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THE SPECTRUM OF NOVA CYGNI 1920

WITH A

NOTE ON THE SPECTRUM OF NOVA AQUILAE No. 3

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On August 20th, 1920, a new star was discovered in the constellation Cygnus by Denning, of Bristol, England, while he was engaged in observing and plotting meteor trails. The announcement was cabled to Harvard the following day, but did not reach here until the 23rd. For the six weeks or so previous practically every night had been clear, but a spell of cloudy weather set in about that time which greatly interfered with the observation of the star. Then, too, the cloudy spell interfered with our regular observing program of Boss stars, which became crowded in the early evening hours, and as a consequence the nova was not observed as frequently as would otherwise have been the case. Nevertheless, 19 plates on 12 nights from August 24 to September 28 furnish considerable data, which the following discussion aims to summarize.

The spectra were made with the single prism spectroscope attached to the 72-inch reflector. It had been intended to use a three-prism dispersion if the sharp line stage, noted in former novæ, should be recorded. Such was not the case here on any night in which the star was observed, though from reports such a stage was recorded in England. Sixteen of the spectra were made on Seed 30 emulsion with a medium focus camera, giving a range of spectrum roughly from $\lambda 3700$ to $\lambda 5150$ with a dispersion of 25.7 angstroms per millimetre at $\lambda 4200$, the centre of the plate. The remaining three spectra were made on Ilford Panchromatic plates with a shorter focus camera, taking in a range of spectrum from $\lambda 3700$ to $\lambda 6800$ and having a dispersion of 43.4 angstroms per millimetre at $\lambda 4200$.

From photographic records there seems to have been no star occupying the exact position of the nova—at least none brighter than the 17th magnitude. As it attained a maximum on August 23rd equal to a 2nd magnitude star, it thus increased in brightness