[redacted]

KRAYNDLER, A. (Bukharest); UNGER, Yu. (Bukharest); VOLANSKIY, D. (Bukharest)

Effect of partial injury of the reticular formation of the brain stem on the higher nervous activity in dogs. Fiziol.zhur. 45 no.3:261-270 '59. (MIRA 12:11)

(REFLEX, CONDITIONED,
eff. of damage of brain stem reticular form. in dogs (Rus))
(BRAIN STEM, physiol.
eff. of reticular form. lesions on conditioned reflex activity in dogs (Rus))

Support - Connection

Service Abstracts
Sect. B

621.315.668.1 : 620.17

3481. Strength tests on wooden poles of overhead lines. S. VIDÁNSZKY. *ElektrotechnikA*, 44, 360 7ff (*Dec.*, 1951) *In Hungarian.*

Four series of strength tests were carried out in 1950 and 1951 on poles and structures made of pine wood with various types of setting, e.g. set in the soil, in concrete foundations, reinforced by steel rings, etc. On the basis of the results the author recommends changes in design calculations and in the existing standard specifications. E. GÁBOR

VOLARIC, B.

Peroral yperite poisoning with suicidal intentions. Arh. hig. rada 7 no.1:45-49 1956.

1. Zavod za sudsku medicinu i kriminalistiku Med. fakulteta, Zagreb.

(MUSTARD GAS, pois.
fatal dichlorodiethyl sulfide suicide (Ser))
(SUICIDE,
by dichlorodiethyl sulfide, peroral (Ser))

VOLARIC-MRSIC, Iva; MIMICA, Milorad; MALJEVAC, Ivo

Aero-biological investigations in Zagreb and on the Island of Rab. B. Investigations on pollen. Rad. med. fak. Zagreb. 10 no.1:39-46 '62.

(POLLEN)

MIMICA, Milorad, dr.; BABIC, Dobroslav, dr.; KOHLER-KUBELKA, Neda, dr.; VOLARIC-MRSIC, Iva, prof.

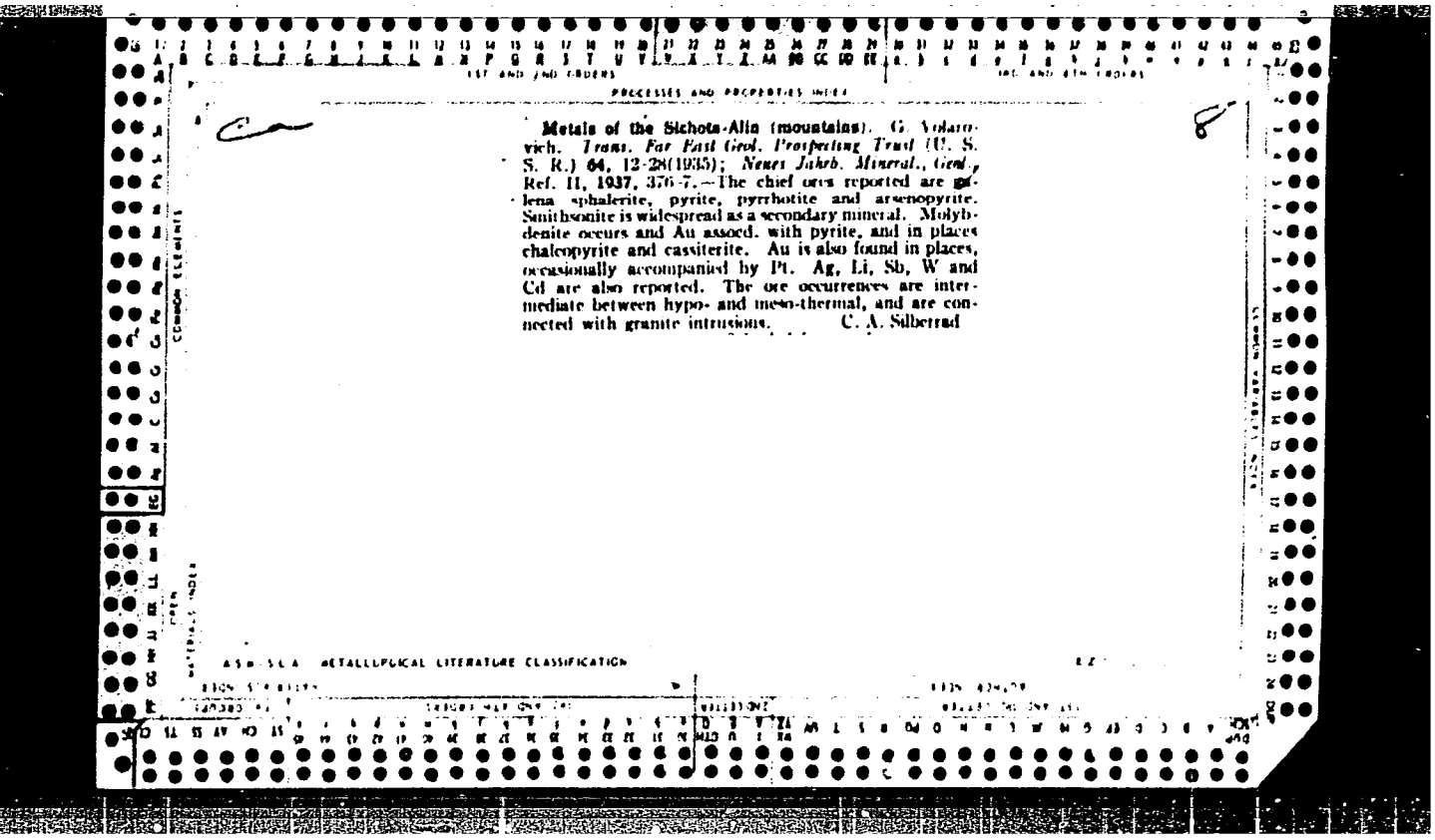
Pollenosis. Lijecn. vjesn. 85 no.5:497-502 '63.

1. Iz Interne klinike Medicinskog fakulteta, Internog odjela bolnice "Dr. J. Kaifes", Immunoloskog zavoda i Zavoda za botaniku Farmaceutskog fakulteta u Zagrebu.
(POLLEN) (SKIN TESTS) (STATISTICS)

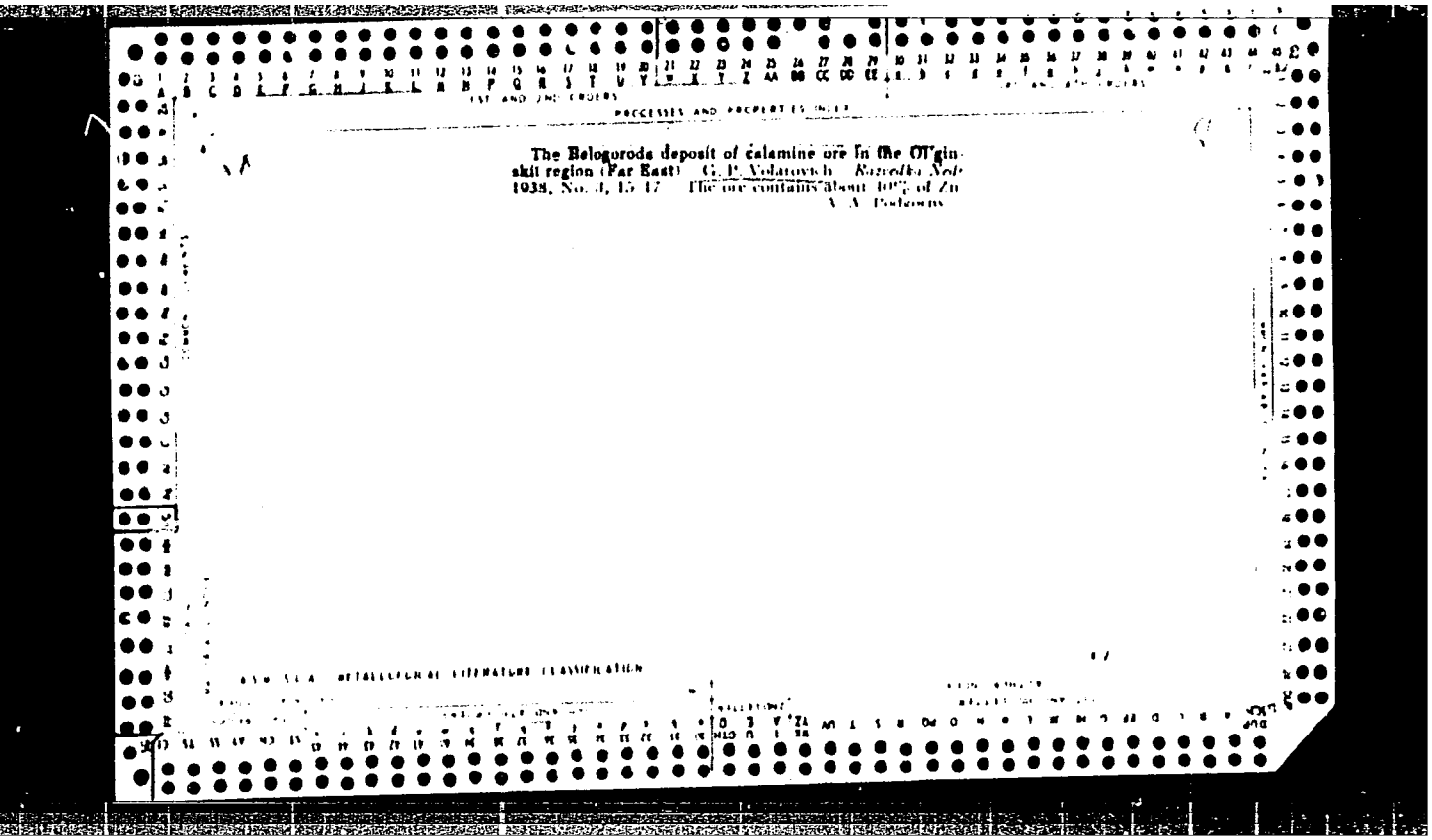
S

VOLARIK, Sandorne; BORBELY, Imre

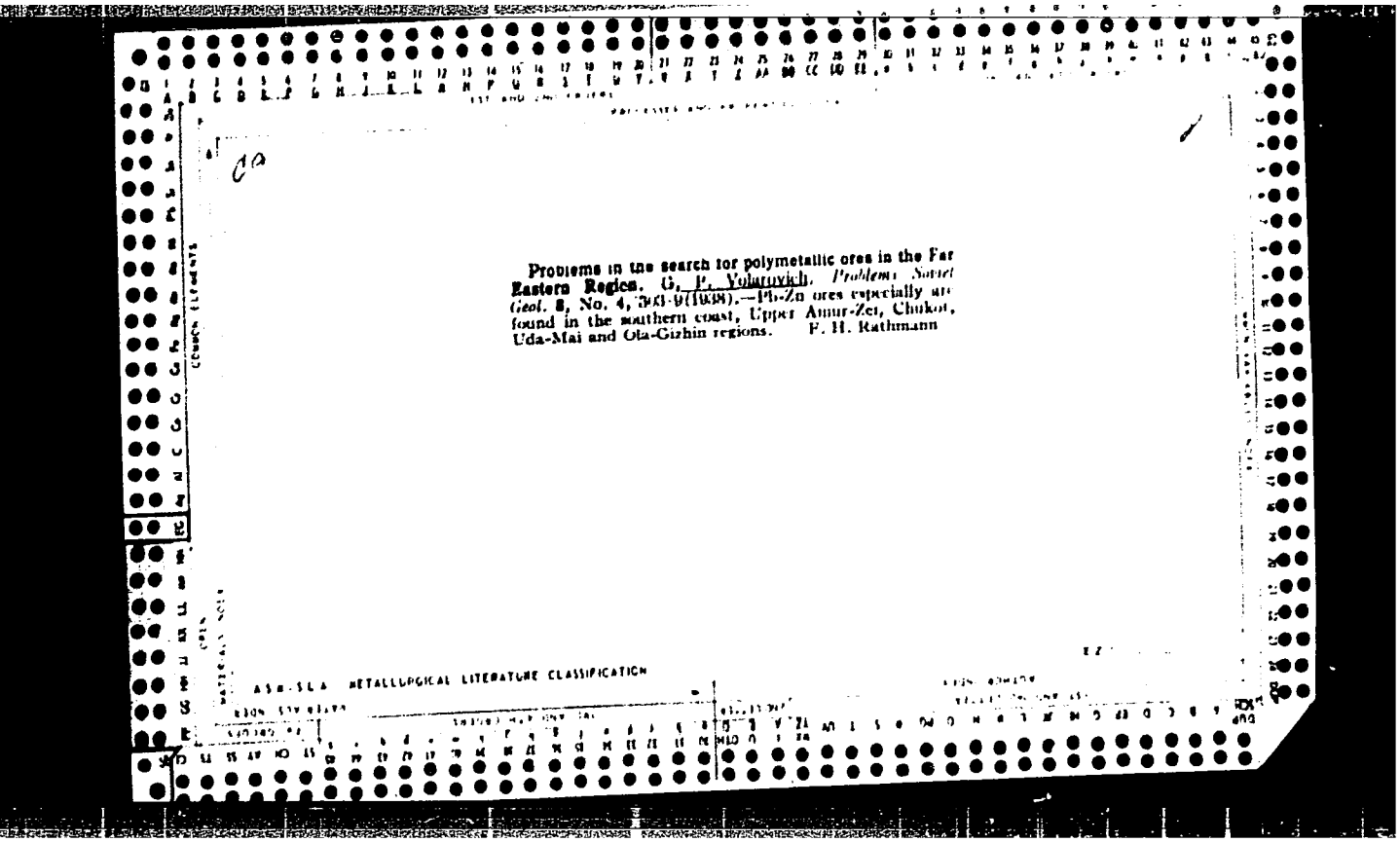
Periodical and book reviews. Epitoanyag 15 no.5:191-192 My '63.



Metals of the Sichota-Alin (mountains). G. Volarovich. *Trans. Far East Geol. Prospecting Trust* (U. S. S. R.) **64**, 12-28(1935); *Neues Jahrb. Mineral., Geol.*, Ref. II, 1937, 376-7.—The chief ores reported are galena sphalerite, pyrite, pyrrhotite and arsenopyrite. Smithsonite is widespread as a secondary mineral. Molybdenite occurs and Au assocd. with pyrite, and in places chalcopyrite and cassiterite. Au is also found in places, occasionally accompanied by Pt. Ag, Li, Sb, W and Cd are also reported. The ore occurrences are intermediate between hypo- and meso-thermal, and are connected with granite intrusions. C. A. Silberrad

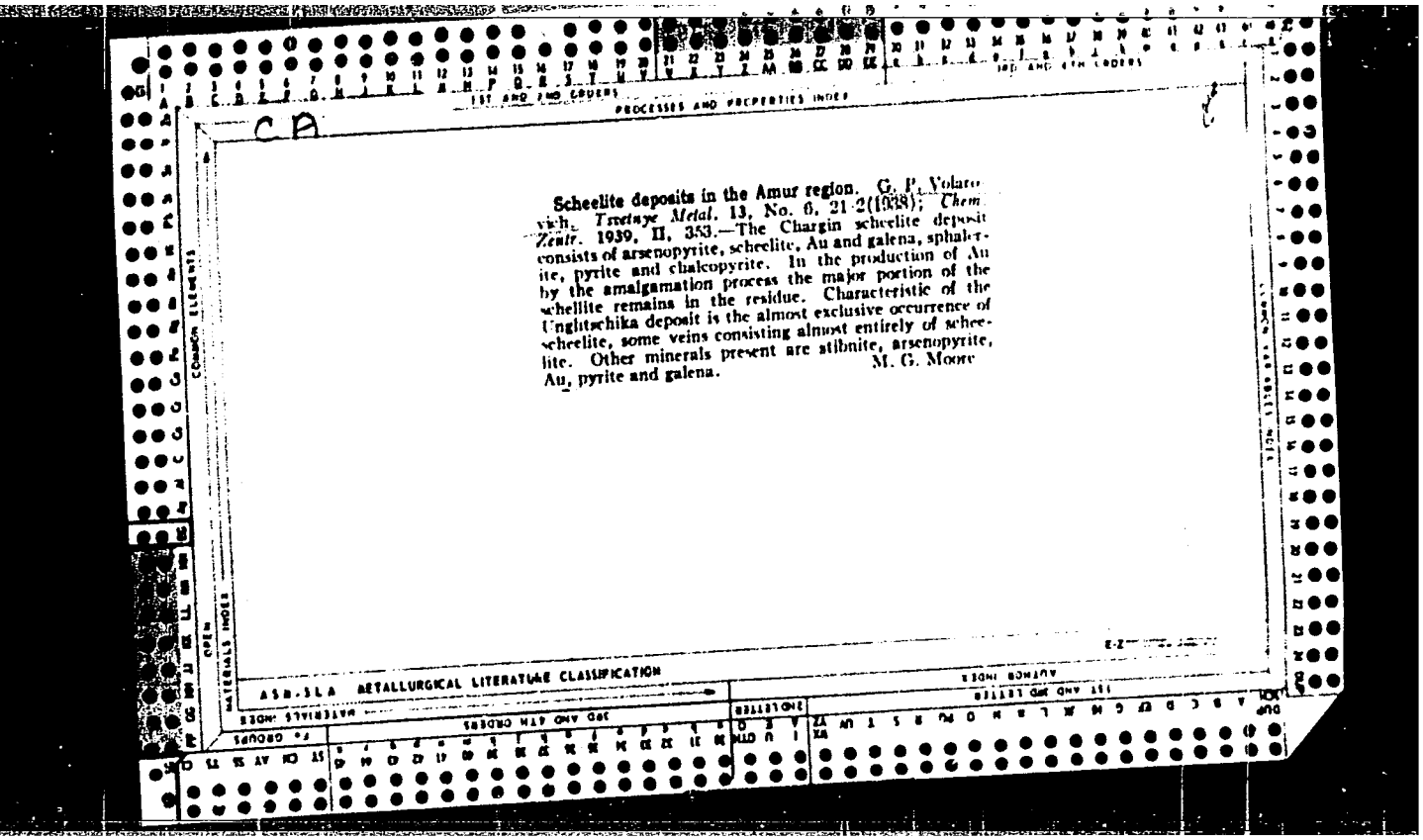


The Belogoroda deposit of calamine ore in the Ol'gin-
skii region (Far East) G. P. Volarovich *Razvedka Nedr*
1938, No. 1, 15-17 The ore contains about 10% of Zn
A. A. Polavina



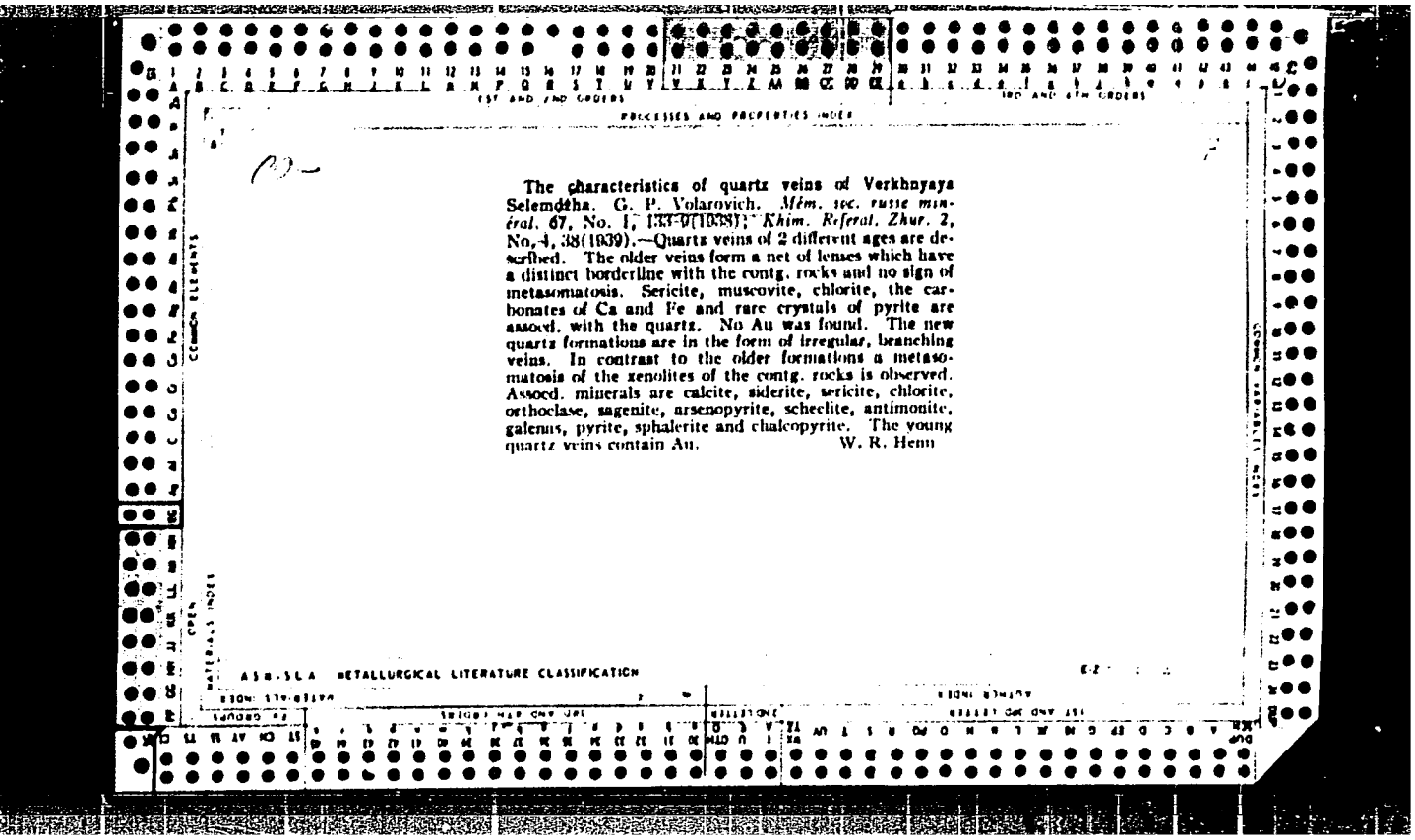
Problems in the search for polymetallic ores in the Far Eastern Region. G. P. Volarovich. *Problems Soviet Geol.* 8, No. 4, 393-9(1938).—Pb-Zn ores especially are found in the southern coast, Upper Amur-Zei, Chukot, Uda-Mai and Ola-Gizhin regions. P. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

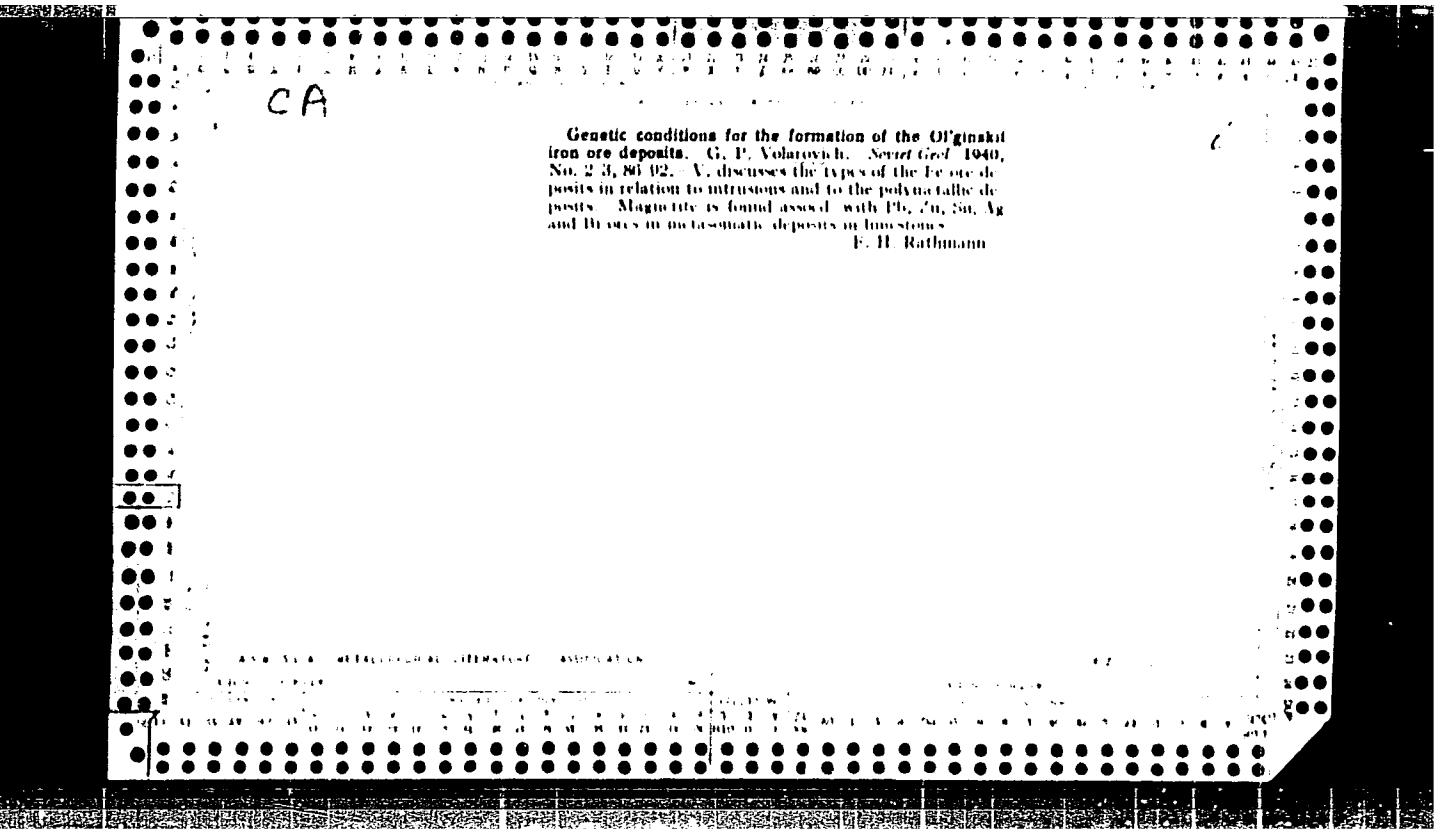


CA

Scheelite deposits in the Amur region. G. P. Volarovich. *Tsvetnye Metal.* 13, No. 6, 21-2(1938); *Chem. Zentr.* 1939, II, 353.—The Chargin scheelite deposit consists of arsenopyrite, scheelite, Au and galena, sphalerite, pyrite and chalcopyrite. In the production of Au by the amalgamation process the major portion of the schellite remains in the residue. Characteristic of the Unglitschika deposit is the almost exclusive occurrence of scheelite, some veins consisting almost entirely of scheelite. Other minerals present are stibnite, arsenopyrite, Au, pyrite and galena. M. G. Moore



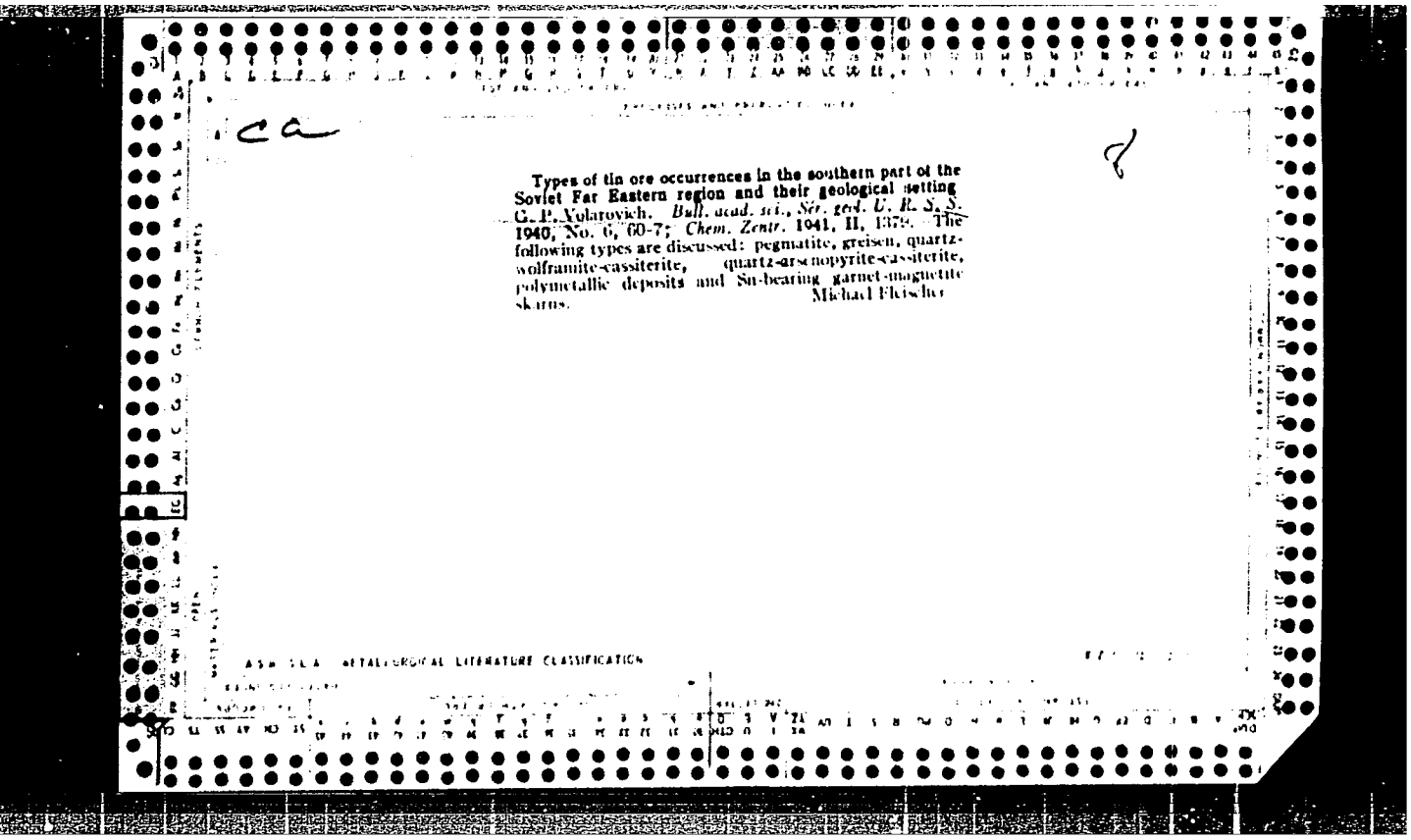
The characteristics of quartz veins of Verkhnyaya Selemdzha. G. P. Volarovich. *Mém. soc. russe minéral.* 67, No. 1, 133-9(1938); *Khim. Referat. Zhur.* 2, No. 4, 38(1939).—Quartz veins of 2 different ages are described. The older veins form a net of lenses which have a distinct borderline with the contg. rocks and no sign of metasomatosis. Sericite, muscovite, chlorite, the carbonates of Ca and Fe and rare crystals of pyrite are assocd. with the quartz. No Au was found. The new quartz formations are in the form of irregular, branching veins. In contrast to the older formations a metasomatosis of the xenolites of the contg. rocks is observed. Assocd. minerals are calcite, siderite, sericite, chlorite, orthoclase, sagenite, arsenopyrite, scheelite, antimonite, galenus, pyrite, sphalerite and chalcopyrite. The young quartz veins contain Au. W. R. Henn



CA

Genetic conditions for the formation of the Ol'ginskii iron ore deposits. G. P. Volarovich. *Sovet Geol.* 1940, No. 2-3, 80-92.—V. discusses the types of the Fe ore deposits in relation to intrusions and to the polymetallic deposits. Magnetite is found associated with Pb, Zn, Sn, Ag and Bi ores in metasomatic deposits in limestones.

F. H. Rathmann



Types of tin ore occurrences in the southern part of the Soviet Far Eastern region and their geological setting. G. P. Yolarovich. *Bull. acad. sci., Sér. géol. U. R. S. S.* 1940, No. 6, 60-7; *Chem. Zentr.* 1941, II, 1379. The following types are discussed: pegmatite, greisen, quartz-wolframite-cassiterite, quartz-arsenopyrite-cassiterite, polymetallic deposits and Sn-bearing garnet-magnetite skarns.

Michael Fleischer

ASM U.S.A. METALLURGICAL LITERATURE CLASSIFICATION

VOLAROVICH, G. P.

PA 28T69

USSR/Metals Mar/Apr 1947
~~Tungsten Ore Deposits~~
Ore Deposits

"The Occurrence of Tungsten Formations in the USSR," G. P. Volarovich, NigriZoloto, 6 pp

"Tsvetnye Metally" No 2

A short account of characteristics of mineral composition of tungsten formation is given, with a discussion of the occurrence of tungsten formations of various types. Geological conditions of the occurrence of various tungsten formations demands different methods of searching for tungsten beds. These geological conditions for various main tungsten for-

28T69

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USSR/Metals (Contd) Mar/Apr 1947

mations in the USSR are discussed. Author was assisted in this work by D. N. Kazanli.

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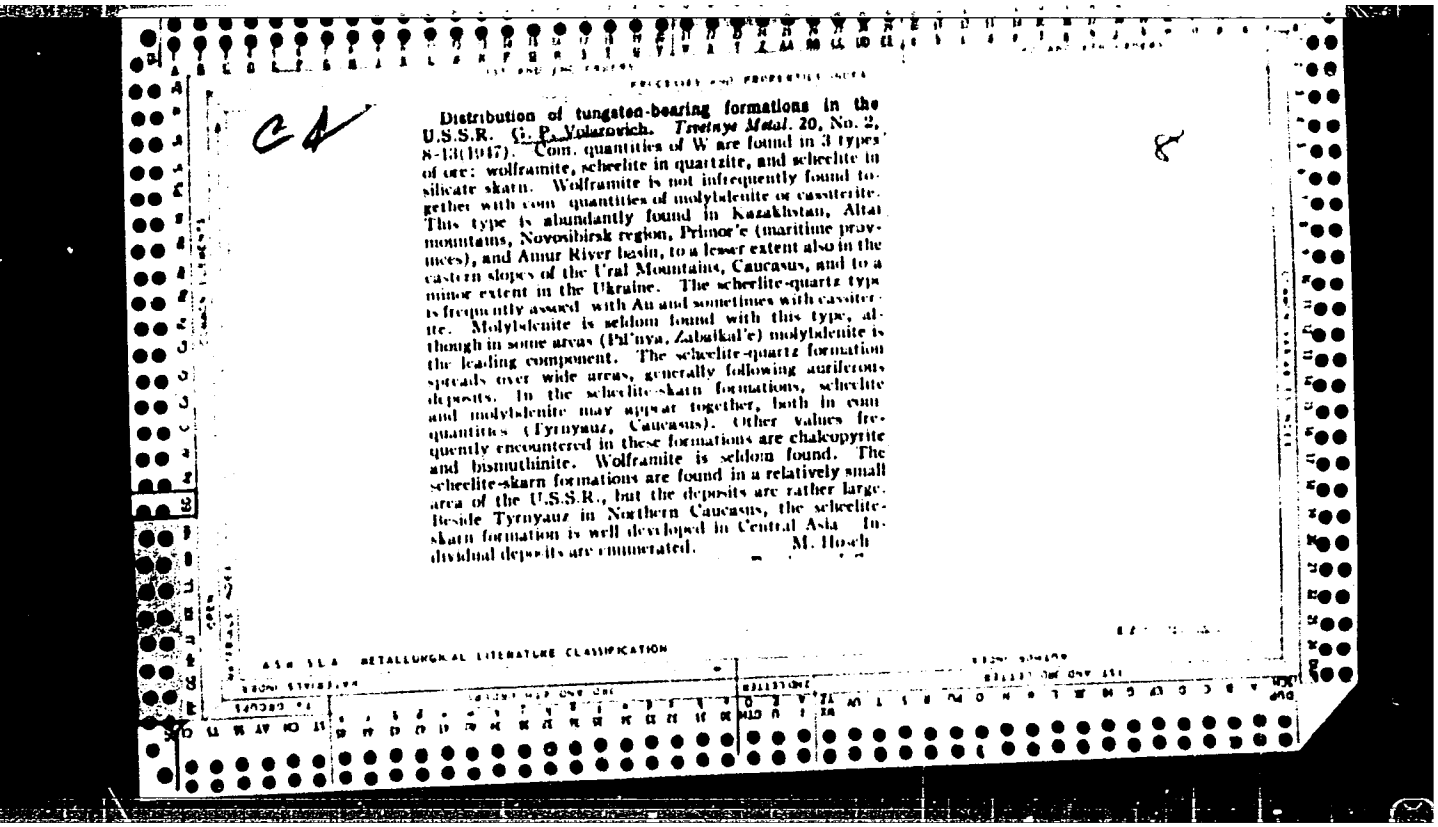


Distribution of tungsten-bearing formations in the U.S.S.R. G. P. Volozovich. *Tsvetnye Metal.* 20, No. 2, 8-13(1947). Com. quantities of W are found in 3 types of ore: wolframite, scheelite in quartzite, and scheelite in silicate skarn. Wolframite is not infrequently found together with com. quantities of molybdenite or cassiterite. This type is abundantly found in Kazakhstan, Altai mountains, Novosibirsk region, Primor'e (maritime provinces), and Amur River basin, to a lesser extent also in the eastern slopes of the Ural Mountains, Caucasus, and to a minor extent in the Ukraine. The scheelite-quartz type is frequently assocd with Au and sometimes with cassiterite. Molybdenite is seldom found with this type, although in some areas (Pil'uya, Zabaikal'e) molybdenite is the leading component. The scheelite-quartz formation spreads over wide areas, generally following auriferous deposits. In the scheelite-skarn formations, scheelite and molybdenite may appear together, both in com. quantities (Tyrnyauz, Caucasus). Other values frequently encountered in these formations are chalcopyrite and bismuthinite. Wolframite is seldom found. The scheelite-skarn formations are found in a relatively small area of the U.S.S.R., but the deposits are rather large. Beside Tyrnyauz in Northern Caucasus, the scheelite-skarn formation is well developed in Central Asia. Individual deposits are enumerated. M. Hoch

VOLAROVICH, G. P.

"The Distribution of Gold-bearing Regions of the Far East in the Zone of Jointing of the Pacific Ocean and Mongolian Structures"

report presented at the First All-Union Conference on the Geology and Metallogeny of the Pacific Ocean Ore Belt, Vladivostok, 2 October 1960

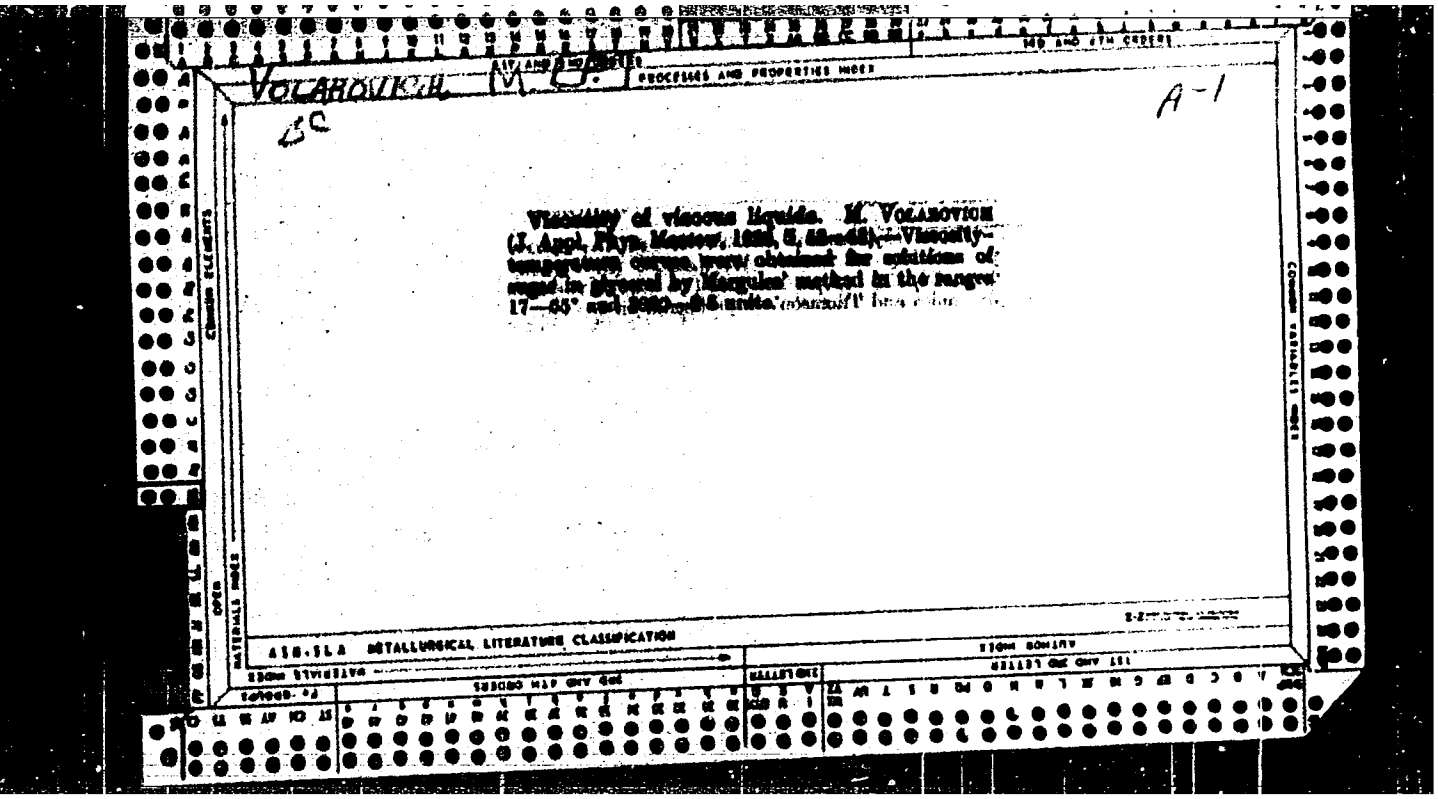
So: Geologiya Rudnykh Mestorozhdeniy, No. 1, 1961, pages 119-127

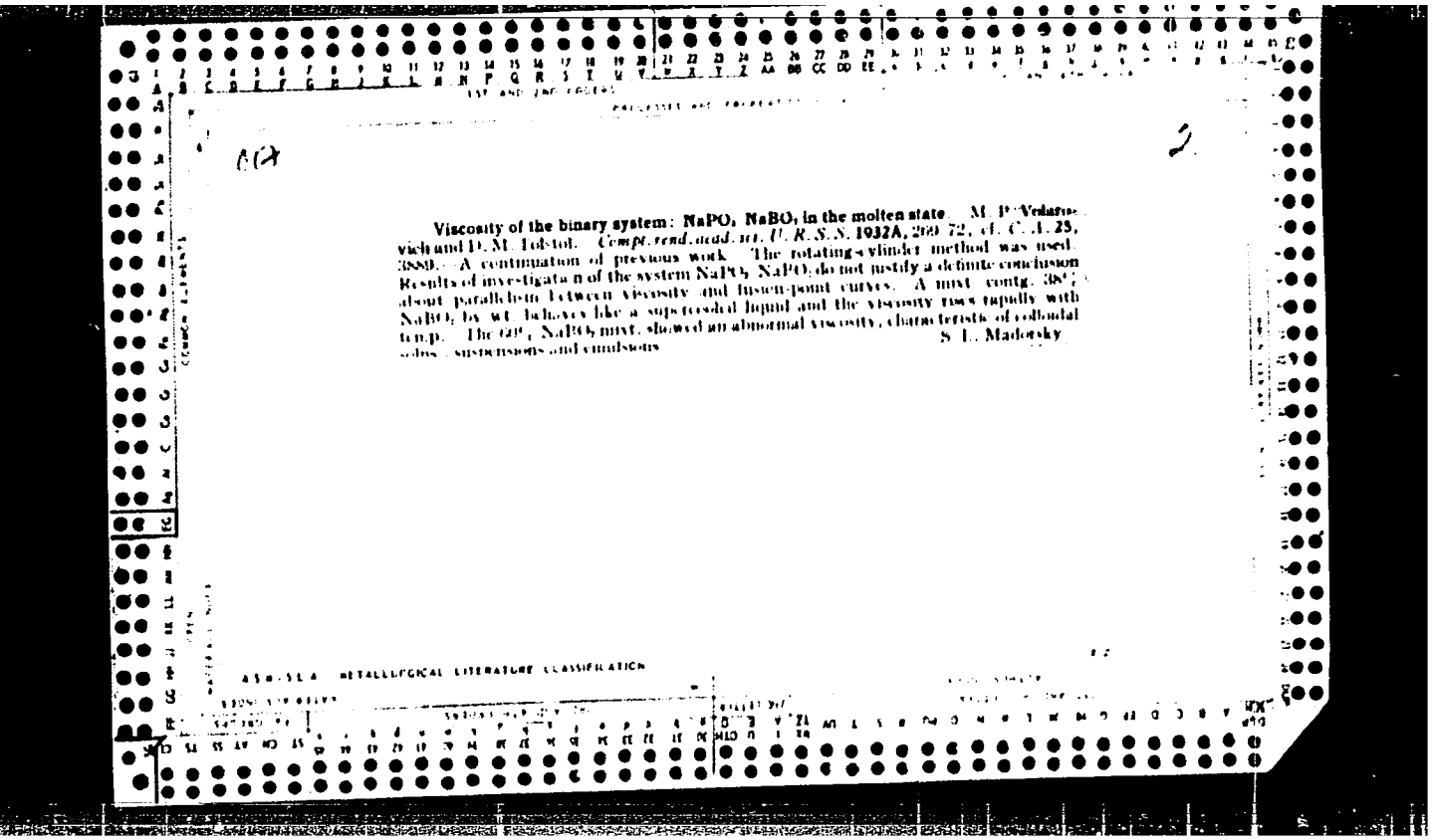
VOLARCVICH, G. P., KROPOTKIN, P. N., and KRASNYY, L. I. (speaker)

"Main Features of the Geologic Structure of the Northwestern Part of the Pacific Ocean Ore Belt"

report presented at the First All-Union Conference on the Geology and Metallurgy of the Pacific Ocean Ore Belt, Vladivostok, 2 October 1960.

So: Geologiya Rudnykh Mestorozhdeniy, No 1, 1961 pages 119-127

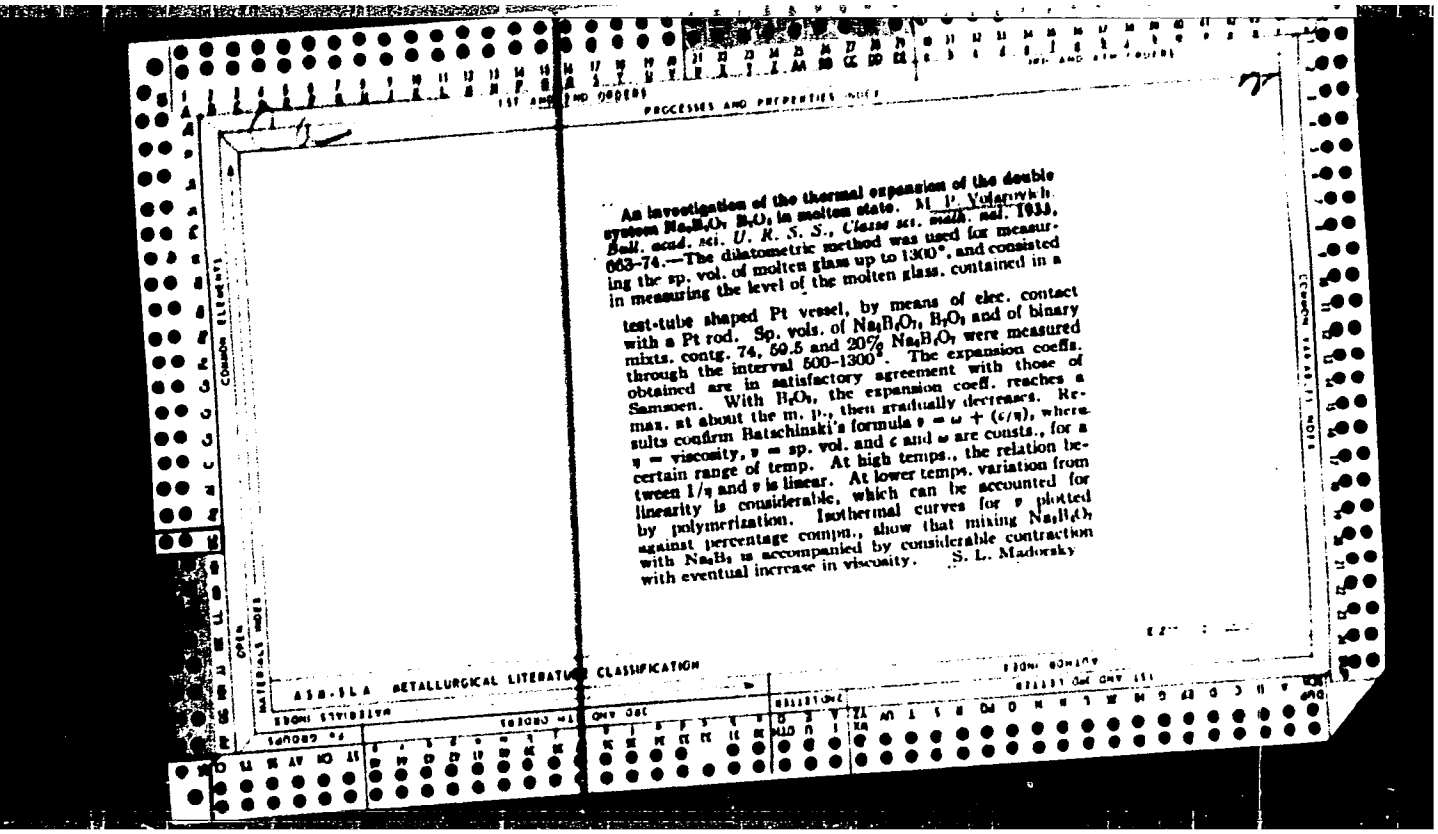




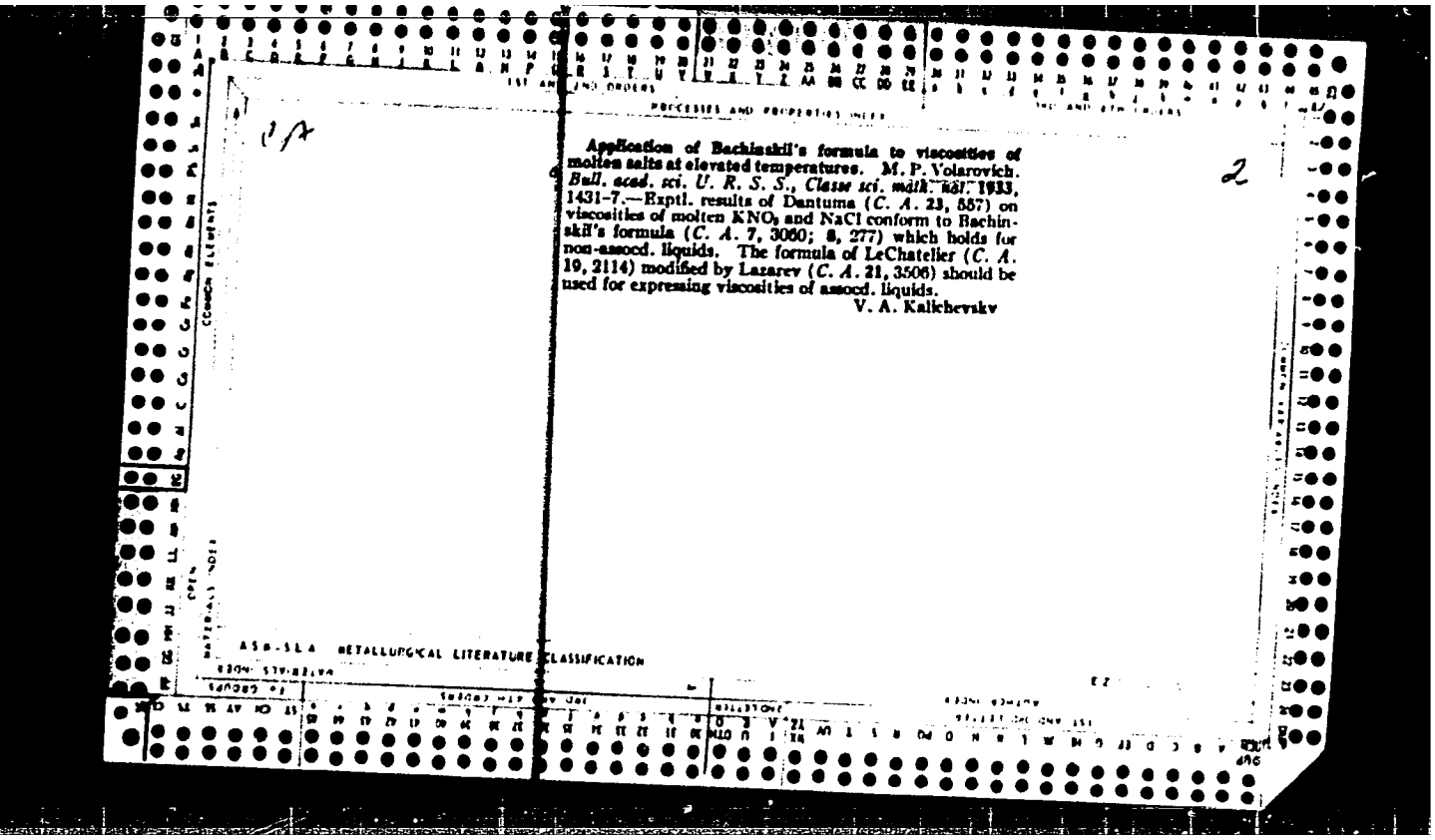
Viscosity of the binary system: $NaPO_3$, $NaBO_2$ in the molten state. M. P. Vedatsevich and D. M. Tolstoi. *Compt. rend. acad. sci. U. R. S. S.* 1932A, 288–72; cf. C. A. 25, 3880. A continuation of previous work. The rotating-cylinder method was used. Results of investigation of the system $NaPO_3$, $NaPO_2$ do not justify a definite conclusion about parallelism between viscosity and fusion-point curves. A mixt. contg. 38% $NaBO_2$ by wt. behaves like a supercooled liquid and the viscosity rises rapidly with temp. The 60% $NaBO_2$ mixt. showed an abnormal viscosity, characteristic of colloidal solns., suspensions and emulsions.

S. L. Madorsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

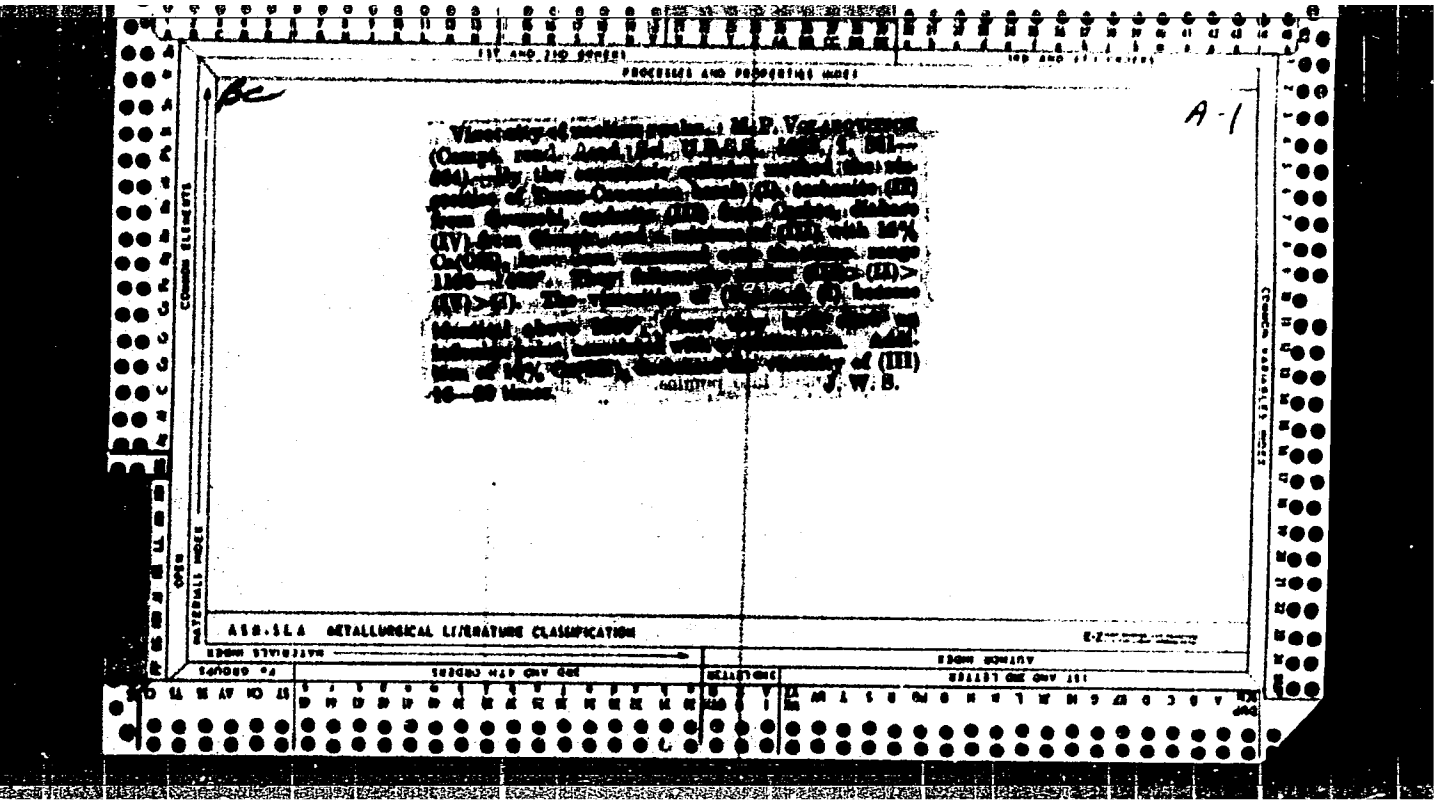


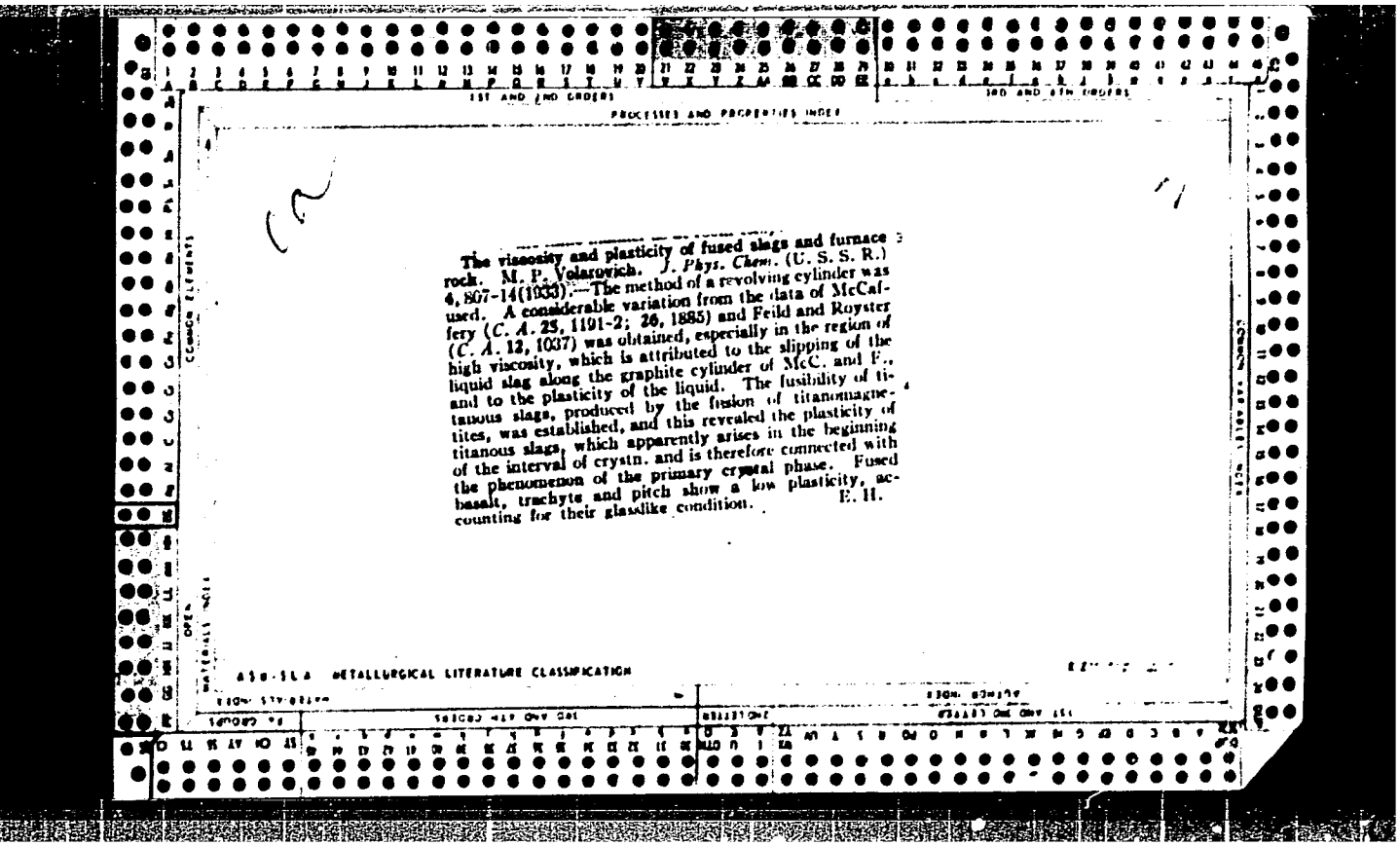
An investigation of the thermal expansion of the double system $Na_2B_4O_7$–B_2O_3 in molten state. M. P. Volarovich. *Bull. acad. sci. U. R. S. S., Classe sci. math. nat.* 1933, 663–74.—The dilatometric method was used for measuring the sp. vol. of molten glass up to 1300°, and consisted in measuring the level of the molten glass, contained in a test-tube shaped Pt vessel, by means of elec. contact with a Pt rod. Sp. vols. of $Na_2B_4O_7$, B_2O_3 and of binary mixts. contg. 74, 59.5 and 20% $Na_2B_4O_7$ were measured through the interval 500–1300°. The expansion coeffs. obtained are in satisfactory agreement with those of Samsoen. With B_2O_3, the expansion coeff. reaches a max. at about the m. p., then gradually decreases. Results confirm Batschinski's formula $v = \omega + (c/\eta)$, where η = viscosity, v = sp. vol. and c and ω are consts., for a certain range of temp. At high temps., the relation between $1/\eta$ and v is linear. At lower temps. variation from linearity is considerable, which can be accounted for by polymerization. Isothermal curves for v plotted against percentage compn., show that mixing $Na_2B_4O_7$ with Na_2B_2 is accompanied by considerable contraction with eventual increase in viscosity. S. L. Madorsky



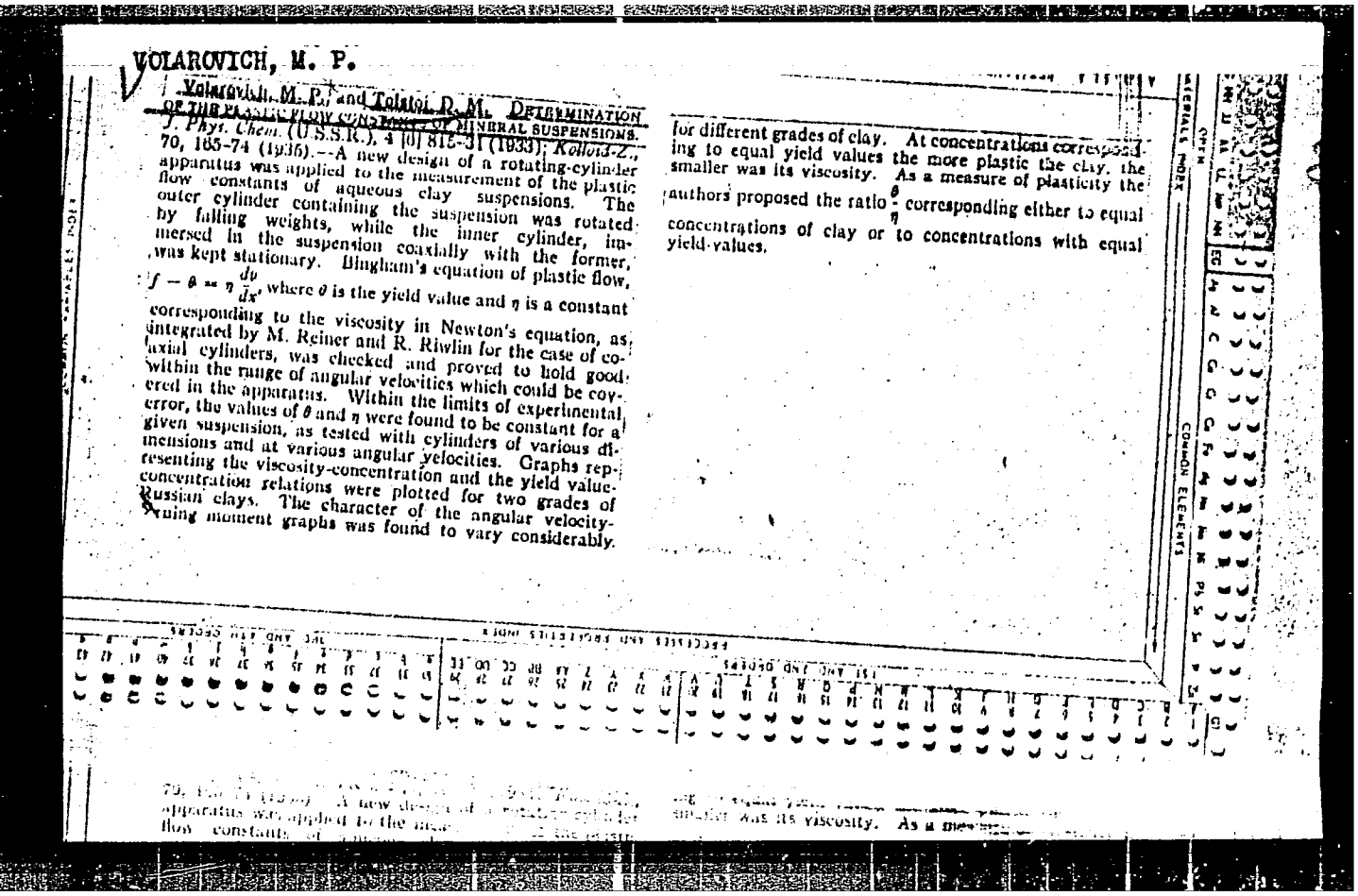
Application of Bachinskii's formula to viscosities of molten salts at elevated temperatures. M. P. Volarovich. *Bull. acad. sci. U. R. S. S., Classe sci. math. nat.* 1933, 1431–7.—Exptl. results of Dantuma (*C. A.* 23, 557) on viscosities of molten KNO_3 and NaCl conform to Bachinskii's formula (*C. A.* 7, 3060; 8, 277) which holds for non-assocd. liquids. The formula of LeChatelier (*C. A.* 19, 2114) modified by Lazarev (*C. A.* 21, 3506) should be used for expressing viscosities of assocd. liquids.

V. A. Kalichevsky



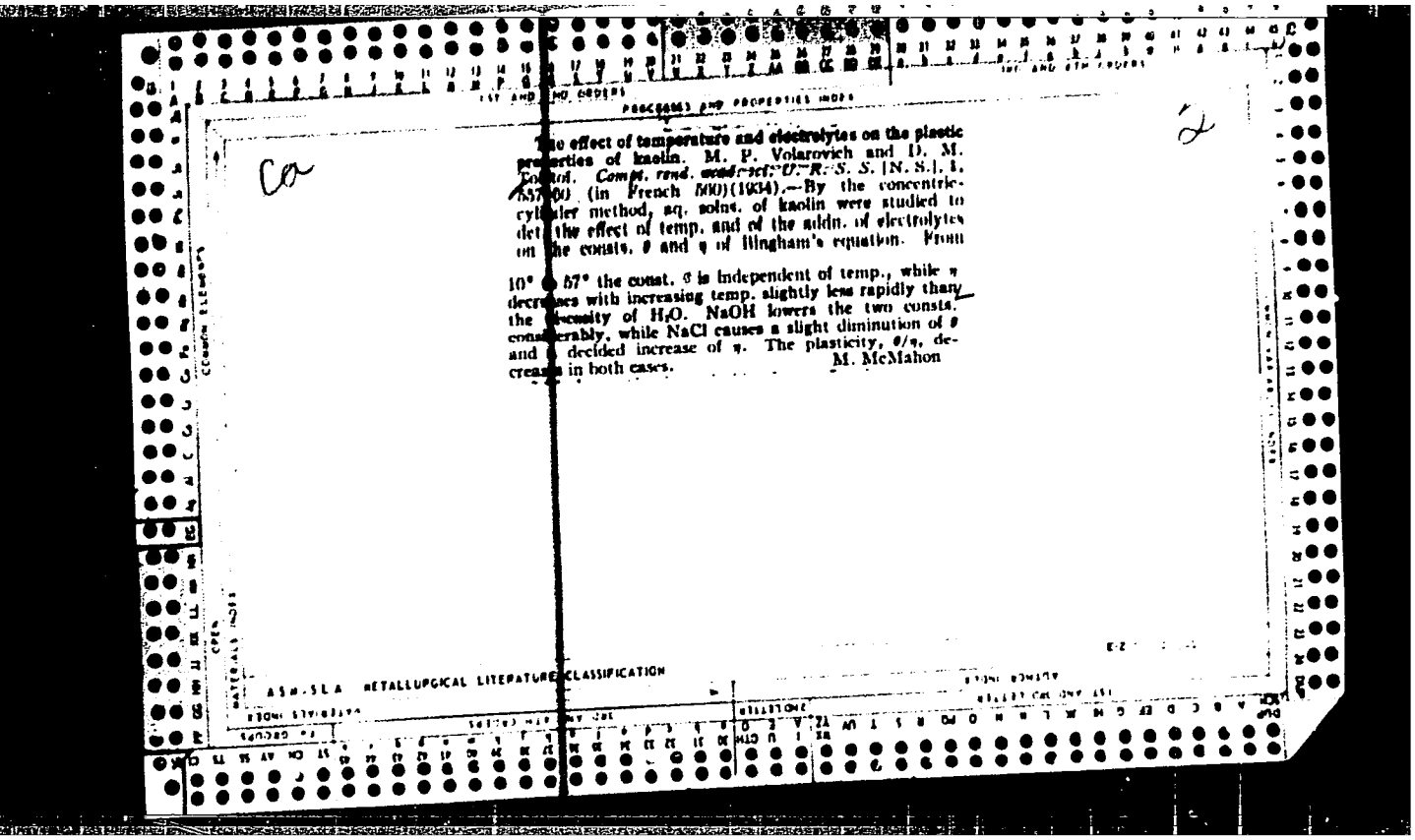


The viscosity and plasticity of fused slags and furnace rock. M. P. Volarovich. *J. Phys. Chem.* (U. S. S. R.) 4, 807-14(1933).—The method of a revolving cylinder was used. A considerable variation from the data of McCaffery (*C. A.* 25, 1191-2; 26, 1885) and Feild and Royster (*C. A.* 12, 1037) was obtained, especially in the region of high viscosity, which is attributed to the slipping of the liquid slag along the graphite cylinder of McC. and F., and to the plasticity of the liquid. The fusibility of titanous slags, produced by the fusion of titanomagnetites, was established, and this revealed the plasticity of titanous slags, which apparently arises in the beginning of the interval of crystn. and is therefore connected with the phenomenon of the primary crystal phase. Fused basalt, trachyte and pitch show a low plasticity, accounting for their glasslike condition. E. H.



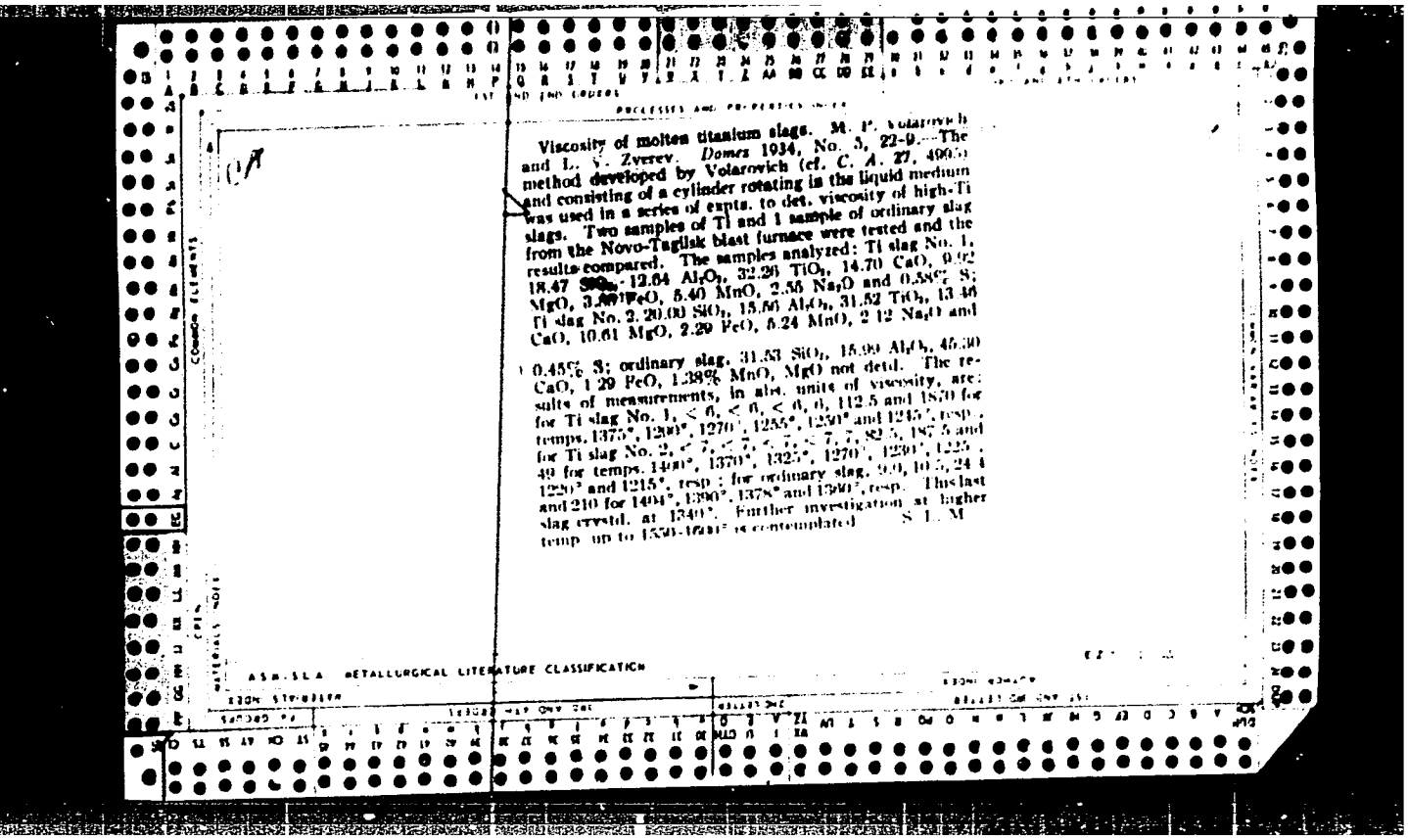
VOLAROVICH, M. P.

Volarovich, M. P., and Tolstoi, D. M. DETERMINATION OF THE PLASTIC FLOW CONSTANTS OF MINERAL SUSPENSIONS. *J. Phys. Chem.* (U.S.S.R.), 4 [0] 815-31 (1933); *Kolloid-Z.*, 70, 165-74 (1936).--A new design of a rotating-cylinder apparatus was applied to the measurement of the plastic flow constants of aqueous clay suspensions. The outer cylinder containing the suspension was rotated by falling weights, while the inner cylinder, immersed in the suspension coaxially with the former, was kept stationary. Bingham's equation of plastic flow, $f - \theta = \eta \frac{dv}{dx}$, where θ is the yield value and η is a constant corresponding to the viscosity in Newton's equation, as integrated by M. Reiner and R. Riwlin for the case of coaxial cylinders, was checked and proved to hold good within the range of angular velocities which could be covered in the apparatus. Within the limits of experimental error, the values of θ and η were found to be constant for a given suspension, as tested with cylinders of various dimensions and at various angular velocities. Graphs representing the viscosity-concentration and the yield value-concentration relations were plotted for two grades of Russian clays. The character of the angular velocity-turning moment graphs was found to vary considerably for different grades of clay. At concentrations corresponding to equal yield values the more plastic the clay, the smaller was its viscosity. As a measure of plasticity the authors proposed the ratio $\frac{\theta}{\eta}$ corresponding either to equal concentrations of clay or to concentrations with equal yield-values.

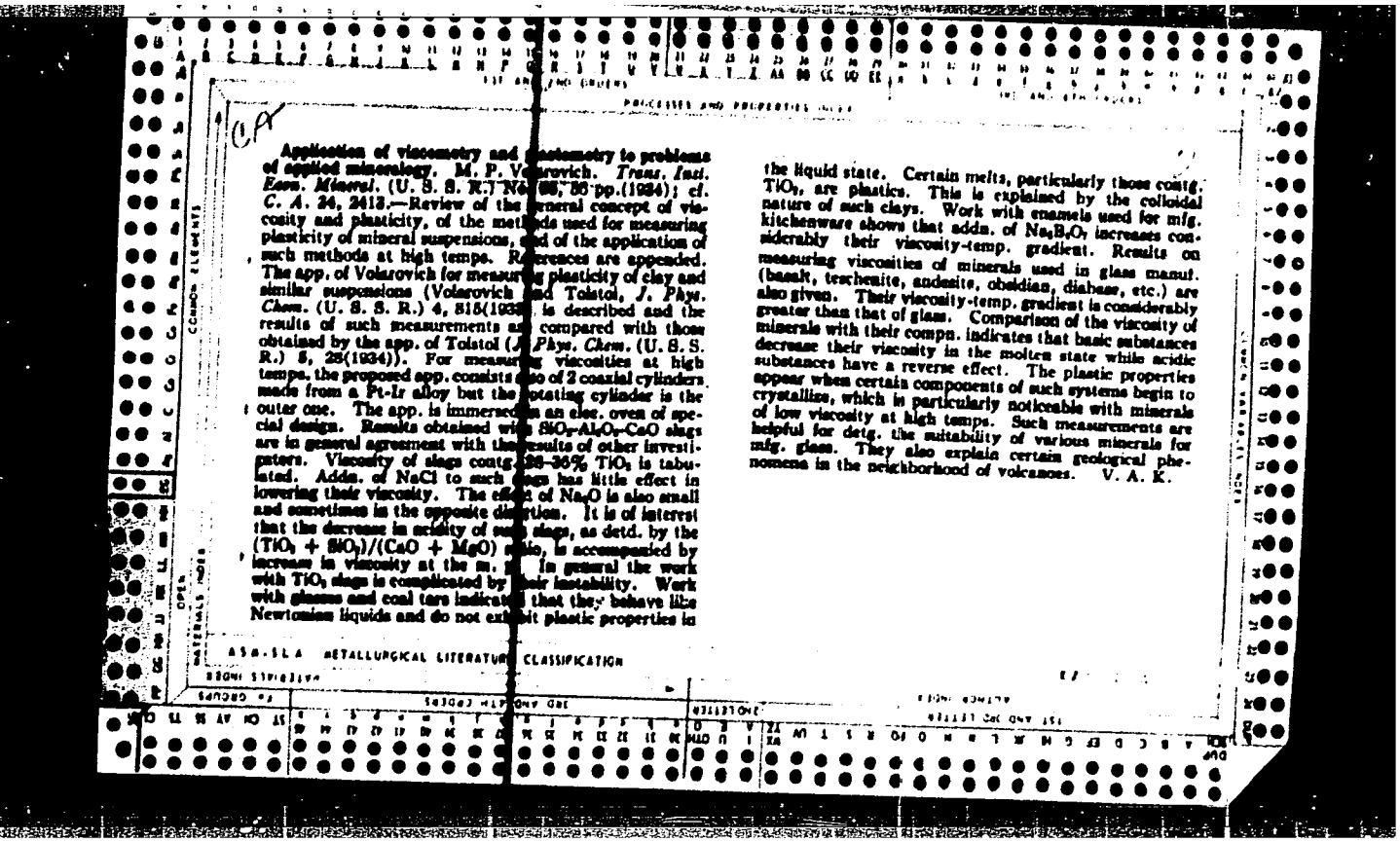


The effect of temperature and electrolytes on the plastic properties of kaolin. M. P. Volarovich and D. M. Eroféd. *Compt. rend. acad. sci. U. R. S. S.* [N. S.] 1, 557-60 (in French 560)(1934).—By the concentric-cylinder method, aq. solns. of kaolin were studied to det. the effect of temp. and of the addn. of electrolytes on the consts. θ and η of Bingham's equation. From 10° to 57° the const. θ is independent of temp., while η decreases with increasing temp. slightly less rapidly than the viscosity of H_2O. NaOH lowers the two consts. considerably, while NaCl causes a slight diminution of θ and a decided increase of η. The plasticity, θ/η, decreases in both cases.

M. McMahon



Viscosity of molten titanium slags. M. P. Volarovich and L. V. Zverev. *Domez* 1934, No. 5, 22-9.—The method developed by Volarovich (*cf. C. A.* 27, 4905) and consisting of a cylinder rotating in the liquid medium was used in a series of expts. to det. viscosity of high-Ti slags. Two samples of Ti and 1 sample of ordinary slag from the Novo-Tagilsk blast furnace were tested and the results compared. The samples analyzed: Ti slag No. 1, 18.47 SiO_2, 12.64 Al_2O_3, 32.26 TiO_2, 14.70 CaO, 9.02 MgO, 3.89 FeO, 5.40 MnO, 2.58 Na_2O and 0.58% S; Ti slag No. 2, 20.00 SiO_2, 15.66 Al_2O_3, 31.52 TiO_2, 13.46 CaO, 10.61 MgO, 2.29 FeO, 6.24 MnO, 2.12 Na_2O and 0.45% S; ordinary slag, 31.53 SiO_2, 15.99 Al_2O_3, 45.30 CaO, 1.29 FeO, 1.38% MnO, MgO not detd. The results of measurements, in abs. units of viscosity, are: for Ti slag No. 1, < 6, < 6, < 6, 6, 6, 112.5 and 1870 for temps. 1375°, 1290°, 1270°, 1255°, 1250° and 1245°, resp.; for Ti slag No. 2, < 7, < 7, < 7, < 7, < 7, > 82.5, 187.5 and 49 for temps. 1440°, 1370°, 1325°, 1270°, 1250°, 1225°, 1220° and 1215°, resp.; for ordinary slag, 9.0, 10.5, 24 and 210 for 1404°, 1390°, 1378° and 1360°, resp. The last slag crystd. at 1340°. Further investigation at higher temp. up to 1550-1600° is contemplated. S. L. M.



Application of viscometry and plastometry to problems of applied mineralogy. M. P. Volarovich. *Trans. Inst. Econ. Mineral.* (U. S. S. R.) No. [illegible], 56 pp. (1934); cf. *C. A.* 24, 2413.—Review of the general concept of viscosity and plasticity, of the methods used for measuring plasticity of mineral suspensions, and of the application of such methods at high temps. References are appended. The app. of Volarovich for measuring plasticity of clay and similar suspensions (Volarovich and Tolstoi, *J. Phys. Chem.* (U. S. S. R.) 4, 815(1933)) is described and the results of such measurements are compared with those obtained by the app. of Tolstoi (*J. Phys. Chem.* (U. S. S. R.) 8, 25(1934)). For measuring viscosities at high temps. the proposed app. consists also of 2 coaxial cylinders made from a Pt-Ir alloy but the rotating cylinder is the outer one. The app. is immersed in an elec. oven of special design. Results obtained with SiO_2-Al_2O_3-CaO slags are in general agreement with the results of other investigators. Viscosity of slags contg. 28–36% TiO_2 is tabulated. Adds. of NaCl to such slags has little effect in lowering their viscosity. The effect of Na_2O is also small and sometimes in the opposite direction. It is of interest that the decrease in acidity of such slags, as detd. by the $(TiO_2 + SiO_2)/(CaO + MgO)$ ratio, is accompanied by increase in viscosity at the m. p. In general the work with TiO_2 slags is complicated by their instability. Work with glasses and coal tars indicates that they behave like Newtonian liquids and do not exhibit plastic properties in the liquid state. Certain melts, particularly those contg. TiO_2, are plastics. This is explained by the colloidal nature of such clays. Work with enamels used for mfg. kitchenware shows that adds. of $Na_2B_4O_7$ increases considerably their viscosity-temp. gradient. Results on measuring viscosities of minerals used in glass manuf. (basalt, teschenite, andesite, obsidian, diabase, etc.) are also given. Their viscosity-temp. gradient is considerably greater than that of glass. Comparison of the viscosity of minerals with their compn. indicates that basic substances decrease their viscosity in the molten state while acidic substances have a reverse effect. The plastic properties appear when certain components of such systems begin to crystallize, which is particularly noticeable with minerals of low viscosity at high temps. Such measurements are helpful for detg. the suitability of various minerals for mfg. glass. They also explain certain geological phenomena in the neighborhood of volcanoes. V. A. K.

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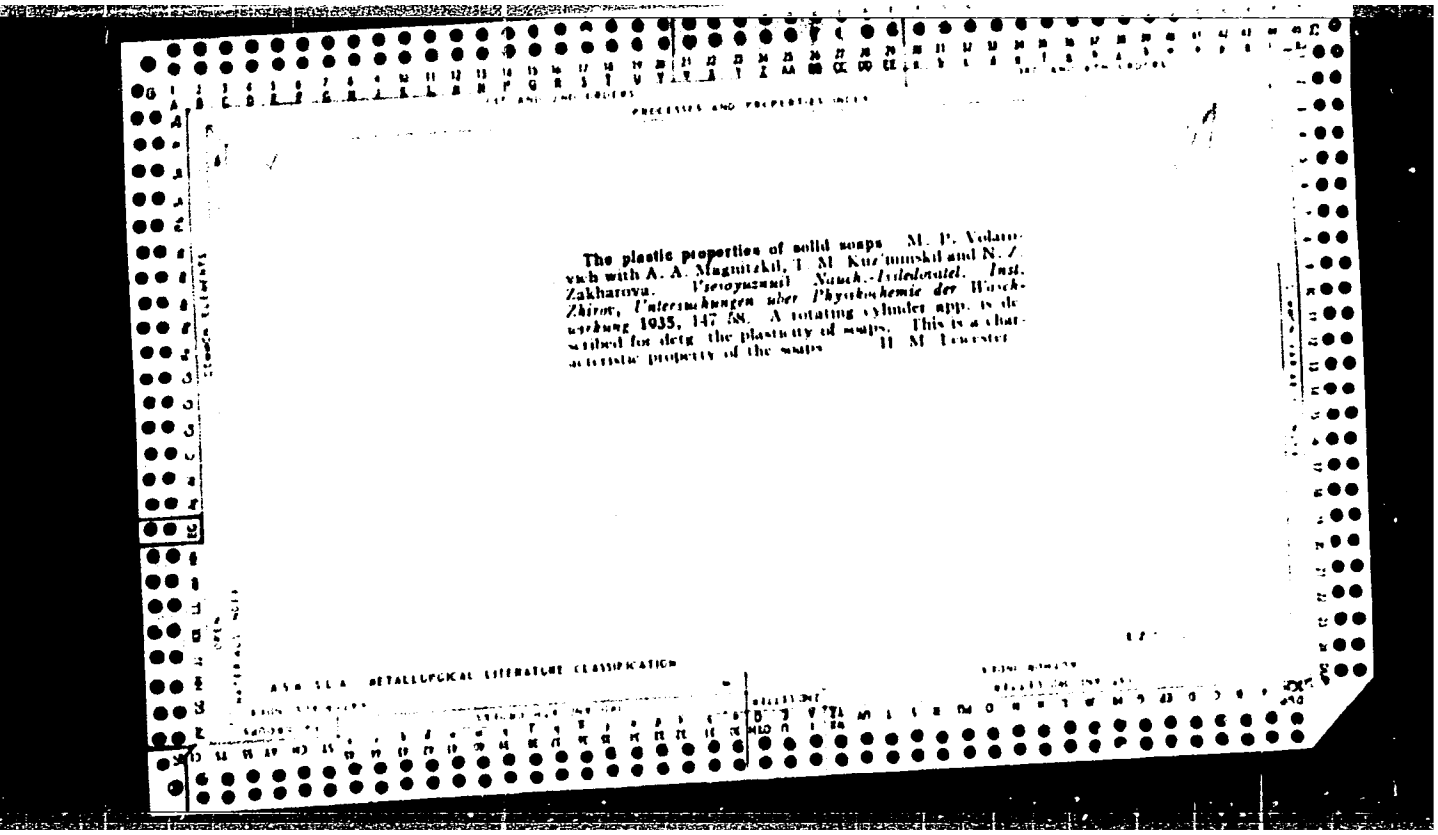
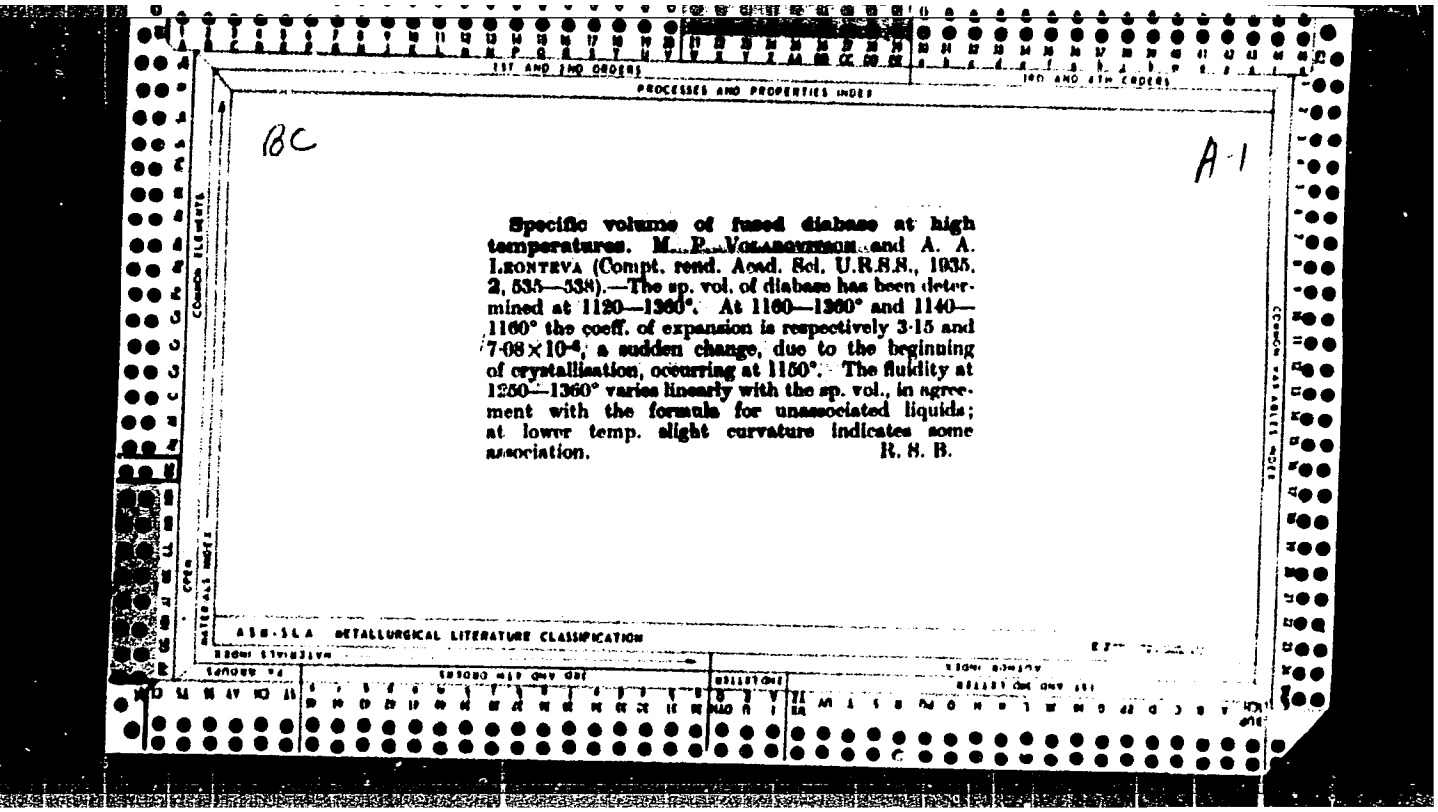


The plastic properties of solid soaps. M. P. Volarovich with A. A. Magnitskii, I. M. Kuz'minskii and N. Z. Zakharova. *Vsesoyuznui. Nauch.-Issledovatel. Inst. Zhirov, Untersuchungen über Physikochemie der Waschwirkung* 1935, 147 pp. A rotating cylinder app. is described for detg. the plasticity of soaps. This is a characteristic property of the soaps. H. M. Leicester



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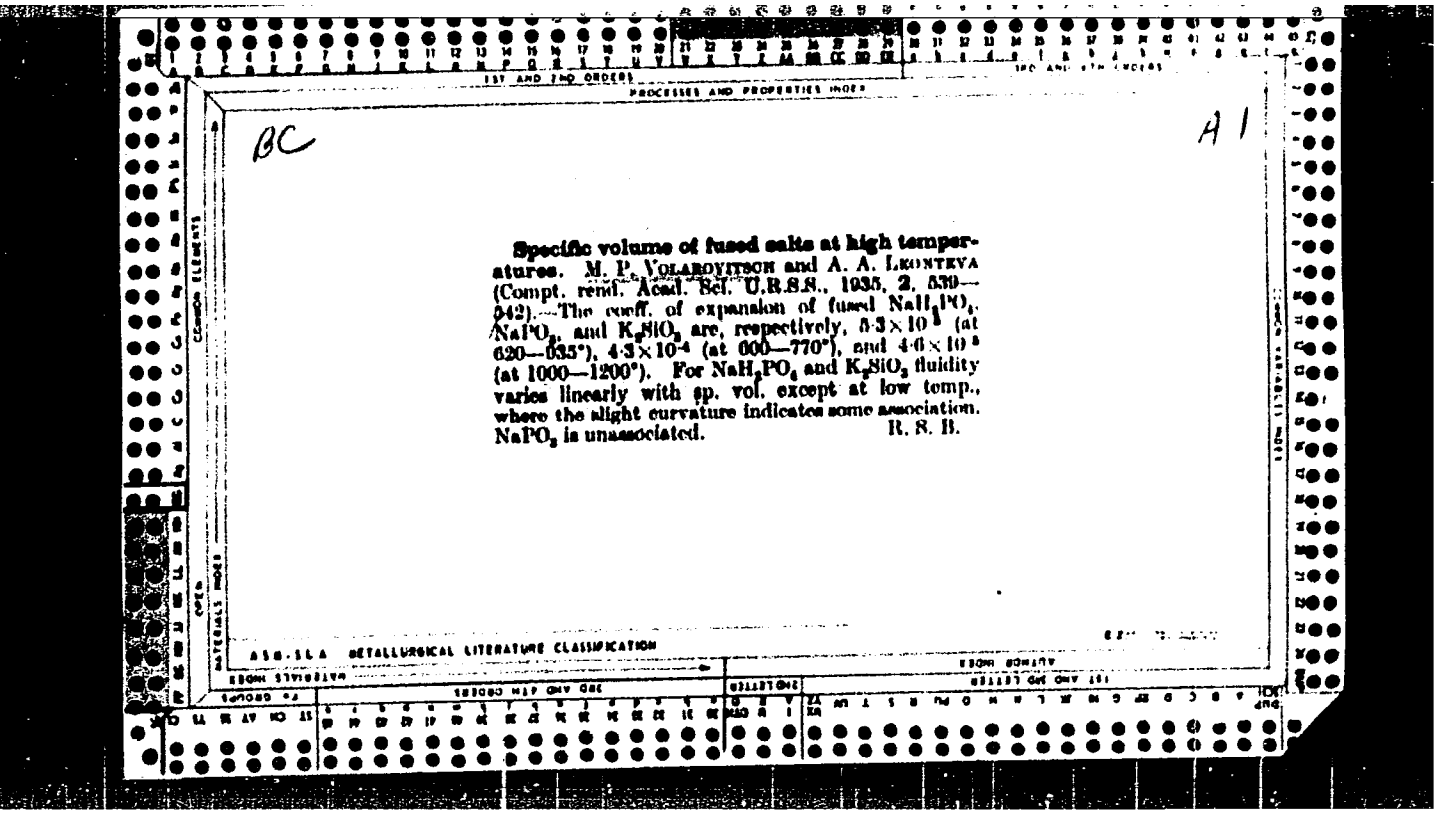
A-1

Specific volume of fused diabase at high temperatures. M. P. Volarovitch and A. A. Leontyeva (Compt. rend. Acad. Sci. U.R.S.S., 1935, 2, 535—538).—The sp. vol. of diabase has been determined at 1120—1360°. At 1160—1360° and 1140—1160° the coeff. of expansion is respectively 3·15 and 7·08 × 10^{-4}, a sudden change, due to the beginning of crystallisation, occurring at 1150°. The fluidity at 1250—1360° varies linearly with the sp. vol., in agreement with the formula for unassociated liquids; at lower temp. slight curvature indicates some association. R. S. B.

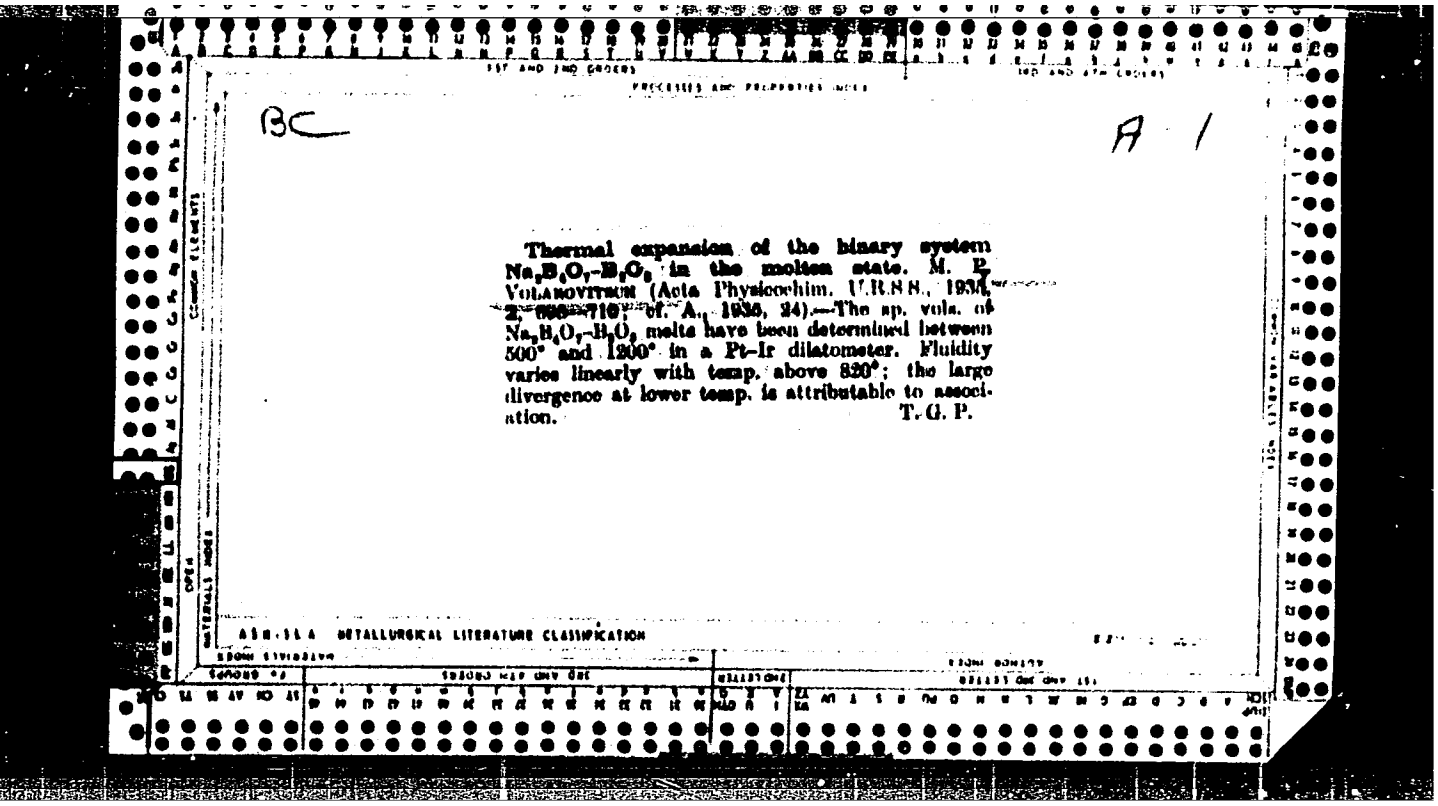


BC

A1

Specific volume of fused salts at high temperatures. M. P. VOLAROVITSCH and A. A. LEONTEVA (Compt. rend. Acad. Sci. U.R.S.S., 1935, **2**, 539—542).—The coeff. of expansion of fused NaH_2PO_4, $NaPO_3$, and K_2SiO_3 are, respectively, $5{\cdot}3\times10^{-4}$ (at 620—635°), $4{\cdot}3\times10^{-4}$ (at 660—770°), and $4{\cdot}6\times10^{-4}$ (at 1000—1200°). For NaH_2PO_4 and K_2SiO_3 fluidity varies linearly with sp. vol. except at low temp., where the slight curvature indicates some association. $NaPO_3$ is unassociated. R. S. B.

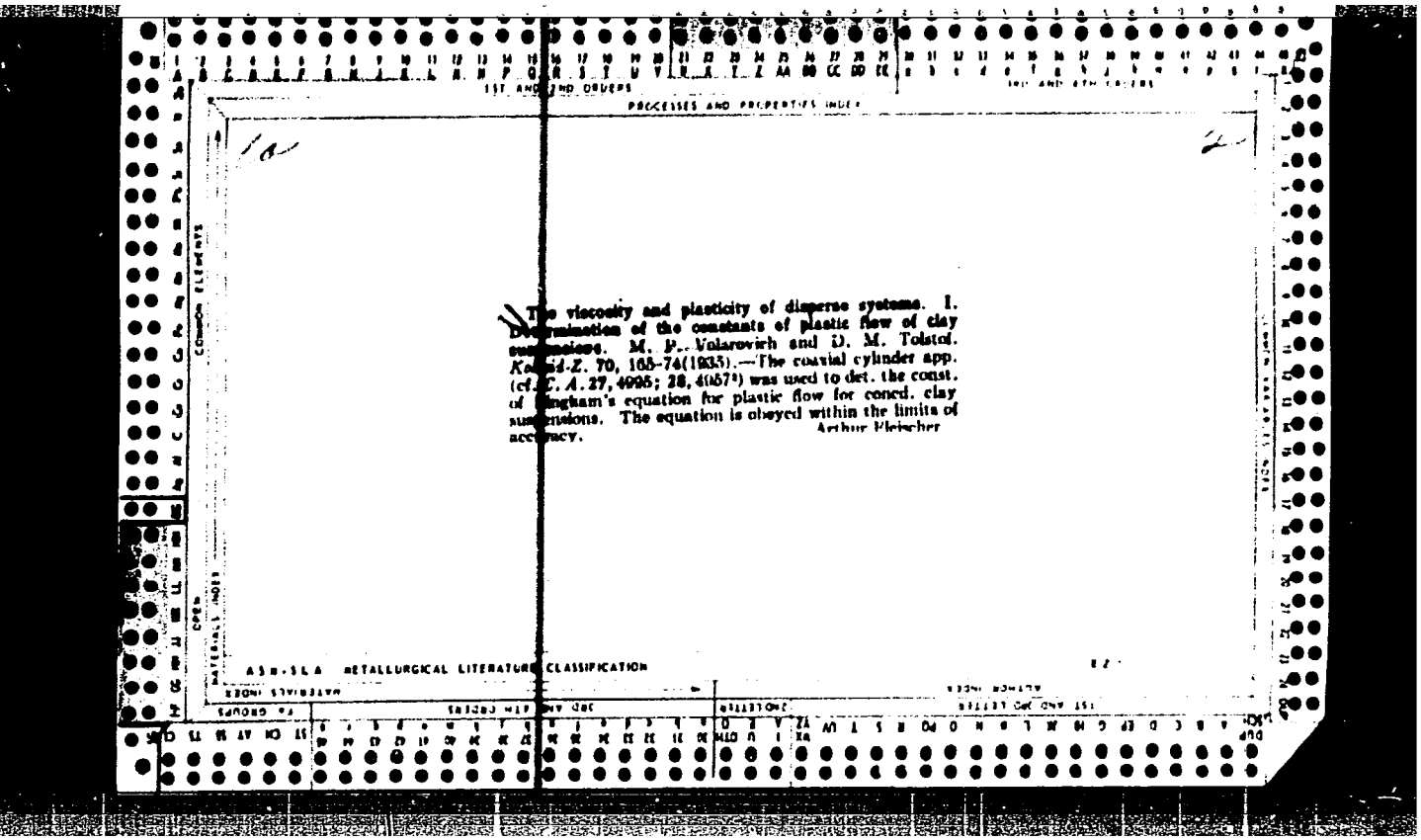
A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION



BC

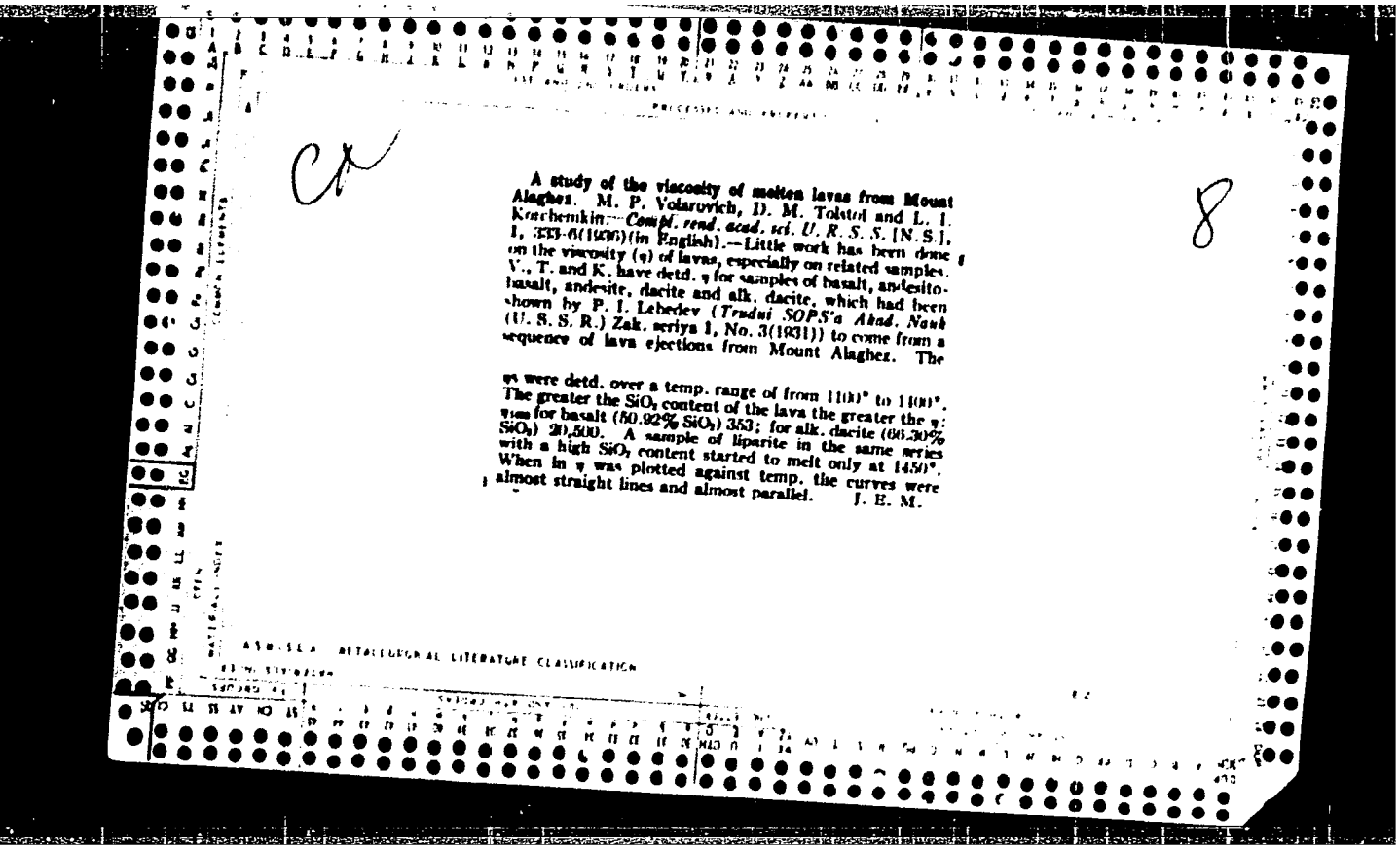
A 1

Thermal expansion of the binary system $Na_2B_4O_7$–B_2O_3 in the molten state. M. P. Volarovitsch (Acta Physicochim. U.R.S.S., 1935, 2, 699–710; cf. A., 1936, 34).—The sp. vols. of $Na_2B_4O_7$–B_2O_3 melts have been determined between 500° and 1200° in a Pt–Ir dilatometer. Fluidity varies linearly with temp. above 820°; the large divergence at lower temp. is attributable to association. T. G. P.

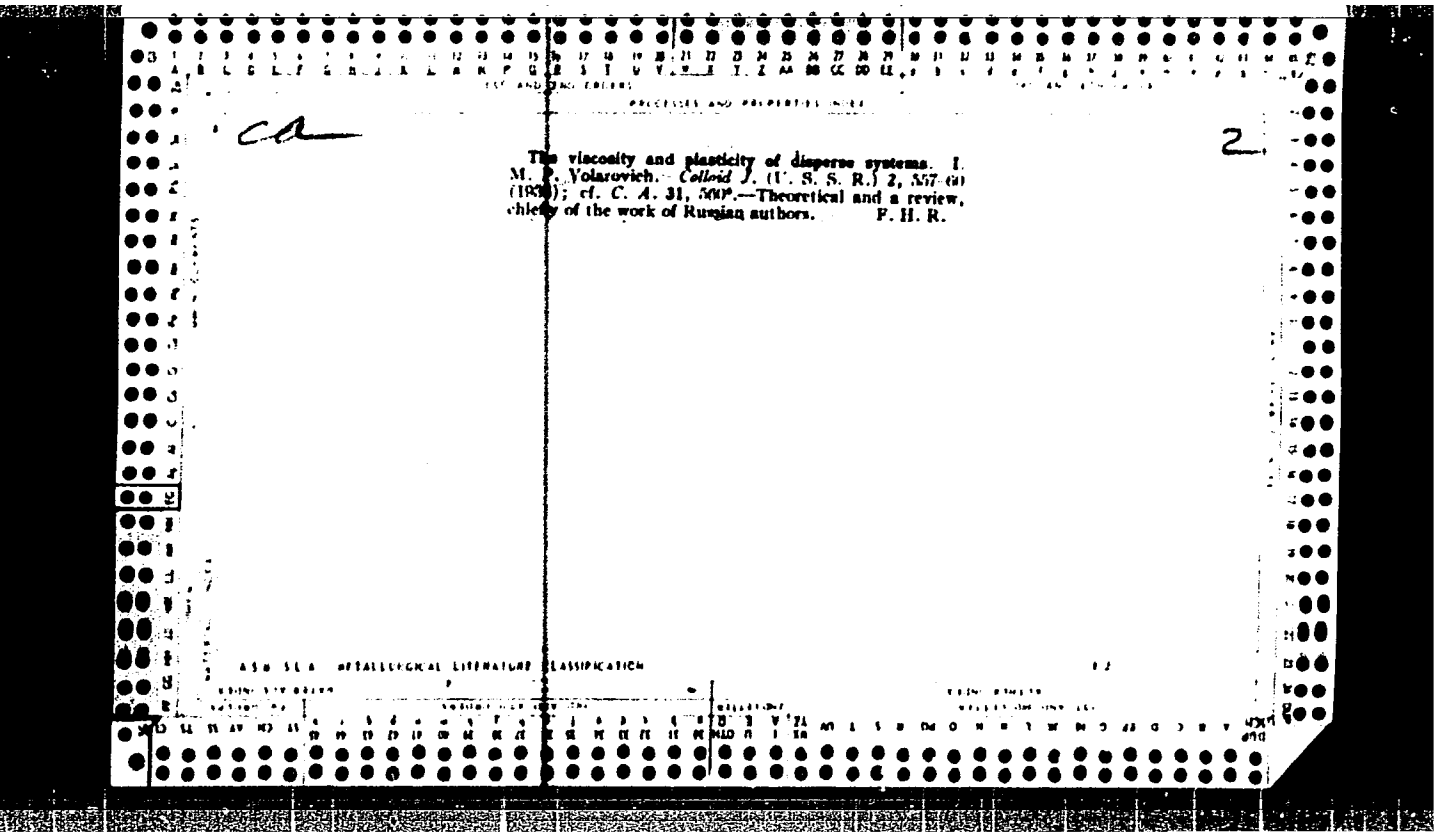


The viscosity and plasticity of disperse systems. I. Determination of the constants of plastic flow of clay suspensions. M. P. Volarovich and D. M. Tolstoi. *Kolloid-Z.* 70, 165–74(1935).—The coaxial cylinder app. (cf. *C. A.* 27, 4995; 28, 4057[9]) was used to det. the const. of Bingham's equation for plastic flow for concd. clay suspensions. The equation is obeyed within the limits of accuracy.

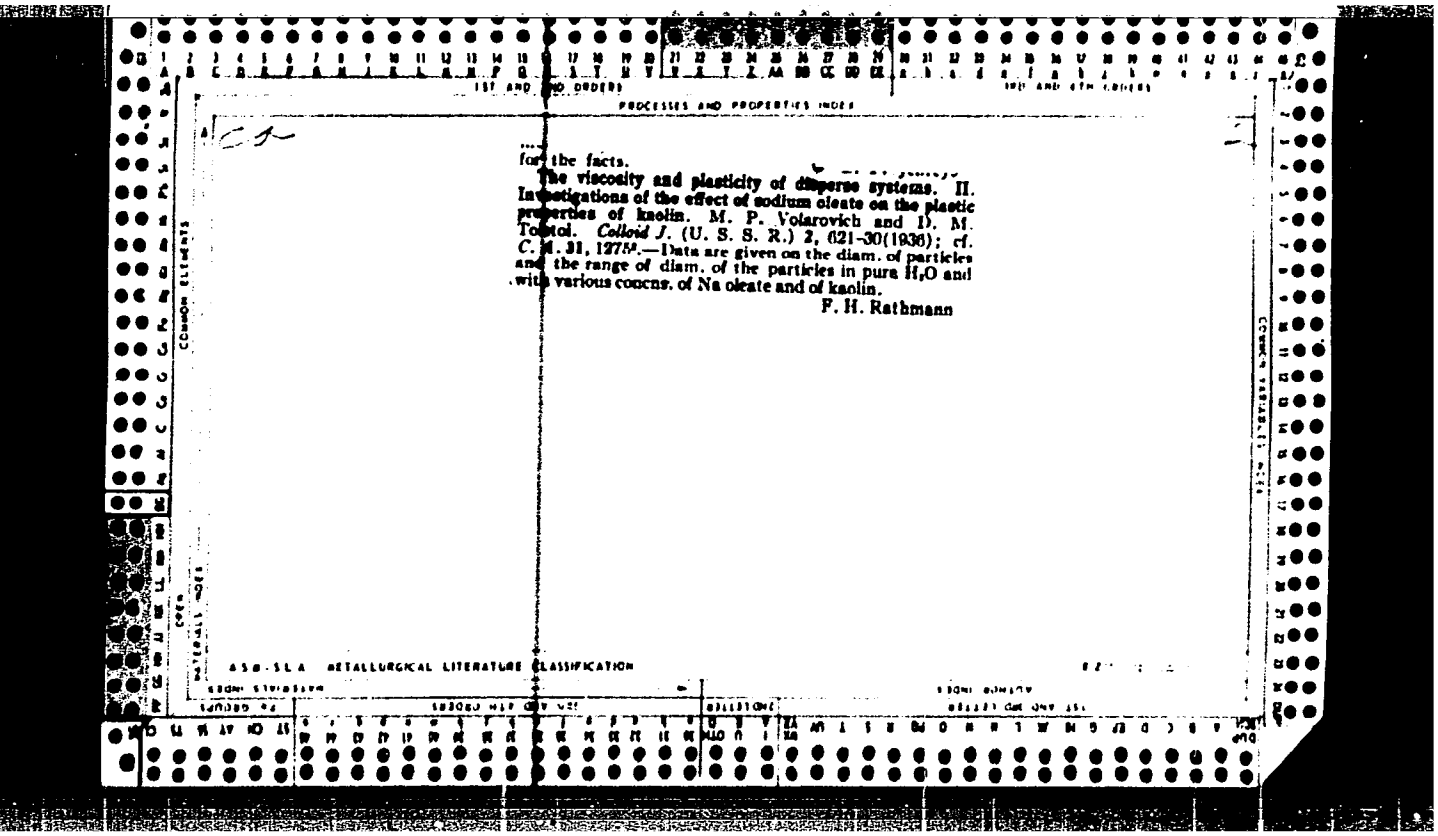
Arthur Fleischer



A study of the viscosity of molten lavas from Mount Alaghez. M. P. Volarovich, D. M. Tolstoi and L. I. Kravchenkin.—*Compt. rend. acad. sci. U. R. S. S.* [N. S.], 1, 333-6(1936)(in English).—Little work has been done on the viscosity (η) of lavas, especially on related samples. V., T. and K. have detd. η for samples of basalt, andesito-basalt, andesite, dacite and alk. dacite, which had been shown by P. I. Lebedev (*Trudui SOPS'a Akad. Nauk* (U. S. S. R.) Zak. seriya 1, No. 3(1931)) to come from a sequence of lava ejections from Mount Alaghez. The η were detd. over a temp. range of from 1103° to 1100°. The greater the SiO_2 content of the lava the greater the η; thus for basalt (50.92% SiO_2) 353; for alk. dacite (66.30% SiO_2) 20,500. A sample of liparite in the same series with a high SiO_2 content started to melt only at 1450°. When ln η was plotted against temp. the curves were almost straight lines and almost parallel. J. E. M.



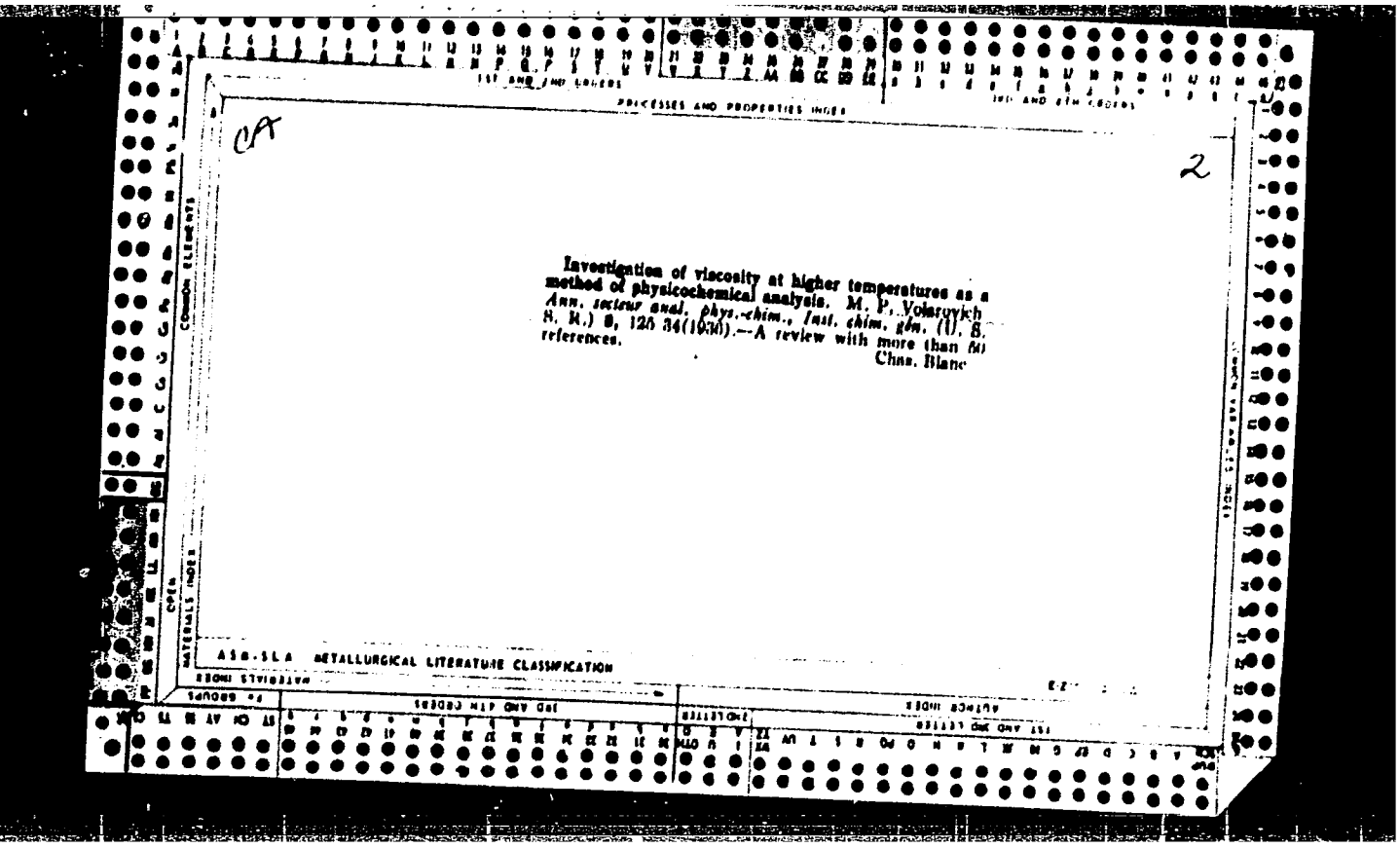
The viscosity and plasticity of disperse systems. I. M. P. Volarovich. *Colloid J.* (U. S. S. R.) 2, 557-69 (1936); *cf. C. A.* 31, 5007.—Theoretical and a review, chiefly of the work of Russian authors. F. H. R.



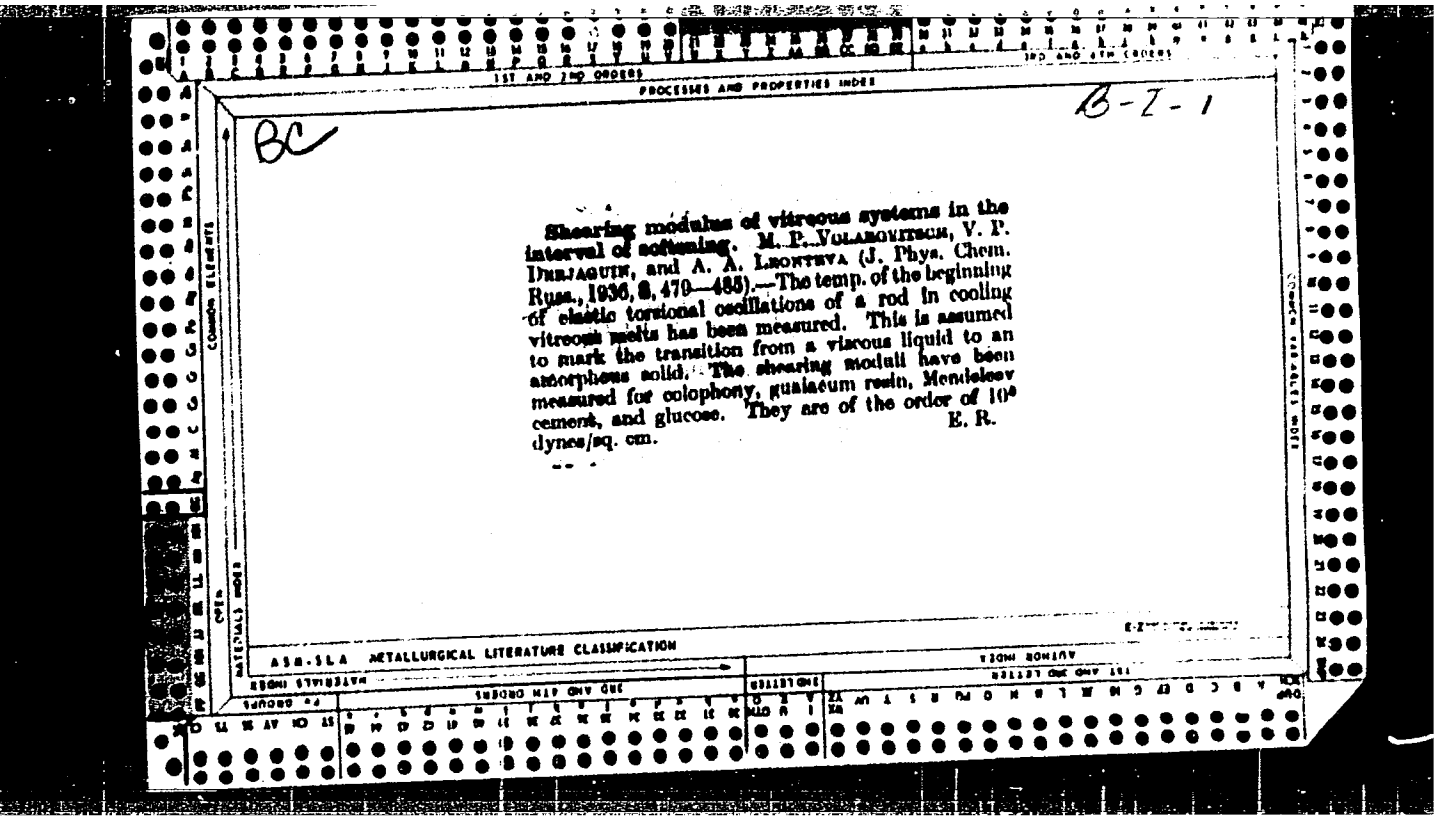
for the facts.

The viscosity and plasticity of disperse systems. II. Investigations of the effect of sodium oleate on the plastic properties of kaolin. M. P. Volarovich and D. M. Tolstoi. *Colloid J.* (U. S. S. R.) 2, 621-30(1936); cf. *C. A.* 31, 1275*9*.—Data are given on the diam. of particles and the range of diam. of the particles in pure H_2O and with various concns. of Na oleate and of kaolin.

F. H. Rathmann



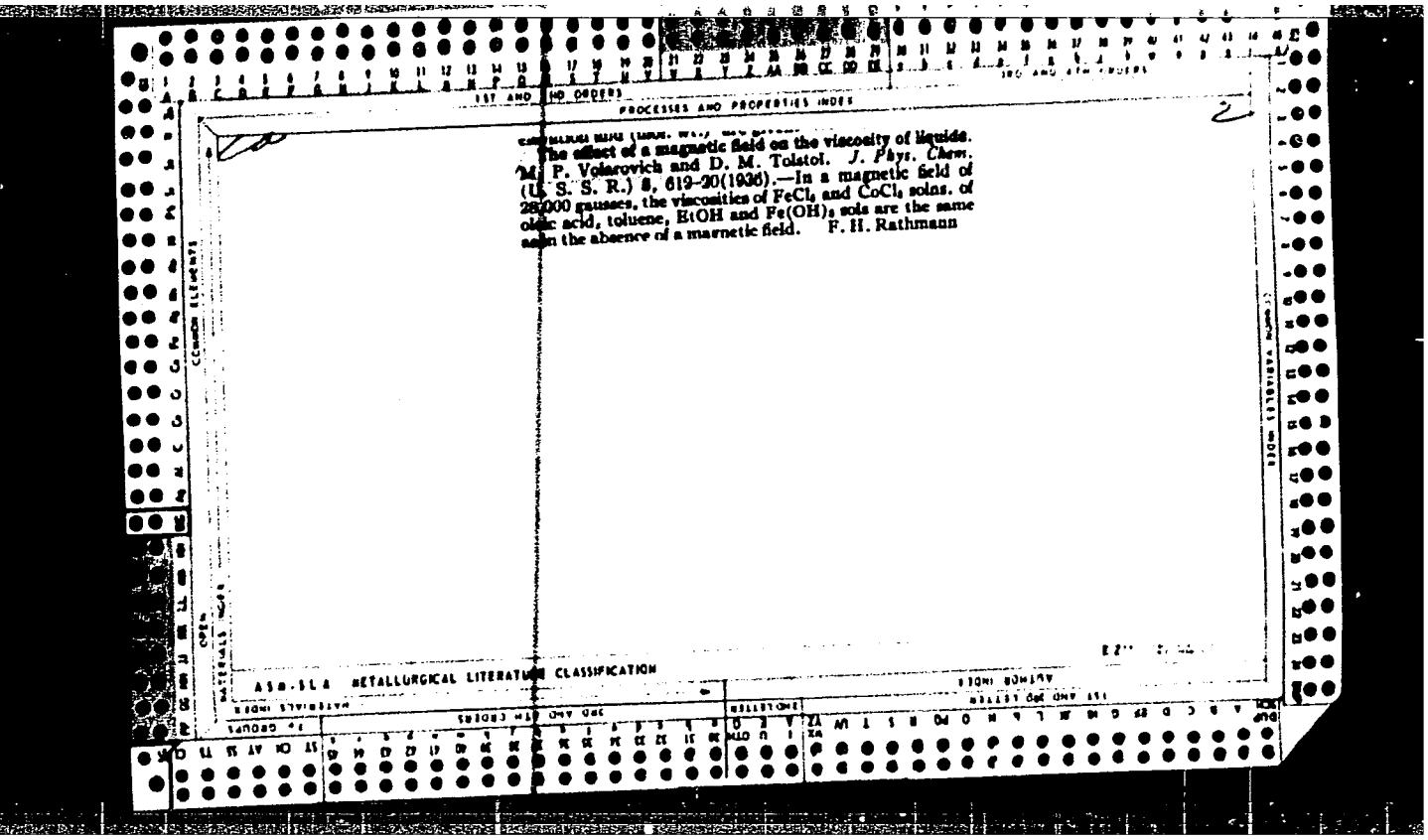
Investigation of viscosity at higher temperatures as a method of physicochemical analysis. M. P. Volarovykh & S. M.) S, 125-34(1936).—A review with more than 80 references.
Chas. Blanc



BC

B-I-1

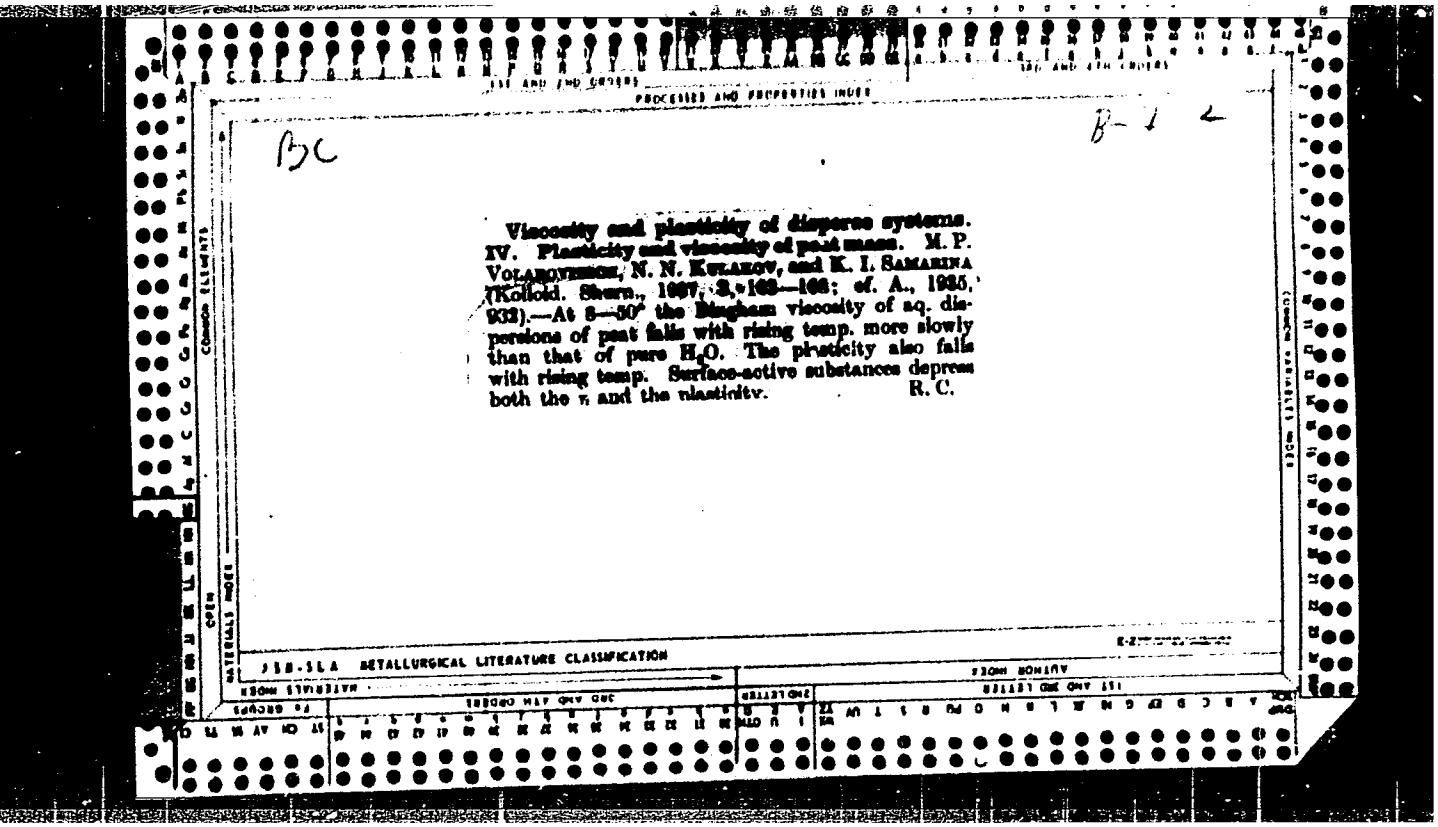
Shearing modulus of vitreous systems in the interval of softening. M. P. Volarovitsch, V. P. Dubjaguin, and A. A. Leontjeva (J. Phys. Chem. Russ., 1936, 8, 470—485).—The temp. of the beginning of elastic torsional oscillations of a rod in cooling vitreous melts has been measured. This is assumed to mark the transition from a viscous liquid to an amorphous solid. The shearing moduli have been measured for colophony, guaiacum resin, Mendeleev cement, and glucose. They are of the order of 10^9 dynes/sq. cm. E. R.



PROCESSES AND PROPERTIES INDEX

The effect of a magnetic field on the viscosity of liquids. P. Volarovich and D. M. Tolstoi. *J. Phys. Chem.* (U. S. S. R.) 8, 619–20(1936).—In a magnetic field of 28,000 gausses, the viscosities of $FeCl_3$ and $CoCl_3$ sols. of oleic acid, toluene, EtOH and $Fe(OH)_3$ sols are the same as in the absence of a magnetic field. F. H. Rathmann

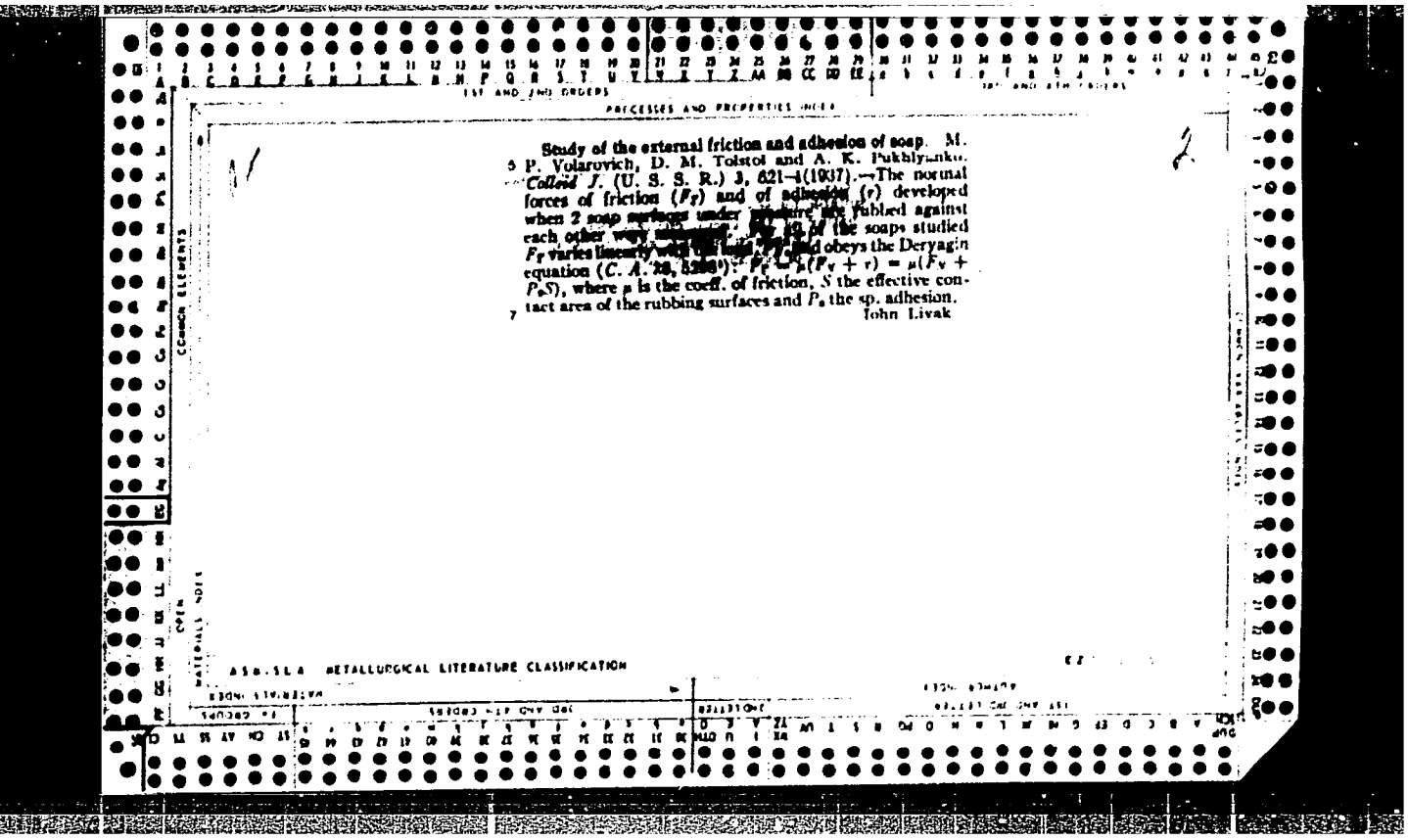
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

B-1 2

Viscosity and plasticity of disperse systems. IV. Plasticity and viscosity of peat mass. M. P. Volarovitsch, N. N. Kulakov, and K. I. Samarina (Kolloid. Shurn., 1937, 3, 163—166; cf. A., 1935, 932).—At 8—50° the Bingham viscosity of aq. dispersions of peat falls with rising temp. more slowly than that of pure H_2O. The plasticity also falls with rising temp. Surface-active substances depress both the η and the plasticity. R. C.

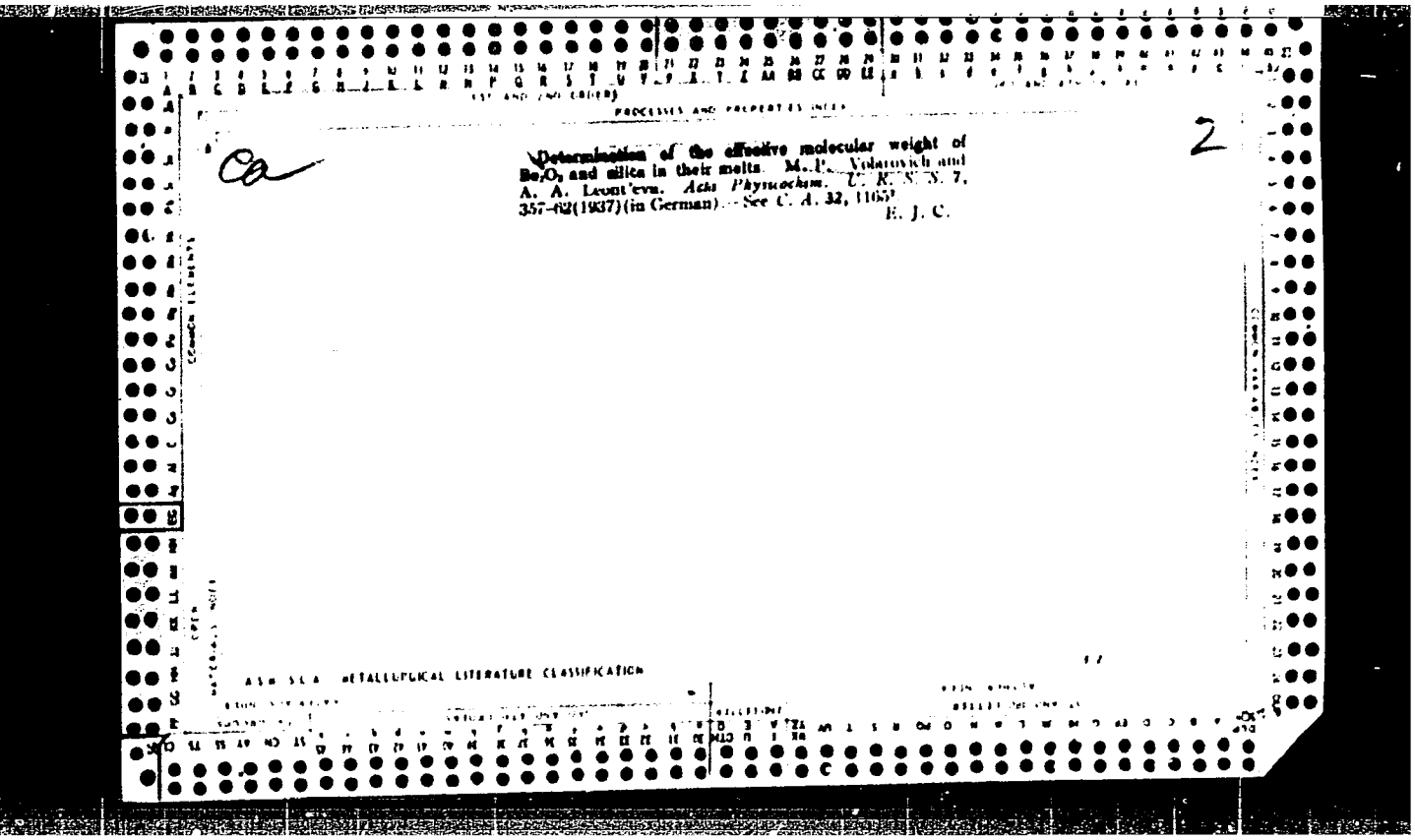


PROCESSES AND PROPERTIES INDEX

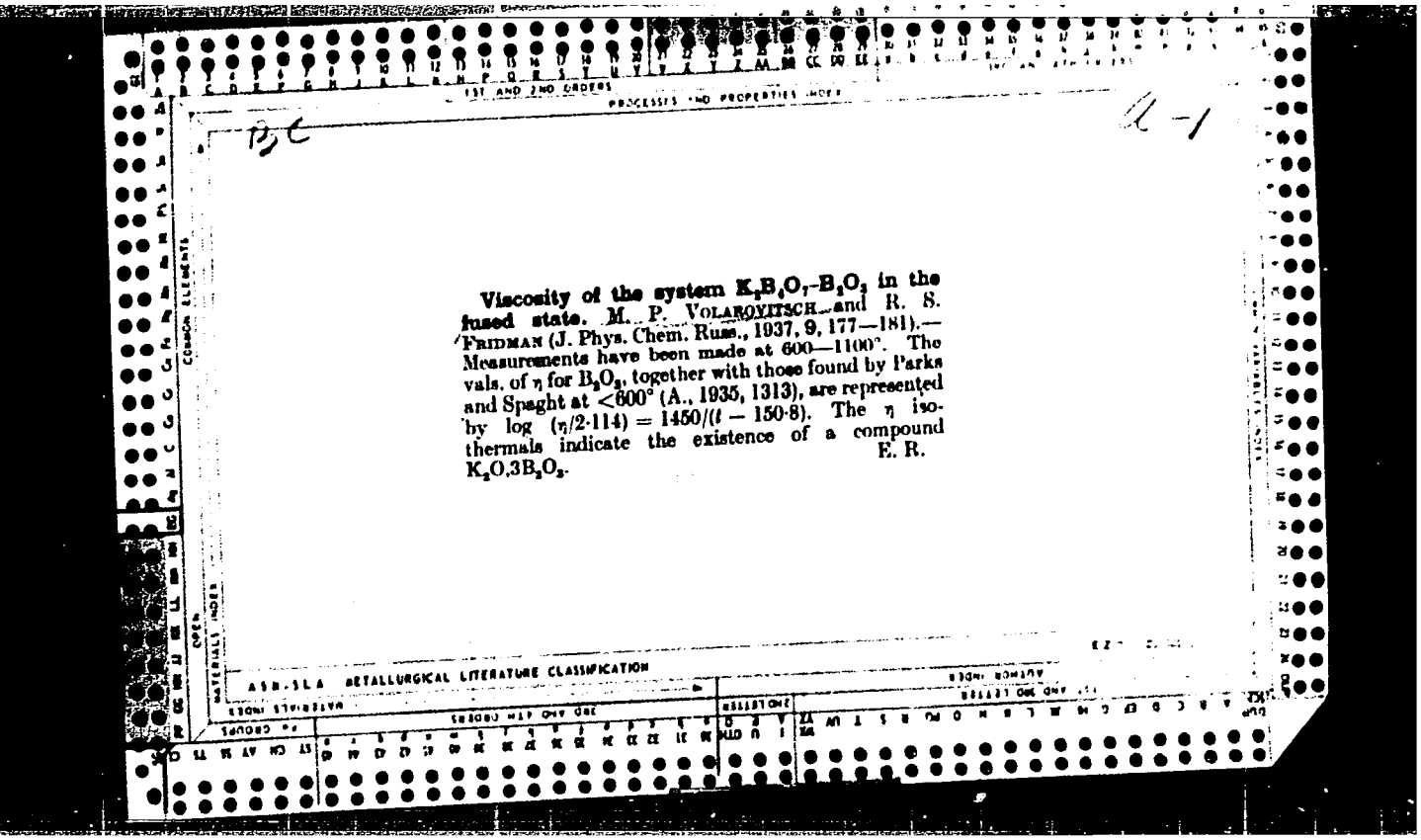
Study of the external friction and adhesion of soap. M. P. Volarovich, D. M. Tolstoi and A. K. Pukhlyenko. *Colloid J.* (U. S. S. R.) 3, 621–4(1937).—The normal forces of friction (F_T) and of adhesion (r) developed when 2 soap surfaces under pressure are rubbed against each other were measured. For [illegible] soaps studied F_T varies linearly with the load, P, and obeys the Deryagin equation (*C. A.* 28, 1288⁹): $F_T = \mu(P_v + r) = \mu(P_v + P_0S)$, where μ is the coeff. of friction, S the effective contact area of the rubbing surfaces and P_0 the sp. adhesion.

John Livak

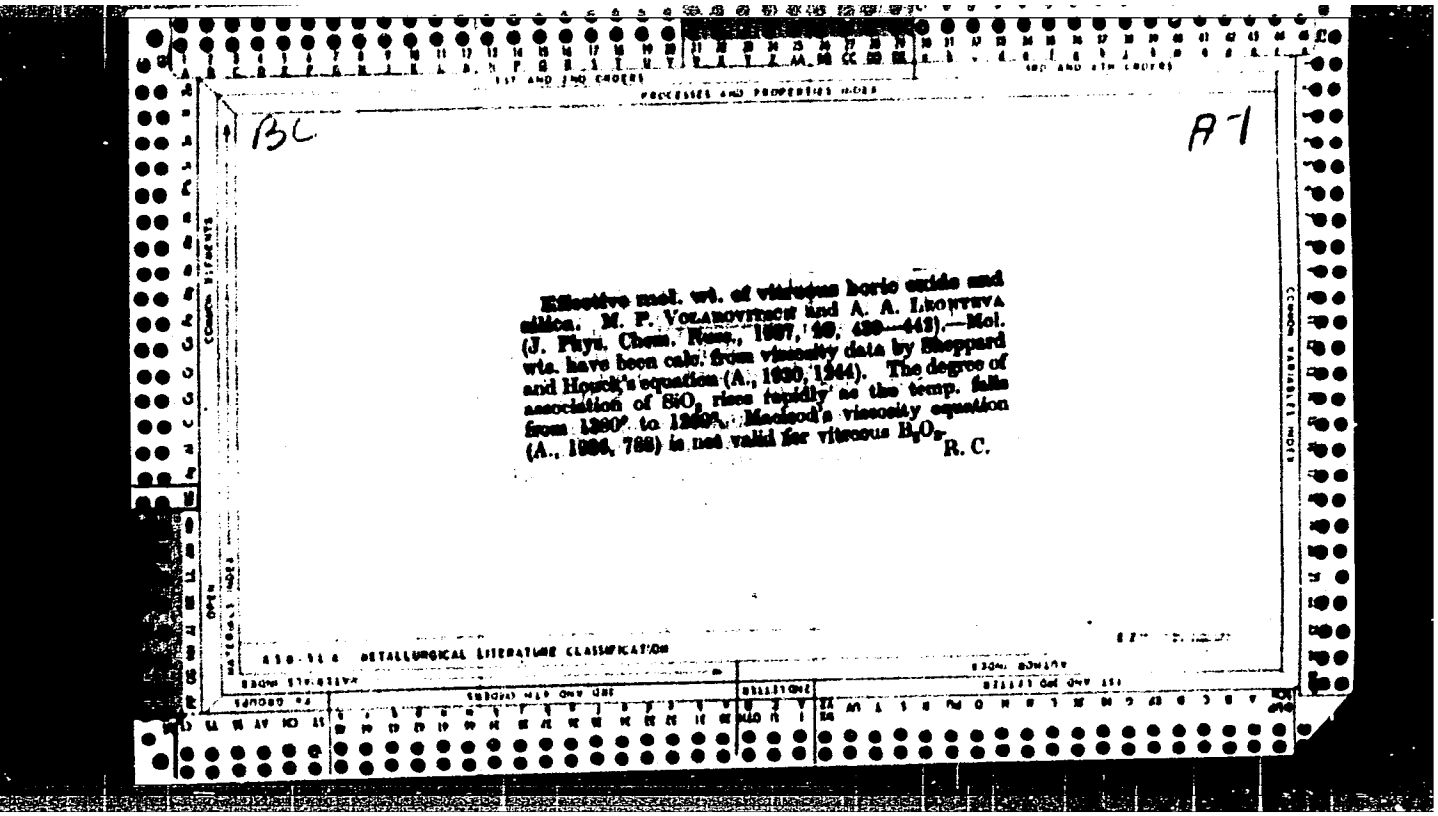
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Determination of the effective molecular weight of Be_2O_3 and silica in their melts. M. P. Volarovich and A. A. Leont'eva. *Acta Physicochim. U. R. S. S.* 7, 357–62(1937)(in German).—See *C. A.* 32, 1165⁹.
E. J. C.



Viscosity of the system $K_2B_4O_7$–B_2O_3 in the fused state. M. P. VOLAROVITSCH and R. S. FRIDMAN (J. Phys. Chem. Russ., 1937, 9, 177—181).—Measurements have been made at 600—1100°. The vals. of η for B_2O_3, together with those found by Parks and Spaght at <600° (A., 1935, 1313), are represented by log $(\eta/2{\cdot}114) = 1450/(t - 150{\cdot}8)$. The η isothermals indicate the existence of a compound $K_2O,3B_2O_3$. E. R.

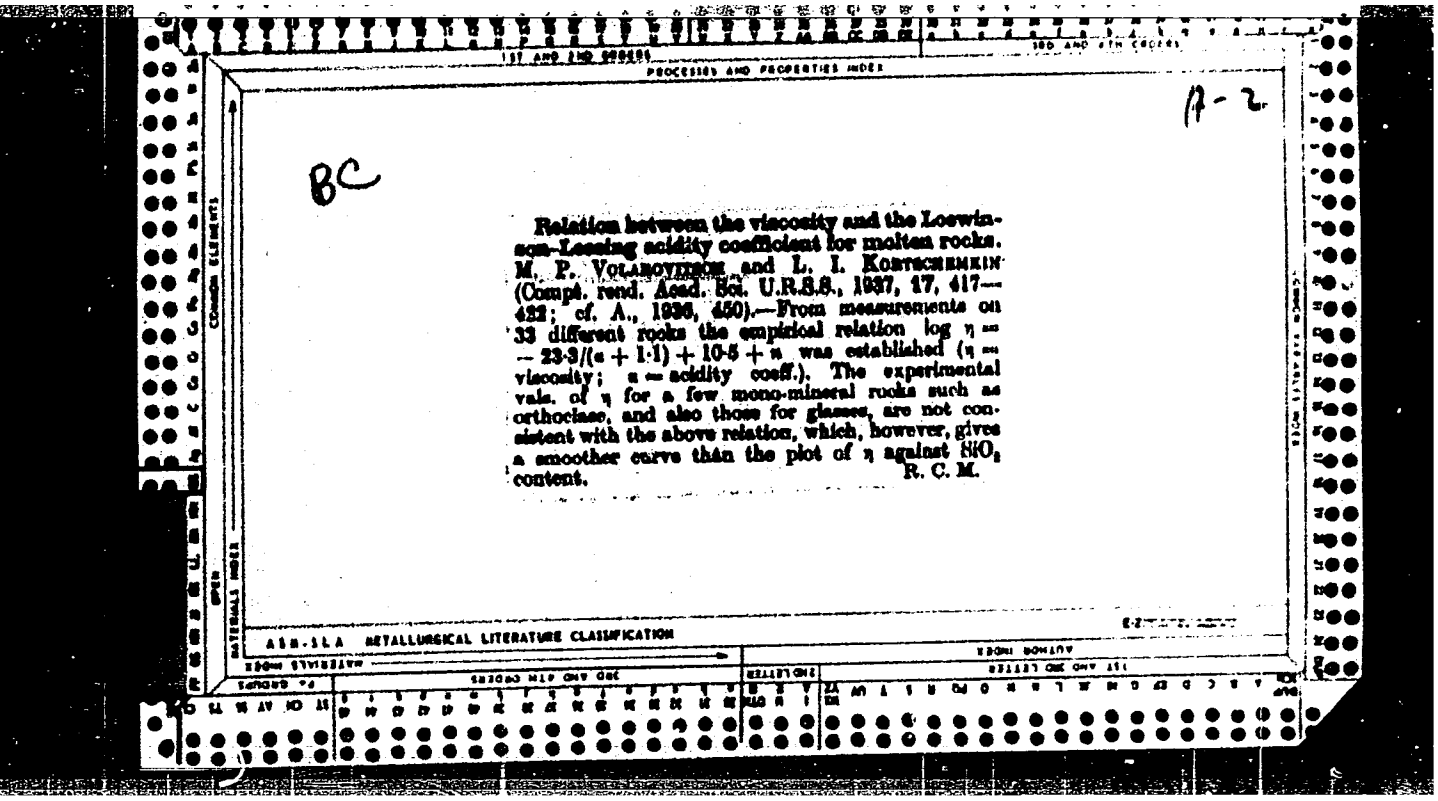


B1

A1

Effective mol. wt. of vitreous boric oxide and silica. M. P. VOLAROVITSCH and A. A. LEONTEVA (J. Phys. Chem., Russ., 1937, 10, 439—443).—Mol. wts. have been calc. from viscosity data by Sheppard and Houck's equation (A., 1930, 1344). The degree of association of SiO_2 rises rapidly as the temp. falls from 1300° to 1200°. Macleod's viscosity equation (A., 1926, 788) is not valid for vitreous B_2O_3. R. C.

METALLURGICAL LITERATURE CLASSIFICATION

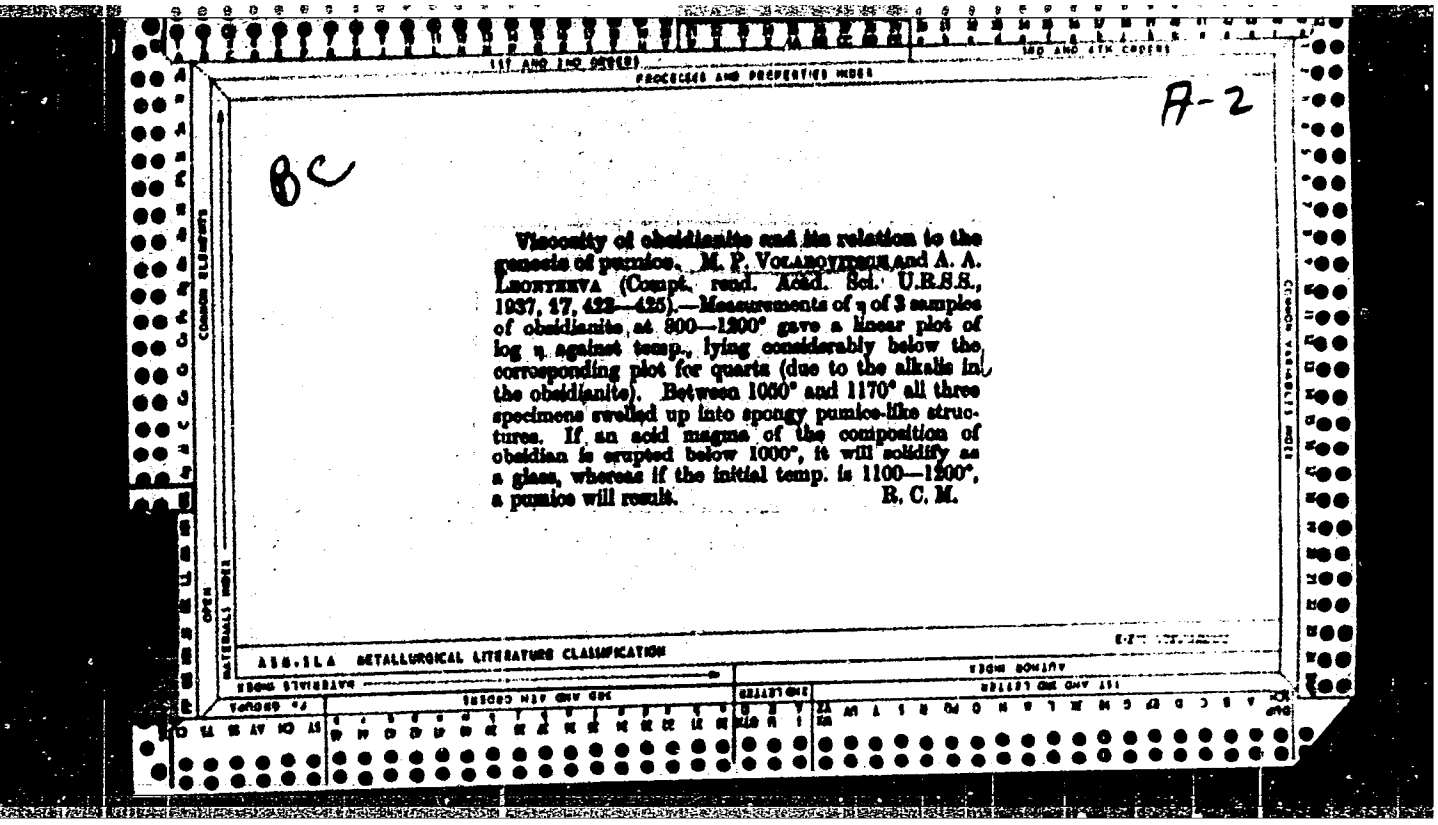


A-2

BC

Relation between the viscosity and the Loewinson-Lessing acidity coefficient for molten rocks. M. P. Volarovitch and L. I. Kostchemkin (Compt. rend. Acad. Sci. U.R.S.S., 1937, 17, 417—422; cf. A., 1936, 450).—From measurements on 33 different rocks the empirical relation $\log \eta = -23{\cdot}9/(a + 1{\cdot}1) + 10{\cdot}5 + a$ was established (η = viscosity; a = acidity coeff.). The experimental vals. of η for a few mono-mineral rocks such as orthoclase, and also those for glasses, are not consistent with the above relation, which, however, gives a smoother curve than the plot of η against SiO_2 content.

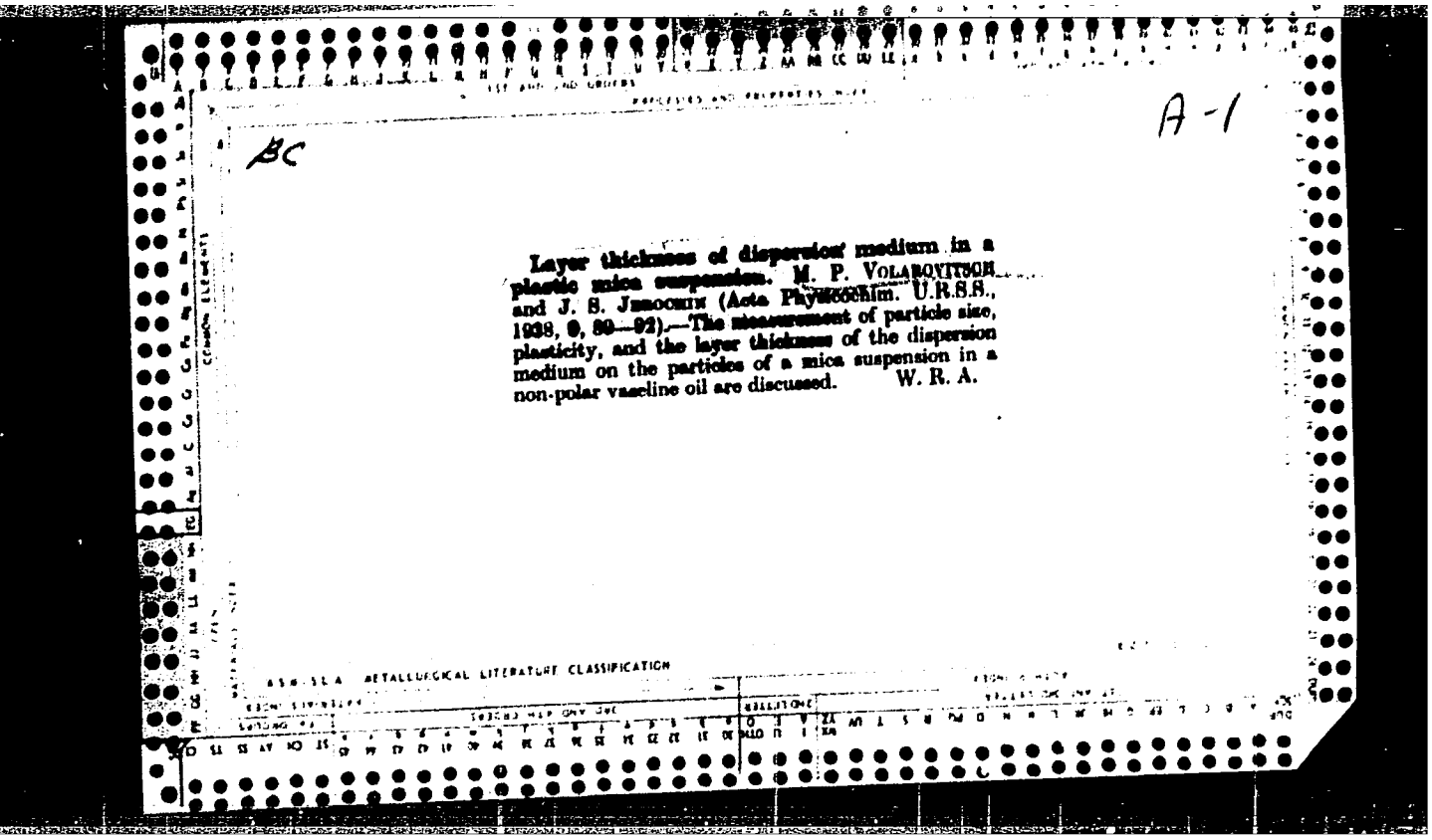
R. C. M.



A-2

BC

Viscosity of obsidianite and its relation to the genesis of pumice. M. P. Volarovitch and A. A. Leontieva (Compt. rend. Acad. Sci. U.R.S.S., 1937, 17, 423—425).—Measurements of η of 3 samples of obsidianite at 800—1200° gave a linear plot of log η against temp., lying considerably below the corresponding plot for quartz (due to the alkalis in the obsidianite). Between 1050° and 1170° all three specimens swelled up into spongy pumice-like structures. If an acid magma of the composition of obsidian is erupted below 1000°, it will solidify as a glass, whereas if the initial temp. is 1100—1200°, a pumice will result. R. C. M.

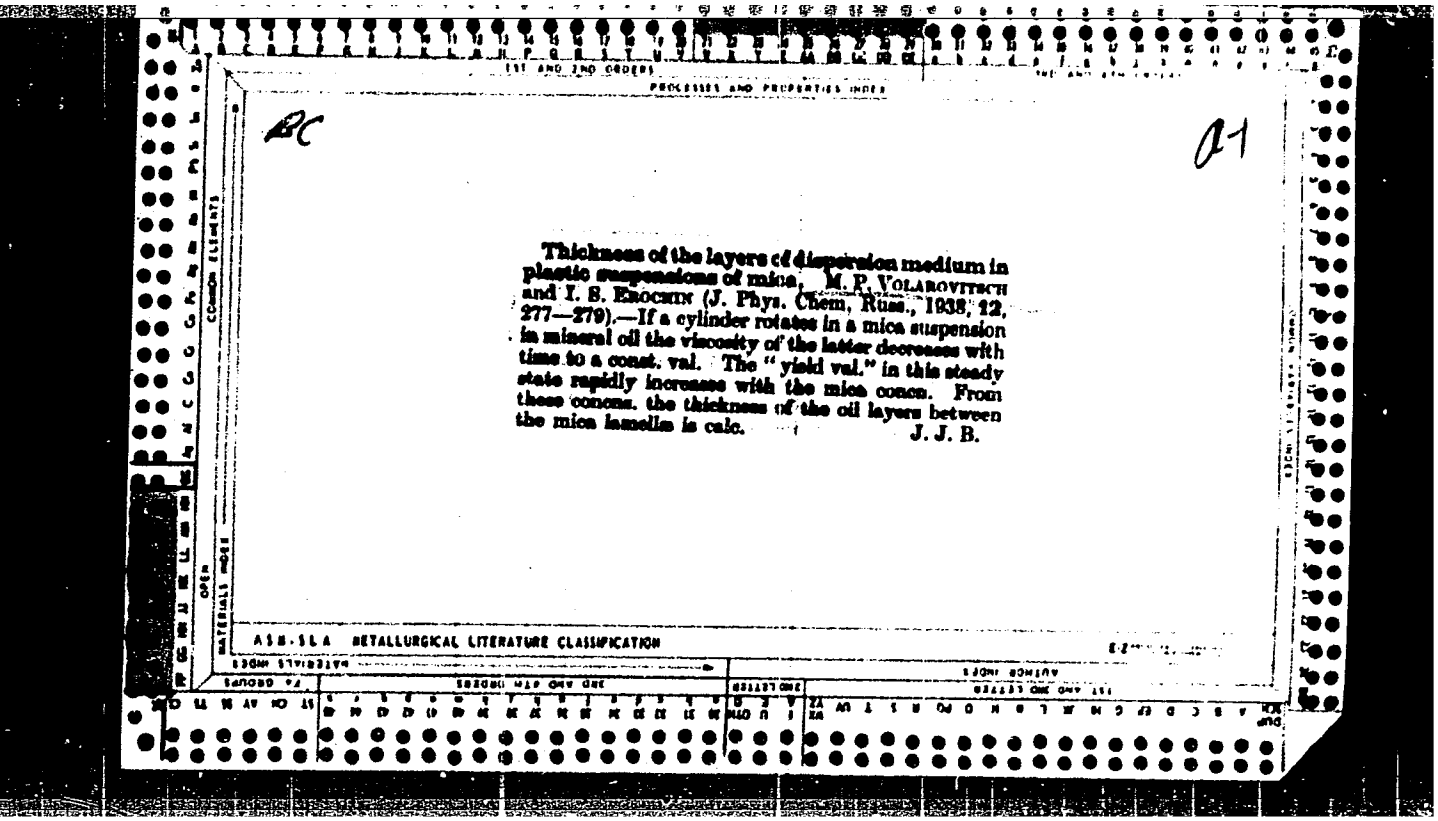


BC

A-1

Layer thickness of dispersion medium in a plastic mica suspension. M. P. VOLAROVITSCH and J. S. JANOCHIN (Acta Physicochim. U.R.S.S., 1938, 9, 89—92).—The measurement of particle size, plasticity, and the layer thickness of the dispersion medium on the particles of a mica suspension in a non-polar vaseline oil are discussed. W. R. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

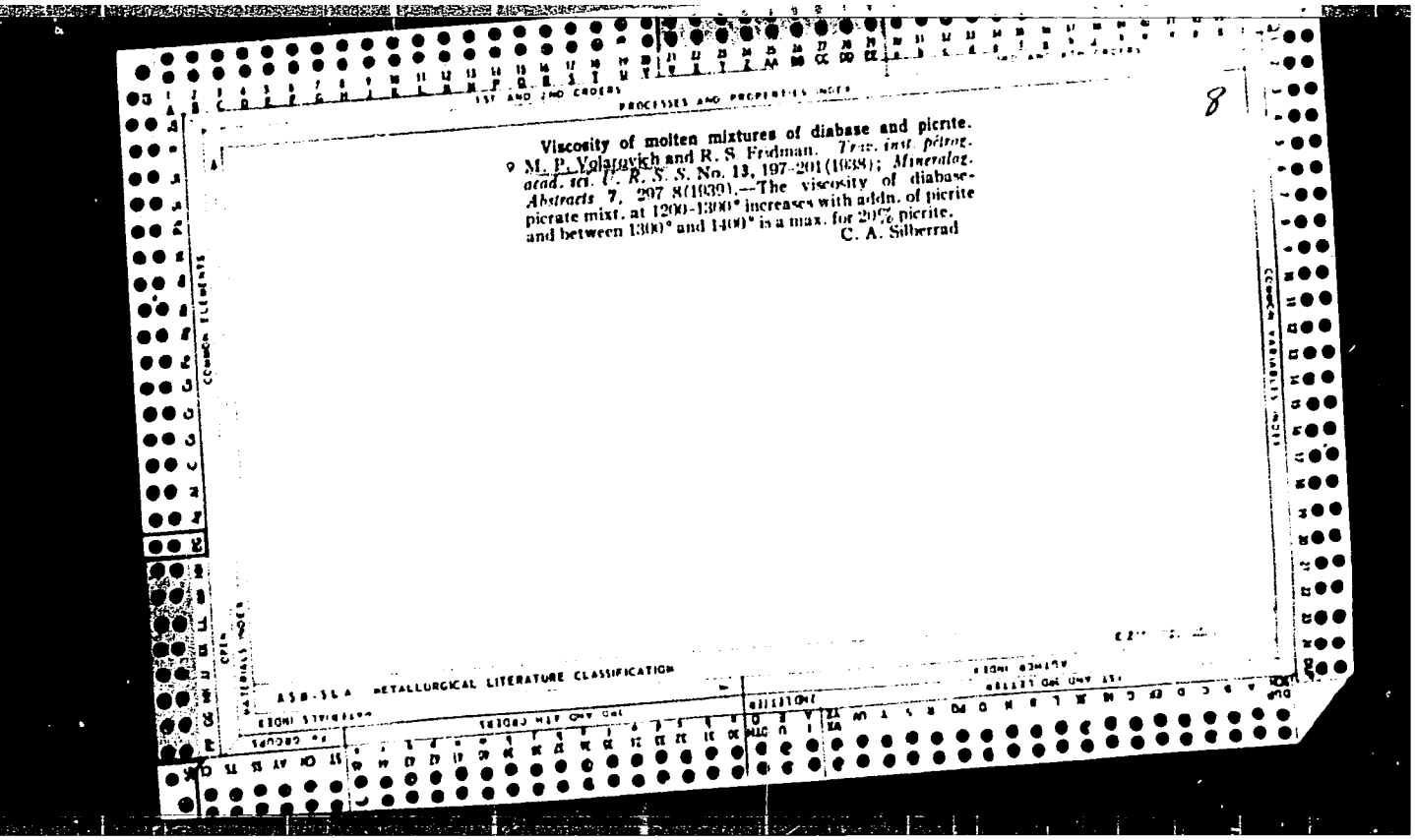


BC

01

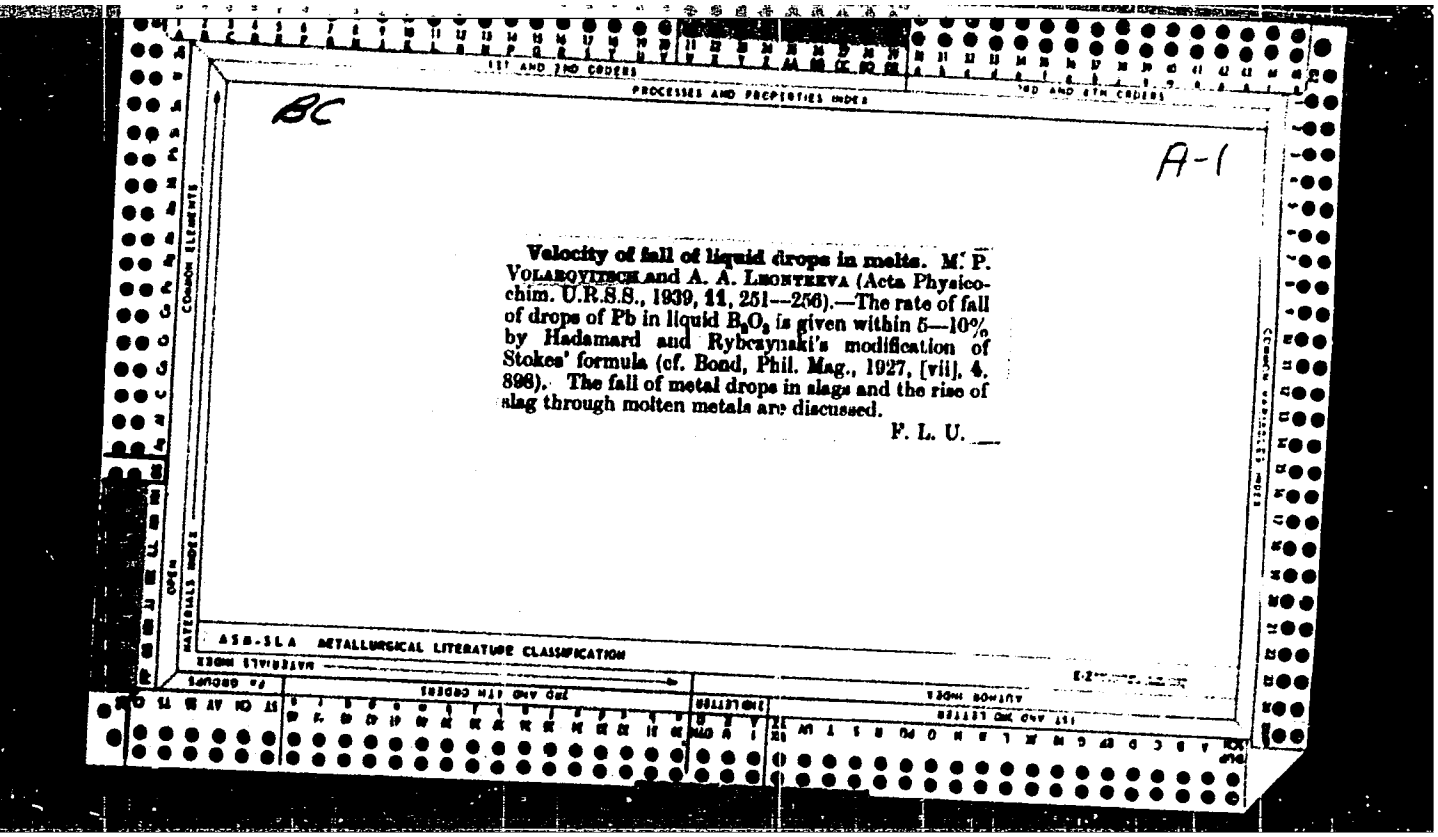
Thickness of the layers of dispersion medium in plastic suspensions of mica. M. P. VOLAROVITSCH and I. S. EROCHIN (J. Phys. Chem. Russ., 1938, 12, 277—279).—If a cylinder rotates in a mica suspension in mineral oil the viscosity of the latter decreases with time to a const. val. The "yield val." in this steady state rapidly increases with the mica concn. From these concns. the thickness of the oil layers between the mica lamellæ is calc. J. J. B.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



8

Viscosity of molten mixtures of diabase and picrite.
M. P. Volarovich and R. S. Fridman. *Trav. inst. pétrog. acad. sci. U. R. S. S.* No. 13, 197–201 (1938); *Mineralog. Abstracts* 7, 297 8(1939).—The viscosity of diabase-picrate mixt. at 1200–1300° increases with addn. of picrite and between 1300° and 1400° is a max. for 20% picrite.
C. A. Silberrad

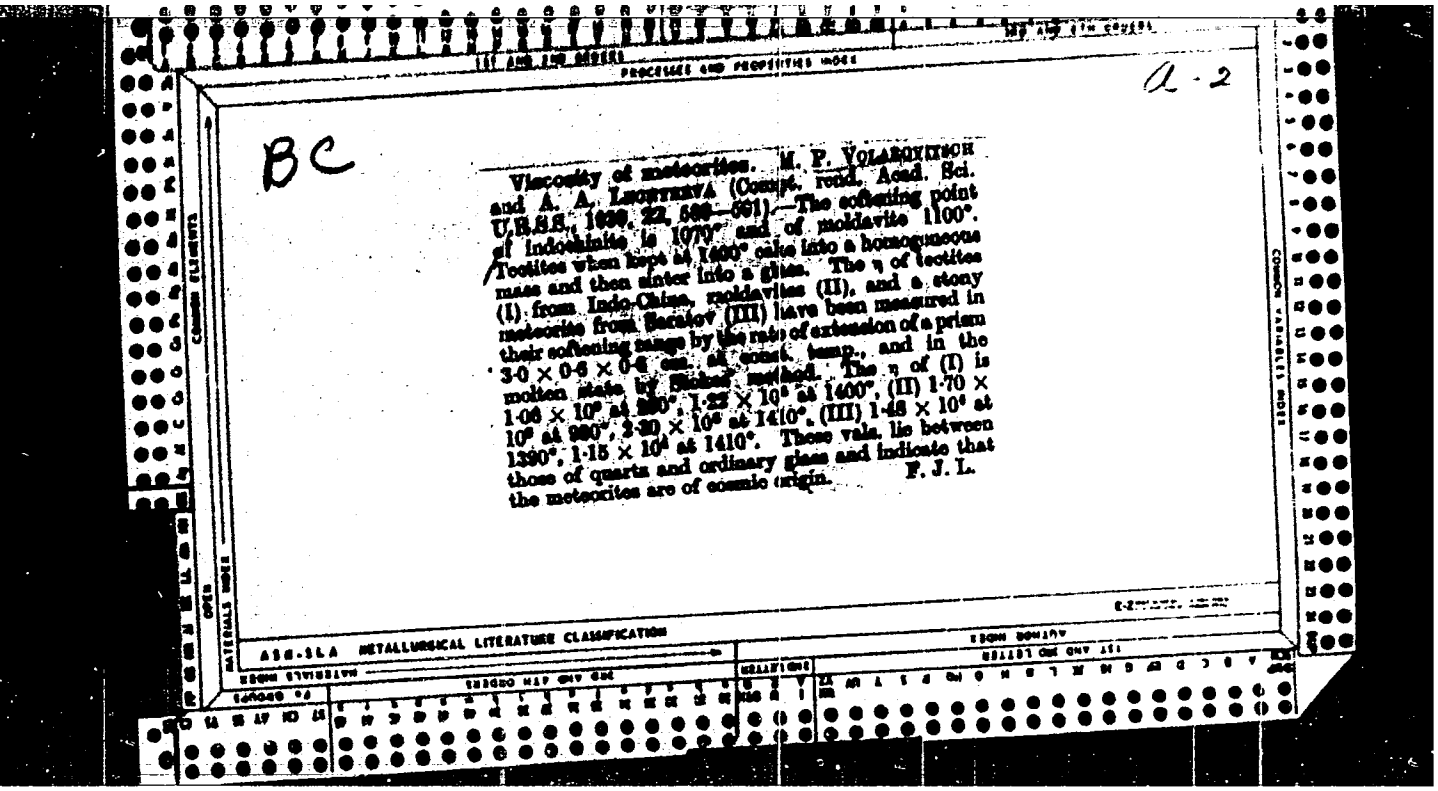


BC

A-1

Velocity of fall of liquid drops in melts. M. P. VOLAROVITSCH and A. A. LEONTIEVA (Acta Physicochim. U.R.S.S., 1939, **11**, 251—256).—The rate of fall of drops of Pb in liquid B_2O_3 is given within 5—10% by Hadamard and Rybczynski's modification of Stokes' formula (cf. Bond, Phil. Mag., 1927, [vii], **4**, 896). The fall of metal drops in slags and the rise of slag through molten metals are discussed.

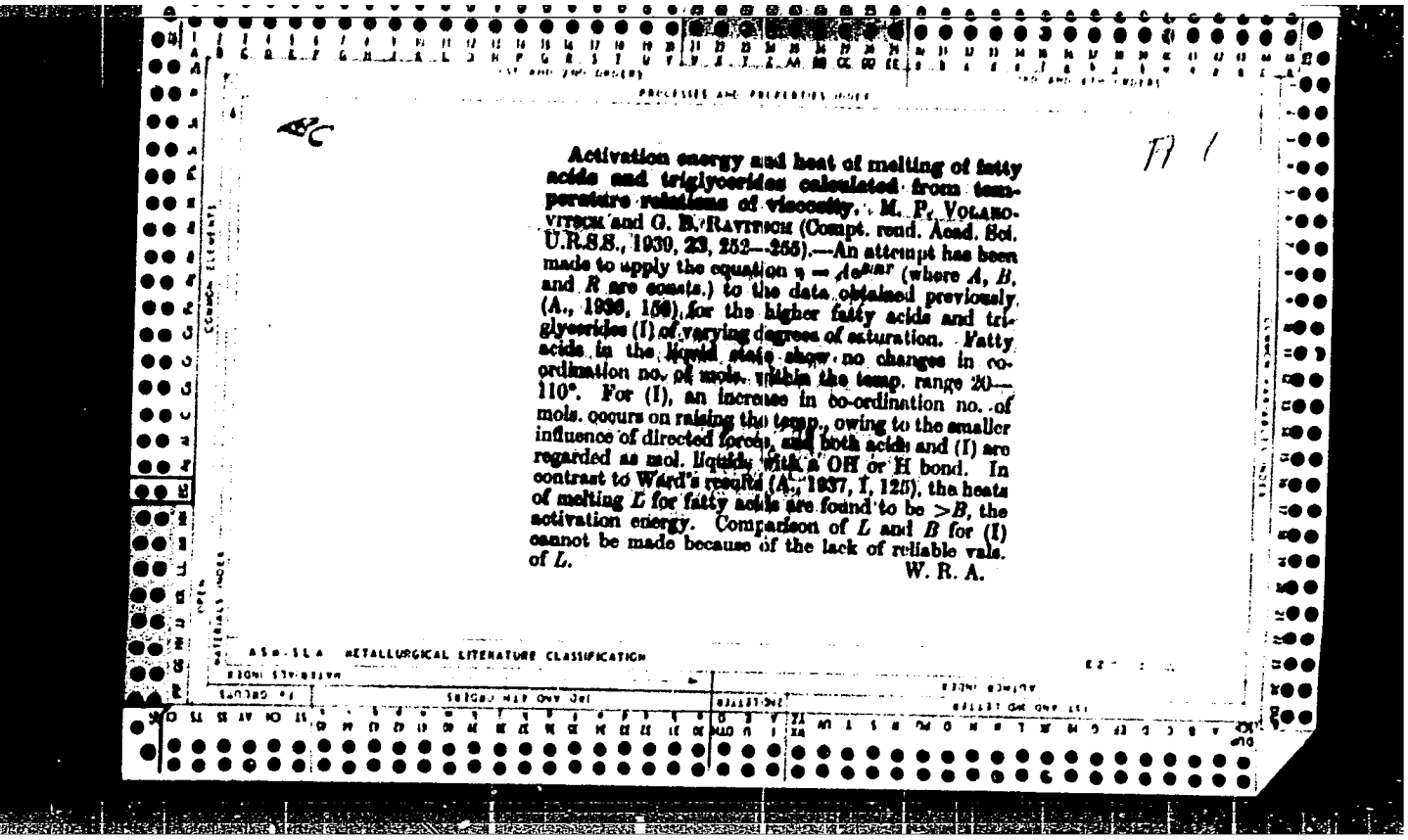
F. L. U.



BC

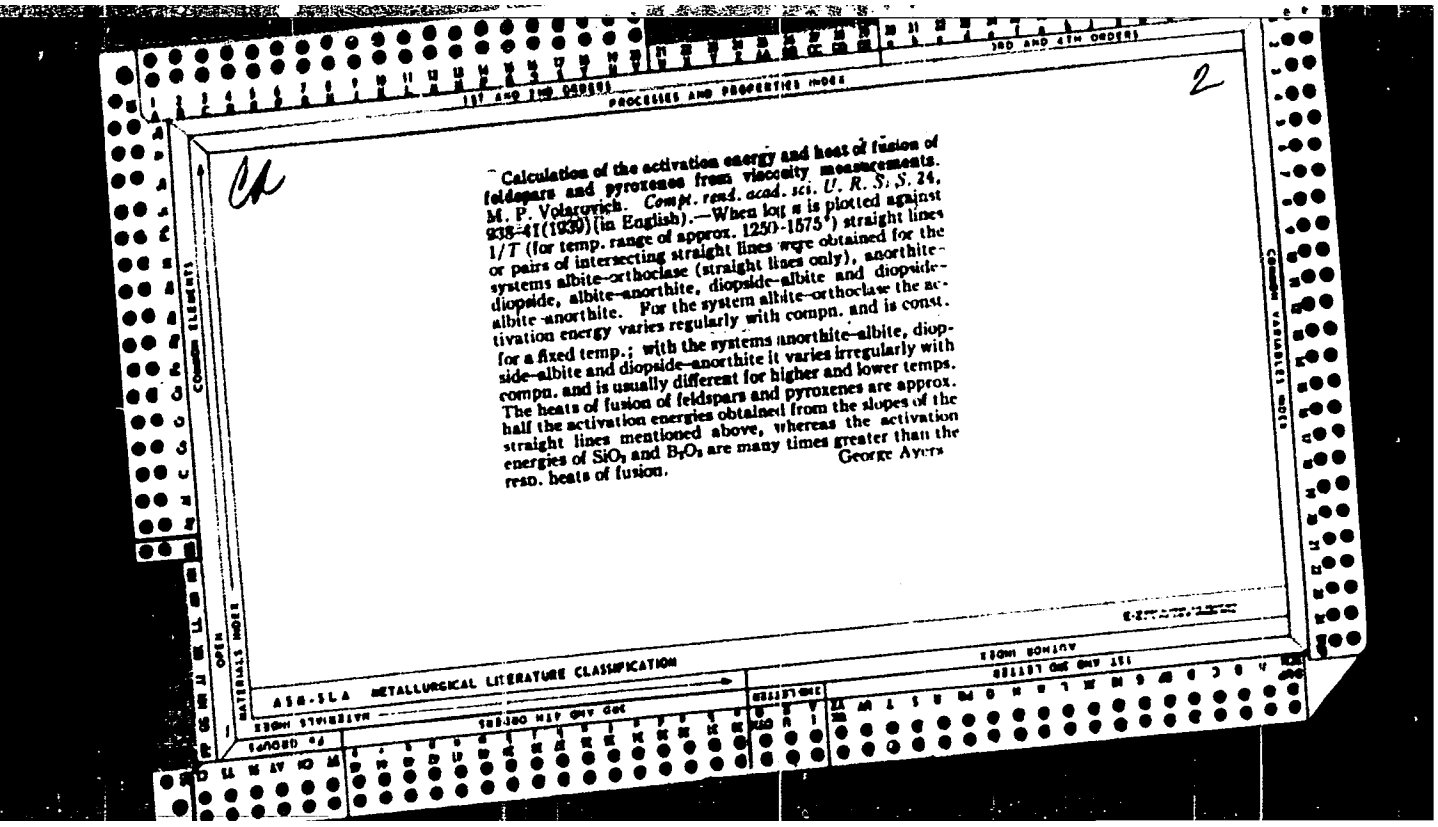
A-2

Viscosity of meteorites. M. P. Volarovitsch and A. A. Lebedeva (Compt. rend. Acad. Sci. U.R.S.S., 1939, 22, 589–591).—The softening point of indochinite is 1070° and of moldavite 1100°. Tectites when kept at 1400° calce into a homogeneous mass and then sinter into a glass. The η of tectites (I) from Indo-China, moldavites (II), and a stony meteorite from Barnaul (III) have been measured in their softening range by the rate of extension of a prism 3·0 × 0·6 × 0·6 cm. at const. temp., and in the molten state by Stokes' method. The η of (I) is 1·06 × 10⁸ at 980°, 1·22 × 10⁷ at 1400°, (II) 1·70 × 10⁸ at 980°, 2·30 × 10⁶ at 1410°, (III) 1·48 × 10⁸ at 1390°, 1·15 × 10⁴ at 1410°. These vals. lie between those of quartz and ordinary glass and indicate that the meteorites are of cosmic origin. F. J. L.



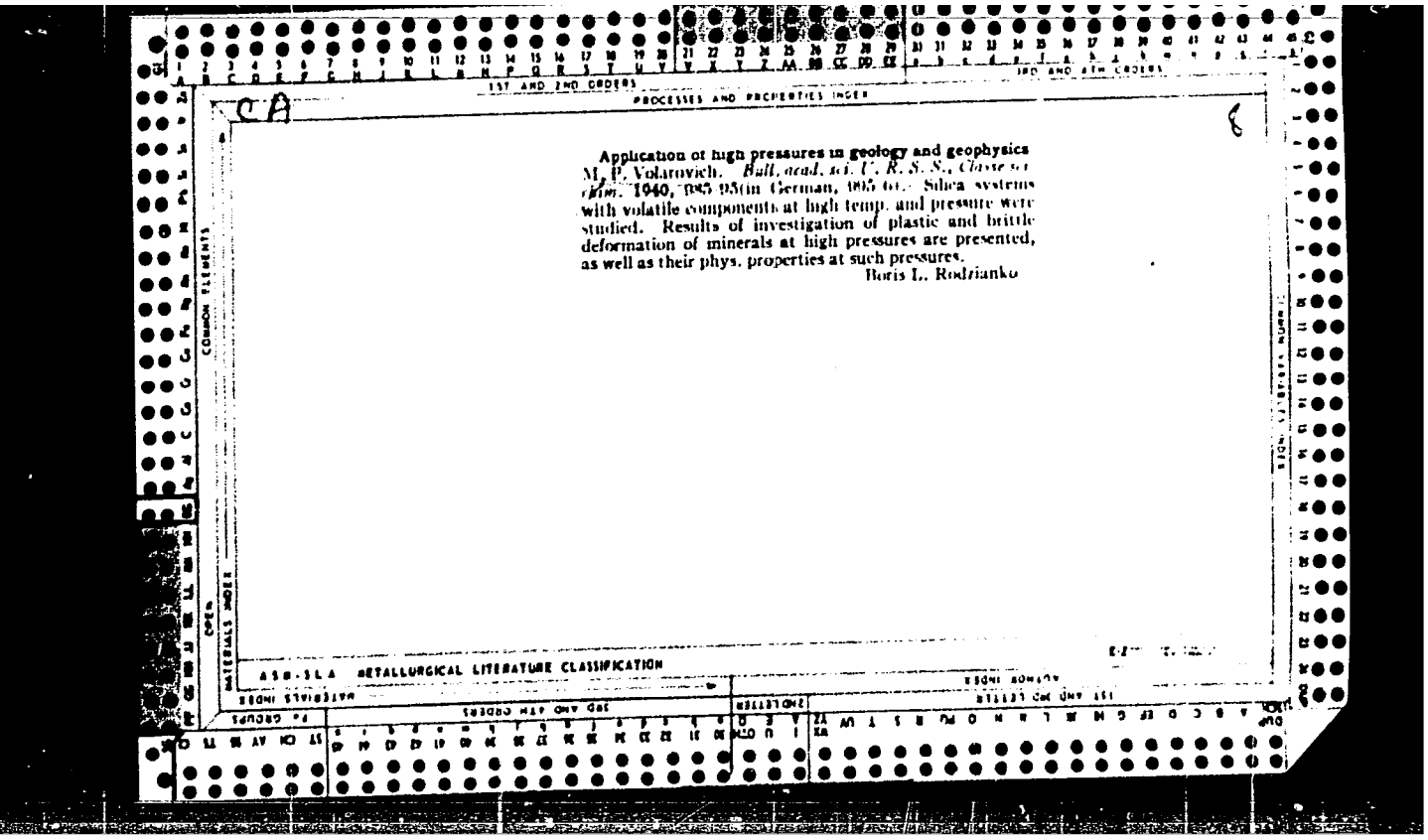
Activation energy and heat of melting of fatty acids and triglycerides calculated from temperature relations of viscosity. M. P. VOLARO-VITSCH and G. B. RAVITSCH (Compt. rend. Acad. Sci. U.R.S.S., 1939, 23, 252—255).—An attempt has been made to apply the equation $\eta = Ae^{B/RT}$ (where A, B, and R are consts.) to the data obtained previously (A., 1936, 156), for the higher fatty acids and triglycerides (I) of varying degrees of saturation. Fatty acids in the liquid state show no changes in co-ordination no. of mols. within the temp. range 20—110°. For (I), an increase in co-ordination no. of mols. occurs on raising the temp., owing to the smaller influence of directed forces, and both acids and (I) are regarded as mol. liquids with a OH or H bond. In contrast to Ward's results (A., 1937, I, 125), the heats of melting L for fatty acids are found to be $>B$, the activation energy. Comparison of L and B for (I) cannot be made because of the lack of reliable vals. of L.

W. R. A.



Calculation of the activation energy and heat of fusion of feldspars and pyroxenes from viscosity measurements. M. P. Volarovich. *Compt. rend. acad. sci. U. R. S. S.* 24, 938–41 (1939) (in English).—When log η is plotted against $1/T$ (for temp. range of approx. 1250–1575°) straight lines or pairs of intersecting straight lines were obtained for the systems albite–orthoclase (straight lines only), anorthite–diopside, albite–anorthite, diopside–albite and diopside–albite–anorthite. For the system albite–orthoclase the activation energy varies regularly with compn. and is const. for a fixed temp.; with the systems anorthite–albite, diopside–albite and diopside–anorthite it varies irregularly with compn. and is usually different for higher and lower temps. The heats of fusion of feldspars and pyroxenes are approx. half the activation energies obtained from the slopes of the straight lines mentioned above, whereas the activation energies of SiO_2 and B_2O_3 are many times greater than the resp. heats of fusion.

George Ayers



PROCESSES AND PROPERTIES INDEX

CA

8

Application of high pressures in geology and geophysics
M. P. Volarovich. *Bull. acad. sci. U. R. S. S., Classe sci. chim.* **1940**, 985-95(in German, 995 61).—Silica systems with volatile components at high temp. and pressure were studied. Results of investigation of plastic and brittle deformation of minerals at high pressures are presented, as well as their phys. properties at such pressures.
Boris L. Rodzianko

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

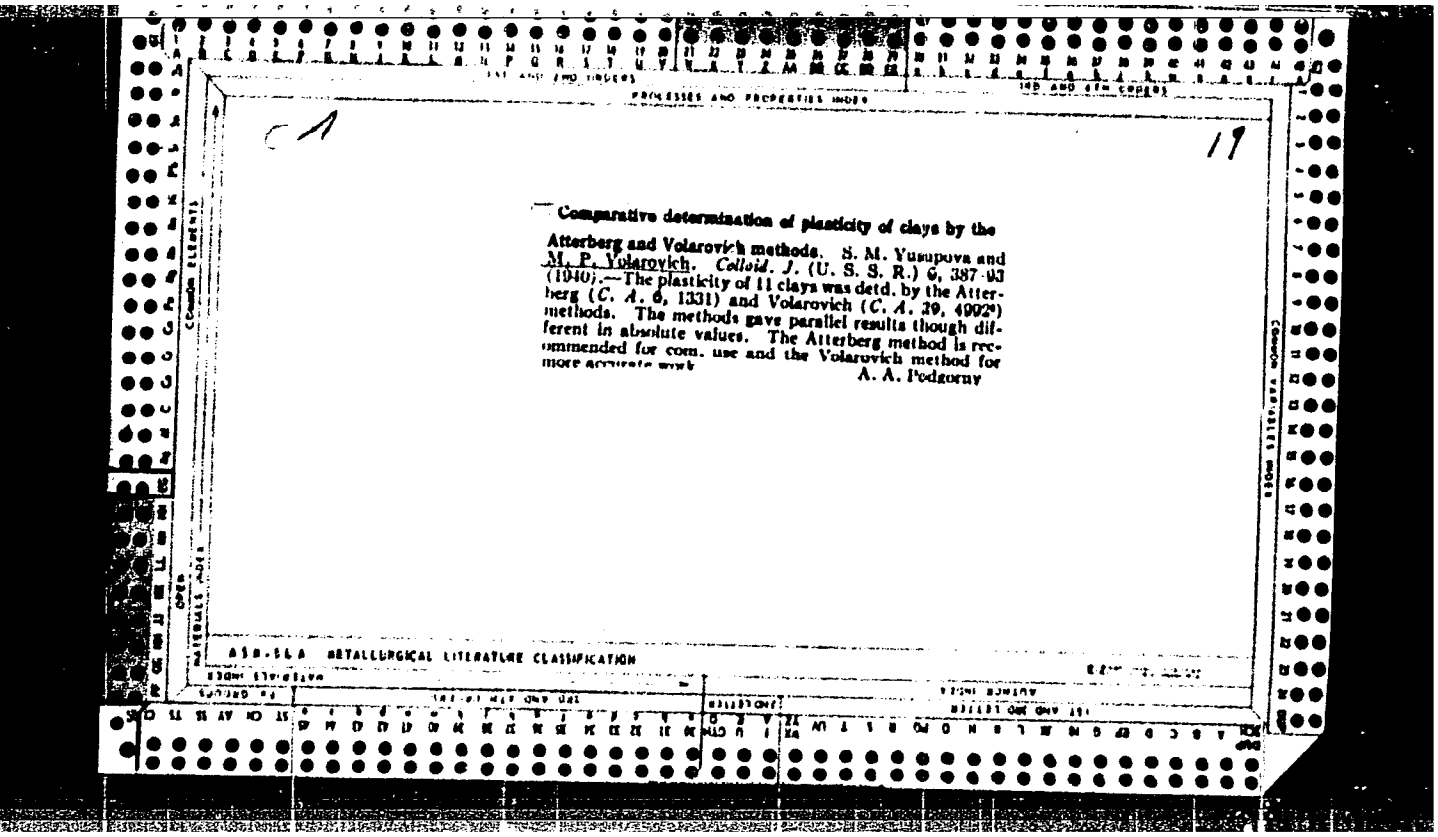
VOLAPOVICHrM8P8 600

1. VOL'POVICH M. P.

2. USSR (600)

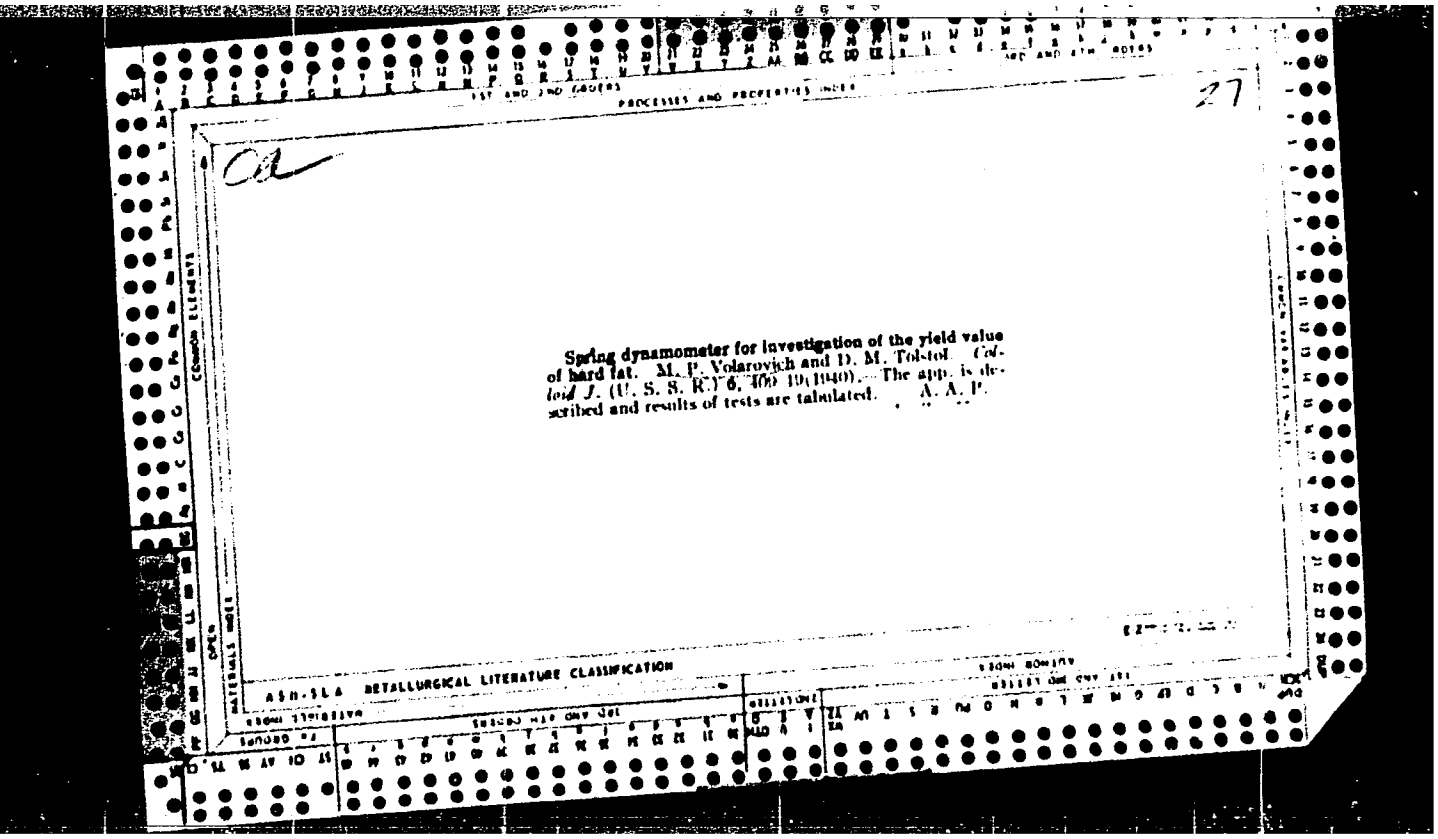
"On the Effect of Pressures Up to 1000 kg/cm^2 on Viscosity of High-Viscosity Fluids (Lubricating Oil and others), "Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No 3, 1940. Petrographic Section, Institute of Geological Sciences, USSR and IMS.

9. [redacted] Report U-1530, 25 Oct 1951

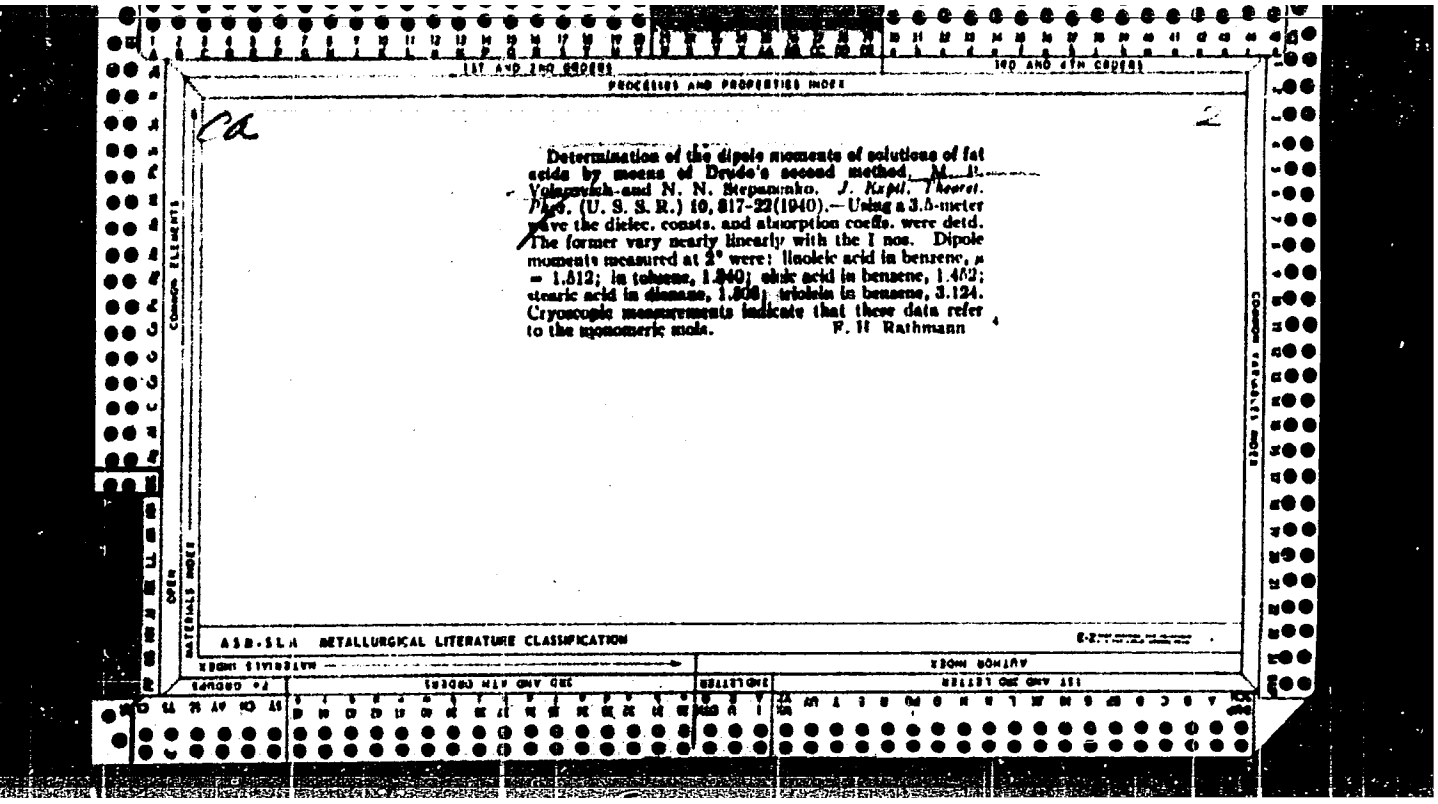


Comparative determination of plasticity of clays by the Atterberg and Volarovich methods. S. M. Yusupova and M. P. Volarovich. *Colloid. J.* (U. S. S. R.) 6, 387-93 (1940).—The plasticity of 11 clays was detd. by the Atterberg (*C. A.* 6, 1331) and Volarovich (*C. A.* 29, 4992[9]) methods. The methods gave parallel results though different in absolute values. The Atterberg method is recommended for com. use and the Volarovich method for more accurate work.

A. A. Podgorny



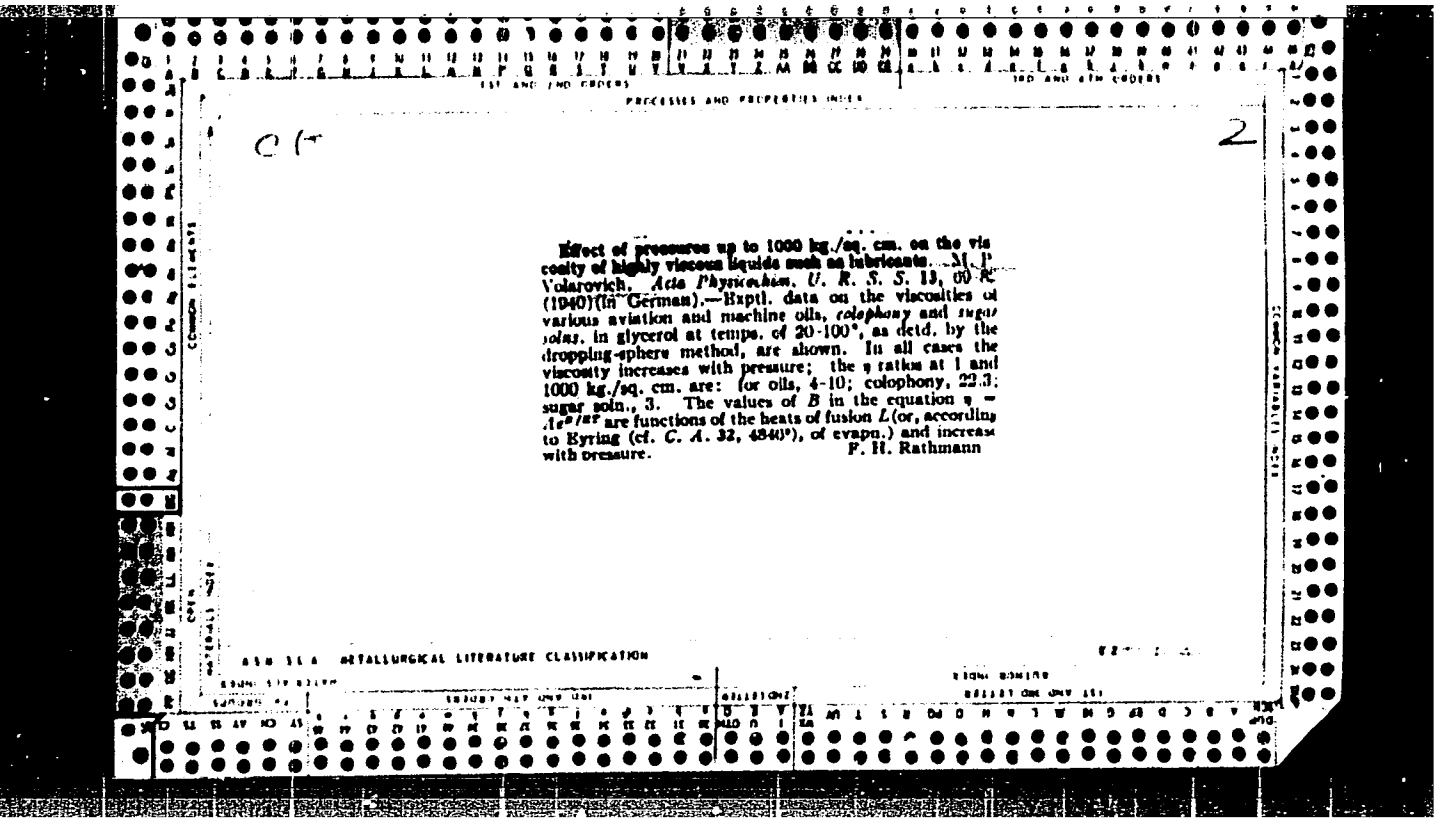
Spring dynamometer for investigation of the yield value of hard fat. M. P. Volarovich and D. M. Tolstoi. *Colloid J.* (U. S. S. R.) 6, 409-19 (1940). The app. is described and results of tests are tabulated. A. A. P.



Ca

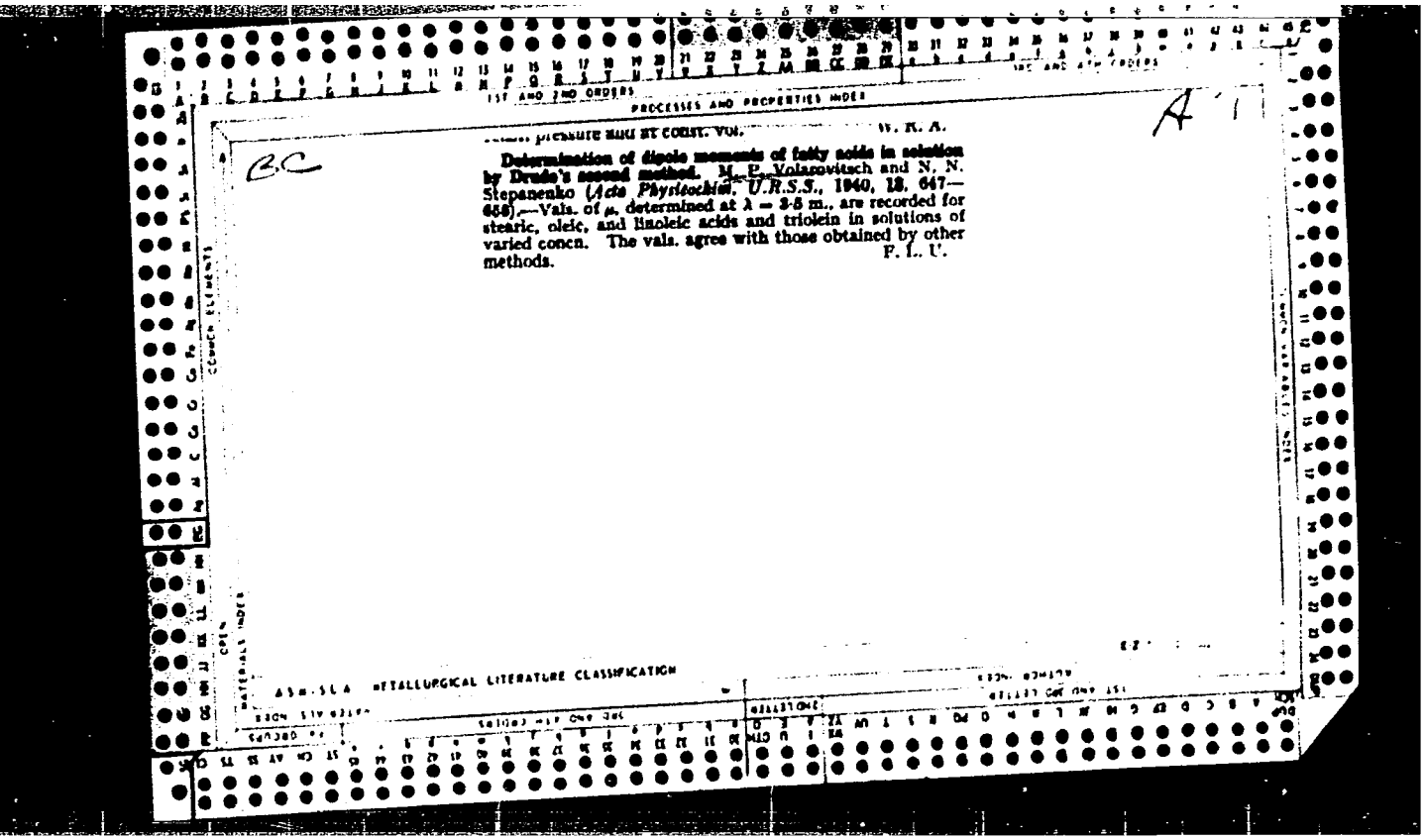
2

Determination of the dipole moments of solutions of fat acids by means of Drude's second method. M. P. Volarovich and N. N. Stepanenko. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 10, 817-22(1940).—Using a 3.5-meter wave the dielec. consts. and absorption coeffs. were detd. The former vary nearly linearly with the I nos. Dipole moments measured at 2° were: linoleic acid in benzene, μ = 1.512; in toluene, 1.540; oleic acid in benzene, 1.462; stearic acid in dioxane, 1.606; triolein in benzene, 3.124. Cryoscopic measurements indicate that these data refer to the monomeric mols. F. H. Rathmann



Effect of pressures up to 1000 kg./sq. cm. on the viscosity of highly viscous liquids such as lubricants. —M. P. Volarovich. *Acta Physicochim. U. R. S. S.* 13, 60 pp. (1940)(in German).—Exptl. data on the viscosities of various aviation and machine oils, *colophony* and *sugar soln.* in glycerol at temps. of 20-100°, as detd. by the dropping-sphere method, are shown. In all cases the viscosity increases with pressure; the η ratios at 1 and 1000 kg./sq. cm. are: for oils, 4-10; colophony, 22.3; sugar soln., 3. The values of B in the equation $\eta = Ae^{B/RT}$ are functions of the heats of fusion L (or, according to Eyring (cf. *C. A.* 32, 4840⁹), of evapn.) and increase with pressure.

F. H. Rathmann

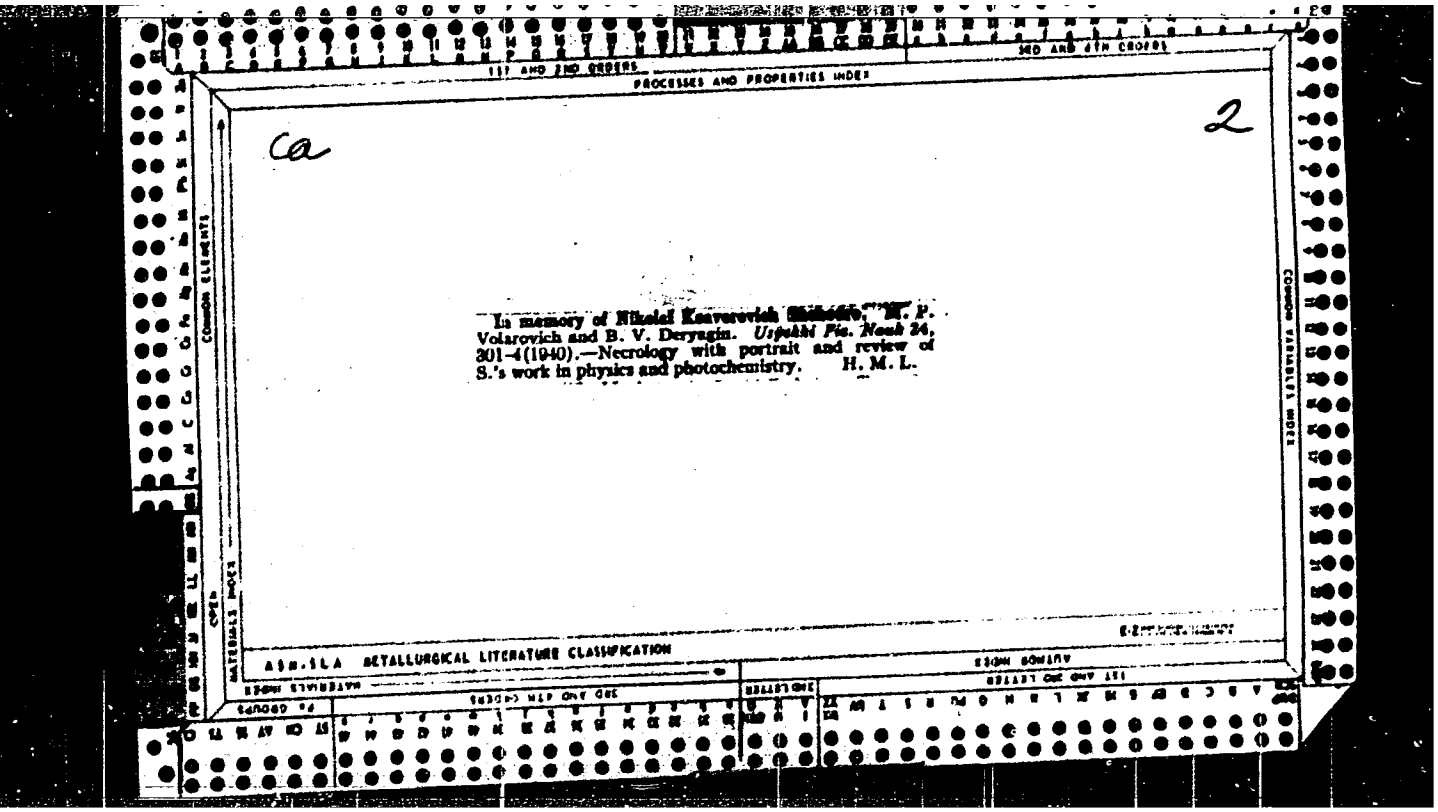


PROCESSES AND PROPERTIES INDEX

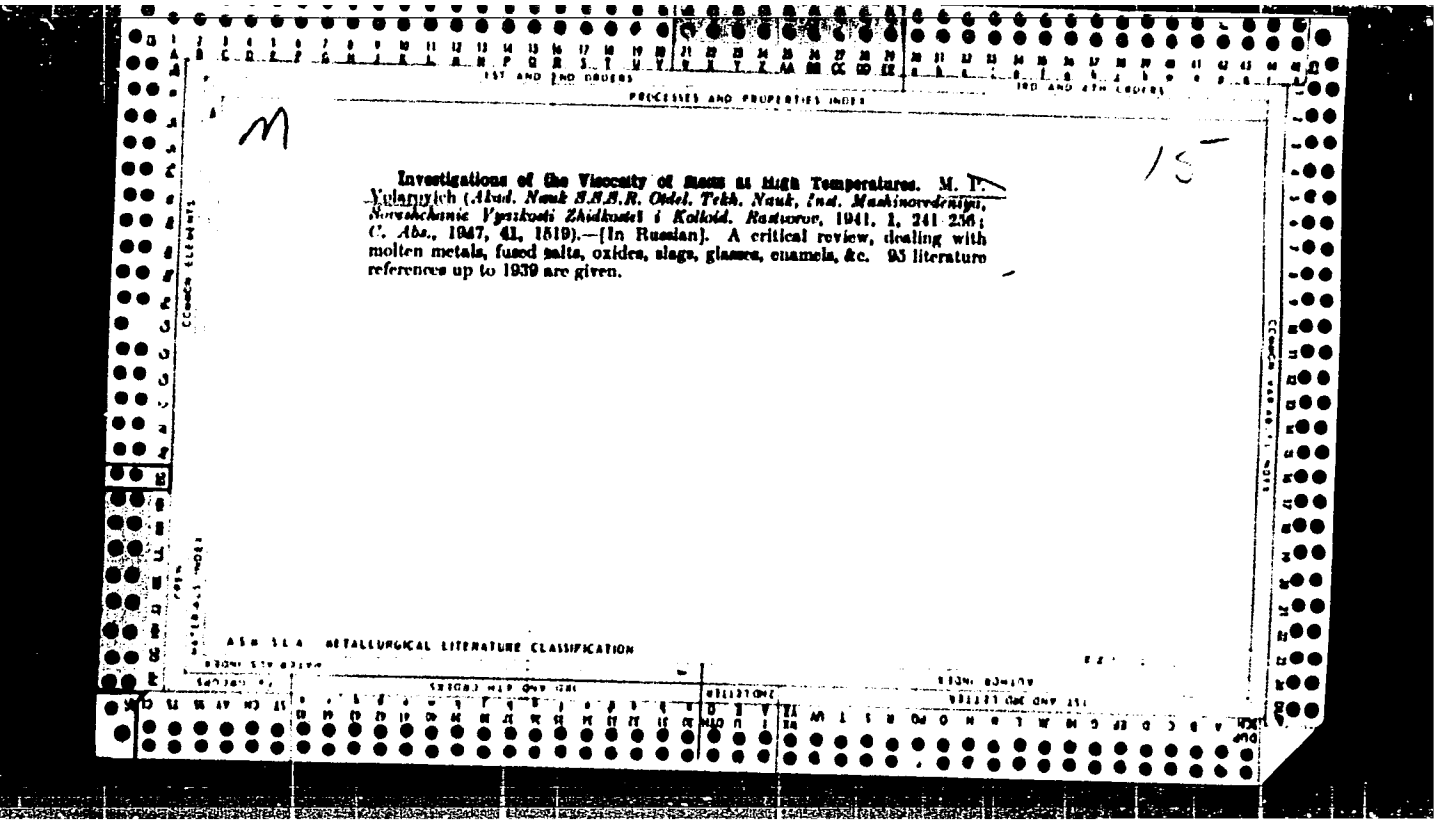
W. R. A.

Determination of dipole moments of fatty acids in solution by Drude's second method. M. P. Volarovitsch and N. N. Stepanenko (*Acta Physicochim. U.R.S.S.*, 1940, **13**, 647—658).—Vals. of μ, determined at $\lambda = 3{\cdot}8$ m., are recorded for stearic, oleic, and linoleic acids and triolein in solutions of varied concn. The vals. agree with those obtained by other methods. P. L. U.

A3m-SLA METALLURGICAL LITERATURE CLASSIFICATION



In memory of Nikolai Konstantinovich [redacted]. M. P. Volarovich and B. V. Deryagin. *Uspekhi Fiz. Nauk* 24, 301–4 (1940).—Necrology with portrait and review of S.'s work in physics and photochemistry. H. M. L.



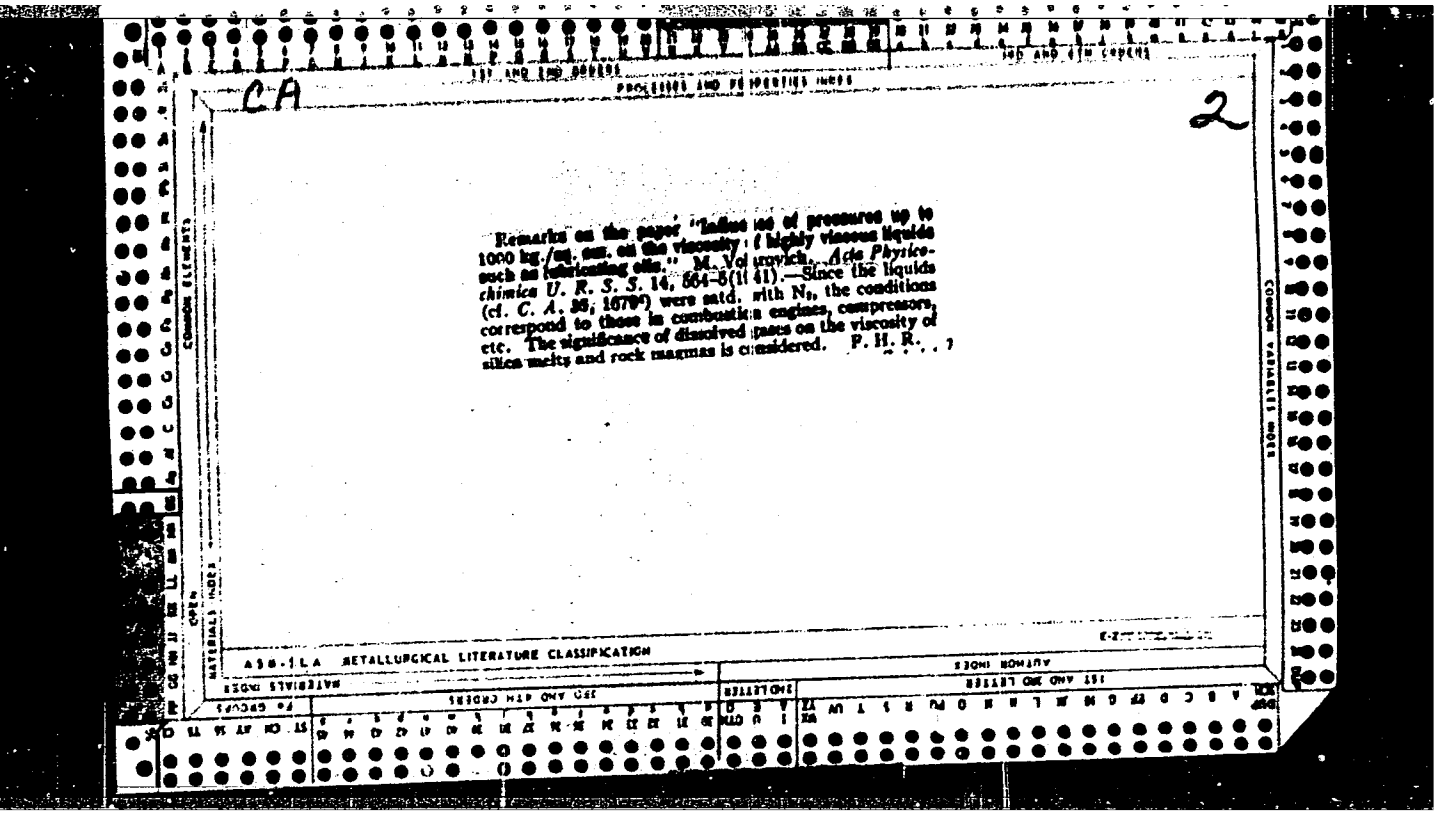
PROCESSES AND PROPERTIES INDEX

M

15

Investigations of the Viscosity of Melts at High Temperatures. M. P. Yulayevich (*Akad. Nauk S.S.S.R. Otdel. Tekh. Nauk, Inst. Mashinovedeniya, Nauchnaya Vyzvkosti Zhidkostei i Kolloid. Rastvorov*, 1941, 1, 241–256; *C. Abs.*, 1947, 41, 1519).—[In Russian]. A critical review, dealing with molten metals, fused salts, oxides, slags, glasses, enamels, &c. 93 literature references up to 1939 are given.

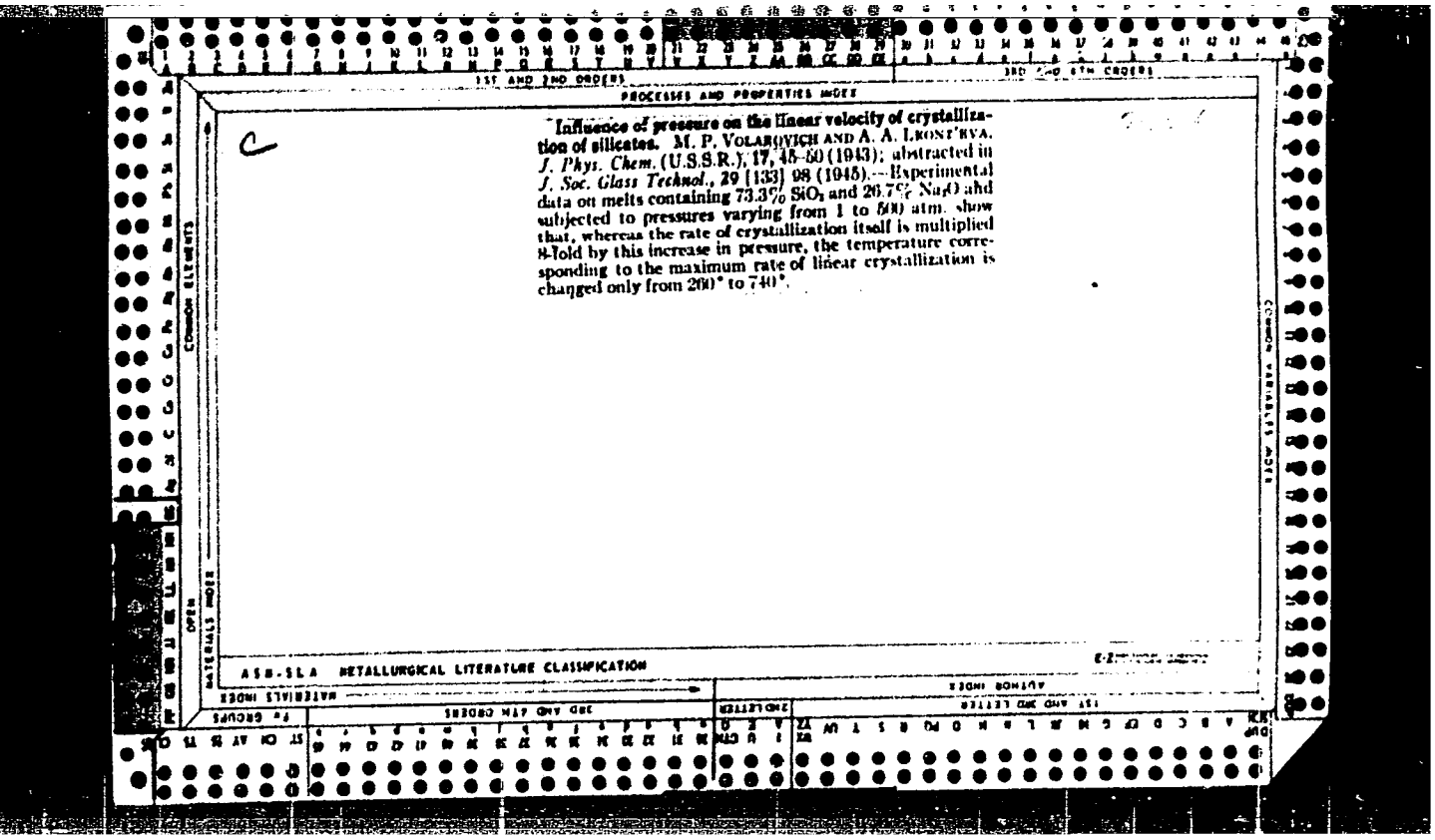
ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

2

Remarks on the paper "Influence of pressures up to 1000 kg./sq. cm. on the viscosity of highly viscous liquids such as lubricating oils." M. Volarovich. *Acta Physicochimica U. R. S. S.* 14, 564-5(1941).—Since the liquids (cf. *C. A.* 35; 1679⁹) were satd. with N_2, the conditions correspond to those in combustion engines, compressors, etc. The significance of dissolved gases on the viscosity of silica melts and rock magmas is considered. P. H. R.

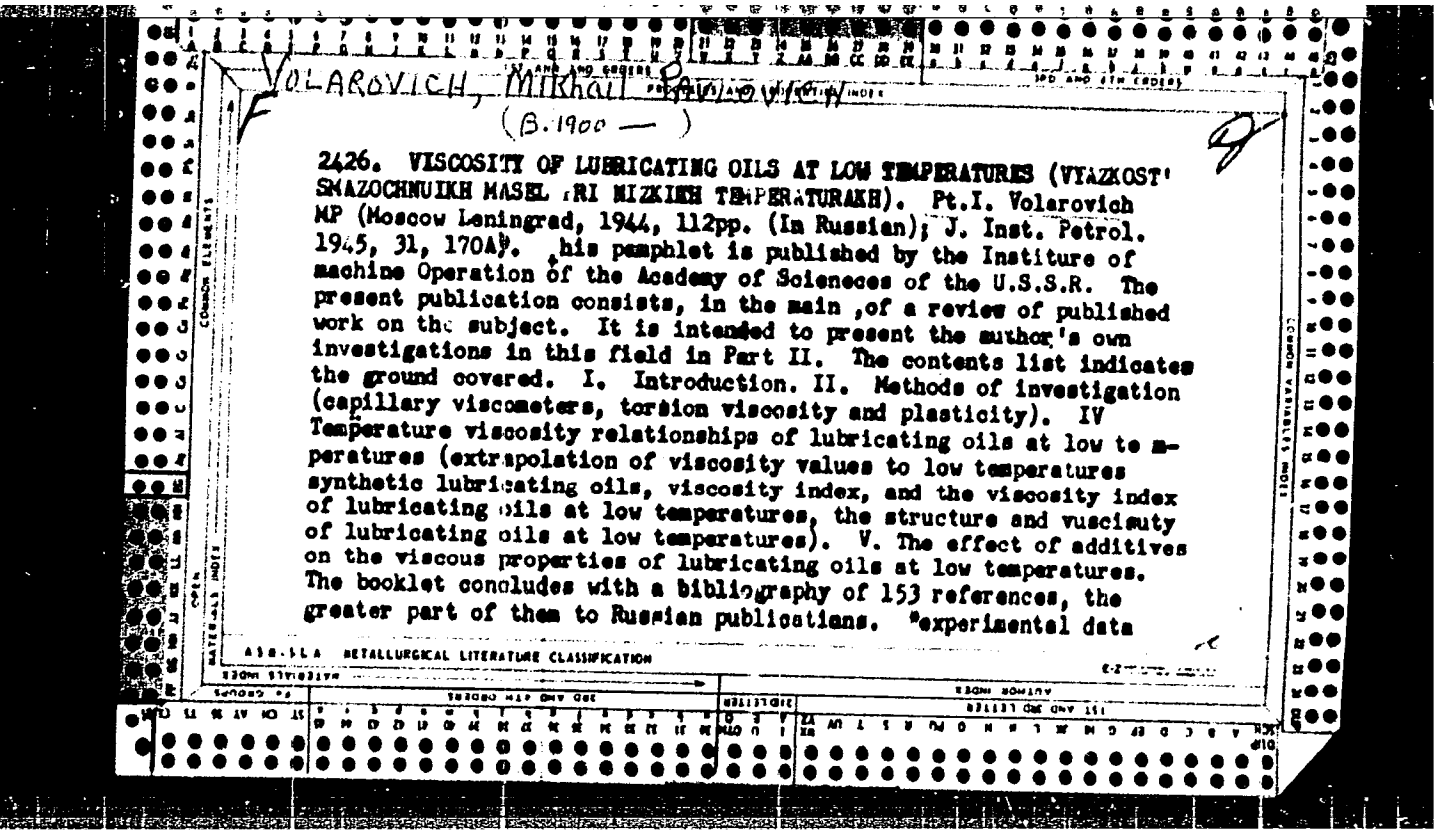


PROCESSES AND PROPERTIES INDEX

C

Influence of pressure on the linear velocity of crystallization of silicates. M. P. VOLARÓVICH AND A. A. LEONT'EVA. *J. Phys. Chem.* (U.S.S.R.), 17, 45–50 (1943); abstracted in *J. Soc. Glass Technol.*, 29 [133] 98 (1945).—Experimental data on melts containing 73.3% SiO_2 and 26.7% Na_2O and subjected to pressures varying from 1 to 500 atm. show that, whereas the rate of crystallization itself is multiplied 8-fold by this increase in pressure, the temperature corresponding to the maximum rate of linear crystallization is changed only from 260° to 740°.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



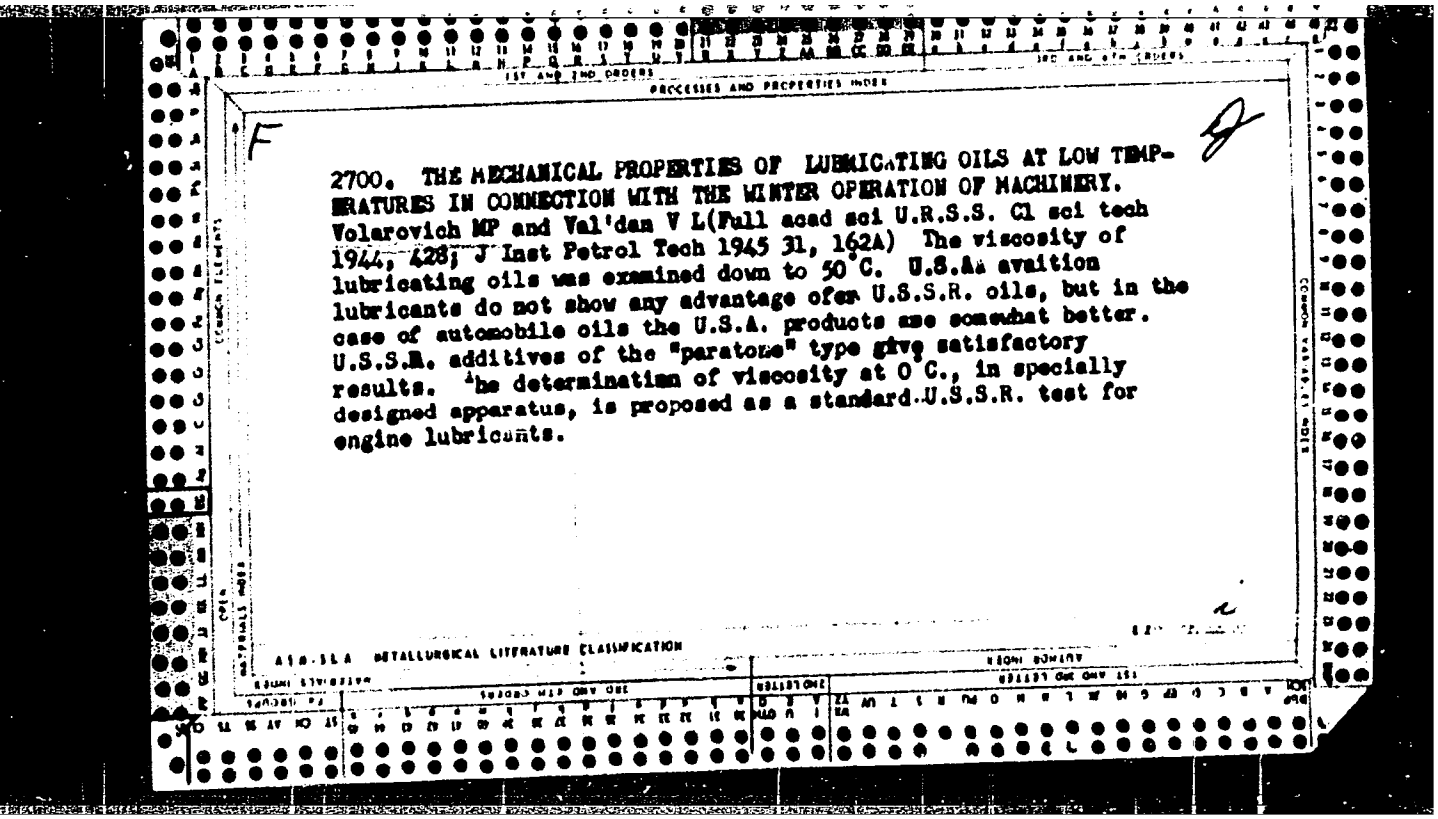
VOLAROVICH, Mikhail Pavlovich

(B.1900 —)

2426. VISCOSITY OF LUBRICATING OILS AT LOW TEMPERATURES (VYAZKOST' SMAZOCHNUIKH MASEL PRI NIZKIKH TEMPERATURAKH). Pt.I. Volarovich MP (Moscow Leningrad, 1944, 112pp. (In Russian); J. Inst. Petrol. 1945, 31, 170A). This pamphlet is published by the Institure of machine Operation of the Academy of Scieneces of the U.S.S.R. The present publication consists, in the main ,of a review of published work on the subject. It is intended to present the author's own investigations in this field in Part II. The contents list indicates the ground covered. I. Introduction. II. Methods of investigation (capillary viscometers, torsion viscosity and plasticity). IV Temperature viscosity relationships of lubricating oils at low te m-peratures (extrapolation of viscosity values to low temperatures synthetic lubricating oils, viscosity index, and the viscosity index of lubricating oils at low temperatures, the structure and vuscisuty of lubricating oils at low temperatures). V. The effect of additives on the viscous properties of lubricating oils at low temperatures. The booklet concludes with a bibliography of 153 references, the greater part of them to Russian publications. *experimental data

A13-11A METALLURGICAL LITERATURE CLASSIFICATION

on the viscosity of lubricating oils at low temperatures.

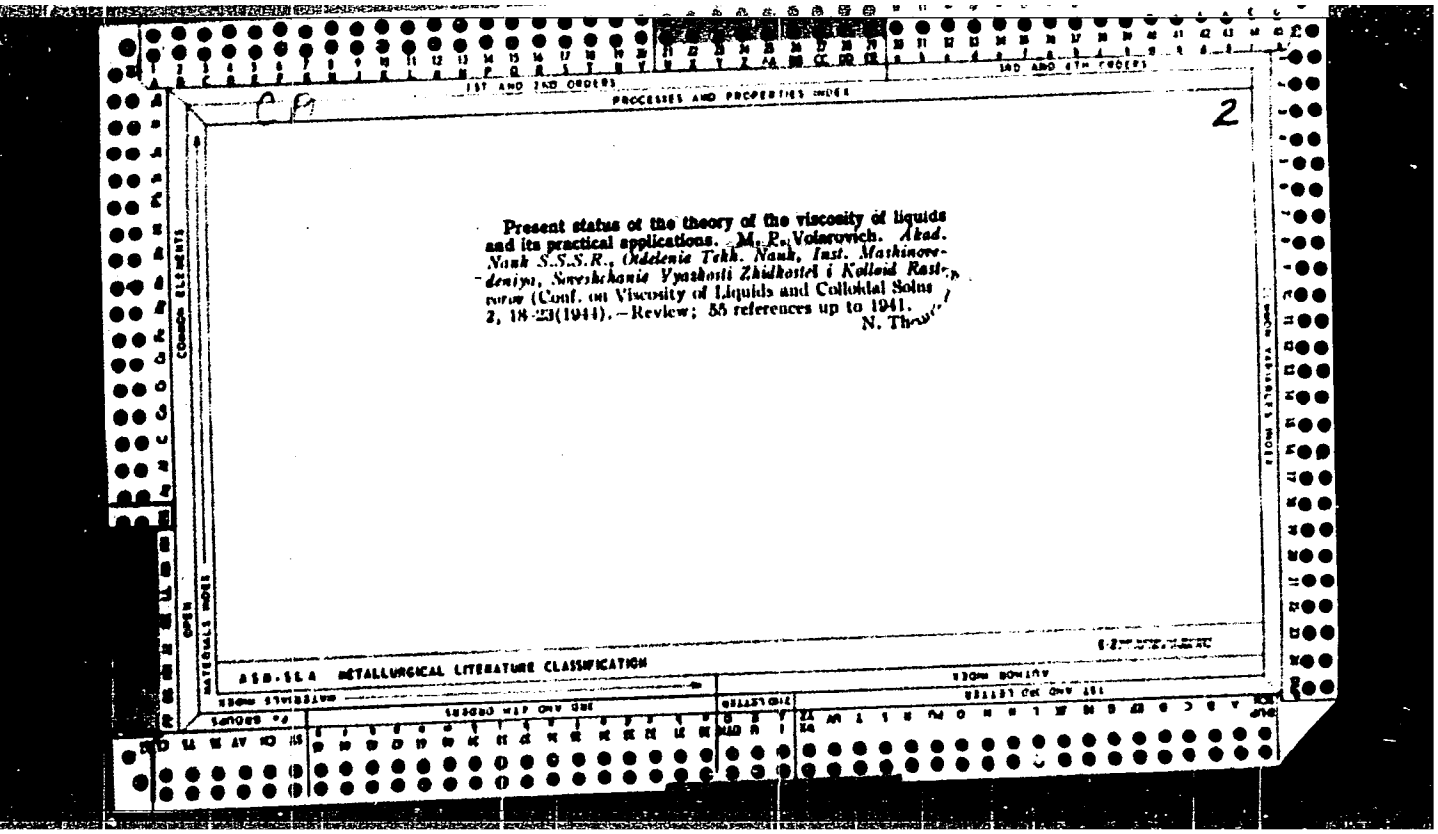


PROCESSES AND PROPERTIES INDEX

F

2700. THE MECHANICAL PROPERTIES OF LUBRICATING OILS AT LOW TEMPERATURES IN CONNECTION WITH THE WINTER OPERATION OF MACHINERY. Volarovich MP and Val'dan V L(Full acad sci U.R.S.S. Cl sci tech 1944, 428; J Inst Petrol Tech 1945 31, 162A) The viscosity of lubricating oils was examined down to 50°C. U.S.A. aviation lubricants do not show any advantage over U.S.S.R. oils, but in the case of automobile oils the U.S.A. products are somewhat better. U.S.S.R. additives of the "paratone" type give satisfactory results. The determination of viscosity at 0°C., in specially designed apparatus, is proposed as a standard U.S.S.R. test for engine lubricants.

A10-51A METALLURGICAL LITERATURE CLASSIFICATION



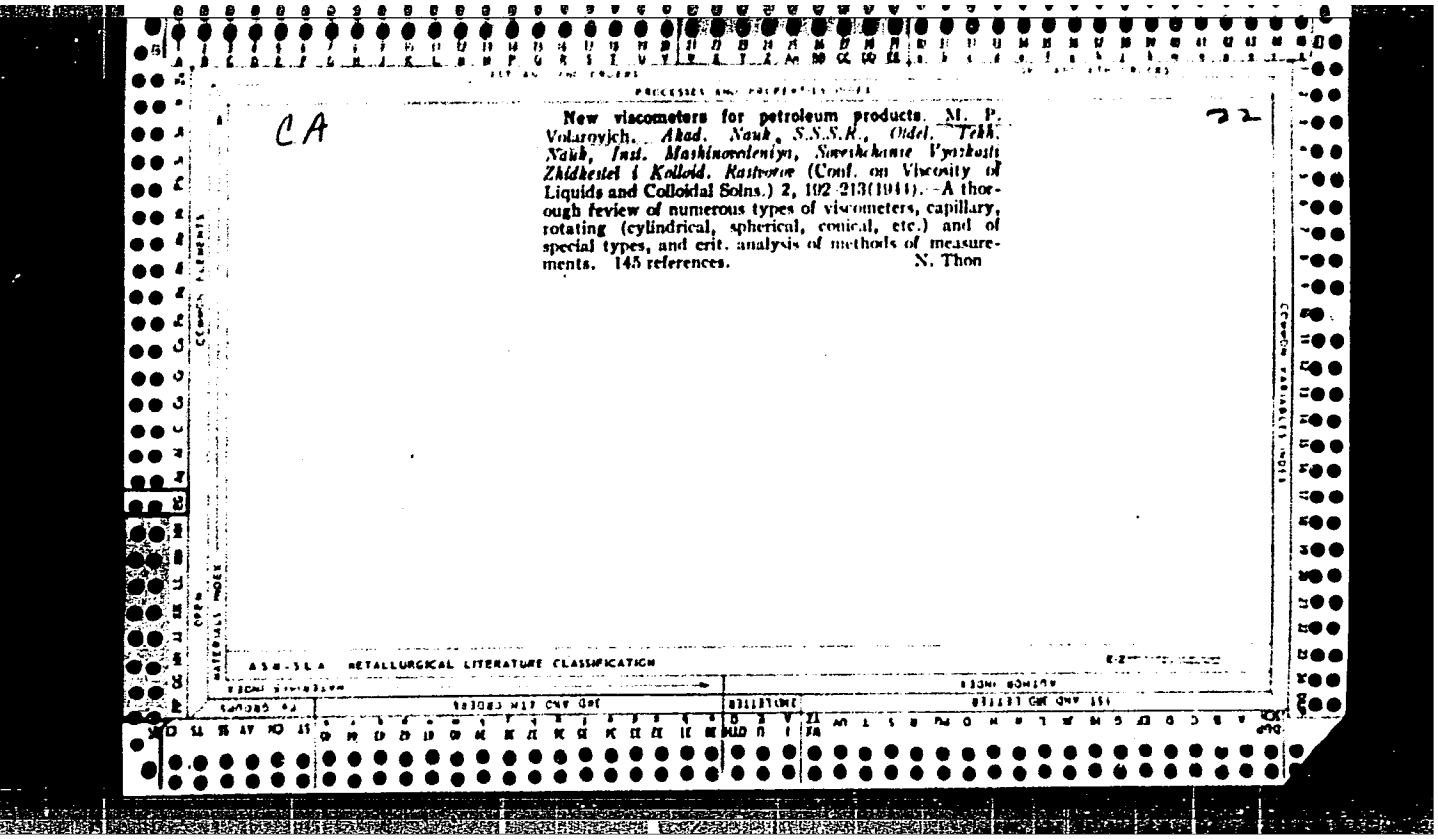
PROCESSES AND PROPERTIES INDEX

2

Present status of the theory of the viscosity of liquids and its practical applications. M. P. Volarovich. *Akad. Nauk S.S.S.R., Otdelenie Tekh. Nauk, Inst. Mashinovedeniya, Sovershchanie Vyazkosti Zhidkostei i Kolloid Rastvorov* (Conf. on Viscosity of Liquids and Colloidal Solns 2, 18-23(1944).—Review; 55 references up to 1941.

N. Th...

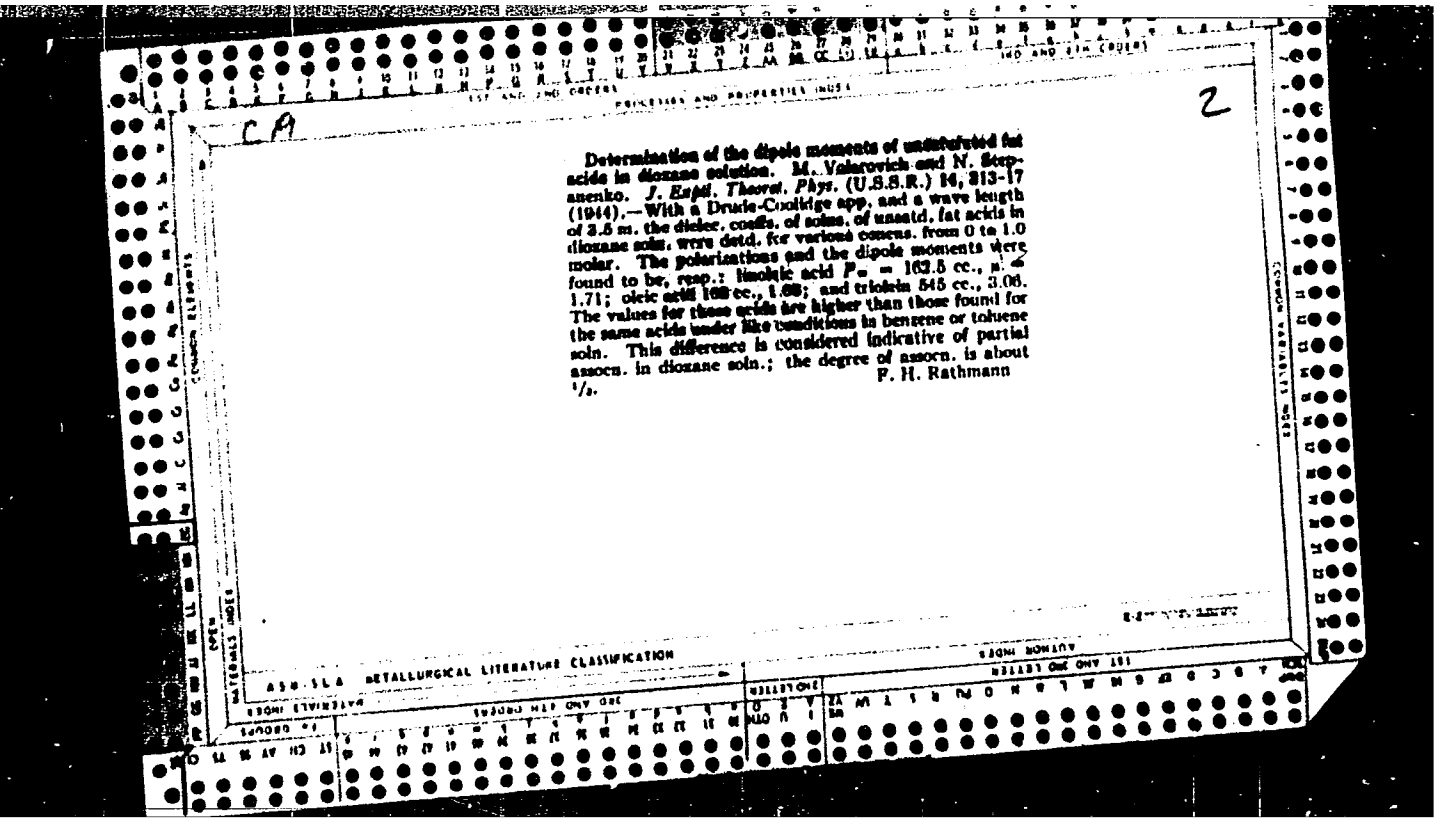
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

72

New viscometers for petroleum products. M. P. Volarovich. *Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk, Inst. Mashinovedeniya, Sovieshchanie Vyezhosti Zhidkostei i Kolloid. Rastvorov* (Conf. on Viscosity of Liquids and Colloidal Solns.) 2, 192-213(1944).—A thorough review of numerous types of viscometers, capillary, rotating (cylindrical, spherical, conical, etc.) and of special types, and crit. analysis of methods of measurements. 145 references. N. Thon

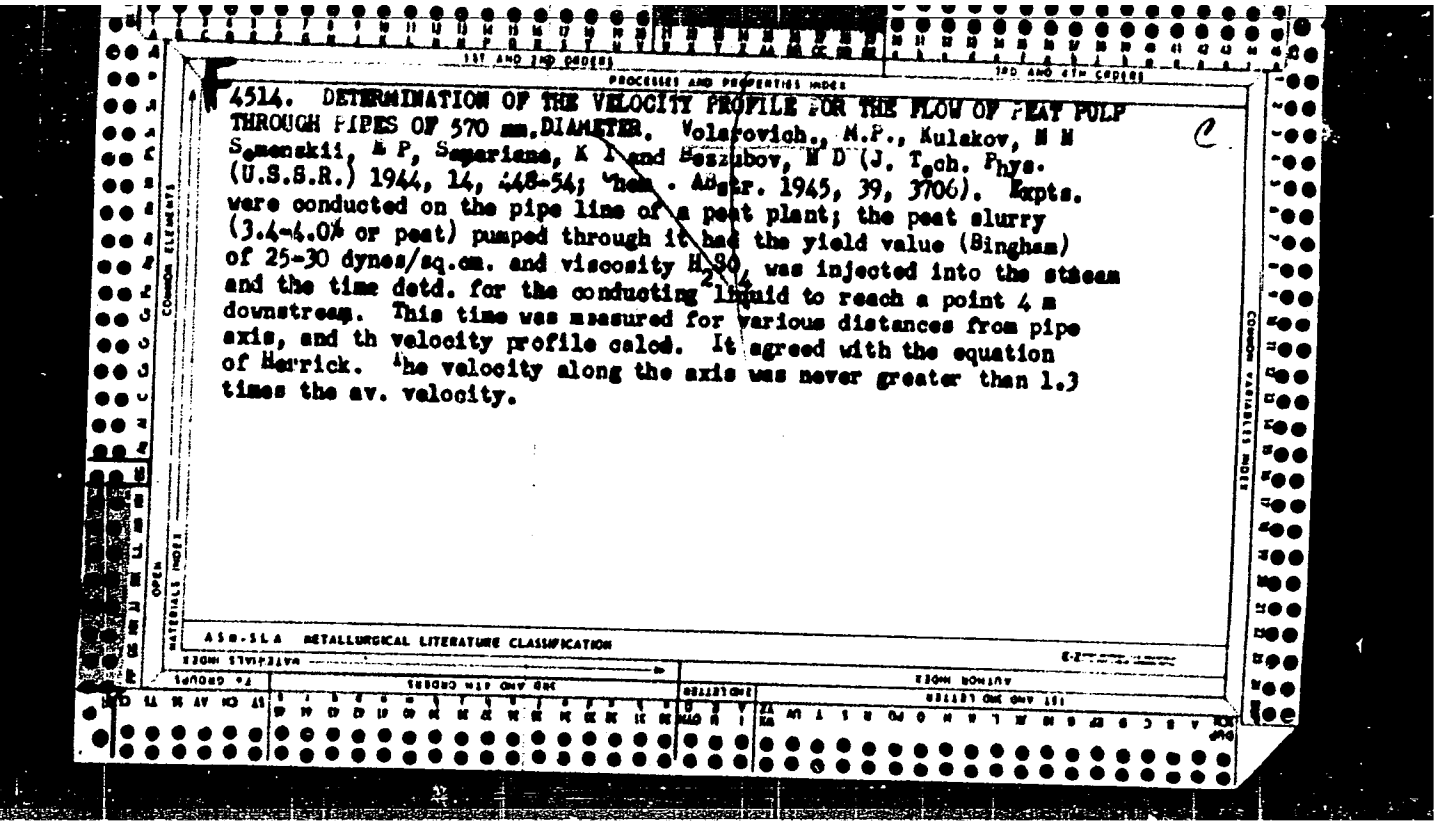


CA

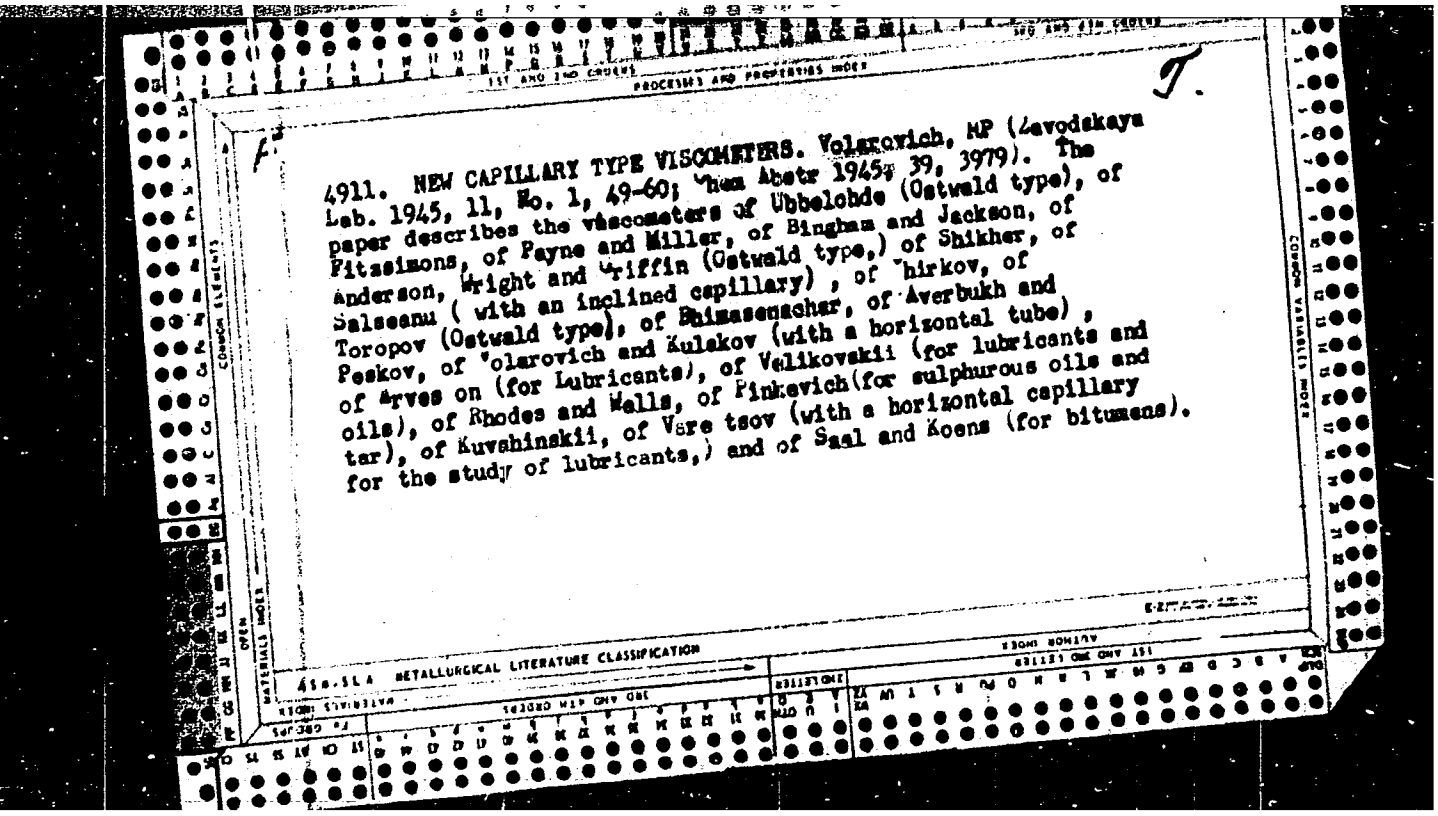
2

Determination of the dipole moments of unsaturated fat acids in dioxane solution. M. Valarovich and N. Stepanenko. *J. Exptl. Theoret. Phys.* (U.S.S.R.) 14, 313-17 (1944).—With a Drude-Coolidge app. and a wave length of 3.5 m. the dielec. coeffs. of solns. of unsatd. fat acids in dioxane solns. were detd. for various concns. from 0 to 1.0 molar. The polarizations and the dipole moments were found to be, resp.: linolic acid P_∞ = 162.5 cc., μ = 1.71; oleic acid 168 cc., 1.68; and triolein 545 cc., 3.06. The values for these acids are higher than those found for the same acids under like conditions in benzene or toluene soln. This difference is considered indicative of partial assocn. in dioxane soln.; the degree of assocn. is about 1/3.

P. H. Rathmann

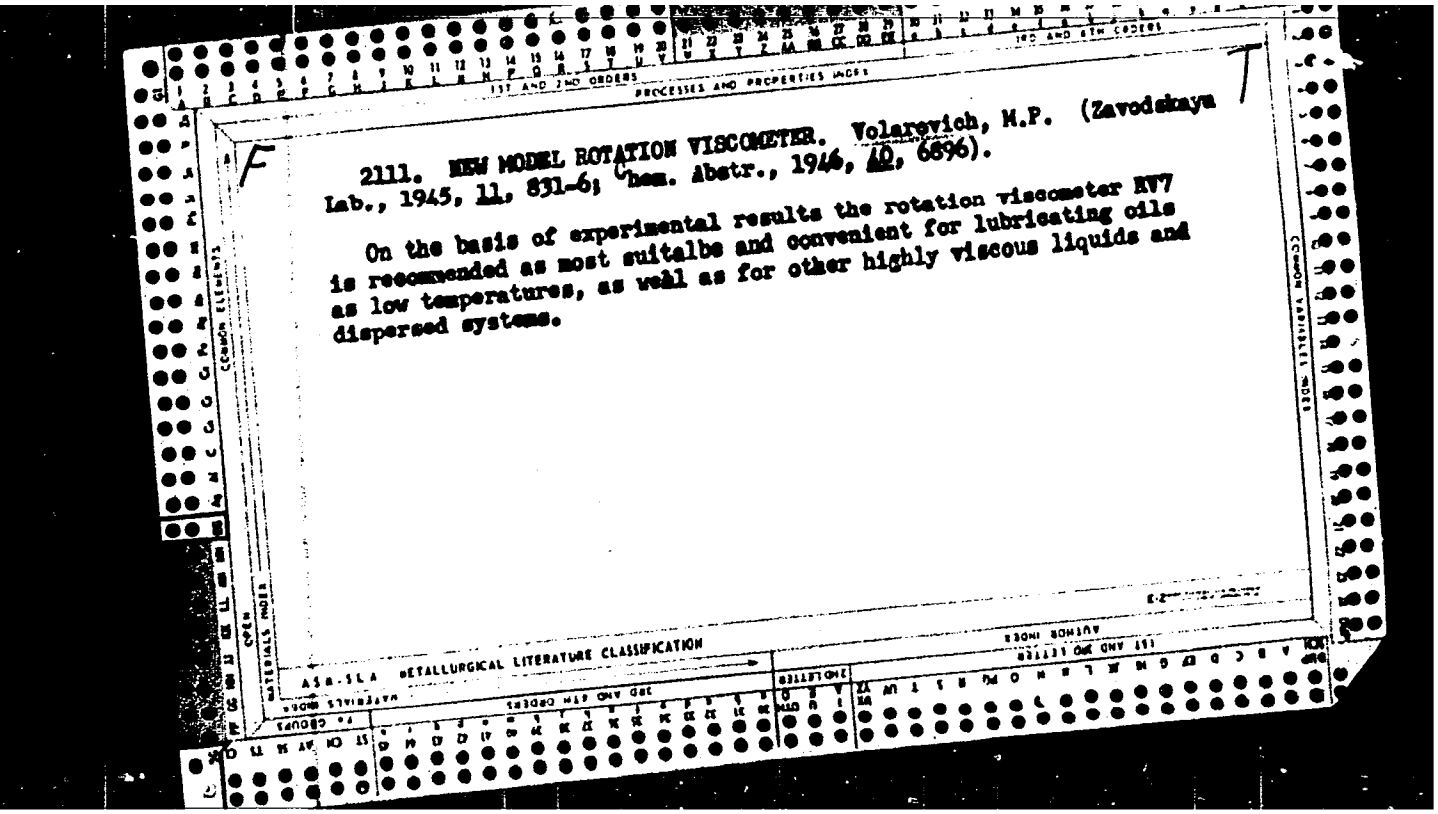


F4514. DETERMINATION OF THE VELOCITY PROFILE FOR THE FLOW OF PEAT PULP THROUGH PIPES OF 570 mm.DIAMETER. Volarovich, M.P., Kulakov, N N Semenskii, A P, Sagarians, K I and Veszabov, N D (J. Tech. Phys. (U.S.S.R.) 1944, 14, 448-54; Chem. Abstr. 1945, 39, 3706). Expts. were conducted on the pipe line of a peat plant; the peat slurry (3.4-4.0% or peat) pumped through it had the yield value (Bingham) of 25-30 dynes/sq.cm. and viscosity $H_{2.4}^{20}$, was injected into the stream and the time detd. for the conducting liquid to reach a point 4 m downstream. This time was measured for various distances from pipe axis, and th velocity profile calcd. It agreed with the equation of Merrick. The velocity along the axis was never greater than 1.3 times the av. velocity.



T.

4911. NEW CAPILLARY TYPE VISCOMETERS. Valarovich, MP (Zavodskaya Lab. 1945, 11, No. 1, 49-60; Chem Abstr 1945, 39, 3979). The paper describes the viscometers of Ubbelohde (Ostwald type), of Fitzsimons, of Payne and Miller, of Bingham and Jackson, of Anderson, Wright and Griffin (Ostwald type,) of Shikher, of Salseanu (with an inclined capillary) , of Shirkov, of Toropov (Ostwald type), of Bhimasenachar, of Averbukh and Peskov, of Valarovich and Kulakov (with a horizontal tube) , of Arveson (for Lubricants), of Velikovskii (for lubricants and oils), of Rhodes and Wells, of Pinkevich(for sulphurous oils and tar), of Kuvshinskii, of Vere tsov (with a horizontal capillary for the study of lubricants,) and of Saal and Koens (for bitumens).



2111. NEW MODEL ROTATION VISCOMETER. Volarovich, M.P. (Zavodskaya Lab., 1945, 11, 831-6; Chem. Abstr., 1946, 40, 6896).

On the basis of experimental results the rotation viscometer RV7 is recommended as most suitalbe and convenient for lubricating oils as low temperatures, as weal as for other highly viscous liquids and dispersed systems.

VOLAROVICH, M. P.

USSR/Flow, Viscous
Flow, Plastic

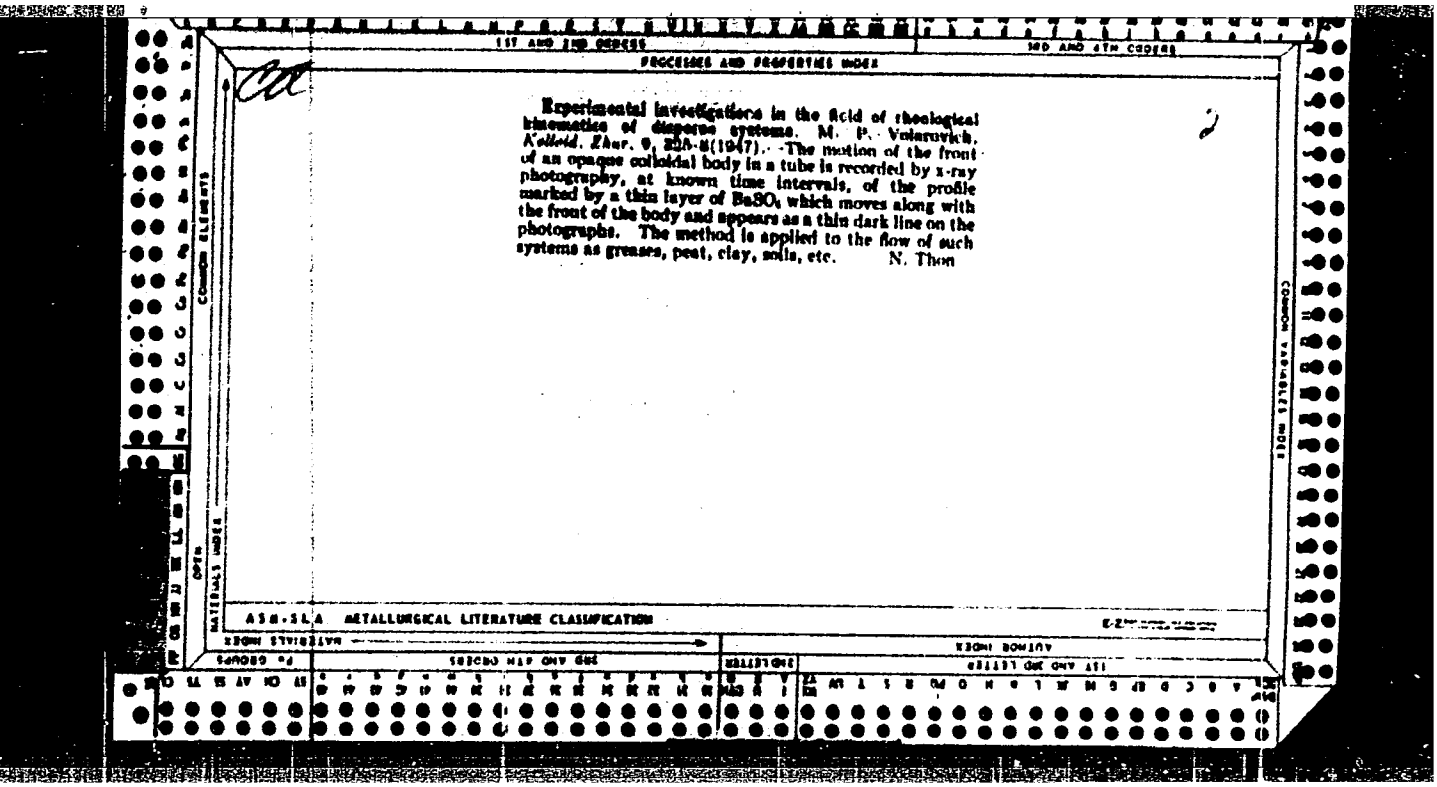
Mar 1946

"Flow of a Plastic-viscous Body Between Two Parallel Plane Walls and in the Ring Space Between Two Coaxial Tubes," M. P. Volarovich, A. M. Gutkin, 8 pp

"Zhur Tekh Fiz" Vol XVI, No 3

Setting up and solving the partial differential equation descriptive of viscous flow.

12T84



Experimental investigations in the field of rheological kinematics of disperse systems. M. P. Volarovich, *Kolloid. Zhur.* 9, 225-8(1947).—The motion of the front of an opaque colloidal body in a tube is recorded by x-ray photography, at known time intervals, of the profile marked by a thin layer of $BaSO_4$ which moves along with the front of the body and appears as a thin dark line on the photographs. The method is applied to the flow of such systems as greases, peat, clay, soils, etc. N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

The work of Poiseuille on the flow of liquids in tubes. M. P. Vollarovich. *Inst. Akad. Nauk S.S.S.R., Ser. Fiz.* 11, 7-18(1947); *Chem. Zentr.* (Russian Zone Ed.) 1948, II, 1160-1.—A brief review of the classical work of Poiseuille and an evaluation of its accuracy, together with a brief report on recent work on the flow of liquids.
M. G. Moore

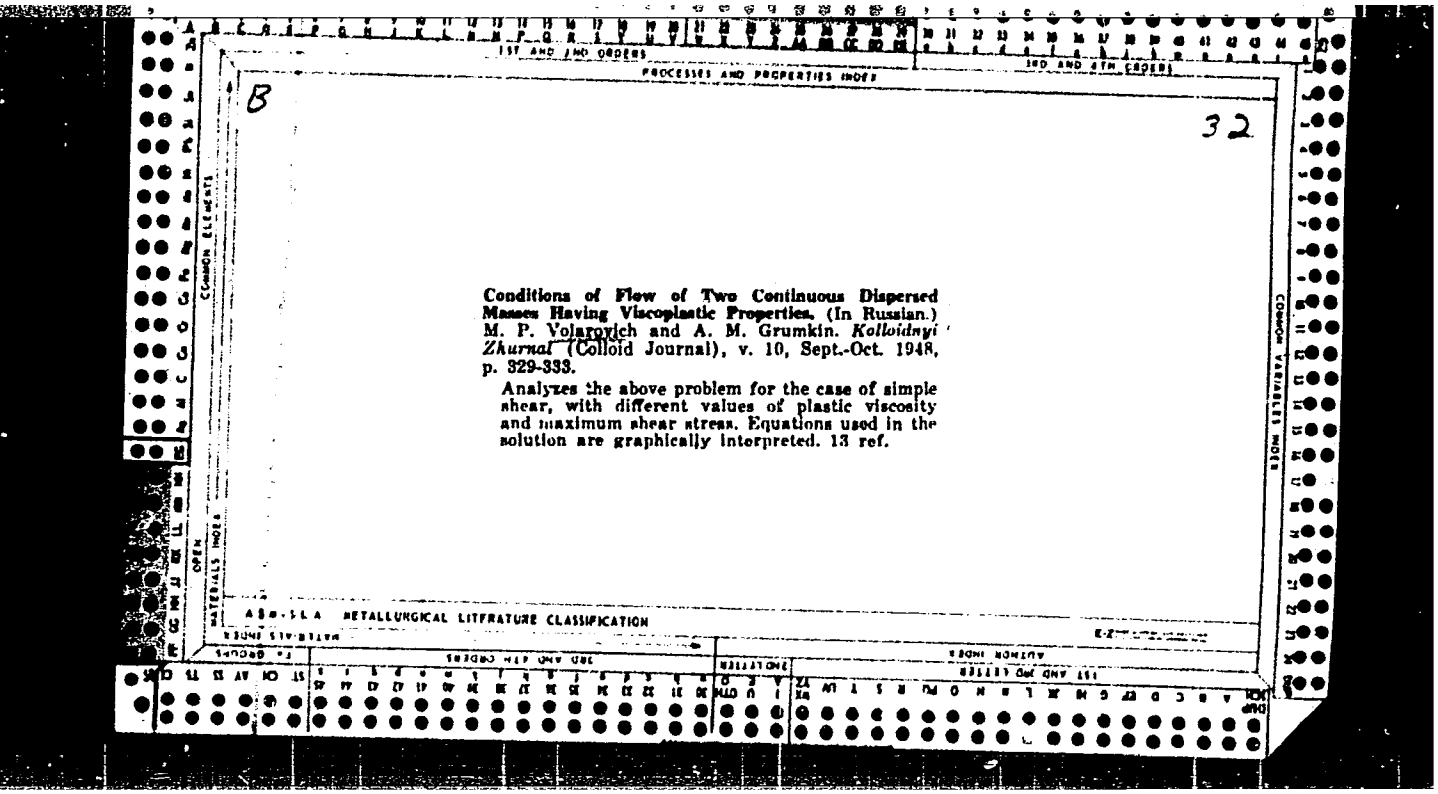
VOLAROVICH, M. P.

USSR/Chemistry Jan 1947
Crystallization
Minerals

"Effect of Pressure on the Linear Speed of Crystallization of Molten Mineral Rock," M.P. Volarovich, A.A. Leont'yeva, 2 pp

"Dok Ak Nauk SSSR" Vol LV, No 3

Submitted by D.S. Belyankin, Institute of Geological Sciences, Academy of Sciences of the USSR, 24 Sep 46. This is of great interest to those interested in the genesis of mineral deposits. Cites example of greater crystallization of glass, SiO_2 - Na_2O, under pressures of 200-500 kilograms per square centimeter than under ordinary atmospheric pressure. 21T12

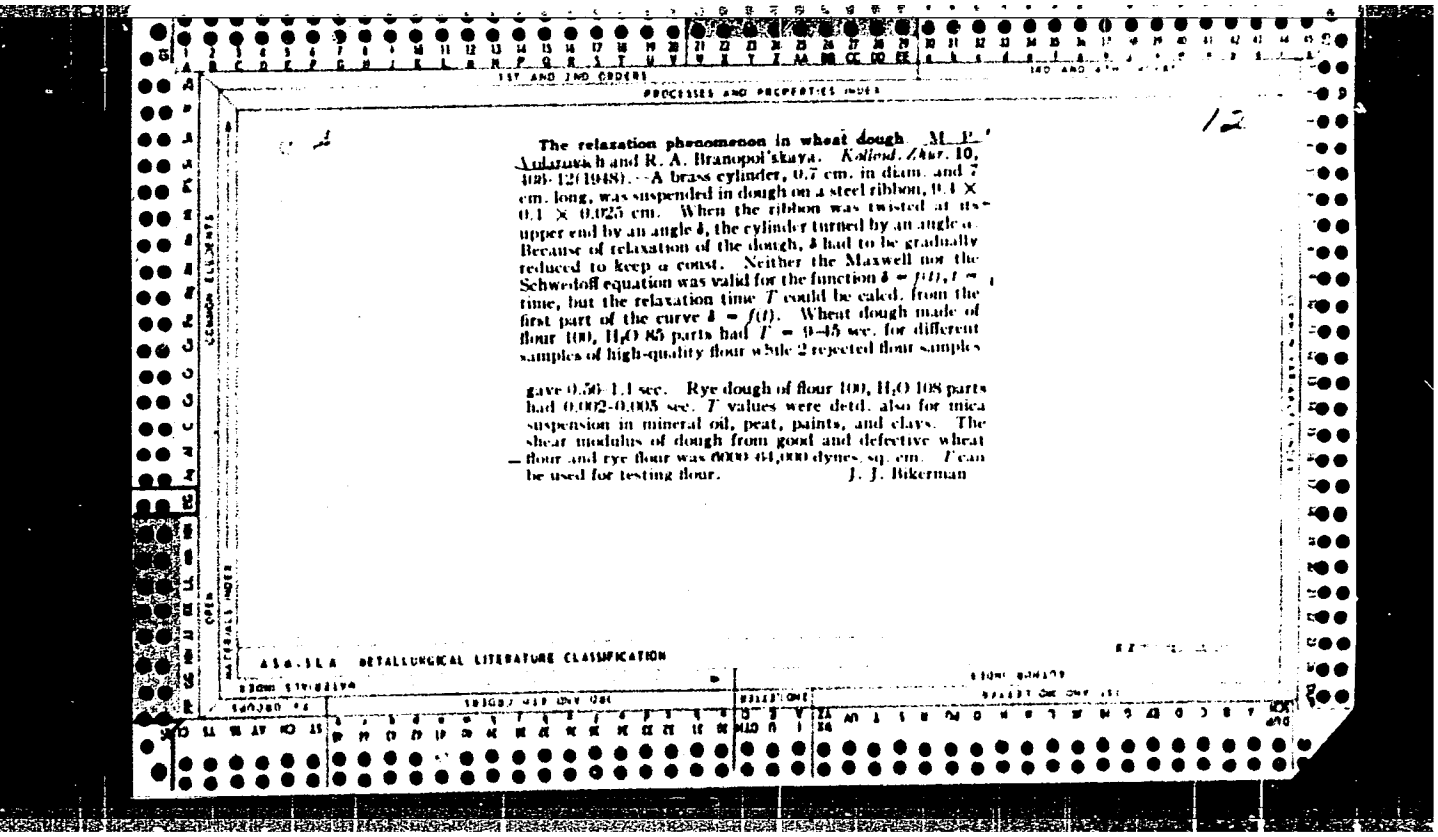


B

32

Conditions of Flow of Two Continuous Dispersed Masses Having Viscoplastic Properties. (In Russian.) M. P. Volarovich and A. M. Grumkin. *Kolloidnyi Zhurnal* (Colloid Journal), v. 10, Sept.-Oct. 1948, p. 329-333.

Analyzes the above problem for the case of simple shear, with different values of plastic viscosity and maximum shear stress. Equations used in the solution are graphically interpreted. 13 ref.



The relaxation phenomenon in wheat dough. M. P. Arkharova and R. A. Branopol'skaya. *Kolloid. Zhur.* 10, 405-12(1948).—A brass cylinder, 0.7 cm. in diam. and 7 cm. long, was suspended in dough on a steel ribbon, 0.4 × 0.1 × 0.025 cm. When the ribbon was twisted at its upper end by an angle δ, the cylinder turned by an angle α. Because of relaxation of the dough, δ had to be gradually reduced to keep α const. Neither the Maxwell nor the Schwedoff equation was valid for the function $\delta = f(t)$, t = time, but the relaxation time T could be calcd. from the first part of the curve $\delta = f(t)$. Wheat dough made of flour 100, H_2O 85 parts had T = 9–45 sec. for different samples of high-quality flour while 2 repeated flour samples gave 0.50–1.1 sec. Rye dough of flour 100, H_2O 108 parts had 0.002–0.005 sec. T values were detd. also for mica suspension in mineral oil, peat, paints, and clays. The shear modulus of dough from good and defective wheat flour and rye flour was 6000–64,000 dynes/sq. cm. T can be used for testing flour. J. J. Bikerman

PA 21/49T35

USSR/Engineering Oct 48

Bearing - Lubrication
Engines, Aircraft - Cold Weather Operation

"Application of the Hydrodynamic Theory of Friction for Bearings Operating Under Low Temperatures," M. P. Volarovich, O. V. Lazovskaya, Inst Mach Studies, Acad Sci USSR, 5½ pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 10

Low-bearing temperatures are encountered when starting automobile and aero engines in winter. Experiments show that hydrodynamic theory of bearing lubrication holds good for auto oils down to -30°. Includes five diagrams, and one table. Submitted 8 Jul 48. 21/49T35

VOLAROVICH, M. P.

Volarovich, M.P.; Lazovskaya, O.V.

"Studies of Friction in a Pair of Cylindrical Bearings at Low Temperatures." Symposium No 4, "Friction and Wear in Machines," Academy of Sciences, 1949.

VOLAROVICH, M.P.

"N.P. Petrov -- Founder of the Hydrodynamic Theory of Machine Lubrication" and "Low Temperature Properties of Transmission Lubricants"
From Friction and Wear in Machines, of the series Works of the Second All-Union Conference on Friciton and Wear in Machines; Academy of Sciences, 1949

VOLAROVICH, M. P.

PA 45/49T48

USSR/Engineering
Worm Gears
Kinematics

Jan/Feb 49

"Use of X-Rays for Kinematic Analysis of the Movement of Dispersed Systems in Worm Gears," M. P. Volarovich, T. Ya. Gorazdovskiy, Chair of Phys, Moscow Peat Inst, 4 pp

"Kolloid Zhur" Vol XI, No 1

Gives analytical and synthetic projection of the screw-thread line. Shows that dispersed systems can fill the whole space between gear worms, and that it is possible to obtain a geometrical

[redacted] 45/49T48

USSR/Engineering (Contd) Jan/Feb 49

representation for the "coefficient of filling up." Models of gear worms can be used effectively in laboratory experiments to determine slip problems of various dispersed systems, and friction they create when acting with various materials.

[redacted] 45/49T48

PA 45/49T8

USSR/Academy of Sciences
Biography

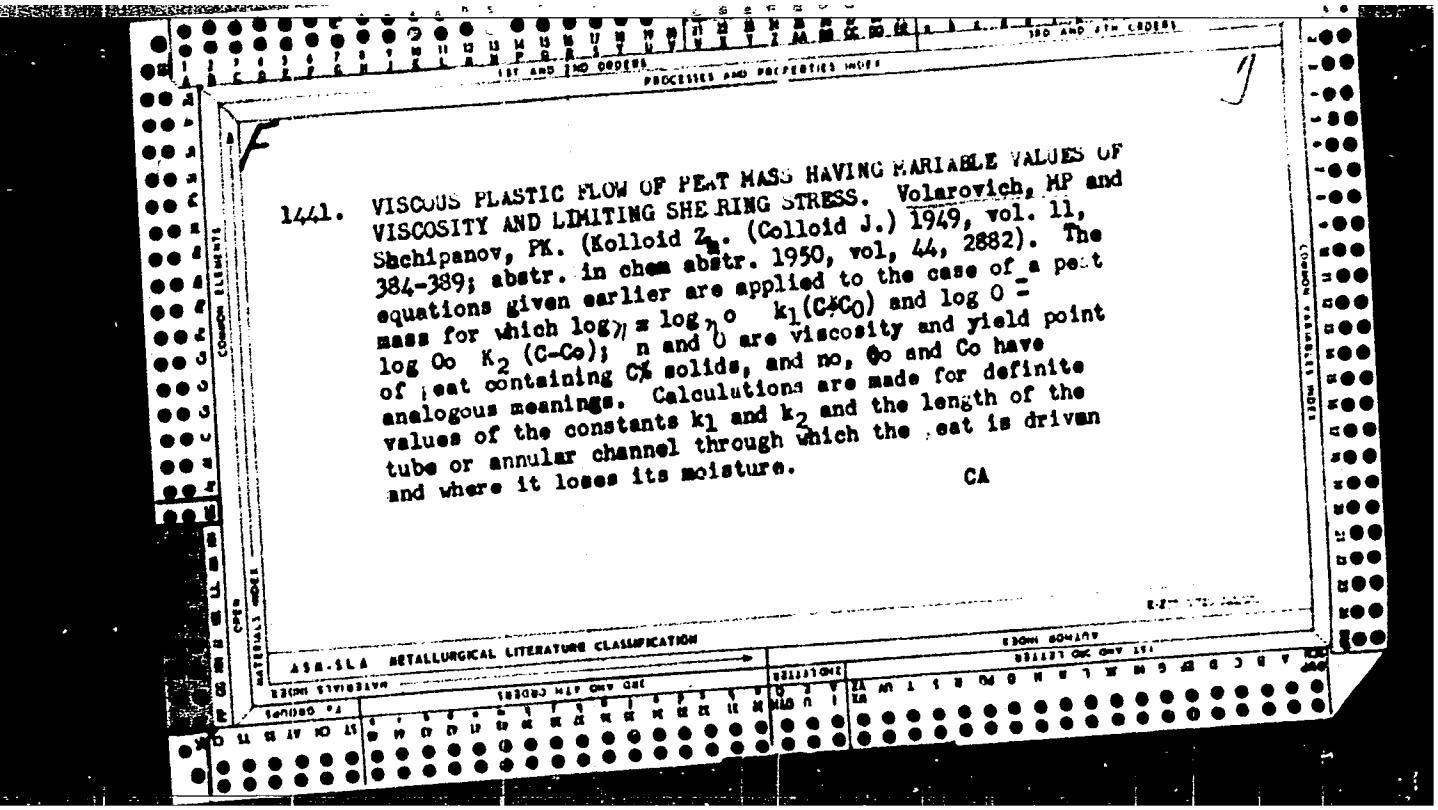
Mar/Apr 49

"On the Fiftieth Anniversary of the Birth, and Twenty-Fifth Anniversary of the Scientific Activity, of Academician P. A. Rebinder," M. P. Volarovich, B. Ya. Yampol'skiy, 1½ p

"Kolloid Zhur" Vol XI, No 2

Summarizes career of P. A Rebinder. His chief fields are (1) study of the effect of adsorption layers on properties and behavior of dispersed systems and colloidal materials, and (2) deformation process in solids. Includes photograph.

45/49T8



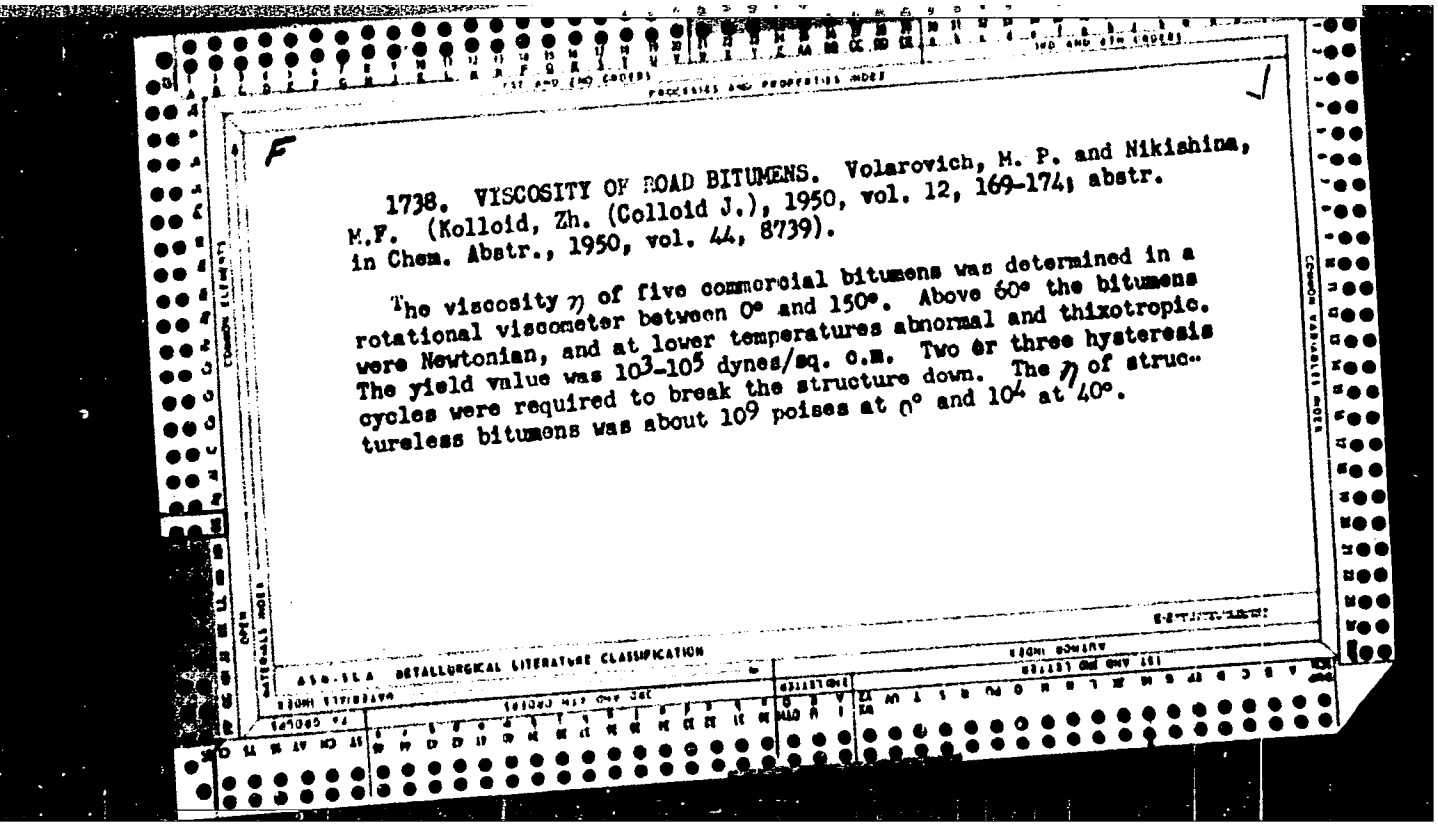
1441. VISCOUS PLASTIC FLOW OF PEAT MASS HAVING VARIABLE VALUES OF VISCOSITY AND LIMITING SHEARING STRESS. Volarovich, MP and Shchipanov, PK. (Kolloid Zh. (Colloid J.) 1949, vol. 11, 384-389; abstr. in chem abstr. 1950, vol, 44, 2882). The equations given earlier are applied to the case of a peat mass for which $\log \eta = \log \eta_0 + k_1(C+C_0)$ and $\log \theta = \log \theta_0 + K_2 (C-C_0)$; n and θ are viscosity and yield point of peat containing C% solids, and η_0, θ_0 and C_0 have analogous meanings. Calculations are made for definite values of the constants k_1 and k_2 and the length of the tube or annular channel through which the peat is driven and where it loses its moisture.

CA

VOLAROVICH, M. P.

"Problem of the Qua.ity of Lubricants in Connection with the Development of Lubricating Technology," report submitted at the 2nd All-Uninn Conf. on Friction and Wear in Machinery at the Institute of Machine Studies, Acad. Sci., USSR

Vest. Ak. Nauk, 3/50



1738. VISCOSITY OF ROAD BITUMENS. Volarovich, M. P. and Nikishina, M.F. (Kolloid, Zh. (Colloid J.), 1950, vol. 12, 169-174; abstr. in Chem. Abstr., 1950, vol. 44, 8739).

The viscosity η of five commercial bitumens was determined in a rotational viscometer between 0° and 150°. Above 60° the bitumens were Newtonian, and at lower temperatures abnormal and thixotropic. The yield value was 10^3–10^5 dynes/sq. c.m. Two or three hysteresis cycles were required to break the structure down. The η of structureless bitumens was about 10^9 poises at 0° and 10^4 at 40°.

166T57

USSR/Metals - Testing Equipment Jul 50

"Viscosimeter for Molten Slags, Based on the Principle of Torsional Vibrations," M. P. Volarovich, O. I. Yatsunskaya, "Serp i Molot" Metallurgical Plant

"Zavod Lab" Vol XVI, No 7, pp 813-818

Describes torsional pendulum type of viscosimeter for molten slags and methods for its application. To obtain values of viscosity in absolute units, poises, instrument is calibrated against liquids of known viscosity: water, aniline, mercury and

166T57

[redacted]

USSR/Metals - Testing Equipment (Contd) Jul 50

castor oil. Density of molten slags, which has to be known for calculation of their viscosity, is determined with aid of dilatometer.

166T57

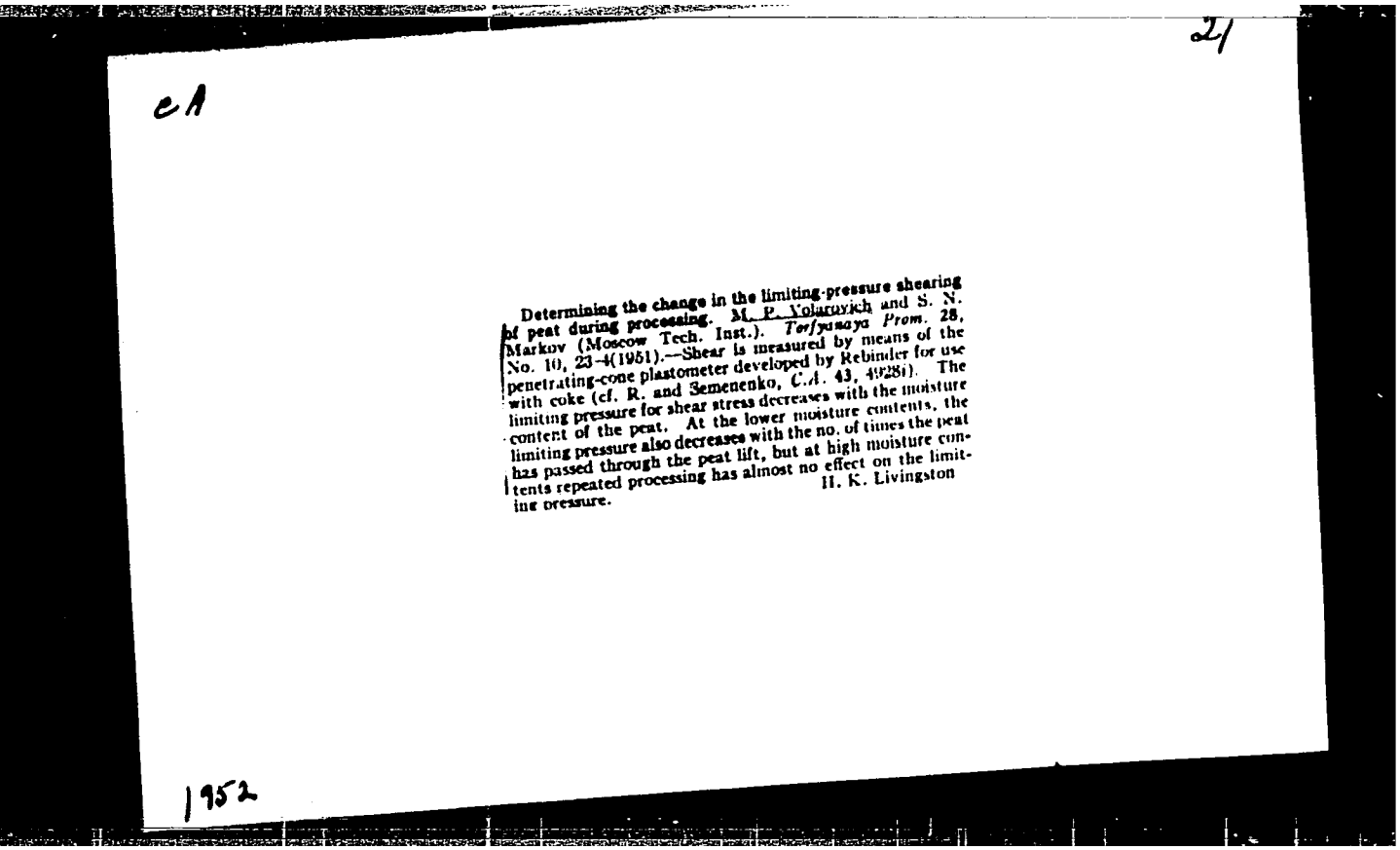
[redacted]

VOLAROVICH, M. P.

VOLAROVICH, M. P.; LAZAREV, P. I.; VAVILOV, S. I. (editor)

Outline of the History of Russian Science (Ocherki istorii russkoy nauki), Academy of Sciences Series, 1951, Izdatel'stvo Akademii Nauk SSSR, 248pp.

Book W-22459, 22 Apr 52

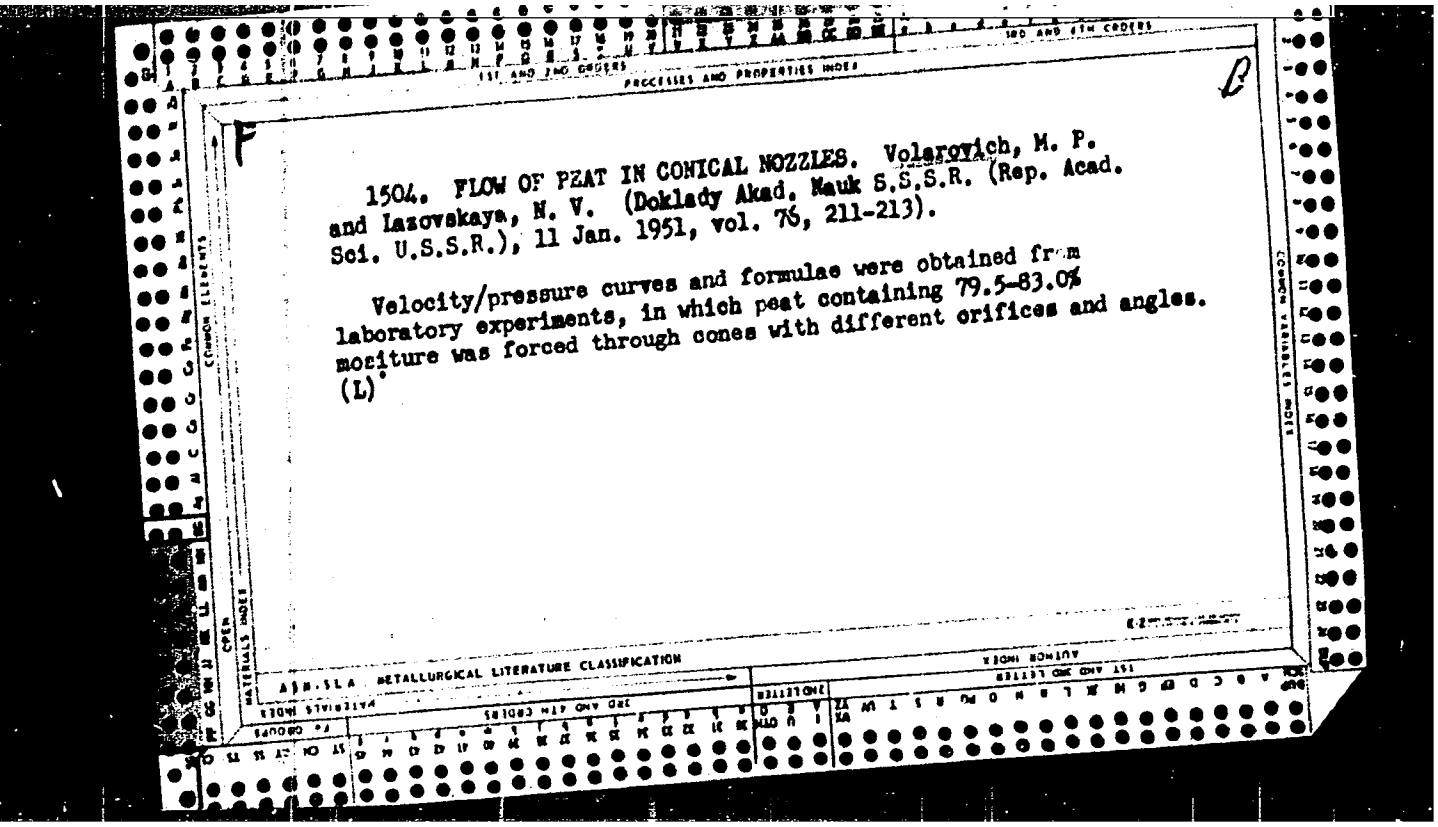


21

cA

Determining the change in the limiting-pressure shearing of peat during processing. M. P. Volarovich and S. N. Markov (Moscow Tech. Inst.). *Torfyanaya Prom.* 28, No. 10, 23–4(1951).—Shear is measured by means of the penetrating-cone plastometer developed by Rebinder for use with coke (cf. R. and Semenenko, *C.A.* 43, 4928i). The limiting pressure for shear stress decreases with the moisture content of the peat. At the lower moisture contents, the limiting pressure also decreases with the no. of times the peat has passed through the peat lift, but at high moisture contents repeated processing has almost no effect on the limiting pressure.
H. K. Livingston

1952



1504. FLOW OF PEAT IN CONICAL NOZZLES. Volarovich, M. P. and Lazovskaya, N. V. (Doklady Akad. Nauk S.S.S.R. (Rep. Acad. Sci. U.S.S.R.), 11 Jan. 1951, vol. 76, 211-213).

Velocity/pressure curves and formulae were obtained from laboratory experiments, in which peat containing 79.5-83.0% moisture was forced through cones with different orifices and angles. (L)

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Comparative characteristic of shoe glues. Leg. prom., 12, No. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1952, Unclassified.

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Rheological and adhesive properties of rubber solutions as functions of the degree of mastication of the rubber. M. P. Volarovich and L. Ya. Ginzburg. *Kolloid. Zhur.* 14, 29-7(1952).—Smoked-sheet having plasticity index K = 0.20 (I) was masticated to K = 0.30 (II), 0.50 (III), 0.60 (IV), and 0.75 (V). For the 1st 3 samples, 11% solns. in gasoline had viscosity (η) of 1040, 655, and 39 poises, yield stresses (Y) of 90, 66, and 0 dynes/sq. cm., and adhesive joint strengths (J) of 1.7, 1.5, and 0.7 kg./cm. at 20°. Eight % solns. of I, II, and III had η values of 384, 224, and 7, and J values of 1.6, 1.3, and 0. III had a measurable Y in 10% soln.; in 30% solns. IV and V had no Y; the η values were 1130 and 83, and J values 0.55 and 0.29. The η and Y values were measured in a rotational viscometer. J was detd. by peeling apart 2 pieces of crude fabric impregnated with the rubber soln. and then aged for 24 hrs. Between 20° and 50°, $\log(\eta_2/\eta_1) = k(t_1 - t_2)$, where t is temp. and k is a const. E.g., at 50° η of IV was 476, 226, 100, 59, and 24 in 20.3, 24.6, 21.3, 19.8, and 16.6% solns. The Y value of I slightly decreased on temp. increase. E.g., at 50° Y was 41, 28, 20, 19, and 12 in 11.3, 9.6, 8.7, 8, and 5.7% solns., while η was 454, 291, 214, 172, and 49. The J depends on the K of the solid more than on the concn. of the soln. Samples having no Y value have low J values, whatever the η of the soln.

J. J. Bikerman

(CA 47 no. 19 : 10261 '53)

VOLAROVICH, M. P.

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Solid Mineral Fuels, I-12

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62515

Author: Volarovich, M. P., Gusev, K. F.

Institution: None

Title: Roentgenographic Investigation of Peat

Original Periodical: Tr. Mosk. torfyanogo in-ta, 1953, No II, 97-111

Abstract: Results of roentgenographic investigations of upper sphagnum-eriophorum peat ranging from absolutely dry to 66% content of water carried out by means of a specially designed apparatus. Peat containing from 66 to 16% water has a crystalline structure the water therein is weakly bound by swelling water and adsorption water. With a water content from 16 to 12% (hydration) a clearly defined crystalline structure of peat is revealed and a cellulose-type lattice is observed. On further drying peat loses the hydration water and is converted to amorphous slate.

Card 1/1

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Study of thin pieces of rock under shearing by torsion and pressure from one side. (In: Soveshchanie po eksperimental'noi mineralogii i petrografii. 4th, Moscow, 1952. Trudy, Moskva, 1953. No.2, p.230-236.) (MLRA 7:3)

1. Institut geofizikii Akademii nauk SSSR. (Rocks)

Volarovich M. P.

The theory of flow of a viscoplastic medium. M. P. Volarovich and A. M. Gutkin. *Kolloid Zhur.* 15, 473-6 (1953). (In Russian.) Reply to Tyalina. *C.A.* 47, 11807i.

Sep 53

USSR/Physics - Bibliography

"Review of V. G. Levin's Book 'Fiziko-khimicheskaya gidrodinamika' (Physicochemical Hydrodynamics)," (M. P. Volarovich, reviewer)

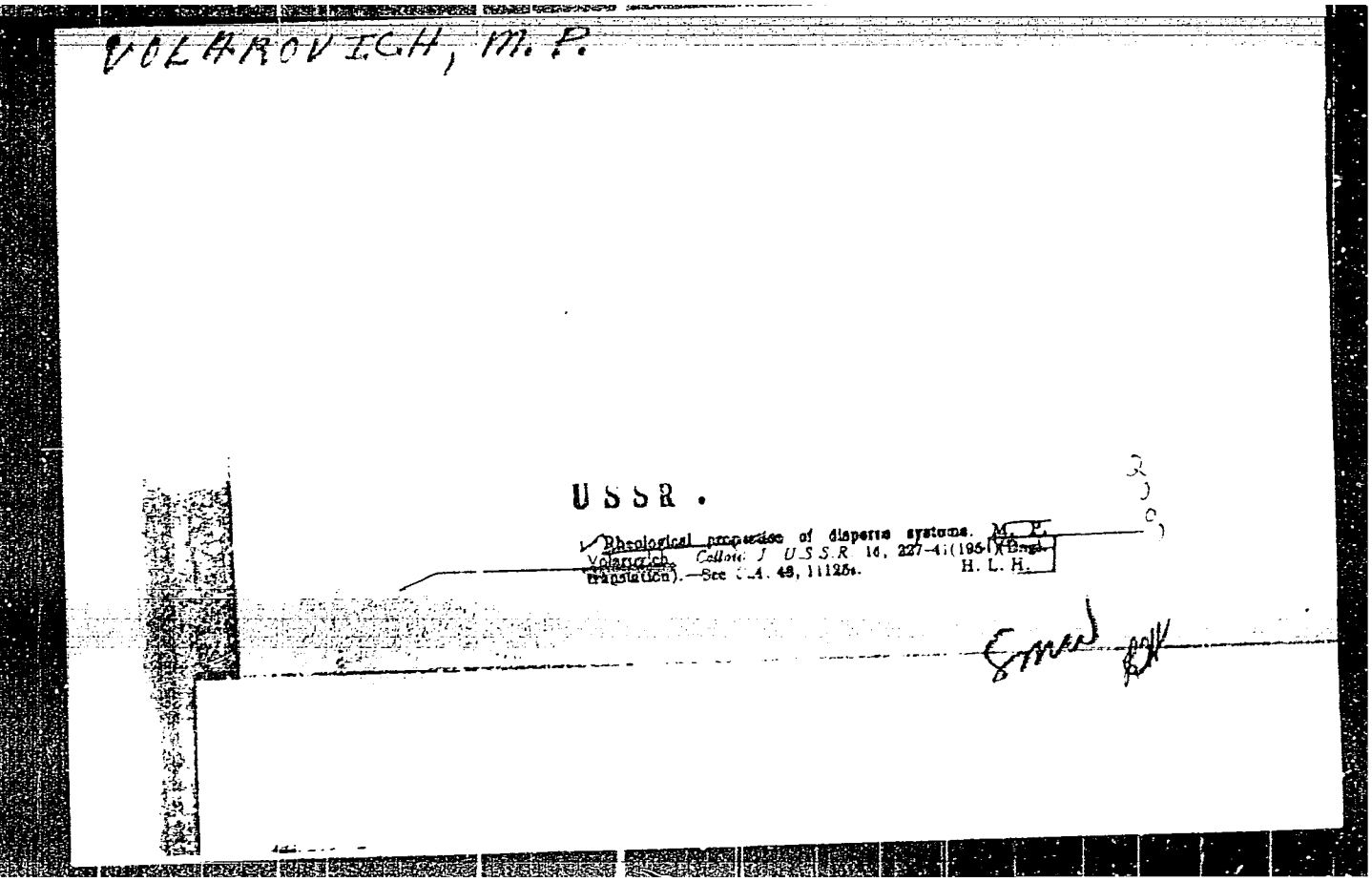
Usp Fiz Nauk, Vol 51, No 1, pp 155-158

Favorably reviews book whose subject lies on boundary between physics and physical chemistry. The 1st part of this book deals with convective diffusion; the 2d, with superficial tension. The book is intended for scientific specialists.

263T100

VOLAROVICH M P

Issledovanie Reologicheskikh Svoistv Dispersnykh Sistem. Investigation of Rheological Properties of Dispersed Systems. M. P. Volarovich. *Arch. Mech. Stosowanej*, (Warsaw), v. 6, no. 2, 1954, p. 171-185 refs. In Russian, with summaries in Polish and English. Review of Russian developments in the study of easily deformable materials, with an analytical interpretation of viscoplastic flow; appraisal of test methods; applications of the experimental results.



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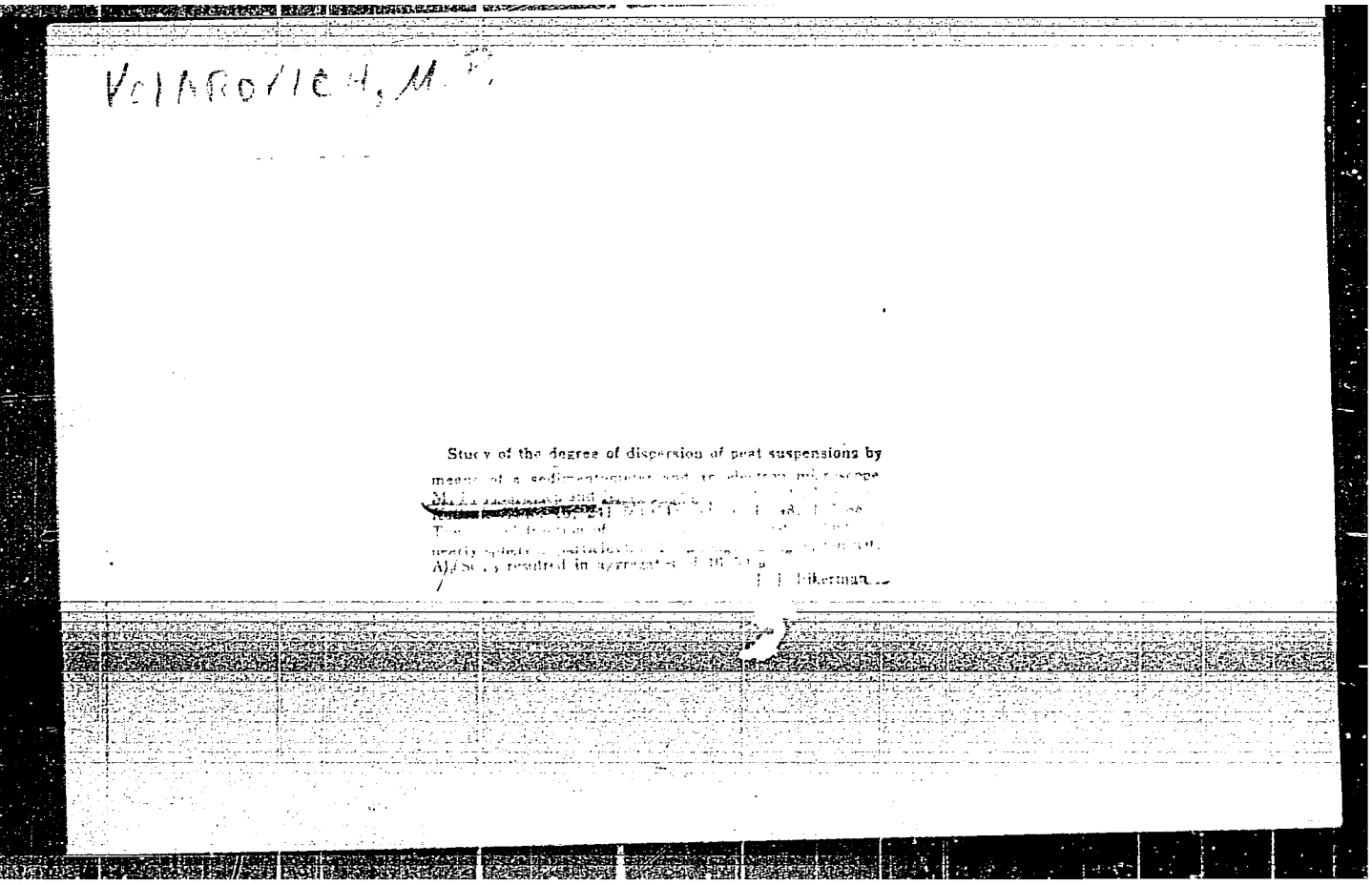
Rheological properties of disperse systems. M. P. Volarovich. Collect. J. U.S.S.R. 16, 227-41(1951)(Engl. translation).—See C.A. 48, 11125a. H. L. H.



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Study of the degree of dispersion of peat suspensions by