjacent nebula. Although the spectrum is unlike those of the new stars in Auriga, Norma, and Carina, yet this object is like them in other respects. All were very faint or invisible for several years preceding their first known appearance. They suddenly attained their full brightness and soon began to fade. Like the new stars in Cygnus, Auriga, and Norma, this star appears to have changed into a gaseous nebula.

The star which was photographed in 1887 in the constellation Perseus apparently belongs to the same class. Its approximate position for 1900 was in R.A. 1h. 55^m., Dec. +56° 15'. Eight images of it were obtained on the Draper Memorial photographs in 1887, all in exactly the same place. Its photographic spectrum showed the hydrogen lines H β , H γ , H ϵ , and a line near 4060, bright, and from this property it was discovered by Mrs. Fleming and assumed to be an ordinary variable star of long period. The spectrum is so faint that it is impossible to decide from it whether it should be regarded as a new star of the class of Nova Aurigæ, or as a variable star of long period like α Ceti, as the hydrogen lines are bright in both these classes of objects. This star soon faded away and does not appear on 81 photographs taken during the last eight years. It has also been repeatedly looked for in the sky without success. No trace of this star appears on two photographs taken November 3, 1885, and December 21, 1886.

A list of the new stars hitherto discovered is given in the annexed table. Some changes would occur in it, if changes were made in the definition assumed for this class of objects. Early observations of several objects frequently called new stars, but which may have been comets, and whose positions are uncertain, have not been included. The stars T Bootis and U Scorpii have not been included, although they also may be new stars, as only one appearance of each has been noted. The name of the constellation is followed by the right ascension and declination for 1900, and the greatest brightness. The year of appearance is followed by the name of the discoverer; or, in the case of the earlier stars, of the principal observer.

¹ Harvard College Observatory Circular, No. 4.

NEW STARS.

Constellation.	R.A. 1900.		Dec. 1900	Mag.	Year.	Discoverer.
	h.	m.				
Cassiopeia	0	19.2	+63 36	-5?	1572	Tycho Brabé
Cygnus	20	14.1	+37 43	3?	1600	Janson
Ophiuchus	17	24.6	-21 24	-4	1604	Kepler
Vulpecula	19	43.5	+27 4	3	1670	Anthelm
Ophiuchus	16	53.9	-12 44	5	1848	Hind
Scorpius	16	11.1	-22 44	7	1860	Auwers
Corona Borealis	15	55.3	+26 12	2	1866	Birmingham
Cygnus	21	37.8	+42 23	3	1876	Schmidt
Andromeda	0	37.2	+40 43	7	1885	Hartwig
Perseus	1	55.1	+56 15	9	1887	Fleming
Auriga	5	25.6	+30 22	4	1891	Anderson
Norma	15	22.2	-50 14	7	1893	Fleming
Carina	11	3.9	-61 24	8	1895	Fleming
Centaurus	13	34.3	-31 8	7	1895	Fleming

THE ETHNOLOGY OF THE BRITISH UPPER CLASSES.

IN "L'Anthropologie," tome v. (1894) Dr. Beddoe has published the results of his work on the cephalic index of the inhabitants of Great Britain and Ireland. Part of his work deals with the cephalic indices of the Cambridge undergraduates, which were placed at his disposal by J. Venn, F.R.S. He has also inquired into their height and weight, classing them in accordance with their place of origin; but he has taken no account of the colour of the eyes of these undergraduates, and so I thought it would be as well to continue his researches, now that there is more material to hand, paying especial regard to the colour of the eyes. It will be seen by a glance at the table appended that it is in a mere fraction of the total number that the eyes are described as "light." This is due to the standard of comparison afforded by the Anthropometrical Committee of the Cambridge Philosophical Society, and is a disadvantage which does not apply to the dark eyes, and it is therefore by confining our attention to the percentages of the dark eyes in the various groups that we get our best results.

I have examined, through the kindness of Dr. Venn, some 1400 more instances since Dr. Beddoe published his results in "L'Anthropologie." In the three special cases of cephalic index, height and weight, where my results are only a continuation of Dr. Beddoe's, I have, in the following table, incorporated his results in mine, so as to gain the advantage of having a larger number of instances to deal with. On glancing at the figures below, one is at first inclined to think that the upper classes of the various races, which have given rise to the present population of Great Britain and Ireland, have entirely fused with one another, as the differences between their respective indices are but small; but the following two points indicate, I think, that the fusion is still incomplete:—

(1) *Stature*.—The Welsh are about .8 inch shorter than the English, and as much as 1.5 inches shorter than the Scotch. They are also a slighter race, they weigh less, are less strong muscularly, and have a smaller breathing capacity.

The English, again, are about .7 inch shorter than the Scotch, weigh about 4 lb. less, and are less strong.

(2) *Colour of Eyes*.—The greatest percentage of dark eyes is to be found in those undergraduates whose origin is in the west and south-west (34.76 per cent.). The smallest among those who come from the east and south-east (18.75 and 15.38 respectively).

The cephalic indices of the various groups do not show much difference. The chief point of interest is the fact that the dark-eyed English have broader and loftier heads than is the case elsewhere in England. This is just the reverse of what Dr. Beddoe found: "L'association," he says (p. 662), "de la couleur brune ou foncée des cheveux avec la dolichocéphalie paraît être à peu près générale."

I may perhaps incidentally touch on a curious point, which is possibly due to nothing more than the instrument used, and that is, that one can, on the average, see further with the right eye than with the left. The average difference is fairly constant, and amounts to about two centimetres. Whether it is due to anything beyond external causes, I hardly like to say.