that of the H and K lines. Spectra of chromospheric faculae obtained by me have shown that electronic impact is the principal mechanism here. The observational material which is available for chromospheric flares indicates the same mechanism in these objects, but further observations are needed for conclusive evidence.

14. CONTRIBUTION TO THE DISCUSSION

By M. WALDMEIER

Coronal observations in connexion with Solar Flares

Limb flares give an opportunity to observe what happens in the solar corona before, during and after the outbreak of a flare. Without exceptions there always appear coronal condensations around the flare material. These bright condensations are best seen in the monochromatic light of the line 5303 Å. The line 6374 Å shows less conspicuous features. Especially close is the connexion between the emission of the yellow line 5694 Å and the appearance of the flare. This line brightens up together with the flare, but its intensity is still increasing when the flare fades away. Maximum intensity may be reached about half-an-hour after the beginning of the flare, at a time when Hα-emission has completely vanished. At that time generally also the line 5445 Å appears for a short duration. As the production of cosmic radiation starts about half-an-hour after the beginning of the flare, it may be that it is generated in the highly ionized coronal condensation.

A limb flare shows striking similarities with typical sunspot prominences. In many cases it has been observed, that coronal condensations are becoming brighter and denser. By these processes the condensation radiates away its energy and its temperature decreases. After this process has been in progress for about 10–30 min., in the very centre of the condensation a bright point of Hα-emission comes into existence. It grows and brightens rapidly, becoming a typical sunspot prominence and after a further quarter-of-an-hour the material is streaming out, downwards into a sunspot. Similar coronal phenomena are observed in connexion with flares.

https://doi.org/10.1017/S0251107X00036051 Published online by Cambridge University Press