VVEDENSKAYA, A.A., Candidate of Physicomathematical Sciences

"Mechanical properties of the earth's shell.", a paper given at the 50th Anniversary Session of the Seismic Station "Pulkovo", 25-29 Sep 1956, Leningrad.

SUM. 1322

RUPRECHTOVA, L.; VVEDENSKAYA, A.V.

On the stresses acting at the foci of earthquakes near the bend of the Carpathian arc. Studia geophys 6 no.2:140-151 '62.

1. Geophysical Institute, Czechoslovak Academy of Sciences, Bocni II, Praha 4 - Spurilov (for Ruprechtova). 2. Institute of Physics of the Earth, Academy of Sciences of U.S.S.R., Moscow, B. Gruzinskaya 10, Moscow G 242, U.S.S.R. (for Vvedenskaya).

VVEDENSKAYA, A. V. Cand. Physicomath Sci.

Dissertation: "On Peculiarities of the Centers and Hodographs of Four Large Earthquakes in Central Asia."

15/11/50
Geophysics Inst. Acad. Sci. USSR

SO Vecheryaya Moskva
Sum 71

VVEDENSKAYA, A. V.

USSR/Geophysics - Earthquakes, Sources of 1 Oct 51

"Determining the Dynamical Parameters Governing Earthquake Seats (Foci) According to Observations of Long-Distance Stations," A. V. Vvedenskaya, Geophys Inst, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXX, No 4, pp 591-594

Considers the problem concerning the detn of the dynamical parameters that govern seismic foci (nature of breaks, orientation of the surfaces of breaks, direction of the forces acting) from

222T41

observations of long-distance stations. Existing methods of detn of subject parameters are based on the theory of propagation of oscillations in homogeneous media with flat boundaries. Study of distant earthquakes requires modification of these methods. Submitted 4 Aug 51 by Acad O. Yu. Shmidt.

222T41

"Problem of Dynamic Characteristic of Sources of Remote Earthquakes" Tr. Geofiz. Inst. AN SSSR, No 29, 1953, pp 37-46

Application of the theory of oscillation propagation in homogeneous media for determining dynamic parameters in observations of remote seismic sources is suggested. (RZhFiz, No 2, 1955)

SO: Sum. 492, 12 May 55

VVEDENSKAYA, A.V.

Use of Wolf's grid in determining dynamic parameters of foci of earthquakes. Trudy Geofiz.inst. no.20:47-50 '53. (MLRA 7:5)
(Seismology)

VVEDENSKAYA, A.V.

Determination of dislocation fields in the case of earthquakes by means of the theory of dislocations. Izv.AN SSSR Ser.geofiz.no.3: 277-284 Mr '56. (MIRA 9:7)

1.Akademiya nauk SSSR, Geofizicheskiy institut.
(Earthquakes)

VVEDENSKAYA, A.V.; BALAKINA, L.M.

Characteristics of displacement fields of longitudinal and transverse waves traveling in the earth's crust. Biul. Sov. po seism. no.6:59-62 '57. (MIRA 11:3)

1. Institut fiziki Zemli Akademii nauk SSSR, Moskva.
(Seismic waves)

VVEDENSKAYA, A.V.

V V

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PHASE I BOOK EXPLOITATION SOV/1663

Akademiya nauk SSSR. Komitet po geodezii i geofizike.

Tezisy dokladov na XI General'noy assambleye Mezhdunarodnogo geodezicheskogo i geofizicheskogo soyuza. Mezhdunarodnaya assotsiatsiya seysmologii i fiziki nedr zemli (Abstracts of Reports Submitted to the XI General Assembly of the International Union of Geodesy and Geophysics. The International Association of Seismology and Physics of the Earth's Interior) Moscow, 1957. 102 p. /Parallel texts in Russian and English/ 1,500 copies printed.

No additional contributors mentioned

PURPOSE: This booklet is intended for geophysicists, especially those specializing in seismology.

COVERAGE: This collection of articles deals with the structure and composition of the Earth and phenomena related thereto. The majority of the articles concern studies of earthquakes and seismic waves. Other articles cover the structure of the Earth's crust and mountain roots; the elastic properties of rocks at high pressures; the piezoelectric effect of rocks and the method of

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modelling in tectonophysics. The collection also contains articles on the Earth's thermal history, the microseismic method of tracing storms, and others. No references are given.

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Shebalin, N.V. Correlation Between Magnitude and Intensity of Earthquakes and Asthenosphere 97

AVAILABLE: Library of Congress (QE 534,A4)

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VVEDENSKAYA, A. V.

49-58-2-4/18

AUTHOR: Vvedenskaya, A. V.

TITLE: On Displacements on a Surface of Discontinuity at which Slipping Takes Place. (O smeshcheniyakh na poverkhnosti razryva, soprovozhdayushchegosya skol'zheniyem.)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr. 2, pp.175-183. (USSR)

ABSTRACT: Present day representations of the nature of seismological phenomena relate the mechanism of an earthquake to a disturbance of the medium density at the origin of the earthquake. Hence the definition of a displacement field for discontinuous material densities is of great interest in studying the processes at the origin of an earthquake. It is possible to suppose that the disturbance of the medium density, which is accompanied by slipping in the plane of discontinuity, is most probable at the origins of the earthquakes. In Ref.1 an attempt was made to determine the displacement field arising at such a

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discontinuity in an elastic medium. Dislocation theory (Ref.2) was used. In the present paper the author shows that the expression obtained in Ref.1 for the displacement field actually describes the slipping along a bounded area of discontinuity. Consider an unbounded elastic isotropic space in which there is a plane of discontinuity (having finite dimensions) of the medium density. Let the opposite sides of the discontinuity be displaced relative to each other in the plane of the section. If an infinitely small part of the section $d\Sigma$ including the origin of the rectangular coordinate system xyz coincides with the plane xz, and one boundary of the section is displaced relative to the other through a distance b in the direction of z, then an expression can be obtained for the elementary component of displacement $u_j(u_j=u_x,u_y,u_z)$ at the point (x, y, z) (Ref.3).

Card 2/15 If this expression is integrated over a finite surface

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Σ, we obtain an expression for the static displacement field in an unbounded elastic space with a discontinuity in the medium density which is accompanied by slipping, and for a continuous deformation throughout the entire space (with the exception of the boundaries of the surface of discontinuity). The expression referred to above can be obtained as a result of differentiation and consequent summation of two static displacement fields due to simple forces. In fact, the expression can be written in the form

$$u_j = b\left(\frac{\partial u_{yj}}{\partial z} + \frac{\partial u_{zj}}{\partial y}\right), \qquad \text{(Eq.2)}$$

where u_{yj} is the displacement component along the x axis for a force numerically equal to $\mu d\Sigma$ applied at the origin and directed along the y axis; u_{zj}

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is the displacement component for a force of the same magnitude directed along the z axis. Nabarro (Ref.2) has proved that the displacements of an isotropic homogeneous medium, due to a sudden infinitesimally small disturbance in the density which is accompanied by slipping in the plane of discontinuity, can be obtained by the same method as that by which the expression referred to above can be obtained using the solution for the static displacement field due to a simple force. Nabarro's solution, corresponding to the sudden appearance of an infinitely small disturbance of the density , is given in the form:

$$u_j = \left(\frac{\partial u_{yj}}{\partial z} + \frac{\partial u_{zj}}{\partial y} \right) \qquad \text{(Eq.3)}$$

Card 4/15 where u_{yj} and u_{zj} are the corresponding displace-

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ment components due to a sudden action of simple forces proportional to $K(t)$ acting at the origin and directed along the y and z axes:

$$u_{ij} = \frac{\partial^2}{\partial x_i \partial x_j}\left(\frac{1}{R}\right)\int_{R/a}^{R/c} t'K(t-t')dt' +$$

$$+\frac{x_i x_j}{R^3}\left[\frac{1}{a^2}K\left(t-\frac{R}{a}\right)-\frac{1}{c^2}K\left(t-\frac{R}{c}\right)\right]+ \qquad \text{(Eq.4)}$$

$$+\frac{\partial x_i}{\partial x_j}\frac{1}{Rc^2}K\left(t-\frac{R}{c}\right), \quad x_i = y, z; \; x_j = x, y, z;$$

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a and c are the velocities of propagation of the longitudinal and transverse waves. If the slipping occurs suddenly at time $t = 0$ and then continues, then $K(t) = 0$ for $t < 0$, and $K(t) = F$ for $t \geq 0$, and

$$\int_{R/a}^{t} t'K(t - t')dt' = F\left(\frac{t^2}{2} - \frac{1}{2}\frac{R^2}{a^2}\right).$$

If Eq.4 is substituted into Eq.3, we obtain an expression which takes the following forms for distinct moments of time:

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$$\text{for } \frac{R}{a} > t, \quad u_j = 0,$$

$$\text{for } \frac{R}{a} \leqslant t \leqslant \frac{R}{c}, \quad F^{-1}u_j = \frac{x_j yz}{R^7}\left\{\frac{3R^2}{a^2} - 15t^2 - 2R^3\left[\frac{1}{a^3}\delta\left(t - \frac{R}{a}\right) - \frac{1}{c^3}\delta\left(t - \frac{R}{c}\right)\right] + \frac{1}{R^5}\frac{\partial(yz)}{\partial x_j}\left(3t^{-2} - \right.\right.$$

$$\left.\left. - \frac{R^2}{a^2} - R^3\frac{1}{c^3}\delta\left(t - \frac{R}{c}\right)\right\}, \qquad \text{(Eq.6)}$$

$$\text{For } t > \frac{R}{c}, \quad F^{-1}u_j = -\frac{3x_j yz}{R^5}\left(\frac{1}{c^2} - \frac{1}{a^2}\right) - \frac{1}{a^2R^3}\frac{\partial(yz)}{\partial x_j}. \qquad \text{(Eq.7)}$$

Card 7/15 x—— x see Eq.8

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By integrating the expressions (6) and (7), formulae were obtained in Ref.1 for the displacements at a point distant from the discontinuity large by comparison with its extent. The author now considers the nature of the displacements on a surface of finite discontinuity at different moments of time. He obtains the result of integrating the expressions (6) and (7) for certain arbitrary points situated on the surface of discontinuity for $t \geq 0$. It is supposed that the area of discontinuity is a circle of radius ρ. Let there be an arbitrary point inside this circle at a distance r_k from its centre, and let this point be chosen as the origin. The directions of the coordinate axes remain as before. Consider the point $(\xi, 0, \zeta)$ inside the circle, and for simplicity make the transformation $x = \xi + r \cos(\varphi + \varphi_0)$, $y = y$, $z = \zeta + r \sin(\varphi + \varphi_0)$ and $d\Sigma = r\, dr\, d\varphi$ $(r = \sqrt{x^2 + z^2})$. Here φ_0 is the angle between the x axis and the straight line joining

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the origin with the centre of the circle, and φ is the angle measured from this straight line. Then equations (6) and (7) become:

$$\text{for } \frac{\sqrt{r^2 + y^2}}{a} > t, \quad u_j = 0;$$

$$\text{for } \frac{\sqrt{r^2 + y^2}}{a} < t < \frac{\sqrt{r^2 + y^2}}{c},$$

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$$\frac{4\pi}{bc^2}u(x,y,z)=\frac{yr^2\sin(\varphi+\varphi_0)}{\sqrt{(r^2+y^2)^7}}\left[r\cos(\varphi+\varphi_0),\ -y,\ r\sin(\varphi+\varphi_0)\right]\left\{\frac{3(r^2+y^2)}{a^2}-\right.$$

$$\left.-15t^2-2\sqrt{(r^2+y^2)^3}\left[a^{-3}\delta\left(t-\frac{\sqrt{r^2+y^2}}{a}\right)-c^{-3}\delta\left(t-\frac{\sqrt{r^2+y^2}}{c}\right)\right]\right\}dr\,d\varphi+$$

$$+\frac{r\left[0,-r\sin(\varphi+\varphi_0),y\right]}{\sqrt{(r^2+y^2)^5}}\left[3t^2+\frac{r^2+y^2}{a^2}-\sqrt{(r^2+y^2)^3}c^{-3}\delta\left(t-\frac{\sqrt{r^2+y^2}}{c}\right)\right]dr\,d\varphi; \qquad \text{(Eq.8)}$$

Card 10/15 ×—~—× this disagrees with the expression given in Eq.6.

On Displacements on a Surface of Discontinuity at which Slipping Takes Place.

$$\text{for } t > \frac{\sqrt{r^2+y^2}}{a},$$

$$\frac{4\pi}{bc^2}u(x,y,z) = -\frac{3yr^2\sin(\varphi+\varphi_0)}{\sqrt{(r^2+y^2)^5}}\left(\frac{1}{c^2}-\frac{1}{a^2}\right)\left[r\cos(\varphi+\varphi_0), -y, r\sin(\varphi+\varphi_0)\right] \times$$

$$\times\, dr\, d\varphi - \frac{r}{a^2\sqrt{(r^2+y^2)^3}}\left[0, -r\sin(\varphi+\varphi_0), y\right] dr\, d\varphi. \qquad \text{(Eq.9)}$$

As a result of integrating Eq.8 as $y \longrightarrow 0$ at time $\frac{\sqrt{(\rho - r_k)^2 + y^2}}{a} \geqslant t$, the component u_j vanishes.

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As a result of integrating Eq.9 as $y \longrightarrow 0$, u_z remains non-zero. From this it follows that at time $t = 0$ on the boundaries of the domain of integration there occurs a discontinuity in the displacements. The opposite boundaries of the section are displaced relative to each other by a distance b in the direction of z. For all successive moments of time u_x, as $y \longrightarrow 0$, is zero. The same is true on integrating Eq.8 for u_z. As a result of integrating Eq.9 for u_z we obtain as before $\lim_{y \to o} u_z = \mp \frac{b}{2}$

Consider now the component u_y. The result of integrating Eq.9 as $y \longrightarrow 0$ is zero for each moment of time, but the result of integrating Eq.8 as $y \longrightarrow 0$ is non-zero. A general expression for the displacements of a point on the boundaries of the domain of integration for $t \geqslant 0$ can be written in the form

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$$u_x = 0,$$

$$u_y = -\frac{bc^2}{2\pi}\sin\varphi_0\left\{\frac{\sin\varphi_a}{a^2} - \frac{t^2}{(\rho^2-r_k^2)}\left[\frac{\rho^2+r_k^2}{\rho^2-r_k^2}(\sin\varphi_a - \sin\varphi_c) - \right.\right. \quad \text{(Eq.10)}$$

$$\left.\left. - \frac{r_k}{\rho}\left(\int_{\varphi_c}^{\varphi_a}\frac{\sin^2\varphi\, d\varphi}{\sqrt{1-\frac{r_k^2}{\rho^2}\sin^2\varphi}} - \frac{2r_k^2}{\rho^2-r_k^2}\int_{\varphi_c}^{\varphi_a}\sqrt{1-\frac{r_k^2}{2}\sin^2\varphi}\, d\varphi\right)\right]\right\},$$

$$u_z = \mp\frac{b}{2},$$

where $\varphi_a = 0$ for $\frac{\rho - r_k}{a} \geqslant t,$

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$$\varphi_a = \arccos \frac{\rho^2 - r_k^2 - a^2t^2}{2atr_k} \quad \text{for} \quad \frac{\rho + r_k}{a} > t \geq \frac{\rho - r_k}{a},$$

$$\varphi_a = \pi \quad \text{for} \quad t \geq \frac{\rho + r_k}{a},$$

Similarly

$$\varphi_c = 0 \quad \text{for} \quad \frac{\rho - r_k}{c} \geq t,$$

$$\varphi_c = \arccos \frac{\rho^2 - r_k^2 - c^2t^2}{2ctr_k} \quad \text{for} \quad \frac{\rho + r_k}{c} \geq t > \frac{\rho - r_k}{c},$$

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$$\varphi_c = \pi \quad \text{for} \quad t \geq \frac{\rho + r_k}{c}.$$

On Displacements on a Surface of Discontinuity at which Slipping Takes Place.

For any point inside the surface of integration u_z is zero as $y \to 0$. From formulae 10 the displacement components for points on the surface of integration at different moments of time have been calculated. The quantities u_x and u_z are given directly by the expressions given above, and the results of determining u_y from Eqs.10 for various values of ρ are shown in Fig.1. For successive moments of time Eqs.10 become expressions for the static displacement field for continuing discontinuity in the medium density. Hence these expressions describe the discontinuity in an elastic medium, and the instantaneous displacement of both sides of the section along the bounded area of discontinuity. Similar expressions for the displacements at the source of the disturbance are derived. There are 2 figures and 3 references, of which 1 is Russian and 2 English.

Card 15/15

ASSOCIATION: Academy of Sciences, USSR; Institute of Earth Physics (Akademiya nauk SSSR; Institut fiziki Zemli.)

SUBMITTED: May 8, 1957.
AVAILABLE: Library of Congress.

SOV/49-59-4-2/20

AUTHOR: Vvedenskaya, A. V.

TITLE: On the Dislocation Field of the Disruption of Continuity in Elastic Media (O pole smeshcheniy pri razryvakh sploshnosti uprugoy sredy)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 4, pp 516-526 (USSR)

ABSTRACT: The author describes a method of determining the dynamic field in the isotropic and homogeneous elastic space in the case of an instantaneous disruption of continuity of the medium. As a result of disruption, the dislocation of particles $u_{x,1}$, $u_{y,1}$, $u_{z,1}$ occurs along the axis x, y, z . The disruption can be expressed as the system of equations (1), where $b_j = b_x$, b_y , b_z and $\omega_j = \omega_x$, ω_y , ω_z define the difference between the uniform components of dislocation and the components of rotation of a pair of particles, ξ , η , ζ - coordinates of these particles. The magnitude b_j is a component of the vector b . If this vector lies in the plane of cross-section, then the disruption occurs at this surface. If it is normal to the cross-section, then fracture or com-

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pression takes place. Similarly to the vector b, the vector m can be shown as $m = (r, \omega)$, where ω - vector with components ω_x, ω_y, ω_z and r - vector with the components ξ, η, ζ. In this case the Eq (1) can be written in the form $u = b + m$. In order to establish the relationship between the dislocated particles, the Volterra theory (Ref 1) can be applied, which defines the surface Σ described by the profile L in which the dislocation of points proceeds as defined by Eq (2). The expression (2) can be written in a more convenient form as Eq (3) or Eq (4). The last terms of Eq (4) will describe the field of dislocation when the centres of expansion (or compression) in relation to the signs of $\cos(b, y)$ and $\cos(m, y)$ are evenly distributed on the unit surface Σ. Therefore, the dislocation occurs when $\cos(b, y) \neq 0$ and $\cos(m, y) \neq 0$. The case of sudden disruption can be compared with the application of

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additional forces, the components of which can be expressed as Eq (6), where the function X_j can be found from Eq (3) (Ref 2). The general formula for the component of dislocation in the direction x_j at the moment t can be shown as Eq (7), by application of which the function X_j can be determined as Eq (8). The functions F_b, F_m, F_{bm} are found when the case of sudden dislocation is expressed as $K(t) = 0$ at $t < 0$ and $K(t) = 1$ for $t \geq 0$. Then the above functions can be substituted in Eq (8) which will now take the form Eq (9) for $R/a \leq t \leq R/c$, or as Eq (10) for $t \geq R/c$. The expression (10) can be equalised with Eq (3) when x is taken as $x - \xi$ and z as $z - \zeta$. Thus, the expression for F_b and F_{bm} can be defined as:

$$F_b = -\frac{bc^2}{4\pi}, \quad F_m = -\frac{mc^2}{4\pi},$$

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$$F_{bm} = - \frac{[b \cos(b, y) + m \cos(m, y)](a^2 - 2c^2)}{4\pi f} .$$

As the focus of the earthquake is not known and the surface of the disruption is difficult to establish, then the Eqs (9) and (10), as defined above, are difficult to apply. Therefore, they must be written in a more convenient form. This can be done as follows: the surface of disruption is assumed to be a circle with the radius ρ . The origin of coordinates is placed in the centre. Then the cylindrical coordinates will be $x - \xi = r \cos \varphi$, $y = y$, $z - \zeta = r \sin \varphi$ and the first maximum in the case of the longitudinal waves will occur as a parallel transfer and the second as a rotation expressed by Eq (11). The dislocation of the transverse wave is determined in a similar manner. Generally, the expressions for the whole field of dislocation of waves SH and SV are defined

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as Eqs (12) and (13). The formulae (11), (12) and (13) describe an instantaneous dislocation which is calculated by the vectors b and ω. If these equations are defined by spherical coordinates Eq (14), then the formulae at the foot of p 524 and the top of p 525 will define the relationship of A and e. The Figs 1-4 illustrate the traces of the junction surfaces of the longitudinal and transverse waves in a unit sphere for various situations of the vector b along the axis y. The value of a^2/c^2 was taken as 3. Thanks are given to Prof. N.V.Zvolinskiy and Docent A.F.Filippov for advice. There are 4 figures and 5 references, of which 3 are Soviet, 1 English and 1 French.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy of Sciences, USSR, Institute of Physics of the Earth)

SUBMITTED: September 3, 1957.

SOV/49-59-8-5/27

AUTHORS: Vvedenskaya, A.V. and Balakina, L. M.

TITLE: Double Ray-Refraction in the Earth's Mantle

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 8, pp 1138-1146 (USSR)

ABSTRACT: Observations of the range of dislocations of the longitudinal (P) and transverse (SV, SH) waves propagating in the Earth's mantle disclosed an increase of amplitudes of the P and SV waves in relation to the SH waves when the seismic rays reached the depths 250-500, 900-1000, 1200-1300, 1800 and 2200 km. This can be explained by the polarization of transverse waves due to double refraction in the anisotropic layers of the Earth's mantle corresponding to these depths. Such an assumption is based on the theoretical analysis of the relationship u_p/u_{SH} (Eqs 1 and 2) as compared with the observed data (Figs 1-3). The existence of a double ray-refraction in the Earth's mantle can be theoretically defined by Eqs 3 to 10, while a relationship between the elastic contents in anisotropic layers can be calculated from

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Double Ray-Refraction in the Earth's Mantle SOV/49-59-8-5/27

Eqs 11 and 12. The nature of these layers, however, cannot be determined.

Acknowledgments are expressed to A. A. Treskov and Ye. F. Savarenskiy for their help.

There are 3 figures and 7 references, 4 of which are Soviet and 3 English.

ASSOCIATION: Akademiya nauk SSSR Institut fiziki Zemli (Institute of Physics of the Earth, Ac.Sc., USSR)

SUBMITTED: October 3, 1958

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D

GOLITSYN, Boris Borisovich [deceased, 1862-1916]; PREDVODITELEV, A.S., otv. red.toma; BOCHKOVSKIY, V.F., prof., red.; GORSHKOV, G.P., prof., red.; KIRNOS, D.P., prof., red.; SAVARENSKIY, Ye.F., prof., red.; SAVARENSKIY, Ye.F., prof., red.; VVEDENSKAYA, A.V., kand.fiz.-mat. nauk, red.; VESHNYAKOV, N.V., kand.fiz.-matem.nauk, red.; LEVITSKAYA, A.Ya., kand.fiz.-matem.nauk, red.; LINDEN, N.A., kand.fiz.-matem. nauk, red.; FILIPPOV, L.P., kand.fiz.-matem.nauk, red.; KHARIN, D.A., kand.fiz.-matem.nauk, red.; ALEKSEYEV, D.M., red.izd-va; MARKOVICH, S.G., tekhn.red.

[Selected works] Izbrannye trudy. Moskva, Izd-vo Akad.nauk SSSR. Vol.1. [Physics] Fizika. 1960. 241 p. (MIRA 13:11)

1.Chlen-korrespondent AN SSSR (for Predvoditelev).
(Physics)

GOLITSYN, Boris Borisovich, akademik; BONCHKOVSKIY, V.F., prof., otv.red.II toma; PREDVODITELEV, A.S., otv.red.I toma; GORSHKOV, G.P., prof., red.; KIRNOS, D.P., prof., red.; SAVARENSKIY, Ye.F., prof., red.; VVEDENSKAYA, A.V., kand.nauk, red.; VESHNYAKOV, N.V., kand.nauk, red.; LEVITSKAYA, A.Y., kand.nauk, red.; LINDEN, N.A., kand.nauk, red.; FILIPPOV, L.P., kand.nauk, red.; KHARIN, D.A., kand.nauk, red.; ALEKSEYEV, D.M., red.izd-va; KASHINA, P.S., tekhn.red.

[Selected works] Izbrannye trudy. Moskva, Izd-vo Akad.nauk SSSR. Vol.2. [Seismology] Seismologiia. 1960. 489 p.
(MIRA 13:12)

1. Chlen-korrespondent AN SSSR (for Predvoditelev).
(Seismology)

S/049/60/000/004/002/018
E032/E514

AUTHOR: Vvedenskaya, A.V.

TITLE: On the Determination of Stresses in Earthquake Foci Using the Observations at Seismic Stations

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1960, No.4, pp. 513-519

TEXT: The determination of stresses in earthquake foci is based on the following assumptions about the breakdown in the continuity of the medium at the focus. If in addition to the hydrostatic pressure, a portion of the Earth's crust is subjected to further forces which give rise to a difference in the pressure in two mutually perpendicular directions, then provided the forces are large enough, a breakdown in the continuity of the medium can take place. Before the crack appears, the particles are held together by internal forces. These forces disappear as soon as the breakdown occurs. Breakdown accompanied by sliding appears to be the most probable form of displacement in earthquake foci. Thus, a limited breakdown surface whose opposite faces are displaced relative to each other by sliding is taken as the

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On the Determination of Stresses in Earthquake Foci Using the Observations of Seismic Stations

most probable theoretical model of an earthquake focus. Static stresses which act on this surface before breakdown, and are removed when it occurs, are defined as the stresses acting in the focus. The problem can be formulated quantitatively as follows. Suppose the limited breakdown surface lies in the xz plane and its normal is in the direction of the y-axis (Fig.1). The part of the section which lies on the positive side of the y-axis is displaced by b/2 in the direction of the (negative) z-axis, while the part on the negative side of the y-axis is displaced by b/2 in the opposite direction. The appearance of a breakdown surface accompanied by sliding gives rise in an elastic medium to the same displacement field as a system of forces in equilibrium distributed uniformly over the area. This system of forces forms a tensor and can be represented by a set of four perpendicular forces as shown in Fig.1, all of which are at 45° to the z-axis. These forces are equal and opposite in pairs, and up to the appearance of the crack they determine the stress tensor at each

S/049/60/000/004/002/018
E032/E514

On the Determination of Stresses in Earthquake Foci Using the Observations of Seismic Stations

point on the surface. They are removed as soon as the crack appears. The principal directions of this stress tensor are therefore parallel to the yz-plane at each point on the surface. The model is used to determine the principal stresses at a focus, using the observed first displacements in the longitudinal and transverse earthquake waves. The displacement field at long distances from the focus was derived in an earlier paper (Ref.1) and is of the form given by Eqs.(1) and (2), where x_j are the coordinates of the point of observation. The displacement field for SH and SV waves can then be written down in the form given by Eqs. (3) and (4). These expressions can be used in conjunction with stereographic projections to determine the positions of the breakdown surface and the principal stress axes. The method is applied to the two examples illustrated in Figs. 2 and 3. There are 3 figures and 4 references: 3 Soviet and 1 English.

ASSOCIATION: Akademiya nauk SSSR Institut fiziki Zemli (Academy of Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: August 11, 1959

Card 3/3

VVEDENSKAYA, A.V.; BALAKINA, L.M.

Methods used and results achieved in determining stresses acting in earthquake foci of the Baikal region and Mongolia. Biul. Sov. po seism. no.10:73-84 '60. (MIRA 13:11)

1. Institut fiziki Zemli AN SSSR, Moskva.
(Baikal region--Seismometry)
(Mongolia--Seismometry)

22433
S/049/61/000/002/011/012
D242/D301

3,9300

AUTHOR: Vvedenskaya, A. V.

TITLE: Discussion on the theoretical model of an earthquake focus

PERIODICAL: Akademiya nauk SSSR. Seriya geofizicheskaya. Izvestiya, no. 2, 1961, 261-263

TEXT: A source of agitation in an elastic medium whose field of displacement is similar to that observed at the arrival of longitudinal and transverse waves during earthquakes is called a theoretical model of an earthquake focus. The author discusses first the work of Western and Oriental geophysicists in this field including H. Nakano (Ref. 1: Notes on the nature of the forces which give rise to the earthquake motions. Seism. Bull. Centr. Met. obs., Japan. 1., 1923) P. Byerly (Ref. 2: Nature of faulting as deduced from seismograms. Crust of the Earth, 1955) and J. H. Hodgson (Ref. 3: Nature of faulting in large earthquakes. Bull. Geolog. Soc. Amer., 68, 1957) as well as H. Honda (Ref. 4: On the mechanism and the types of the seismograms of shallow earthquakes

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Discussion...

Geophys. Mag., 5, 1932) and (Ref. 5: The mechanism of the earthquakes. Sci. Rept. Tohoku Univ., 9 ser. 5, 1957). At present Soviet seismologists have no single opinion on the theoretical model of an earthquake focus, although they also assume that fracturing with the displacement of the faces along its plane most probably occurs during an earthquake. Opinions differ as to whether each applied system of forces induces the same displacement field as is the case in fracturing accompanied by sliding. According to V. I. Keylis-Borok (Ref. 6: O dinamicheskoy kharakteristike ochaga po seysmicheskim nablyudeniyam (Dynamic Characteristics of the Focus from Seismic Observations) Dokl. AN SSSR, 70, No. 6, 1950), (Ref. 7: Issledovaniye istochnikov, priblizhenno ekivalentnykh ochagam zemletryaseniy (Investigation of Sources Approximately Equivalent to Earthquake Foci) Tr. Geofiz. In-ta AN SSSR, No. 9, 1950) and (Ref. 8: K teorii voln, voznikayushchikh pri zdvige (Theory of Waves Caused by Shearing) Izv. AN SSSR, Ser. Geofiz., No. 4, 1957) the reproduction of waves due to mechanical shearing

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Discussion...

is best accomplished by the method of Byerley and Hodgson (Refs. 2 and 3: Op cit) which he takes as being equivalent to a dipole with a moment, although his work is based on observations of transverse rather than longitudinal waves. The author believes that before fissuring in the focal area under stress, there are forces of the intrinsic reaction between particles situated on different sides of the zone of future fracture which retard any movement in this zone. She then notes that the formation of a fracture leads to the relief of tension and that the restricted zone of fracture, whose opposite edges are shifted relative to each other, can be considered as the most effective theoretical model for an earthquake focus. The pre-disturbance static stresses which disappear at the moment of fracture are termed stresses acting at the focus. Their determination is accomplished on the basis of the agreement between the displacement field in the final fracturing of the medium and that for the system of forces applied in the flat zone corresponding to the fracture surface. According to the theory of dislocations, if the faces of

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a restricted fracture zone are suddenly shifted relative to each other by a value v, the displacement field for such a source will be similar to that of a suddenly-applied and evenly-distributed system of mutually-balanced forces. Within each elementary area this system will form a tensor consisting of two perpendicular double forces with no moment oriented at 45° to the plane of fracture, as shown in Fig. 3.
Vvedenskaya believes that such a system of forces capable of forming a tensor may well represent the force model of the focus since its intensity or stress belongs to the class of tensor values. Since the field of displacements arising in sudden movements of the faces of a fracture are solely related to the stresses removed from the fracture, it is in order to determine these stresses without having to consider the stressed

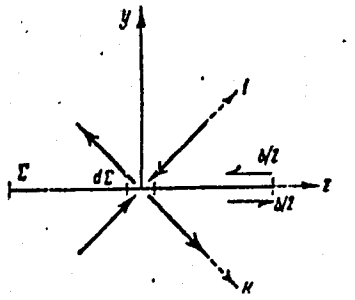

Fig. 3

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state of the zones prior to fracture and the causes of the origin of the fracture. This source of disturbance creates over considerable distances the same displacement field as is the case with the theoretical model of Honda. The views of the author are therefore corroborated by the observations made in Japan and by the conclusions drawn from them regarding the theoretical model of the focus. Besides this force model for fracturing accompanied by sliding, force models for other types of fracture (fracturing accompanied by tearing, bending, etc.) have also been determined by Vvedenskaya by means of the theory of dislocations, and it was found that the force model of any type of fracture is a system of forces forming a tensor. Not one of these systems, however, agrees with the force models proposed by O. D. Gotsadze and V. I. Keylis-Borok (Ref. 9: Issledovaniye mekhanizma zemletryaseniy (Investigation of Earthquake Mechanism) Tr. Geof. in-ta AN SSSR, No. 40 (166), 1957) for tearing, bending, etc. Thus, there appears to be a difference of opinion regarding the nature of the force model for fracturing accompanied by sliding - the most probable form of movement at an

Discussion....

earthquake focus. Some seismologists advocate the dipolar model with a moment, others favoring a model of two equal perpendicular forces with no moment. Hence the conclusions drawn by authors concerning the nature of forces at the focus and their views on the possibilities of determining the surface of the fracture at the focus and the displacement along it are also different. This in turn has its effect on other seismologic problems such as seismic zoning, the determination of the direction of emission of energy during earthquakes and the study of the inner structure of the Earth. There are 3 figures and 12 references: 7 Soviet-bloc and 5 non-Soviet-bloc. The references to the four most recent English-language publications read as follows: H. Honda, On the mechanism and the types of the seismograms of shallow earthquakes. Geophys. Mag., 5, 1932; H. Honda, The mechanism of the earthquakes. Sci. Rept. Tohoku Univ., 9, ser. 5, 1957; J.H.Hodgson, Nature of faulting in large earthquakes. Bull. Geol. Soc. Amer., 68, 1957; and P. Byerly, Nature of faulting as deduced from seismograms. Crust of the Earth, 1955.

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22433
S/049/61/000/002/011/012
D242/D301

Discussion...

ASSOCIATION: Akademiya nauk SSSR, institut fiziki zemli (Academy of Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: September 19, 1960

Card 7/7

S/049/61/000/005/003/013
D218/D306

AUTHOR: Vvedenskaya, A.V.

TITLE: Properties of the stressed state at the foci of earthquakes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 5, 1961, 666-669

TEXT: This is a continuation of previous work reported by the author and L.M. Balakina (Ref. 1: Byull. Soveta po seysmologii AN SSSR, no. 9, 1960). In the present paper the author reports on a determination of the directions of the principal stress axes for the earthquake which occurred on August 29, 1959, at 17 hours ($\lambda_E = 107^\circ.1, \varphi_N = 52^\circ.6$). This earthquake occurred in the immediate neighborhood of the Baikal Lake. It was found that the compression axes are parallel to the local structures and make large angles with the horizontal plane, while the extension axes lie approximately in the horizontal plane and are perpendicular to the

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general trend of the local structures. The orientation of the axes for the above and other earthquakes in the region of the Baikal Lake is shown in Fig. 1 in which the black and white arrows represent the compression and extension axes respectively. The length of the arrows is proportional to the cosine of the angle with the horizontal plane. Solid arrows represent axes which make acute angles with the direction of the zenith, broken arrows represent axes making obtuse angles with this direction. There are 3 figures, 3 tables and 5 Soviet-bloc references.

ASSOCIATION: Akademiya nauk SSSR. Institut fiziki zemli (Academy of Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: November 29, 1960

S/049/61/000/007/001/005
D263/D306

AUTHORS: Vvedenskaya, A.V., and Ruprekhtova, L.

TITLE: Peculiarities of the stress state in earthquake foci at the curve of the Carpathian arc

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 7, 1961, 953-965

TEXT: The authors investigated earthquakes in the Carpathian region of $M \geqslant 6$ with foci at a depth of 100 - 150 km. As a theoretical basis for their work, the authors employed Volterra's theory of dislocation. Results are presented on the stereographic projection. Analysis of the results shows that compression forces in that region are almost parallel to the horizontal plane and normal to the Carpathian arc. The axes of tensile and interjacent forces are situated in the plane, whose line of intersection with the earth's surface is a tangent of the arc. This indicates the uniformity of the tectonic structure of that region to a depth of at least 150 km. The analyses indicate also that in the earthquake foci the

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S/049/61/000/007/001/005
D263/D306

Peculiarities of the stress ...

same forces act as those which determined the relief and tectonics of the region. There are 10 figures, 1 tables and 8 references: 6 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: F.R.N. Nabarro. The synthesis of elastic dislocation field. Phil. Mag., 334, 1951.

ASSOCIATION: Akademiya nauk SSSR. Institut fiziki zemli (Academy of Sciences USSR. Institute of Physics of the Earth); Chekhoslovatskaya akademiya nauk. Geofizicheskiy institut (Czechoslovak Academy of Sciences. Geophysics Institute)

SUBMITTED: January 8, 1961

Card 2/2

VVEDENSKAYA, A.V.

Study of the tensions and fissures in focures of earthquakes. (MIRA 14:7)
Biul. MOIP. Otd. geol. 36 no.2:127-128 Mr-Ap '61.
(Seismology)

RUPRECHTOVA, L.; VVEDENSKAYA, A.V.

On the stresses acting at the foci of earthquakes near the bend of the Carpathian arc. Studia geophys 6 no.2:140-151 '62

1. Geophysical Institute, Czechoslovak Academy of Sciences, Bocni II, Praha 4 - Sporilov (for Ruprechtova).
2. Institute of Physics of the Earth, Academy of Sciences, of U.S.S.R., Moscow, B.Gruzinskaya 10, Moscow G 242, U.S.S.R. (for Vvedenskaya).

VVEDENSKAYA, A.V.; BALAKINA, L.M.

Certain characteristics of the displacement fields of longitudinal and transversal waves propagating along the earth's crust. Izv.AN SSSR.Ser. geofiz. no.8:1052-1054 Ag '57. (MLRA 10:8)

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

L 43039-66 EWT(1) GW

ACC NR: AP6029665 SOURCE CODE: UR/0387/66/000/008/0022/0035

AUTHOR: Balakina, L. M.; Vvedenskaya, A. V.; Kolesnikov, Yu. A.

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

TITLE: Investigation of the outer boundary of the earth's core by means of spectral analysis of seismic waves

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 8, 1966, 22-35

TOPIC TAGS: seismic wave, ~~spectrum, earth core, seismic sounding, earth interior~~ seismicity, geology

ABSTRACT: The amplitude and phase spectra of incident and reflected transverse waves were used in the investigation of the outer boundary of the earth's core. Records from the Moskva, Irkutsk, and Kabansk seismic stations obtained with Golitsyn instruments were used. The amplitude and phase spectra of the seismic waves were determined with the aid of a computer. From these spectra the frequency dependence of the coefficients of reflection and the phase shifts in the waves reflected from the core boundary were determined. The state of the matter at the outer boundary of the core was estimated by comparing these dependencies with the theoretical values computed for the case of a boundary between elastic and elastic-viscous media. The theoretical values of the coefficients of reflection and the phase shifts in the reflected waves were computed for two possible elastic-viscous states of the matter in the core.

Card 1/2 UDC: 550.341:550.31

L 43039-66

ACC NR: AP6029665

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corresponding to a Maxwell body and a Kelvin body. Discrepancies in the theoretical calculations of core properties obtained from frequency variations of the coefficients of reflection and the phase shifts in the reflected waves are believed to indicate that the real conditions of seismic-wave reflection at the core boundary differ from the reflection conditions at the boundary taken in the computations of ideal media.
The author thanks G. S. Pod"yapol'skiy, Ye. F. Savarenskiy, and N. V. Golubeva.
[DM]
Orig. art. has: 8 figures.

SUB CODE: 08/ SUBM DATE: 10Sep65/ ORIG REF: 004/ ATD Press 5065

Card 2/2 JD

VVEDENSKAYA, A.V.

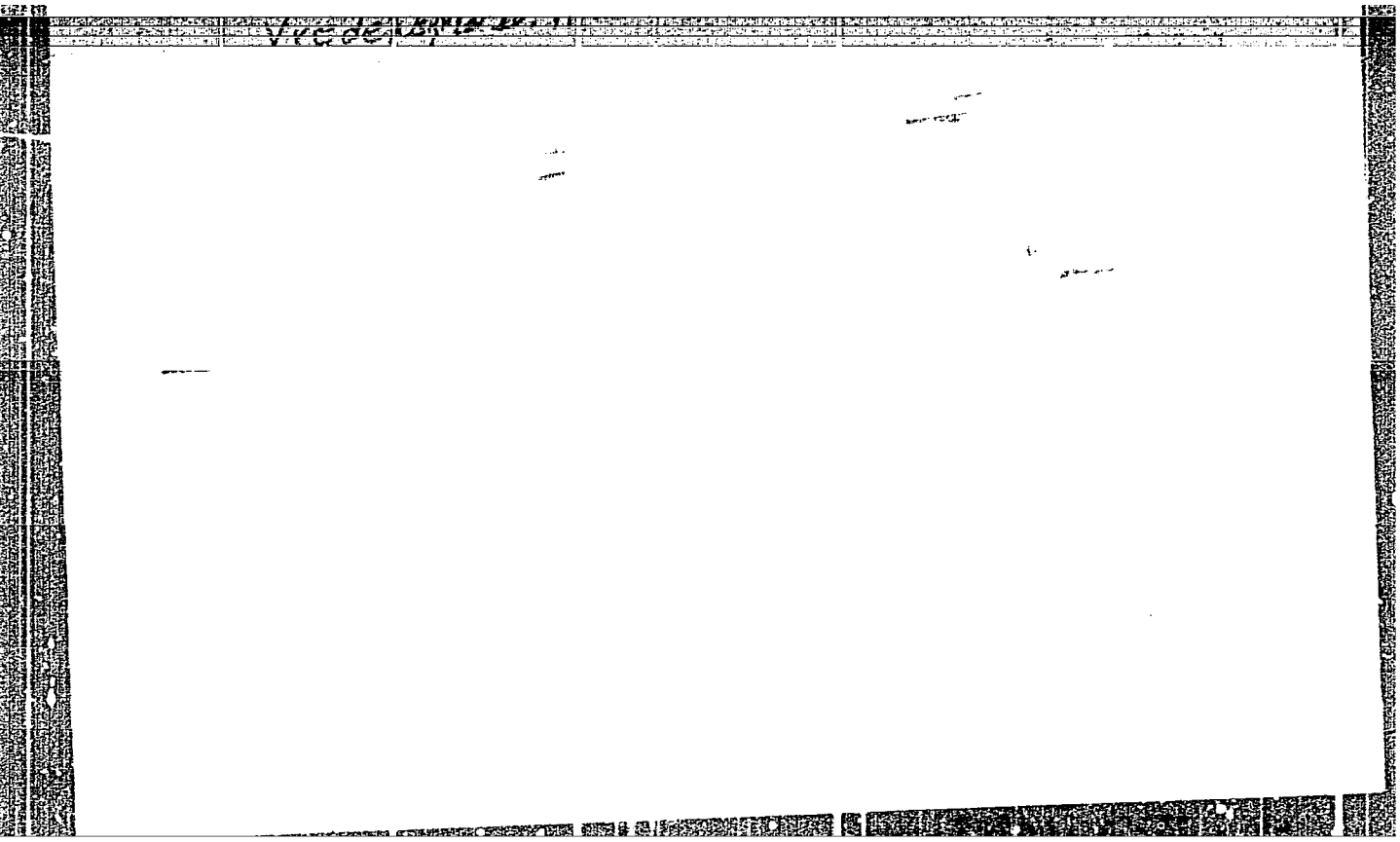
Dependence of shifts in body waves on the duration and propagation velocity of a dislocation. Izv. AN SSSR. Fiz. zem. no.1:3-11 '65. (MIRA 18:5)

1. Institut fiziki Zemli AN SSSR.

BALAKINA, L.M.; VVEDENSKAYA, A.V.

Change in the elastic properties and the density of matter on the edge of the earth's core. Izv. AN SSSR. Ser. geofiz. no.11:1457-1470 N '62. (MIRA 15:11)

1. Institut fiziki Zemli AN SSSR.
(Earth--Internal structure)



2/T

2.6

Processes occurring during the aging of nitrocellulose films. A. Ya. Drinberg and E. F. Vvedenskaya. *Trudui Nauch.-Issledovatel. Inst. Lakov i Kraso,* No. 1 (*Film-Forming Substances*), 121-71(1935); cf. C. A. 29, 0247.—The strength of nitrocellulose films decreases with the degree of depolymerization, which in turn is connected with a lowering in the viscosity of the nitrocellulose. Synthetic plasticizers, such as esters of org. acids, are best. Esters of inorg. acids (phosphoric acid esters) are less valuable, because during the aging process they split off the inorg. radical, which has a depolymerizing effect on nitrocellulose. The high-quality films prepd. with dibutyl phthalate deteriorate rapidly on aging because of the volatility of this ester. This disadvantage disappears with the increase of the mol. wt. of the esters of org. acids, such as of diamyl phthalate, dibenzyl phthalate, etc. Acids suited best for the prepn. of high-grade plasticizers are the esters of fatty acids with long side chains, which are active solvents, for example, the ester of adipinic acid. Therefore, it may be said that the formation of free and unbranched and uncombined (among themselves) chains favors elasticity. Judging by the elasticity of the mixt. of castor oil with triphenyl phosphate, it may be stated that mixed plasticizers from synthetic and nondrying vegetable oils give a higher effect than each of them individually. Among the vegetable nondrying oils best results are obtained with oils having a low iodine no. Drying oils increase the strength of the film, lowering its elasticity, and therefore they are unsuitable plasticizers. Drying oils can be used in nitrocellulose varnishes for the same purpose as resins. An addn. of resins increases the swelling of films, lowering their strength, elasticity and the stability. Resins should not be added to upper layer lacquers. The introduction of asphalts into nitrocellulose lacquers makes the latter waterproof, eliminating their swelling without affecting other properties to any appreciable extent. Pigments absorbing ultraviolet rays accelerate the aging of the film. The introduction of pigments protects the film from the effects of the atm. and lowers the degree of swelling with age. Blue pigments are destroyed most rapidly. Other pigments which do not permit the passage of ultraviolet rays are more stable. The expts. are described. Seventy references.

A. A. Boehtlingk

METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Processes occurring during the aging of nitrocellulose
films. A. Ya. Driinberg and E. K. Vvedenskaya. *Trudui*
Nauch.-Issledovatel. Inst. Lakov i Krasok. No. 1 (*Film-*
Forming substances), 121-71(1935); cf. *C. A.* 29, 924[4].--
The strength of nitrocellulose films decreases with the
degree of depolymerization, which in turn is connected
with a lowering in the viscosity of the nitrocellulose. Syn-
thetic plasticizers, such as esters of org. acids, are best.
Esters of inorg. acids (phosphoric acid esters) are less valu-
able, because during the aging process they split off the
inorg. radical, which has a depolymerizing effect on nitro-
cellulose. The high-quality films prepd. with dibutyl
phthalate deteriorate rapidly on aging because of the
volatility of this ester. This disadvantage disappears
with the increase of the mol. wt. of the esters of org. acids,
such as of diamyl phthalate, dihexyl phthalate, etc.
Acids suited best for the prepn. of high-grade plasticizers
are the esters of fatty acids with long side chains, which
are active solvents, for example, the ester of adipinic acid.
Therefore, it may be said that the formation of free and
unbranched and uncombined (among themselves, chains
favors elasticity. Judging by the elasticity of the mixt. of
castor oil with triphenyl phosphate, it may be stated that
mixed plasticizers from synthetic and nondrying vege-
table oils give a higher eff[illegible]ct than each of them individu-
ally. Among the vegetable nondrying oils best results
are obtained with oils having a low iodine no. Drying
oils increase the strength of the film, lowering its elasticity,
and therefore they are unsuitable plasticizers. Drying
oils can be used in nitrocellulose varnishes for the same
purpose as resins. An addn. of resins increases the swell-
ing of films, lowering their strength, elasticity and the
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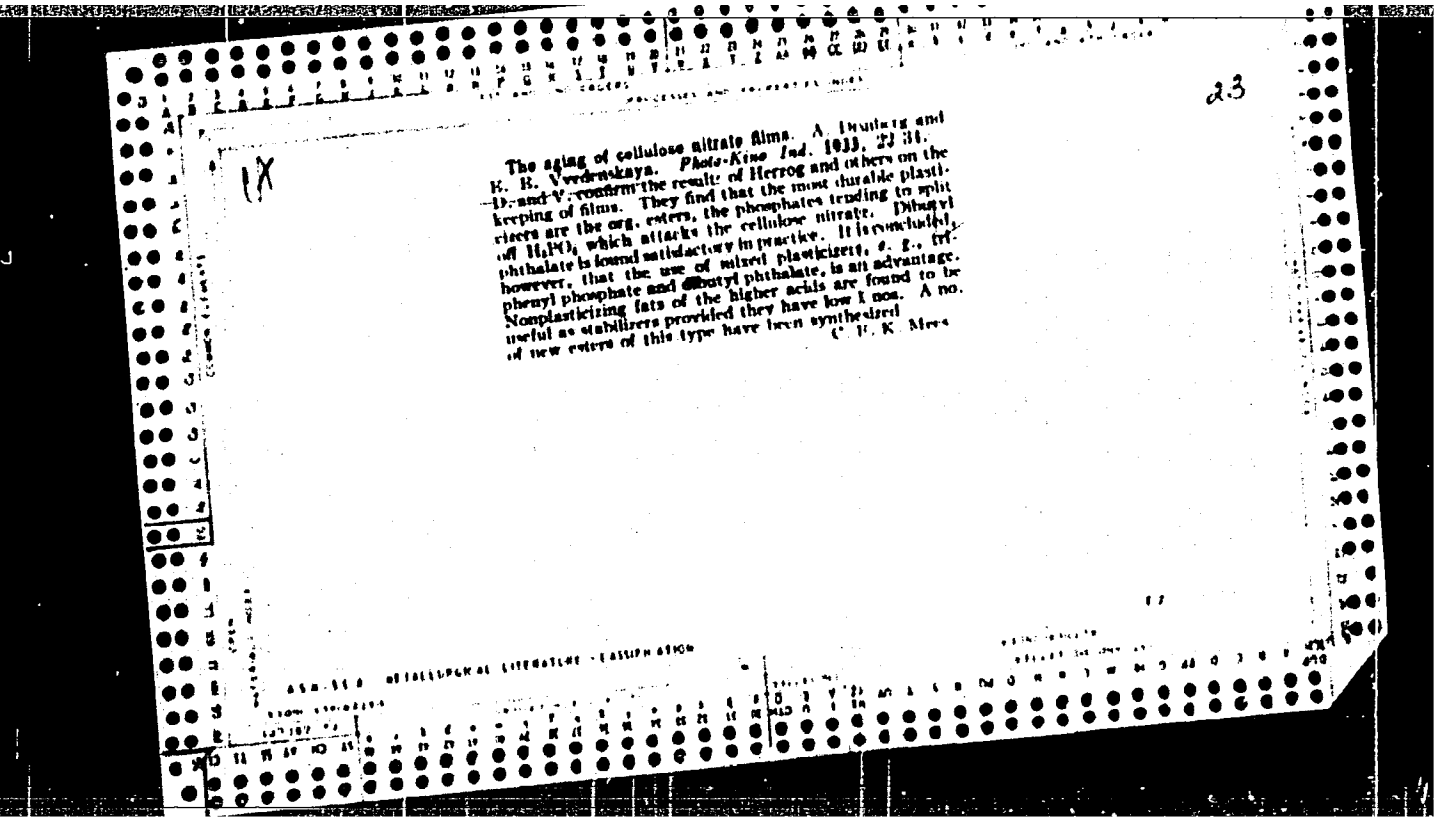
lacquers. The introduction of asphalts into nitrocellu-
lose lacquers makes the latter waterproof, eliminating
their swelling without affecting other properties to any
appreciable extent. Pigments absorbing ultraviolet rays
accelerate the aging of the film. The introduction of pig-
ments protects the film from the effects of the atm. and
lowers the degree of swelling with age. Blue pigments are
destroyed most rapidly. Other pigments which do not
permit the passage of ultraviolet rays are more stable.
The expts. are described. Seventy references.

A. A. Boehtlingk

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



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The aging of cellulose nitrate films. A. Dunlaeg and K. R. Vvedenskaya. *Photo-Kino Ind.* 1933, 29 31. D. and V. confirm the results of Herrog and others on the keeping of films. They find that the most durable plasticizers are the org. esters, the phosphates tending to split off H_3PO_4 which attacks the cellulose nitrate. Dibutyl phthalate is found satisfactory in practice. It is concluded, however, that the use of mixed plasticizers, e. g., triphenyl phosphate and dibutyl phthalate, is an advantage. Nonplasticizing fats of the higher acids are found to be useful as stabilizers provided they have low I nos. A no. of new esters of this type have been synthesized

C. H. K. Mees

VVEDENSKAYA, G.M.

Radiographic and fluorographic parallels in studying silicosis and silicotuberculosis; preliminary report. Trudy Inst.kraev.pat. AN Kazakh.SSR 4:242-244 '56. (MLRA 10:3)
(LUNGS--DUST DISEASES)
(DIAGNOSIS, RADIOSCOPIC)

VVEDENSKAYA, G.M.

Roentgenotomographic criteria of recovery from tuberculosis. Zdrav. Kazakh. 22 no.5:38-42 '62. (MIRA 15:6)

1. Iz Kazakhskogo nauchno-issledovatel'skogo instituta tuberkuleza (direktor - zasluzhennyy vrach Kazakhskoy SSR D.U. Tulemisov).
(TUBERCULOSIS) (PNEUMOTHORAX)

VVEDENSKAYA, I., starshiy inzh.; ULITSKIY, P.

Is Comrade Sosnov right? Sots.trud 7 no.7:139-141 Jl '62.
(MIRA 15:8)

1. Otdel truda i zarabotnoy platy Ivanovskogo soveta narodnogo khozyaystva (for Vvedenskaya). 2. Glavnyy inspektor po avtotransportu i shosseynym dorogam Inspektsii po transportu i svyazi Gosudarstvennogo komiteta Soveta Ministrov SSSR po voprosam truda i zarabotnoy platy (for Ulitskiy).
(Wages—Transportation, Automotive)

VVEDENSKAYA, I.I.

Use of ridinole in parkinsonism. Zhur. nevr. i psikh. 64 no.6:837-840 '64. (MIRA 17:12)

1. Klinika nervnykh bolezney (zaveduyushchiy - prof. F.A. Poyemnyy) Gor'kovskogo meditsinskogo instituta im. S.M. Kirova.

VVEDENSKAYA, I.V.; STEPANOVA, T.S.

Electroencephalographic evaluation of the functional state of the central nervous system in the process of megavol't radiotherapy. Vop. neirokhir. no.2:31-35 '16. (MIRA 18:10)

1. Leningradskiy nauchno-issledovatel'skiy neyrokhirurgicheskiy institut imeni A.L. Polenova (direktor - prof. V.M. Ugryumov).

BORODKIN, Yu.S.; VVEDENSKAYA, I.V.; GRACHEV, K.V.; DUBIKAYTIS, V.V.; DUBIKAYTIS, Yu.V.; STEPANOVA, T.S.

Results of the study of the bioelectric activity of the brain with organic lesions during administration of ethylnorantiffeine. Zhur. nevr. i psikh. 64 no.11:1631-1635 '64. (MIRA 18:6)

1. Elektrofiziologicheskaya laboratoriya Leningradskogo nauchno-issledovatel'skogo neyrokhirurgicheskogo instituta im. A.L. Polenova (direktor - prof. V.M. Ugryumov) i otdel farmakologii (zaveduyushchiy - prof. S.V. Anichkov) Instituta eksperimental'noy meditsiny AMN SSSR.

ABRAKOV, L.V., kand. med. nauk (Leningrad); VVEDENSKAYA, I.V. kand. biologicheskikh nauk (Leningrad); DIL'MAN, V.M., kand. med. nauk (Leningrad).

Mechanism of massive changes in bioelectrical activity in metastasizing tumors of the brain. Vop. neirokhir. 26 no.5:35-40 S-O '62. (MIRA 17:4)

1. Leningradskiy neyrokhirurgicheskiy institut imeni prof. A.L. Polenova i Institut onkologii AMN SSSR.

VVEDENSKAYA, I.V.

USSR/Human and Animal Physiology - Nervous System. V-12

Abs Jour : Ref Zhur - Biol., No 1, 1958, 4424

Author : I.V. Vvedenskaya

Inst : Academy of Sciences, USSR

Title : Effect of Stimulus in the Hypothalmic Region on Reflex Vibrations of the Skin Potentials in Frogs.

Orig Pub : Bull. Eksperim. Biol. i Meditsiny, 1957, No 1, Supplement p 129-132

Abstract : Variations in the latent period and increased intensity of reflex oscillations of the skin electromotive force under the influence of chemical stimulation were observed in 100 curarized frogs with Sechnov inhibition induced under experimental conditions. These variations were mostly found to occur in a direction opposed to that of motor

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VVEDENSKAYA, I.V.

Effect of stimulation of the hypothalamic region on reflex fluctuations of skin potentials in a frog. Biul.eksp.biol. i med. 43 no.1 supplement:129-132 '57. (MIRA 10:3)

1. Iz elektrofiziologicheskoy laboratorii (zav. - chlen-korrespondnet AMN SSSR prof. A.V.Lebedinskiy) Leningradskogo nauchno-issledovatel'skogo neyrokhirurgicheskogo instituta (dir. - deystvitel'nyy chlen AMN SSSR prof. V.N.Shamov) Predstavlena deystvitel'nym chlenom AMN SSSR V.N.Shamovym.

(SKIN, physiol.
reflex fluctuations induced by stimulation of hypothalamus in frogs)
(HYPOTHALAMUS, physiol.
eff. of stimulation on reflex fluctuation in skin of frogs)

RUBINSHTEYN, S.L.; SOKOLOV, A.N.; LURIYA, A.R.; LEONT'YEV, A.N.; SMIRNOV, A.A.; GOLOBOLIN, F.N.; MENCHINSKAYA, N.A.; ZHINKIN, N.I.; IGNAT'YEV, Ye.N.; EL'KONIN, D.B.; OJREVICH, K.M.; GUR'YANOV, Ye.V.; LEYTES, N.S.; KRUTETSKIY, V.A. Prinimali uchastiye: POLYAKOV, G.I.; SHEMYAKIN, F.N.; TEPLOV, B.M., red.; VVEDENSKAYA, L.A., red.; DRANNIKOVA, M.S., tekhn. red.

[Psychology]Psikhologiia; uchebnik dlia pedagogicheskikh institutov. Pod red. A.A.Smirnova i dr. Izd.2. Moskva, Uchpedgiz, 1962. 558 p. (MIRA 15:11)

1. Akademiya pedagogicheskikh nauk RSFSR, Moscow. Institut psikhologii.

(PSYCHOLOGY)

LEVITOV, Nikolay Dmitriyevich, prof.; MILERYAN, Ye.A., kand. ped. nauk, retsenzent; GUREVICH, K.M., kand. ped. nauk, st. nauchnyy sotr., retsenzent; VVEDENSKAYA, L.A., red.; KARPOVA, T.V., tekhn. red.

[Psychology of work] Psikhologiia truda. Moskva, Uchpedgiz, 1963. 339 p. (MIRA 16:7)

1. Zaveduyushchiy otdelom psikhologii truda Nauchno-issledovatel'skogo instituta psikhologii Ukr.SSR (for Mileryan). 2. Institut psikhologii Akademii pedagogicheskikh nauk RSFSR (for Gurevich).

(Work) (Psychology)

VVEDENSKAYA, L. A.

May 49

USSR/Chemistry - Anabasine
Acids, Mineral

"Reaction of Anabasine With Mineral Acids," V. V. Udovenko, L. A. Vvedenskaya, Lab of Physicochem, Cen Asia State U, 1 3/4 pp

"Zhur Obshch Khim" Vol XIX, No 5 -- pp 753-756

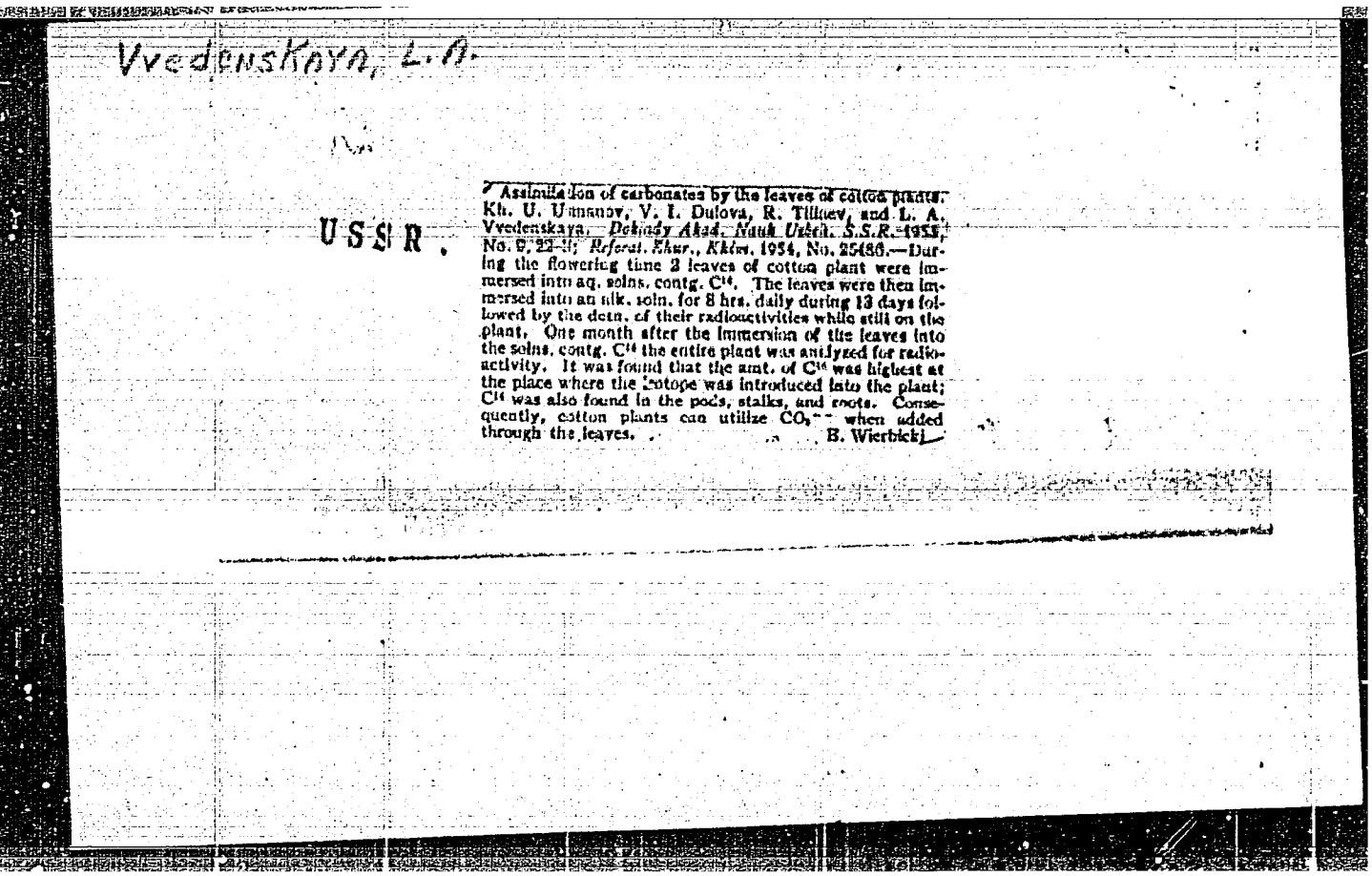
Derives the crystalline compounds of anabasine with hydrogen chloride and nitric acid, respectively: $C_{10}H_{14}N_2$ HCl and $C_{10}H_{14}N_2$ HNO_3. Submitted 28 Mar 48

PA 67/49T44

VVEDENSKAYA, L.A.

USSR

Separation of mixture of alkaloids anabasine and lupinine. V. V. Udovenko, O. I. Granitova, and L. A. Vvedenskaya (Central Asia State Univ., Tashkent). Zhur. Obshchei Khim. 4, 1124-6(1953).—The sepn. is performed through the Cu salts (cf. following abstr.) as follows. The mixt. of known compn. of anabasine and lupinine is treated with a highly concd. soln. of $CuCl_2$ and HCl or $Cu(NO_3)_2$ and HNO_3, made up on the basis of theoretical calcn. to form either $CuCl_2.A.2HCl$ or $Cu(NO_3)_2.2A.4HNO_3$ (A = anabasine), with cooling. The order of addn. is immaterial. Since the mixt. now contains a ppt. of Cu oxide, addnl. acid is added to dissolve this (avoid excess of HNO_3). Traces of kerosine from com. alkaloids are removed at this point by boiling. The mixt. then yields cryst. salt of anabasine, which treated with concd. NaOH gives the pure base, which is purified by distn. *in vacuo*. The evapd. filtrate from the salt is treated with concd. NaOH and extd. with C_6H_6. Evapn. of the ext. yields cryst. lupinine. The HCl salt gives somewhat better results. Pure *anabasine* b$_4$ 107-10°, n_D^{20} 1.5420, d_4^{20} 1.0469; *lupinine* m. 69°. G. M. K...



Vvedenskaya, L. A.

USSR

Assimilation of carbonates by the leaves of cotton plants. Kh. U. Usmanov, V. I. Dulova, R. Tillaev, and L. A. Vvedenskaya. *Doklady Akad. Nauk Uzbek. S.S.R.* 1955, No. 9, 22–5; *Referat. Zhur., Khim.* 1954, No. 25486.—During the flowering time 3 leaves of cotton plant were immersed into aq. solns. contg. C^{14}. The leaves were then immersed into an alk. soln. for 8 hrs. daily during 13 days followed by the detn. of their radioactivities while still on the plant. One month after the immersion of the leaves into the solns. contg. C^{14} the entire plant was analyzed for radioactivity. It was found that the amt. of C^{14} was highest at the place where the isotope was introduced into the plant; C^{14} was also found in the pods, stalks, and roots. Consequently, cotton plants can utilize CO_3^{--} when added through the leaves. B. Wierbicki

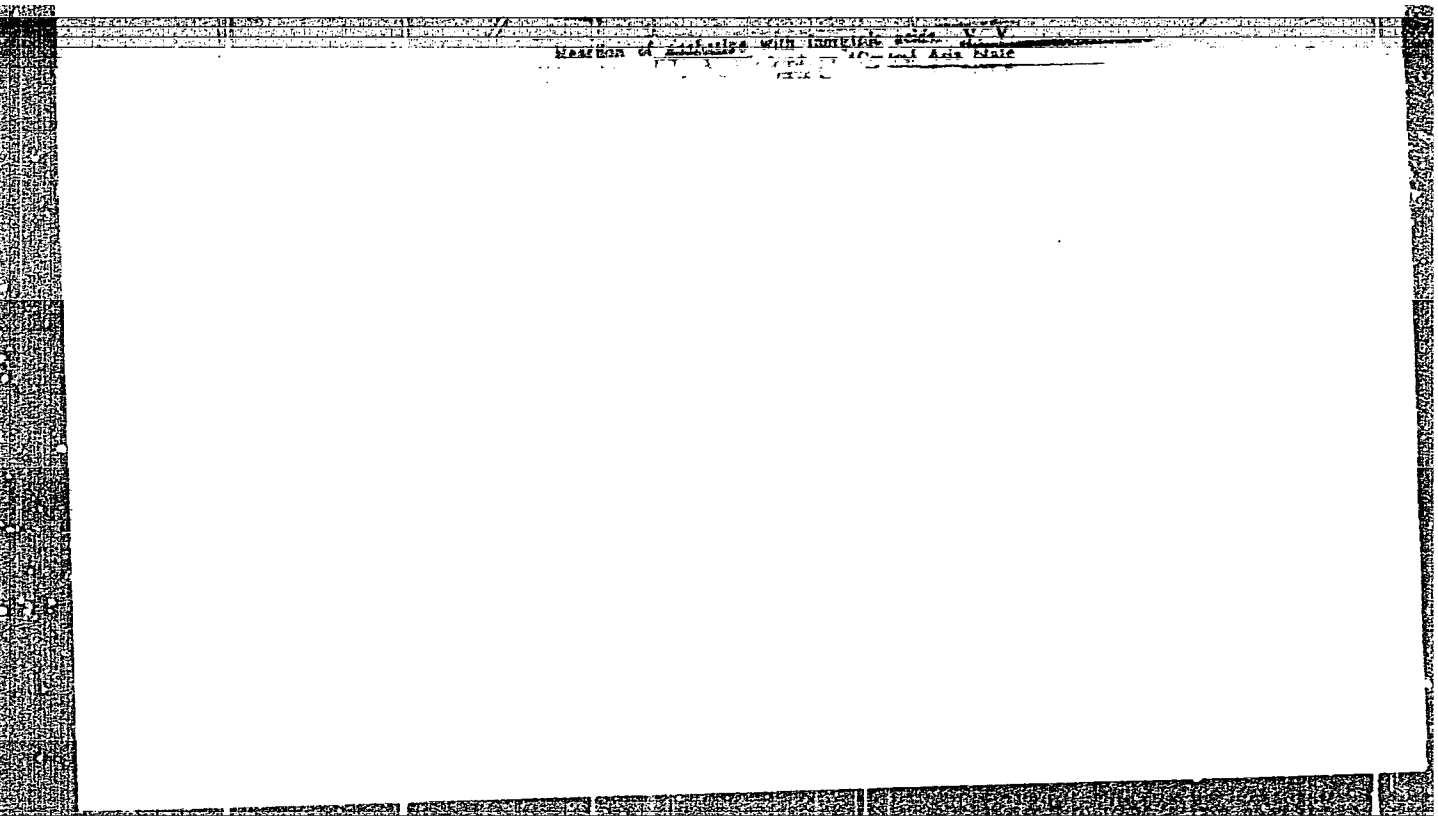
Vvedenskaya, V.

5

Interaction of anabas ne with aluminum chloride and ... Vvedenskaya.
[illegible]

VVEDENSKAYA, L.A.

Reaction of anabasine with organic acids. V. V. Udovenko and L. A. Vvedenskaya (Central Asia State Univ., Tashkent). Zhur. Obshchei Khim. 23, 1931-4(1953).—Anabasine (I) and HCO_2H yield crystalline I.HCO_2H, very hygroscopic and sol. in org. solvents. I and AcOH gave I.AcOH, m. [illegible]. PrCO₂H similarly gave I.PrCO₂H, very hygroscopic solid. I and iso-BuCO₂H gave I.iso-BuCO₂H, very hygroscopic solid. With $(CO_2H)_2$ there are formed: 2I.$C_2O_4H_2$, m. 210°, I.$C_2O_4H_2$, m. 190°, and I.2$C_2O_4H_2$, m. 81°; all are very sol. in the usual solvents. Malonic acid gave 2I.$C_3O_4H_4$, m. 66°. Succinic acid gave very hygroscopic 2I.$C_4O_4H_6$. Tartaric acid gave solid 2I.$C_4H_6O_6$. Citric acid gave solid 3I.$C_6H_8O_7$. With naphthalene-2-sulfonic acid there are formed: I.$C_{10}H_7SO_3H$, m. 139°, and I.2$C_{10}H_7SO_3H$, m. 121°. O. M. Kosolapoff



VVEDENSKAYA, L.A.

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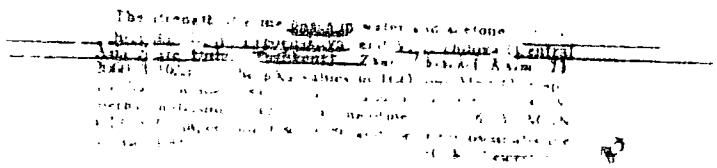
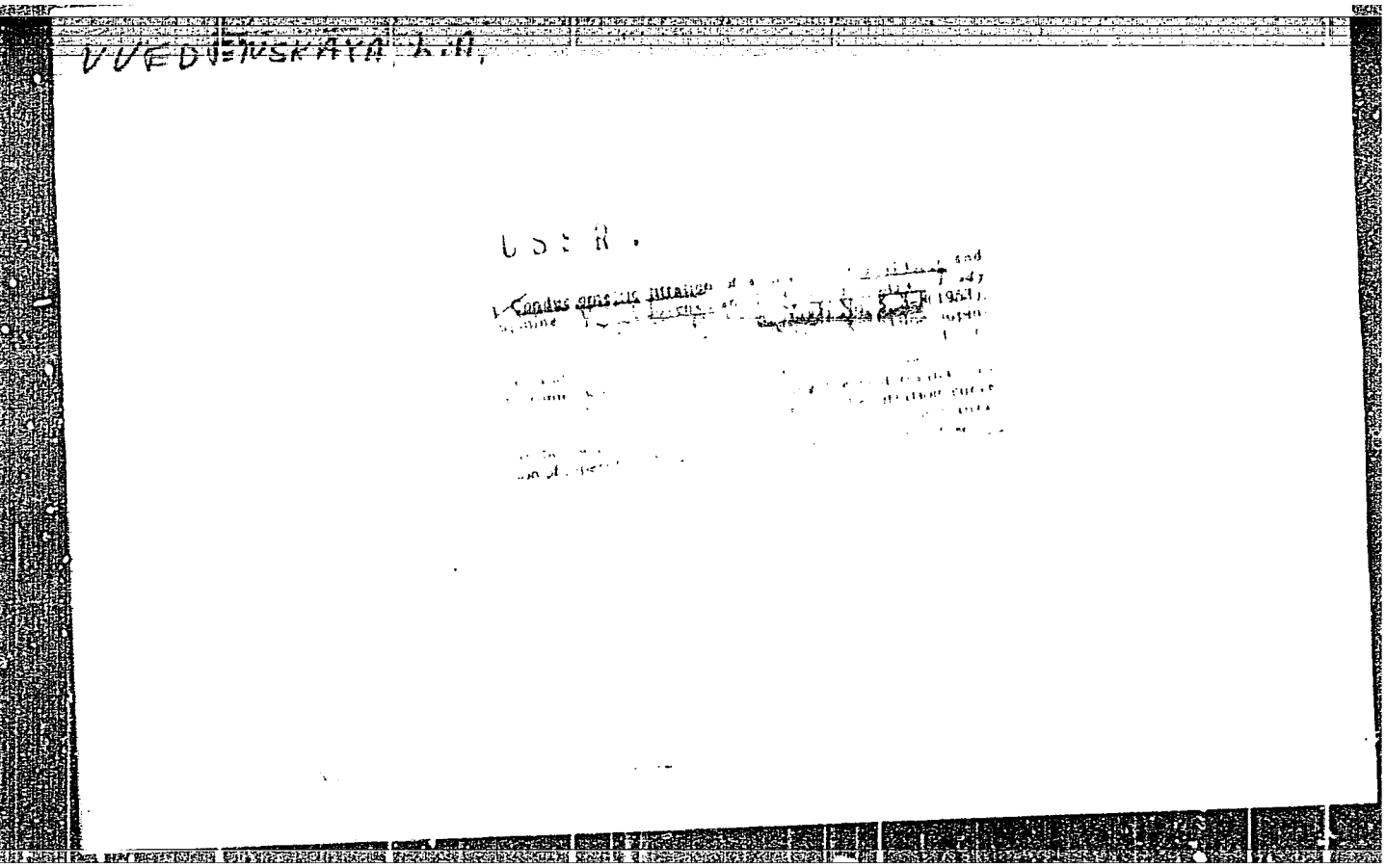


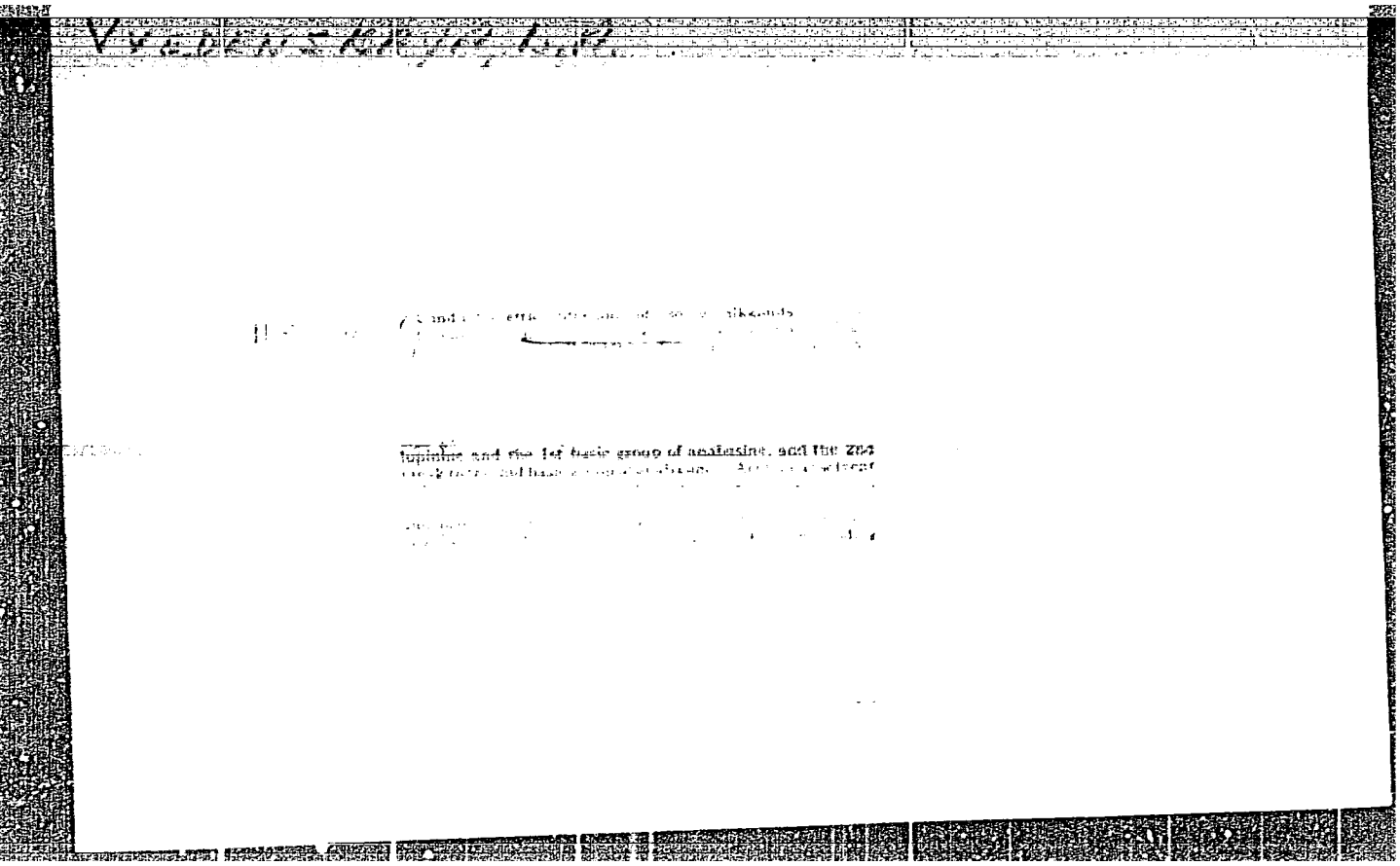


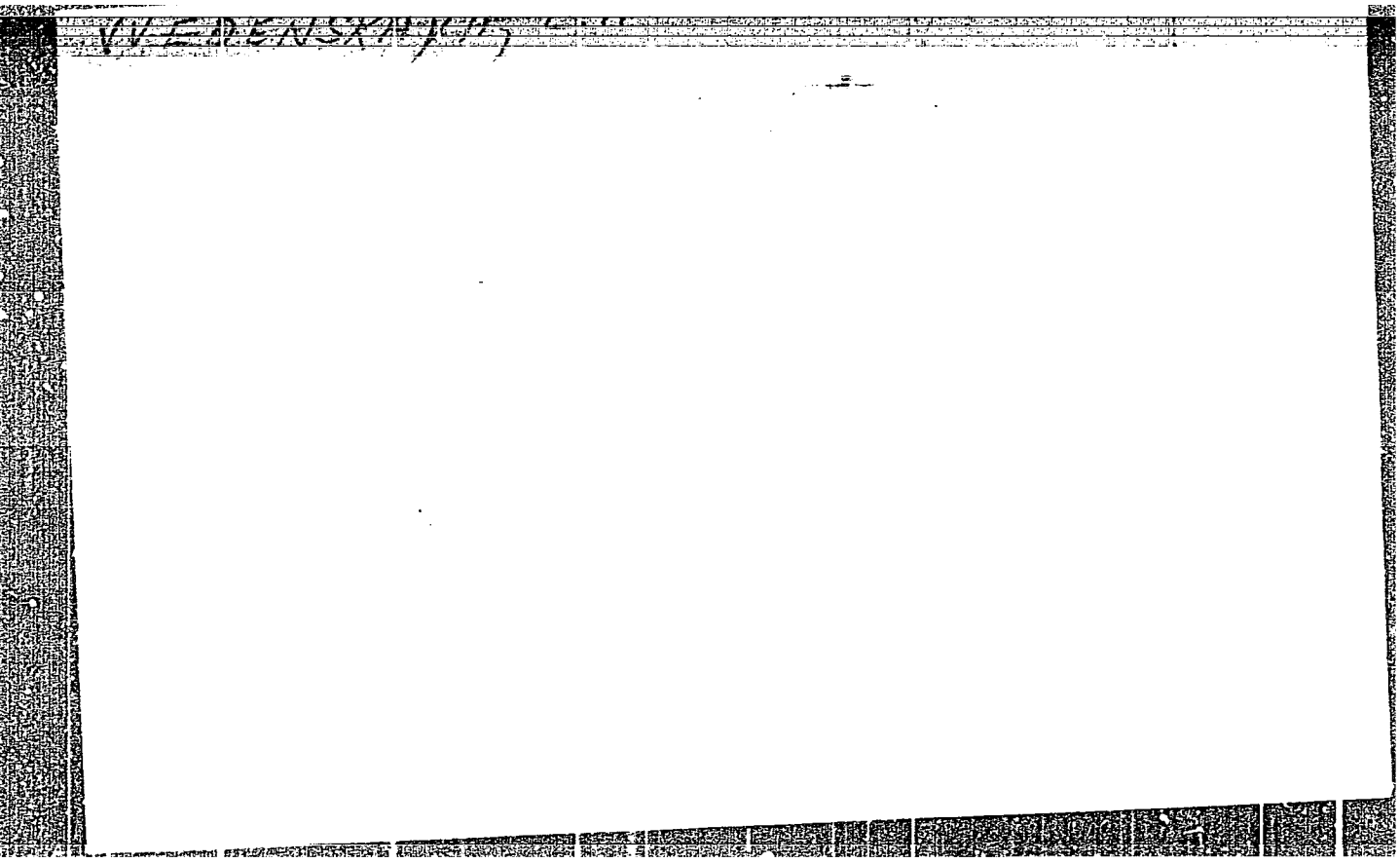
IGNAT'YEV, Ye.I.; LUKIN, N.S.; GROMOV, M.D.; VVEDENSKAYA, I.A., red.

[Psychology; a textbook for normal schools] Psikhologiia; posobie dlia pedagogicheskikh uchilishch (shkol'nykh). Moskva, Prosveshchenie, 1965. 343 p. (MIRA 18:8)

VYDENSKAYA, L.A., kandidat tekhnicheskikh nauk; POTSUKOV, N.G., professor, doktor tekhnicheskikh nauk.

Operational control of steam purity by the concentrated sample method. Trudy MEI no.25:122-133 '55. (MIRA 9:7)
(Steam) (Boilers)





SOV/124-57-8-9068

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 8, p 71 (USSR)

AUTHOR: Vvedenskaya, L. A.

TITLE: To the Experimental Determination of the Correction to the Hydrodynamic Theory of Heat Exchange for the Turbulent Flow in Pipes (K eksperimental'nomu opredeleniyu popravki k gidrodinamicheskoy teorii teploobmena pri turbulentnom dvizhenii v trubakh)

PERIODICAL: Sb. nauch. tr. Kuybyshevsk. industr. in-ta, 1956, Nr 6, book 1, pp 225-227

ABSTRACT: The author determines the correction term in the well-known equation of Prandtl's hydrodynamic analogy, $N=c_f RPK/8$ (1), where N, R, and P are the Nusselt, Reynolds, and Prandtl numbers for the flow, respectively, and $K = 1/[1+w_2(P_m^{-1})/w]$ (2), wherein the experimentally obtained relationships $N=0.023\,R^{0.8}P^{0.4}$ (3) and $c=0.3164/R^{0.25}$ (4) are employed. From equations (1), (3), and (4) it follows that $K=0.582R^{0.05}/P^{0.6}$ (5). Utilizing formula (2) and expression (5), the author finds the relationship $w_2/w=1.72R^{-0.05}$ (6) which he recommends for the computation of the value of w_2/w. Here w is the fluid velocity in the core of a boiler, while w_2 is the

Card 1/2

SOV/124-57-8-9068

To the Experimental Determination of the Correction to the Hydrodynamic (cont.)

velocity at the boundary of the laminar boundary layer. Bibliography: 3 references.

L. V. Kozlov

Card 2/2

UDOVENKO, V.V.; VVEDENSKAYA, L.A.

Hydrolysis of salts. Zhur.fiz.khim.29 no.9:1640-1645 S '55.

1.Kiyevskiy politekhnicheskiy institut.
(Hydrolysis) (Salts)

SOV/124-59-1-534

Translation from: Referativnyy zhurnal. Mekhanika, 1959, Nr 1, p 76 (USSR)

AUTHORS: Kudryashev, L.I. and Vvedenskaya, L.A.

TITLE: The Regular and the Limited-Regular Temperature Conditions and Their Application to the Experimental Determinations of the Coefficient of Heat-Transfer and of the Resistance to the Heating of Bodies of Arbitrary Shape

PERIODICAL: Sb. nauchn. tr. Kuybyshevsk. industr. in-ta, 1957, Nr 7, pp 47-59

ABSTRACT: The evaluation of the influence of the non-steadiness of a temperature field on the heat-transfer is performed for the case of introducing an α-calorimeter into the stream of a viscous incompressible liquid. By the method of regular temperature-process, the heat-transfer of tubes with circular, square and triangular cross-section blown off by an air-jet in a wind tunnel at the Reynolds number $R = 10^3 \ldots 4 \times 10^4$ has been investigated. It was found that the deflection angle of the tube relative to the direction of the flowing stream does not affect the average coefficient of heat-transfer. Making use of previously obtained expressions (Kudryashev, L.I., Izv. AS USSR. Otd. tekhn. n., 1953, Nr 9, pp 1309-1316) for the relation between the coefficients of resistance and heat-exchange, for the

Card 1/2

SOV/124-59-1-534

The Regular and the Limited-Regular Temperature Conditions and Their Application to the Experimental Determinations of the Coefficient of Heat-Transfer and of the Resistance to the Heating of Bodies of Arbitrary Shape

case of the stream along a body and with separation of the jet, the authors have determined the coefficients of resistance for the same tubes. The obtained results are in accordance with other known treatments and are represented by means of the relations $N = N(R)$ and $c_f = c_f(R)$.

N.A. Anfimov

Card 2/2

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D218/D304

AUTHORS: Kudryashev, L. I., Doctor of Technical Sciences, Professor, and Vvedenskaya, L. A., Candidate of Technical Sciences

TITLE: On determining the effect of free motion on the coefficient of heat transfer in forced flow past solids

SOURCE: Kuybyshev. Industrial'nyy institut. Sbornik nauchnykh trudov, no. 8, 1959. Teplotekhnika; voprosy teorii rascheta i proyektirovaniya, 131-143

TEXT: Experiments carried out by the authors have shown that free motion has an appreciable effect on convective heat transfer in the case of forced flow past solid bodies for relatively large Reynolds numbers. The paper is concerned with the theory of the phenomenon. The stationary problem of convective heat transfer is taken to be defined by the following equations:

X

Card 1/5

On determining the effect ...

$$(w\nabla)w = F - \frac{1}{\rho}\,\mathrm{grad}\,p + \nu\nabla^2 w$$

$$\mathrm{div}\,w = 0 \qquad (2)$$

$$(w\nabla)t = a\nabla^2 t$$

where w is the velocity vector, t the excess temperature of the flow, p the pressure, ρ the density of the medium, ν the kinematic viscosity of the medium, a the temperature diffusity of the medium and F the lift force given by

$$F = g\frac{T - T_f}{T_f} = \beta\Delta t \qquad (3)$$

where T is the absolute temperature at any point in the field, T_f

Card 2/5

On determining the effect ...

is the absolute temperature at a very distant point and g is the acceleration due to gravity. These equations are then reduced to a dimensionless form, and an estimation is obtained from them for the lower limit of the effect of free motion on the coefficient of convective heat transfer. The method employed is the superposition method which was developed by the present authors and which is used in conjunction with the theory of similarity. The theory has been checked by measuring the heat transfer coefficient under the conditions of forced convection for pipes of circular, square and triangular cross-section in wind tunnels. Both the theoretical and experimental results indicate that for $Re \leq Gr$ the effect of free convection is appreciable and must not be neglected. For a circular tube

$$Nu = 0.0563\ Re^{0,714} + 0,54(Gr \cdot Pr)^{0,25} \qquad (27)$$

The first term in this expression represents forced convection. For a tube of square cross-section

On determining the effect ...

$$Nu = 0,0069\ Re^{0,91}\left[1 + 78,3\ \frac{(Gr \cdot Pr)^{0,25}}{Re^{0,91}}\right] \qquad (34)$$

(parallel orientation) and

$$Nu = 0,0063\ Re^{0,93}\left[1 + 85,8\ \frac{(Gr \cdot Pr)^{0,25}}{Re^{0,93}}\right] \qquad (35)$$

(perpendicular orientation, one edge facing the stream). Finally, for a tube of triangular cross-section the result is

$$Nu = 0,051\ Re^{0,69}\left[1 + 10,6\ \frac{(Gr \cdot Pr)^{0,25}}{Re^{0,69}}\right] \qquad (37)$$

X

On determining the effect ...

$$Nu = 0{,}0525\ Re^{0{,}69}\left[1 + 10{,}3\ \frac{(Gr.Pr)^{0{,}25}}{Re^{0{,}69}}\right] \qquad (38)$$

where the former applies to the parallel orientation and the latter to the perpendicular orientation (edge or side facing the stream). There are 5 figures and 6 Soviet-bloc references.

Card 5/5

KOLESOV, Svyatoslav Nikolayevich; VVEDENSKAYA, Lyudmila Andreyevna; KHARIN, A.N., prof., retsenzent; RUSTAMOV, Kh.R., prof., retsenzent; RAYTSYN, G.A., dots., retsenzent; LOVTSOV, V.M., dots., retsenzent; LIKONTSEV, N.N., dots., retsenzent; PUTILOVA, I.N., doktor khim. nauk, prof., red.; MAKUSHENKO, Ye.N., red.

[Laboratory work in general chemistry] Praktikum po obshchei khimii. Izd.2., perer. i dop. Tashkent, Sredniaia i vysshaia shkola, 1963. 186 p. (MIRA 17:12)

1. Zaveduyushchaya kefedroy khimii Moskovskogo elektrotekhnicheskogo instituta svyazi(for Putilova).

KOLESOV, S.N.; VVEDENSKAYA, L.A.; KHARIN, A.N., prof., retsenzent; LOVTSOV, V.M., dots., retsenzent; LIKONTSEV, N.N., kand. tekhn. nauk, retsenzent; PUTILOVA, I.N., prof., doktor khim. nauk, red.; TROFIMOV, F.D., red.; BAKHTIYAROV, A., tekhn. red.

[Laboratory work in general chemistry] Praktikum po obshchei khimii. Tashkent, Gos.izd-vo Uzb.SSR, 1960. 141 p. (MIRA 17:4)

1. Zaveduyushchiy kafedroy khimii Taganrogskogo radiotekhnicheskogo instituta (for Kharin). 2. Zaveduyushchaya kafedroy khimii Moskovskogo elektrotekhnicheskogo instituta (for Putilova).

Vvedenskaya, M.M.

PHASE I BOOK EXPLOITATION SOV/3509

Sbornik radiokhimicheskikh i dozimetricheskikh metodik (Collection of Radio-Chemical and Dosimetric Methods) Moscow, Medgiz, 1959. 459 p. Errata slip inserted. 9,000 copies printed.

Eds. (Title page): N.G. Gusev, U.Ya. Margulis, A.N. Marey, N.Yu. Tarasenko, Yu.M. Shtukkenberg; Ed. (Inside book): V.I. Labaznov; Tech. Ed.: A.I. Zakharova.

PURPOSE: This collection of articles is intended for physicists, sanitation and public health doctors, chemists and other specialists working in radioactive dosimetry.

COVERAGE: This work discusses the following subjects: (1) principles of organizing sanitation and dosimetric control in institutions where work is carried on with radioactive substances; (2) radio-chemical and chemical methods for determining certain radioactive substances in samples of air, water, soil and foodstuffs; (3) physical methods of measuring contamination of the air by radioactive gases and aerosols, and methods for determining the level of contamination of working surfaces, clothes and leather coverings; (4) methods of measuring external streams of x- and gamma-radiation, and methods of individual dosimetric monitoring; (5) Absolute and relative methods of measuring the activity of solid and liquid radioactive sources. There are four appendixes dealing with methods of calculating the total dosage from sources of ionizing radiation, units of activity, and doses from natural (background) radioactivity in the calcium of foodstuffs. Sanitary regulations observed during transportation, storage, and handling of radioactive substances are discussed, as well as the permissible level of ionizing radiation. The editors thank Yu.V. Sivintsev and B.P. Shirshov. References appear at the end of each chapter.

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BOGDANOVA, A.D., kand;med.nauk; VVEDENSKAYA, M.V., kand.mod.nauk

Case of thromboangiitis obliterans with multiple lesions of the large and small vessels and a syndrome of liver lesions. Sov. med. 25 no.7:141-143 Jl '61. (MIRA 15:1)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. A.I.Gefter) Gor'kovskogo meditsinskogo instituta.
(BLOOD VESSELS--DISEASES) (LIVER--DISEASES)