

SOV/137-58-8-17675

The Effect of Preliminary Plastic Deformation (cont.)

action of PD on the MT is a function not only of the degree of the PD, but of the plastic-elastic properties of the initial phase as well.

1. Chromium-iron-nickel alloys--Analysis
2. Martensite--Transformations
3. Martensite--Deformation
4. Martensite--Temperature factors

M. Sh.

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SOV/137-58-8-17676

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 211 (USSR)

AUTHORS: Maksimova, O. P., ~~Nikonorova, A. I.~~

TITLE: On the Incubation Period in Martensite Transformation (Ob inkubatsionnom periode pri martensitnom pre-rashchenii)

PERIODICAL: Sb. tr. In-t metalloved. i fiz. metallo: Tsentr. n. i. in-ta chernoy metallurgii, 1958, Vol 5, pp 56-65

ABSTRACT: The authors describe the process of martensite transformation (MT) by considering it as a phase transition in a single component system. Unlike the usual phase transformations which are characterized by a very slow initial progress during isothermal exposure followed by a gradual increase in rate the transformation rate during isothermal MT is at a maximum initially and decreases subsequently as the time of exposure is increased. However, the process of isothermal MT proceeding at an increasing rate may be observed during phase hardening, as well as in the presence of very small degrees of supercooling. In the alloy N23G3, at a small degree of supercooling, isothermal MT is preceded by an incubation period. The phase hardening of this alloy (with concurrent transformation of 30% of

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austenite) results in a condition in which the incubation period is apparent throughout the entire interval of the MT. The duration of the incubation period is at a minimum when the degree of supercooling corresponds to the maximum rate of progress of the process. An incubation period during the MT became evident in the case of certain other alloys also. During investigations of the Kh17N8 alloy it was established that the time of approach to the isotherm located in the vicinity of the martensite point affects the rate of subsequent isothermal MT. It is assumed that no significant temperature lag exists between the surface and the center of a specimen during its cooling.

1. Martensite—Transformations

M. Sh.

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137-58-6-13268

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 300 (USSR)

AUTHORS: Maksimova, O.P., Golovchiner, Ya.M., Lyubov, B.Ya.,
Nikonorova, A.I.

TITLE: Fundamental Trends in Investigations of the Theory of Martensite Transformation (Osnovnyye napravleniya issledovaniy v oblasti teorii martensitnykh prevrashcheniy)

PERIODICAL: Sb. tr. In-t metalloed. i fiz. metallov Tsentr. n.-i. in-ta chernoy metallurgii, Trans. Amer. Soc. Metals, 1957, Nr 49, pp 427-444. Discuss. 1958, Vol 5, pp 147-160

ABSTRACT: Fundamental problems of the study of laws governing the martensite transformation (MT), the effect of various factors on it, and the control of the process of MT, also means and methods for the investigation of MT are formulated. Bibliography: 80 references.

L.V.

1. Martensite--Analysis 2. Martensite--Theory 3. Metals--Transformations

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SOV/126-6-1-12/33

AUTHORS: Kurdyumov, G. V., Maksimova, O. P., Nikonorova, A. I., Pavlenko, Z. D., and Yampol'skiy, A. M.

TITLE: Influence of Preliminary Plastic Deformation on the Martensitic Transformation in the Alloy Fe-Cr-Ni
(Vliyaniye predvaritel'noy plasticheskoy deformatsii na martensitnoye prevrashcheniye v splave Fe-Cr-Ni)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol 6, Nr 1, pp 95-105 (USSR)

ABSTRACT: The results are described of experiments carried out for elucidating the finer features of the influence of plastic deformation and subsequent annealing on the martensite transformation in Fe-Cr-Ni alloys of the type Kh18N8. The aim was to establish the activating effect of deformation in such an alloy and to verify the validity of the assumption of the activating influence of stresses on the martensitic transformation of deformed austenite. For this it was necessary to study the character of elimination of the after effects of deformation with gradually increasing annealing temperature; in view of the possible super-position of diffusion processes onto the processes of stress elimination during annealing,

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such investigations could not be effected on steel. If the assumption on the favourable influence of stresses on the martensitic transformation of deformed austenite would be correct, the effect of activation should be eliminated in the case of heating in the range of relatively low temperatures. Another aim of the described work was to study the influence of deformation on the isothermal martensitic transformation for the purpose of elucidating the characteristic features of the changes in the kinetics caused by the influence of the activating and/or the braking effects of deformation. Since the activating influence of deformation can only be detected in alloys with high elasticity values, it was decided to carry out the experiments on the alloy Kh18N8 (0.03% C, 18.10% Cr, 8.1% Ni) and the alloy Kh17N9 (0.05% C, 17.25% Cr, 9.16% Ni), both of which are similar in composition and as regards the martensitic point. On the alloy Kh18N8 the influence of deformation and subsequent heating for obtaining martensitic transformation during cooling was studied, whilst on the

Card 2/8 alloy Kh17N9 the influence of deformation on the isothermal

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martensitic transformation was studied. Investigations were carried out on flat 3.5 x 5.5 x 25.5 mm specimens which after manufacture were subjected to diffusion annealing at 1150°C for ten hours. The plastic deformation was effected by compression by means of a press at room temperature, at 100 and at 175°C. Deformation at 100 and 175°C was effected inside a special sleeve fitted with a heater winding; as a medium for ensuring the temperature of 100°C boiling water was used, whilst deformation at 175°C was effected in glycerine. Evaluation of the change of the ability of the austenite to become transformed into martensite was effected by means of the thermo-magnetic method by plotting the curves of cooling to -196°C and subsequent heating to 20°C with a speed of 10°C/min. As the basic criterion of the stability of the austenite, the total transformation effect was chosen which was obtained as a result of cooling and heating. The change in the fine structure of the austenite during the plastic deformation and during the subsequent heating was investigated by the X-ray method

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by measuring the width of the line (311). As a characteristic of the state of the structure of the austenite (Type II stresses, dimensions of the blocks and coherent scattering), the magnitude of physical widening of the (311) austenite lines was chosen. In Fig.1 the transformation of the austenite into martensite during cooling to -196°C and subsequent heating to $+20^{\circ}\text{C}$ is graphed after various degrees of preliminary plastic deformation at room temperature for the alloy Kh18N8; in Fig.2 the same relation is graphed for the case of deformations taking place at 100°C and at 175°C . In Fig.3 the change of the total effect of martensitic transformation as a function of the degree of preliminary plastic deformation is graphed for various temperatures of preliminary deformation for the alloy Kh18N8. In Fig.4 the influence of the annealing temperature on the transformation of the deformed austenite during cooling to -196°C and heating to 20°C is graphed for various degrees of deformation at 100°C (alloy Kh18N8). In Fig.5 Card 4/8 the change of the widening of the line (311) of the

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austenite, of the total effect of martensitic transformation (during cooling and during heating) and the change of the martensitic point are graphed as functions of the annealing temperature for specimens of the Kh18N8 alloy deformed by 10% at 100°C. In Fig.6 the temperature dependence of the initial speed and the total effect of isothermal martensitic transformation are graphed for non-deformed and deformed (8 and 17%) states for a deformation temperature of 100°C (alloy Kh17F9). It was found that, depending on the conditions of deformation and annealing, plastic deformation can have an activating or a braking effect on the martensitic transformation. Small degrees of deformation activate the transformation, i.e. widen the temperature range of the transformation, bring about an increase of the initial speed of the isothermal transformation and of the total quantity of the martensitic phase. Various changes in the fine crystalline structure of the austenite may lead either to easier formation of martensite nuclei during subsequent cooling or may impede their formation. For small degrees

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of plastic deformation those structural changes will occur to an increasing extent which bring about the formation of germinations. However, even at such degrees of deformation changes occur in the austenite which impede transformation. With increasing degree of deformation and also with increasing deformation temperature, the changes in the structure which bring about braking of the transformations increase in importance. The changes in the fine crystalline structure, which activate the transformation are eliminated at relatively low annealing temperatures at which the width of interference lines does not yet change, i.e. whilst there are still no important changes in the magnitude of the Type II distortions or in the dimensions of the areas of coherent scattering. Changes in the structure braking the formation of germinations are maintained thereby; elimination of these takes place only at higher temperatures corresponding to the region of decrease in the degree of blurring of the lines. It is not possible

Card 6/8 as yet to establish those details of the fine structure

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which favour the formation of martensite germinations and those which impede their formation. Comparison of the results relating to the influence of plastic deformation on the martensitic transformation in Fe-Ni-Mn and Fe-Cr-Ni systems leads to the conclusion that the intensity of the deformation caused changes of structural factors depends on the elastic-plastic properties of the austenite. The relation between the changes bringing about activation and braking of the martensitic transformations may differ depending not only on the degree of deformation but also on the elastic-plastic properties of the initial phase. As a result of this an unequal character of the effects of plastic deformation on the martensitic transformation

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was observed in various materials.

There are 6 figures and 11 references, 9 of which are Soviet, 1 German, 1 English.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (The Central Research Institute of Ferrous Metallurgy)

SUBMITTED: March 21, 1957

Card 8/8

1. Chromium-iron-nickel alloys--Transformations 2. Chromium-iron-nickel alloys--Deformation 3. Chromium-iron-nickel alloys--Heat treatment

6656

S/180/60/000/02/014/028

R111/R152

187500

AUTHORS: Zakher, I.M., Maksimova, O.P., Nikonorova, A.I.,
Plemyannikova, I.M., and Yampol'skiy, A.M. (Moscow)

TITLE: Study of the Austenite Stabilization Effect in Phase Work Hardening ✓

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, Nr 2, pp 93-103, (USSR)

ABSTRACT: The authors suggest that the important problem of gamma-phase stabilization should be considered to include the action of any factor which raises stability without changing the chemical composition of the austenite (Refs 1-8). One of these is internal work hardening due to the martensite transformation itself (Ref 9), which has been described by Golovchiner and Yu.D. Tyapkin, and by Golovchiner and Landa (Ref 10). In superinvar alloy Maksimova and Golovchiner found a "super-stabilization" effect for austenite with respect to the martensite transformation in subsequent cooling. In the present work the aim was to find: the influence of various degrees of phase work hardening on austenite stability, kinetics of isothermal transformation and the micro- and submicro- ✓

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S/180/60/000/02/014/028
E111/E152

Study of the Austenite Stabilization Effect in Phase Work Hardening

structure of austenite; the rules governing the removal of the effects of this phenomenon during subsequent annealing at gradually increasing temperatures; the changes in martensite transformation kinetics produced by phase work hardening in contrast to those produced by a different sort of effect, e.g. plastic deformation or high-energy particle irradiation. Two types of alloy were used; Fe-Ni-Mn (N2303) and Fe-Cr-Ni (Kh17N8); their respective compositions being 0.06, 0.05% C; 23.45, 8.40% Ni; 3.30, -% Mn; -, 17.34% Cr. These had been studied widely in connection with austenite stability and fine crystal structure (Refs 5-7, 12). The investigation involved thermomagnetic, X-ray, microstructure and microhardness methods. The experimental conditions chosen in the present work are represented in Fig 1. Phase work hardening was produced by cooling to a low temperature followed by heating in a tin bath to the lowest temperature at which the reverse martensite transition is completed; the heating conditions ensured that a martensite mechanism governed the alpha to gamma

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Study of the Austenite Stabilization Effect in Phase Work Hardening

transformation. Fig 3 gives the influence of degree of phase work hardening on the martensite transformation on subsequent cooling, while Figs 4 and 5 give for the nickel and the chromium alloys, respectively, isothermal martensite transformation curves for the initial and phase work-hardened states. Figs 6 and 7 give, for the same alloys respectively, the influence of phase work hardening on the starting rate of the isothermal martensite transformation (curves a) and on the overall effect of the transformation. In Fig 8 the influence of annealing temperature on the state of N23G3 subjected to different degrees of phase work hardening is shown, while Fig 9 shows effects for K117N8 alloy subjected to a 40% phase work hardening. Figs 10 and 11 show for the two alloys, respectively, microstructures at different stages of stabilization treatment and the nature of the martensite formed in subsequent cooling. The work showed that for both alloys phase work hardening depresses the "true" martensite point and the temperature range of the transformation, reducing its initial rate; external ✓

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1111/1152

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work hardening has different effects on the two alloys (Ref 7). The observed changes in kinetics (similar to those produced by stabilizing plastic deformation) can be explained by the relatively high temperature required for the reverse martensite transformation, which makes it impossible to retain those changes in austenite fine structure which favour formation of martensite nuclei. Phase work hardening was found to produce extension of structural faults in adjacent austenite zone, decrease in martensite grain size and, to some extent, relative stability of some austenite zones. In general, the changes produced are very stable (disappearing at 1100-1150 °C); their removal on raising the temperature takes place in a stepwise manner.

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There are 11 figures, 1 table and 15 references, of which 14 are Soviet and 1 is English.

SUBMITTED: July 30, 1959

NIKONOROVA, A.I. (Moskva)

Electromyographic study of work performed at different
tempo within the same range of power. Gig. truda i
prof. zab. 6 no.5:8-13 Ny'62. (MIRA 16:8)

1. Institut gigiyeny truda i professional'nykh zabolevaniy
AMN SSSR.

(ELECTROMYOGRAPHY) (STRESS (PHYSIOLOGY))

KHENKIN, M.L., kand. tekhn. nauk; NIKONOROVA, A.I., kand. tekhn. nauk;
GLADYSHEV, S.A., inzh.; BOLOTOVA, Ye.P., inzh.; SOBCEVA, N.P.,
inzh.

Stainless steel for thin-walled castings. Lit. proizv. no.11:
3-5 N '65. (MIRA 18:12)

ACC NR: AT6012412

SOURCE CODE: UR/0000/65/000/000/0329/0333

AUTHORS: Nikonorova, A. I.; Sineonov, S. L.; Karabasova, L. V.; Dubovaya, G. V.; Sobolava, N. I.

ORG: none

TITLE: Coefficient of linear expansion of industrial titanium

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya, Moscow, Izd-vo Nauka, 1965, 329-333

TOPIC TAGS: expansion coefficient, titanium alloy, metal property / VT1-1 titanium alloy

ABSTRACT: To determine the cause of the large scatter ($\Delta\alpha \bar{\alpha} \pm 1.85$) of the coefficient of linear expansion of titanium alloys, the expansion coefficient and texture of the corresponding metal were investigated on VT1-1 specimens. The coefficient of linear expansion was measured over the temperature interval of 20--120C with a dilatometer, while the texture was determined by the x-ray method. The coefficient of linear expansion was significantly affected by the texture, with three types of texture definable with certain values of the expansion coefficient: $[10\bar{1}0]$ small-grained texture corresponded to $(9.3--10.3) \times 10^{-6}$ 1/degree; no definable texture corresponded to $(8.5--9.2) \times 10^{-6}$; and $[0001]$ large-grained

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ACC NR: AT6012412

texture corresponded to $(7.3--8.4) \times 10^{-6}$ 1/degree. It was found that repeated forging or drawing (40% deformation for cold working, 60--80% deformation with intermediate tempering at 600C) would provide a fairly uniform texture with a coefficient of linear expansion of $8.5 \pm 0.5 \times 10^{-6}$ 1/degree. Orig. art. has: 9 figures and 1 table.

SUB CODE: 11, 13/

SUBM DATE: 02Dec65/

ORIG REF: 001/

OTH REF: 003

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L 6482-66 EWT(a)/EWT(m)/EWP(c)/EWA(d)/EWP(v)/T/EWP(t)/EWP(r)/EWP(z)/EWP(b)/
ACC NR: AP5025591 EWP(i)/EWA(e)/ETC(m) SOURCE CODE: UR/0129/65/000/010/0016/0016
KJW/JD/Wd/Hd

AUTHOR: Nikolova, A. I.; Florensava, F. R.

ORG: Kuznetsk Metallurgical Combine (Kuznetakiy metallurgicheskiy kombinat)

TITLE: Effect of the melting conditions on the quality of rolled Kh17N7Yu steel plates and bars

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1965, 16-18

TOPIC TAGS: steel, stainless steel, precipitation hardenable steel, steel melting, steel rolling, plate rolling, bar rolling/Kh17N7Yu steel

ABSTRACT: In 1960 the Kuznetsk Metallurgical Combine began production of Kh17N7Yu precipitation-hardenable steel plates 6-45 mm thick and round bars 100-110 mm in diameter. Initially the steel was melted from scrap in a basic arc furnace with the use of oxygen, but the steel was of inferior quality. Therefore, in 1963 the plant changed to the virgin-charge process, using 75 kg nickel, 830 kg carbon steel scrap, 45 kg iron ore, and 21 kg lime per ton. The virgin-charge process yielded metal of much better quality, hot tears were eliminated completely, rejects owing to unsatisfactory chemical composition were reduced from 22.7% to 6%, and the ingot consumption was reduced from 3.11 to 2.01 kg per kg of finished product. Slabs and billets are conditioned by machining and heated for rolling to 1280-1300C and 1270-1280C, respectively. Heating to a lower temperature produced unsatisfactory results. Orig. art. has: 2 figures. [ND]

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UDC: 669.18:658.562

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ACC NR: AF5025591

SUB CODE: MM, IE/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 002/ ATD PRESS:

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L 26030-66 ENT(m)/EWA(d)/T/ESP(t) IJP(c) JD/HW

ACC NR: AP6008863

SOURCE CODE: UR/0128/65/000/011/0003/0005

AUTHOR: Khenkin, M. L. (Candidate of technical sciences); Nikonova, A. I. (Candidate of technical sciences); Gladyshev, S. A. (Engineer); Bolotova, Ya. P. (Engineer); Soboleva, N. P. (Engineer)

ORG: none

TITLE: Stainless steel for thin-walled castings

SOURCE: Litaynoye proizvodstvo, no. 11, 1965, 3-5

TOPIC TAGS: metal casting, martensite steel, copper, corrosion resistance, tempering, austenitic steel, steel, stainless steel/ ~~AKH15NAD3L~~ stainless steel, 35L steel

ABSTRACT: The steel used for thin-walled and intricate castings of parts of precision machinery and devices must display a high resistance to atmospheric corrosion without requiring a protective coating, a satisfactory fluidity, a high dimensional stability, adequate physico-mechanical properties, and a satisfactory machinability. Of the standard stainless steels not one satisfies the entire set of these requirements. Cr-Ni austenitic steels have a high corrosion resistance but a low fluidity, while martensitic-class steels have a low corrosion resistance but an insufficient fluidity. Hence it is normally necessary to employ for these purposes 35L steel despite the highly undesirable necessity of coating it electrochemically with zinc. Of the elements

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UDC: 621.74.045:669.14.018.8

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ACC NR: AP6008863

enhancing the fluidity of stainless steels, Cu is the most effective. In this connection, six melts of the newly developed ϕ Kh15N4D3L martensitic stainless steel (up to 0.08% C, 0.8% Si, 0.7% Mn, 14.5-17% Cr, 3-4% Ni and 3-4% Cu) were tested for fluidity, as a function of temperature and shape of metal. Tests of various intricate thin-walled (1.5 mm thick) castings confirmed the definitely satisfactory casting properties of this steel -- high fluidity and absence of hot cracking. Since steels used for thin-walled and precision castings also must satisfy high requirements with respect to corrosion resistance in non-coated state, high dimensional stability, and machinability, these properties were also investigated for ϕ Kh15N4D3L steel as compared with 35L steel. Findings: the dimensional stability of ϕ Kh15N4D3L steel is such that, after its air quenching from 1020°C, 2-hr treatment with cold at -70°C and 2-hr tempering at 600°C, this steel remains stable in time even in the presence of temperature fluctuations of from +150°C to -40°C. Compared with 35L steel, ϕ Kh15N4D3L steel displays superior strength properties (1.5-2 times higher) as well as superior corrosion resistance and superior machinability (30-40% higher). Thus ϕ Kh15N4D3L steel may be accepted as a replacement for 35L steel which previously had to be used for this purpose. Orig. art. has: 6 figures, 4 tables.

SUB CODE: 11, 13 / SUBM DATE: none/ ORIG REF: 00

Card 2/2

KOSINSKI, Jan; NIKONOROW, Maksym

Spectrophotometric determination of methyl α -naphthylacetate in
potatoes. Chem anal 4 no.5/6:925-937 '59. (KXAI 9:9)

1. Wojakowe Centralne Laboratorium Sanitaro-Higieniczne,
Warszawa
(Spectrophotometry) (Methylnaphthaleneacetic acid)
(Potatoes)

NIKONOROW, Maksym; CWIERTNIEWSKA, Emilia; KAMINSKI, Alfred

A biological method for the determination of DDT residues on the surface and inside cherry fruits. Acta pol. pharm. 18 no.6:485-491 '61.

1. Z Zakładu Badania Żywności i Przedmiotów Użytku PZH i Wojskowego Instytutu Higieny i Epidemiologii w Warszawie.
(DDT chem) (FRUIT)

GWIERTNIEWSKA, E.; NIKORCHOW, M.; KOSLINSKA, M.; LESKI, R.

Studies on the DDT residues on cherry fruit sprayed against the
cherry fruit fly (*Rhagoletis cerasi* L.). Roczn. nauk roln. rosl 86
no.3:533-547 '62.

SZYMCZYK, F., ins.; SZCZYGIŁA, A., prof. dr, NIKONCZAK, M., prof. dr; JUST, J.,
prof. dr; KACERZAK, M., prof. dr

Works and achievements in public hygiene during the 20-year
period of the Polish People's Republic. Rocz panst zakl hig
15 no.4:337-347 '64.

KASHEKHLEBOV, I.F.; LOTSMANOVA, P.N.; NIKONOV, A.A.; OLOVENIKOV, G.B.;
PESTOV, G.S.; SINELOBOV, M.A.; TREYNIS, A.M.; TULYAKOV, B.V.,
insh.; USTINOVICH, B.P.; ROMANOV, A.V., retsousemt; NIKIFOROV,
N.S., red.; SARMATSKAYA, G.I., red.izd-va; GRECHISHCHEVA, V.I.,
tekhn. red.

[Manual on turpentine] Spravochnik; podsochka lesa. Pod ob-
shchey red. B.V.Tuliakova. Moskva, Goslesbumizdat, 1962. 334 p.
(MIRA 16:3)

(Turpentine)

MIRONOV, A.A.

"Specialization and Concentration of Production in the Sovkhozes
of Latvian SSR";

dissertation for the degree of Candidate of Economic Sciences
(awarded by the Timiryazev Agricultural Academy, 1962)

(Investiya Timiryazevskoy Sel'skokhozyaystvennoy Akademii, Moscow, No. 2,
1963, pp 232-236)

NIKONOV, A.A.

Ultimate heat loads for steam-heated surfaces of marine
boilers. Sudostroenie 24 no. 6:21-25 Jo '58. (MIRA 11:8)
(Boilers, Marine)

NIKONOV, A.A., kand.tekhn.nauk

Evaluating the operational reliability of evaporative heating
surfaces of marine steam boilers. Sudostroenie 24 no.7:31-34
J1 '58. (MIRA 11:9)
(Boilers, Marine)

NIKOROV, A.A.

Characteristics of the last glaciation moraine in western Lapland.
Izv. Kar. i Kol'. fil. AN SSSR no.2:62-76 '58. (MIRA 11:9)

1.Geologicheskij institut Kol'skogo filiala AN SSSR.
(Lapland--Moraine)

NIKOLY, A.A.

Microdislocations in fluvioglacial deposits of the western Kola Peninsula. Izv.Kar. i Kol'.fil.AN SSSR no.3:43-45 '58.
(NINA 11:12)

1. Geologicheskiy institut Kol'skogo filiala AN SSSR.
(Kola Peninsula--Geology, Structural)

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AUTHORS:

Nikonov, A. A., Cherezhisina, Ye. A. SOV/20-123-3-43/54

TITLE:

Recent Data on Late and Postglacial Marine Basins in the Western Part of the ~~Kola~~ Kola Peninsula (Novyye dannyye o pozdne- i poslednikovykh morskikh basseynakh na zapade Kol'skogo poluostrova)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 3, pp 530-533 (USSR)

ABSTRACT:

The recent land forms and the formation and distribution of glacial deposits in the Kola peninsula, and likewise in the other marginal areas of Fennoscandia, were determined in post-glacial time by the combined effects of the shrinking ice cover, the isostatic uplifts, and the fluctuations of the sea level. The multipurpose investigations of the previously very slightly known, western mainland part of the peninsula have clarified several questions which concern the problem mentioned in the title and have supplemented previous data (Refs 1-5). These glacial sediments mentioned in the title are distributed in depressions as bands 1 to 6 km wide, which extend from the west and southwest toward the east and northeast. At present they are

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encompassed by the Lotta and Nota Rivers and their tributaries, the Yauri-yoki and Girvas. 3 distinct masses can be recognized: 1. banded clays 2. stratified clays, clayey and sandy soils 3. fine-grained sand and sandy soil. These sediment masses belong to 2 complexes: Portlandiya and Felas. Portlandiya complex: The lithologic composition is described, and a list of the diatom complexes found (Table 1), which are characteristic of the Portlandiya sea, is given. The assemblage contains forms of various ecologies and origins: 1. species of a fresh-water, arctic-alpine nature, which live in the shallow bank zones of northern lakes and rivers. 2. Salt water and marine elements, coastal zone inhabitants. Group 1 is numerically predominant. The Portlandiya sea was almost fresh. Pollen of herbaceous plants and the undershrubs (dwarf birch - *Betula nana* - 46-75%, heather - Ericaceae - 6 - 7 %) are predominant among the pollen assemblages. Also found were wormwood pollen (*Artemisia*) and pollen from orach (*Atriplex*). The composition of the spores is varied, abundant green moss, many ferns (Polypodiaceae) and club-moss plants (Lycopodiaceae). This composition indicates sparsely forested or forestless lands with dwarf birch bushes and a covering of grass and moss in the area. Salt water of the

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in the Western Part of the Kola Peninsula

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Portlandiya transgression gradually invaded the glacial waters. However, the salinification did not advance very far into the narrow and long ocean bays. The arrival of melt water from the glacier also worked against salinification (Ref 2). Sedimentation occurred chiefly in bay areas near the shore from erosion of moraine materials and from materials brought by the glacial melt waters. The suspended materials in the glacial waters were deposited in the central parts of the bays. Fresh water diatom species increased after the retreat of the Portlandiya sea. Folas complex: The chiefly fine, gray sand forms narrow (up to 1 km wide) bands in the axial parts of the depressions. Their thickness attains 15-20 m. Table 2 contains a list of the diatom assemblages. Among them are many marine salt-water inhabitants: littoral and upper sublittoral dwellers. The Folas sea was not more than 40-45 m deep. In the western sections, which were farthest from the open sea, the assemblages are composed almost entirely of fresh-water forms. Tree species are predominant among the pollen assemblages (66%),

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Recent Data on Late and Postglacial Marine Basins SOV/20-123-3-43/54
in the Western Part of the ~~Kola~~ Peninsula

and grasses and undershrubs comprise 22% of the assemblage. The climate was far milder, and fir-birch forests extended. No further transgressions have occurred in this region. There are 2 tables and 6 references, 4 of which are Soviet.

ASSOCIATION: Geologicheskii institut Kol'skogo filiala Akademii nauk SSSR
(Geological Institute of the ~~Kola~~ Branch of the Academy of
Sciences, USSR)

PRESENTED: June 28, 1958, by D. V. Nalivkin, ~~Academy of Sciences, USSR~~

SUBMITTED: June 26, 1958

Card 4/4

NIKONOV, A.A.

Features of the structure of eskars and problems in the paleogeography of areas of late glaciation in the southern part of the Pechenga district. Izv. Kar. i Kol' fil. AN SSSR no.1:47-58 '59. (MIRA 12:9)

1. Geologicheskii institut Kol'skogo filiala AN SSSR.
(Kola Peninsula--Nekar)

NIKOLAY, A.A.

New work on problems in Quaternary glaciation. Izv.Kar.i Kol'.fil.
AN SSSR no.3:154-155 '59. (MIRA 13:4)

1. Geologicheskii institut Kol'skogo filiala AN SSSR.
(Glaciers)

5(5)

AUTHOR:

Nikonov, A. A.

SOV/20-125-4-50/74

TITLE:

The Restoration of Neotectonics and the Paleogeography of the Late Glacial Period by Means of the Epeirogenic Spectrum in the Continental Part of the Kola Peninsula. (Vosstanovleniye neotektoniki i paleogeografii pozdnelednikov'ya s pomoshch'yu epeyrogenicheskogo spektra v materikovoy chasti Kol'skogo poluostrova)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 4, pp 866 - 869 (USSR)

ABSTRACT:

The spectrum mentioned in the title reflects objectively the interaction of the isostatic movements of the earth's crust, of the vanishing glacial envelope, and the postglacial waters. Thus, the paleogeographical milieu can be restored and the rules governing the recent structure of the region clarified (Refs 1-3, 6). The hitherto existing data are completed by the spectrum constructed by the author according to the Lotta (Lottinskaya) depression (Fig 1) for the continental part of the Kola peninsula (Kol'skiy poluostrov). Furthermore, it facilitates a new interpretation of several complicated problems of the postglacial paleogeography of the western part of

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The Restoration of Neotectonics and the Paleogeography of the Late Glacial Period by Means of the Epeirogenic Spectrum in the Continental Part of the Kola Peninsula SOV/20-125-4-50/71

the peninsula. The analyses of the Diatomaceae were mostly carried out by Ye. A. Cheremisinova, the spore-pollen analyses on the whole by R. M. Lebedeva. No fauna was found. The comparison of the height and the morphology of the levels as well as the stratigraphy of the sediments of the postglacial waters made possible the synchronization of the levels of the Lotta depression with those of the Tulomo-Notozerskaya depression the dating of which is more precise (Refs 1-5). The total course of the terrace levels which ascend towards the west and form a divergent bundle corresponds completely to the known rule on the highest elevation of the central parts of Fennoscandia. The specific property of the spectrum in question is its heterogeneity. It is expressed in the disturbances of an even course of the levels which are accompanied by a simultaneous variation of their morphology and their structure and by the vanishing of the upper level in the west. 4 sections can be separated in the spectrum which correspond to those in the terrain: I - IV. In the Lotta depression disjunctive dislocations of the late- and postglacial period were found. Their

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The Restoration of Neotectonics and the Paleogeography of the Late Glacial Period by Means of the Epeirogenic Spectrum in the Continental Part of the Kola Peninsula SOV/20-125-4-50/74

elevation at that time took place with a different amplitude. Such dislocations analogously dated by the archaeological method have hitherto been known reliably only for the western part of the Murman coast (Ref 6). During the formation of all these levels 1, h, G, F, e, d₅, d₄ and d₃ the waters spread during an isostatic elevation of the terrain over the depression freed from ice as far as to the place where a corresponding level had vanished. Here the waters were stopped by the ice. Terminal remains and other traces of the activity of the ice lack for this period. The character of the fluvioglacial formations at the coast of the waters speaks in favor of an ice which was dead at that time. The ice in the depression was apparently reduced mainly in consequence of the influence of heat of the adjacent sea. The discovery of a glacier marginal complex which crosses the depression near the place of the rapid vanishing of the mentioned coast level is in line with the conception concerning the existence of the waters Portlandia-Littorina as well as Pholas. Thus, the opinion concerning the preserved activity of the ice during the late glacial period is disproved. On the

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The Restoration of Neotectonics and the Paleogeography of the Late Glacial Period by Means of the Epeirogenic Spectrum in the Continental Part of the Kola Peninsula SOV/20-125-4-50/74

strength of the chronology of Tanner (Ref 6) the Portlandia transgression attained its maximum approximately 10,500 years ago. Thus, the elevation velocity of the Lotta depression amounts in the west to 1.4 - 1.5 cm/year, in the east 0.9 - 1.0 cm/year. There are 1 figure, and 6 references, 5 of which are Soviet.

ASSOCIATION: Kol'skiy filial im. S. M. Kirova Akademii nauk SSSR (Kola Branch imeni S. M. Kirov of the Academy of Sciences, USSR)

PRESENTED: November 21, 1958, by D. V. Nalivkin, Academician

SUBMITTED: November 16, 1958

. Card 4/4

3(5)

007/25 116-1110/01

AUTHORS: Nikonov, A. A., Lebedeva, R. M.

TITLE: A Contribution to the History of Late-glacial Landscapes in the Continental Part of the Kola Peninsula

PERIODICAL: Doklady Akademii nauk SSSR, 1959. Vol 128. No 1, pp 148 - 151 (USSR)

ABSTRACT: The new material collected in the western continental part of the Kola peninsula does not agree with the existing schemes of the late-glacial development of the region. The section of the late-glacial sediments on the bank of the Lotta river 50 km away from the mouth is interesting and instructive in this respect. The section was compiled according to three well comparable out-crops and may serve as directing line. The distance between the out-crops amounts to 50-80 m (Figs 1 and 2). 2 masses may be recognized on the strength of texture-lithological characteristics. The lower one shows a gradual deepening of the basin near the glacier removal of the coastal zone of erosion), its stable existence and subsequent flattening with simultaneous loss of the near the glacier character. The upper mass characterized a flat basin with increased supply of sandy

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A Contribution to the History of Late-glacial Landscapes SOV/26-128-1/1967
in the Continental Part of the Kola Peninsula

material and undisturbed conditions of its accumulation. The investigation of diatoms carried out by Ye. A. Cheremisinova firms such a division of the section and completes the characteristics of the basins and their surrounding conditions. An accurate comparison of the pollen spectra determined with the material existing for the Baltic region (Refs 4, 6-11) shows that the development course of plants and climate of the Baltic basin is similar to that of the region investigated. In the deposits of the late glacial period of both regions the transition from the tundra flora to a thermophilic wood-tundra flora was found. The good agreement of the course of development of flora and climate allows the following conclusion with respect to the differences of latitude. The first stage of development can be compared with the IIrd historic zone of European pollen ("Allerod"), the second with the IIIrd zone (early Brias), and the third with the IVth zone (preboreal era). The found data admit the assumption that the sequence and time of the development of the landscape in the regions extending towards the Barents Sea are very similar to the Baltic ones. This agrees with the concept of Hyyppae (Ref 8) and Aario (Ref 5) on the

Card 2/3

A Contribution to the History of Late-glacial Landscapes SOV/20-128-1-40/58
in the Continental Part of the Kola Peninsula

existence of a meridional zonality along the eastern boundary of the Scandinavian ice over and on the similarity of the plant history in North- and South-East Finland during the late glacial time. The occurring differences are connected with the latitude, the earlier dying (in any case before "Allerod") and with the slower recess of the ice cover in the North. There are 2 figures and 11 references, 4 of which are Soviet.

ASSOCIATION: Kol'skiy filial im. S. M. Kirova Akademii nauk SSSR (Kola Branch imeni S. M. Kirov of the Academy of Sciences, USSR)

PRESENTED: May 12, 1959, by V. N. Sukachev, Academician

SUBMITTED: May 12, 1959

Card 3/3

NIKONOV, A.A.

Stratigraphy of sediments and paleogeography of late-glacial sea
basins in the Lotta Depression. Vop.geomorf. i geol.osad.pokr.-
Kol'.poluost. 1:85-120 '60. (MIRA 15:1)
(Kola Peninsula--Geology, Stratigraphic) (Paleogeography)

NIKONOV, A.A.

Stratigraphy of moraines and glacial deposits in the western part
of the Kola Peninsula. Vop.geomorf. i geol.osad.pokr.Kol'.poluost.
1:121-135 '60. (MIRA 15:1)
(Kola Peninsula--Geology, Stratigraphic) (Drift)

NIKONOV, A.A.

Development of the vegetation and climate in the decreasing continental glacial deposits; review of Finnish literature, 1927-1957.

Vop.geomorf. i geol.osad.pokr.kol'.poluost. 1:180-187 '60.

(MIRA 15:1)

(Fennoscandia--Vegetation and climate)

И. И. ИВАНОВ, А. А.

Aqueoglacial formations during the retreat of continental ice
in the northeastern part of Fennoscandia. *Geol. Zh.* 1961, 50, 153-159
no. 1:150-153 (Russian) (1961:153)

1. И. И. Иванов, И. И. Иванов. Академия наук СССР.
Председатель комиссии Л. И. Шехтербаковым.
(Scandinavian-Glacial epoch) (Iola Peninsula--glacial epoch)

INCH V. A. etc.

Differences in the dynamics and energy of the northern and southern
fronts of the Scandinavian ice cover. Do I. AN S. S. 1971 no. 2:337 -
396 for '61. (M. A. 14:2)

1. Kol'skiy filial Inst. J. M. Kirova AN S. S. S. R. Predstavleno naučnikom
D. I. Sacherbakovym.

(Scandinavia—Glacial epoch)
(Kola Peninsula—Glacial epoch)

ARMAND, A.D.; ARMAND, N.N.; NIKONOV, A.A.

Special features of the history of recent glaciation in the
northeastern part of Fennoscandia. Izv.AN SSSR.Ser.geog.
no.2:55-60 Nr-Ap '63. (MIRA 16:4)

1. Geologicheskii institut Kol'skogo filiala AN SSSR.
(Fennoscandia—Glacial epoch)

NIKOROV, A. A.

Dissertation defended at the Institute of Geography
for the academic degree of Candidate of Geographical Sciences:

"Regularities in the Formation Quaternary (Anthropogenic) Formations
in the West Kola Peninsula (Basin of the Lotta River)."

Vestnik Akad Nauk No. 4, 1963, pp. 119-145

NIKONOV, A.A.

Marginal formations and the retreat of the last ice sheet in
the northwestern part of the Kola Peninsula. Trudy Kom. chetv.
per. 21:5-14 '63. (MIRA 16:10)

1. Kol'skiy filial AN SSSR.

NIKONOV, A.A.; VOSTRUKHINA, T.M.

Quaternary stratigraphy in the northern part of the Kola
Peninsula. Dokl. AN SSSR 158 no.1:104-107 S-C'64
(MIRA 17:8)

1. Geologicheskiy institut Kol'skogo filiala imeni S.M.Kirova
AN SSSR. Predstavleno akademikom A.A. Grigor'yevym.

NIKONOV, Andrey Alekseyevich; BISKE, G.S., doktor geogr. nauk,
Sov. Fed.

[Development of the Quaternary relief and paleogeography
in the western part of the Kola Peninsula] Razvitie rel'efa
i paleogeografiia antropogena na zapade Kol'skogo polu-
ostrova. Moskva, Nauka, 1964. 181 p. (MIRA 18:3)

ZONFRSHAYN, L.P.; BERTEL'S-ISPENSKAYA, I.A.; SAFRONOV, V.S.; NEYMAN, V.R.;
GENDLER, V.Ye.; CHURIKOV, V.S.; YPREMIN, M.I.; KOGAN, R.S.; YAKOVIEVA,
M.N.; LANGE, O.K.; KABANOV, G.K.; KUZNETSOVA, K.I.; SINITSYNA, I.N.;
SMIRNOVA, T.N.; VENKATACHALAPATI, V.; MASLAKOVA, N.I.; BELOUSOVA, Z.D.;
YAKUBOVSKAYA, T.A.; YURINA, A.L.; RYBAKOVA, N.O.; MOROZOVA, V.G.;
BARASH, M.S.; POZAREV, V.I.; NIKONOV, A.A.

Activity of the Geological Sections of the Moscow Naturalists'
Society. *Biul. MOIP. Otd. geol.* 39 no.6:127-151 N-1 '64.
(MIRA 14.3)

NIKONOV, A.A.; NIKONOVA, K.I.

Mammoth remains in Fennoscandia and their paleogeographical significance. Izv. Vses. geog. ob-va 97 no.3:27(-27) Moscow 1965.
(MIRA 18:8)

NEKROV, A.A.

Stratigraphy and paleogeography of the Upper Paleocene of the
Kola Peninsula. Dokl. AN SSSR 160 no.3:669-672, 1964.

1. Submitted May 10, 1964.

NIKONOV, A.A.

Recent and present tectonic movements of the earth's crust
in the Kola Peninsula and adjacent areas. Izv. AN SSSR. Ser.
geog. no.6:40-47 K-D '65. (MIRA 18:11)

1. Institut fiziki Zemli AN SSSR.

TYUZNEV, K.I., dotsent; KIRICHENKO, V.I., gornyy inzh.; NIKONOV, A.F.,
gornyy inzh.; CHERNYAYEV, V.I., gornyy inzh.; SONIN, S.D.,
prof.; KILYACHEV, A.P., dotsent; DUDKO, I.S., gornyy inzh.

Readers' response to A.A. Shamin, A.M. Belenski and A.V.
Galkin's article "Pillar methods of mining flat dipping seams
without undermining the side walls in development workings."
Ugol' Ukr. 6 no.2:36-41 F '62. (MIRA 15:2)

1. Novocherkasskiy politekhnicheskiy institut (for Tyuznev).
2. Trest Sovetskugol' (for Dudko). 3. Donetskoy nauchno-
issledovatel'skiy ugol'nyy institut (for Kirichenko). 4. Gos-
udarstvennyy institut po proyektirovaniyu shakhtnogo stroitel'-
stva kamsnougol'noy promyshlennosti (for Nikonov). 5. Ukrain-
skiy filial Vsesoyuznogo nauchno-issledovatel'skogo markshyde-
rskogo instituta (for Chernyayev). 6. Moskovskiy gornyy institut
(for Sonin, Kilyachev).

(Coal mines and mining)
(Shamin, A.A.) (Belenski, A.M.) (Galkin, A.V.)

~~MIKONOV, A.G.~~

Pathogenesis and treatment of cholera. 'vez. i dokl. konf. Irk. gos.
nauch.-issl. protivochum. inst. no. 1:29-30 '55. (MIRA 11:3)

1. Kostovskiy gosudarstvennyy nauchno-issledovatel'skiy
protivochumnyy institut.
(CHOLERA, ASIATIC)

EXCERPTA MEDICA Sec 4 Vol. 10/9 Microbiology Sept 57

2068. NIKONOV A.G. Rostov-on-Don, U.S.S.R. "The pathogenesis and Treatment of cholera (Russian text) Z. MIKROBIOL. 1956, No. 5 (32-39) Tables 2

Small doses of *V. cholerae* were introduced into the gallbladder of guinea-pigs. As a result of rapid multiplication of the vibrios in the gallbladder and small intestine, the animals died in 6 to 7 days. Experiments carried out on rabbits and guinea-pigs showed that antigenic products of the vibrios are absorbed from the biliary system into the blood. The less marked the cholecystitis, the more intense is the absorption. Removal of the gallbladder, before guinea-pigs were infected into the common bile duct, lessened the toxæmia and prolonged life. In a series of experiments guinea-pigs were infected by injection of vibrios into the duodenum. In some of the animals the common bile duct was ligatured before infection. These experiments showed that *V. cholerae* can make their way into the bile both hæmatogenously and enterogenously via the common bile duct. Ligature of this duct stimulated multiplication of the vibrios in the intestine. On the basis of his results and of supporting data from the literature, the author considers that the biliary system is a second focus of multiplication of cholera vibrios and that the persistent carrier state in cholera is a biliary carrier state. In the treatment of cholera it is essential to use preparations able to make their way into the biliary system.

Chakhava - Moscow

NIKSOV, A.G.

Pathogenesis and diagnosis of prolonged carrying of *Vibrio cholerae*
in convalescents. Zhur.mikrobiol.epid. i immun. no.1:43-47 Ja '58.
(MIRA 11:4)

1. Iz Kostovskogo-na-Donu nauchno-issledovatel'skogo instituta
Ministerstva zdorovokhraneniya SSSR.
(CHOLERA, transmission,
carriage by convalescents (Rus))

NIKONOV, A.G.; YEVSKYVA, V.I.; BIBIKOVA, P.D.; RICHUL', K.G.

Cultivation of *Vibrio comma* in the small intestine of guinea pigs.
Zhur. mikrobiol. epid. i imm. 29 no.12:51-53 D '58. (MIRA 12:1)

1. Iz Rostovskogo-na Donu nauchno-issledovatel'skogo protivochumnogo
instituta Ministerstva zdoravookhraneniya SSSR.

(*VIBRIO COMMA*, cultures.

an isolated loops of guinea pig small intestine (Rus))

(*INTESTINE, SMALL*,

cultivation of *Vibrio comma* in isolated loops of intestine
from guinea pigs (Rus))

NIKOL'EV, A.G.; KHOSHLOVA, A.M.; BICHUL', K.G.; TIMOFEEVA, R.I.

Cholera bacteriophage. Zhur.mikrobiol.epid. i imm. 30 no.1:90-96
Ja '58. (MIRA 12:3)

1. Iz Krestevskogo-na-Domu nauchno-issledovatel'skogo protivochum-
nogo instituta Ministerstva zdorovookhraneniya SSSR.

(VIBRIO COEHA,
bacteriophage (Rus))
(BACTERIOPHAGE,
of Vibrio coeua (Rus))

PLANKINA, Z.A.; NIKONOV, A.G.; SAYAMOV, R.M.; KOTLYAROVA, R.I.

Control of cholera in Afghanistan. Zhur.mikrobiol., epid.i
immun. 32 no.12:20-24 D '61. (MIRA 15:11)

1. Iz protivochumnykh uchreshdeniy Ministerstva zdravookhraneniya
SSSR.

(AFGHANISTAN—CHOLERA, ASIATIC—PREVENTIVE INOCULATION)

PLANKINA, Z.A.; NIKONOV, A.G.; SAJANOV, R.M.; KOTLIAROVA, K.I.

Cholera control in Afghanistan. Cesk. epidem. ll no.1:65-69 Ja
'62.

1. Laborator vysoce virulentnich infekci ministerstva zdravotnictvi
SSSR.

(CHOLERA prev. & control)

NIKONOV, A.G. [deceased]; GORIYENKO, I.I.; KARNITSKAYA, N.V.; GOL'DBERG,
N.S.; KANDROVSKAYA, V.D.

Coli-Protous bacteriophage in experimental conditions in vivo. Report
No. 1. Zhur. mikrobiol., epid. i immun. 40 no. 8:82-85 Ag '63.
(MIRA 17:9)

1. In Rostovskogo instituta epidemiologii, mikrobiologii i gigiyeny.

ODING, I.A. [deceased]; NIKONOV, A.G.; MARI'YANOVSKAYA, T.D.

Effect of tempering on the critical brittleness temperature of
cyclically loaded carbon steel. Dokl. AN SSSR 161 no.3:577-579
Mr '65. (MIRA 18:4)

1. Institut metallurgii im. A.A.Baykova. 2. Chlen-korrespondent
AN SSSR (for Oding).

NIKONOV, A. G.

Mbr., Inst. Metal, im. A. A. Baykov, Dept. Tech, Sci., Acad. Sci., -1949-.

"Interaction of Magnesium" ith Carbon Monoxide," Iz. Ak. Nauk SSSR, Otdel. Tekhn.
Nauk, No. 10, 1949;

"Serous Diseases and Passive Immunity," (bk.), 1949.

NIKONOV, A. G.

USSR/Metals - Cadmium

Jan 51

"On the Interaction of Cadmium With Carbon Oxides." D. M. Chirzhikov, Corr Mem. Acad Sci USSR, Ye. I. Khasanov, A. G. Nikonov, Inst Metallurgy imeni A. A. Baykov, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 1, pp 68-73

Showed that Cd is not oxidized with C oxides at temp above its bp (768°). Oxidation with CO occurs below 350° and oxidation with CO₂ is noticeable only near Cd mp (319°). Low rates of oxidation of Zn and Cd with C oxides suggest possibility of fractional condensation of vapors of Zn and Cd from their mixt with CO in obtaining metal by distillation.

184793

NIKONOV, A.G.

NIKONOV, A. G.: "Investigation of the effect of alloying elements on the quality of seamless rolled railroad wheels". Moscow, 1955. Acad Sci USSR. Inst of Metallurgy imeni A. A. Baykov, Acad Sci USSR. (Dissertations for the Degree of Candidate of Technical Sciences)

SO: Knizhaya letopis', No. 52, 24 December, 1955. Moscow.

MEYER, A. H., 1957

"Les Phénomènes de Fatigue Pendant le Roulement avec Glissement,"
a paper submitted for Annual Meeting of French Society of Metallurgy, Paris,
7-12 Oct 57

C-3800355

SOV/137-57-11-22643

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 288 (USSR)

AUTHORS: Bardin, I. P., Nikonov, A. G., Pinkhusovich, L. L.

TITLE: The Hardenability of Wheel Steel Due to Sliding Friction
(Issledovaniye zakalivayemosti kolesnoy stali pri trenii skol'zheniya)

PERIODICAL: Tr. In-ta metallurgii. AN SSSR, 1957, Nr 1, pp 114-119

ABSTRACT: A new method is described for testing the resistance of steel against the formation of chipped-out hollows on the rolling surface of railway wheels (W) through braking action. The reproduction of the hardened layer (HL) on the surface prior to the formation of the chipped-out hollows was accomplished under laboratory conditions on a special machine in which the specimen (S) of steel tested was fixed in a stationary position while the local heating was accomplished by the friction of a rotating W 1000 mm in diam with the rim machined in the shape of the railhead profile. The hardness on the rolling surface of the W was $H_B = 300$, i. e., equal to the hardness of the rail. The length of the S tested was equal to the width of the rim of the W, their width was 60 and thickness 40 mm. S were carefully

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SOV/137-57-11-22643

The Hardenability of Wheel Steel Due to Sliding Friction

ground on four sides, washed with gasoline and fitted into the grinding slot of a yoke, which was made of a piece of W rim, and fastened with a wedge. This ensured heat elimination at about the same rate as in the rim of a full-scale W. Thereupon the rail-shaped W was set into rotation and, when the surface of W reached a constant linear speed (60 km/hour), the S was pressed to the W with a force regulated by the safety valve of the hydraulic transmission, and kept in this position for a specified period of time. To decrease the sticking of metal onto the surface of the W during its slipping on the S it was wetted with machine oil. Upon the expiration of the time of holding the specimen under pressure, the valve on the hydraulic transmission was switched over and the S was moved away from the W. The experiments were carried out on S of carbon steel with 0.59% C, holding at a constant pressure of 1250 kg during 3, 5, and 8 sec, and at different loadings (750, 1000, 1250, and 1500 kg) for a constant duration of 5 sec. In addition, S of 7 grades of wheel steel were tested. After the tests the structure was investigated, microhardness was measured over the section of the S, and the HL was analyzed by X-ray diffraction. The evaluation of the resistance of the W against the formation of chipped-out hollows through the braking action was made according to the hardness and the thickness of the HL. Tests were also performed on the formation of HL at low temperature (-60°C) in order to ascertain the effect

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SOV/137-57-11-22643

The Hardenability of Wheel Steel Due to Sliding Friction

of the temperature of the S on the thickness and hardness of the HL, and also the tendency towards the formation of cracks without the application of mechanical action. The results of the investigations are adduced and recommendations are made on the manufacture of integrally-rolled W, resistant to the formation of chipped out hollows through braking action.

L. G

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NIKONOV, A.G.

137-58 1-1248

Translation from: Referativnyy zhurnal Metallurgiya. 1958, Nr 1, p 168 (USSR)

AUTHORS: Guseva, L.N. Nikonov, A.G.

TITLE: Use of X-ray Structural Analysis for Investigation of Hardenability of Wheel Steel in Sliding Friction (Primeneniye rentgenostrukturnogo analiza dlya issledovaniya zakalivayemosti kolesnoy stali pri trenii skol'zheniya)

PERIODICAL: Tr. In-ta metallurgii, AN SSSR. 1957, Nr 1, pp 120-123

ABSTRACT: One of the most common defects on the contact surface of railroad wheels is the flat spot due to braking action. The formation of flat spots is the result of excessive heating at the point of contact between the wheel and the rail when moving with brakes locked, the heating being followed by subsequent rapid escape of heat within the rim. In the heating zone, a hard and brittle work-hardened crust up to 3 mm in thickness, that is discolored as the wheel continues in use, comes into being. In order to reproduce the hardened layer forming at the surface of a wheel under sliding friction for purposes of laboratory reproduction and investigation, a special machine was designed. Determination of hardenability under various conditions of heat

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137-58-1-1246

Use of X-ray Structural Analysis (cont.)

treatment was performed by evaluating the shift of line (011) or comparing the width of x-ray lines (110) - (011) of the test specimens of carbon and wheel steel against the width of the lines of standard specimens (S) of carbon steel hardened to martensite, and by measuring the microhardness of the surface of the S. It was found that in the S of wheel steel of the various chemical compositions investigated, and in the area of the flat spots due to braking, products of austenite transformation are present due to rapid cooling at close to the critical rate. The tendency of the steel of the grades investigated to harden under conditions of sliding friction varies and may be determined by the width of the interference lines (110) - (011). The S revealing the greatest hardness also presented the greatest expansion of the lines (011). The width of the x-ray lines obtained in the S of wheel steel investigated and S from zones with flat spots due to braking on an operational wheel were greater than the width of lines of hardened standard S, which is due to the change in the structure of the crystal lattice arising out of the special conditions of hardening.

1. Steel-Structural analysis 2. X-ray-Applications 3. Steel-Heat treatment N. T.

Card 2/2

NIKONOV R. G.

AUTHOR: Serensen, S. V., Member of the AS, Ukrainian SSR 30-1-29/59

TITLE: A Meeting of the French Society of Metallurgists (Sessiya Frantsuzskogo obshchestva metallurgov)

PERIODICAL: Vestnik AN SSSR, 1958, Vol. 20, Nr 1, pp. 107-108 (USSR)

ABSTRACT: The meeting took place in Paris from October 7 - 11, 1957. Problems of material fatigue were discussed, with French, English, Italian, Russian, American and Swedish scientists taking part. The processes in fatigued steel were determined by means of measurements of the magnetic resistance. Problems of fatigue with increased temperatures were discussed. Experiments with motor elements, auto-chassis and riveted airplane constructions were discussed. The Soviet scientists reported on fatigue problems:

S. V. Serensen (Fatigue of Cast Iron in Connection with the Character of State of Stress and Structure),

G. V. Uzhik (On the Influence of the Concentration of Tensional Stress on Fatigue),

A. G. Nikonov (On the Fatigue Phenomena in Rolling with Sliding),

I. A. Odintsov (On the Structure Theory of Creeping).

Card 1/2

A Meeting of the French Society of Metallurgists

30-1-25/39

AVAILABLE: Library of Congress
 1. Metallurgy-France

Card 2/2

NIKONOV A. G.

16(1) **ITEM 1: THE DEVELOPMENT OF THE**
ADVANCED AND NEW. Technical progress is necessary
Development, 1977-1977; (No. 12) Development in the USSR, 1977-1977, Vol.
8) Moscow, Metallurgizdat, 1977. 213 p. Soviet ally American. 3,000
copies printed.

16. (Title page): I. P. Boris, Assistant) M. (Inside book): G. V. Popyov
1976. 261 p. 6. 16cm/17cm.

Summary: This book is devoted for metallurgists.
Contents: The articles in this collection present historical data on the
 achievements of Soviet metallurgy during the period 1977-1977, during
 the period 1977-1977. Advances in metallurgy during the period 1977-1977 are
 thoroughly discussed. Many of the articles describe the application of
 individual branches of metallurgy and give an idea of what may be
 expected in the future. Advances made in other countries are also
 discussed. The articles are accompanied by a large number of references.
 For further coverage, see Table of Contents.

Production, Distribution of Technical Sciences; and A. S. Kuznetsov, Chairman
of Technical Sciences. (Chairman of Metallurgy Union, USSR, USSR, USSR, USSR)
Academy of Sciences. Advances in Metallurgy, USSR, USSR, USSR, USSR 101

Contents in engineering specifications and improvements in production
methods and quality of steel and alloy steels in the USSR since 1960
are discussed. Further progress in this field is predicted.

Shen, A. I., Professor, Director of Technical Sciences, (USSR) Foreign
and Planning Methods 113

This is a historical survey of developments in forging and stamping
processes in Russia from pre-revolutionary times up to 1977.

16. I. Conditions of Technical Sciences. (Recent Advances of Machine
Design) Production of Castings 121

The paper traces the general course of development and discussion
problems in the theory of casting. Casting alloys, casting alloys, casting
processes, casting and core materials, metallurgical alloys, special
casting methods (permanent mold casting, die casting, sand casting,
lost wax)

NIKONOV, A.G.; PINKHUSOVICH, L.L.

Wheel bandage wear. Trudy Inst. met. no.4:250-253 '60.

(MIRA 14:5)

(Car wheels--Testing)
(Mechanical wear)

S/48/60/000/010/012/018
A161/A030

AUTHORS: Pinkhusovich, L.L.; Nikonov, A.G.

TITLE: The Effect of the Quenching Method on Wear Resistance and on the Fatigue Crumbling of Rolled Seamless Wheels

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, 1960, No. 10, pp. 126 - 131

TEXT: Rolled RR wheels are quenched in the USSR in a horizontal position by water jets directed on the rolling surface from tangentially placed pipes. This method has been compared with the U.S. method of quenching wheels in vertical position by rotation with a wheel rim portion submerged in water (Refs. 5 - 8). The test wheels were of standard steel with 0.53% C; 0.69% Mn; 0.27% Si; 0.029% P and 0.02% S. The hardness and the mechanical properties of wheels hardened by the U.S. method were better, they had pearlitic structure through the work portion and higher wear resistance in comparative tests on a IA Amster test machine. In fatigue crumbling tests on the same Amster machine, specimens taken at 12 and 30 mm distance from the surface of the wheels treated the U.S. way withstood 690,000 and 875,000 cycles, compared with 630,000 and 660,000 cycles withstood by

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S/148/60/000/010/012/018
A161/A030

The Effect of the Quenching Method on Wear Resistance and the Fatigue Crumbling of Rolled Seamless Wheels

specimens from same spots treated in the Soviet-way. The higher crumbling resistance is explained by the different metal structure having a higher resistance to cracks formation. The conclusion was made that wheels quenched in a vertical position by periodical submersion of a portion of the rim into a running water will have higher resistance to wear and fatigue crumbling. There are 5 figures, 2 tables and 8 references: 5 Soviet and 3 English.

ASSOCIATION: Institut metallurgii im. A.A. Baykova AN SSSR (Institute of Metallurgy im. A.A. Baykov of the Academy of Sciences USSR)

SUBMITTED: November 26, 1959

Card 2/2

NIKONOV, A.G.; KLEBANOV, G.N.

Measuring surface temperatures during sliding friction. Izv. vys.
ucheb. zav.; Chern. met. no.2:122-126 '61. (MIRA 14:11)

1. Institut metallurgii im. A.A. Baykova.
(Surfaces (Technology)--Testing)
(Car wheels--Testing)

NIKONOV, A.G., PINKHUSOVICH, L.L.

Investigating trial batches of low-alloy wheel-grade steel. Trudy
Inst. met. no.11:90-98 '62. (MIRA 16:5)
(Chromium-vanadium steel—Testing)

S/020/62/143/006/013/024
B164/B101

AUTHORS: Oding, I. A., Corresponding Member AS USSR, Nikonov, A. G.,
and Mar'yanovskaya, T. S.

TITLE: Effect of cyclical loading on the cold-brittleness threshold
in carbon steel

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 6, 1962,
1332-1335

TEXT: The effect of the duration of cyclical loads on the critical temperature for failure of carbon steel containing 0.68% of C and 0.68% of Mn was examined. This critical point was determined from the change in impact strength that occurred within the temperature range -60 to +60°C. Round specimens were subjected to fatigue by cyclical loading and then to Charpy impact tests. The critical temperature for failure steadily increases with the duration of loading, from -50°C initially to -20°C after $30 \cdot 10^3$ cycles, +30°C after $60 \cdot 10^3$ cycles, and to +50°C after $150 \cdot 10^3$ cycles. Examination of the fractures of the specimens showed no

Card 1/2

Effect of cyclical loading on the ...

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B164/B101

macroscopic cracks after relatively short durations of loading ($30-60 \cdot 10^3$ cycles), but cracks of considerable size were noted after $150 \cdot 10^3$ cycles. These, however, do not affect the position of the cold-brittleness threshold. An explanation of the increased embrittlement may be sought in the theory of dislocations, it being supposed that the loading produces stresses in the steel, which cause dislocations; these accumulate at obstacles so that heavy local stresses arise, which lead to fracture. There are 4 figures.

ASSOCIATION: Institut metallurgii im. A. A. Baykova (Institute of Metallurgy imeni A. A. Baykov)

SUBMITTED: December 29, 1961

Card 2/2

ODING, I.A. (Moskva) [deceased]; NIKONOV, A.G. (Moskva); MAR'YANOVSKAYA, T.S.
(Moskva)

Changes of rail metal properties in service conditions. Izv. AN SSSR.
Met. i ger. delo no.5:101-107 2-0 '64. (MIRA 18:1)

FRIDANTSEV, M.V.; KAZARNOVSKIY, D.S.; DANILOV, V.N.; VEKSER, N.A.;
NIKONOV, A.G.; BYKOV, N.F.

Isothermal treatment of rails. Stal' 25 no.4:358-361 Ap '65.
(MIRA 18:11)

SKARZHINSKAYA, T.A. [Skarzhyns'ka, T.O.]; NIKONOV, A.I.

Division of a lower member of the tuffaceous-sedimentary and
effusive rocks of the Belozherka iron-ore region. Geol. zhur.
24 no.4:86-91 '62. (MIRA 18:2)

1. Institut geologicheskikh nauk AN UkrSSR i Dnepropetrovskaya
ekspeditsiya Ukrainkogo nauchno-issledovatel'skogo gornorudnogo
instituta.

KOROLEV, K.A.; NIKONOV, A.I.

Improving the work of track machinery stations. Put' i put. khoz.
9 no.10:22-23 '65. (MIRA 18:10)

1. Nachal'nik putevoy mashinnoy stantsii No.47, stantsiya Orenburg, Yuzhno-Ural'skoy dorogi (for Korolev). 2. Glavnyy mekhanik putevoy mashinnoy stantsii No.47, stantsiya Orenburg, Yuzhno-Ural'skoy dorogi (for Nikonov).

NIKONOROV, A.P.; ORLOVA, L.N.; TSAREV, I.V.

Unit for measuring the surface roughness of pinion teeth.
Inv.tskh. no.5:14 My '60. (MIRA 14:5)
(Gear cutting)

~~NIKOLAI P. P.~~

Sensory innervation of the esophagus. Trudy Stal.med.inst.
25:137-145 '57 (NINA 1118)

1. Iz kafedry gistologii i embriologii (nav. dots. I.I. Sharov)
Stalinabadskogo gosudarstvennogo meditsinskogo instituta im.
Abuali ibn-Sino.
(ESOPHAGUS--INNervation)

NIKONOV, A.E. (Tadshikakaya SSR, g.Stalinabad, ul. Lenina, d.138, kv.21)

Sensory innervation of intramural nerve ganglia of the esophagus
in dogs. Arkh. anat. gist. i embr. 36 no.5:96-98 My '59. (MIRA 12:7)

1. Kafedra gistologii i embriologii (sav. - dotsent I.I. Sharov)
Stalinabadskogo meditsinskogo instituta imeni Avitsenny.

(ESOPHAGUS, innerv.

intramural nerve ganglia, sensory innerv. in dogs (Rus))

KRAYEV, A.V.; NIKONOV, A.P.; RASSOKHINA, L.I.; ETINGEN, L.Ye.

First conference of anatomists, histologists, and embryologists of
Central Asia and Kazakhstan. Arkh. anat. gist. i embr. 40 no.2:111-
115 F '61. (MIRA 14:5)

(HISTOLOGY—CONGRESSES)