at. % S, R/R had an extremely small value, beyond the sensitivity of our apparatus. Exceptions were the chromium sulfides with sulfur excess (58 to 59 at. %), for which we were able to measure the change of resistance in a magnetic field; however, ...had a negative sign, i.e., it behaved anomalously (see Fig. 2).

The only previous example of a fall in resistance in a magnetic field was tellurium (a semimetal), as indicated by R. A. Chentsov /3/.

The immeasurably small values of the Hall effect in chromium sulfides with sulfur contents of .... at. % and also the absence of any influence of magnetic field on the electrical resistance of these compounds may indicate the existence of mixed conductivity (electron and hole). If we start from energy-band considerations relating to the energy states of the electrons in semiconductors, we must conclude that in the present case the mixed conductivity is a result of the very small width of the forbidden band. This is also suggested by the fact that the temperature coefficient of the resistance of chromium sulfide changes its sign at comparatively low temperatures.

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