

KATS, N.Ya.: KATS, S.V.

New data on interglacial sediments near Korenevo in Moscow Province.
Biol. Kom. sbstv. per. no.22:54-62 '58. (MIRA 11:11)
(Korenevo--Paleobotany)

AUTHOR: Kats, N.Ya. SOV-5-58-2-38/43

TITLE: The Change of Climate Since the Last Glaciation Period on the Continents of the Northern Hemisphere (Izmeneniye klimata vo vremeni poslednego oledeneniya na materikakh Severnogo polushariya)

PERIODICAL: Byulleten' Moskovskogo obshchestva ispytateley prirody - Otdel geologicheskoy, 1958, Nr 2, p 162 (USSR)

ABSTRACT: The author gives general well-known data on the various climatic zones, their precipitations and boundaries since the last glaciation period, in areas of West Siberia, Europe and North America.

1. Climate--Statistical analysis 2. Meteorology

Card 1/1

AUTHOR: Kats, N.Ya. SOV/5-58-5-11/20

TITLE: New Articles on the Reconstruction of the Quaternary Period
(Novyye stat'i po rekonstruktsii chetvertichnogo perioda)

PERIODICAL: Byulleten' Moskovskogo obshchestva ispytateley prirody,
Otdel geologicheskii, 1958, Nr 5, pp 148 - 149 (USSR)
13

ABSTRACT: This is a review of two articles by K.K. Markov, "The Origin of Contemporary Landscapes", (Proiskhozhdeniye sovremennykh geograficheskikh landshaftov) and "Concerning the History of the Nature of the West Siberian Lowland in the Quaternary Period" ("K istorii prirody Zapadno-Sibirskoy nizmennosti v chetvertichnom periode").

Card 1/1

KATS, N.Ya.; KATS, S.V.

History of the flora and vegetation of northwestern Siberia during
the postglacial and late glacial periods [with summary in English].
Bot. zhur. 43 no.7:998-1014 J1 '58. (MIRA 11:9)
(Siberia, Western--Paleobotany, Stratigraphic)

KATS, N.Ya.; KATS, S.V.

New data on interglacial deposits near Grodno. Dokl. AN BSSR 3
no.2:56-60 F '59. (MIRA 12:5)

1. Predstavleno akademikom AN BSSR K.I. Lukashevym.
(Grodno Province--Geology, Stratigraphic)

KATS, N.Ya. (Moskva)

"History of forests and paleogeography of the U.S.S.R. in the
Holocene" by M.I. Neishtadt. Reviewed by N.IA.Kats. Bot.zhur.
44 no.9:1352-1354 S '59. (MIRA 13:2)
(Forests and forestry) (Paleogeography)
(Neishtadt, M.I.)

KATS, N.Ya.

Swamps and peat bogs of North America. Pochvovedenie no.10:
44-52 0 '59. (MIRA 13:2)
(North America--Swamps)

KATS, N.Ya.; KATS, S.V.

Fossil flora and vegetation in Mindelian-Russian interglacial
sediments in the Zhidovshchizna region near Grodno. *Biul. Kon.
chetv. per. no.25:35-49 '60.* (MIRA 14:1)
(Grodno region--Paleobotany)

KATS, N.Ya.; LOPATIN, V.D.

"Atlas of plant remains occurring in peat" by A.V.
Dombrovskaja, M.M.Koreneva, S.N.Tiuremnov. Reviewed by
N.IA.Kats, V.D.Lopatin. Bot.zhur. 45 no.8:1237-1240
Ag '60. (MIRA 13:8)

1. Institut biologii Karel'skogo filiala Akademii nauk
SSSR, Petrosavodsk.
(Peat) (Dombrovskaja, A.V.) (Koreneva, M.M.)
(Tiuremnov, S.N.)

KATS, N.Ya.; KATS, S.V.; CHEMEKOV, Yu.F.

Tetyukhe peat bogs and their importance for Quaternary stratigraphy
in the southern Soviet Far East. Geol. i geofiz. no.4:96-105 '61.
(MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut,
Leningrad.

(Soviet Far East--Geology, Stratigraphic)
(Tetyukhe region--Peat bogs)

KATS, N.Ya.

Classification of bogs. Bot. zhur. 46 no.4:538-540 Ap '61.
(MIRA 14:3)
(Peat bogs)

KATS, N.Ya. (Moskva); KATS, S.V. (Moskva)

Interglacial deposits near the village of Sukhoy Pochinok in Yel'nya
District of Smolensk Province. Bot.zhur. 46 no.6:847-853 Je '61.
(MIRA 14:6)

(Yel'nya District--Glaciological research)

KATS, N. Ya.

High moors in the coastal areas of western seas of the U.S.S.R.
Biol. MOIP. Otd. biol. 66 no. 2: 44-64 Mr-Apr '61. (MIRA 14:6)
(RUSSIA, NORTHWESTERN--PEAT BOGS)

KATS, N.Ya.; KATS, S.V.

Seeds of Euryale from the Pliocene of the lower Kama Valley. Dokl.
AN SSSR 136 no.1:206-208 Ja '61. (MIRA 14:5)

1. Predstavleno akademikom V.N.Sukachevym.
(Menzelinsk District--Euryale, Fossil)

KATS, Nikolay Vasil'yevich; ARNAUTOV, P.N., retsenzent; GEKHT, M.R.,
retsenzent; KALININA, N.M., red.; AKSENOVA, I.I., red.;
SHAPENKOVA, T.A., tekhn. red.

[Metallization of textile fabrics] Metallizatsiia tkanei. Mo-
skva, Rostekhzdat, 1962. 169 p. (MIRA 15:9)
(Textile finishing) (Metal spraying)

Z/011/62/019/011/003/003
E073/E535

AUTHOR: Kats N.V.

TITLE: Some properties of metallized fabrics

PERIODICAL: Chemie a chemicka technologie. Přehled technické a
hospodářské literatury, v.19, no.11, 1962, 527.
abstract Ch 62 7119 (Izv. vyssh. ucheb. zav., Ser.
Tekhnol. tekst. Prom., no.2, 1962, 75-83)

TEXT: Some properties are described of fabrics which were
metallized with aluminium, zinc, lead or steel. The results of
tests on these fabrics are summarized in six tables and
illustrated in three graphs.
6 figures, 6 tables, 10 references.

[Abstracter's note: Complete translation.]

Card 1/1

KATS, N.Ya.; KATS, S.V.

Interglacial sediments in the vicinity of Rozdol in the Drogobych
area. Trudy Kom.chetv.per. no.26:61-73 '61. (MIRA 15:3)

(Rozdol region--Glacial epoch)

(Rozdol region--Paleontology, Stratigraphic)

KATS, N.Ya; KATS, S.V.

Flora and vegetation of the Pliocene in the lower Kama Valley.
Biol.MDIP.Otd.biol. 67 no.4:62-78 JI-Ag '62. (MIRA 15:10)
(KAMA VALLEY--PALFOBOTANY, STRATIGRAPHIC)

KATS, N. Ya.

Some data on the boundary between Tertiary and Quaternary
sediments in the lower Kama basin. Trudy Kom. chetv. per. 20:
169 '62. (MIRA 16:1)

(Kama Valley—Geology, Stratigraphic)

KATS, N. Ya.

"On the structure and development of interglacial peat bogs and saprophel deposits."

Report submitted for the 2nd International Peat Congress, Leningrad,
15-22 Aug 63.

KATS, N.Ya.

In defense of some achievements of paleobotany, paleogeography
and the pollen method. Biul.MOIP.Otd.biol. 69 no.2:145-148
Mr-Ap '64. (MIRA 17:4)

KATS, N.Ya.; KATS, S.V.

Outcrop near the village of Korenevo, Moscow Province, a geological monument of the Riss-Wurm Age with plants extinct in Europe. Trudy Od. un. 152. Ser. geol. i geog. nauk no.9:53-60 '62. (MIRA 17:6)

KATS, Nikolay Yakovlevich; KATS, Sof'ya Vasil'yevna; KIPIANI,
Mariya Georgiyevna; SUKACHEV, V.N., akademik, otv. red.;
ENDEL'MAN, G.N., red.

[Atlas and guide to Quaternary plants and seeds found in
the U.S.S.R.] Atlas i opreditel' plodov i semian,
vstrechayushchikhsia v chetvertichnykh otlozheniakh SSSR.
Moskva, Nauka, 1965. 364 p. (MIRA 18:7)

KATS, O. V.
RADLOVA, L. N., KATS, O. V.

Mbr., State Astronomical Inst. im. P. K. Shternberg, -c1948-.

"Photographic Stellar Magnitudes of Wolf-Rayet Stars". Astron. Zhur., 25, No. 6, 1948.

BR-52085091

KATS, O. V.

USSR/Astronomy
Nebulae
Photography

May/June 49

"Integral Photographic Astrel Dimensions of
Certain Planetary Mists," L. N. Radlowa,
O. V. Kats, O. D. Dokuchayev, State Astr Inst
Imeni P. K. Shternberg, 1 1/2 pp

"Astron Zhur" Vol XXVI, No 3
Discusses southern planetary mists photographed
in 1947 by L. N. Radlowa and O. V. Kats at
Abdusman Astrophys Obs. Photographing was
done with an 8-inch camera (one meter length)
58/4974

May/June 49

USSR/Astronomy (Contd.)
and a Schmidt nonaberration camera (D-36 cm,
F-62 cm). Gives table of names of mists, angular
their coordinates for the year 1900, angular
diameters, etc.

58/4974

KATTS, O. V.

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KATTS, O. V. Pokazateli Tsveta Novykh Zvezd Posle Maksimnna Soobshch.
Gos. Astron. III-TA II. Shternberga, No. 30, 1949, S. 23-29.
Bibliogr: 7 Nazv.

SO: Letopis, No. 32, 1949.

KATS, P.; IVANOV, V.

Practices of the Voroshilovsk Building Trust in making supports
for electric transmission lines. Bud.mat.i konstr. 1 no.1:
19-21 0 '59. (MIRA 13:8)

1. Rukovoditel' brigady instruktorov tresta "Voroshilovskstroy"
(for Kats). 2. Starshiy instruktor peredovykh metodov truda
tresta "Voroshilovskstroy" (for Ivanov).
(Prestressed concrete) (Electric lines--Poles)

KATS, P. D.: ^{Card} ~~Master~~ Med Sci (diss) -- "Material on the study of cardiovascular disorders in acute bacterial dysentery in children". Baku, 1958. 19 pp (Azerb State Med Inst im N. Narimanov), 200 copies (KL, No 2, 1959, 125)

AMIRDZHANOV, A.N.: KATS, P.D.

Clinical aspects of hemorrhagic vasculitis in children. Azerb. med.
zhur. no.2:70-74 F '59. (MIRA 12:3)

1. Iz kliniki gospital'noy pediatrii (zav. - zaslushennyy deyatel'
nauki, dots. A. N. Amirdzhanov) Azerbaydzhanskogo gosudarstvennogo
meditsinskogo instituta im. N. Narimanova (direktor - zaslushennyy
deyatel' nauki prof. B. A. Kyvazov) na baze bol'nitsy im. Shaumyana
(glavvrach - Sh. S. Kasumov).
(PURPURA (PATHOLOGY))

AMIRDZHANOV, A.N.; BERMAN, S.Ya.; KATS, P.D.

Coli-enteritis in young children. Azerb. med. zhur. no. 7:7-14
Jl '60. (MIRA 13:8)
(INTESTINES DISEASES) (ESCHERICHIA COLI)

ABIYEV, G.S., kand.meditsinskikh nauk; KATS, P.D., kand.meditsinskikh nauk

"Permeability of the capillaries in diseases of the thyroid gland, thyrotoxicosis, euthyroid and hypothyroid goiter, hypothyrosis and myxedema" by A.A.Mirzazade. Reviewed by G.S.Abiyev, P.D.Kats. Azerb. med. zhur. no.9:59 S '60. (MIRA 13:9)

1. Uchenyy sekretar' Soveta Azgosmedinstituta (for Abiyev).
(CAPILLARIES—PERMEABILITY) (THYROID GLAND—DISEASES)
(MIRZAZADE, A.A.)

LIVANOV, M.I.; KATS, P.D.

Norms of the T-wave in the electrocardiogram of children. Azerb.
med.zhur. 40 no.1:15-20 Ja '63. (MIRA 16:3)
(ELECTROCARDIOGRAPHY)

KATS, P.D.; DZHAFAROVA, S.A.

Dynamics of some peripheral blood indices and daily excretion of
17-ketosteroids with the urine of healthy children under the effect
of a single administration of ACTH. Izv. AN Azerb. SSR. Ser. biol.
i med. nauk no.1:109-115 '63. (MIRA 17:5)

KATS, P.D.; GABUCHIYA, A.K.

Cholinesterase activity of the blood in healthy children. Izv.
AN Azerb. SSR. Ser. biol. nauk no.5:109-111 '64.

(MIRA 18:4)

KATS, P.D., kand. med. nauk

Dynamics of blood histamine and serotonin in experimental dysenterial intoxication in rabbits. Azerb. med. zhur. 42 no.9:27-31 S '65. (MIRA 18:11)

1. Kafedra patologicheskoy fiziologii (zav. - prof. T.G. Pashayev) i gospi'tal'noy pediatrii (zav. - zasluzhennyi deyatel' nauki, dotsent A.N. Amirdzhanov) Azerbaydzhanskogo meditsinskogo instituta imeni Narimanova (rektor -- prof. Kh.A. Khasanov). Submitted September 14, 1964.

KATS, P. G.

CA

11 Q

Blood proteins in child anemia. P. G. Kats (Leningrad State Med. Pediatr. Inst.). *Voprosy Pediatr. i Obshch. Akusherstva i Ginekologii* 20, No. 1, 20-5 (1952).—Generally even in severe anemia the serum protein level remains within the limits of normal variation. Globulins tend to be low. In hypoproteinemia the level of proteins rises in convalescence and the albumin-globulin ratio returns to normal. The content of protein in whole blood and erythrocytes parallels the hemoglobin content of the latter. Deviations are observed in cases of disturbed water metabolism.
G. M. Kosolapoff

KATS, P.S., kand.sel'skokhoz.nauk

Effect of peat fertilizers on winter crop yields. Zemledelie 8 no.7:
75-80 JI '60. (MIRA 13:9)
(Grain-- Fertilizers and manures) (Peat)

NIKONOV, M.N., prof.; FATCHIKHINA, O.Ye., kand. sel'khoz. nauk;
GORSHKOV, L.A.; KOCHER, S.G.; KATS, P.S., kand. sel'-
khoz. nauk; GRIGOR'YEVA, A.I., red.; SOKOLOVA, N.N., tekhn.
red.

[Peat in agriculture] Torf v sel'skom khoziaistve. [By] M.N.
Nikonov i dr. Moskva, Sel'khozizdat, 1962. 166 p.

(MIRA 15:11)

(Fertilizers and manures) (Peat)

KATS, R.

New procedure for paying benefits earned through cooperative insurance to working pensioners. Prom.koop. 14
no.6:39 Je '60. (MIRA 13:7)

1. Nachal'nik otdela pensiy i posobiy Rospromstrakhsoveta.
(Pensions)

OFITSEROVA, V.N.; KATS, R.A.

Nitrogen metabolism in infantile dysentery. Vopr. pediat. 19 no.2:
39-47 1951. (GIML 20:8)

1. Of the Department of Biochemistry (Head--Prof. L.F. Soley'yev),
Leningrad State Pediatric Medical Institute and of Children's
Infectious Hospital imeni K. Ibbnekht (Scientific Supervisor--
Docent V.N. Ofitserova, deceased).

KATS, R. A.

OFITSEROVA, V. N.; KATS, R. A.

Use of casein hydrolysates in the treatment of dysentery in infants. Vopr. pediat. 19 no. 5:35-39 1951. (GML 21:3)

1. Of the Department of Biochemistry (Head — Prof. L. T. Solov'yev), Leningrad Pediatric Medical Institute, and of the Children's Infectious Hospital imeni K. Libknekht (Scientific Supervisor — Docent V. N. Ofitserova, deceased).

AFANAS' YEVA, L.N., bibliograf; KATS, R.I., inzh., red.; YELAGINA, T.A.,
tekh.n.red.

[Production organization in the machinery and instrument industry;
recommended list of literature] Kul'tura proizvodstva na mashino-
stroitel'nykh predpriatiakh; rekomendatel'nyi spisok literatury.
Pod red. R.I.Kats. Leningrad, 1959. 26 p.

(MIRA 14:1)

1. Leningradskiy dom nauchno-tekhnicheskoy propogandy. Nauchno-
tekhnicheskaya biblioteka.

(Bibliography--Industrial management)

KATS, R.I.

Conference on interfactory and external communications in enterprises
of the Leningrad Economic Council. Biul.tekh.-ekon.inform. no.11:
86-87 '61. (MIRA 14:12)
(Leningrad Province--Communication and traffic)

MIKHALEVICH, Semen Iosifovich; KATS, Raisa Il'ichna, inzh.; NEYMARK, M.M.,
inzh. red.; FOMICHEV, A.G., red. izd-va; BELOGUROVA, I.A., tekhn. red.

[Technical reorganization and utilization of the production
potentialities for increasing the output capacity of the automatic
turret-lathe shop] Organizatsionno-tekhnicheskaja perestroika i ispol'-
zovanie rezervov proizvodstva dlia povysheniia proizvodstvennoi moshch-
nosti avtomatno-revol'vernogo tsekha. Leningrad, 1961. 16 p. (Lenin-
gradskii Dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom.
Seria: Organizatsiia i ekonomika proizvodstva, no.2) (MIRA 14:7)
(Leningrad--Industrial management)

PRAVEDNIKOV, N.K., inzh.; KATS, R.M., inzh.

Considering the characteristics of the performance of wells in line
flooding when calculating the water encroachment of an oil layer.
Nauch. zap. Ukrniiproekta no.9:111-124 '62. (MIRA 16:7)
(Oil field flooding)

PRAVEDNIKOV, N.K.; KATS, R.M.

Equations for the movement of the water-oil contact in systems of
pattern flooding. Trudy VNII no.42:222-234 '65.

(MIRA 18:5)

GOFMAN-ZAKHAROV, P.M., inzh.; KATS, R.M., inzh.; FRIDMAN, A.M., inzh.

Thermal field of the underground isothermal storage of liquefied hydrocarbon gases. Nauch. zap. Ukrniiproekta no.9:130-136 '62.
(MIRA 16:7)

(Liquefied gases--Storage)

KATS, R.P.

Appearance of hemorrhagic diathesis during the treatment of syphilis with arsenicals. Vest. vener., Moskva no.2:40-41 Mar-Apr 1953.

(CLML 24:3)

1. Candidate Medical Sciences. 2. Of the Department of Skin and Venereal Diseases (Head -- Prof. A. A. Akobyan) of Tashkent Medical Institute and the Venerological Hospital (Consultant -- Prof. A. A. Akobyan ; Head Physician -- F. I. Stekhun).

KATS, R. S.

1. POPOV, I. V.: KATS, R. S.
2. USSR (600)
4. Cartography
7. Methodical directions for compiling engineering and geological maps (scale 1:5000-1:10,000) for civil and industrial construction. (Abstract). Izv. Glav. upr. geol. fon. no. 2, 1947.

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

BAYBAKOV, Aleksandr Borisovich; KATS, Revekka Samsonovna; OSTAF'YEV.
A.I., red.; NOSAROV, M.F., red.; MONETA, A.A., red.; GAPON, G.I.,
red.; SNIGUR, Ye.Ye., red.; NOVIK, A.M., red.; MATUSEVICH, S.M.,
tekhn. red.

["Leninskaia Kuznitsa" Plant] Zavod "Leninskaia kuznitsa." Kiev,
Gos. izd-vo tekhn. lit-ry USSR, 1962. 172 p. (MIRA 15:3)
(Kiev—Machinery industry)

D'YACHENKO, A.Z.; KATS, R.Z.; SHVETSOVA, M.N., inzh.

Casehardening of point rails and rail tongues. Put' 1 put.khoz.
no.12:35-36 D '59. (MIRA 13:4)

1. Glavnyy metallurg Novosibirskogo strelochnogo zavoda (for D'yachenko). 2. Nachal'nik tsentral'noy zavodskoy laboratorii Novosibirskogo strelochnogo zavoda (for Kats). 3. TSentral'naya laboratoriya Novosibirskogo strelochnogo zavoda (for Shvesova).
(Railroads--Switches) (Steel--Hardening)

KATS, R.Z., inzh.

Wear and reinforcement of frogs with a G13L steel core. Vest.TSNII
MPS 22 no.6:11-14 '63. (MIRA 16:10)

1. Strelochnyy zavod Ministerstva putey soobshcheniya, Novosibirsk.

KATS, R.Z.

Effect of the deoxidation method on the mechanical properties
of high-manganese steel. Stal' 24 no.8:700-701 Ag '64.
(MIRA 17:9)

L 20737-66 EWP(k)/EWT(m)/T/EWA(d)/EWP(w)/EWP(t) JD/EM
ACC NR: AP6010133 SOURCE CODE: UR/0122/66/000/003/0067/0069

AUTHOR: Kats, R. Z. (Candidate of technical sciences); Zamanskaya, F. P. (Engineer); Gentse, M. V.; Khoroshko, V. P.; Kashkina, S. T.

ORG: none

TITLE: Explosive strengthening of G13L steel

SOURCE: Vestnik mashinostroyeniya, no. 3, 1966, 67-69

TOPIC TAGS: high manganese steel, explosive strengthening, austenitic steel, steel strengthening / G13L steel

ABSTRACT: Explosive strengthening of G13L steel (0.9—1.4% C, 11.0—14.0% Mn, 0.4—1.0% Si, 0.2% Cr, 0.2% Ni) used for railroad frog-points has been investigated. Strengthening was done either by detonation of a charge placed directly on the frog-point or by impact of a plate activated by an explosion. In both methods the frog-point had to be coated with a layer of clay to prevent the formation of small surface cracks. The explosion had a considerable effect on the physical and mechanical properties. It reduced the dimensions of the tested articles and increased the tensile strength from 62.4—82.4 to 103.1—110 kg/mm², and the yield strength from 39.0—45.4 to 83—99.0 kg/mm² at a satisfactory ductility. The surface hardness increased

UDC: 621.787.044:669.15'74-194

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36
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L 20737-66

ACC NR: AP6010133

from 179—224 to about 302—450 HB. Along the depth, the hardness gradually decreased to the original value at a depth of 28 mm. Orig. art. has: 3 figures and 2 tables. [WW]

SUB CODE: 11/ SUBM DATE: none/ ATD PRESS: 4225

Card 2/2 *sb*

KATS, S.A.

Gall Bladder

Isolated subcutaneous ruptures of the gall bladder. Vest. khir. 72 No. 2, 1952

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

KATS, S.A.; CHERKASSKIY, S.A.

Towards increased production. Leg.prom. 15 no.5:43-44 My '55.
(MIRA 8:7)

1. Direktor Kiyevskoy shestoy obuvnoy fabriki (for Kats)
2. Nachal'nik otдела organizatsii truda (for Cherkasskiy)
(Kiev--Shoe industry)

KATS, S.A.; KIRILLOVSKIY, G.S.; CHERKASSKIY, S.A.

Organizing a conveyer system in the punching shop of the Kiev Shoe
Factory No.6. Leg. prom. 18 no.1:42-45 Ja '58. (MIRA 11:2)
(Assembly line methods) (Punching machinery)

KATS, S A

KATS, S.A., dotsent

Experimental anaerobic osteomyelitis. Khirurgia no.11:11-18 N '54.
(MLRA 8:3)

1. Iz kafedry obshchey khirurgii/ pediatricheskogo i sanitarno-gigiyenicheskogo fakul'teta (zav. kafedroy prof. M.M.Levin) Khar'kovskogo meditsinskogo instituta (dir. dotsent I.F.Konovenko) i anaerobnogo otdela (zav. dotsent M.R.Nechayevskaya) Ukrainskogo instituta epidemiologii i mikrobiologii imeni I.I. Mechnikova (dir. prof. V.M.Zhdanov).
(OSTEOMYELITIS, experimental,
anaerobic)

KATS, S.A., professor

Effectiveness of antibiotics in the compound treatment of peritonitis. Vest.khir. 89 no.7:69-73 J1 '62. (MIRA 15:8)

1. Iz kafedry obshchey khirurgii (zav. -- prof. S.A. Kats) Chernovitskogo meditsinskogo instituta (dir. -- dotsent M.M. Kovalev).
(PERITONITIS) (ANTIBIOTICS)

KIRILOVSKIY, G.S. [Kyrylovs'kyi, H.S.]; IVANOV, O.F.; KATS, S.A.

Standard shoes with leather sole and rubber half heel. Leh.prom.
no.4:28-29 O-D '62. (MIRA 16:5)

1. Kiyevskaya obuvnaya fabrika No.6.
(Shoe manufacture) (Rubber goods)

KATS, S.A.

Dissemination of seismic waves in porous media. Trudy MINKHIGP
no.25:394-402 '59. (MIRA 15:5)
(Seismic prospecting)

KAES, S. H.

PLATE I BOOK EXTRACTS

807/533x

Академия наук СССР, Институт Физики Земли

Yegorov, I. M. *Problems in Engineering Seismology*, Vol. 3 Moscow, 1950. 191 p. 1,700 copies printed. (Series: Izv. Trudy, no. 20 (17))

Eds.: B. V. Medvedev, Doctor of Technical Sciences, and A. Z. Kats, Candidate of Physics and Mathematics; Ed. of Publishing House: I. K. Bilyalov; Tech. Ed.: P. S. Kashina.

PURPOSE: This book is intended for seismologists, and engineers concerned with the construction of earthquake-resistant buildings.

CONTENTS: This is a collection of 15 articles by different authors on problems of engineering seismology. Individual articles discuss the effects of quakes on various structures; seismic activity in the South-Ural, Kazan, Polyma, and Polotsk-Ural regions; and ground vibrations during strong earthquakes. One article discusses the effect of the detonation of 3100 tons of explosives on buildings located 1000 m away. No personalities are mentioned. Each article is accompanied by references.

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AVIARSKI: Library of Congress

21/Jan/Jan 67-28-01

14

28398

S/169/61/000/007/017/104

A006/A101

9,9465 (1327)

AUTHOR: Kats, S.A.

TITLE: Propagation of oscillations in a one-dimensional discrete medium

PERIODICAL: Referativnyy zhurnal. Geofizika, no.7, 1961, 13, abstract 7A125 ("Tr. In-ta fiz. Zemli, AN SSSR", 1960, no. 10, 112 - 117)

TEXT: The author analyzes the propagation of oscillations in a system consisting of elements of different mass with linear forces acting between the elements, when the wave length considerably exceeds the dimensions of non-homogeneities. A formula was obtained for the phase velocity without and with taking into account decay (due to viscous friction). In heterogeneous media decay increases abruptly on account of friction. A case is considered when different elastic forces are acting between the elements; this corresponds to the periodic alternation of layers with different properties. It is noted that the propagation velocity in a heterogeneous medium may be lesser than that in a homogeneous medium. This type of phenomenon is, in the author's opinion, connected with the relative shift resonance of two adjacent elements. I. Khaykovich
[Abstracter's note: Complete translation]

Card 1/1

GLOGOVSKIY, V.M.; ~~KATS, S.A.~~

Computing theoretical vertical electric sounding curves for sections
containing a high-resistivity layer. Trudy MINKHIGP no.31:
197-201 '60. (MIRA 13:11)

(Electric prospecting)

KATS, S.A.

The equivalence principle of interference systems. Izv. AN SSSR.
Ser. geofiz. no.11:1624-1632 N '61. (MIRA 14:11)

1. Akademiya nauk SSSR, Institut fiziki Zemli.
(Seismic prospecting)

KATS, S.A.

Methodology of a frequency analysis and synthesis based on an
approximative calculation of Fourier's integrals. Prikl.
geofiz. no.33:85-96 '62. (MIRA 15:10)
(Seismometry) (Fourier's series)

BRINDZINSKIY, A.M.; KATS, S.A.

Some characteristics of the excitation of high-frequency waves. Trudy
SNIIGGIMS no.27:127-131 '62. (MIRA 16:9)

1. Tyumenskoye territorial'noye geologicheskoye upravleniye.
(Seismic prospecting)

KATS, S.A.

Method for calculating complex spectra of impulse functions with
the aid of a pulse height analyzer. Izv. AN SSSR. Ser. geofiz.
no.10:1544-1553 0 '63. (MIRA 16:12)

1. Institut fiziki Zemli AN SSSR.

L 32163-66 EWT(1) GW

ACC NR: AP6010064

SOURCE CODE: UR/0387/66/000/003/0044/0054

AUTHOR: Kats, S. A.

47
B

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR (Institut fiziki Zemli, Akademii nauk SSSR)

TITLE: Resolving capability of high frequency seismics

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 3, 1966, 44-54

TOPIC TAGS: HF ~~filter~~, free oscillation, seismic wave, ~~propagation~~, wave equation

ABSTRACT: The mechanisms of seismic wave separation by high frequency filters were studied. The important parameters affecting seismic impulses and filtration were examined in order to determine the resolving capability of high frequency seismographs and establish optimum conditions for their use. A theoretical analysis is given for determining the resolution capability of high frequency filters, applicable to output signals of spectra which can be represented by algebraic functions. It was shown that oscillations registered on high frequency output filters had a superpositioned frequency for forced oscillations close to the frequency of the input signal, while the high frequency free oscillations of the filter were close to the actual frequency of the process. All high frequency oscillations started at the time when the higher derivatives from the input signal underwent disruption; in this way the separations and

Card 1/2

UDC: 550.834

L 32163-66

ACC NR: AP6010064

correlations of the high frequency waves were deduced from the separation and correlations of the signal disruptions. The lower the number of derivatives above which all of the higher derivatives began to undergo disruption, the greater was the absolute magnitude of the free oscillations and the more the free oscillations prevailed over the forced ones. By increasing the natural frequency of the filter the intensity of the free oscillations and of the registered high frequency wave decreased. The sharpest input signals always resulted in greatest clarity and intensity of the output signal. The useful range of filter operation was determined and this was related to $R(\omega)$ —frequency characteristic of the filter, ω —rotational frequency. Orig. art. has: 9 figures, 29 formulas.

SUB CODE: 08/

SUBM DATE: 27Dec63/

ORIG REF: 006/

OTH REF: 003

Card 2/2

JS

АВЕРБУХ, Т.Д.; КАТС, С.Д.; СЕРЕБРЯННИКОВА, М.Т.; БАКИНА, Н.П.; ТРОФИМОВА, В.С.

Absorbent for the extraction of sulfur dioxide from industrial gases.
Patent U.S.S.R. 77,110, Dec. 31, 1949.
(CA 47 no.19:10202 '53)

KATS, S. I. Cand. Tech. Sci.

Dissertation: "Application of the Professor V. Z. Vlasov's Theory for Strength
Calculation of Metal Thin-Walled Columns of Variable Cross-Section." Central Sci Res Inst
of Industrial Structures - "TsNIPS" 7 Oct 47.

Acad Constr & Arch. USSR

SO: Vechernyaya Moskva, Oct, 1947 (Project #17836)

USSR/

Card 1/1 Pub. 22 - 3/54

Authors : Kats, S. I.

Title : On the behavior of spectral functions of second order

Periodical : Dokl. AN SSSR 196/2, 187-188, Jan 21, 1954

Abstract : 22-3/54

Invented by: Academician A. N. Kolmogorov, October 22, 1955

KATS, Sh. I.,

"Schistose Type of Fracture in Chrome-Nickel-Molybdenum Steel," Forging and Heat Treatment, Moscow, Mashgiz, 1958. p 103, with MIKUL'CHIK, A. V.,

book prepared by members of NTOmashprom in connection with 25th anniv.
Ural Heavy-machine-building Plant im S. Ordzhonikidze.

SOV/137-59-3-6409

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 210 (USSR)

AUTHORS: Mikul'chik, A. V., Kats, Sh. I.

TITLE: Cleavage Fracture in a Cr-Ni-Mo Steel (Shifernyy izlom v khromoni-kelemolibdenovoy stali)

PERIODICAL: Sb. statey. Ural'skiy z-d tyazh. mashinostr. im. S. Ordzhonikidze, 1958, Nr 5, pp 103-110

ABSTRACT: In order to evaluate the effect of technological factors of smelting and casting on the susceptibility of Cr-Ni-Mo steel 34KhNZM to cleavage fracture (CF), six forgings made of this steel (five of which exhibited CF) were investigated. The investigations dealt with the following factors: Macro and microstructure, the nature of the fracture, incidence of nonmetallic inclusions, and the mechanical properties of the forgings. It was established that CF is observed only in the upper and central portions of the forgings and that it is independent of the concentration of nonmetallic inclusions and gases in the steel. CF is caused by a coarse dendritic structure which had formed as a result of excessively high casting temperatures and which had not been refined in the course of forging. Bibliography: 7 references. T. F.

Card 1/1

KATS, S.M.; BIRYUKOV, A.L.

Precise piston manometers. Izv. tekhn. no. 4:51-53 J1-Ag '57.
(Manometer) (MLRA 10:8)

8.ATS, S.M.

84(7) SOV/1700

PHASE I BOOK EXPLOITATION

L'ouv. Universitet

Materialy I Vsesoyuznogo soveshchaniya po spektroskopii, 1956
t. III Akademiya spektroskopii (Materials of the 10th All-Union
Conference on Spectroscopy, 1956) Vol. 3 (Acad. Spectroscopy)
Groznyi: Izdatel'stvo nauch. i tekhn. liter., 1958. 568 p. (Soviet lit:
Vostochny sbornik, vyp. 4(3)). 3,000 copies printed.

Additional Sponsoring Agency: Akademiya nauk SSSR, Komissiya po
spektroskopii.

Editorial Board: G.S. Landsberg, Academician, (Resp. Ed.);
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(deceased), Doctor of Physical and Mathematical Sciences; A.J.
Glimberg, Doctor of Physical and Mathematical Sciences;
M.I. S.A. Gasser, Tech. Ed.; E.V. Shvartzuk

PURPOSE: This book is intended for scientists and researchers in
the field of spectroscopy, as well as for technical personnel
using spectrum analysis in various industries.

COVERAGE: This volume contains 177 scientific and technical studies
of atomic spectroscopy presented at the 10th All-Union Confer-
ence on Spectroscopy in 1956. The studies were carried out by
members of scientific and technical institutes and include
extensive bibliographies of Soviet and other sources. The
studies cover many phases of spectroscopy: spectra of rare earths,
electromagnetic radiation, physicochemical methods for controlling
uranium production, physics and technology of gas discharges,
optics and spectroscopy, anomalous dispersion in metal vapors, ores
and minerals, spectroscopic methods for determination of the
concentration of elements, photographic determination of the
hydrogen content of metals by means of isotopes, tables, and
atlases of spectral lines, spark spectrographic analysis,
statistical study of variation in the parameters of calibration
curves, determination of traces of metals, spectrum analysis in
metallurgy, thermochemistry in metallurgy, and principles and
practice of spectrochemical analysis.

Card 2/31

Materials of the 10th All-Union Conference (Cont.) SOV/1700

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Card 26/31

KATS, Samuil Mikhaylovich; YEVANGULOV, L.B., red.; BUL'DYAYEV, N.A.,
tekh. red.

[Balance-type dynamometers for measuring torque]Balansirnye
dinamometry dlia izmereniia vrashchaiushchego momenta. Moskva,
Gosenergoizdat, 1962. 142 p. (MIRA 16:1)
(Dynamometer)

KATS, SH. N.

0

3

J14632* (Creep of Tubes.) Polzuchest' trub. Sh. N. Kats
Vestnik Mashinostroeniia, v. 33, no. 12, Dec 1953, p. 58-63.
Creep investigations of cylinders under internal pressure. Tables,
graphs, photograph, diagram.

Abstract in "A Review of The World Literature on
The Creep of metals at Elevated
Temperatures," in Library. IV, April 53 to Dec 53

KATS, Sh. N.

USSR/Engineering - Steel pipes

Card 1/1 Sub. 128 - 5/32

Authors : Leleev, N. S.; Troyanskiy, E. A.; Zalkind, E. M.; Kats, Sh. N.; Makharov, A. A.; and Kachanov, L. M.

Title : Comments and critical review of the article, "A Problem Concerning the Strength of Steel Pipes for High-Pressure Boilers"

Periodical : Vest. mash. 11, 24-27, Nov 1954

Abstract : A discussion and rebuttal of the article, "A Problem Concerning the Strength of Steel Pipes for High-Pressure Boilers", written by N. S. Leleev, and E. A. Troyanskiy, is presented. Graphs; table; diagram.

Institution : ...

Submitted : ...

KATS. SH. N.

AID P - 3888

Subject : USSR/Power Eng.
Card 1/1 Pub. 110-a - 9/17
Author : Kats, Sh. N., Central Boiler and Turbine Institute
Title : Research on durability of carbide pipes
Periodical : Teploenergetika, ¹11, 37-40, N 1955
Abstract : Results of experimental research on tensile strength of carbide pipes under internal pressure at 500°C are presented. Thirteen figures. Three Russian references, 1949-1954; 4 English, 1942-1952.
Institution : None
Submitted : No date

KATS, Sh.N.

Apparatus for studying the strength of tubes by long tests at high temperatures. Zav.lab. 22 no.1:118-120 '56. (MLRA 9:5)

1. Tsentral'nyy nauchno-issledovatel'skiy kotloturbinnyy institut imeni I.I. Polzunova.

(Tubes--Testing) (Testing machines)

AUTHOR: Kats, Sh.N., Engineer.

296

TITLE: Rupture of austenitic pipes under the effect of an internal pressure under conditions of creep. (Razrushenie austenitnykh trub pod deystviem vnutrennego davleniya v usloviyakh polzuchesti.)

PERIODICAL: "Energomashinostroenie" (Power Machinery Construction), 1957, No. 2, pp. 1 - 5, (U.S.S.R.)

ABSTRACT: Investigations of long duration failures of austenitic pipes under the effect of internal pressure were carried out on tube specimens. The tubular and also non-hollow cylindrical specimens, intended for uni-axial tensile tests specimens, were produced from the same original rods of 1X18H9T steel. The material for all the specimens was first subject to heat treatment in two batches, consisting of heating to 1100 °C and cooling in air, followed by stabilisation at 800 °C for 10 hours. The heat treatment of one batch (A) was effected exactly according to specifications whilst for the second batch (B) this was hardened at a slightly reduced temperature. This was done because similar cases can easily occur in heat treatment under shop conditions and, therefore, the test carried out on batch B is considered of great practical interest. The test results obtained at 650, 700 and partly at 600 °C on tubes of the heat treatment batches A and B are given respectively in Tables 1 and 2. Thin-walled as well as thick-walled tubes were tested

Rupture of austenitic pipes under the effect of an internal ²⁹⁶ pressure under conditions of creep. (Cont.)

for test durations of up to 7 000 hours with specific pressures of up to 460 atm. It was established that the equations (1) and (2), p.2, are the most suitable for practical calculation of the rupture of austenitic tubes under creep conditions.

4 tables, 9 figures, including 3 sets of photographs and 6 graphs. There are 4 Russian and 1 American references.

KATS, SH. N.

AUTHOR: Kats, Sh. N. (Leningrad)

24-10-15/26

TITLE: Creep and fracture of tubes under the effect of internal pressure. (Polzuchest' i razrusheniye trub pod deystviyem vnutrennego davleniya).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1957, No.10, pp. 86-89 (USSR)

ABSTRACT: The problem of plastic flow of a tube at finite deformations has been dealt with by a number of authors (Refs.1-4). In this paper an attempt is made to determine the time until fracture on the basis of the analysis of the creep of tubes at finite deformations. The creep speed at finite deformations is determined according to the Hoff formula (Ref.7) Eq.(14); test results carried out by the author on the steels 20, 12MXΦ and 1X18H9T are in agreement with this formula. A formula for calculating the time until rupture is derived and the results are compared with experimentally determined results in the graphs Figs.1-3. On the whole, the agreement between experimental and calculated results is satisfactory. The described solution characterises adequately the qualitative picture of fracture and is also suitable for a rough Card 1/2 quantitative evaluation. The difference between the

24-10-15/26

Creep and fracture of tubes under the effect of internal pressure.

experimentally and theoretically determined times are approximately of the same order of magnitude as in the case of uniaxial tension; the slight divergence between experimental and theoretical data in the case of uniaxial tension is confirmed by the data of Hoff who evaluated the experimental results of Dorn and Tietz (Ref.11). The here considered rupture scheme during creep is based on the conception of continuous flow of the material of the tube maintaining fully the initial geometrical shape right up to the instant of fracture. There are 3 figures and 11 references, 5 of which are Slavic.

SUBMITTED: June 22, 1957.

AVAILABLE: Library of Congress.

Card 2/2

KATS, S H. N.

AUTHORS: Kats, Sh. N. and Kachanov, L. M. (Leningrad) 24-11-22/31

TITLE: On plastic deformation in the case of complicated loading.
(O plasticheskoy defermatsii pri slozhnom nagruzhenii)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1957, No.11, pp. 172-173 (USSR)

ABSTRACT: The results of various authors, for instance, of Neal, B. (Ref.5) relating to the determination of the torsion resistance of an initially bent rod prove indirectly the usefulness of the plastic flow theory. Therefore, the authors considered it of interest to accumulate various experimental data on this problem and here results are described of torsion experiments on tubes which were first plastically deformed by internal pressure. Inside a special set-up a vertically disposed tube was fixed which was stressed by internal hydraulic pressure. The measurement of the pressure was accurate to a degree 0.35%. The change in the tube diameter under the effect of internal pressure was recorded in six points along the circumference of the tube with an indicator having scale divisions of 1 μ . The torsion was effected by loads applied to arms of 1 m length. Seven

Card 1/2 tubes were investigated, all of which were produced from

24-11-22/31

On plastic deformation in the case of complicated loading.

Steel 20 which was first annealed to obtain given mechanical properties. The experimentally determined curves show that in presence of a plastic deformation in the tube, caused by internal pressure, the initial shear modulus will equal the elastic shear modulus as follows from the theory of plastic flow; thereby, the degree of plastic deformation caused by the internal pressure does not manifest itself greatly on the values of the shear modulus and torsion. The coefficient of proportionality between the torque and the twist angle is strongly dependent on the magnitude of accumulated deformation; these conclusions of the theory of elastic-plastic deformations contradict the above mentioned experimental data.

There are one figure and 5 references, one of which is Slavic.

SUBMITTED: May 22, 1957.

ASSOCIATION: Central Boiler-Turbine Institute. (Tsentral'nyy Kotloturbinnyy Institut).

AVAILABLE: Library of Congress.

Card 2/2

KATS, Sh.N., Cand Tech Sci -- (diss) "Study of deformations
and destruction of ~~metals~~ ^{metals} under conditions of *creep* ."

Len 1958, 9 pp. (Len ~~Fl~~ ^{Fl}tech Inst im M.I. Kalinin) 150 copies
(KL, 32-58, 108)

SOV/96-58-6-10/24

AUTHOR: Zakharov, A.A., Cand.Tech.Sci. and Kats Sh.N., Engineer.

TITLE: The long-term strength of cylindrical chambers weakened by holes.
(Dlitel'naya prochnost' tsilindricheskikh kamer, oslablennykh otverstiyami)

PERIODICAL: Teploenergetika, 1958, V.5. No.6. pp. 52-55 (USSR)

ABSTRACT: The article describes the results of an experimental study of the long-term strength of drums and superheater chambers weakened by rows of holes. The tests were made on tubular models with blind holes drilled in the walls, as shown in fig.1.; with this arrangement leakage was, of course, easily prevented. The models were made of austenitic steel 1Kh18N9T and of carbon steel St 20. The former were of 54 mm outside diameter, with a wall thickness of 9 mm, and were made in three forms: without holes, with two longitudinal parallel rows each of five holes, and with two rows of holes arranged diagonally. The hole diameter was about 10 mm and the depth 2.5 mm. The models of steel St 20 were 46 mm outside diameter, with a wall thickness of 8mm and were variously made without holes, with two rows of five holes each and with other arrangements of holes, as indicated in fig.2. Using a suitable test rig, the long-term strength of tubes under internal pressure was evaluated, and concurrent tests were made on specimens in tension. Tests on the models of austenitic steel were made at a temperature of 700°C and on those of carbon steel at 500°C. The formulae used for stress determination are given for the various

Card 1/2

SOV/96-58-6-10/24

The long-term strength of cylindrical chambers weakened by holes.

arrangements of holes. The results, for tubes with and without holes, are given in table.1., the strength factors and stresses being calculated by means of the formulae given. Further test results appear in table.2. and the various data are plotted in figs.3. and 4. for steels 1Kh18N9T and St 20 respectively. The straight lines correspond to test data for both tension and internal pressure and correspond to the usual relationship between stress and time to failure; it will be seen that the points for the weakened tubes are in line with the rest. The experimental and calculated strength factors for tubes weakened by holes are given in fig.5. and a formula is written for the strength factor. A photograph of an austenitic steel tube after failure appears in fig.6; the mode of failure is described, noting that for tubes weakened by holes there is more or less uniform stress-distribution over the load-carrying section. Thus, the tests show that when designing cylindrical chambers weakened by holes, the procedure established for low temperatures can be applied at high temperatures, even when quite brittle steel is used. There are 2 tables, 6 figures and 4 literature references (Soviet).

ASSOCIATION: Central Boiler Turbine Institute. (Tsentral'nyy kotloturbinnyy institut) 1. Cylindrical shells--Model test results 2. Cylindrical shells--Mechanical properties 3. Heat exchangers--Test results
Card 2/2

AUTHORS: Zakharov, A.A., Kats, Sh.N. 32-24-4-45/67

TITLE: The Simultaneous Investigation of Two Samples With Respect to Creeping- and Stretching Resistivity (Odnovremennoye ispytaniye dvukh obraztsov na polzuchest' i dlitel'nuyu prochnost')

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 4, pp. 476-477 (USSR)

ABSTRACT: The assembly scheme of the "chains" on the IP-2 machine is used, so that two samples can be tested simultaneously. It may be seen from a schematic drawing that the two samples under investigation are connected at their central ends by way of a cylindrical disk, whereas the outer ends are fastened to the machine holders by way of tensometers. The tensometers can be adjusted to 0.001 or 0.01 mm according to the tests carried out. Equality of temperature of the two samples was easily obtained, and this test system has been in use for more than three years, the efficiency of the testing machines being doubled. It is recommended to use different heavy gages for two samples in order to obtain different tensions in the case of equal stress. When investigating samples of larger heavy gages interruptions are necessary in order to

Card 1/2

The Simultaneous Investigation of Two Samples With
Respect to Creeping- and Stretching Resistivity

32-24-4-45/67

exchange the destroyed samples, in which case practice showed that, in the case of noticeable tensile stresses 3-5 interruptions take up to 12 hours. In investigations of lower tensile stresses, which cause no destruction, no interruption is necessary. There is 1 figure.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut im. I.I. Polzunova
(Central Institute imeni I.I. Polzunov for Boiler Turbines)

1. Metals--Mechanical properties
2. Metals--Test methods
3. Metals--Testing equipment

Card 2/2

AUTHOR: Kats, Sh. N.

SOV/32-24-7-37/65

TITLE: An Attempt to Use the Machine of the Type IP-4 for Testing the Tensile Strength in a Multistressed State (Opyt ispol'zovaniya mashin tipa IP-4 dlya ispytaniy na dlitel'nuyu prochnost' v slozhnonapryazhennom sostoyanii)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 7, pp. 867 - 868 (USSR)

ABSTRACT: The tests of creep and of tensile strength under two-axial stress conditions were carried out with the IP-4 machine especially adapted for this purpose, with thin-walled tube-like samples under inner pressure being extended. From the schematic representation and the description given may be seen that the axis creep is continuously measured during the test by means of a densometer of the machine IP-2, and that the circumferential creep is measured by a periodical checking of the sample diameter. This machine is nominally rated at a stress exceeding 3 tons at an internal pressure of up to 500-550 atmospheres absolute pressure, with the change of the state of stress being determined by means of the quantity $\lambda = P/\rho r^2$

Card 1/2

An Attempt to Use the Machine of the Type IP-4 for
Testing the Tensile Strength in a Multistressed State

SOV/32-24-7-37/65

(r =inner radius of the tube). Four samples can be investigated at the same time and the four tubes can be investigated with different values of the quantity λ . In order to secure the harmless character of the work during the destruction of the sample a protection wall is mounted to the front of the test stand. Besides the determinations mentioned also the tensile strength of thick-walled tubes may be measured where the stress varies with the radius. There are 2 figures.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut im.I.I.Poizunova (Central Institute of Boiler Turbines imeni I.I.Polzunov)

Card 2/2

OKUN', G.S.; KOMAROV, V.M.; KATS, Sh.N.

Use of MRShchPr-54 instruments in testing for creep and long-period strength. Zav.lab. no.11:1387-1388 '59. (MIRA 13:4)

1.TSentral'nyy kotloturbinnyy institut im. I.I.Polzunova.
(Testing machines)

Report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

- 122. G. Dvorkin (Prygo): The state of stress and deformation of the turbine blades.
- 123. L. A. Pank (Pankov): On some new forms of the general solution of the three-dimensional problem of the theory of elasticity expressed in invariant functions.
- 124. A. J. Derachov (Derachov): Generalization of the method of superposition in structural mechanics.
- 125. P. F. Derzhav (Derzhav), S. F. Pivina (Pivina): Surface problems in the mechanics of fluids.
- 126. B. A. Kargin (Kargin): Experimental data concerning the deformation of fibrous and fibrous composites in compressive stresses.
- 127. G. Ya. Domozhilov (Domozhilov): Almost's problem.
- 128. A. I. Zhurav (Zhurav): A finite difference analysis of the stability of a shell under combined loading.
- 129. M. S. Gerasimov (Gerasimov): Generalization of the method of superposition in problems of the theory of elasticity.
- 130. M. D. Bobrov (Bobrov): The construction of solutions of the equations of structural mechanics by means of special uniformly convergent series.
- 131. L. G. Prudkin (Prudkin): A method of investigating the stability of shells and struts and the ally lines in multilayered shells.
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AUTHOR: Kats, Sh.N. (Leningrad)

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TEXT: The paper is a continuation of previous work (Refs 2, 8, 9, 10). Hoff (Ref 1) has proposed a theoretical scheme for calculating time to rupture based on the non-linear creep law:

$$\dot{\epsilon} = A\sigma_0^n \quad (1)$$

where $\dot{\epsilon}$ is the uniaxial creep velocity, σ_0 is the stress in uniaxial extension, A and n are constants. Hoff's method is applied in the present paper to solve the problem of rupture of a thin-walled tube under the action of an internal pressure p and an axial tensile force P . The external and internal radii of the tube are b and a respectively, and $\beta = b/a$; λ , defined by Eq (3), is a parameter characterising the ratio of the additional axial force P_+ to the axial stress caused by the internal pressure. The development of the theory leads to Eq (21) for the time to rupture, with $\Phi(\beta_0, \lambda_0)$ given by Eq (19) and C by

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Eq (14). The equivalent rupture stress for the tube is obtained from Eq (22); Eq (23) is the time to rupture as found by Hoff for uniaxial extension with k obtained from Eq (24). The solution assumes flow of the tube material with complete conservation of the initial geometrical form up to the point of rupture. It also assumes that the material is homogeneous and isotropic and that cracks are absent during the creep process. In practice, these assumptions do not hold, and rupture occurs earlier than predicted by Eq (21). The theoretical relationships have been compared with experimental data obtained on tubes of 12 MKhF steel at 595 °C. The internal diameter was 15-20 mm, length 100-130 mm, β_0 1.19-1.39 and duration of testing up to 3470 hours. The results are presented in Fig 1 as a logarithmic plot of σ_e against time to rupture, with σ_e calculated from Eq (22). Points 1, 2, 3, 4, 5, 6, 7 correspond respectively to $\lambda = 0.3, 0.5, 1.0, 1.3, 3.0, 3.85, 4.0$. The line in Fig 1 corresponds to uniaxial extension, and some deviation of the points from the line is apparent. The solution therefore gives rather rough quantitative values, but gives a satisfactory qualitative picture of the rupture of a tube in complex stress conditions.

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