melting point of iron. This produces a layer of carbon in solution in liquid iron. Then the melt hardens and excess carbon is evolved in the form of needles of cementite. The reduction in the melting temperature of iron in contact with graphite also plays a part, because the iron-carbon diagram is of the eutectic type. The small thickness of the thermal influence zone indicates that there are very severe temperature gradients during cooling of the melt. The significant polygonal zone that was observed with dimensions two orders of magnitude greater than those of the saturation and thermal influence zones is also of interest. The existence of this zone is apparently associated with the total effect of heating in the impact wave heating by heat transfer from the metal surface. From the appearance of the structure it seems that the initial process is twinning, which is only later followed by polygonization.

In conclusion the authors would like to thank T. M. Aver'yanova, and L. I. Gryaznova for help in conducting the experiments.

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