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SOURCE Documentary as indicated. (Information specifically requested.)

RECENTLY PUBLISHED RESEARCH OF THE S. N. KIROV ACADEMY OF MILITARY MEDICINE, Leningrad, USSR

"Polymerization-Depolymerization: I, Depolymerization of Rubber-like Polymers of Isobutylene," Ya. M. Slobodin, N. I. Matusevich, Kirov Acad Mil Med

"Zhurnal Obshchey Khimii" Vol 16, 1946, pp 2077-82

Thermal depolymerization of isobutylene rubber gives fragments ranging from the monomer to pentamers; some cracking also occurs. Crystalline trimer discovered. Vistanax was heated to 325° in a distillation apparatus. After depolymerization, the residue never exceeded 6-8%. Analyses of gases showed the presence of 1.3-3.9% saturated hydrocarbons; the unsaturated product was isobutylene, while the saturated product was apparently C<sub>4</sub>H<sub>10</sub>, with some C<sub>2</sub>H<sub>6</sub>. Liquid portion of the distillate was fractionated to give a series of products whose properties are given.

"Polymerization-Depolymerization: II, Catalytic Thermopolymerization of Divinyl," Ya. M. Slobodin, F. Yu. Rachinskiy, Kirov Acad Mil Med

"Zhurnal Obshchey Khimii" Vol 17, 1947, pp 374-7

Polymerization of CH<sub>2</sub>=C(CH<sub>3</sub>)CH=CH<sub>2</sub> in a quartz tube of 20-mm diameter over an activated phloridin catalyst in a layer 22 cm high, at a rate of flow of 1 liter/hour, at 300°, 350°, and 400°, reached 54, 77, and 85% respectively. The gas contained some H<sub>2</sub>. In

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the condensate, the dimer fractions, boiling at 128-32° and 132-5°, contained up to 50% of an aromatic hydrocarbon, possibly formed from the dimer ( $2 C_8H_{12} \rightarrow C_8H_{10} + C_8H_{14}$ ); hydrogenation over Pt black revealed the presence of one double bond. The dimer obtained forms no crystalline tetrabromide; its Br addition product is unstable and resinifies on standing; with  $C(NO_2)_4$ , the dimer gives a red color; its surface tension  $\sigma = 24.2$  dynes/cm; the parachor  $P=310$ . The aromatic hydrocarbon was identified as para-xylene by its oxidation with  $KMnO_4$  to terephthalic acid. The trimer fraction contains no aromatic compounds; it has two double bonds;  $\sigma = 20.8$ ,  $P=416.3$ . The tetramer fraction is a highly viscous yellow liquid with marked fluorescence; the presence of three double bonds was established. In the fraction whose boiling point is above 140°, the presence of a pentamer and of a hexamer can be inferred from the average molecular weight.

"Use of Zinc Phosphide ( $Zn_3P_2$ ) as a Rodenticide,"  
N. I. Kalabukhov, Kirov Acad Mil Med

"Farmakol i Toksikol" Vol 9, No 2, 1946, pp 53-6

Use of  $Zn_3P_2$  in dry baits is effective against rats. Large doses (10-50 mg per rat) in fresh baits kill in 8-20 hours. Small doses in baits dried at 45° kill in 48-120 hours.

"Diacetonefructose," Ya. M. Slobodin, A. N. Klimov,  
Kirov Acad Mil Med

"Zhurnal Obshchey Khimii" Vol 15, 1945, pp 921-4

It was shown that the content of the a- and b-forms of diacetonefructose depends upon the amount of  $H_2SO_4$  used for acetonization. With 0.5 cc  $H_2SO_4$  per 100 cc  $Me_2CO$  there is formed a mixture having 93% a-diacetonefructose, and 7% b-form. By using 7 cc  $H_2SO_4$  per 100 cc  $Me_2CO$ , the mixture contains only 4% of the a-form and 96% b-form. Analysis conducted by determination of melting points, by using a melting point curve which was constructed from known mixtures.

"New Data on Therapy of Poisoning by Scorpion Venom,"  
A. D. Panashenko, Kirov Acad Mil Med

"Farmakol i Toksikol" Vol 7, No 6, 1944, pp 41-6

In addition to known first-aid measures against scorpion bites, early application of any of the following treatments is recommended: (1) subcutaneously 20 ml 3-5% or intravenously 100 ml of 1%  $Na_2S_2O_3$ , repeated; (2) subcutaneously, 10 ml 5% or intravenously, 100 ml slowly, 1% quinine-2HCl; (3) intravenously 10-20 ml 1% methylene blue; (4) intravenously 50 ml 0.1% rivanol. Low toxicity,

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ready availability, and direct action are characteristics of  $\text{Na}_2\text{S}_2\text{O}_3$ . Other agents act indirectly. Ephedrine and the novocaine-block technique are ineffective against scorpion venoms.

"Latrodectus Spider Venom," A. I. Kuznetsov, Kirov Acad Med

"Farmakol i Toksikol" Vol 7, No 6, 1944, pp 36-41

Black-death spider (*Latrodectus tredecimguttatus* or *L. lugubris* spp. *erebus*) is dangerous to men, horses, cows, and camels but not to sheep. Venom spreads to the loins, shoulders, joints, and extremities. Symptoms include excitation of motor nerves, insomnia, cardiac pain, anesias, cyanotic lips, and salivation. Swelling occurs near the bite. The blood can sometimes be detoxified by repeated intravenous injections of 2-3%  $\text{NaNO}_3$  in 3-5 ml doses, or by subcutaneous or intravenous injection of 100-300 ml of 1-5%  $\text{Na}_2\text{S}_2\text{O}_3$ . Tests were made with frogs, mice, rats, rabbits, dogs, and birds. Even at a dilution of 1:127,000 the venom in vitro causes hemolysis and lysis of erythrocytes.

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