"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

BARK, S.Ye., red.; VIDGORCHIK, D.Ya., red.; KACHUR, O.Yu., red.; RAVICH, M.B., red.; TSIKERMAN, L.Ya., red.; PANKRATOVA, O.M., ved. red.

[Use of gas in industry] Ispol'zovanie gaza v promyshlennosti. Moskva, 1962. 109 p. (MIRA 16:10)

L. Institut tekhnicheskoy informatsii i ekonomicheskikh issledovaniy po neftyanoy i gazovoy promyshlennosti.
(Gas as fuel)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/170/62/005/001/002/013
B104/B102

AUTHORS: Khitrin, L. N., Ravich, M. B., Kotova, L. L.

TITLE: Methods and results of a study of the kinetic characteristics of combustion of powdery fuel in a flow

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 5, no. 1, 1962, 7-12

TEXT: A dev ce designed for studying the combustion of powdery fuel in a gas flow under isothermal conditions is described. Its main part is a vertical, electrically heated, stainless steel reaction tube of 800 mm length and 8 mm inner diameter. A screw conveyer transports fuel from a bunker into the tube and at the same time air or a nitrogen-oxygen mixture is blown through. The mixture is heated to a certain temperature in the tube (maximum 750°C). The ratio between the oxygen used in the flow during the experiment and the theoretically necessary value amounted to 0.035-0.10. A section of 500 mm of the reaction tube could be investigated. Gas samples were taken at the end of the tube. The conditions for sufficient mixing of the gas flow with fuel particles and also the isothermal reaction conditions in the tube were studied in

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preliminary tests. Nearly isothermal burning conditions were reached with 5 g of fuel per standard liter. The following types of fuel have been investigated: peat coke, coke of Moscow coal, anthracite and oil shale coke residue. The activity of the fuels investigated was mainly a function of temperature and duration of coking. The tests were limited to materials produced by the following two methods: 1) 6-hr coking at 600°C with exclusion of air; 2) 6-hr coking at 800°C with exclusion of air. The content of O_2, CO_2, and CO was determined from gas samples. The results show that during the reaction of oxygen with fuel complex sorption processes take place, which will have to be studied more closely before the burning processes can be calculated. There are 4 figures and 12 references: 10 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: Rhead T. E. and Wheeler R. V. Journ. Chem. Soc., 97, 2178, 1910; 99, 1140, 1911; 103, 461, 1210, 1913; Lambert. Trans. Faraday Soc., XXXII, part 2, 452, 1936.

ASSOCIATION: Energeticheskiy institut im. G. M. Krzhizhanovskogo, g. Moskva (Institute of Power Engineering imeni G. M. Krzhizhanovskiy, Moscow)

SUBMITTED: July 8, 1961

Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

KHITRIN, L.N.; RAVICH, M.B.; KOTOVA, L.L.

Oxygen sorption during the combustion of carbon (coke). Inzh.-fiz.zhur. 5 no.8:17-22 Ag '62. (MIRA 15:11)

1. Energeticheskiy institut imeni G.M.Krzhizhanovskogo, Moskva.
(Sorption) (Combustion) (Carbon)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, Mark [redacted], prof., doktor tekhn. nauk; KUDRYAVTSEVA, L.V., red.

[Simplified methods of heat-engineering calculations; heat engineering calculations on the generalized constants of combustion products] Uproshchennaia metodika teplotekhnicheskikh raschetov; teplotekhnicheskie raschety po obobshchennym konstantam produktov goreniia. Izd.4., dop. Moskva, Izd-vo "Nauka," 1964. 365 p. (MIRA 17:4)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, Mark Borisovich, prof., doktor tekhn. nauk; DVORIN, Semen Semenovich, inzh.; PEVZNER, Solomon Isaakovich, inzh.; SUSHKIN, I.N., inzh., red.; KNORRE, G.F., doktor tekhn. nauk [deceased], red.; ZIKEYEV, T.A., kand. tekhn. nauk, red.

[Fuel for metallurgical furnaces; a handbook] Metallurgicheskoe toplivo; spravochnik. [By] Ravich M.B. i dr. Moskva, Metallurgiia, 1965. 470 p. (MIRA 18:12)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.B.

Increasing the efficiency of the use of gas is an important problem. Gaz. prom. 10 no.1:30-33 '65. (MIRA 18:1)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.B.

Maximal content of water vapor in the combustion products from gaseous fuel. Gaz. delo no.12:42-43 '64. (MIRA 18:2)

1. Moskovskiy ordena Trudovogo Krasnogo Znameni institut neftekhimicheskoy i gazovoy promyshlennosti im. akademika Gubkina.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

KOROLEV, V.K.; RAVICH, M.B., doktor tekhn. nauk, prof., red.

[Humid gas and the I-d diagram; a lecture for students of the Faculty of the Advancement of Postgraduate Engineers specializing in "Steamoperated units and ways toward their improvement" and for 6th year students of the Faculty of Heat Engineering, specializing in "Industrial heat engineering," and studying the subject of "Drying plants"] Vlazhnyi gaz i I-d diagramma; lektsiia dlia slushatelei fakul'teta usovershenstvovaniia diplomirovannykh inzhenerov spetsializatsii "Paroispol'zuiushchie ustanovki i puti ikh usovershenstvovaniia" i dlia studentov VI kursa teploenergeticheskogo fakul'teta spetsializatsii "Promyshlennaia teploenergetika" pri izuchenii distsipliny "Sushil'nye ustanovki." Moskva, Vses. zaochnyi energeticheskii in-t, 1963. 58 p. (MIRA 18:4)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.B.

Determining the coefficient of gas utilization in processing furnaces in the separation of carbon dioxide. Gaz. delo no.3: 33-36 '63. (MIRA 17:8)

1. Vsesoyuznyy zaochnyy energeticheskiy institut.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M. B.

Determining efficient utilization of liquefied gases. Gaz. delo no. 11:48-50 '63. (MIRA 17:5)

1. Vsesoyuznyy zaochnyy energeticheskiy institut.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.B., inzh.

Constructing and assembling chemical plants. Opyt stroi. no.30: 89-103 '60. (MIRA 13:11)

(Chemical plants)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

[illegible]AVICH, [illegible]

Poverkhnostnoye bezplamennoe gorenie (Flameless surface combustion).

Moscow-Leningrad, 1949.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Ravich, M. G.

USSR/ Geology - Petrology

Card 1/1 Pub. 46 - 4/11

Authors : Ravich, M. G., and Chayka, L. A.

Title : Differentiated intrusion of trappean formation in the Taymir folding area

Periodical : Izv. AN SSSR. Ser geol. 1, 50 - 64, Jan 1956

Abstract : Description is presented of a unique differentiated stratified intrusion of trappean formation discovered in the Taymir peninsula, USSR. Seven references: 6 USSR and 1 USA (1928-1953). Tables; charts.

Institution : Scientific Research Inst. of Arctic Geology, Leningrad

Submitted : May 3, 1955

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.

ATLASOV, I.P.; DEMOKIDOV, K.K.; DIBNER, V.D.; EGIAZAROV, B.Kh.; IVANOVA, A.M.; LOBANOV, M.F.; MARKOV, F.G.; RABKIN, M.I.; RAVICH, M.G.; SAKS, V.N.; SOKOLOV, V.N.; TKACHENKO, B.V.; USTRITSKIY, V.I.; NALIVKIN, D.V., nauchnyy red.; VASIL'YEV, R.P., red.; SOLOV'YEV, L.D., red.; NEKHOROSHEV, A.P., red.; DOLGONOS, L.G., tekhn. red.

[Geological map of the Soviet Arctic] Geologicheskaia karta Sovetskoi Arktiki. Sost. I.P.Atlasov [i dr.] Glav. red. F.G. Markov. ....Nauchn. red. D.V. Nalivkin. [Moskva] 1957. ..Col. map 89 x 131 cm. no. 4 sheets 51 x 72 cm. .. Scale 1:2,500,000. ..Inset: [Geological map of Wrangel Island] Geologicheskaia karta Ostrova Vrangelia, 1:1,500,000. (MIRA 11:8)

(Arctic regions--Geology--Maps)
(Wrangel Island--Geology--Maps)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

MARKOV, F.G.; RAVICH, M.G.; VAKAR, V.A.

Geology of the Taymyr Peninsula. Trudy Nauch.-issl. inst. geol. Arkt. 81:313-387 '57. (MIRA 11:5)

1. Ekspeditsii Nauchno-issledovatel'skogo instituta geologii Arktiki i tresta "Arktikrazvedka" Gorno-geologicheskogo upravleniya Glavsevmorputi.

(Taymyr Peninsula--Geology)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Ravich, M.G.

20-6-34/48

AUTHOR: Ravich, M.G., Solov'yev, D.S.

TITLE: New Data on the Geological Structure of the Banger Oasis in the East Antarctic (Novyye dannyye o geologicheskom stroyenii oazisa Bangera v Vostochnoy Antarktide)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 6, pp.1177-1180 (USSR)

ABSTRACT: In the course of the antarctic summer 1956/57 the authors made a geological survey (1 : 100 000) of the oasis and its environment. Thereby the characterization of a large part of the archaean cross section (visible thickness not below 12 km) of the East Antarctic is made possible. The first data of the discoverer (Banger 1947) and others by Vyalov and Voronov (1956) were very poor. By the data won by the authors the conceptions on the Pre-Cambrian of this region are fundamentally changed. The Banger oasis, together with the islands to the north situated in front of it, lies between 65°50' - 66°20' south latitude and 100°30' - 101°70' east longitude. The archipelago is connected with the mainland by Shakleton's shelf-glacier. The area of the archipelago is about 350 km^2,

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20-6-34/48

New Data on the Geological Structure of the Banger Oasis in the East Antarctic

200 km^2 of those being occupied by the largest island , i.e. the Banger oasis. 40 km far in the southwest a group of rocky volcanoes rises out of the glacier, separated from each other by ice-claps. This group forms a new oasis (about 50 km^2) developing right now and is called "Obruchev oasis" by the authors. The not high (100 - 150 m) volcanoes of the Banger oasis are separated by narrow valleys filled by moraines. The boulders predominantly come from the local rocks, but exotic ones that chiefly consist of Rapakivi-granite not seldom occur. Only in the southwestern part of the oasis the valleys are wide, filled by loose sediments and surrounded by flat (60 - 70 m high) hills. In them lie chains of small lakes. The only large lake, "Figurnoye", more than 20 km long, lies along a comparatively young thick break. All forms of relief are here caused by the action of glaciers. The volcanoes are formed in a row according to the expansion of gneiss, whereas the valleys between them run along the numerous tectonic faults. The summer in this region lasts from the beginning of December to the end of February, when the air temperature by day varies between +1 and +6°C and the blanket

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New Data on the Geological Structure of the Banger Oasis in the East Antarctic

of snow is absent. It is also at other seasons that the snow, in spite of very low temperatures below zero, is blown away here. Due to an extreme dryness of the air, precipitations are very rare and in summer occur hardly at all. The region is to be considered as "cold stone-desert". Only archaean rocks participate in its geological structure: various crystalline schists and gneisses, mostly intensively magmatized, metamorphosed basic magma-rocks, and intrusions of pyroxene-granites (-charnokites). The archaean complex is intersected by dolerite-dikes of apparently early-mesozoic age. Quartary sediments have a considerable development and are represented by glacial- and fluvioglacial formations. The tectonics of the region is extremely complicated, as the numerous faults destroyed the early plicative structures. The above-mentioned rocks are classified in 3 families and a preliminary lithologic-mineralogical description of them is given till their study will be concluded. The magmatization took place in 2 stages: they are characterized by a different composition of the injection-material. Pegmatite- and quartz-veins which accompany the magmatites mostly have an intersecting character, usually in a flat angle to the containing schists. The thickness of the veins is quite different, mostly it is 1 - 3 m. It can be followed over

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20-6-34/48

New Data on the Geological Structure of the Banger Oasis in the East Antarctic

some ten, rarely hundred, meters. They are usually interrupted by breaks, in places torn, twisted and torn to pieces. The rocks of the immediate surroundings are cataclased. 2 Charnokite-massives were discovered. Their age supposedly is not higher than Upper Triassic. Finally the tectonic conditions are described. There is 1 Slavic reference.

ASSOCIATION: Antarctic Expedition AN USSR (Antarkticheskaya ekspeditsiya Akademii nauk SSSR)

PRESENTED: by D.I. Shcherbakov, Academician, June 5, 1957

SUBMITTED: June 7, 1957

AVAILABLE: Library of Congress

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G., doktor geologo-mineralog.nauk

Absolute age of Pre-Cambrian rocks in the central sector of the eastern Antarctic. Inform.biul.Sov.antark.eksp. no.1:31-33 '58. (MIRA 12:8)

1. Nauchno-issledovatel'skiy institut geologii Arktiki.
(Antarctic regions--Rocks) (Geological time)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G., doktor geol.-min. nauk

Some results of geological research undertaken by the Soviet Antarctic Expedition. Inform. biul. Sov. antarkt. eksp. no.2: 13-16 '58. (MIRA 12:8)

1. Nauchno-issledovatel'skiy institut geologii Arktiki.
(Antarctic regions--Geology)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.; VORONOV, P.S.

Geology of the east Antarctic coast between 55 and 110° east longitude [with summary in English]. Sov. geol. 1 no.2:3-26 '58. (MIRA 11:4)

1. Nauchno-issledovatel'skiy institut geologii Arktiki.
(Antarctic Regions--Geology)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.; VAKAR, V.A.; GRAMBERG, I.S.

Concerning A.M. Daninova's article "Age of the crystalline schist complex in the Taymyr Peninsula" ("Sovetskaia Geologiia," no.58, 1957). Sov. geol. 1 no.3:130-132 Mr '58. (MIRA 11:5)

1. Nauchno-issledovatel'skiy institut geologii Arktiki.
(Taymyr Peninsula--Schists)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.; VAKAR, V.A.; GRAMBERG, I.S.

Concerning A.M.Daminova's article "More on the age of the crystalline schist complex in the Taymir Peninsula" (Sovetskaia geologiia," no.6, 1958). Inform.biul.NIIGA no.11:77-80 '58. (MIRA 12:6)

(Taymir Peninsula--Schists)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, Mikhail Grigor'yevich; CHAYKA, Leonid Andreyevich; YELISEYEV, N.A., red.; ANISIMOV, B.A., tekhredaktor

[Small intrusions in the Byrranga Mountains (Taymyr Peninsula)] Malye intruzii khrebta Byrranga (Taimyrskii poluostrov). Leningrad, 1959. 147 p. (Leningrad. Nauchno-issledovatel'skii institut geologii Arktiki. Trudy, vol.88) (MIRA 13:2)

1. Chlen-korrespondent AN SSSR (for Yeliseyev).
(Byrranga Mountains--Rocks, Igneous)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

SOV/11-59-3-2/17

3(5,8)

AUTHOR: Voronov, P.S., Klimov, L.V., and Ravich, M.G.

TITLE: Late Pre-Cambrian Deposits of the Amundsen and Sandau Mountains on Queen Mary Land in the Eastern Antarctic (Pozdnedokembriyskiye otlozheniya gor Amundsena i Sandau na Zemle Korolevy Meri v vostochnoy Antarktide)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geologicheskaya, 1959, Nr 3, pp 3-18 (USSR)

ABSTRACT: The authors describe in detail the results of the cameral treatment of materials gathered by the Soviet Antarctic Expedition in 1956-1957. The extremely rare group of late Cambrian metamorphic rock of green schists, encountered in the Central sector of the Eastern Antarctica for the first time, is dealt with in particular. Exact data on the location of the Amundsen and Sandau mountains are furnished. The geological research of both these mountains was started in January 1957 by L.V. Klimov and P.S. Voronov

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Pre-
Late/Cambrian Deposits of the Amundsen and Sandau Mountains on Queen Mary Land in the Eastern Antarctic

who systematically described the laminar cross section of the terrigenous rock stratum and a total of 70 samples were taken. The collected material was examined by the Nauchno-issledovatel'skiy institut geologii Arktiki (Scientific Research Institute of Arctic Geology). The petrographic description of rock was handled by M.G. Ravich with the assistance of Ye.M. Orlenko. A complete silicate analysis on the green schist of the Sandau mountain was made by A.Z.Shpindler. The absolute age was determined at the Laboratoriya geologii dokembriya AN SSSR (Laboratory of Geology of the Pre-Cambrian Period, AS USSR) under the direction of E.K. Gerling. Orographically, the Amundsen and the Sandau mountains represent typical nunataks, the first one being 50 m, the other 150 m above the ice shield of the Antarctica (Figures 2 and 5). The absolute height of the Amundsen mountain is 1,445 m and that of the Sandau mountain, 1,380 m. Judging from the configuration of ice cracks,

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SOV/11-59-3-2/17

Late Pre-Cambrian Deposits of the Amundsen and Sandau Mountains on Queen Mary Land in the Eastern Antarctic

the Sandau mountain is circumflown from SW by an ice stream heading NW. This ice stream is located approximately 1,5 km from the mountain summit. An analogous stream circumflows the Amundsen mountain from the S and SE. This ice stream is about 2 km away from the Amundsen mountain peak. A petrographic study of these 2 mountains disclosed that the metamorphic rock could be classified into 5 principal groups: 1) metamorphic baltoids, converted into epidotic-chlorite slates with quartz-epidotic and chloritic veins; 2) metamorphic quartz conglomerates; 3) various metamorphic quartz-feldspathic and quartz sandstones in places resembling quartzites; 4) metamorphic aleurolites and argillites; 5) sericitic slates. These 5 groups are fully dealt with. The authors conclude that by comparing the metamorphic terrigenous mountains under discussion for composition, geological status and character of metamorphism with rock series in Siberia, it may be assumed that the most probable time of their

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Pre-
Late/Cambrian Deposits of the Amundsen and Sandau Mountains on Queen Mary Land in the Eastern Antarctic

SOV/11-59-3-2/19

formation was the late Pre-Cambrian period. The green slates of the Sandau mountain may be identical with the green slate formation on the Taymyr Peninsula, a number of regions in Eastern Siberia, on the Kola Peninsula and in Kareliya. In all these regions, the green slate formation is considered to originate from the Proterozoic period. The same holds true for the green slate deposited in the Sandau mountain. Psammitic sediments are prevalent in the composition of terrigenous deposits, whereas psephitic aleuropelitic sediments are less developed. Judging from the lithological peculiarities of metamorphic terrigenous rock, the clastic material was deposited by water streams and partly by wind under conditions of a littoral-continental environment. There are 4 photographs, 1 map, 2 sketches and 2 references, 1 of which is Soviet and 1 English.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

Pre-
Late Cambrian Deposits of the Amundsen and Sandau Mountains on Queen Mary Land in the Eastern Antarctic SOV/11-59-5-2/17

ASSOCIATION: Kompleksnaya antarkticheskaya ekspeditsiya AN SSSR (Comprehensive Antarctic Expedition of the AS USSR); Institut geologii Arktiki, Leningrad (Institute of Arctic Geology, Leningrad).

SUBMITTED: June 21, 1958.

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G., doktor geol-miner. nauk

Problems in the geology of Eastern Antarctica. Inform. biul. Sov. antark. eksp. no.4:15-18 '59. (MIRA 12:11)

1. Nauchno-issledovatel'skiy institut geologii Arktiki.
(Antarctic regions--Geology)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.; MARKOV, F.G.

Principal geologic and metallogenic characteristics of the mountainous part of the Taymyr Peninsula [with summary in English]. Sov. geol. 2 no.5:11-24 My '59. (MIRA 12:8)

1. Nauchno-issledovatel'skiy institut geologii Arktiki.
(Taymyr Peninsula--Geology)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.

3(5)

AUTHORS: Baranov, V. I., Knorre, K. G. SOV/7-59-6-14/17

TITLE: Chronicle. The VIII Session of the Commission for the Determination of the Absolute Age of Geological Formations (at the Otdeleniye Geologo-geograficheskikh nauk AN SSSR (Department of Geological-geographical Sciences AS USSR), May 18 - 22, 1959, Moscow)

PERIODICAL: Geokhimiya, 1959, Nr 6, pp 562 - 563 (USSR)

ABSTRACT: The 8th regular session of the (Commission on the Determination of the Absolute Age of Geological Formations) was held in Moscow from May 18 to May 22, 1959 at the Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy). A series of summarizing reports was held on age determinations in the most important parts of the USSR, which are to be presented to the 21st International Geological Congress. The following reports are concerned:

A. V. Polkanov, E. K. Gerling: Problems of the absolute age of the Precambrian of the Baltic Shield.

A. P. Vinogradov, L. V. Komlev, A. I. Tugarinov: The absolute age of the Ukrainian crystalline shield.

Card 1/4

P. P. Semenenko, Ye. S. Burkser, and M. N. Ivantishin: Age groups of the mineralization of the rocks of the Ukraine in their absolute age.

A. P. Vinogradov, A. I. Tugarinov, K. G. Knorre, and Ye. Y. Bibikova, V. V. Zhirova, S. I. Zykov: The age of the Precambrian rocks of the crystalline fundament of the Russian Platform.

I. Ye. Starik, A. Ya. Krylov, M. G. Ravich, Yu. I. Silin: The absolute age of the rocks of the eastern part of the Antarctic continent.

A. Ya. Krylov: The absolute age of the rocks of the Tsentral'nyy Tyan' Shan' and the employment of the argon method for metamorphous and sedimentary rocks.

G. D. Afanas'yev: Results of the geochrony formations of the Caucasus.

L. P. Ovchinnikov and M. A. Garris: Age of the geological formations of the Urals and the Priural'ye (Cis-Urals).

N. I. Poleva and G. A. Nurina, G. A. Kazakov: Absolute age determination of the sedimentary and volcanic formations.

Card 2/4

L. P. Krasnyy and N. I. Poleva: Absolute age of the magmatic rocks of the (Soviet) Far East.

L. V. Komlev: Absolute age of the granite intrusions of Kazakhstan.

The research work of a number of laboratories, RIAN, UNOKHI, LAGED, VSEGEI, [illegible], UFAN, etc aroused great attention, especially a report of E. K. Gerling, Yu. A. Shukolyukov on the concentration of the isotope Ar^{38} in uranium minerals as well as the comprehensive research work carried out by the vozrastnaya laboratoriya Akademiya nauk Gruzinskoy SSR (Laboratory of Age Determination of the Academy of Sciences of the Gruzinskaya SSR) under the application of isotopic dilution and flame photometry. The determination of the age of sedimentary rocks was discussed; A. Ya. Krylov proved in his report how well radiogenic argon is conserved in desbroyed products of rocks such as boulders, sands, sandstones, clays, and muds. A. I. Tugarinov and S. I. Zykov were the first to attempt to determine the absolute age of sedimentary carbonate formations according to isotopic composition of lead.

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G., doktor geologo-mineral.nauk

Geological investigations carried out by the Fourth Continental Expedition in the Queen Maud Land. Inform.biul.Sov.antark.eksp. no.12:10-13 '59. (MIRA 13:6)

1. Nauchno-issledovatel'skiy institut geologi Arktiki.
(Queen Maud Land--Geology, Structural)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

VOROHOV, P.S.; KLIMOV, L.V.; RAVICH, M.G.

Late Cambrian deposits of Mount Amundsen and Mount Sandow on Queen Mary Coast in the eastern Antarctic. Izv.AN SSSR.Ser. geol. 24 no.3:3-18 Mr '59. (MIRA 12:4)

1. Kompleksnaya antarkticheskaya ekspeditsiya AN SSSR, Institut geologii Arktiki, Leningrad.
(Antarctic regions--Geology, Stratigraphic)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.

Minor metallogenic intrusions of the mountainous part of the Taymyr Peninsula. Zakonom. razm. polezn. iskop. 2:289-307 '59. (MIRA 15:4)

1. Institut geologii Arktiki Ministerstva geologii i okhrany nedr AN SSSR.

(Taymyr Peninsula--Ore deposits)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.; VORONOV, P.S.; KLIMOV, L.V.; SOLOV'YEV, D.S.

Reconnaissance of the eastern part of the mountains on Queen Maud Land in the Antarctica. Inform.biul.NIIGA no.16:30-36 '59. (MIRA 15:3)

(Queen Maud Land--Mountains)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

3.(5)

AUTHORS: Starik, I. Ye., Corresponding Member AS USSR, Ravich, M. G., Krylov, A. Ya., Silin, Yu. I.

SOV/20-126-1-39/62

TITLE: On the Absolute Age of the Rocks of the East-Antarctic Platform (Ob absolyutnom vozraste porod Vostochno-Antarkticheskoy platformy)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 1, pp 144 - 146 (USSR)

ABSTRACT: In the present paper the first determination results of the rocks mentioned in the title, mainly of Precambrian age, are discussed. For this purpose the collection of the Sovetskaya antarkticheskaya ekspeditsiya (Soviet Antarctic Expedition) 1956-58 was used. It was collected during the prospecting of a coastal strip of almost 5000 km length (Refs 1,2). The investigated region has the structure of a 3-stage plateau which is in many a respect analogous to the other Godvanskiye platforms All three stages are characterized in short. No Mesozoic sediments have hitherto been found in the region of the mentioned plateau. Cenozoic sediments are only represented by covers of basic effusives among which leucite basalts predominate. The

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first 40 determinations of the absolute age by means of the argon method made more precise ideas possible concerning the structure of the aforesaid plateau. Several results were surprising and their geological interpretation meets with serious difficulties (Table 1). The highest age, i. e. 1020-1270 million years were obtained at first for the oases Langeneset, Grirson, Banger, and Obruchev, i. e. for leucocratic granites and pegmatites. The age of the weakly migmatitic (Banger oasis andother regions of the crystalline basement) rocks fluctuates between 940 and 1050 million years. So-called poly-migmatites which are 700-730 million years old occur at the same time at several places, especially in the Banger oasis. Thus two migmatitization stages can be separated: a) an earlier one which occurred more than 1000 million years ago, and b) a late one - more than 700 million years ago. Thus the migmatitization of the oldest masses of the eastern Antarctic belongs to the Proterozoic. A packet of gneisses in the region of the Einsvort bay and the Vil'son elevation is for the time being the only exception. Weakly migmatitized biotite-gneisses are here 425-485 million years old. This agrees almost with the age of the

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here occurring porphyroblastic granites. The age of the green schists and mica phyllites (middle stage of the plateau) fluctuates between 400 and 500 million years. This corresponds to Sinisian and Lower Cambrian. The Rapakivi granites in the extreme east of the investigated region has approximately the same age. The most recent granitoids are the subalkaline biotite-hornblende varieties. They are Caledonian, with an age of 305-315 million years. The age of the gabbro-dolerite from a stratiform intrusion within the Bikon (Beakon) series (170 million years old) agrees rather well with the geological position (Lower Triassic). The same holds in the case of Tertiary leucite-granite (mountain Gauss) which is approximately 20 million years old. The age determinations of the mentioned rocks confirm on the whole the authors' assumption concerning the 3-stage structure of the plateau. The old Gerling constant $\lambda_k = 6.02 \cdot 10^{-11}$ year^{-1} which is much used in the USSR was used for the determination. The data are only temporary and probably

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

On the Absolute Age of the Rocks of the East Antarctic Platform SOV/20-126-1-39/62

somewhat too low. There are 1 table and 3 Soviet references.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR (Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR). Nauchno-issledovatel'skiy institut geologii Arktiki (Scientific Research Institute of the Geology of the Antarctic)

SUBMITTED: January 19, 1959

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

3(5) SOV/20-128-1-41/58

AUTHOR: Ravich, M. G.

TITLE: A Short Information on the Geologic Structure of the Eastern Mountains in Queen Maud's Land, East Antarctica

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 1, pp 152 - 155 (USSR)

ABSTRACT: In February 1959 a group of collaborators at the Institut geologii Arktiki (Institute of the Geology of Antarctic) investigated the eastern part of the mountains of Queen Maud's Land between 9°25' and 18°37' eastern longitude and 71 - 72° southern latitude in an extension of 330 km as well as the oasis **Shirmakher** at the point of contact between land ice and shelf ice. The present paper is based upon the material collected by L. V. Klimov and D. S. Solov'yev. Mainly various gneisses and crystalline schists of the granulite negative facies of the regional metamorphism take part in the geological formation of the mountains investigated. All these rocks are assumed to belong to early pre-Cambrian on the strength of the similarity of the better investigated regions of East Antarctic where crystalline schists and gneisses form the

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

A Short Information on the Geologic Structure of the Eastern Mountains in Queen Maud's Land, East Antarctica SOV/20-128-1-41/58

crystalline foundation of the East Antarctic plateau. At some places massifs of porphyritic granitoids as well as veins of various fine-grained granitoids are discovered which are apparently younger than gneisses. Sporadical dolerite dikes occur as well. Erratics and splinters of porphyritic granitoids and their vein facies as well as gneisses and crystalline schists predominate among the numerous moraine-like Quaternary deposits. Crystalline schists and gneisses can be divided into at least 5 especially widely distributed groups: 1) Crystalline pyroxene-schists, and plagiogneisses 2) garnet-biotite, rare garnet-sillimanite-biotite-gneisses 3) granulites with pyroxene or garnet 4) amphibiolites 5) marbles calciphyres, and diopside rocks. The rock species given are described, as well as the rules governing the geological structure of the region investigated. Rich graphite insets in calciphyres and in single pegmatite veins are for the time being the only finds. There are, however, indications that muscovite-, phlogopite-, iron ore-, and boron-containing mineral deposits will be found. The low degree of transformation of the rocks in migmatite seems to be extremely favorable

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

A Short Information on the Geologic Structure of the Eastern Mountains in Queen Maud's Land, East Antarctica SOV/20-128-1-41/58

for a possible concentration of ore minerals. There is 1 reference.

ASSOCIATION: Institut geologii Arktiki (Institute of the Geology of the Arctic)

PRESENTED: May 20, 1959, by D. S. Korzhinskiy, Academician

SUBMITTED: May 11, 1959

Card 3/3

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

SOMOV, M.M., otv. red.; MAKSIMOV, I.V., zamestitel' otv.red.; TRESHNIKOV, A.F., zamestitel' otv.red.; ANDRIYASHEV, A.P., red.; BUYNITSKIY, V.Kh., red.; VOROMOV, P.S., red.; DOLGIN, I.M., red.; KALESNIK, S.V., red.; KOROTKEVICH, Ye.S., red.; NIKOL'SKIY, A.P., red.; RAVICH, M.G., red.; TAUBER, G.M., red.; FROLOV, V.V., red.; SLEVICH, S.B., red.; KAPLINSKAYA, L.G., red.izd-va; DROZHZHINA, L.P., tekhn.red.

[Report on observations completed by the Soviet Antarctic Expedition in 1957 and 1958] Otchet o nabliudeniiakh, vypolnennykh Sovetskoi antarkticheskoi ekspeditsiei v 1957 i 1958 gg. Sovetskaia antarkticheskaia ekspeditsiia, 1955-1958. Leningrad, Izd-vo "Morskoi transport," 1960. 39 p (Informatsionnyi biulletin', no.15) (MIRA 13:6)

(Antarctic regions--Russian exploration)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.

Rocks of Vestfold Oasis. Trudy NIIGA 113:25-52 '60. (MIRA 14:5)
(Vestfold Hills, Antarctica—Petrology)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.

Rocks of Grearson Hills and Windmill Islands (Grearson Oasis).
Trudy NIIGA 113:53-84 '60. (MIRA 14:5)
(Windmill Islands, Antarctica—Petrology)
(Grearson Hills, Antarctica—Petrology)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RABKIN, M.I. and RAVICH, M.G.

"The pre-Cambrian of the Soviet Arctic."

report presented at the First International Symposium on Arctic Geology, Calgary, Canada, 11-13 Jan 1960.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G., doktor geol.-miner.nauk; KRYLOV, A.Ya., nauchnyy sotrudnik

Absolute age of rocks in the region of the Mawson Station. Inform. biul. Sov. antark. eksp. no.19:8-9 '60. (MIRA 13:9)

1. Nauchno-issledovatel'skiy institut geologii Arktiki i Radiyevyy institut im.Khlopina.
(Mawson station region, Antarctica--Charnockites)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.

Age of metamorphic complexes in the Taymyr Peninsula. Inform. biul. NIIGA no.19:8-12 '60. (MIRA 13:12)
(Taymyr Peninsula--Rocks, Crystalline and metamorphic)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G., doktor geol.-mineral.nauk; KRYLOV, A.Ya., nauchnyy sotrudnik

Absolute age of rocks in the eastern part of the mountains of Queen Maud Land. Inform. biul. Sov. antark. eksp. no.20:15-17 '60. (MIRA 13:9)

1. Naucho-issledovatel'skiy institut geologii Arktiki i Radiyevyy institut AN.
(Queen Maud Land--Rocks, Igneous)
(Geological time)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

STARIK, I.Ye.; RAVICH, M.G.; KRYLOV, A.Ya.; SILIN, Yu.I.; ATRASHENOK, L.Ya.; LOVTSYUS, A.V.

Recent data on the absolute age of rocks in eastern Antarctica. Dokl. AN SSSR 134 no.6:1421-1423 O '60. (MIRA 13:10)

1. Radiyevyy institut im. V.G.Khlopina Akademii nauk SSSR. 2. Chlen-korrespondent AN SSSR (for Starik).
(Antarctic regions--Rocks) (Geological time)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, Mikhail Grigor'yevich; GRISHINA, L.I., red. ZHURAVLEVA, G.P., mladshiy red.; VILENSKAYA, E.N., tekhn. red.

[Warmed land; in the mountains of Antarctica] Otogretaia zemlia; v gorakh Antarktidy. Moskva, Gos.izd-vo geogr. lit-ry, 1961. 199 p. (MIRA 14:6)

(Antarctica—Mountains) (Antarctica—Discovery and exploration)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G, prof.

Geology of the Antarctic. Priroda 51 no.9:58-65 S '62. (MIRA 15:9)

1. Nauchno-issledovatel'skiy institut geologii Arktiki, Leningrad. (Antarctic regions--Geology)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M. G.; KRYLOV, A. Ya.; SOLOV'YEV, D. S.; SILIN, Yu. I.

Absolute age of rocks of the central part of the mountains in Queen Maud Land (eastern Antartica). Dokl. AN SSSR 147 no.6: 1433-1436 D '62. (MIRA 16:1)

1. Nauchno-issledovatel'skiy institut geologii Arktiki i Radiyevyy institut im. V. G. Khlopina AN SSSR. Predstavleno akademikom D. I. Shcherbakovym.

(Queen Maud Land--Petrology)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

DZEVANSKIY, Yu.K.; DODIN, A.L.; KONIKOV, A.Z.; KRASNYY, L.I.; MAN'KOVSKIY, V.K.; MOSHKIN, V.N.; LYATSKIY, V.B.; NIKOL'SKAYA, I.P.; SALOP, L.I.; SALUN, S.A.; RABKIN, M.I.; RAVICH, M.G.; POSPELOV, A.G.; NIKOLAYEV, A.A.; IL'IN, A.V.; BUZIKOV, I.P.; MASLENNIKOV, V.A.; NEYELOV, A.N.; NIKITINA, L.P.; NIKOLAYEV, V.A.[deceased]; OBRUCHEV, S.V.; SAVEL'YEV, A.A ; SEDOVA, I.S.; SUDOVIKOV, N.G.; KHIL'TOVA, V.Ya.; NAGIBINA, M.S.; SHEYNMANN, Yu.M.; KUZNETSOV , V.A.; KUZNETSOV, YU.A.; BORUKAYEV, R.A.; LYAPICHEV, G.F.; NALIVKIN, D.V., glav. red.; VERESHCHAGIN, V.N., zam. glav. red.; MENNER, V.V., zam. glav. red.; OVECHKIN, N.K., zam. glav. red.[deceased]; SOKOLOV, B.S., red.; SHANTSER, Ye.V., red.; MODZALEVSKAYA, Ye.A., red.; CHUGAYEVA, M.N., red.; GROSSGEYM, V.A., red.; KELLER,B.M., red.; KIPARISOVA, L.D., red.; KOROBKOV, M.A., red.; KRASNOV, I.I., red.; KRYMGOL'TS, T.Ya., red.; LIBROVICH, L.S., red.; LIKHAREV, B.K., red.; LUPPOV, N.P., red.; NIKIFOROVA, O.I., red.; POLKANOV, A.A., red.[deceased]; RENGARTEN, V.P., red.; STEPANOV, D.L., red.; CHERNYSHEVA, N.Ye., red.; SHATSKIY, N.S., red.[deceased]; EBERZIN, A.G., red.; SMIRNOVA, Z.A., red.izd-va; GUROVA, O.A., tekhn. red.

[Stratigraphy of the U.S.S.R. in fourteen volumes. Lower Pre-Cambrian] Stratigrafiia SSSR v chetyrnadtsati tomakh. Nizhnii Dokembrii. Moskva, Gos. Nauchno-tekhn. izd-vo lit-ry po geologii i okhrane nedr. Pt. 1 (Asiatic part of the USSR) 1963. 396p.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.; REVNOV, B.I.

Lazarev iron meteorite (Antarctic region). Meteoritika no.23:30-35 '63. (MIRA 16:9)

(Antarctic regions--Meteorites)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.; KLIMOV, L.V.; SOLOV'YEV, D.S.; SOLOVIKOV, N.G., doktor geol.-mineral. nauk, red.

[Pre-Cambrian of eastern Antarctica.] Dokembrii Vostochnoi Antarktidy. Moskva, Nedra, 1965 469 p. (Leningrad. Nauchno-issledovatel'skii institut geologii Arktiki. Trudy, vol. 138)

(MIRA 18:5)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

L 08697-67 EWT(1) WVH/GW

ACC NR: AT7001653 SOURCE CODE: UR/3174/66/000/057/0028/0042

AUTHOR: Ravich, M. G. (Doctor of geomineralogical sciences)

15
B+1

ORG: Scientific Research Institute of Arctic Geology (Nauchno-issledovatel'skiy institut geologii Arktiki)

TITLE: Geological structure of Antarctica

SOURCE: Sovetskaya antarkticheskaya ekspeditsiya, 1955-. Informatsionnyy byulleten', v. 57, 1966, 28-42

TOPIC TAGS: petrology, geology

ABSTRACT: This is a review of Soviet geological investigations in Antarctica during the last ten years, accompanied by some information on foreign research there. A large fold-out map accompanying the text shows the geological features of the entire continent as now known (19 forms of symbolization are used). The Soviet work has been exclusively in Eastern Antarctica. In nine years Soviet geologists have investigated 31 coastal sectors between 9 and 165° E (a distance of more than 8,000 km), 23 of them never before visited by geologists. The most important of the earlier uninvestigated areas are: the central Part of Queen Maud Land, an area of 50,000 square kilometers, now mapped at 1:1,000,000; Enderby Land, an area of 50,000 square kilometers, mapped at 1:1,000,000;

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L 08697-67

ACC NR: AT7001653

an area of 400 square kilometers around Banguer Oasis, mapped at 1:100,000; an area near Mirnyy, mapped at scales from 1:1,000 to 1:10,000. Among the accomplishments have been the first breakdown of formations and petrological description of the rocks of the crystalline basement of the Antarctic platform, determination of the structure of this platform, discovery of formations which may contain rare metals, discovery of mineral shows. Although this paper is quite brief, it may well be the most thorough exposition and summary of the work of Soviet geologists in Antarctica. Orig. art. has: 1 figure. [JPRS: 38,230]

SUB CODE: 08 / SUBM DATE: 15Jul65

Card 2/2 nst

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

PROCESSES AND PROPERTIES INDEX

Singular fields in the ternary system: Na_2O-HBr-H_2O. V. I. NIKOLAEV AND M. I. RAVICH. *J. Gen. Chem.* (U. S. S. R.) 1, 785-91(1931).—Eutectic combinations were studied in a system of salts having several hydrate forms, such as $NaBr\ 2H_2O$ and $NaBr\ 5H_2O$. The effect of NaOH or HBr on loss of H_2O by the NaBr was traced. It was found that in neutral soln. the transition: $NaBr\ 2H_2O \longrightarrow NaBr$ takes place at 50.7°. At 44.5° dehydration takes place in the presence of 5.13% NaOH or 11.40% HBr. At lower temps. dehydration takes place in the presence of higher concns. of the base or acid. At 25°, the NaOH required is 15.91% and the HBr required is 41.38%. The transition point for $NaBr\ 2H_2O \longrightarrow NaBr.5H_2O$ is —22.0° in neutral soln., —28.7° in the presence of 5.52% NaOH, and —27.0° in the presence of 9.12% HBr. Tables, diagrams and photographs of models of the system are given. S. L. MADORSKY.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

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Isothermic evaporation of water from the brine of "Ramaninskaya Kanava." M. I. Ravich and E. Yu. Levina. *J. Applied Chem.* (U.S.S.R.) 4, 1002-16(1931).—Investigation of the brine from Baku oil fields as a source of I_2, naphthenic acids, etc. V. K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RAVICH, M.G.; KUNO, V.G.

Charnockites of the Bunger's oasis (Eastern Antarctica). Izv.AN SSSR. Ser.geol. 26 no.11:64-77 N '61. (MIRA 14:10)

1. Institut geologii Arktiki, Leningrad.
(Antarctic regions--Charnockite)

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The purification of sodium chloride brines for electrolysis. A. F. Sagaidachnyi and M. I. Ravich. *J. Chem. Ind.* (Moscow) 1933, No. 4, 42-50. - The conditions for pptn. of sulfate, Ca and Mg from NaCl solns. may be varied widely without affecting the final purity of the brine. Best results are obtained by adding at 75° a small excess of $BaCl_2$, then, after 2-3 hrs., the theoretical amt. of NaOH and 0.01 g. equiv. excess of Na_2CO_3. If the brine is slightly acidified with HCl before adding $BaCl_2$, an excess of this salt is not required. H. M. Leicester

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2

Ternary system, ammonia-nitrogen pentoxide-water. N. S. Kurnakov and M. I. Ravich. Ann. inst. anal. phys.-chem. (Leningrad) 6, 169-94(1933); cf. C. A. 28, 3720.—Isotherms for the ternary system NH_3:N_2O_5:H_2O were detd. at −10°, 0°, 25°, 35°, 55°, 80°, 105°, 100° and 120°. The isotherm at 130° was detd. by keeping the soln. in a sealed tube. S. L. Madorsky

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4

Asbestos diaphragms. Properties of (electrolytic) asbestos-board diaphragms. M. I. Ravich and S. A. Mamulov. *Trans. State Inst. Applied Chem.* (U. S. S. R.) No. 22, 7-24(1934).—The various procedures followed in a comparative study of the chem., phys., mech. and elec. properties of American, German and Soviet-Union asbestos-board diaphragms are described in detail, and the results are tabulated and discussed. The Soviet and American diaphragms are somewhat similar and are superior in certain qualities to the German products, which contain fillers, such as clay and sand. **Factors that affect the properties of asbestos-board diaphragms.** V. V. Stender, S. A. Mamulov and M. I. Ravich. *Ibid.* 23-34. Increasing the amt. of uncooked potato starch (0.5-7%) decreases the permeability of the resulting asbestos boards considerably and the d. slightly and increases the general porosity somewhat; the coeff. α (detd. from the resistance to diffusion, a product of the relations of the mean length of capillaries to the thickness of the diaphragm and the general diam. of pores to the vol. porosity) is unchanged and the mech. properties improved, particularly the tearing strength and, to a less degree, the compressibility in the dry state. The stretching quality and compressibility of wet boards are little affected. These changes become greater with the addn. of cooked starch, because, probably, of the greater adsorption by asbestos. The addn. of starch (uncooked) should not exceed 3% of the wt. of asbestos. The results of the effect of increased fineness of grinding on the properties of asbestos boards are incon[illegible]sive, because of the presence of starch. With the increasing fiber length of asbestos materials the permeability of boards is considerably increased and the tearing strength and the resistance to compression are improved. The effect of preliminary calcining of asbestos materials was studied at 150°, 250° and 400°. The results show that with the increasing temp. of heating the asbestos boards made with 3% starch become increasingly more soft, brittle, discolored, permeable and porous, with the mech. properties impaired and the coeff. α unchanged. The preliminary heating of asbestos materials should not exceed 150-200° and can be entirely eliminated, because it complicates the process and is of no advantage. In making asbestos boards, increasing the pressure results in decreasing permeability, apparent d. and general porosity, a slight increase of the coeff. α, and improvement of tearing strength and compressibility. In drying better results are obtained by heating the cylinders with steam than with air. **Laboratory tests of asbestos diaphragms for the electrolysis of aqueous solutions.** S. S. Lur'e, H. I. Rimmer, G. A. Volin and L. H. Polyakova. *Ibid.* 35-40; cf. C. A. 28, 46°.—The procedure and construction of electrolytic cells used in the comparative tests of American and Soviet-Union asbestos-board diaphragms are illustrated and described. The results show that Soviet diaphragms can be entirely substituted for the American article in com.

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electrolysis. During the electrolysis the diaphragms undergo formation, viz., the initially sharply increased permeability gradually decreases to a definite, stable value. **Tests of asbestos board diaphragms in commercial cylindrical electrolytic cells.** V. V. Stender, P. I. Andreev, F. A. Sergeev and R. N. Kinkul'skaya. *Ibid.* 40-8.—Comparative electrolytic tests of American and Soviet asbestos board diaphragms in the Vorce cell produced practically equal results. The advantage of the Soviet diaphragms is that they undergo formation during electrolysis sooner than the American article. American asbestos-boards made from Ural asbestos possess inferior mech. properties and poor stability in electrolysis, which is ascribed to the faulty methods of manuf. **Formation of asbestos board diaphragms during electrolysis.** V. V. Stender, M. I. Rayich, S. A. Mamulov, I. G. Zhornitskii, Yu. K. Maslov and E. M. Aronson. *Ibid.* 48-68; cf. Stender, *et al.*, C. A. 28, 711[1].—The factors causing the formation of asbestos-board diaphragms in electrolysis can be divided into 4 groups: (1) mech. deformation; (2) chem. changes; (3) incidental contamination and (4) electrolytic factors. Studies of the 1st 3 factors produced the following results: The most important property of asbestos diaphragms in electrolysis is their permeability. The permeabilities of Soviet "Komsomoletz" diaphragms and American diaphragms made from Canadian asbestos are nearly similar. Besides the electrolytic factors, the most important factors in changing the coeff. of permeability K are the time and hydrostatic pressure H. With time K decreases rapidly in the beginning and slowly toward the end. When the passage of liquid is stopped ($H = 0$), K increases and then within a short time drops to the normal magnitude. K decreases with increase in H and vice-versa. With the changes in the direction of the passage of the soln. K at first increases greatly and then decreases rapidly. All these processes can be explained only by the mech. deformation of asbestos boards. It is shown that in the course of time the asbestos diaphragms tend to equalize the magnitudes of the product KH, i. e., to equalize (automatically regulate) its permeability independent of the hydrostatic pressure. As a characteristic of asbestos boards the magnitude $KH = vN\eta/ST$ (where v = no. of cc. of the passing liquid, N = thickness of the diaphragm in cm., S = useful surface in sq. dm., T = time in hrs. and η = coeff. of the liquid viscosity) may be accepted, which for long periods of time is more characteristic than K. For short periods of time the magnitude K is more characteristic than KH. Various electrolytes give for equal periods of time different KH values. For solns. of NaCl + NaOH and NaCl satd. with Cl with addn. of a little NaClO, the product KH is 2-2.5 times smaller than for solns. of pure NaCl. For unwaked diaphragms K in the beginning increases and then drops (expulsion of air bubbles). With increasing temp. (50°) K is practically unchanged, but the actual permeabilities are changed in indirect proportion to η and, therefore, increase with increase in temp. During electrolysis the

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4

Asbestos diaphragms. Properties of (electolytic) asbestos-board diaphragms.
M.I. Ravich and S.A. Namulov. 1934

diaphragms undergo a chem. change. Cl water exts. Mg from the diaphragms. Alkalies (NaOH) are the most important agents in effecting chem. changes of asbestos diaphragms. They decomp. Mg silicate with the liberation of Mg sol. in acid. The increased amt. of this Mg is deposited as $Mg(OH)_2$, decreasing the permeability of diaphragms. Under the influence of these combined actions in the electrolysis the diaphragms become porous and their mech. strength is impaired. A sep. study of the effect of electrolytic factors on the forming of asbestos diaphragms disclosed that with the switching on of elec. current the permeability of the vertical diaphragms sharply decreases, with increasing c. d. it somewhat increases; and on switching off the current it increases. The permeability of asbestos diaphragms is nearly independent of the hydrostatic pressure; hence the permeability of the electrolytic cells must be equal at any height and should not change with changes in hydrostatic pressure. The fundamental factor of electrolytic influence on the performance of the asbestos diaphragms is the mech. action of H sepd. at the cathode. **Performance of asbestos-board diaphragms under varying working conditions of commercial electrolytic cells.** V. V. Stender, P. I. Andreev, R. N. Kinkul'skaya and E. P. Bissenok. *Ibid.* 68-77.—In addn. to the above lab. studies, the behavior of vertical asbestos-board diaphragms in electrolysis in com. Vorce cells was investigated. Of the various methods studied of starting the cells with brine soln., H_2O and suspended asbestos pulp, the most rapid forming of the diaphragms takes place with brine soln. with the addn. of asbestos pulp. Starting the cells with H_2O is not feasible. Studies of the influence of temporary interruptions of the electrolysis on the performance of the cells showed that such pauses with brine soln. have no effect on the performance. In cells fed with H_2O, with the resumption of normal work the permeability is somewhat increased and the voltage decreased, but these changes are not of long duration. Conservation of Vorce cells (interruption of electrolysis with the cessation of the flow of electrolyte because of the filling of the cathode space) has practically no effect on the subsequent performance of the cells and, therefore, can be practiced. The performance of the Vorce cells at a 50% increase of load (to 1500 amp.) does not markedly change the yield for the current but increases the voltage at the clamps 13-15% above the normal. With increased current strength the concn. of alkali in the catholyte does not increase proportionally, because with the increase of load the permeability of the diaphragm is increased somewhat. A decrease of the permeability of the asbestos diaphragms by varying the hydrostatic pressure can be

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effected for only very short periods, because the permeability becomes in time equalized, almost independent of the hydrostatic pressure. Thus, it is impossible to increase the concn. of the alkali in the catholyte in the electrolysis by filling the cathodic space of the Vorce cells in order to decrease the hydrostatic pressure on the diaphragms. **Methods of testing asbestos cloth.** S. A. Mamikov and Yu. K. Mashov. *Ibid.* 77 86. The methods followed in the comparative tests of Soviet, German and crocidolite asbestos cloths for use as diaphragms in the electrolysis are described and the results are tabulated and discussed. The Soviet product is less uniform in texture, possesses a lower d., shows a greater and more irregular permeability in electrolysis and a higher resistance to the action of acids than the German cloth. Crocidolite (blue) asbestos cloth of a foreign manuf. possesses the highest resistance to acids. Chas. Blanc

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Singular elements of chemical diagrams. N. S. Kurnakov and M. I. Ravich. *Inst. anal. phys.-chem.* (U. S. S. R.) 7, 211-23(1935).—The development in literature of the Kurnakov theory (*C. A.* 7, 1120, 1932) of singular elements of chem. diagrams of binary and ternary systems (*C. A.* 27, 10) is reviewed. The problem of the structure of an ice field and the interrelation of the ice and salt isotherms requires further study. More than 31 references. Chas. Blau

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Singular fold in the ternary system: sodium chloride platinum chloride-water. N. S. Kurnakov and M. I. Ravich. *Inst. anal. phys.-chim.* (U. S. S. R.) 7, 225-31(1935); cf. C. A. 28, 400.—The study of the singular points of isotherms of the ice field and the cryohydric lines in the formation of Na_2PtCl_6 in the ternary system $NaCl$-$PtCl_4$-H_2O was carried out by the method previously described. The ice field of the ternary system clearly indicated the formation of the undissocd. chem. compd. Na_2PtCl_6, hence ice isotherms for systems of the electrolytic type in relation to the formation of singular points are in many cases more typical than the isotherms of the salts themselves. Hence, when a singular point on the salt isotherms is absent, it must be sought in an ice field. However, the character of the ice field is not affected by the formation of any chem. compd. In most cases the isotherms of the ice field form straight lines in spite of the formation of acid, basic and double salts characterized by independent branches on the salt solty. isotherms. Thus, $NH_4NO_3.2HNO_3$, $KHSO_4$, $KH_3(SO_4)_2.H_2O$, $KH_5(SO_4)_3$, KHS_2O_7, $Na_2CrO_4.13H_2O$ and $KAl(SO_4)_2.12H_2O$ in the resp. ternary systems NH_4NO_3-HNO_3-H_2O, K_2O-SO_3-H_2O, Na_2O-CrO_3-H_2O and K_2SO_4-$Al_2(SO_4)_3$-H_2O, are characterized by entirely independent solty. isotherms, but do not appear on the ice fields and do not noticeably change the straight direction common to the ice isotherms. Thus, though the isotherm fields of Na_2PtCl_6 and the other compds. are alike, their ice isotherms behave differently. Na_2PtCl_6 is discovered very sharply, forming singular ice ribs, while most of the other acid, basic and double salts give no singular points on salt or ice isotherms. In this respect Na_2PtCl_6 acts as a complex salt, an indication of its stability.

Chas. Blanc

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Singular elements in the ternary system: lithium oxide-nitric anhydride-water. The effect of hydration. M. I. Kovich. *Ann. inst. anal. phys.-chim.* (U. S. S. R.) 7, 2[illegible]-44(1935); cf. C. A. 30, 3720. -Isotherms of the ternary system Li_2O-N_2O_5-H_2O were detd. at 0°, 15°, 2[illegible]°, 28.5°, 65° and 130°. From the tabulated results it is concluded that in a ternary system A-B-C, contg. a mondissocg. compd. AB, the singular folds at the section AB-C are disclosed not only in the fields AB and C, but also in the field of the ternary compd. ABC dissocg. by the scheme: ABC ⇌ AB + C. In systems of the electrolytic type, the singular elements can have concealed characters and disclose them only under special conditions.

Chas. Blanc

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The ice fields of the ternary systems: potassium oxide-phosphoric anhydride-water and ammonia-phosphoric anhydride-water. M. I. Ravich and N. V. Troitskaya. Kaliii (U. S. S. R.) 1937, No. 3, 34-41.—Tables and graphs are given. Seventeen references. A. Pestoff

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2

Solubility polytherms of secondary and tertiary potassium orthophosphates in water. M. I. Ravich. *Bull. acad. sci. U. R. S. S., Classe sci. math. nat., Sér. chim.* 1939, No. 1, 127-40(in English 140).--The soly. polytherm of the secondary salt consists in the following branches corresponding to the solid phases: ice, $K_2HPO_4 \cdot 6H_2O$, $K_2HPO_4 \cdot 3H_2O$ and K_2HPO_4. The hexahydrate is stable at −12.5° to 14.3°, the trihydrate at 14.3-48° (approx.) and the anhyd. salt at higher temp. The soly. polytherm for the tertiary salt consists in the following branches, corresponding to the solid phases: ice, $K_3PO_4 \cdot 9H_2O$, $K_3PO_4 \cdot 7H_2O$ and $K_3PO_4 \cdot 3H_2O$. The nonahydrate is stable at −24° to −15° (approx.), and the heptahydrate is stable above −15°. The soly. curve of the latter is characterized by a max. (45.6°) corresponding to the compn. of the salt. A eutectic point was observed at 45.4°, above which the trihydrate becomes a stable phase. Thirteen references.

A. A. Balandin

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The solubility isotherm in the ternary system K_2O-P_2O_5-H_2O at 0°. M. I. Rovich. *Bull. acad. sci. U. R. S. S., Classe sci. math. nat., Sér. chim.* 1938, No. 1, 167-75 (in English 175-6); cf. *C. A.* 31, 8286[3].—Tables, graphs and the description of the system are given. The solubility isotherm consists of nine branches, corresponding to the following solid phases: $KOH.2H_2O$; $K_2PO_4.3H_2O$; $K_2PO_4.7H_2O$; $K_2PO_4.6H_2O$; $K_2HPO_4.2H_2O$; $K_2HPO_4.6H_2O$; KH_2PO_4; $KH_2(PO_4)_3$ and $2H_2PO_4.H_2O$. All salts with the exception of $KH_2(PO_4)_3$ dissolve in water without decomp. Most of the branches were successfully prolonged into the metastable region and some of them (tri- and nonahydrate of K_2PO_4 and $K_2HPO_4.3H_2O$) lie entirely in the metastable region. Ten references.

A. A. Podgorny

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The ice fields of the ternary systems: base-acid-water. Formation of phosphates, chromates and borates. N. S. Kurnakov, M. I. Ranich and N. V. Troitskaya. Ann. secteur anal. phys.-chim., Inst. chim. gén. (U. S. S. R.) 10, 275-[illegible]; cf. C. A. 39, [illegible]; 31, 0092[illegible].—A discussion of the structure of the ice fields and the cryohydric lines in the formation of phosphates, chromates and borates in the ternary systems K_2O-P_2O_5-H_2O, NH_3-P_2O_5-H_2O, K_2O-CrO_3-H_2O and Na_2O-B_2O_3-H_2O based on the previous and some new exptl. evidence. Tables and graphs are given. Approx. 50 references. C. B.

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[redacted] of Na_2HPO_4 and [redacted] and Z. V. Popova. Bull. acad. [redacted] 1948, 200-73 (English [redacted] of the system K_2HPO_4- [redacted] 0° and 25°. Both [redacted] branch corresponding [redacted] G. M. Kosolapoff

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Viscometric method of physicochemical analysis. N. K. Voskresenskaya, M. I. Ravich, and E. B. Shternina. *Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk, Inst. Mashinovedeniya, Soveshchanie Vyazkosti Zhidkostei i Kolloid. Rastvorov (Conf. on Viscosity of Liquids and Colloidal Solns.)* 1, 31-9(1941)(in Russian). Typical cases of viscosity compn. isotherms are reviewed, classified, and analyzed, mainly on the basis of the work of the school of N. S. Kurnakov and of Ravich, with special attention to the case of chem. interaction of the components. Formation of a stable compd. with a sharp max. of the viscosity isotherm is illustrated by the system aniline mustard oil and systems consisting of derivs. of these compds.; viscosity curves show the max. much more markedly than melting diagrams or compn. isotherms of other properties. Such systems are termed rational. In the case of a partly dissocg. compd. ("irrational systems") the max. is broadened and usually shifted to the side of the component with the higher viscosity; the shift of the position of the max. varies with the temp. When chem. interaction is only slight, the max. disappears and only a more or less pronounced convexity of the curve remains. Such systems often show max. of the *temp. coeff.* of the viscosity, situated much closer to the compn. corresponding to that of the compd. and much more marked than that of the viscosity curve itself, example: $SnCl_4$-Et_2CO_3. S-shaped viscosity curves show an inflection point at the compn. corresponding to the compd., e.g., $C_6H_6.2SbCl_3$. In some instances the viscosity isotherm has a max. even though the melting diagram shows a eutectic min. More frequently, a max. is absent in the viscosity curve although the melting diagram shows the existence of a definite compd., e.g. $H_2O.SO_3$; this indicates decompn. of the compd. in the liquid phase at all temps. above melting. The viscosity diagram of the ternary system m-phenylenediamine (*P*)-benzoic acid (*B*) salicylic acid (*S*) reveals the three binary compds. *BP*, *SP*, and *BS*, of which *SP* has the highest viscosity; the compd. *BS* is not indicated on the melting diagram. Another example of a "rational" ternary system is K_2O-P_2O_5-H_2O, the viscosity diagram of which shows a sharp singular crest K_2PO_4-H_2O. The ternary system aniline (*A*) water (*W*) acetic acid (*C*) illustrates a viscometric diagram of the "irrational" type; the binary max. corresponding to the compd. *A.2C* is somewhat

[illegible] towards *C*, on addn. of *w*, this max. becomes a [illegible] shifted towards *C* from the secant *A.2C-W*. A similar shape is shown by the viscosity space model of chloral (*C*) ethyl alcohol (*E*)-benzene (*B*). In this system addn. of a third component has the same effect on viscosity as has an increase of temp.; plots of the viscosity against the relative concns. of *C* and *E*, at equal concns. of *B*, show that the viscosity decreases with increasing content in *B* and the max. moves away ever more from the ordinate of the compd. towards *E*. Viscometric analysis of ternary systems is particularly fruitful when binary melting diagrams are not readily accessible. N. T.

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Area of solid solutions of potassium and ammonium phosphates in an aqueous system of $NH_4H_2PO_4 + KCl \rightleftharpoons KH_2PO_4 + NH_4Cl$ at 0°. M. I. Ravich and Z. V. Popova (Inst. Gen. Inorg. Chem., Acad. Sci. U.S.S.R., Moscow). *Ann. sector anal. phys. chim., Inst. chim. gén.* (U.R.S.S.) 14, 273-88(1941).—The purpose was to elucidate the conditions of crystn. of these solid solns. on neutralizing a mixt. of H_3PO_4 and KCl with NH_4OH. The results are tabulated and presented in diagrams. A new graphical method is described for calcg. the yield and compn. of solid solns. of K and NH_4 phosphates obtained by crystn. of a soln. of a given compn. M. Hosch

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1 The polytherm of the ternary system $NaNO_3$-Na_2CrO_4-H_2O. M. I. Rovich. Bull. acad. sci. U. R. S. S., Classe sci. chim. 1943, 233-6.—Isotherms for this system are given at 0, 25, 50 and 90.5°. No compd. analogous to $NaNO_3$.Na_2SO_4.H_2O is formed. The existence of Na_2CrO_4.$6H_2O$ is not confirmed. H. M. Leicester

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2

The polytherm of the ternary system: KNO_3-K_2CrO_4-[illegible] and E. V. Prelova. [illegible] 1944, [illegible]-4.—In the system [illegible] the isotherms of sol. were studied at [illegible] No new compds. were found in the system. The triple eutectic point was found at −12.1° with compn.: KNO_3 [illegible] wt. %, K_2CrO_4 [illegible] wt. %. The results are presented in tabular form and on the usual triangular diagram. G. M. Kuselopoff

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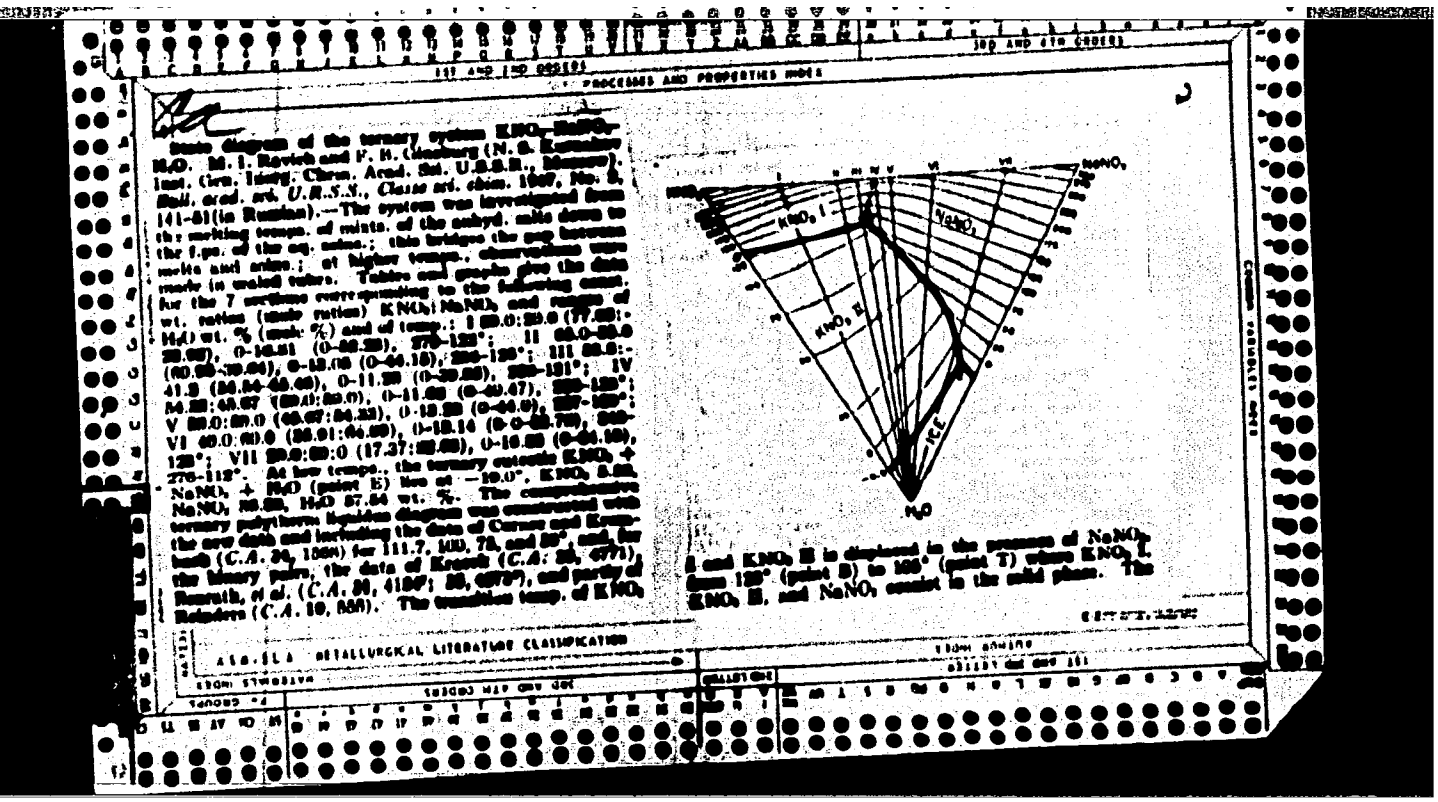

State diagram of the ternary system KNO_3–$NaNO_3$–H_2O. M. I. Rovich and F. H. Gleiberg (N. S. Kurnakov Inst. Gen. Inorg. Chem. Acad. Sci. U.S.S.R., Moscow). *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1947, No. 5, 141–61 (in Russian).—The system was investigated from the melting temps. of mixts. of the anhyd. salts down to the f.pts. of the eq. solns.; this bridges the gap between melts and solns.; at higher temps., observations were made in sealed tubes. Tables and graphs give the data for the 7 systems corresponding to the following comm. wt. ratios (mole ratios) KNO_3:$NaNO_3$ and ranges of H_2O wt. % (mole %) and of temp.: I [illegible] (17.[illegible]:[illegible]), [illegible]–[illegible]°; II [illegible] (0–[illegible]), [illegible]–[illegible]°; III [illegible] (0–[illegible]), [illegible]–[illegible]°; IV [illegible] (0–[illegible]), [illegible]–[illegible]°; V [illegible] (0–[illegible]), [illegible]–[illegible]°; VI [illegible] (0–[illegible]), [illegible]–[illegible]°; VII [illegible] (17.37:[illegible]), 0–[illegible] (0–[illegible]), [illegible]–[illegible]°. At low temps., the ternary eutectic KNO_3 + $NaNO_3$ + H_2O (point E) lies at −19.0°, KNO_3 [illegible], $NaNO_3$ [illegible], H_2O 57.84 wt. %. The comprehensive ternary polythermal liquidus diagram was constructed with the new data and including the data of Carnot and Knop-hach (*C.A.* 34, 1568) for 111.7, 100, 75, and 50° and, for the binary pairs, the data of Kracek (*C.A.* 26, 4771), Benrath, *et al.* (*C.A.* 30, 4180; 35, [illegible]), and partly of Reinders (*C.A.* 10, 888). The transition temp. of KNO_3 I and KNO_3 II is displaced in the presence of $NaNO_3$ from 128° (point S) to 108° (point T) where KNO_3 I, KNO_3 II, and $NaNO_3$ coexist in the solid phase. The

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complete state diagram consists of 4 cryst. fields, KNO_3 I, KNO_3 II, $NaNO_3$, and H_2O. The eutectic diagrams I, II, and III, which cross the fields of KNO_3 I and KNO_3 II, show, correspondingly, discontinuous breaks; their coordinates are in agreement with the boundaries of C. and K. Analyses of the compos. of the solid phases along the 160, 180, and 200° isotherms coincide exactly with the liquidus diagram. In particular, curves of the KNO_3/-$NaNO_3$ compos. of the solid phase as a function of the compos. of the liquid phase are continuous at 200° whereas, at 180° and below, they show a discontinuous break; this is in keeping with the appearance of a eutectic point on the 180° and lower isotherms. Thus, above 180°, KNO_3 I and $NaNO_3$ form a continuous series of solid soln.; below 180°, there is a solid soln. gap. Because of some contradictions of literature data on the binary system KNO_3-$NaNO_3$, the diagram of that system was redetd. by using known small addns. of extraneous salts forming no solid soln. with either KNO_3 or $NaNO_3$ (0.2% NaCl or 0.5% Na_2SO_4) as a means of allowing for the amt. of liquid adhering to the solid phase. The liquidus is in agreement with that of Briscoe and Madgin (C.A. 17, 3126). The pure binary system forms a continuous series of solid soln. When H_2O is introduced into the melt and the cryst. temp. lowered correspondingly, the compos. of solid soln. corresponding to the same KNO_3:$NaNO_3$ ratio in the liquid phase decreases, an outright solid. gap forming around 180°. Below that temp., solid soln. is unilateral; although KNO_3 I is able to dissolve considerable amts. of $NaNO_3$, the latter crystallizes practically pure.

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Viscosity of the system ethyl alcohol-chloral-benzene at 60°. M. I. Ravich and V. G. Sil'nichenko. *Izvest. Sektora Fiz.-Khim. Anal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* 18, 68-78(1947).—The viscosity and d. isotherms taken along cuts of 12.5, 25, 50, and 75 mol. % of C_6H_6 are presented graphically and tabulated.

M. Hosch

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Equilibrium in waterless and aqueous systems with low-melting salt base. M. L. Savich, V. Ya. Ketkovich, and I. S. Rassonskaya. *Izvest. Sektora Fiz.-Khim. Anal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* 17, 254-85 (1949).—The purpose of this investigation was to bridge the gap left by studies of aq. solns., ordinarily up to 100-120°, on the one hand, and by fused salts, ordinarily at much higher temps., on the other. To this end were studied NH_4NO_3-NH_4CNS and NH_4CNS-KCNS in both aq. and waterless systems. These salts were suitable for the purpose because (*a*) they do not form solid solns. with H_2O, (*b*) crystal hydrates are known only in the 2nd pair, and (*c*) the crystal hydrates crystallize at about 0°, i.e. at a temp. considerably lower than the temp. at which solid solns. are likely to exist. The formation and decompn. of solid solns. between the salts was clearly reflected on both aq. and waterless diagrams. The 2 diagrams act as supplement and check of one another, especially since the methods of their study differ in thermography, microstructure, phys. properties, etc. However, because of certain limitations this method (of 2 diagrams) is not always applicable. Some of the limitations are: the solvent should not form solid solns. with other components; the solvent should be relatively low-melting; it should form no chem. compds. with other components, but if such compds. are formed, their crystn. fields should be at low temps.; satd. soln. should be nonviscous and should have low vapor pressure; the solid phases should crystallize well and sep. readily from the mother liquor; the phases should be easily analyzed.

M. Hosch

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Phase equilibria in ternary water-salt systems at elevated temperatures. M. I. Ravich and F. E. Borovaya (N. S. Kurnakov Inst. of Gen. and Inorg. Chem., Acad. Sci. U.S.S.R.). *Izvest. Sektora Fiz.-Khim. Anal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* 10, 91 (1948).—The systems KCl-NaCl-H_2O, KCl-K_2SO_4-H_2O, NaCl-Na_2SO_4-H_2O, and KCl-KBr-H_2O were studied at 200 (60)° and up to 350 atm. The crystn. point was detd. from breaks in the p-x or p-t curves, where p and t are pressure and temp., resp., and x is the $-H_2O$ content. The expts. were made in an autoclave. x was varied by releasing small measured quantities of steam from the autoclave and t was varied by lowering the temp. a few degrees at a time. The curves showed the conditions at which a mixt. of salts crystd. in the presence of water vapor and also indicated the pressures above which crystn. is impossible. The use of p-x and p-t diagrams for phase analysis is discussed. The results are presented diagrammatically. M. Hasch

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RAVICH, M.I.

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Crystallization of potassium chloride and sodium chloride fusions in the presence of water vapor. M. I. Ravich and E. R. Borovaya. *Izvest. Sektora Fiz.-Khim. Anal., Akad. Nauk S.S.S.R.* 20, 165-83(1950).—The purpose of this investigation was to study the soly. and vapor pressure of satd. solns. within the system KCl–NaCl–H_2O at temps. of 300–650° and 300–350 atm. Special autoclaves (described) were built for this purpose. The crystn. point was detd. from the relations of vapor pressure and the H_2O content at a given temp. (p-x curves) and vapor pressure and temp. at a given H_2O content (p-t curves). At the onset of crystn. these curves have a break; the position of this break indicates the temp., vapor pressure, and compn. of the satd. soln. The p-t curves had maxima. It was the highest for satd. solns. of KCl, followed by satd. solns. of NaCl, and being the lowest for a eutonic satd. soln. of KCl + NaCl. In the system KCl–NaCl–H_2O the max. value of vapor pressure of satd. solns. is not a value intermediate between the vapor pressures of satd. solns. of the individual salts. The soly. polytherm of the system KCl–NaCl–H_2O has crystn. fields of KCl and NaCl. At temps. above 500° the crystn. curves of KCl and NaCl have a smooth transition from one into another, indicating the existence of continuous solid solns. The isobars of satd. solns. of this system are of 2 kinds. In the first of these corresponding to pressures below 132 kg./sq. cm. each of the curves of the isobars starts on the KCl side of the diagram and ends on the NaCl side. Above this pressure each of the curves of the isobars starts and ends on one side of the diagram; thus a passage is left between the 2 curves. The position of this passage corresponds to KCl + NaCl compn. which does not crystallize at the given pressure at any temp.

M. Hoseh

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Feb. 25, 1954
General and Physical Chemistry

Chem

3

Phase equilibria at high temperatures in the system $NaCl-Na_2SO_4-H_2O$. M. I. Ravich, F. E. Borovaya, and V. Ya. Ketkovich. *Doklady Akad. Nauk S.S.S.R.* 77, 617-20(1951).—Vapor pressures of satd. solns. of the salts and their crystn. temps. were detd. by previously-described methods (cf. *C.A.* 44, 9232*c*; 45, 4125*b*). The vapor pressure of satd. solns. of NaCl rises to a max. of 401 kg./sq. cm. at 600°, and then falls to 0 at 800° (m.p. of NaCl). When enough Na_2SO_4 is added to the NaCl, a 2nd max. appears at a lower temp., defining a region where Na_2SO_4 is the solid phase. This 2nd max. rises and the former diminishes with increasing Na_2SO_4 concn. When the eutectic mixt. (70% Na_2SO_4-30% NaCl) is reached, the Na_2SO_4 curve is almost superimposed on the curve for the vapor pressure of pure water. Approx. values for % Na_2SO_4, pressure (in kg./sq. cm.), and temp. of the Na_2SO_4 max., and pressure and temp. of the NaCl max. are, resp.: 0, —, —, 401, 600; 20, —, —, 350, 600; 35, 160, 375, 300, 590; 50, 320, 430, 250, 560; 70 (eutectic), —, —, 225, 500 (no data were given for the Na_2SO_4 max. at eutectic concn.). The m.-p. diagram for the ternary system is presented in triangular form, and is based on previously published data (cf. *C.A.* 26, 1500; 29, 7770[1]; 36, 3087[8]). A ternary eutectic m. 100° contains approx. 5% Na_2SO_4, 20% NaCl, 75% H_2O.

Arild J. Miller.

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Vapor pressure of eutonic quaternary aqueous solutions of the reciprocal systems of potassium and sodium chlorides and sulfates at high temperatures. M. I. Ravich and F. E. Borovaya. *Doklady Akad. Nauk S.S.S.R.* 79, 815-18(1951); cf. *C.A.* 46, 9232c.—The method of *p-x* and *p-t* curves previously described was used. Results indicated that, in the presence of water vapor, the mixt. of chlorides and sulfates of Na and K, for detd. salt ratios, can be retained entirely in the liquid phase at temps. considerably above the crit. temp. of water. The min. water vapor pressure must be relatively small (below 100 atm.).

Gladys S. Macy

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RAVICH, M. I.

SYSTEMS (Chemistry)

Equilibria of salts in the presence of high pressure water vapor. Usp. khim. 21 no. 9, 1952

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

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RAVICH, M.I.; BOROVAYA, F.Ye.; KETKOVICH, V.Ya.

Solubility and vapor pressure of saturated solutions in the system $KCl - K_2SO_4 - H_2O$ at high temperatures. Izv.Sekt.fiz.-khim.anal. 22:225-239 '53. (MLRA 7:5)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova Akademii nauk SSSR. (Solution (Chemistry)) (Salts)

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RAVICH, M.I.; BOROVAYA, F.Ye.; KETKOVICH, V.Ya.

Solubility and vapor pressure of saturated solutions in the system $NaCl - Na_2SO_4 - H_2O$ at high temperatures. Izv.Sekt.fiz.-khim.anal. 22:240-254 '53. (MLRA 7:5)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova Akademii nauk SSSR. (Solution (Chemistry)) (Salts)

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Ravich, M. I.

Solubility and vapor pressure of saturated solutions in the quaternary aqueous reciprocal system of potassium, sodium, chloride, and sulfate at high temperatures. M. I. Ravich and F. E. Borovaya. *Izvest. Sektora Fiz.-Khim. Anal., Akad. Nauk S.S.S.R.* 23, 258-83(1953); cf. *C.A.* 46, 4890i.—The system was studied by the method of *p-x* and *p-t* curves (cf. *C.A.* 48, 7968d) at temps. up to 500°. As the temp. rose, the vapor pressure of eutonic solns. first increased to a max. and then decreased. The max., 70-72 kg./sq. cm., was observed at 400-420°. This shows the possibility of keeping K and Na chlorides and sulfates in soln. at temps. greatly exceeding the crit. temp. of H_2O; the required pressure is not very great. *p-x* diagrams obtained at 400-500° showed the conditions under which salts within the system crystd. M. Hosch

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RAVICH, M. 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
Ravich, M. I.	"Equilibrium of Salts in the Presence of High Pressure Steam"	Institute of General and Inorganic Chemistry Imoni N.S. Kurnakov, Academy of Sciences USSR

SO: W-30604, 7 July 1954

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RAVICH, M. I.

Phase equilibriums in the NaCl-NaOH-H_2O system at high temperatures. M. I. Ravich, F. E. Borovaya, E. I. Luk'yanova, and V. [redacted] (N.S. Kurnakov Inst. Gen. and Indrg. Chem., Moscow). *Izvest. Sektora Fiz.-Khim. Anal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* 24, 280-98(1954).—Diagrams are constructed on the basis of exptl. data that show the conditions for the existence of solid NaCl and of liquid solns. formed from all of the possible mixts. of NaCl and NaOH in the presence of H_2O vapor. J. Rovtar Leach

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RAVICH, M. I.

V Phase conversions in the system sodium sulfate-sodium hydroxide. M. I. Ravich and V. M. Elenevskaya. *Izvest. Sektora Fiz.-Khim. Anal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* 25, 176-81(1954).—Phases are formed by reaction of Na_2SO_4 and NaOH that, on the basis of data obtained by different methods, are considered incongruently fused chem. compds. with the probable formulas $3Na_2SO_4 \cdot 2NaOH$ and $Na_2SO_4 \cdot NaOH$. The first compd. exists at temps. below 485° and at 418° undergoes polymorphic conversion; the 2nd compd. exists at temps. below 316°.

Burilla Mayerle

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Ravich, M. I.

Existence of an equilibrium solid phase $K_2CO_3.Na_2CO_3$ in the system K_2CO_3–Na_2CO_3–H_2O at temperatures above 100°. M. I. Ravich, L. S. Itkina, and V. F. Kokhova. *Izvest. Sektora Fiz.-Khim. Anal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* 25, 350–60(1954).—A study of soly. at 100° and 150°, and also x-ray and thermographic study of $K_2CO_3.Na_2CO_3$ show that the isotherm of soly. at 100° consists of 4 branches corresponding to the crystn. of $Na_2CO_3.H_2O$, Na_2CO_3, $K_2CO_3.Na_2CO_3$, and K_2CO_3, and that the isotherm of soly. at 150° consists of 3 branches, corresponding to crystn. of Na_2CO_3, $K_2CO_3.Na_2CO_3$, and K_2CO_3. Existence of $K_2CO_3.Na_2CO_3$ at temps. up to 475° is confirmed. Data show that $K_2CO_3.Na_2CO_3$ must be crystd. from aq. solns. and at temps. below 150°. B. Mayerle

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RAVICH, M.I.; BOROVAYA, F.Ye.

Phase equilibrium in the system: Na_2SO_4--NaOH--H_2O at high temperatures. Izv.Sekt.fiz.-khim.anal. 26:229-241 '55. (MLRA 8:9)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN SSSR. (Sodium compounds) (Phase rule and equilibrium)

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RAVICH, M.I.; SHCHERBAKOVA, L.G.

Nature of the solid phase crystallized at high temperatures from tribasic sodium orthophosphate solutions. Izv.Sekt.fiz.-khim.anal. 26:248-258 '55. (MIRA 8:9)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN SSSR. (Phosphates) (Phase rule and equilibrium)

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