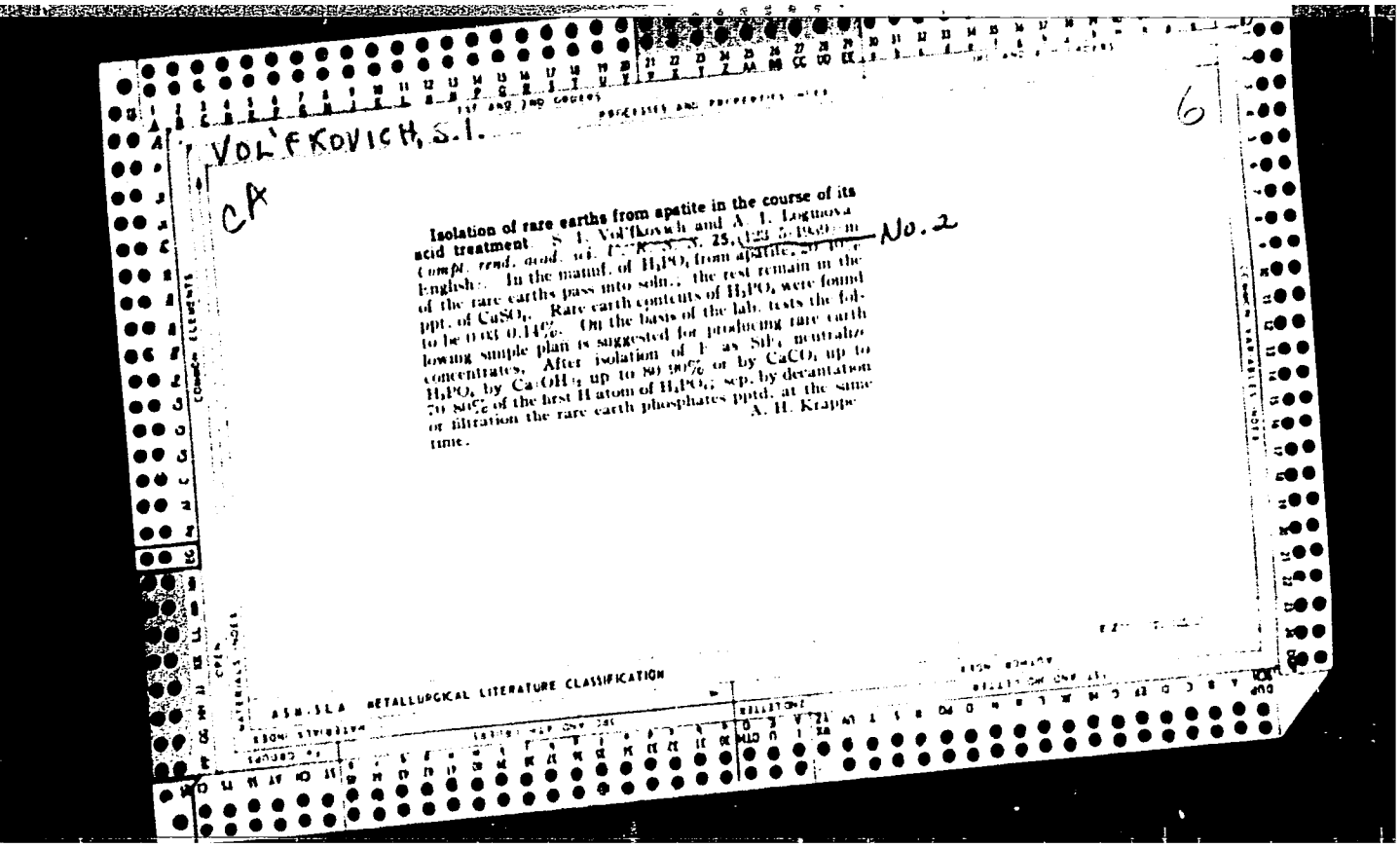


VOL'FKOVICH, S.I.

CA

6

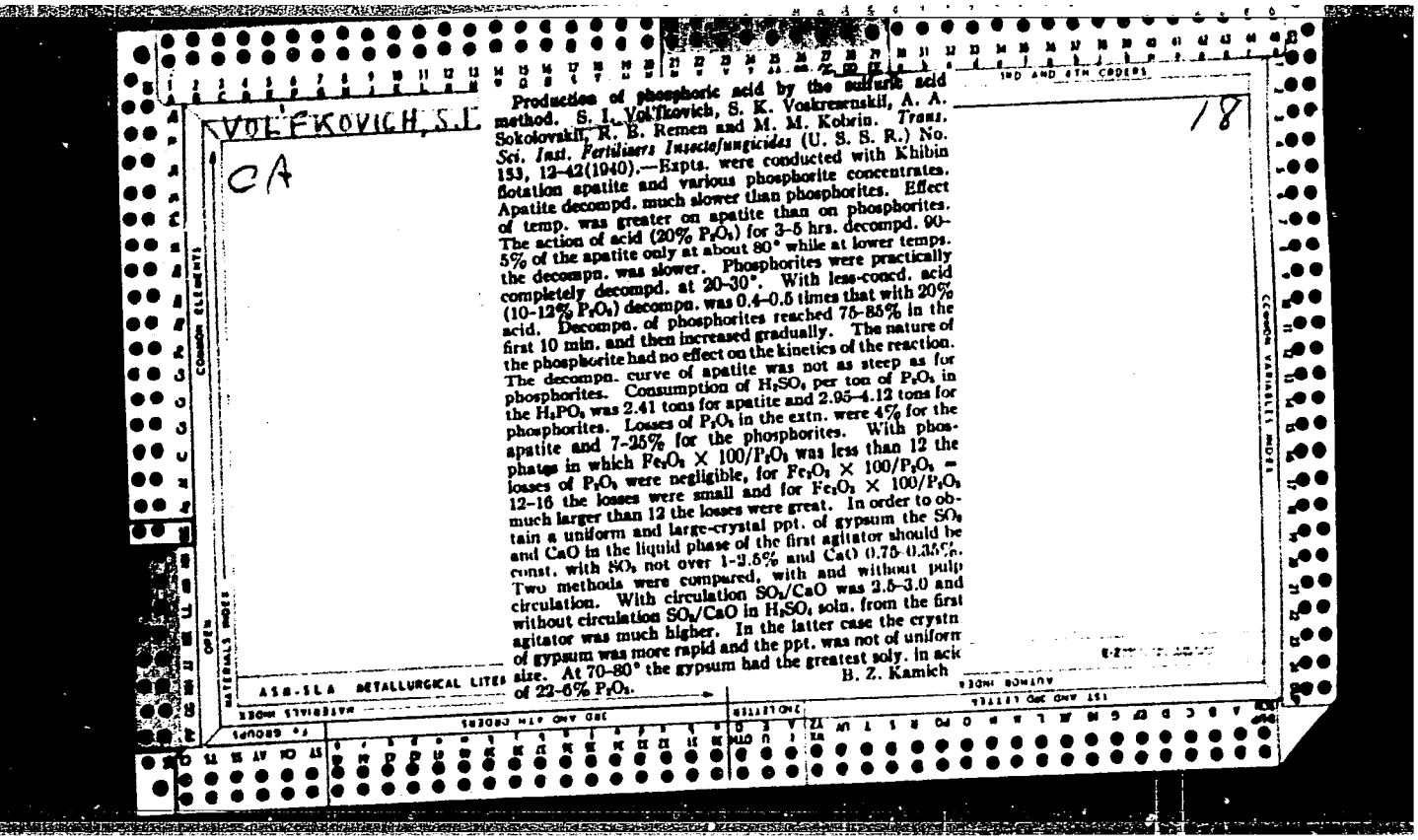
Isolation of rare earths from apatite in the course of its acid treatment S. I. Vol'fkovich and A. I. Loginova *Compt. rend. acad. sci.* [illegible] N. S. 25, [illegible] (1939). In English.—In the manuf. of H_3PO_4 from apatite, 50–70% of the rare earths pass into soln., the rest remain in the ppt. of $CaSO_4$. Rare earth contents of H_3PO_4 were found to be 0.03–0.14%. On the basis of the lab. tests the following simple plan is suggested for producing rare earth concentrates. After isolation of P as SiF_4, neutralize H_3PO_4 by $Ca(OH)_2$ up to 80–90% or by $CaCO_3$ up to 70–80% of the first H atom of H_3PO_4; sep. by decantation or filtration the rare earth phosphates ppted. at the same time. A. H. Krappe

No. 2

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VOL'FKOVICH, S. I.

"The Physical, Chemical, and Technical Analysis of Processes of Decomposition of Phosphates by Saltpeter Acid with Utilization of Waste," Iz. Ak. Nauk USSR, Ot. Khim. Nauk, No. 5, 1940. Scientific Inst. for Fertilization and Insecticides im. Ya. V. Samoylova, -1940-



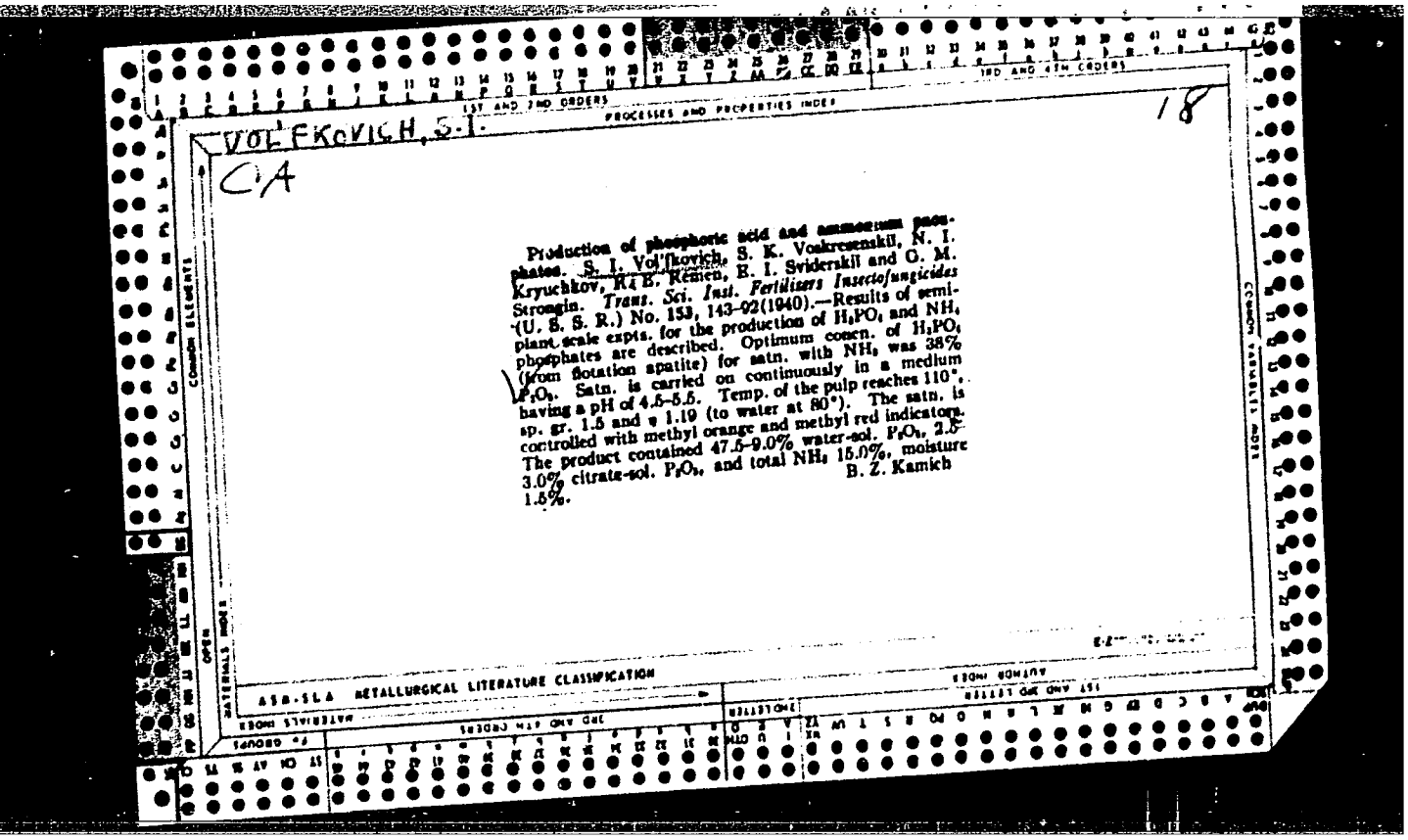
VOLFKOVICH, S. I.

CA

18

Production of phosphoric acid by the sulfuric acid method. S. I. Volfkovich, S. K. Voskresenskii, A. A. Sokolovskii, R. B. Remen and M. M. Kobrin. *Trans. Sci. Inst. Fertilizers Insecto-fungicides* (U. S. S. R.) No. 153, 12–42(1940).—Expts. were conducted with Khibin flotation apatite and various phosphorite concentrates. Apatite decompd. much slower than phosphorites. Effect of temp. was greater on apatite than on phosphorites. The action of acid (20% P_2O_5) for 3–5 hrs. decompd. 90–5% of the apatite only at about 80° while at lower temps. the decompn. was slower. Phosphorites were practically completely decompd. at 20–30°. With less-concd. acid (10–12% P_2O_5) decompn. was 0.4–0.5 times that with 20% acid. Decompn. of phosphorites reached 75–85% in the first 10 min. and then increased gradually. The nature of the phosphorite had no effect on the kinetics of the reaction. The decompn. curve of apatite was not as steep as for phosphorites. Consumption of H_2SO_4 per ton of P_2O_5 in the H_3PO_4 was 2.41 tons for apatite and 2.95–4.12 tons for phosphorites. Losses of P_2O_5 in the extn. were 4% for the apatite and 7–25% for the phosphorites. With phosphates in which $Fe_2O_3 \times 100/P_2O_5$ was less than 12 the losses of P_2O_5 were negligible, for $Fe_2O_3 \times 100/P_2O_5$ = 12–16 the losses were small and for $Fe_2O_3 \times 100/P_2O_5$ much larger than 12 the losses were great. In order to obtain a uniform and large-crystal ppt. of gypsum the SO_3 and CaO in the liquid phase of the first agitator should be const. with SO_3 not over 1–2.5% and CaO 0.75–0.35%. Two methods were compared, with and without pulp circulation. With circulation SO_3/CaO was 2.5–3.0 and without circulation SO_3/CaO in H_2SO_4 soln. from the first agitator was much higher. In the latter case the crystn of gypsum was more rapid and the ppt. was not of uniform size. At 70–80° the gypsum had the greatest soly. in acid of 22–6% P_2O_5.

B. Z. Kamich



VOL'FKOVICH, S. I.

CA

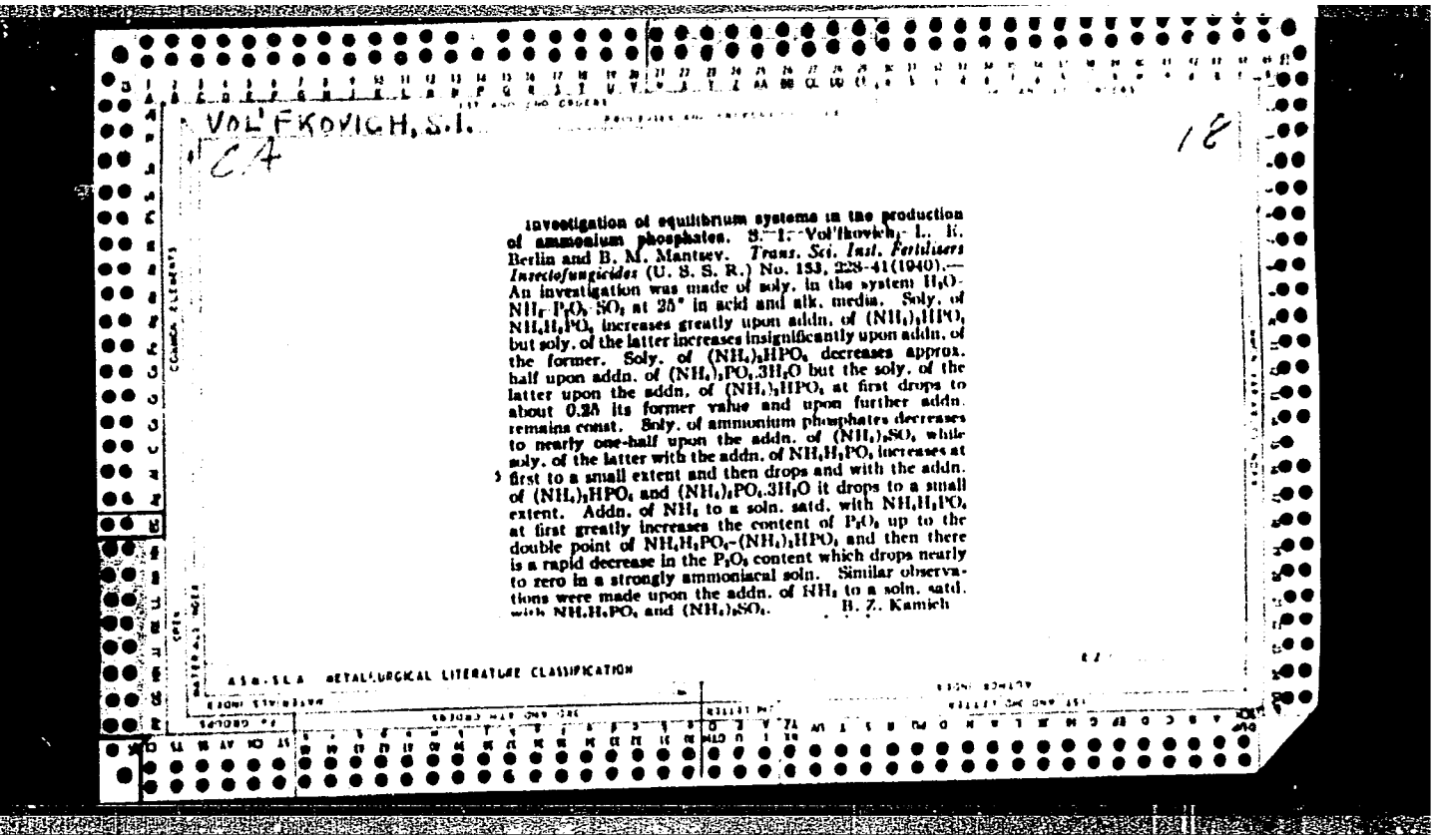
18

Production of phosphoric acid and ammonium phosphates. S. I. Vol'fkovich, S. K. Voskresenskii, N. I. Kryuchkov, R. E. Remen, E. I. Sviderskii and G. M. Stroogin. *Trans. Sci. Inst. Fertilizers Insectofungicides* (U. S. S. R.) No. 153, 143-92(1940).—Results of semi-plant-scale expts. for the production of H_3PO_4 and NH_4 phosphates are described. Optimum concn. of H_3PO_4 (from flotation apatite) for satn. with NH_3 was 38% P_2O_5. Satn. is carried on continuously in a medium having a pH of 4.5–5.5. Temp. of the pulp reaches 110°, sp. gr. 1.5 and η 1.19 (to water at 80°). The satn. is controlled with methyl orange and methyl red indicators. The product contained 47.5–9.0% water-sol. P_2O_5, 2.5–3.0% citrate-sol. P_2O_5, and total NH_3 15.0%, moisture 1.5%.

B. Z. Kamich

VOL'FKOVICH, S. I.

"Hydrochloric Acid Conversion of Apatites to Fertilizers, Rare Earths and Fluoride Salts," Dok. AN, 44, No. 4, 1944 (Samoylov Inst. Fertilizers and Insectofungicides, c. 1944)



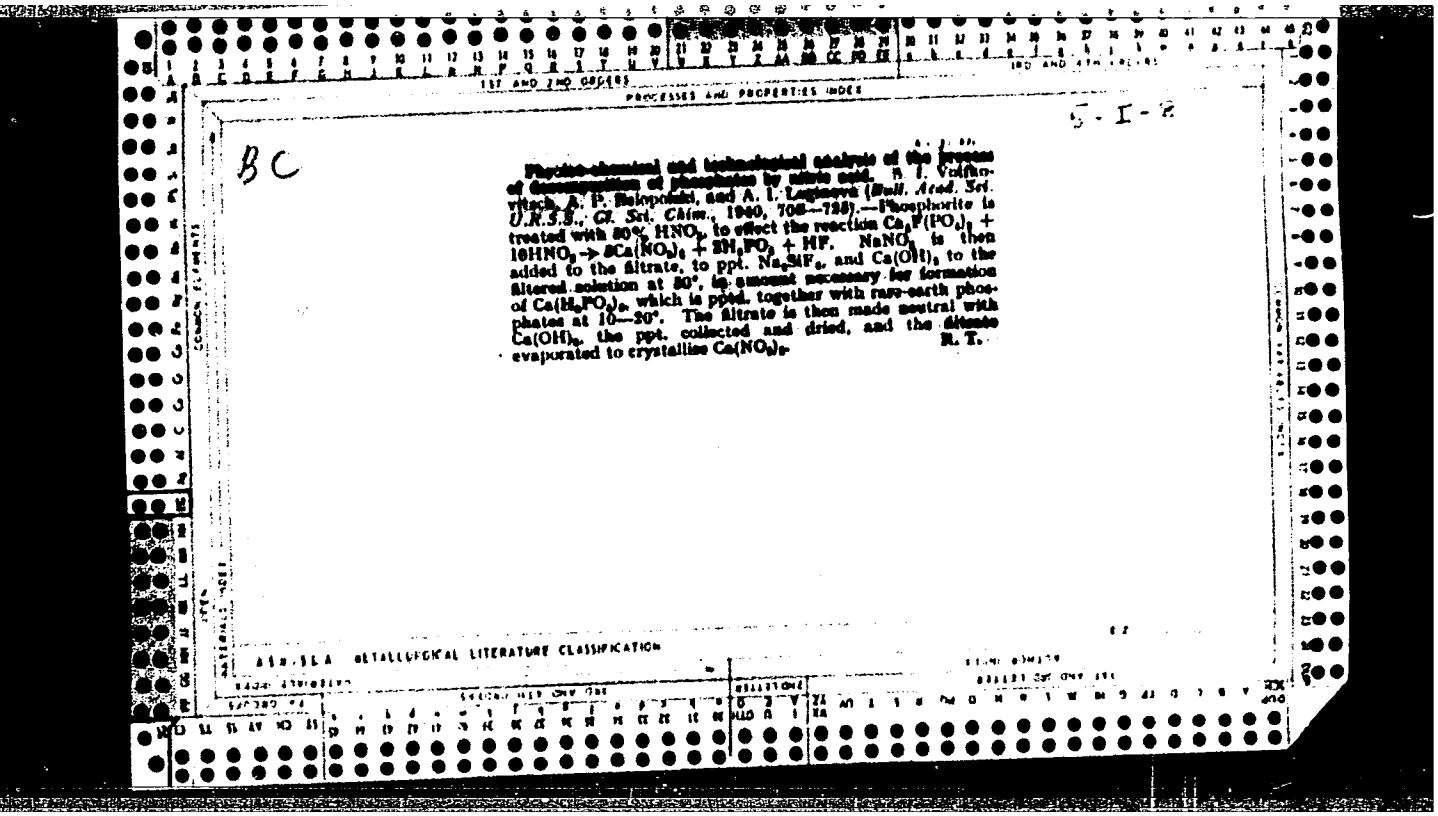
VOL'FKOVICH, S.I.

C4

18

Investigation of equilibrium systems in the production of ammonium phosphates. S. I. Vol'fkovich, L. K. Berlin and B. M. Mantsev. *Trans. Sci. Inst. Fertilisers Insectofungicides* (U. S. S. R.) No. 153, 228-41 (1940).—An investigation was made of soly. in the system H_2O-NH_3-P_2O_5-SO_3 at 25° in acid and alk. media. Soly. of $NH_4H_2PO_4$ increases greatly upon addn. of $(NH_4)_2HPO_4$ but soly. of the latter increases insignificantly upon addn. of the former. Soly. of $(NH_4)_2HPO_4$ decreases approx. half upon addn. of $(NH_4)_2PO_4.3H_2O$ but the soly. of the latter upon the addn. of $(NH_4)_2HPO_4$ at first drops to about 0.25 its former value and upon further addn. remains const. Soly. of ammonium phosphates decreases to nearly one-half upon the addn. of $(NH_4)_2SO_4$ while soly. of the latter with the addn. of $NH_4H_2PO_4$ increases at first to a small extent and then drops and with the addn. of $(NH_4)_2HPO_4$ and $(NH_4)_2PO_4.3H_2O$ it drops to a small extent. Addn. of NH_3 to a soln. satd. with $NH_4H_2PO_4$ at first greatly increases the content of P_2O_5 up to the double point of $NH_4H_2PO_4$-$(NH_4)_2HPO_4$ and then there is a rapid decrease in the P_2O_5 content which drops nearly to zero in a strongly ammoniacal soln. Similar observations were made upon the addn. of NH_3 to a soln. satd. with $NH_4H_2PO_4$ and $(NH_4)_2SO_4$. B. Z. Kamich

A S & S L A METALLURGICAL LITERATURE CLASSIFICATION



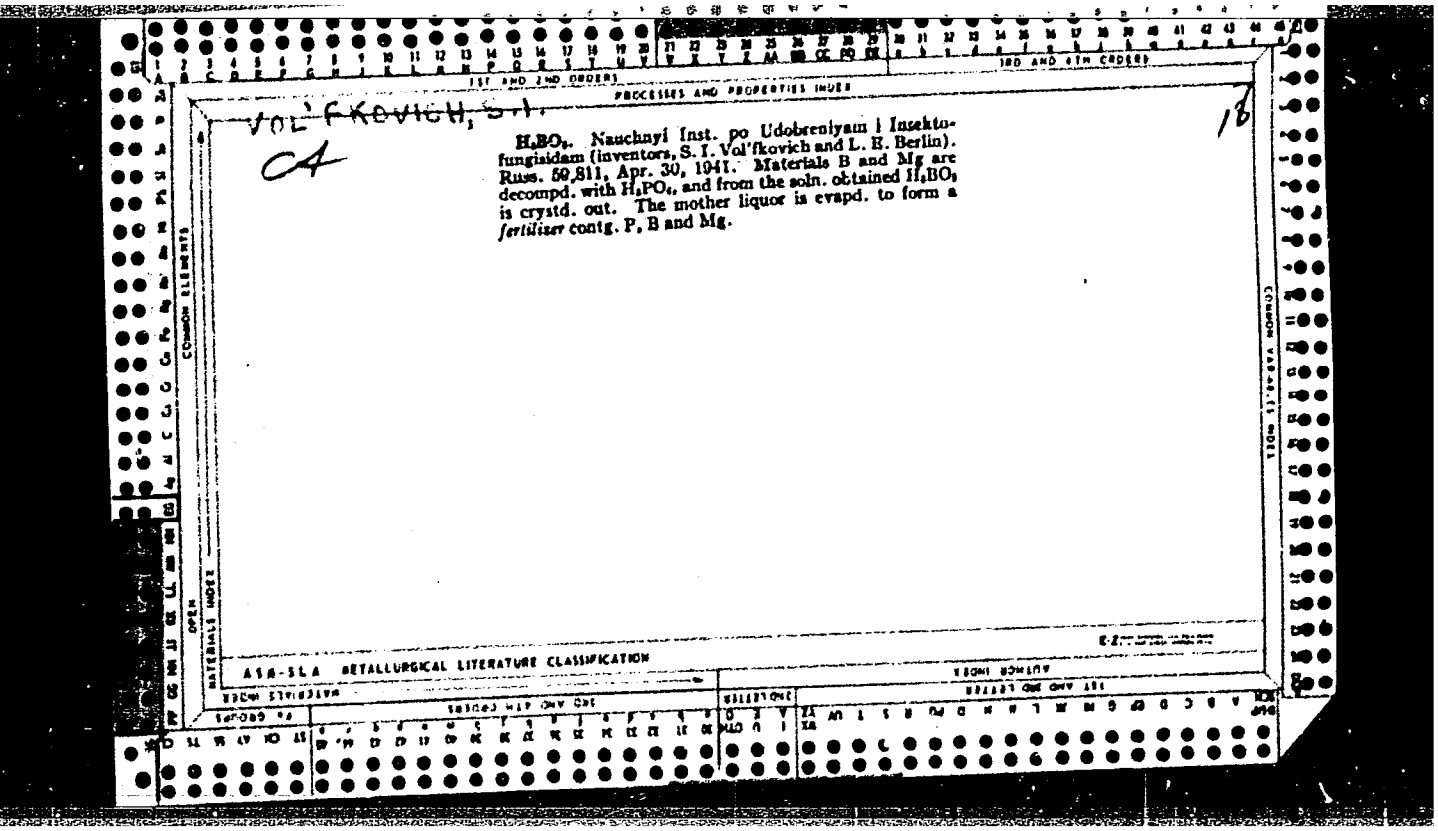
PROCESSES AND PROPERTIES INDEX

5-I-2

BC

Physico-chemical and technological analysis of the process of decomposition of phosphates by nitric acid. N. I. Vinnikovitch, A. P. Belopolskii, and A. I. Laptievich (*Bull. Acad. Sci. U.R.S.S., Cl. Sci. Chim.*, 1940, 708—738).—Phosphorite is treated with 80% HNO_3 to effect the reaction $Ca_5F(PO_4)_3 + 10HNO_3 \rightarrow 5Ca(NO_3)_2 + 3H_3PO_4 + HF$. $NaNO_3$ is then added to the filtrate, to ppt. Na_2SiF_6, and $Ca(OH)_2$ to the filtered solution at 80°, the amount necessary for formation of $Ca(H_2PO_4)_2$ which is ppted. together with rare-earth phosphates at 10—20°. The filtrate is then made neutral with $Ca(OH)_2$, the ppt. collected and dried, and the filtrate evaporated to crystalline $Ca(NO_3)_2$. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

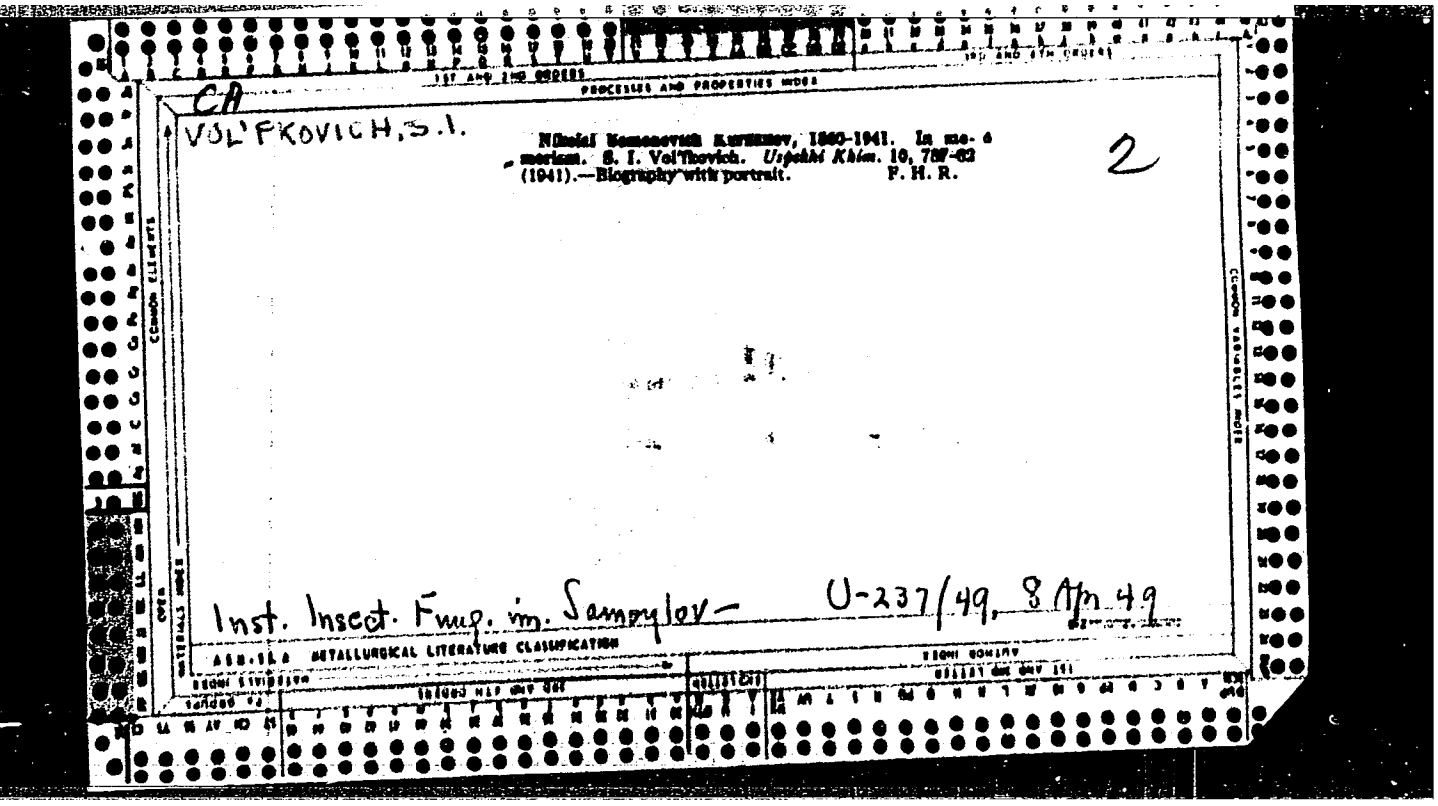


VOL'FKOVICH, S.I.

CA

16

H_3BO_3. Nauchnyi Inst. po Udobreniyam i Insektofungisidam (inventors, S. I. Vol'fkovich and L. E. Berlin). Russ. 59,811, Apr. 30, 1941. Materials B and Mg are decompd. with H_3PO_4, and from the soln. obtained H_3BO_3 is crystd. out. The mother liquor is evapd. to form a *fertiliser* contg. P, B and Mg.



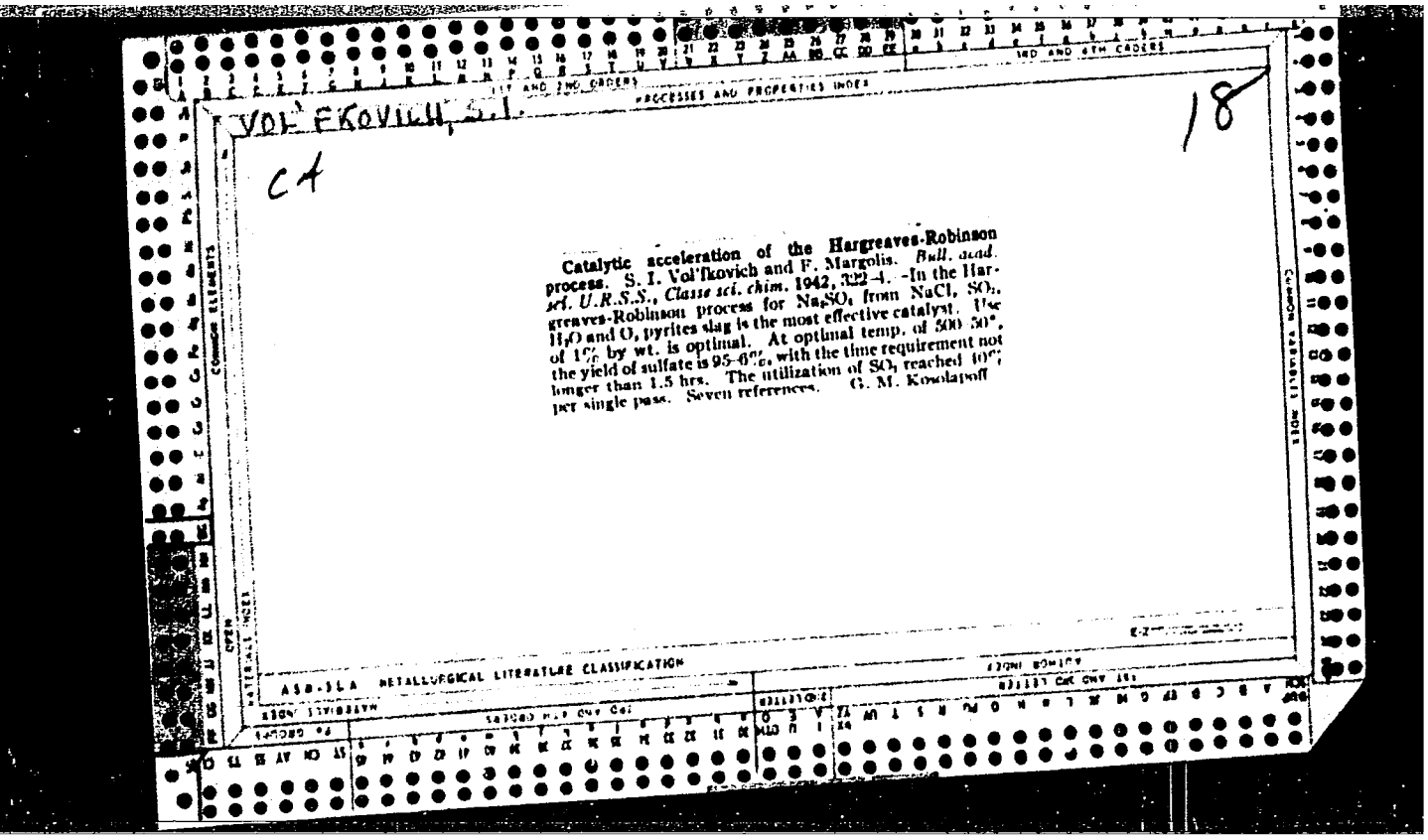
CA

VOL'FKOVICH, S. I.

Nikolai Semenovich Kurnakov, 1860-1941. In memoriam. S. I. Vol'fkovich. *Uspekhi Khim.* 10, 787-92 (1941).—Biography with portrait. F. H. R.

2

Inst. Insect. Fruit. im. Sampsonov— U-237/49, 8 Apr 49



VOL'FKOVICH, S.I.

C4

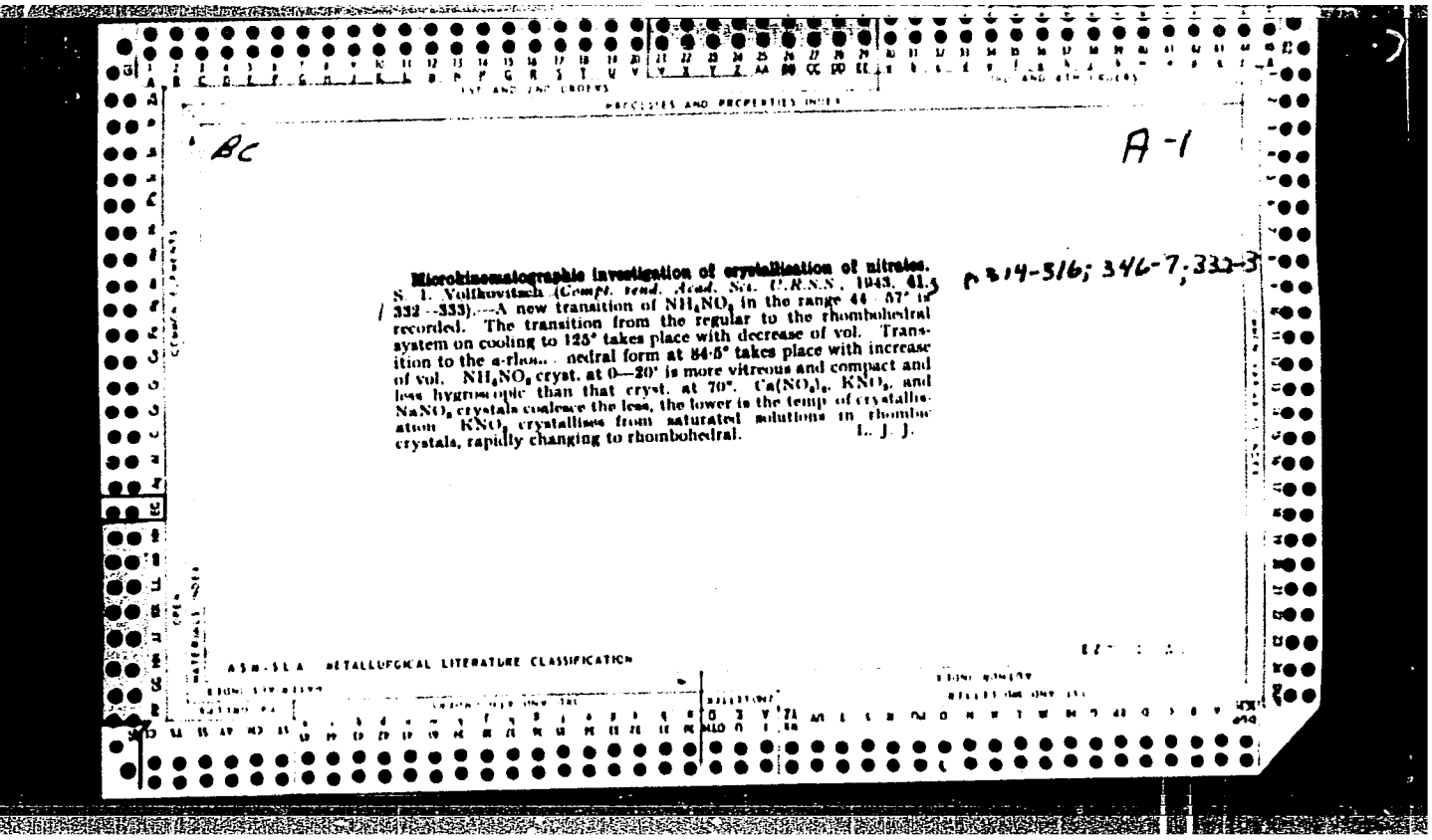
18

Catalytic acceleration of the Hargreaves-Robinson process. S. I. Vol'fkovich and F. Margolis. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1942, 322-4. -In the Hargreaves-Robinson process for Na_2SO_4 from NaCl, SO_2, H_2O and O_2, pyrites slag is the most effective catalyst. Use of 1% by wt. is optimal. At optimal temp. of 500-50°, the yield of sulfate is 95-6%, with the time requirement not longer than 1.5 hrs. The utilization of SO_2 reached 10% per single pass. Seven references. G. M. Kosolapoff

VOL'FKOVICH, S.I.

"C. H. Pryanishnikov and the Development of the Fertilizer Industry in USSR," S. I. Vol'fkovich, J. Applied Chem (USSR) XIX, pp 333-42 (1942)
(SEE: Inst. Insect/Fungi. in Ya. V. Samoylov)

SO: U-237/49, 8 April 1949



Bc

A-1

Microthermatographic investigation of crystallisation of nitrates. S. I. Volkovitsch (*Compt. rend. Acad. Sci. U.R.S.S.*, 1943, 41, 332—333).—A new transition of NH_4NO_3 in the range 46—57° is recorded. The transition from the regular to the rhombohedral system on cooling to 125° takes place with decrease of vol. Transition to the a-rhom... nedral form at 84·5° takes place with increase of vol. NH_4NO_3 cryst. at 0—20° is more vitreous and compact and less hygroscopic than that cryst. at 70°. $Ca(NO_3)_2$, KNO_3, and $NaNO_3$ crystals coalesce the less, the lower is the temp of crystallisation. KNO_3 crystallises from saturated solutions in rhombic crystals, rapidly changing to rhombohedral. L. J. J.

A314-316; 346-7; 332-3

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

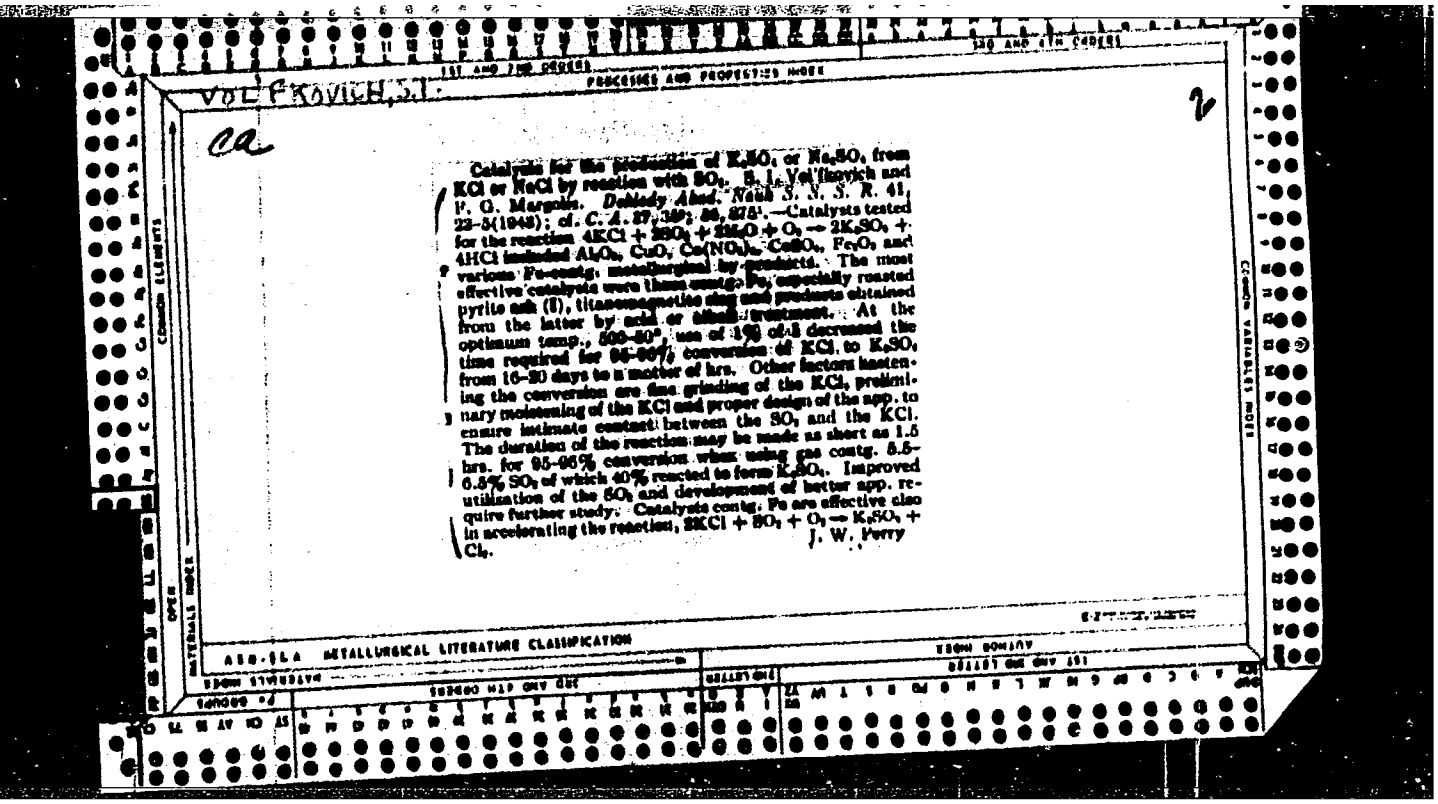
VOL'FKOVICH, S. I.

"Chemistry in War," S. I. Vol'fkovich, Vestnik Akad Nauk SSSR, 113, No 1/2, p 93-108 (1943), a review (SEE: Inst. Insect/ Fungi. in Ya. V. Samoylov)

SO: U-237/49, 8 April 1949

Catalysis in producing potassium and sodium sulphates from chlorides decomposed with sulphur dioxide in the presence of oxygen. S. I. Volfkovitsch. (*Compt. rend. Acad. Sci. U.R.S.S.*, 1943, 41(21—23).—The oxidation of SO_2 to SO_3 in the vapour phase in presence of H_2O (for conversion of KCl into K_2SO_4 with SO_2 in presence of O_2 at 500—550°) can be accelerated several hundred times by means of catalysts containing Fe_2O_3. Burnt pyrites refuse from H_2SO_4 manufacture is best used as a 1% admixture by wt. with the KCl. 90—95% recovery of K_2SO_4 is obtained with a reaction time of >1·5 hr. and 40% utilisation of the SO_2 per passage. L. J. J.

No. 1



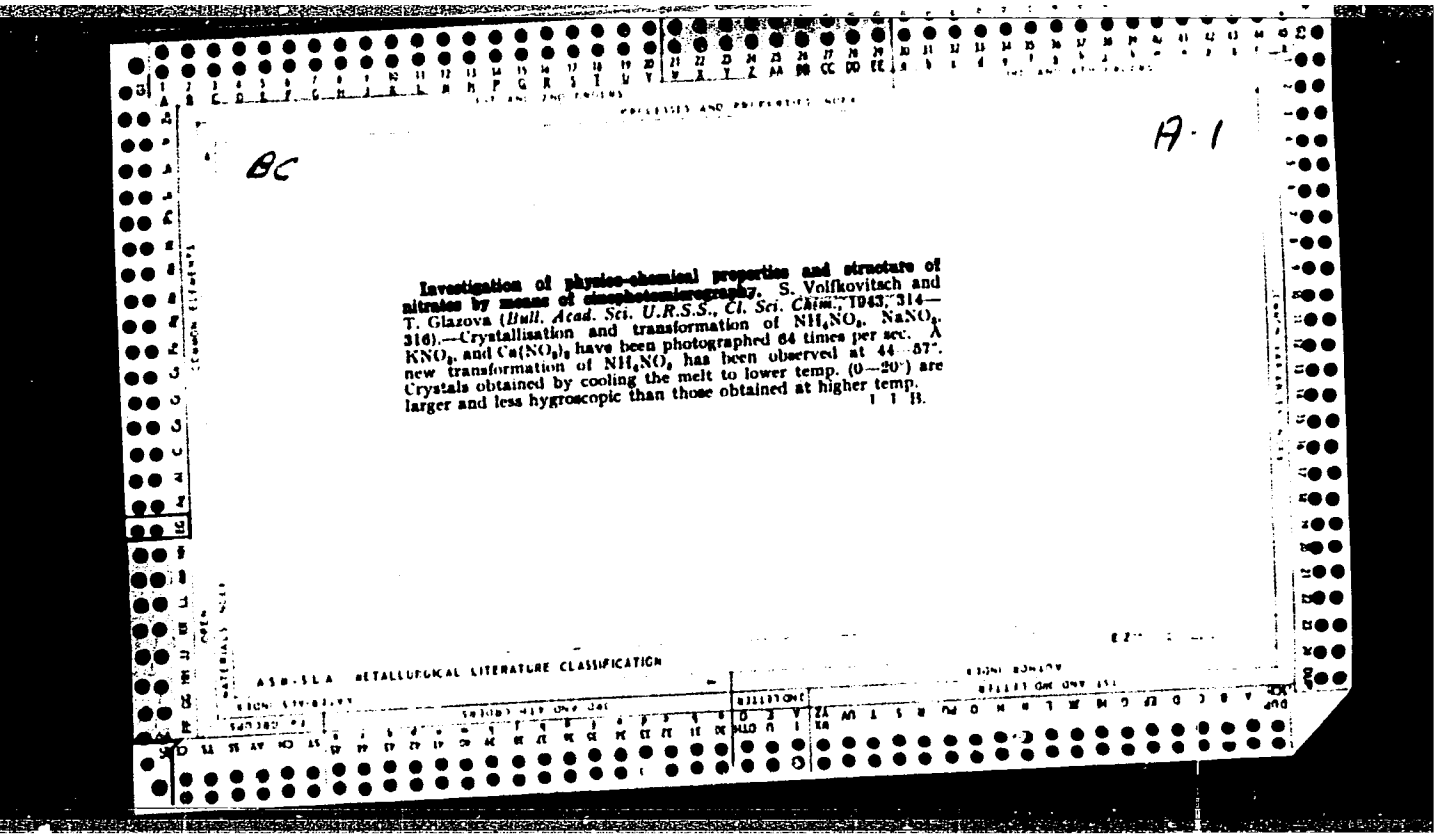
VOLFKOVICH, S.I.

ca

Catalysts for the production of K_2SO_4 or Na_2SO_4 from KCl or NaCl by reaction with SO_2. S. I. Vol'fkovich and P. G. Margulis. *Doklady Akad. Nauk S. S. S. R.* 61, 23-5(1948); cf. *C. A.* 37, 359; 38, 875i.—Catalysts tested for the reaction $4KCl + 2SO_2 + 2H_2O + O_2 \rightarrow 2K_2SO_4 + 4HCl$ included Al_2O_3, CuO, $Co(NO_3)_2$, $CaSO_4$, Fe_2O_3 and various Fe-contg. metallurgical by-products. The most effective catalysts were those contg. Fe, especially roasted pyrite ash (I), titaniferous magnetite slag and products obtained from the latter by acid or alkali treatment. At the optimum temp., 500–50°, use of 1% of I decreased the time required for 95–98% conversion of KCl to K_2SO_4 from 10–20 days to a matter of hrs. Other factors hastening the conversion are fine grinding of the KCl, preliminary moistening of the KCl and proper design of the app. to ensure intimate contact between the SO_2 and the KCl. The duration of the reaction may be made as short as 1.5 hrs. for 95–98% conversion when using gas contg. 5.5–6.5% SO_2 of which 40% reacted to form K_2SO_4. Improved utilization of the SO_2 and development of better app. require further study. Catalysts contg. Fe are effective also in accelerating the reaction, $2KCl + SO_2 + O_2 \rightarrow K_2SO_4 + Cl_2$.

J. W. Perry

A60-11A METALLURGICAL LITERATURE CLASSIFICATION



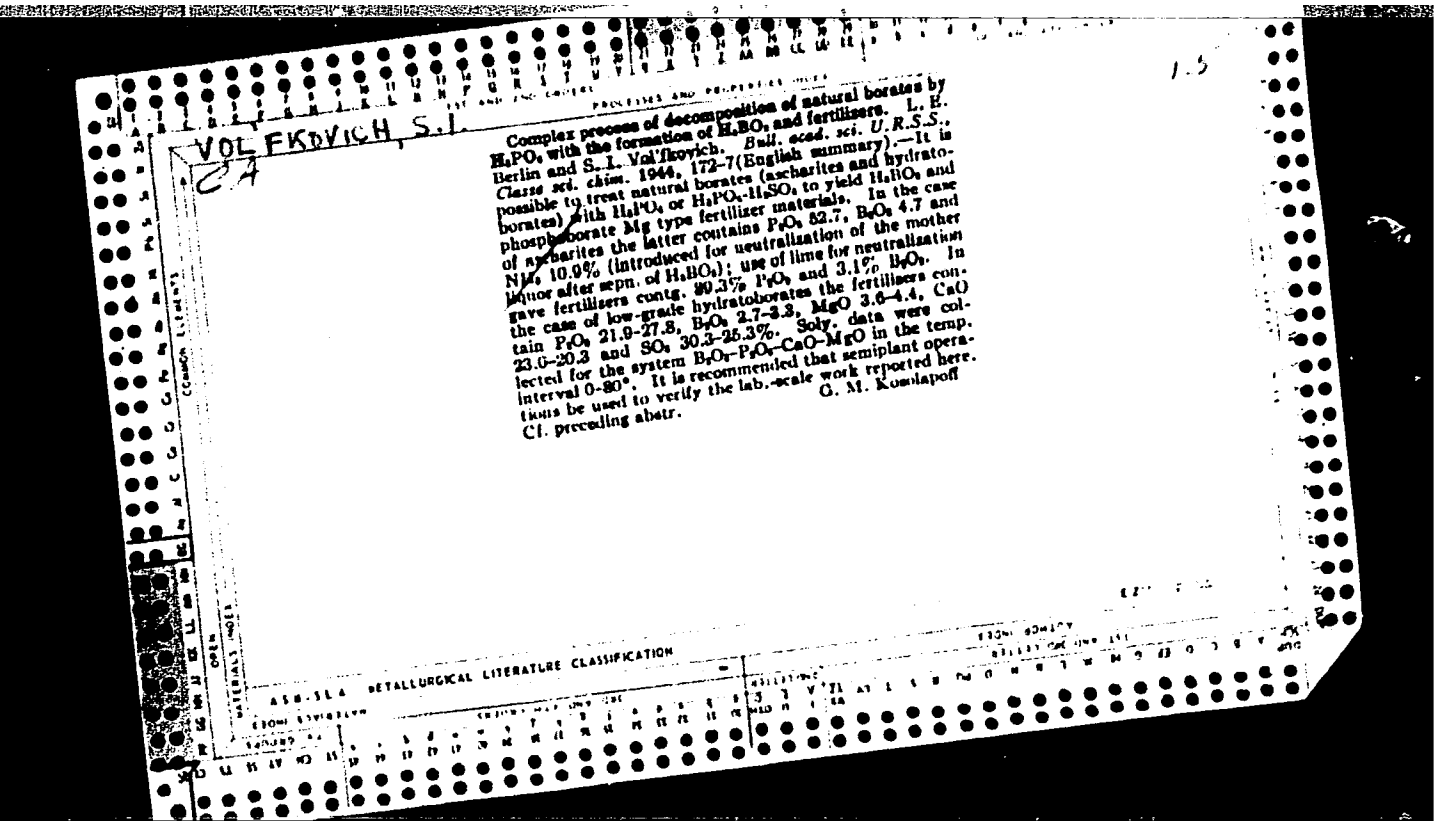
BC

A-1

Investigation of physico-chemical properties and structure of nitrates by means of cinephotomicrography. S. Volfkovitsch and T. Glazova (*Bull. Acad. Sci. U.R.S.S., Cl. Sci. Chim.*, 1943, 314—316).—Crystallisation and transformation of NH_4NO_3, $NaNO_3$, KNO_3, and $Ca(NO_3)_2$ have been photographed 64 times per sec. A new transformation of NH_4NO_3 has been observed at 44—57°. Crystals obtained by cooling the melt to lower temp. (0—20°) are larger and less hygroscopic than those obtained at higher temp.

I. I. B.

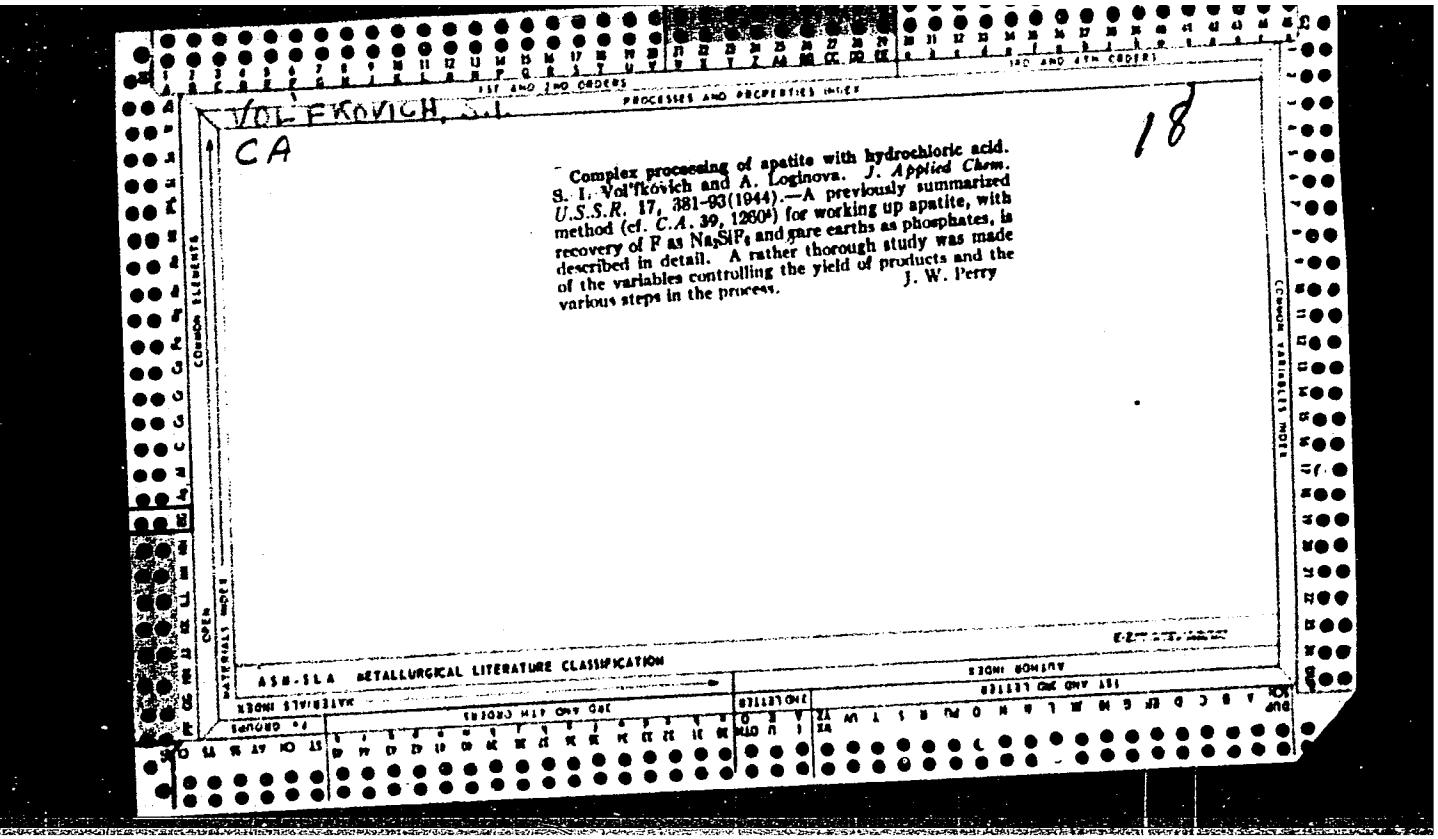
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



VOLFKOVICH, S.I.

CA

Complex process of decomposition of natural borates by H_3PO_4 with the formation of H_3BO_3 and fertilizers. L. E. Berlin and S. I. Vol'fkovich. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1944, 172–7(English summary).—It is possible to treat natural borates (ascharites and hydratoborates) with H_3PO_4 or H_3PO_4-H_2SO_4 to yield H_3BO_3 and phosphoborate Mg type fertilizer materials. In the case of ascharites the latter contains P_2O_5 32.7, B_2O_3 4.7 and NH_3 10.9% (introduced for neutralization of the mother liquor after sepn. of H_3BO_3); use of lime for neutralization gave fertilizers contg. 30.3% P_2O_5 and 3.1% B_2O_3. In the case of low-grade hydratoborates the fertilizers contain P_2O_5 21.9–27.8, B_2O_3 2.7–3.3, MgO 3.6–4.4, CaO 23.0–20.3 and SO_3 30.3–25.3%. Soly. data were collected for the system B_2O_3–P_2O_5–CaO–MgO in the temp. interval 0–80°. It is recommended that semiplant operations be used to verify the lab.-scale work reported here.
Cf. preceding abstr.
G. M. Kosolapoff

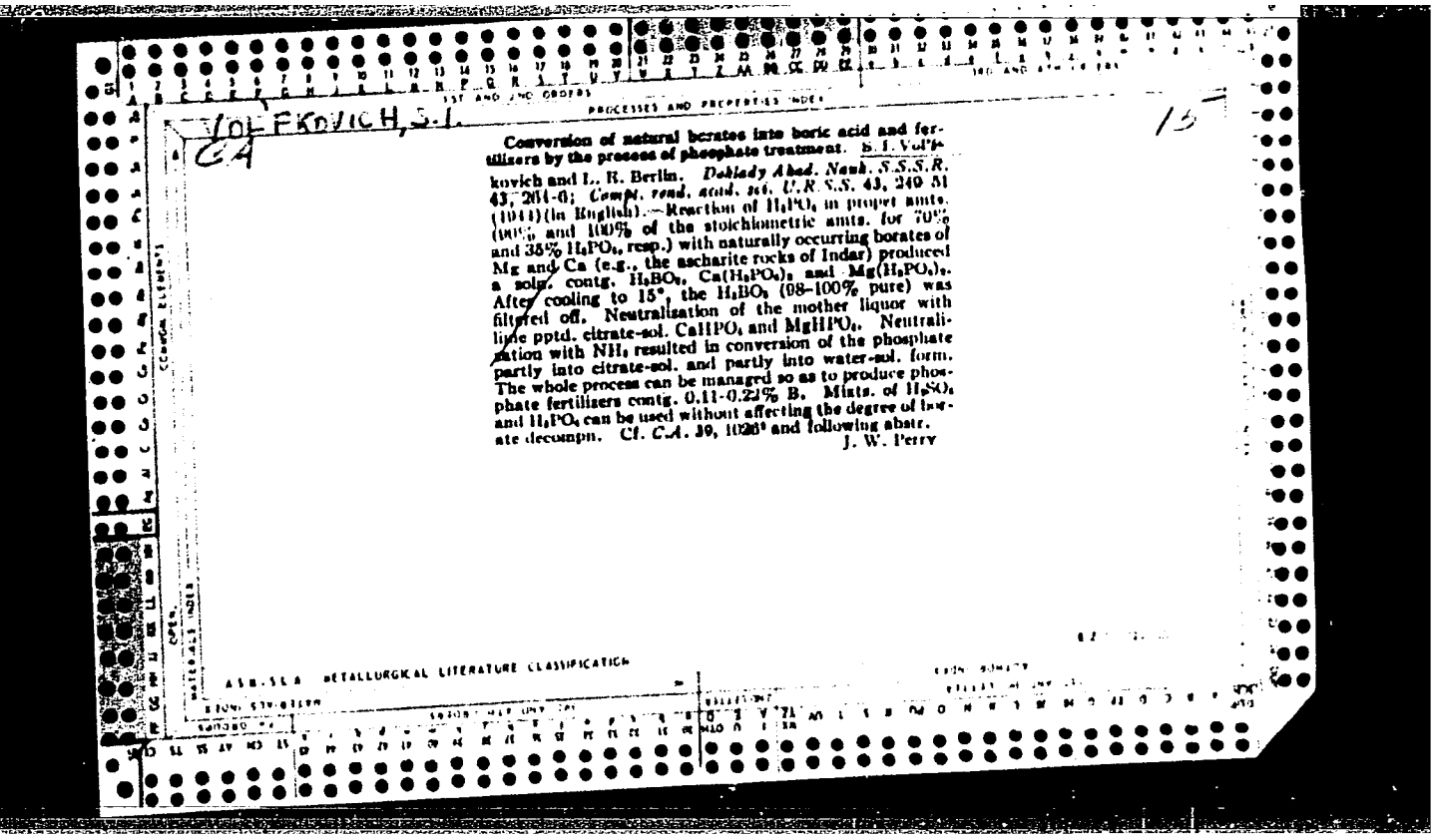


VOL'FKOVICH, S.I.

CA

18

Complex processing of apatite with hydrochloric acid. S. I. Vol'fkovich and A. Loginova. *J. Applied Chem. U.S.S.R.* 17, 381-93(1944).—A previously summarized method (cf. *C.A.* 39, 1260[4]) for working up apatite, with recovery of F as Na_2SiF_6 and rare earths as phosphates, is described in detail. A rather thorough study was made of the variables controlling the yield of products and the various steps in the process. J. W. Perry



VOLFKOVICH, S.I.

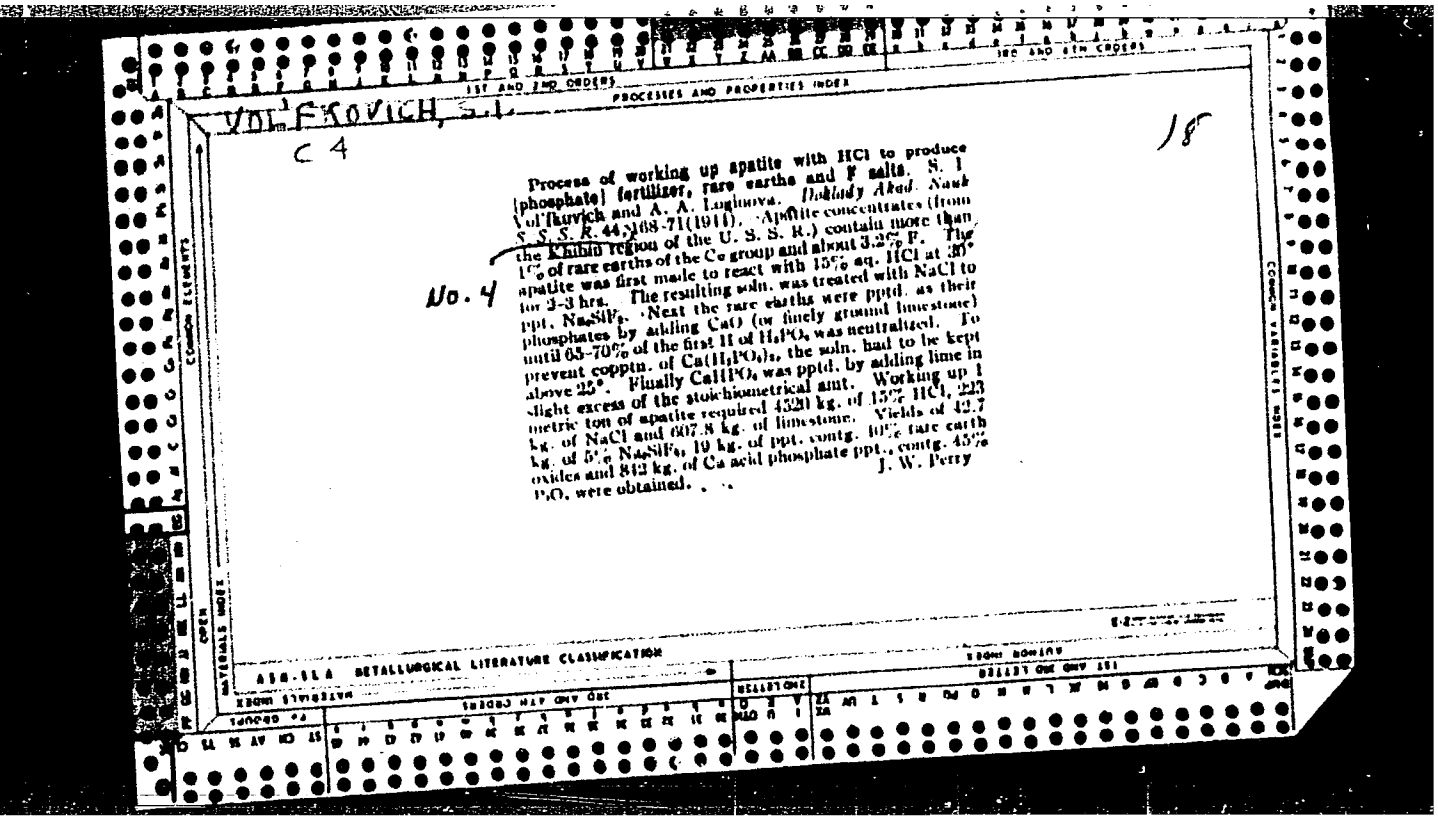
C-4

15

Conversion of natural borates into boric acid and fertilizers by the process of phosphate treatment. S. I. Volfkovich and L. R. Berlin. *Doklady Akad. Nauk. S.S.S.R.* 43, 204-6; *Compt. rend. acad. sci. U.R.S.S.* 43, 249-51 (1944) (in English).—Reaction of H_3PO_4 in propr amts. (100% and 100% of the stoichiometric amts. for 70% and 35% H_3PO_4, resp.) with naturally occurring borates of Mg and Ca (e.g., the ascharite rocks of Indar) produced a solg. contg. H_3BO_3, $Ca(H_2PO_4)_2$ and $Mg(H_2PO_4)_2$. After cooling to 15°, the H_3BO_3 (98–100% pure) was filtered off. Neutralization of the mother liquor with lime pptd. citrate-sol. $CaHPO_4$ and $MgHPO_4$. Neutralization with NH_3 resulted in conversion of the phosphate partly into citrate-sol. and partly into water-sol. form. The whole process can be managed so as to produce phosphate fertilizers contg. 0.11-0.22% B. Mixts. of H_2SO_4 and H_3PO_4 can be used without affecting the degree of borate decompn. Cf. *C.A.* 39, 1026⁹ and following abstr.

J. W. Perry

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



VOL'FKOVICH, S. I.

C 4

No. 4

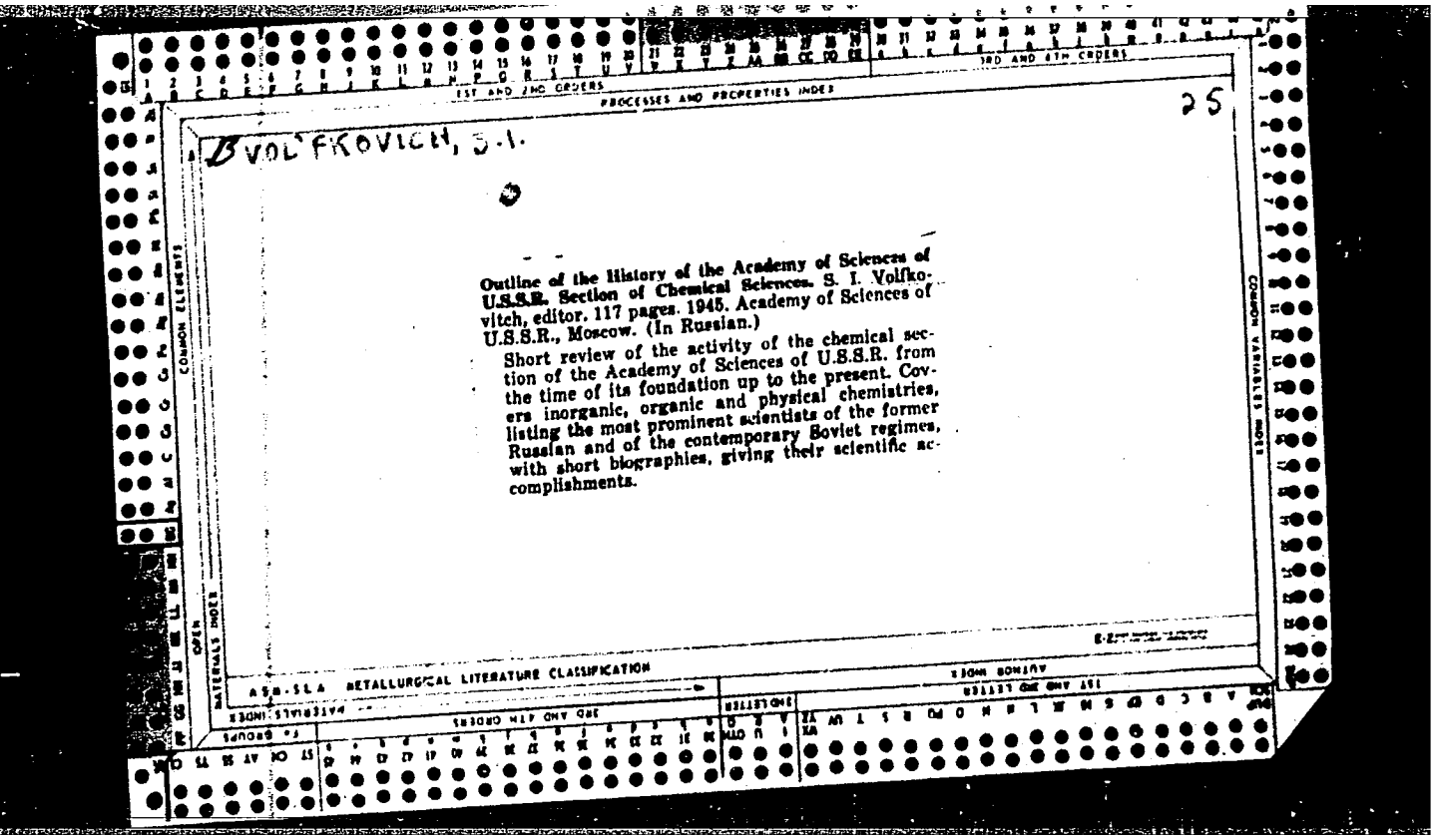
18

Process of working up apatite with HCl to produce [phosphate] fertilizer, rare earths and F salts. S. I. Vol'fkovich and A. A. Luginova. *Doklady Akad. Nauk S. S. S. R.* 44,168-71(1944). Apatite concentrates (from the Khibin region of the U. S. S. R.) contain more than 1% of rare earths of the Ce group and about 3.2% F. The apatite was first made to react with 15% aq. HCl at 30° for 2-3 hrs. The resulting soln. was treated with NaCl to ppt. Na_2SiF_6. Next the rare earths were pptd. as their phosphates by adding CaO (or finely ground limestone) until 65-70% of the first H of H_3PO_4 was neutralized. To prevent coppth. of $Ca(H_2PO_4)_2$, the soln. had to be kept above 25°. Finally $CaHPO_4$ was pptd. by adding lime in slight excess of the stoichiometrical amt. Working up 1 metric ton of apatite required 4321 kg. of 15% HCl, 223 kg. of NaCl and 607.8 kg. of limestone. Yields of 42.7 kg. of 5% Na_2SiF_6, 10 kg. of ppt. contg. 10% rare earth oxides and 813 kg. of Ca acid phosphate ppt., contg. 45% P_2O_5 were obtained.

J. W. Perry

VOLFKOVICH, S.I.

[Chemical sciences] Khimicheskie nauki. Moskva, Akademiia nauk SSSR, 1945. 116 p. (MLRA 7:6)
(Chemistry)

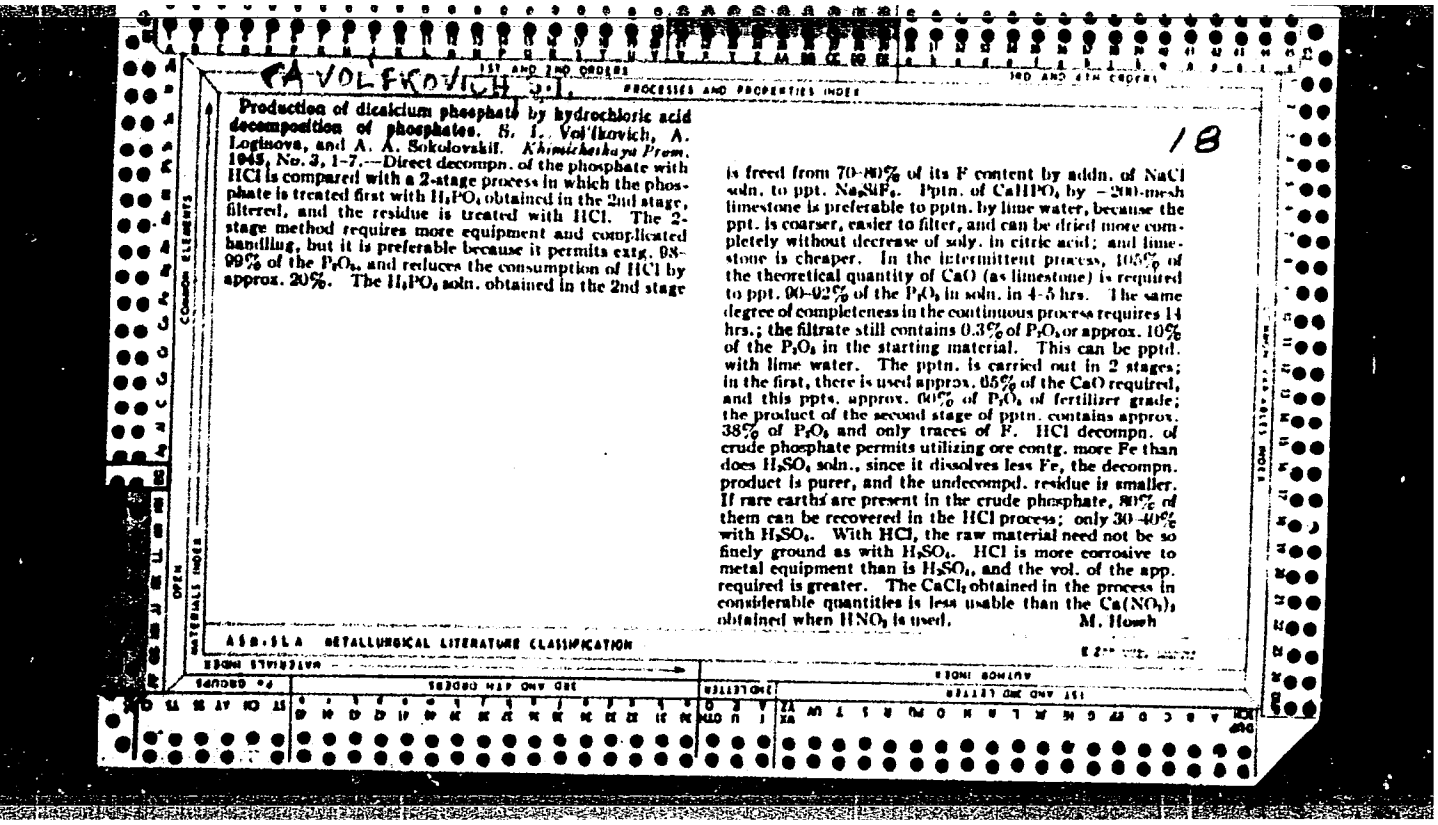


VOL'FKOVICH, S.I.

25

Outline of the History of the Academy of Sciences of U.S.S.R. Section of Chemical Sciences. S. I. Volfkovitch, editor. 117 pages. 1945. Academy of Sciences of U.S.S.R., Moscow. (In Russian.)

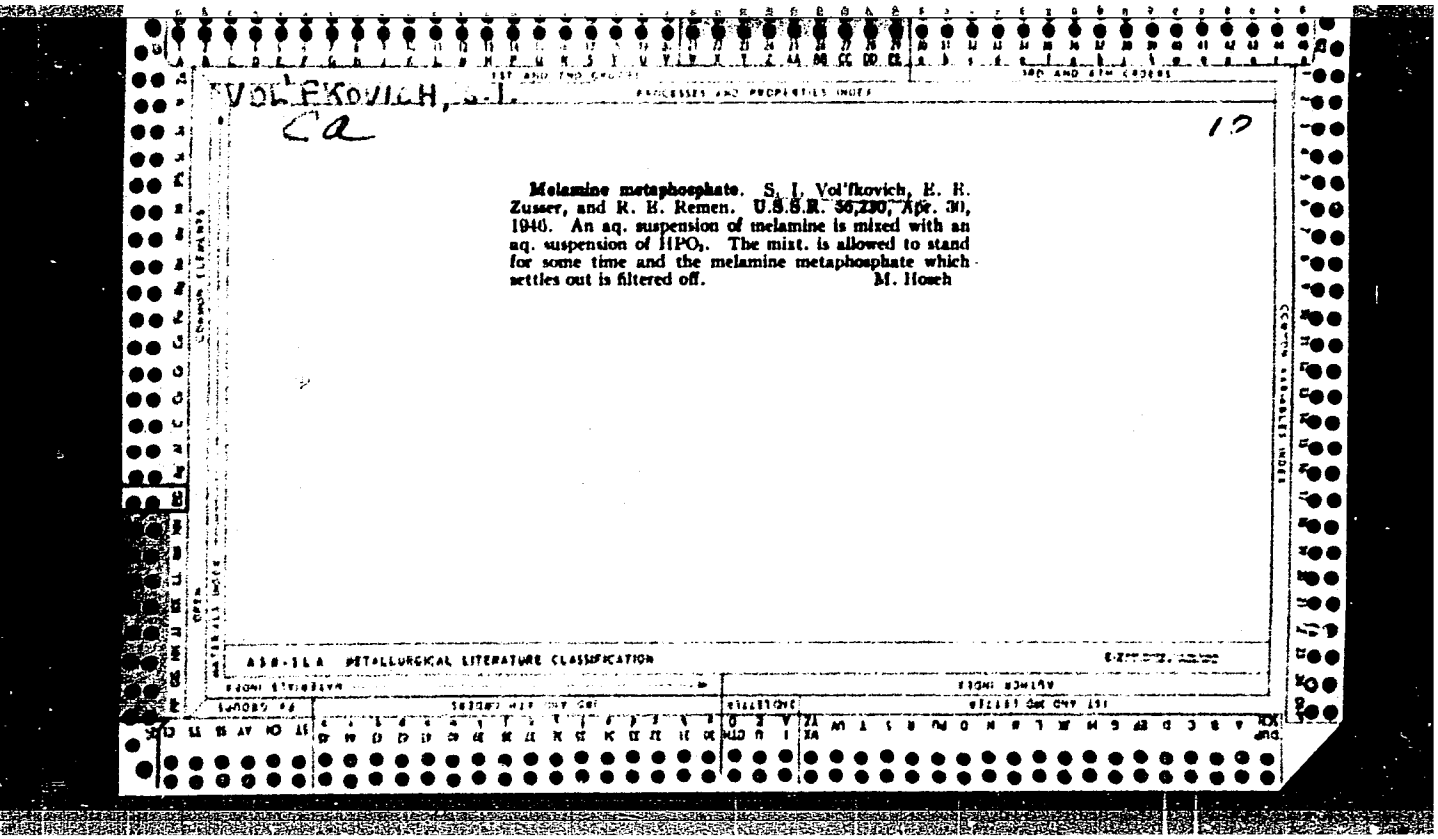
Short review of the activity of the chemical section of the Academy of Sciences of U.S.S.R. from the time of its foundation up to the present. Covers inorganic, organic and physical chemistries, listing the most prominent scientists of the former Russian and of the contemporary Soviet regimes, with short biographies, giving their scientific accomplishments.



VOL'FKOVICH S.I.

18

Production of dicalcium phosphate by hydrochloric acid decomposition of phosphates. S. I. Vol'fkovich, A. Loginova, and A. A. Sokolovskii. *Khimicheskaya Prom.* 1945, No. 3, 1–7.—Direct decompn. of the phosphate with HCl is compared with a 2-stage process in which the phosphate is treated first with H_3PO_4 obtained in the 2nd stage, filtered, and the residue is treated with HCl. The 2-stage method requires more equipment and complicated handling, but it is preferable because it permits extg. 98–99% of the P_2O_5, and reduces the consumption of HCl by approx. 20%. The H_3PO_4 soln. obtained in the 2nd stage is freed from 70–80% of its F content by addn. of NaCl soln. to ppt. Na_2SiF_6. Pptn. of $CaHPO_4$ by −200-mesh limestone is preferable to pptn. by lime water, because the ppt. is coarser, easier to filter, and can be dried more completely without decrease of soly. in citric acid; and limestone is cheaper. In the intermittent process, 105% of the theoretical quantity of CaO (as limestone) is required to ppt. 90–92% of the P_2O_5 in soln. in 4–5 hrs. The same degree of completeness in the continuous process requires 14 hrs.; the filtrate still contains 0.3% of P_2O_5 or approx. 10% of the P_2O_5 in the starting material. This can be pptd. with lime water. The pptn. is carried out in 2 stages; in the first, there is used approx. 65% of the CaO required, and this ppts. approx. 60% of P_2O_5 of fertilizer grade; the product of the second stage of pptn. contains approx. 38% of P_2O_5 and only traces of F. HCl decompn. of crude phosphate permits utilizing ore contg. more Fe than does H_2SO_4 soln., since it dissolves less Fe, the decompn. product is purer, and the undecompd. residue is smaller. If rare earths are present in the crude phosphate, 80% of them can be recovered in the HCl process; only 30–40% with H_2SO_4. With HCl, the raw material need not be so finely ground as with H_2SO_4. HCl is more corrosive to metal equipment than is H_2SO_4, and the vol. of the app. required is greater. The $CaCl_2$ obtained in the process is considerable quantities is less usable than the $Ca(NO_3)_2$ obtained when HNO_3 is used. M. Hosch



VOL'FKOVICH, S. I.
Ca
10

Melamine metaphosphate. S. I. Vol'fkovich, E. B. Zusser, and R. E. Remen. U.S.S.R. 56,230, Apr. 30, 1940. An aq. suspension of melamine is mixed with an aq. suspension of HPO_3. The mixt. is allowed to stand for some time and the melamine metaphosphate which settles out is filtered off. M. Hosch

A58-1LA METALLURGICAL LITERATURE CLASSIFICATION

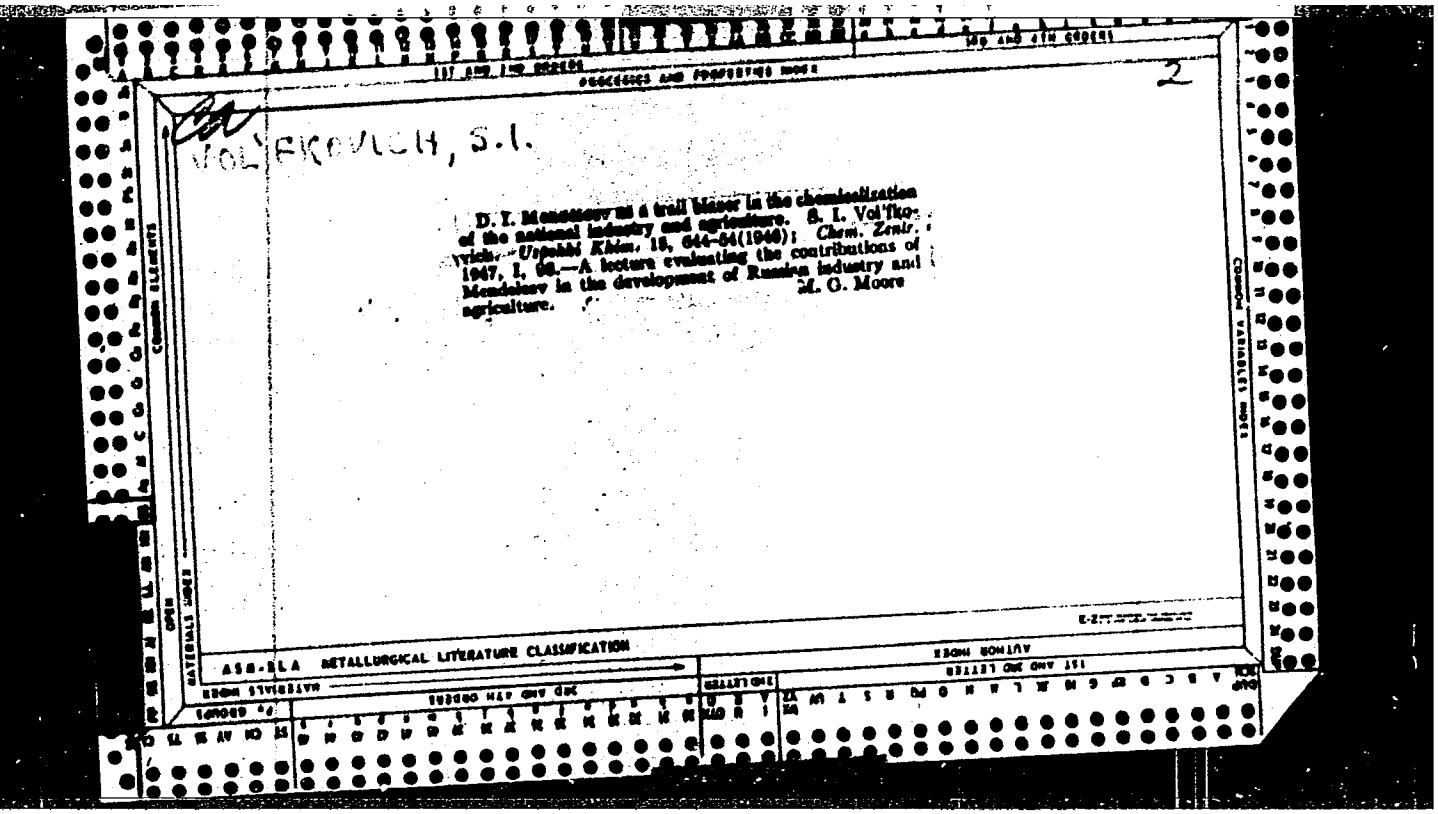
VOL'FKOVICH, S. I.

"Problems of Agricultural Science in the Light of the Fourth Five-Year Plan for the Chemical Industry," a lecture given at the Conference on Problems of Agricultural Chemistry in the New Five-Year Plan held 17-20 May 1946.

Vestnik AS USSR 8/9, 1946

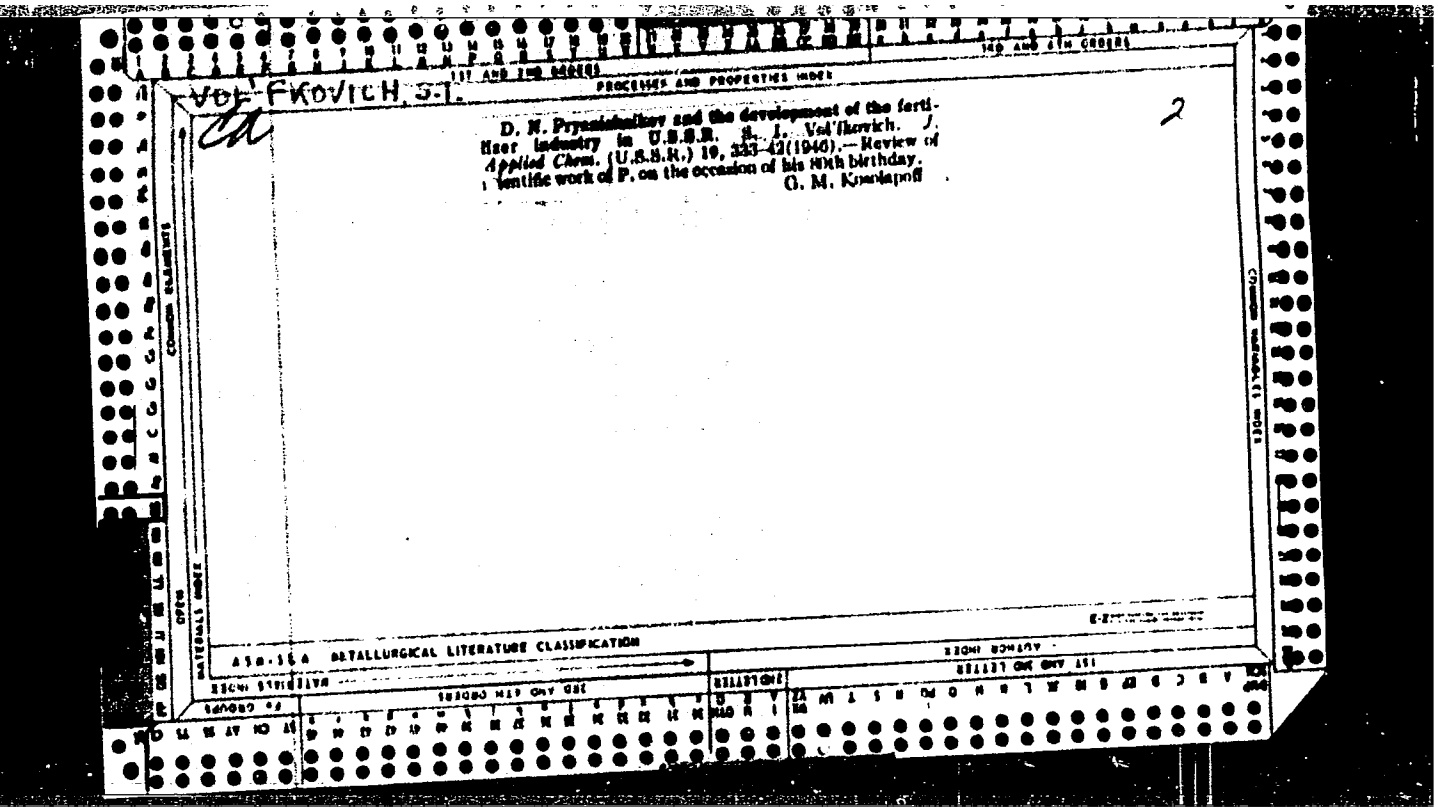
VOL'FKOVICH, S. I.

Melamine phosphates. S. I. Vol'fkovich, E. E. Zusser, and K. E. Remen. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1946, 671–9.—The metaphosphate was prepd. by a new method, termed the "suspension method," in a reaction between solid melamine, $C_3H_6N_6$ (I), and solid HPO_3 in suspension in H_2O. This method permits considerable reduction of the vol. of the app. and economy of operations; also, hydration of solid HPO_3 is slow, hence there is a smaller amt. of other phosphates in the product. A mixt. of 10 parts by wt. of I with 18 parts "HPO_3" (solid, contg. 67.5% P_2O_5 and about 40% salts, mainly $NaPO_3$) and 200 ml. H_2O, gave in 1 hr., at 30, 60, and 80°, a product with a soly. of 0.25, 0.23, and 0.30%, resp.; the yield of $I.HPO_3$ was 1.5–1.6 wt. parts per 1 part I. The solid product obtained in suspension filtered readily and could be washed about 10 times faster than that obtained in soln. with chemically pure HPO_3, the product was difficult to filter and to wash. The optimum drying temp. is 45–50°; a higher drying temp. or prolonged drying impairs the quality of the product in the sense of lowering the P_2O_5 content and increasing the soly., owing to partial conversion to orthophosphate. On standing above H_2O at 20°, the increase of wt. was 14–15 and 60–70%, resp., in 7 and 20 days, and the soly. rose to 0.71%. Synthesis from I and $(NaPO_3)_6$ gave poorer yields and poorer quality (higher soly.). The pyrophosphate was synthesized by 2 methods, either by producing first the orthophosphate from H_3PO_4 and I in suspension or in soln. and heating at 250–70°, or by direct reaction of I with $Na_4P_2O_7$ in soln. and pptn. with an acid. The $I.H_3PO_4$ obtained in the 1st method was easily filtered and washed with cold water, dried at 100–120°, and converted to $2I.H_4P_2O_7$ at 250–70°; the product contained 33% P_2O_5 and its soly. at 20° was not over 0.1%. By the 2nd method, using 9–18 g. $Na_4P_2O_7$ per 5 g. I, the best products (soly. 0.07–0.16%) were obtained by pptn. with HCl or HNO_3; pptn. with H_3PO_4 gives more highly sol. products, and requires greater expenditure of acid. The best filterability is obtained at about 0.040–0.046% HNO_3 in the pulp, and an optimum stirring rate of 60–80 r.p.m. The pyrophosphate is best dried at above 100°. Variations of the soly. of the different products are due to the presence of varying amts. of the other phosphates. The solubilities of the individual phosphates, at 20° and 100°, are: $I.HPO_3$ 0.09 and 1.60%; $I.H_3PO_4$ 0.35 and 2.91%; $2I.H_4P_2O_7$ 0.09 and 0.54%. In the order of decreasing hygroscopicity, the gain of wt. after 17 days over H_2O at 17° was: $I.HPO_3$ 31.0%, $I.H_3PO_4$ 7.0%, $2I.H_4P_2O_7$ 2.1%. $I.HPO_3$ appears on microscopic examn. as a microcryst. aggregate, n(av.) ~ 1.640. $2I.H_4P_2O_7$ forms fine orthorhombic plates or needles, the former with n_g 1.483, n_g 1.712, the latter 1.535, 1.723. $I.H_3PO_4$ forms thin monoclinic plates, n_g 1.475, n_g 1.725. N. Thon



VOL'FKOVICH, S.I.

D. I. Mendeleev as a trail blazer in the chemicalization of the national industry and agriculture. S. I. Vol'fkovich. *Uspekhi Khim.* 16, 644–64(1946); *Chem. Zentr.*, 1947, I, 98.—A lecture evaluating the contributions of Mendeleev in the development of Russian industry and agriculture. M. G. Moore



VOLFKOVICH, S. I. PA 21T17

USSR/Chemistry Sep 1946
Fertilizers
Phosphates

"A Method for Manufacturing NPK Fertilizers," S. I. Volfkovich, Corresponding Member of the Academy of Sciences of the USSR, A. I. Loginova, Research Institute of Fertilizers and Insectofungicides, imeni J. V. Samoilov, 4 pp

"Comptes Rendus (Doklady)" Vol LIII, No 8

A discussion is made of a new efficient method of treating phosphates with nitric acid in the making of nitrogen-phosphate fertilizers from Khibiny apatites.

21T17

C A
VOL'FKOVICH, S.I.

Mineral fertilizer. S. I. Vol'fkovich and A. I. Logunova. U.S.S.R. 60,610, Nov. 30, 1917. Natural phosphorites are treated with HNO_3. The ext. is cooled to approx. 10° to ppt. 40 60% of the $Ca(NO_3)_2$ in soln. The mother liquor is then converted to a NP or NPK fertilizer by the usual methods. M. Hosch

VOL'FKOVICH, S. I. IA 53T10

USSR/Chemistry - Biography Sep./Oct 1947
Chemistry - Bibliography

"Nikolay Aleksandrovich Morozov as a Chemist," S. I. Vol'fkovich, 11 pp

"Izv Akad Nauk SSSR, Otd Khim Nauk" No 5

Describes Morozov's contributions to science during his lifetime (born 1854, died 30 Jun 1946) and includes brief reviews of some of his books.

[redacted] 53T10

VOL'FKOVICH, S. I. PA 34T12

USSR/Chemistry - Fertilizers Nov 1947
Fertilizers - Production

"Production of Mineral Fertilizers in the USSR for Thirty Years," Academician S. I. Vol'fkovich, A. M. Dubovitskiy, Candidate in Technical Sciences, 8 pp

"Khimicheskaya Promyshlennost'" No 11

A brief historical survey of mineral fertilizer production in the USSR for the past 30 years. The establishment of the various raw material bases is discussed with some treatment of the chemical aspects of the raw materials. The production of phosphorous fertilizers is discussed at length. Production of borates and other fertilizers, and the chemical and physicochemical analysis of the different types of fertilizers is treated. COM 34T12

VOL'FKOVICH, S. I. PA 30T4

USSR/Chemistry - Biographies May 1947
Academy of Sciences

"Alekaey Nikolayevich Bakh, His Life and Achievements (1857 - 1946)," S. I. Vol'fkovich, A. I. Oparin, 7 pp

"Zhurnal Obshchey Khimii" Vol XVII, No 5

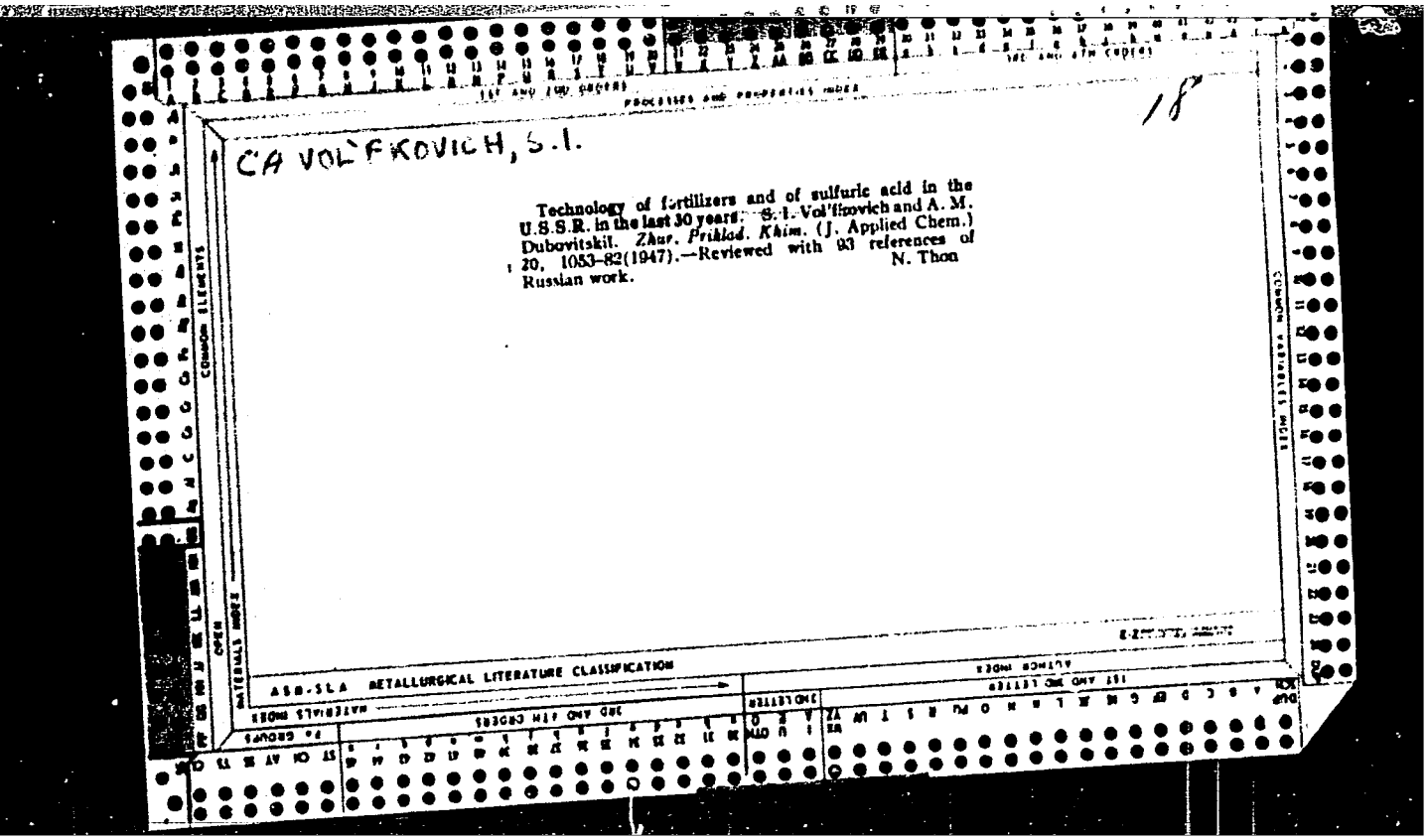
Summary of the life and work of Academician A. N. Bakh /Bach/, noted pioneer in the field of Soviet scientific and research work.

IC 30T4

VOL'FKOVICH, S. I.

"General Chemical Technology. Vol II" Edited by S. I. Vol'fkovich, J. A pplied Chem (USSR) XX, pp 574 (1947) review (SEE: Inst. Insect/Fungi. in Ya. V. Samoylov)

SO: U-237/49, 8 April 1949



CA VOL'FKOVICH, S.I.

18

Technology of fertilizers and of sulfuric acid in the U.S.S.R. in the last 30 years. S. I. Vol'fkovich and A. M. Dubovitskil. *Zhur. Prikład. Khim.* (J. Applied Chem.) 20, 1053–82(1947).—Reviewed with 93 references of Russian work. N. Thon

VOL'FKOVICH, S. I.

"Historical Notes from the Soviet Potassium Industry,"(Sci. Inst. on Fertilizers & Insectofungicides imeni Ya. V. Samoylov.) Paper presented by (extramural) members at a session of the Commission on the History of Chemistry, Acad. Sci., USSR, first conference on the history of Soviet chemistry, held 12 to 15 May 1948, Moscow.

VOL'FKOVICH, S.I.

Vol'fkovich, S.I. "On the sue of sulfur gases for obtaining fertilizer," (reference), Soobshch. o nauch. rabotakh chelenov Vsesoyuz. khim. o-va im. Mendeleyeva, 1948, Issue 2,.P. 13-16

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

USSR/Chemistry - Synthesis
Chemistry - Chemical Industry
May 1948

"Trends in Modern Chemistry," Academician S.I. Vol'fkovich, 12 pp

"Nauka i Zhizn'" No 5

Apparently one of series of lectures on the trends in contemporary chemistry. Lecture discusses development of raw ore bases for chemical products, synthesis of new chemical products, development of new methods and improvements to contemporary production methods, development of scientific research methods, new methods for analysis and control of

67T7

USSR/Chemistry - Synthesis
(Contd)
May 1948

production, studies of mechanisms and kinetics of chemical reactions, and the introduction of chemistry into other fields of science, technology, and national economy. Pictures of synthetic rubber plant, method for hydrometallurgical extraction of nonferrous metals from ore, cracking plant for high octane gas, and equipment for producing liquid natural gas.

67T7

VOL'FKOVICH, S. I.

VOL'FKOVICH, S. I.

42370 VOL'FKOVICH, S. I. - O. prepodavanii obtsey khimicheskoy tekhnologii uspekhi 1948, vyd 6, S. 733-43

SO: Letopis' Zhurnal'nykh Statey, Vol. 47, 1948

USSR/Academy of Sciences Dec 48

"Collaboration Between Factory Laboratories and Scientific Research Institute," Acad S. I. Vol'-fkovich, 2½ pp

"Zavod Lab" Vol XIV, No 12

Stresses importance of subject collaboration, giving concrete examples from work of Sci Res Inst for Fertilizers and Insectofungicides imeni Ya. V. Samoylov and Sci Res Inst for the Sugar Beet Industry.

49/49T3

VOL'FKOVICH, S. I.

Vol'Fkovich, S. I. Correspondance of N. A. Morozov, D. P. Konovalov and V. Kruks on 'Periodic systems of the structure of matter]" Trudy in-ta istorii yestestvoznaniya (Akad. nauk SSSR), Vol. III, 1949, p. 2000-08

SO: U-5241, 17 December 1953, (Letopis 'Zhurnal 'nykh Statey, No. 26, 1949)

PA 53/49T23

VOL'FKOVICH, S. I.

Jul/Aug 49

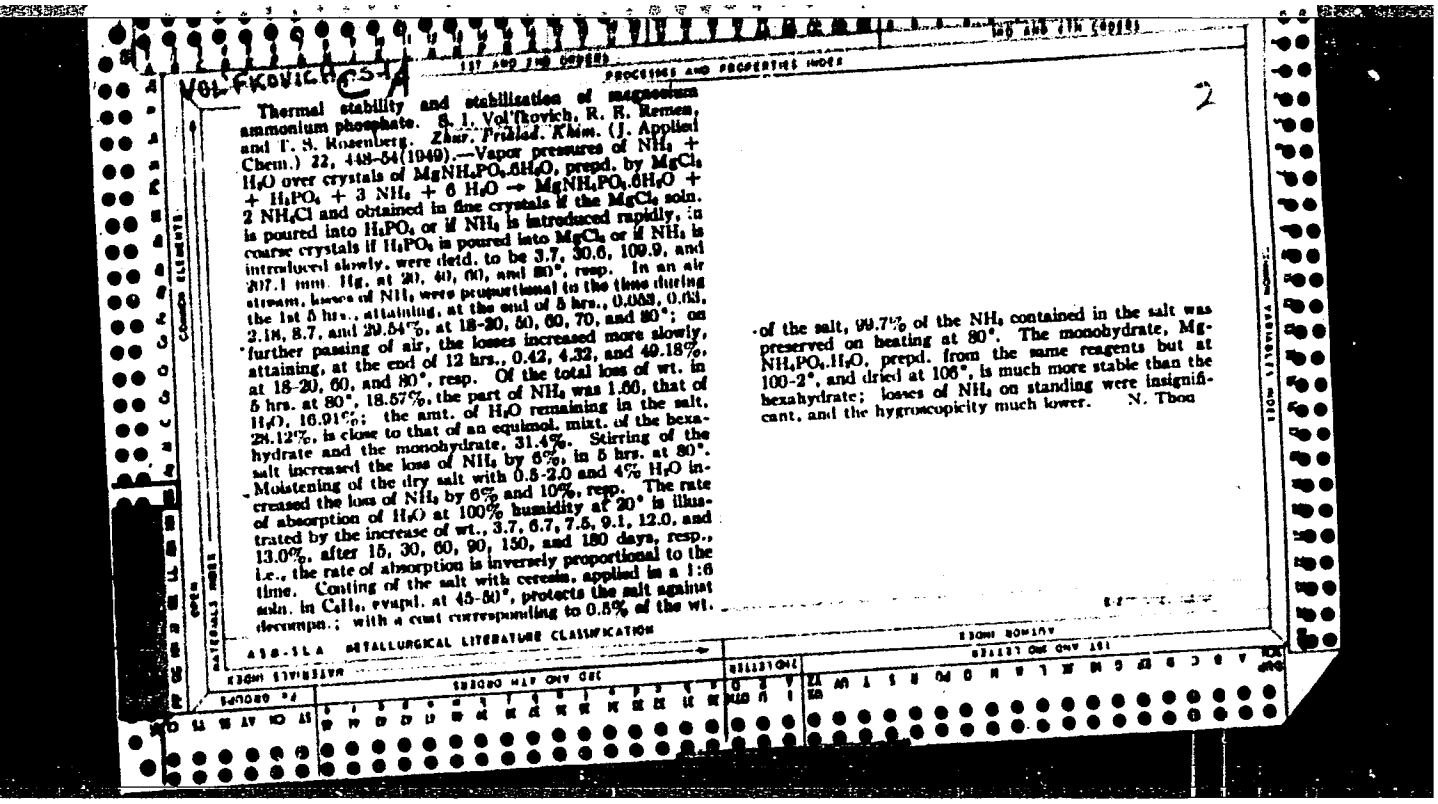
USSR/Chemistry
Fertilizers
Nitric Acid

"Nitric and Phosphoric Fertilizers Made by Decomposition of Phosphates by Nitric Acid," S. I. Vol'fkovich, A. I. Loginova, Moscow, 10 pp

"Uspekhi Khim" Vol XVIII, No 4

Gives a complete graphical physicochemical analysis of the system CaO -P_2O_5-N_2O_5-H_2O at 100, 75, 50, 25, and 5° C, and tabulates relation between amount of phosphate decomposed and amount of nitric acid used.

53/49T23



VOL'FKOVICH, S.I.

Thermal stability and stabilization of magnesium ammonium phosphate. S. I. Vol'fkovich, R. R. Remen, and T. S. Rosenberg. *Zhur. Prikład. Khim.* (J. Applied Chem.) 22, 448–54(1949).—Vapor pressures of NH_3 + H_2O over crystals of $MgNH_4PO_4.6H_2O$, prepd. by $MgCl_2$ + H_3PO_4 + 3 NH_3 + 6 H_2O → $MgNH_4PO_4.6H_2O$ + 2 NH_4Cl and obtained in fine crystals if the $MgCl_2$ soln. is poured into H_3PO_4 or if NH_3 is introduced rapidly, in coarse crystals if H_3PO_4 is poured into $MgCl_2$ or if NH_3 is introduced slowly, were detd. to be 3.7, 30.6, 109.9, and 207.1 mm. Hg, at 20, 40, 60, and 80°, resp. In an air stream, losses of NH_3 were proportional to the time during the 1st 5 hrs., attaining, at the end of 5 hrs., 0.083, 0.63, 2.18, 8.7, and 29.54%, at 18–20, 50, 60, 70, and 80°; on further passing of air, the losses increased more slowly, attaining, at the end of 12 hrs., 0.42, 4.32, and 49.18%, at 18–20, 60, and 80°, resp. Of the total loss of wt. in 5 hrs. at 80°, 18.57%, the part of NH_3 was 1.60, that of H_2O, 16.91%; the amt. of H_2O remaining in the salt, 28.12%, is close to that of an equimol. mixt. of the hexahydrate and the monohydrate, 31.4%. Stirring of the salt increased the loss of NH_3 by 6%, in 5 hrs. at 80°. Moistening of the dry salt with 0.5–2.0 and 4% H_2O increased the loss of NH_3 by 6% and 10%, resp. The rate of absorption of H_2O at 100% humidity at 20° is illustrated by the increase of wt., 3.7, 6.7, 7.5, 9.1, 12.0, and 13.0%, after 15, 30, 60, 90, 150, and 180 days, resp., i.e., the rate of absorption is inversely proportional to the time. Coating of the salt with ceresin, applied in a 1:6 soln. in CaH_6, evapd. at 45–50°, protects the salt against decompn.; with a coat corresponding to 0.5% of the wt. of the salt, 99.7% of the NH_3 contained in the salt was preserved on heating at 80°. The monohydrate, $MgNH_4PO_4.H_2O$, prepd. from the same reagents but at 100–2°, and dried at 106°, is much more stable than the hexahydrate; losses of NH_3 on standing were insignificant, and the hygroscopicity much lower. N. Thon

VOL'FKOVICH, S. I.

"Materials on the History of Soviet Chemical Science," published by Acad Sci USSR in Moscow-Leningrad, 1950

VOL'FKOVICH, S. I.

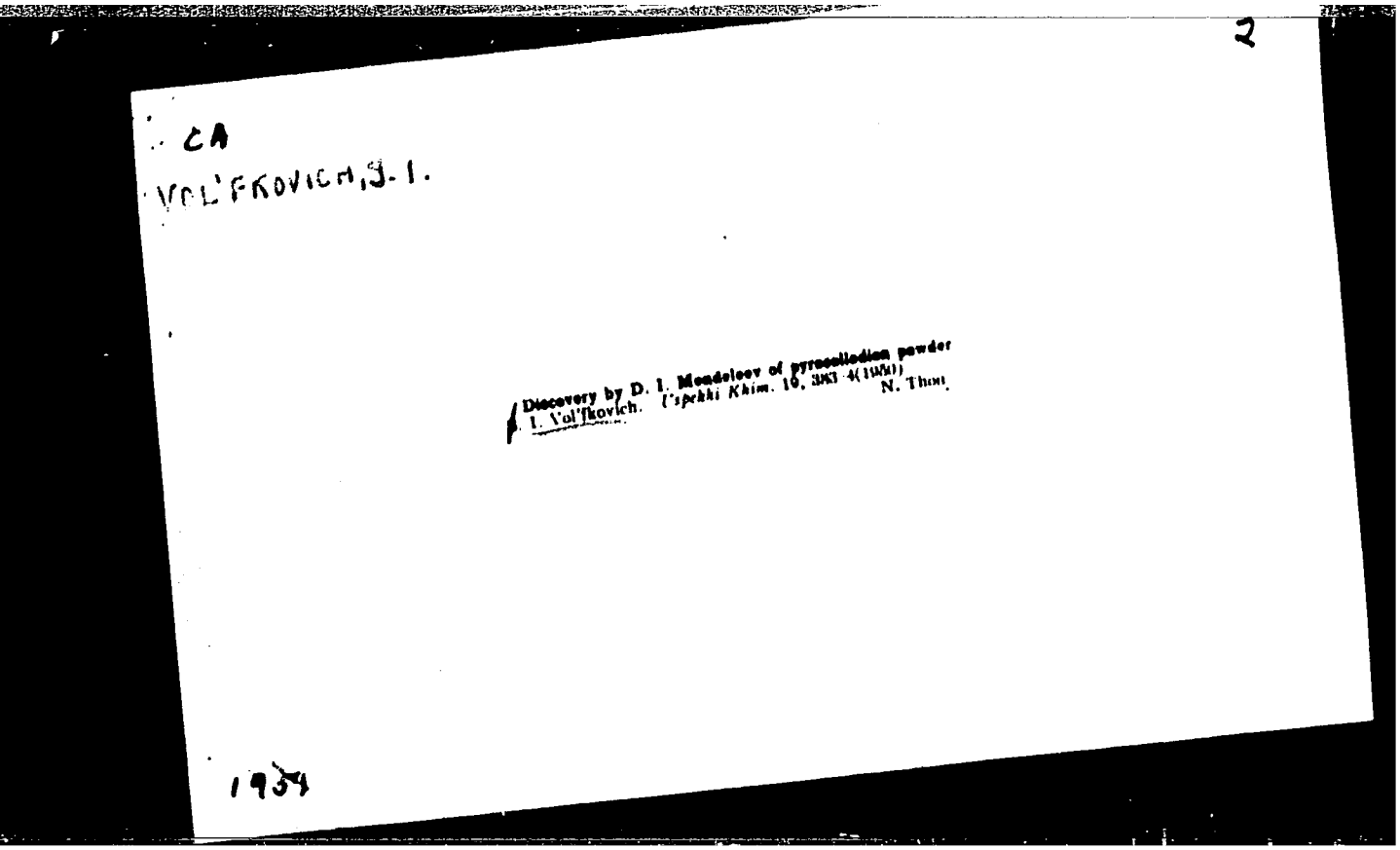
"New Problems of Chemical Technology," speech delivered by Academician S. I. Vol'fkovich of the Chemical Faculty, Tbilisi Polytechnical Institute, before scientific workers of the Institute and members of Tbilisi Dept. of the All-Union Chemical Society im. D. I. Mendeleyev.

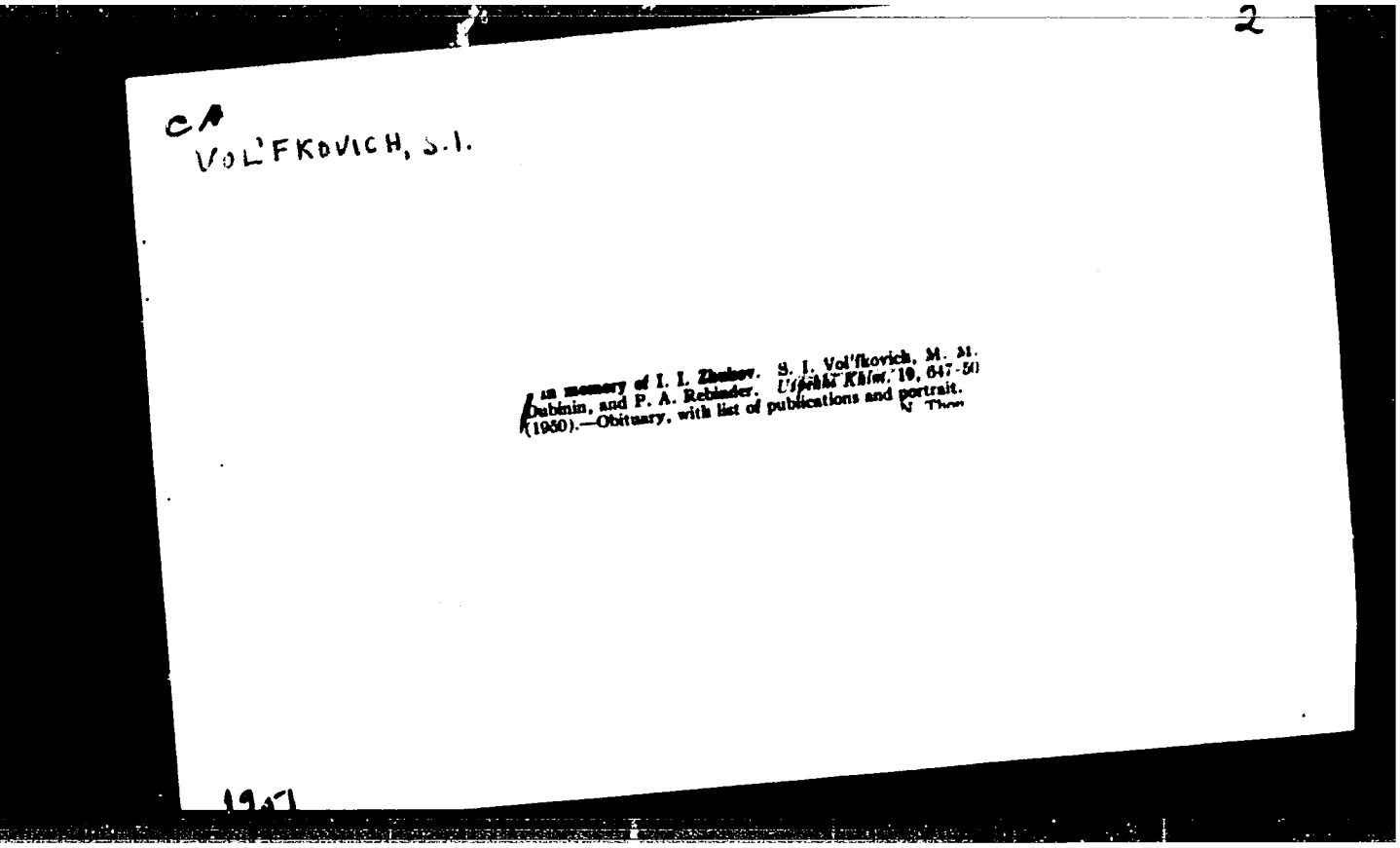
SO: Vestnik Akad. Nauk, March 1950

VOL'FKOVICH, S. I.

"Powerful Chemical Agent for Use Against Agricultural Pests and Diseases," Nauka i Zhiza, No. 3, 1950

DIGEST OF TRANSLATION AVAILABLE--W-12836, 16 Aug 50





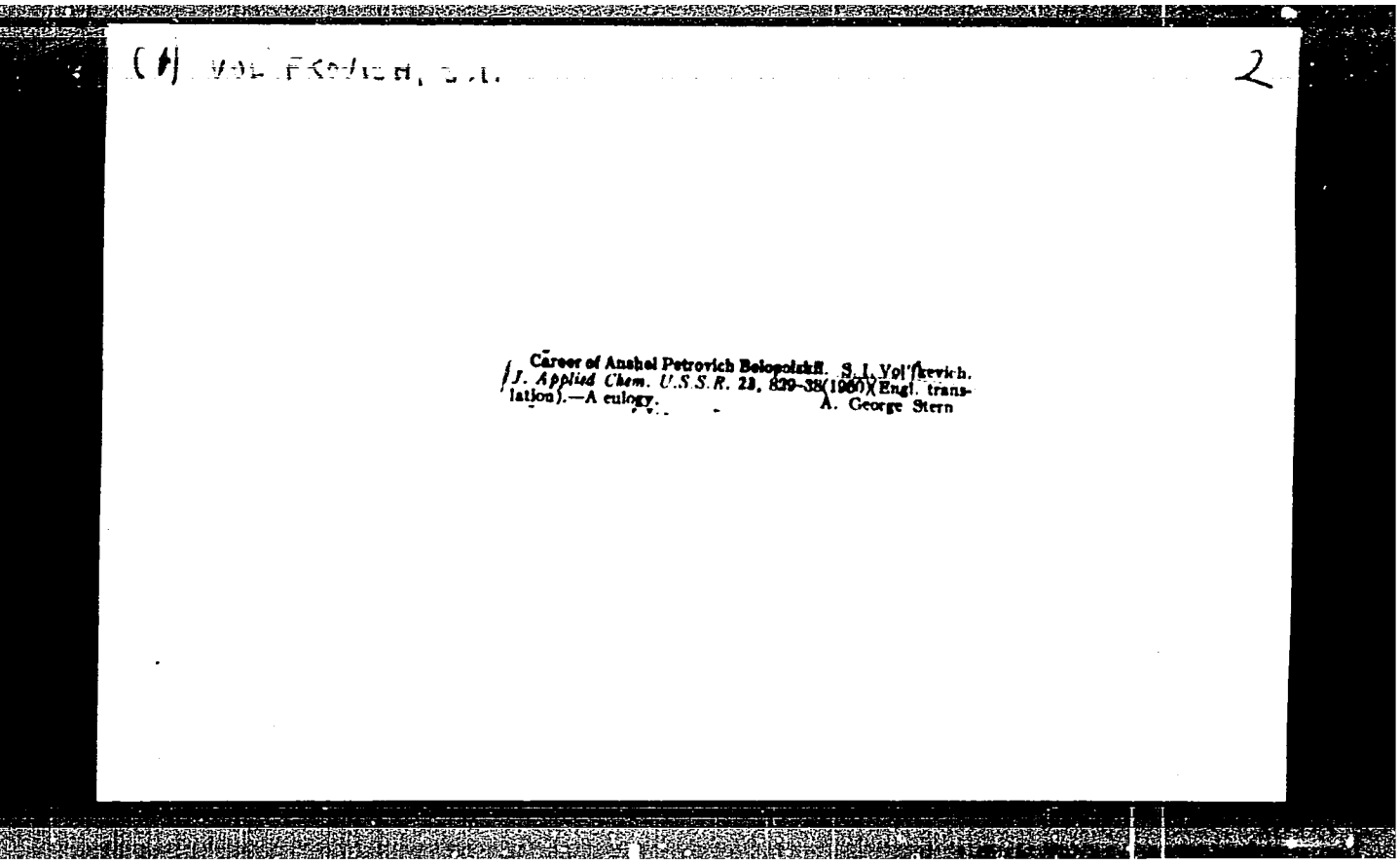
2

CA

VOL'FKOVICH, S.I.

In memory of I. I. Zhukov. S. I. Vol'fkovich, M. M. Dubinin, and P. A. Rebinder. *Uspekhi Khim.* 19, 647-51 (1950).—Obituary, with list of publications and portrait.

1951



(1) VOL'FKOVICH, S.I.

2

Career of Anshel Petrovich Belopolskii. S. I. Vol'fkovich. *J. Applied Chem. U.S.S.R.* 23, 829–38(1950)(Engl. translation).—A eulogy. A. George Stern

VOL'FKOVICH, S.I.

CA

Thermographic investigation of the phosphates. 1. The thermal dehydration of the dihydrate of dicalcium phosphate. S. I. Vol'fkovich and V. V. Urusov. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1951, 341-9.—The thermal dehydration of $CaHPO_4.2H_2O$ was studied by measuring the temp. difference between a sample of the salt and a heating furnace as a function of time as the furnace was heated (*cf. C.A.* 36, 3094⁶). The sample was enclosed in a glass tube with pressures of air varying from 25 to 760 mm. Hg. At air pressures from 25 to 100 mm., the temp. differential curves show 3 minima at 100–110°, 127–142°, and 172–175°; this indicates that $CaHPO_4.2H_2O$ goes through 2 intermediate compds. before being completely dehydrated to anhyd. $CaHPO_4$. At pressures of 100–224 mm., there is one min. at 68–69°; this fact indicates a direct dehydration to the anhyd. form. At higher pressures there is a min. at 68–69°, as above, with another broad min. at 80–100°, accompanied by the formation of a liquid phase. Some com. applications of this method of dehydration are discussed.

Arild J. Miller

VOL'FKOVICH, SEMEN ISAAKOVICH

VOL'FKOVICH, Semen Isaakovich, 1896- , ed.

[General chemical technology] Obshchaia khimicheskaia tekhnologiia. M, Gos. nauch.tekhn. izd-vo khim. lit-ry, 1952-
(Chemical engineering) (MLRA 7:5)

VOL'FKOVICH, S. I.; LOGINOVA, A. I.; POLYAK, A. M.

"Solution of Phosphates by Nitric Acid," 1952.

U-1882, 29 April 52

Utilization of new micro-fertilizers in agriculture. S. I. Vol'fkovich. [illegible] 1950

[illegible] A review with [illegible] references, in which the [illegible] of micro-fertilizers [illegible] the immediate problems requiring solu. are stated in the field of detn. of utilization of compds. of B, Mn, Cu, and Zn that would give the best crop results.

G. M. Kosolapoff

VOLFKOVICH, S.I.

3

551.573.1

S.2-201
Vol'fkovich, S. I., **Obrazovanie i predotvrashchenie tumanov.** (Formation and prevention of fogs.) *Nauka i Zhizn'*, Moscow, No. 1:20-21, 1952. 2 illus. DLC—A popular science article describing and illustrating the nature of fogs (natural and artificial), and the usefulness in agriculture and industry as well as aviation, etc., of research into the nature, formation and dissipation of fogs of all types. The work of A. G. AMELIN (*see item* 3.10-1, Oct. 1952, *MAB*), who received the Stalin Prize, is given great emphasis. *Subject Headings:* 1. Fog formation 2. Fog prevention 3. Artificial fog. I. Amelin, A. G.—*M.R.*

1

Translation W-22908. 27 May 52

VOL'FKOVICH, S.I.

Chemistry and the socialist industrialization of the U.S.S.R. Trudy Inst. ist.est. 4:31-45 '52. (MLRA 6:7)

(Chemistry, Technical)

VOL'FKOVICH, S. I., SOBOLEV, F. S.

Agricultural Chemistry

Thoughts and works of D. I. Mendeleev on agriculture and the application of chemistry to it. Vest. Mosk. un. no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1953, Uncl.

1. VOL'FKOVICH, S. I., Acad.

2. USSR (600)

4. Chemical Industries

7. Chemistry of a peaceful life, Znan. sila, No. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

VOL'FKOVICH, S. I.

"Developments in Soviet Chemistry," Nauka i Zhizn', Vol. XIX, No. 11, pp. 21-23.

TRANSLATION AVAILABLE--W-27557, 26 Aug 53

VOL'FKOVICH, S.I.

ANOSOV, Viktor Yakovlevich, professor, doktor khimicheskikh nauk; POGODIN, Sergey Aleksandrovich, professor, zasluzhennyy deyatel' nauki i tekhniki RSFSR, doktor khimicheskikh nauk [authors]; VOL'FKOVICH, S.I., akademik; KLOCHKO, M.A., professor, doktor khimicheskikh nauk, laureat Stalinskoy premii [reviewers].

Second awarding of N.S.Kurnakov's prize ("Fundamentals of physicochemical analysis." V.IA.Anosov, S.A.Pogodin. Reviewed by S.I.Vol'fkovich, M.A. Klochko). Izv.Sekt.fiz.-khim.anal. 21:5-9 '52. (MLRA 6:7)
(Chemistry, Analytical) (Pogodin, Sergei Aleksandrovich)
(Anosov, Viktor Iakovlevich, 1891-) (Chemistry, Physical and theoretical)

Vol'FKovich, S.I.

between 8 and 14% [illegible] conen of the initial H_2SiF_6 [illegible] finely ground chalk or limestone [illegible] — 85, $CaCO_3$ 2–12, SiO_2 19–33, and sesquioxide not in excess of 0.4%. The CaF_2 was a fine white cryst. powder with nearly spherical crystals 2–5 μ in diam. CaF_2 can also be prepd. from the thermal decompn. of $CaSiF_6$ at 380–400° into CaF_2 and gaseous SiF_4. The optimum conditions for the isolation of cryst. $CaSiF_6.2H_2O$ from aq. soln are: (1) a CaC H_2SiF_6 ratio of 0.97–1.2; (2) a H_2SiF_6 concn not lower than 10%; (3) careful stirring until the residual concn of free H_2SiF_6 is not less than 0.5%. The bulk of the $CaSiF_6$ ppts.; the remaining 12–15% $CaSiF_6.2H_2O$ in the filtrate can be obtained by evapn. $CaSiF_6.2H_2O$ loses its water of crystn. upon heating above 140°. Yields of 91.6–94.5% CaF_2 were obtained by this method, the impurities being

over

3–5% CaO, 2–3% SiO_2, and about 1% sesquioxides. Artificially prepd. 64–68% CaF_2 is recommended as a substitute for natural fluorospar in the production of cement and glass. High-grade CaF_2 from the thermal decompn of $CaSiF_6$ is recommended for the production of HF by reaction with H_2SO_4. $CaSiF_6$ is recommended as a wood fungicide.

George L. Jones, Jr.

VOL'FKOVICH, S. I.

USSR/Chemistry - Phosphorus Compounds Jun 52

"Separation of a Mixture of $POCl_3$ and PCl_3," T. I. Sokolova, V. V. Illarionov, S. I. Vol'fkovich

"Zhur Prik Khim" Vol XXV, No 6, pp 652-657

It is shown that values expressing the dependence of partial pressures on the compn of the PCl_3-$POCl_3$ mixt, as derived for the purpose of plotting the isotherm of partial pressures of the system, satisfy the Duheme (?) eq and allow calcn of the Duheme-Margulis const. On the basis of the data obtained, the dependence of the compn of the vapor phase on the compn of the liquid phase can be plotted. It can be considered, with sufficient accuracy, as an isobaric function.

218T37

(BA-A1 Je '53:510)

1. TUL'CHINSKAYA, V. P., VOL'FKOVICH, S. I.

2. USSR (600)

4. Lopatto, Eduard Ksaver'evich, 1893-1951

7. In memory of Professor Eduard Ksaver'evich Lopatto (1893-1951). Zhur. prikl. khim. 25 no. 10, '52.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

VOL'FKOVICH, S. I.

USSR.

The electron-microscopic study of natural phosphates, S. I. Vol'fkovich, L. B. Grinshpan, and A. B. Shcherbakova, *Doklady Akad. Nauk S.S.S.R.* 86, 137-9(1952).—The surface structures of natural apatite and phosphorites were studied. The photomicrographs show the great range of particle sizes, from large particles to particles of several hundred A. in diam. The principal characteristics of the phosphorites are their porosity and fine-crystal structure. These characteristics are used to compare the chem. reactions of phosphorites and apatite, which has a smaller sp. surface.

J. Rovtar Leach

VOL'FKOVICH, Semen Isaakovich

VOL'FKOVICH, Semen Isaakovich.

Sovetskaya khimicheskaya nauka (Soviet Chemical Science) Moskva, Izd-vo Znaniye, 1953.
30 p.
"Literatura": p. (32)

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VOL'FKOVICH, S. I.

Scientific research work in chemistry in the U.S.S.R. S. I. Vol'fkovich. *Soobshcheniya o Nauch. Rabotakh Vsesoyuz. Khim. Obshchestva im. Mendeleeva* 1953, No. 1, 4–17; *Referat. Zhur., Khim.* 1953, No. 6068.—A review of trends and development of Soviet chemistry. M. H.

VOL'FKOVICH, S. I.

PHASE I TREASURE ISLAND BIBLIOGRAPHIC REPORT AID 169 - I

Call No.: AF582723

BOOK

Author: VOL'FKOVICH, S. I., YEGOROV, A. P., and EPSHTEYN, D. A.
Full Title: GENERAL CHEMICAL TECHNOLOGY (VOL. I)
Transliterated Title: Obshchaya khimicheskaya tekhnologiya

Publishing Data

Originating Agency: None
Publishing House: State Scientific-Technical Publishing House of Chemical Literature (GOSKHIMIZDAT)
Date: 1953 No. pp.: 632 No. of copies: 25,000
Editorial Staff
Editor: Luchinskiy, G. P. Tech. Ed.: None
Editor-in-Chief: Vol'fkovich, S. I., Acad. Appraiser: None
Others: Gratitude is expressed to several Soviet scientists for their valuable comments.
Three additional authors are mentioned: Z. A. Rogovin, Yu. P. Rudenko, I. V. Shmanenkov.

Text Data

Coverage: The book consists of two volumes. Volume I is devoted to general problems of chemical technology (such as raw materials, energetics, technology of water and fuel), to the manufacture of gases, acids, alkalies, salts, fertilizers, and to electrochemical processes, etc. Some illustrations of machinery, tables, and diagrams are included.

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AID 169 - I

Obshchaya khimicheskaya tekhnologiya

The book might be of interest because it mentions names of many Soviet scientists and their contributions to the development of various chemical industries. Deposits of some raw materials in the U.S.S.R. and goals set by the Five-Year Plan (1951-1955) for some industries are cited.

Purpose: Approved by the Ministry of Higher Education of the U.S.S.R. as a textbook for departments and colleges of chemical technology.

Facilities: Names of many Soviet chemists are mentioned.

No. of Russian and Slavic References: 145 (1922-1952)

Available: A.I.D., Library of Congress.

2/2

Chemical and technological problems relating to mineral fertilizers in Middle Asia. S. I. Vol'fkovich. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1953, 448–58.—A detailed report relating to the needs of Middle Asia and the methods of production with reference to the phosphate deposits in Kara-tau (cf. Belopol'skii, *et al.*, *C.A.* 48, 10280b). The advantages of HNO_3 treatment and a concd. fertilizer are emphasized. I. Bencowitz

VOL'FKOVICH, S.I.

Physicochemical analysis of salts and fertilizers in the works of Prof. A. P. Belopol'skii

VOL'FKOVICH, S. I.

USSR/Chemistry - Chemical Technology Sep 53

"Review of S.I. Vol'fkovich, A.P. Yegorov and D.A. Epshteyn's book 'General Chemical Technology (Obshchaya Khimicheskaya Tekhnologiya)' Vol I, 632 pp, Goskhimizdat, Moscow, 1953," (P.P. Budnikov, reviewer)

Usp Khim, Vol 22, No 9, pp 1165-1168

In this book material is organized on the basis of similarity of technol processes and partly on the basis of common raw material source. The section on thermal treatment of fuels discusses pyrolysis of solid fuel, conversion of petroleum and natural gas, and gasification of solid fuel, including subterranean gasification. Development of the chem ind during prewar 5-yr plans and the leading USSR chem schools are discussed. The section on basic inorganic synthesis describes new processes for production of conc HNO_3 by direct synthesis and combined production of HNO_3 and H_2SO_4. While the book has some shortcomings, it is a valuable textbook for higher educational institutions.

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268T17

VOL'FKOVICH, S.I.; YEGOROV, A.N.; EPSHTEYN, D.A. [authors]; YAKOVKIN, G.A. [reviewer].

"General chemical technology." S.I.Vol'fkovich, A.N.Egorov, D.A.Epshtein. Reviewed by G.A.IAkovkin. Zhur.prikl.khim. 26 no.10:1103-1104 O '53. (MLRA 6:10)

(Chemistry, Technical) (Vol'fkovich, Semen Isaakovich) (Egorov, A.N.) (Epstein, D.A.)

ZVYAGINTSEV, O.Ye. [reviewer]; VOL'FKOVICH, S.I.; YEGOROV, A.P.; EPSHTEYN, D.A. [authors].

"General chemical technology." S.I.Vol'fkovich, A.P.Egorov, D.A.Epshtein. Reviewed by O.E.Zviagintsev. Zhur.prikl.khim. 26 no.12:1323-1324 D '53. (MLRA 6:11)

(Chemistry, Technical) (Vol'fkovich, Semen Isaakovich) (Egorov, A.P.) (Epshtein, D.A.)

RAZUVAYEV, G.A.; PETUKHOV, G.P.; REKASHEVA, A.F.; MIKLUKHIN, G.P.; VOL'FKOVICH, S.I., akademik.

Use of deuterium in the study of photochemical reactions in the liquid phase of metalorganic compounds. Dokl.AN SSSR 90 no.4:569-572 Je '53. (MLRA 6:5)

1. Akademiya Nauk SSSR (for Vol'fkovich). 2. Institut fizicheskoy khimii im. L.V. Pisarshevskogo Akademii nauk Ukrainskoy SSR (exc. Vol'fkovich). 3. Gor'kovskiy gosudarstvennyy universitet (for all exc. Vol'fkovich).
(Organometallic compounds) (Deuterium)

RODE, T.V.; VOL'FKOVICH, S.I., akademik.

Polymorphous conversions of potassium and sodium peroxides, at low temperatures. Dokl. AN SSSR 90 no.6:1075-1078 Je '53. (MLRA 6:6)

1. Akademiya nauk SSSR (for Vol'fkovich). (Peroxides)

RODE, T.V.; DOBRYNINA, T.A.; VOL'FKOVICH, S.I., akademik.

Thermal analysis of lithium peroxide. Dokl. AN SSSR 91 no.1:125-127 Jl '53. (MLRA 6:6)

1. Akademiya nauk SSSR (for Vol'fkovich).
(Lithium peroxide) (Thermal analysis)

LESKOVICH, I.A.; VOL'FKOVICH, S.I., akademik.

Relaxation of strains in phase transformations of ammonium nitrate and p-dichlorobenzene. Dokl. AN SSSR 91 no.2:295-298 Jl '53. (MLRA 6:6)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova Akademii nauk SSSR. 2. Akademiya nauk SSSR (for Vol'fkovich).
(Phase rule and equilibrium) (Ammonium nitrate) (Benzene derivatives)

RODE, T.V.; VOL'FKOVICH, S.I., akademik.

Thermographic study of lithium carbonate. Dokl.AN SSSR 91 no.2:313-314 Jl '53. (MLRA 6;6)

1. Akademiya nauk SSSR (for Vol'fkovich). (Lithium carbonate) (Thermochemistry)

BOKIY, G.B.; SMIRNOVA, N.N.; VOL'FKOVICH, S.I., akademik.

Crystallochemical investigation of the compound Ag_7NO_{11}. Dokl.AN SSSR 91 no.4:821-823 Ag '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Vol'fkovich). 2. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova Akademii nauk SSSR.
(Silver compounds)

TSIKLIS, L.S.; VOL'FKOVICH, S.I., akademik.

Compressibility of ammonia at pressure up to 10 000 atm. Dokl.AN SSSR 91 no.4:889-890 Ag '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Vol'fkovich).
(Ammonia)

GEL'D, P.V.; PASHILOV, A.I.; CHUCHMAREV, S.K.; VOL'FKOVICH, S.I., akademik.

Reciprocal solubility of calcium oxide and calcium carbonate. Dokl.AN SSSR 91 no.5:1115-1117 Ag '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Vol'fkovich). 2. Ural'skiy politekhnicheskiy institut im. S.M.Kirova. (Calcium compounds) (Solubility)

TSIKLIS, D.S.; VOL'FKOVICH, S.I., akademik.

Limited reciprocal solubility of gases in the system: helium - ethylene, under high pressures. Dokl.AN SSSR 91 no.6:1361-1363 Ag '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Vol'fkovich). 2. Nauchno-issledovatel'skiy i proyektnyy institut azotnoy promyshlennosti (for TSiklis).
(Solubility) (Helium) (Ethylene)

KUSKOV, V.K.; GRADIS, T.Kh.; VOL'FKOVICH, S.I., akademik.

Reaction of diethyl phosphite with sodium alcoholates. Dokl.AN SSSR 92 no.2: 323-324 S '53. (MLRA 6:9)

1. Akademiya nauk SSSR (for Vol'fkovich). 2. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (for Kuskov and gradis).
(Diethyl phosphite) (Alcoholates)

PORAY-KOSHITS, M.A.; ANTSISHKINA, A.S.; VOL'FKOVICH, S.I., akademik.

Structure of the crystals of dichlorotetrapyridine of nickel, and dichlorotetrapyridine of cobalt. Dokl.AN SSSR 92 no.2:333-335 S '53. (MLRA 6:9)

1. Akademiya nauk SSSR (for Vol'fkovich).
(Nickel organic compounds) (Cobalt organic compounds)

POZIN, M.Ye.; MUKHLENOV, I.P.; VOL'FKOVICH, S.I., akademik.

Foam conditions for the processing of gas-fluid systems. Dokl.AN SSSR 92 no.2: 393-396 S '53. (MLRA 6:9)

1. Akademiya nauk SSSR (for Vol'fkovich). 2. Leningradskiy tekhnologicheskiy institut im. Lensoveta (for Pozin and Mukhlenov).
(Foam) (Fluid dynamics)

VAYNSHTEYN, E.Ye.; VOL'FKOVICH, S.I., akademik.

Generalization of the equation for the converted function of blackening. Dokl.AN SSSR 92 no.4:723-725 O '53. (MLRA 6:9)

1. Akademiya nauk SSSR (for Vol'fkovich). 2. Institut geokhimii o analiticheskoy khimii im. V.I.Vernadskogo Akademii nauk SSSR (for Vaynshteyn).
(Microspectrophotometry)

BOKIY, G.B.; BATSANOV, S.S.; VOL'FKOVICH, S.I., akademik.

Refraction of the hydrogen bond. Dokl.AN SSSR 92 no.6:1179-1180 O '53. (MLRA 6:10)

1. Akademiya nauk SSSR (for Vol'fkovich). (Refraction) (Hydrogen)

VOL'FKOVICH, S. I.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Vol'fkovich, S. I. Yegorov, A. P. Epshteyn, D. A.	"General Chemical Technology" (Textbook, Vol I)	Scientific Research Institute of Teaching, Academy of Pedagogical Sciences RSFSR

SO: W-30604, 7 July 1954

VOL'FKOVICH, S.I.

VOL'FKOVICH, S.I., akademik; SERGIYENKO, S.R., doktor khimicheskikh nauk professor; KAUFMAN, I.M., redaktor; KHOVANSKIY, I.P., tekhnicheskiy redaktor

[Russian chemists; annotated reading list] Russkie khimiki; annotirovannyi ukazatel' literatury. Vvodnaia stat'ia i biograficheskie ocherki S.R.Sergienko. Pod red. S.I.Vol'fkovicha. Moskva, 1954. 145 p. (Chto chitat' o vydaiushchikhsia deiateliakh otechestvennoi nauki i tekhniki. no.5)

(Chemists)

VOL'FKOVICH, S. I.

U S S R

Reaction of phenol with phosphorus. S. I. Vol'fkovich, V. K. Kuskov, and K. P. Koroteeva. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1954, 5-8.—Heating P with EtOH in an autoclave at 240–50° and 100 atm. gave a low yield of organo-P derivs., including those, b. 110–220°, whose structure was not detd. The gaseous products contained C_2H_4. At higher temp. noticeable amts. of decompn. products were observed. It is believed that the 1st reaction is dehydration of EtOH and the reaction of the resulting H_2O with P; the resulting products then react with EtOH yielding the various products. PhOH does not react with red P in an autoclave, even at 300°, but in the presence of a little H_2O reaction starts even at 200° with a rise in pressure to 40–150 atm. Thus, a well mixed mixt. of 23.5 g. PhOH, 6.8 g. red P, and 4.5 ml. H_2O heated in an autoclave 4.5 hrs. at 250–65° and 110 atm., then allowed to cool over 12 hrs., gave a residual pressure of 20 atm. the gases being composed principally of H (99.5%). After dilu. with H_2O, the residual red P was filtered off (5 g.), washed with Et_2O, the filtrates were warmed to expel Et_2O and extd. with C_6H_6; evapn. of the C_6H_6 gave 2 fractions: 2.8 g. $PhPH_2$, b$_1$ 87–96°, b. 180°, and 1 g. Ph_2PH, b$_1$ 170°, b. 272°. Steam distn. of the PhOH from the aq. portion and evapn. of the residual soln. yielded 4 g. yellowish cryst. product, apparently crude $PhPO_3H_2$. In a similar expt. but with only 2.25 ml. H_2O, heating 16 hrs. to 260° at 50 atm. again yielded Ph_2PH and a mixt. of acids of P. A mixt. of 3.2 g. red P with 23.2 g. dry NaOPh and 3.6 g. H_2O heated in an autoclave over 4 hrs. to 250° (47 atm. pressure developed), kept there 3 hrs., allowed to cool 12 hrs. (residual pressure of 30

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S.I. VOL'FOLKOVICH

atm., with gas composed of H and PH_3 was found), extd. with 250 ml. hot H_2O, the ext. neutralized with HCl, the unreacted P filtered off, washed with Et_2O (4 g. P reclaimed), the combined filtrate heated to expel the Et_2O, extd. with C_6H_6, and the C_6H_6 distd. gave 0.7 g. $PhPH_2$, while the aq. layer, freed of PhOH by steam distn., evapd., the NaCl removed, and the filtrate evapd. further and chilled gave 1 g. crude $PhPO_3Na_2$, contaminated with Na_3PO_4 (contained 17% P); evapn. of the filtrate gave 1.4 g. Na_2HPO_4. By increasing the amt. of H_2O in the reaction to 7.2 ml., the above mixt. gave, after 8 hrs. at 150° and 4 hrs. at 225° and 260°, only traces of phosphines, while the org. ext. gave 1–2 g. $(PhO)_3PO$, along with crude $PhPO_3H_2$ and about 5 g. mixed Na phosphates and phosphites. Heating 13.5 g. NaOPh and 17 g. PhOH with 3.96 g. red P 2 hrs. at 260° (52 atm. pressure developed), then 1 hr. at 270° (56 atm.), gave after cooling a gas mixt. contg. PH_3, while treatment of the products as described above gave 3 g. Ph_2O, along with traces of undetd. organo-P compds. Apparently the reaction of P with PhOH and PhONa in the presence of H_2O proceeds through dismutation analogous to that of P with H_2O alone, so that, instead of PH_3 and inorg. P acids, their phenylated analogs are formed. The following reactions are usable for identification of the products: with PhOH are formed $(PhO)_3PO$ and H_2; with PhONa, $PhPH_2$ and NaH_2PO_2, along with PH_3, $PhPO(OH)ONa$ and $PhPO(ONa)_2$. Cf. Ipatieff, *et al.*, *Zhur. Obshchei Khim.* 1, 632(1931); *C.A.* 22, 2389; Berthaud, *C.A.* 1, 720; Senderens, *C.A.* 1, 3990; Britske and Pevtov, *C.A.* 24, 298. G. M. Kosolapoff

Volfkovich, S.T.

Low-temperature modifications of ammonium nitrate on cooling and quenching. S. I. Zhavoronkov, S. M. Rubinchik, and V. M. Kochin. *Zhur. Obshchei Khim.* 24, 1954. [illegible] low-temp modifications of NH_4NO_3 were [illegible] designated modifications II, III, and IV. [illegible] and thermal [illegible] NH_4NO_3 at a rate not greater than 2° per min., an unstable transformation of modification II to IV takes place; on heating it is not observed. NH_4NO_3 at −20° consists principally of modifications II and IV. Modification III is absent, as shown by cooling curves on rapid cooling. NH_4NO_3 quenched at −196° consists of modifications IV and [illegible]. Transformation of NH_4NO_3 at 50° and −65° [illegible] was not observed.

[illegible] N. Bednarski

VOL'FKOVICH, S.I.

Triumph of Mendeleev's genius; on the occasion of the 120th anniversary of his birth. February 8, 1834--February 8, 1954. Soob.o nauch.rab.chl.VKHO no.2:1-17 '54. (MIRA 10:10)
(Mendeleev, Dmitrii Ivanovich, 1834-1907)

VOL'FKOVICH, S. I. FD 191

USSR/Chemistry - Phosphate Fertilizers Production

Card 1/1

Authors : Vol'fkovich, S. I., Illarionov, V. V., and Remen, R. Ye.

Title : Investigation of the process of hydrothermal conversion of apatite

Periodical : Khim. prom. 4, 11-17 (203-209), June 1954

Abstract : Investigated the defluorination of fluoroapatite with steam. Found that by treating an apatite concentrate with steam at 1400°C in the presence of 2% of silicon dioxide, a fertilizer which contains up to 34-36% of phosphorus pentoxide and less than 0.1% of fluorine is obtained. This fertilizer is approximately twice as concentrated as Thomas slag. Ten USSR references, three since 1940; twenty-five foreign references. Three graphs and seven tables.

Institution : Scientific Research Institute of Fertilizers and Insectofungicides

Vol'fkovich, S. I.

USSR/Chemistry - Agricultural

FD-868

Card 1/1 Pub.50 - 1/24

Author : Vol'fkovich, S. I., Mel'nikov, N. N., Orlov, V. I.

Title : The chemical industry in the fight to increase yields and preserve crops (Concerning the opening of the All-Union Agricultural Exposition).

Periodical : Khim. prom., No. 6, 321-331 (1-11), Sep 1954

Abstract : Review general trends in USSR agricultural chemistry and current production plans and other developments in fertilizers, insecticides, fungicides, herbicides, and plant growth stimulants. Six references, all USSR, all since 1940. Three figures.

Institution :

Submitted :

Vol'fkovich, S.

USSR/Chemistry - Technology, Electrothermic processes FD-889

Card 1/1 Pub.50 - 22/24

Author : Vol'fkovich, S.

Title : Obituary of L. A. Kuznetsov

Periodical : Khim. prom., No 6, 379 (59), Sep 1954

Abstract : Reviews the life and activity of L. A. Kuznetsov (1894-1954), a chemical engineer, research worker, and technologist who was active in the calcium carbide and calcium cyanamide industries, worked on the production of cyanides, thiourea, melamine, insecticides, various synthetic organic chemicals, etc., and was in charge of the installation and operation of plants manufacturing these products. According to Vol'fkovich, Kuznetsov was one of the foremost USSR authorities on electrothermic processes. One figure (portrait of Kuznetsov).

Institution :

Submitted :

VOL'FKOVICH, S.I., akademik.

Chemistry in agriculture. Tekh.mol. 22 no.4:7-10 Ap '54.
(MLRA 7:4)
(Agricultural chemistry)

VOL'FKOVICH, S. I.

AID P - 263

Subject	:	USSR/Chemistry
Card	:	1/1
Authors	:	Vol'fkovich, S. I. and Kapustinskiy, A. F. (Moscow)
Title	:	Ergard Viktorovich Britske (1877-1953)
Periodical	:	Usp. khim. 23, No. 2, 129-141, 1954
Abstract	:	Biography and outline of E. V. Britske's scientific and industrial activities (fertilizers, metallurgy). A list of his publications is given. Four references (Russian): 1931-1947.
Institution	:	None
Submitted	:	No date

VOL'FKOVICH, S.I.

Famous Russian scientist and revolutionary (100th anniversary of the birth of N.A.Morozov). Vest. AN SSSR 24 no.8:56-63 Ag '54. (Morozov, Nikolai Aleksandrovich, 1854-1946) (MLRA 7:9)

VOL'FKOVICH, S. I.

"Soviet Work on Hydrothermic Method for Conversion of Natural Phosphates into Fertilizers, Vest Ak Nauk SSSR, Vol 24, No 12, p 72, 1954

Summary W-31263, 10 May 55