of the S strain of *T. cruzi* grown on NNN medium with Tyrode overlay. These "whole culture lysates" were injected either intraperitoneally or subcutaneously and were quantitated to give the equivalent of about 1,000,000 lysed organisms/daily inoculum. We prepared such lysates from cultures received through Malisoff and from our own cultures of S strain. Among the various tumors tested (Table 1) were two lines of sarcoma 180; one obtained from K. Sugiura, of Memorial Hospital, and the other furnished and implanted in every case by the same technician who had supplied Malisoff with sarcoma T-180. The former tumor (Sugiura S-180) took and killed in all instances, while Malisoff's sarcoma T-180 regressed spontaneously in more than half of our controls.

Since the claims of Malisoff (*8*) are based on a total of only 43 treated mice and 15 controls, and since exact repetition of the T-180 experiments showed more than 50% tumor regressions in the untreated mice, all of Malisoff's results with sarcoma T-180 may be looked upon as spontaneous regressions. "Whole culture lysates" tested by us against spontaneous adenocarcinoma in 40 C3H- and dba-mice gave no sign of cancerolytic effect and did not prolong survival. On the contrary, deaths among the treated mice were more frequent than among the controls.

Malisoff's use of the term "chemical purification" gives the misleading impression of a fractionating technique followed in preparing the cancerolytic principle. Actually, whole culture lysates are crude preparations, and failure of other laboratories to reproduce potent KR should not be ascribed to degree of refinement in procedure. As for the work of Roskin and Klyueva, it is still too early for final judgment; but in view of the almost wholly negative outcome of our experiments (*5, 6*) and those of others (*1–3*), the elusive "endotoxin" of *T. cruzi* does not at present appear to hold out much promise for cancer therapy.

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Three New Polymorphs of Zinc Sulfide

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Three new polymorphs of ZnS have been recognized by the writers. All are related structurally to wurtzite, but differ in that they represent stacking sequences of hexagonal closest-packing of higher periodicity than that of the basic wurtzite structure. The new polymorphs correspond to 4H, 6H and 15R in the notation of Ramsdell (*1*) and are isostructural with the corresponding polymorphs of silicon carbide. Table 1 shows the crystallographic properties, data for ordinary wurtzite (2H) being given for comparison.

TABLE 1

	Wurtzite–2H	Wurtzite–4H	Wurtzite–6H	Wurtzite–15R
a_0	3.811 A	3.806	3.813	3.822
c_0	6.234	12.44	18.69	46.79
$a_0 : c_0$	1 : 1.6358	1 : 3.268	1 : 4.902	1 : 12.242
Cell contents	Zn_2S_2	Zn_4S_4	Zn_6S_6	$Zn_{15}S_{15}$
Space group	C6mc	C6mc	C6mc	R3m

The crystals of the new polymorphs are steep pyramidal in habit and are doubly terminated with the basal pinacoid present at the analogous pole only. Parallel intergrowths of 15R with 4H and of 15R with 6H were observed, the surfaces of juncture being uneven and approximately vertical in position. In physical properties the several polymorphs are identical with wurtzite-2H. All have a distinct cleavage on $\{11\bar{2}0\}$ and traces of cleavage on {0001}. The specific gravity, determined by a microbalance on a 20-mg sample composed largely of 4H, was 4.09, in close agreement with the calculated value of 4.121 for 4H. Sufficient material for a quantitative chemical analysis is not at hand, but the material probably contains at least several per cent of divalent iron in isomorphous substitution for zinc.

The crystals occur in shrinkage cracks in clay-ironstone (siderite) concretions embedded in a carbonaceous black shale of the lower Conemaugh formation at numerous localities in western Pennsylvania and eastern Ohio. Associated minerals are barite, sphalerite, chalcopyrite, pyrite, and calcite. The concretions and minerals therein apparently formed at essentially ordinary conditions of temperature and pressure during the diagenesis of the sediment. All three of the polymorphs occur side by side in rudely radial aggregates of single crystals, indicating simultaneous crystallization. Sphalerite is later formed than the polymorphs, and wurtzite-2H does not occur in the assemblage.

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