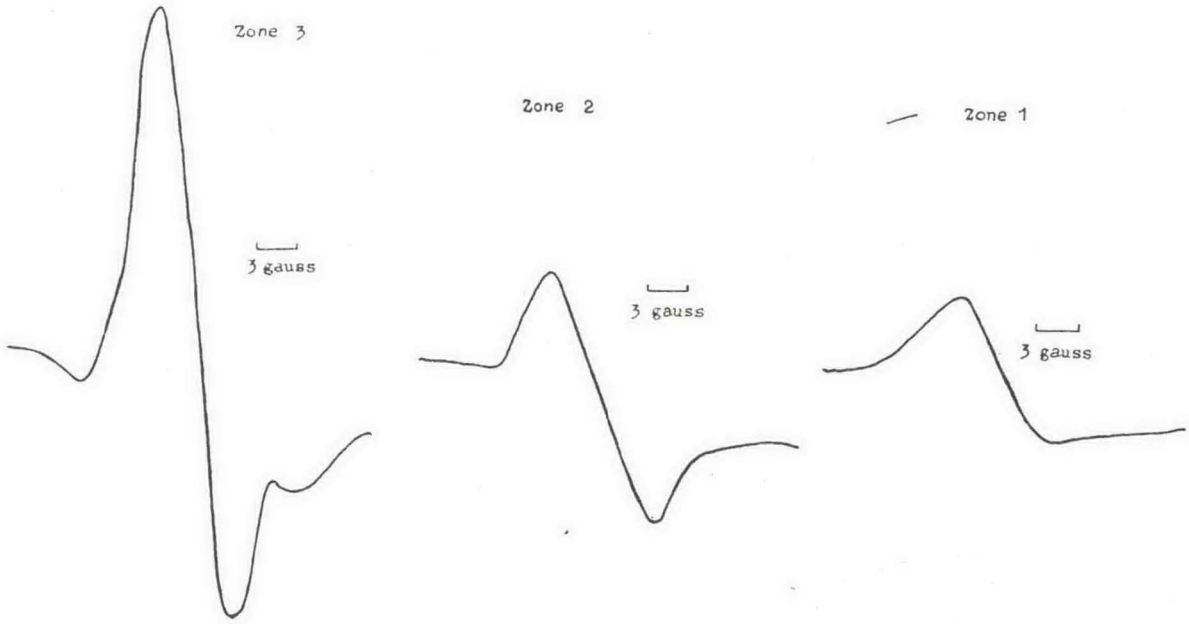

Fig. 5. EPR (electron paramagnetic resonance) spectra of the paramagnetic defect in shocked zircone of zone 3, 2 and 1.

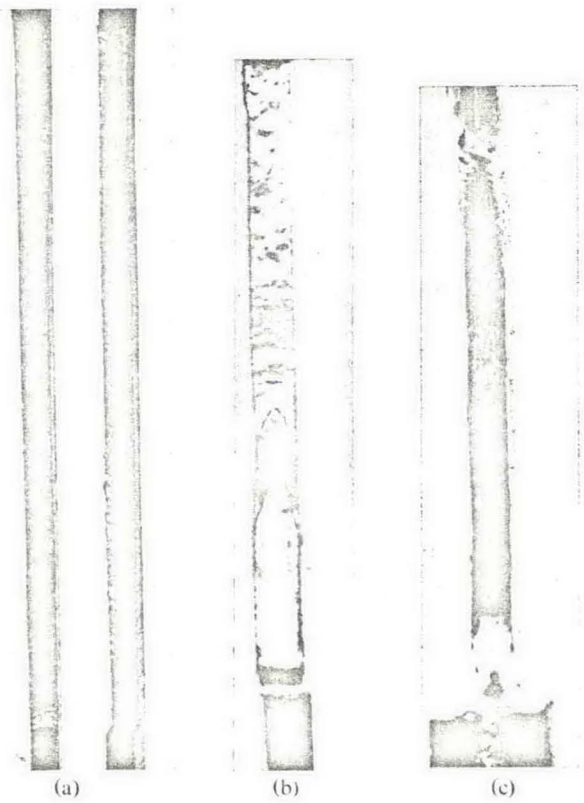

Fig. 6. Shocked powder of SiO_2 under different conditions: a – long container and large charge, size 0.5 of real size, b – short container and small charge, c – double shocked powder, band c being twice their original size.

work silicates without formation of a three-shock configuration (fig. 6). Several cone-shaped zones are distinguishable in this case. The sizes of these zones essentially depend on the sizes of containers, explosive charge and initial density of powder.

It is possible to assume, that the absence of the three-shock configuration is connected with the "friable" structure of these silicates in comparison with the orthosilicates.

The situation and composition of phases are shown in fig. 7 for SiO_2 and $KAlSi_3O_8$ shocked in the equivalent conditions. The major part of the shocked products is the glass of normal density containing the great number of smallest bubbles in the lower part of a container. (Detonation moves from above.) The intermediate zones 2 and 3 are most interesting.

3.1. *SiO_2*

The fragments of grains of powder SiO_2 transit gradually with the preservation of form into the glass-like phase with the heightened density (N = 1.510 instead of N = 1.460 for normal SiO_2 glass). Simultaneously the relics of quartz grains acquired the lower refractive index (N up to 1.520) and the low double-refraction (0.001–0.003), the broadening of lines and disappearing of weak lines in X-ray patterns were observed. The appearance of the X-ray patterns indicates