"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

[redacted] RADZIYEVSKIY, V. V.

USSR/Astronomy - Cosmogony 1 Jun 53

"Problem of the Origin of the Protoplanetary Cloud in O. Yu. Shmidt's Cosmogonical Theory," V. V. Radziyevskiy, Yaroslavl State Pedagog Inst imeni Ushinskiy

DAN SSSR, Vol 90, No 4, pp 517-520

Analyses the mechanism governing the capture of cosmic dust by the Sun, which mechanism is based on the increase of the effective (reduced) mass M' of the Sun; here capture ($dH/dt < 0$), or rejection ($dH/dt > 0$), in the two-body problem means the appearance of the change in sign of specific energy H of one body relative to the other. Acknowledges advice of B. Yu. Levin and O. Yu. Shmidt; the latter ~~of-whom~~ presented ~~this paper~~ 24 Mar 53.

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RADZIYEVSKIY, V.V.

Radzievskii, V. V. General solution of a case of the problem of three bodies. Doklady Akad. Nauk SSSR (N.S.) 91, 1309–1311 (1953). (Russian)

Consider a homogeneous spherical cosmic cloud of constant density and two quasi-particles moving inside this cloud under the action of their mutual attraction and attraction toward the center of the cloud. The author shows that, if the density of the cloud is sufficiently small, so that one may neglect the resistance of the medium, the problem of relative motion of the two bodies can be solved by quadratures for arbitrary initial conditions.

E. Leimanis (Vancouver, B. C.).

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RADZIYEVSKIY, V. V.

AID P - 846

Subject : USSR/Astronomy

Card 1/1 Pub. 8 - 5/13

Author : Radziyevskiy, V. V.

Title : On the Question of Disintegration of Meteoric "Twins"

Periodical : Astron. zhur., v. 31-5, 433-435, S-O 1954

Abstract : Demonstrates the inadequacy of the method and results of M. Plavec's research concerning the velocity of disintegration of meteor "twins", giving corrected data. Formulae, table, 8 references of which 4 are Russian and 2 Czechoslovakian.

Institution : Yaroslav State Pedagogic Institute im. K. D. Ushinskiy

Submitted : Ja 25, 1954

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V. V.

AID P - 847

Subject : USSR/Astronomy

Card 1/1 Pub. 8 - 6/13

Author : Radziyevskiy, V. V.

Title : General Solution of the Non-Limited Problem of Three Bodies under Newtonian-Hook Interaction

Periodical : Astron. zhur., v. 31-5, 436-441, S-O 1954

Abstract : Discusses the possible study of the three bodies problem by the method of substitution of the law of force. A general solution of the unlimited problem is given for two bodies under gravitational intereffect of Newton's law and the third body attracted to them by forces proportional to the distances. Results applied to prove the impossibility or difficulty of disintegration of stellar systems in the Galaxy. 22 formulae, 6 theorems, one Russian reference.

Institution : Yaroslav State Pedagogic Institute im. K. D. Ushinskiy

Submitted : Ja 25, 1954

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V. V.

USSR/ Astronomy

Card : 1/1

Authors : Radziyevsky, V. V.

Title : The mechanical process of the disintegration of asteroids and meteorites.

Periodical : Dokl. AN SSSR, 97, Ed. 1, 49 - 52, July 1954

Abstract : The reasons why the rotation of asteroides and meteorites, subjected to the effect of solar rays, will either accelerate continuously or decelerate are explained. In the case of acceleration, the increase of the latter will continue until the body disintegrates due to the increased centrifugal forces of inertia. A method for calculating the maximum angular velocities and the duration of disintegration (in years) for bodies of various shapes and dimensions, at various distances from the sun, is demonstrated and a corresponding table is shown. Three references; one of these is a USSR reference, by the same author, published in Journal for Astronomy, Vol. 29, Ed. 2, 162, (1952).

Institution : The K. D. Ushinsky Pedagogical Institute of the City of Yaroslavl

Presented by : Academician, O. Yu. Schmidt, March 1954

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

MASLIFEVSKIY, V. V.

"Celestial Mechanics of Radiating Bodies. (Problems of Photogravitational Celestial Mechanics). "Acad Sci USSR, Main Astronomical Observatory, Leningrad, 1955. (Dissertation for the Degree of Doctor of Mathematical Sciences)

SO: M-972, 20 Feb 56

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.: GIMMEL'FARB, B.N.

Imaginary paradoxes of astronomical aberration. Biul.VAGO no.18:9-12 '56. (MLRA 10:1)

(Aberration)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.

3

Radzievskiĭ, V. V. Tensor of radiation pressure. Astr. Z. 33 (1956), 129–136. (Russian. English summary)

It is shown by means of an example that electromagnetic radiation pressure must sometimes satisfy physical conditions which preclude its being a tensor. In general the radiation pressure at a point is a tensor only for those cartesian coordinate systems having a common origin at the point and with respect to which the directions of radiation propagation lie in the first octant. Consequences of this result for the calculation of the radiation pressure of stars are discussed, the most important being that at a point lying on or near a closed radiating surface or in its interior, radiation pressure is not a tensor.

R. N. Goss (San Diego, Calif.).

Yaroslavl' State Pedagogical Inst im K.D. Ushinskiy

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

AUTHOR: Radziyevskiy V.V. and Gel'fgat, B.Ye. 33-4-7/19

TITLE: The Restricted Problem of two Bodies of Variable Mass. (Ob ogranichennoy zadache dvukh tel peremennoy massy).

PERIODICAL: Astronomicheskiy Zhurnal, 1957, Vol.34, No.4, pp.581-587 (USSR).

ABSTRACT: Jeans has shown ("Cosmogony and Astronomy") that the following relationships hold for any law of change in the mass of the sun:

$$ma = \text{const.}$$
$$e = \text{const.}$$

where m is the mass of the sun (a function of time), a is the semi-major axis of the elliptic orbit being described at the instant by a satellite of a very small mass ("Cosmogony and Astronomy", C.U.P. 1928, page 291). It is claimed that this result is based on a simplification, the justification of which is not obvious. Jeans assumed that "the average value of 1/r taken over a complete revolution is 1/a" (where r = the modulus of the radius vector as a planet). This, however, will only be the case for an unperturbed Keplerian motion. The real trajectory in the problem of two bodies with

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variable mass is not a conic section and its representation by an osculating conic section must be treated with caution.

The rigorous solution of the problem has so far been only given for two special cases of the law of variation of mass. (Cf. Meshcherskiy Ref. 5)

At the present time it is usual to assume that the loss of mass by a star may be represented by

$$\frac{dm}{dt} = \left(- \alpha m^n,\right)$$

where α, m are constants. Meshcherskiy considered n = 2 and n = 3. In the present paper the problem is re-examined once more. It is shown that the problem may be solved for $-\infty \leqslant n \leqslant \infty$ if the solutions for $1 \leqslant n_1 \leqslant 3$ are known, where $n_1 = (3-2n)/(2-n)$. This introduces a considerable simplification of the problem. The result is obtained by a transformation of the usual equations of motion into a more convenient form. For any value of n such a transformation reduces the above problem to the case of two bodies of constant mass the

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The Restricted Problem of Two Bodies of Variable Mass. 53-4-7/19

motion of which is perturbed by two small forces one of which is proportional to speed, and acts like a "frictional force", and the other is a quasi-elastic central force which is attractive for $n < 3/2$ and repulsive for $n > 3/2$. The latter is absent for $n = 0$ or $n = 3/2$.

New special cases are found of the integrability of differential equations of motion of a material particle in the attractive field of a central body the mass of which changes with time and which is surrounded by a gravitating and resisting atmosphere. In particular, it is shown that if the mass of the central body changes exponentially while the resisting medium has a constant density then a periodic motion in a conic section is possible.

There are 1 figure, no tables, and 9 references 6 of which are Slavic.

SUBMITTED: November, 1, 1956.

ASSOCIATION: Yaroslav State Pedagogical Institute, named after K.D. Ushinskii. (Yaroslavskiy Gosudarstvennyy Pedagogicheskiy Institut im. K. D. Ushinskogo).

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33-4-7/19

The Restricted Problem of Two Bodies of Variable Mass.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.

Effect of the anisotropy of overradiation on the inclinations of heliocentric orbits. Biul.VAGO no.23:26-30 '58. (MIRA 11:11)

1. Yaroslavskiy gosudarstvennyy pedagogicheskiy institut im. K.D. Ushinskogo.
(Solar radiation) (Solar system)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

SOV/33-35-4-8/25

3(1)

AUTHOR: Radziyevskiy, V.V.

TITLE: On the Period- Eccentricity Correlation (O korrelyatsii period- ekstsentrisitet)

PERIODICAL: Astronomicheskiy zhurnal, 1958, Vol 35, Nr 4, pp 597-604 (USSR)

ABSTRACT: The author deduces a new formula for the relation between the period of rotation and the eccentricity of the orbit of binaries. This formula is in good coincidence with the observations. The author demonstrates that the observed correlation between the two parameters cannot be explained by the selection effect; the cited investigations are those carried out by B.M.Shebigolev [Ref 3], V.M.Loseva [Ref 5], V.A.Krat [Ref 6], S.V.Nekrasova [Ref 7], and P.P.Parenago [Ref 8]. The new formula of the author can be simply interpreted. There are 1 table, and 25 references, 11 of which are Soviet, 10 English, 3 American, and 1 German.

ASSOCIATION: Gor'kovskiy gosudarstvennyy pedagogicheskiy institut imeni A.M.Gor'kogo (Gor'kiy State Pedagogical Institute imeni A.M. Gor'kiy)

SUBMITTED: March 20, 1957

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.

47-58-2-12/30

AUTHORS: Zimin, A.V., Radziyevskiy, V.V. and Sokolov, S.A.

TITLE: Device for Determining the Ephemerides of an Earth Satellite (Pribor dlya opredeleniya efemeridy sputnika)

PERIODICAL: Fizika v Shkole, 1958, Nr 2, pp 59 - 61 (USSR)

ABSTRACT: This device consists of globe with its axle fixed in a box which contains the activating mechanism. The angle of inclination of the earth axis is equal to the angle of inclination of the sputnik's orbit to the equator. On the vertical plane, the orbit of the sputnik is fixed with a bent wire. This wire turns around the earth with the help of a handle and cog system. There is 1 figure.

ASSOCIATION: Pedagogicheskiy Institut, Gor'kiy (The Pedagogical Institute Gor'kiy)

AVAILABLE: Library of Congress

Card 1/1 1. Satellite vehicle trajectories-Determination 2. Satellite vehicle models-USSR

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.; KAGAL'NIKOVA, I.I.

Nature of gravitation. Biul.VAGO no.26:3-14 '60. (MIRA 13:10)

1. Gor'kovskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva i Yaroslavskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva.
(Gravitation)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.; ARTEM'YEV, A.V.

Influence of solar radiation pressure on the motion of artificial earth satellites. Astron.zhur. 38 no.5:994-996 S-O '61. (MIRA 14:9)

1. Yaroslavskiy gosudarstvennyy pedagogicheskiy institut im. K.D. Ushinskogo.

(Artificial satellites--Orbits)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

S/556/62/000/031/001/004
I023/I223

AUTHOR: Radziyevskiy, V.V.

TITLE: Two inclinometers for the measurements of the gravitational effect

SOURCE: Vsesoyuznoye astronomo - geodezicheskoye obshchestvo. Byulleten' no. 31(38). Moscow, 1962, 3-14

TEXT: Previous attempts to measure the absorption of gravitation by a material screen are described. The change in the weight of a body during a solar eclipse (the screening effect of the moon) is calculated and is found to be equal to $\Delta P = 5x10^5 xhxPx$ cosZ and the inclination of the vertical (plumb line) is $\alpha = 5x10^5 xhx$ sin Z (P-weight of the body, h-the absorption coefficient and Z is the zenith angle of the sun during eclipse). An attempt to measure

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I023/I223

Two inclinometers for....

the change in the weight did not give any conclusive results. Two inclinometers are described; the experimental results obtained during the eclipse of February 15, 1961 are given in a following paper. The design of the inclinometers was done according to the following lines: 1.) the sensitivity should be variable in a wide range; 2.) the period of free vibrations should not be influenced by a change in the sensitivity; 3.) the period of free vibrations should be large (minutes or tens of minutes); 4.) in order to make the inclinometer usable for other purposes, the period of free vibrations should be variable without influencing the sensitivity. The first inclinometer is a horizontal pendulum suspended by two perpendicular bifillars. The only degree of freedom is rotation in a horizontal plane. Near the pendulum is placed a second exactly similar one. Between them is hanging a light mirror. The equation

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

S/556/62/000/031/001/004
I023/I223

Two inclinometers for ...

of motions is given. The second inclinometer is vertical pendulum suspended by two bifillars. The equation of motion is written and analyzed. A calibration device is described. There are 6 figures.

ASSOCIATION: Yaroslavskiy gosudarstvennyy pedagogicheskiy institut im. K.D. Ushinskogo, Yaroslavskoye otdeleniye vsesoyunogo astronomo geodezicheskogo obshchestva (Yaroslavl' State Pedagogical Institute im. K.D. Ushinskiy, Yaroslav section of the All-Union Astronomo-Geodesical Society)

SUBMITTED: February, 1961

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

KAGAL'NIKOVA, L.I.; RADZIYEVSKIY, V.V.; CHERNIKOV, Yu.A.; CHERNYSHOV, V.I.; SHUVALOV, V.V.

Observation of the gravity effect of the solar eclipse of February 15, 1961 in Yaroslavl. Biul. VAGO no.31:15-17 '62. (MIRA 16:4)

1. Yaroslavskiy gosudarstvennyy pedagogicheskiy institut imeni K.D. Ushinskogo i Yaroslavskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva.
(Yaroslavl—Eclipses, Solar) (Gravity)

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L 54612-65 EWT(1)/EWG(v) Pe-5/Pae-2 GW
ACCESSION NR: AP5006007 S/0033/65/042/001/0124/0128

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B

AUTHOR: Artem'yev, A.V.; Radziyevskiy, V.V.

TITLE: Origin of the axial rotation of planets

SOURCE: Astronomicheskiy zhurnal, v. 42, no. 1, 1965, 124-128

TOPIC TAGS: Laplace hypothesis, planetary rotation, planetary rotational axis, cosmogony, protoplanetary cloud

ABSTRACT: Since publication of the Laplace hypothesis and until recently, it was assumed that the Keplerian motion of particles forming the circumsolar disk of photoplanetary matter was incompatible with the direct axial rotation of planets condensing from it. In order to explain the latter phenomenon, it has been necessary to assume a solid-body character of the rotation of the photoplanetary cloud or part of it (which always has met with the objection that the density and the viscous adhesion of the particles were inadequate) or special artificial models of conglomeration of the planets had to be invoked. A number of these explanations are examined and their defects pointed out. This paper demonstrates that the direct axial rotation is the result of the Keplerian distribution of the velocities of particles of the photoplanetary cloud. It already has been shown by V.S. Safronov (Voprosy kosmogonii, VIII, 150, 1962) and K.E. Edgeworth (Monthly Notices Roy. Astron. Soc.,

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ACCESSION NR: AP5006007

106, 470, 1946) that the total kinetic moment of particles moving in Keplerian orbits and at some distance r from an arbitrarily selected center is positive. The authors use this as a point of departure, developing the idea further and proving that particles moving in Keplerian orbits, upon falling toward a planet, impart to it a positive moment of momentum, rather than a negative moment of momentum, as has been assumed until now. The proof begins with examination of an idealized case when all particles move in circular Keplerian orbits in planes forming such small angles with the plane of the planet's orbit that the paths of the particles in the immediate neighborhood of the latter can be considered coplanar. This simplification is then used as a base for incorporating an allowance for the influence of the gravitational field of the planet. After further development of this approach it is shown that quantitative computations lead to periods of axial rotation which, for the main planets of the solar system, coincide with the actual periods. Orig. art. has: 16 formulas and 1 figure.

ASSOCIATION: Yaroslavskiy gosudarstvennyy pedagogicheskiy institut (Yaroslav State Pedagogic Institute)

SUBMITTED: 15Jul62 ENCL: 00 SUB CODE: AA

NO REF SOV: 003 OTHER: 002

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

L 47299-65 EWT(1)/EEC(s)/EWP(m)/FS(v)-3/EEC(j)/EEC(r)/EWG(v)/EWA(d) Pc-4/Pe-5/Pq-4/Pg-4/Pae-2 GW

ACCESSION NR: AP5010436 UR/0033/65/042/002/0424/0432 60 59 B

AUTHOR: Vinogradova, V.P.; Radziyevskiy, V.V.

TITLE: Acceleration of the satellites of Mars and stabilization of artificial earth satellite orbits

SOURCE: Astronomicheskiy zhurnal, v. 42, no. 2, 1965, 424-432

TOPIC TAGS: Mars, Deimos, Phobos, artificial earth satellite, earth satellite orbit, planetary satellite, light pressure, radiation pressure

ABSTRACT: It is demonstrated that the secular variations of the Martian satellites Deimos and Phobos can be attributed to light pressure, assuming that these satellites are aspherical. Aspherical artificial earth satellites, depending on their form and orientation, also are subject to either deceleration or acceleration by light pressure. The use of light pressure for the compensation of atmospheric acceleration would make it possible to stabilize a satellite orbit at a height at which the air density $\rho = 2 \cdot 10^{-17}$ g/cm^3. This conclusion is drawn from an analysis of the special case of an orbit lying in theplane of the ecliptic, but the method suggested can easily be generalized for orbits of other inclinations. Analysis of the special aspherical satellite considered leads to the conclusion that orbital stabilization is possible at about 800 km, where the annual energy loss by the satellite

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ACCESSION NR: AP5010436

due to its deceleration by the air would be greater than 10^8 ergs per 1 cm^2 of its midsection. With respect to the orbital behavior of the natural satellites of Mars, it is shown that if they are aspherical there will be an effect considerably exceeding the Poynting-Robertson effect and for certain special forms the transverse component of radiation pressure would exceed the Poynting-Robertson effect by many orders of magnitude and become virtually equal to the force of total light pressure. In contrast to the Poynting-Robertson effect, depending on the orientation of the satellite, there can be a resultant acceleration or deceleration which can explain the secular change in the periods of the Martian satellites. (Phobos experiences acceleration and Deimos deceleration). As a working hypothesis, it is assumed that the satellites are hexahedrons, gigantic ice crystals, but the demonstration given in this paper would be applicable to satellites of granite or other material or for other aspherical configurations. Orig. art. has: 30 formulas, 1 figure, and 3 tables. [08]

ASSOCIATION: Yaroslavskiy gosudarstvennyy pedagogicheskiy institut imeni K. D. Ushinskogo (Yaroslavl State Pedagogic Institute)

SUBMITTED: 29Nov63 ENCL: 00 SUB CODE: AA, SV

NO REF SOV: 004 OTHER: 001 ATD PRESS: 3254

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V., prof.

Gravitation energy should be in the service of man. Zem. i vsel. 1 no.3:76-79 My-Je '65. (MIRA 18:8)

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L 44709-66 EWT(d)/EWP(m)/EWT(1)/T/EEC(k)-2/ESS-2 IJP(c) TT/JKT/JT/GW
ACC NR: AP6030740 SOURCE CODE: UR/0384/65/000/003/0076/0079

AUTHOR: Radziyevskiy, V. V. (Professor)

ORG: none

TITLE: Energy of gravitation to the service of man

SOURCE: Zemlya i vselennaya, no. 3, 1965, 76-79

TOPIC TAGS: gravitation effect, interplanetary flight, spacecraft trajectory, Jupiter planet, Earth gravity, moon, Mars planet, Uranus planet

ABSTRACT: Some twenty years ago, two Soviet scientists, Academician O. Yu. Shmidt and Professor N. N. Pariyskiy, suggested that a celestial body could be trapped by two other bodies and ejected beyond their gravitational fields. As a result of this ejection, the potential energy of the two remaining bodies would decrease and the surplus energy could be carried away by the third body. This theory met with a great deal of skepticism when first advanced. It seemed doubtful that celestial bodies, whether stars or cosmic dust, could be trapped and ejected in this way under the existing conditions of our galaxy. It was pointed out that the existence of an initial trajectory, which a third body would have to follow while using the potential gravity of two celestial bodies, is highly improbable. The question now arises whether these unlikely conditions could be created by man: could not the third body be a spacecraft ejected into interplanetary space by the gravitational energy

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ACC NR: AP6030740

of some of the members of the solar system? Concrete examples are given to illustrate this idea. For reasons of simplicity, the flight trajectories are plotted from sections of the Keplerian orbits. The flight into interstellar space follows a "two-stage" orbit: Earth-Jupiter-space (see Fig. 1).

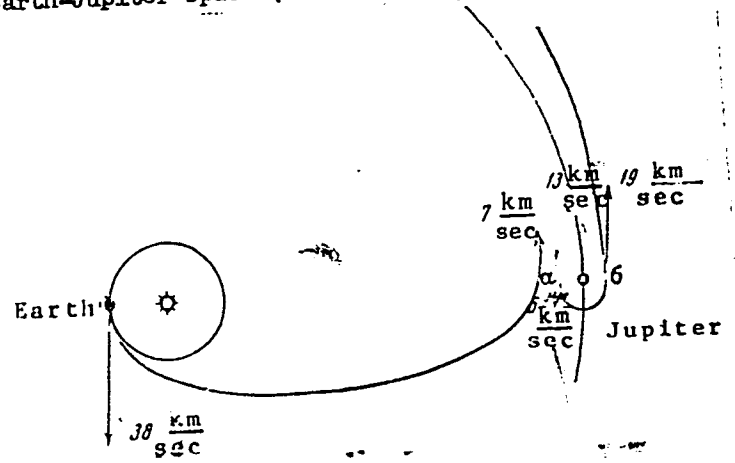

Fig. 1. Interstellar flight following "two-stage" orbit: Earth - Jupiter - space.

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ACC NR: AP6030740

A spacecraft moving along a semielliptical trajectory tangential to the Earth's orbit in its perihelion, and to Jupiter's orbit in its aphelion, requires an initial velocity of 38 km/sec. This means that a spacecraft should have 8.5 km/sec velocity relative to the Earth. If this velocity is in the same direction as the Earth (whose velocity is 29.5 km/sec), the spacecraft will have a total initial velocity of 38 km/sec and will reach the orbit of the planet Jupiter. Its velocity by that time will drop to 7 km/sec. The time of the launching should be computed so that the spacecraft would reach Jupiter's orbit slightly ahead of the planet, which moves at 13 km/sec. The velocity of the spacecraft relative to Jupiter at point α will thus be 6 km/sec, but it will be in the opposite direction. The spacecraft will have the same relative velocity at the opposite point α after making a pass around the planet. In relation to the sun, however, the spacecraft will already have a velocity of 13 + 6 = 19 km/sec, more than enough to escape into interplanetary space along a hyperbola. A spacecraft without the energy supplied by Jupiter would require an additional velocity of 12.5 rather than 8.5 km/sec (the total velocity must be 42 km/sec) in order to go from Earth's orbit into interplanetary space. The excess-energy requirements would thus be almost doubled (the kinetic energy is proportional to the square of the velocity).

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The energy required to attain additional velocity can be further reduced by using a "multistage" trajectory whereby the spacecraft is "refueled" with gravitational energy near the Moon, Mars, Jupiter, and Uranus. In this case, it would not even be necessary to propel the spacecraft beyond the Earth's gravitational pull. All that would be required would be to launch a reverse Earth satellite with its apogee in the region of the lunar orbit (see Fig. 2). After approaching the Moon during its full phase, the

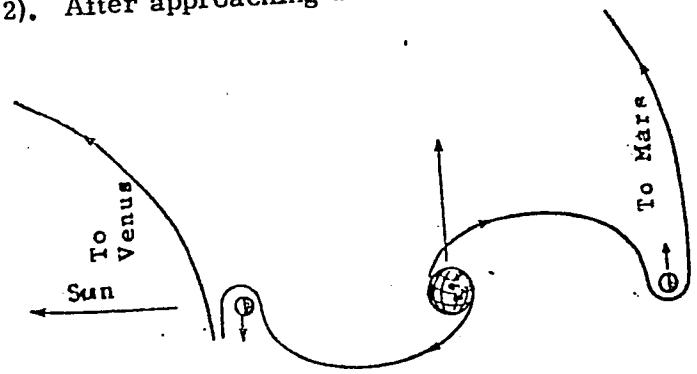

Fig. 2. Initial stage of "multistage" trajectory into space.

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ACC NR: AP6030740

spacecraft will already have a velocity approaching that needed to fly to Mars, Jupiter, Uranus, and into interplanetary space. In-flight corrections would have to be performed at certain points in the trajectory. They would require a minimum amount of fuel. Conversely, on its return flight the spacecraft would have to give part of its potential energy back to the planets.

A rough estimate has shown that a flight to Venus would merely require an "elastic impact" of the spacecraft with the Moon during its new phase. During such an "impact" the gravitational energy of the Moon would enhance the kinetic energy of the spacecraft only in relation to the Earth. Relative to the Sun, however, its energy would be decreased, hence enabling the spacecraft to fly to the minor planets.

The "elastic impact" effect described above opens wide possibilities for computing a variety of flight paths along which spacecraft would be supplied with gravitational energy from the celestial bodies it encounters in its path. In view of the rapid technological advances there is no longer any doubt that the energy of gravitation will soon be put to the service of mankind. Orig. art. has: 3 figures. [ATD PRESS: 4119-F]

SUB CODE: 22, 03 / SUBM DATE: none

Card 5/5 hs

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

ACC NR: AP7008807 SOURCE CODE: UR/0033/67/044/001/0166/0177

AUTHOR: Radziyevskiy, V. V.

ORG: Gorkiy State Pedagogical Institute im. M. Gorkiy (Gor'kovskiy gosudarstvennyy pedagogicheskiy institut)

TITLE: The gravitational capture of cosmic dust by the sun and planets and the evolution of the circumterrestrial cloud

SOURCE: Astronomicheskiy zhurnal, v. 44, no. 1, 1967, 166-177

TOPIC TAGS: cosmic dust, planet, space density, particle, zodiacal cloud, geocentric orbit, GRAVITATION FIELD, SOLAR ACTIVITY, ZODIACAL LIGHT

ABSTRACT: The inevitability of a permanent, purely gravitational capture of cosmic dust by the Sun with the help of planets and by planets with the help of their satellites is proved without any hypothetical assumptions. An approximate quantitative computation is made of the captured mass, which for every auxiliary body depends only on the space density (ρ) of the captured matter and the velocity of the particles at infinity (V_∞). At a density of the galactic medium $\rho \geq 4 \cdot 10^{27}$ and $V_\infty \leq 2 \cdot 10^6$, the Sun, due to the Jovian group of planets, captures an amount of material which is wholly sufficient for maintaining the zodiacal cloud. The Earth, with the help of the Moon, captures an amount of zodiacal matter which exceeds that necessary

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for maintaining the circumterrestrial cloud of the observed density by a factor of three. It is proposed that a small fraction of the particles captured by the Earth acquire geocentric orbits with an eccentricity close to zero. Due to the planetocentric effect of radiative deceleration, such particles gradually "spiral" toward the Earth, forming a circumterrestrial dust cloud with a density inversely proportional to the third power of the distance from the center of the planet. The elongation of the geocentric orbits of the majority of captured particles is such that the perihelion parts of the orbits are located in the zone of the Earth's radiation belt. Here the particles are subjected to intense fragmentation leading to a sharp increase of the relative role of solar ray light pressure. As a result, the apolheion parts of the orbits of the products of fragmentation are outside the zone of the Earth's influence. The products of fragmentation are expelled by light pressure and form the gas-dust tail. The total mass of the tail is estimated and found to be wholly sufficient (of the order of three tons) for maintaining several observed optical effects. [BA]

Orig. art. has: 41 formulas and 2 figures.

SUB CODE: 03/ SUBM DATE: 03Jan66/ ORIG REF: 012/ OTH REF: 003

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZMIŃSKI, A

707. INTRACRANIAL COMPLICATIONS IN THE COURSE OF OTITIS MEDIA IN INFANTS - Powikłaniat wewnątrzczaszkowe w przebiegu zapalenia ucha środkowego u niemowląt - Radzmiński A. and Kmita S. I. Klin. Chor. Dzieci i Otolaryngol. A. M., Łódź - PEDIAT. POL. 1957, 32/3 (237-244)

The authors presented a description of 3 cases of intracranial complications of aural origin in infants in the form of large abscesses of the brain diagnosed post mortem. On the basis of the cases under observation the authors came to the following conclusion: (1) Premature infants or those born in pathological labour ran a greater risk of intracranial complications in the course of otitis media than infants born in normal conditions. That is why the treatment should be carried out in clinical conditions. (2) The appearance of paresis of the facial nerve, nystagmus or meningeal symptoms may be the early sign of the changes in the brain tissue. (3) The changes in the brain tissue in infants often arise haematogenically in the course of otitis media of the septicaemia type which is favoured by the presence of the embryonal tissue in the middle ear in infants.

(XI, 7, 8)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZIMINSKI, Aleksander, prof. dr. med.

Use of polyester mesh in closing of esophageal defects. Otolaryng. Pol. 18 no.1:53-56 '64.

1. Z Kliniki Otolaryngologicznej Akademii Medycznej w Lodzi (Kierownik: prof. dr med. A. Radziminski).

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZO, V.; PTAK, J.; CINCZROVA, M.

Palgorskite from the magnesite quarry of Dubrava, west of Jelseva, in Slovakia, p. 59

Prague, Ustredni ustav geologicky. VESTNIK. Prague, Czechoslovakia, Vol. 34, no.1 1959

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 11, Nov. 1959

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZO, V.

GEOGRAPHY & GEOLOGY

Periodicals: GEOLOGICKE PRACE; ZPRAVY. No. 12, 1958

RADZO, V. A recent find of molybdenite in the biotitic granodiorite of the Cerna Hora Mountains near Tahanovce, southwest of Kosice. p.43.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5, May1959, Unclass.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZO, VENDELIN

Czechoslovakia/Cosmochemistry - Geochemistry. Hydrochemistry, D

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 64130

Author: Radzo, Vendelin

Institution: None

Title: Investigation of the Clays of Eastern Slovakia

Original Periodical: Výskum ilov vychodneho Slovenska, Geol. prace, 1954, No 37, 66-107; Slovak; Russian and German resumés

Abstract: By modern methods (chemical, thermal, dehydration, roentgenometric, electron microscopy and technological) a study has been made of the bentonite clays from 2 deposits, Svinitsa and Kuzmitse (in the area of the town Koshitse). Svinitsa clay forms a lenticular body in the sandy marl and tuffitic deposits of the Tortonian. Composition: Ca-montmorillonite and quartz essentially in colloidal form. Proportions of the oxides: $0.10\ MgO \cdot 0.17\ CaO \cdot Al_2O_3 \cdot 6.81\ SiO_2 \cdot 4.91\ H_2O$. Kuzmitse clay forms several lenticular bodies in sandy marl and tuffitic rocks containing lignite assumed

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Czechoslovakia/Cosmochemistry - Geochemistry. Hydrochemistry, D

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61314

Abstract: to be of Sarmatian age. Composition: Ca-montmorillonite and β-cristobalite. In both cases the montmorillonite was formed on decomposition of volcanic ash from which were formed the andesite tuffs and tuffites. Due to the basic composition of the feldspar material contained in the ash a saturation of montmorillonite with calcium took place. Excess of silica was deposited in the form of quartz. The β-cristobalite has been retained in the initial form. Considerable amounts of alkalies render the Svinitsa clay of low refractory nature.

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[illegible], V.

"[illegible] Hrabovec."

[illegible]; [illegible], [illegible], [illegible], No. 4, [illegible].

Monthly list of EAST EUROPEAN ACCESSIONS INDEX (EAAI), Library of Congress, Vol. [illegible], No. [illegible], August, [illegible].

Unclassified.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZO, Vendelin

Bentonite from near Nižný Hrabovec. Vendelin Radzo (Tech. Hochschule, Kosice, Czech.). ~~Geol. Práce 4, 78-81~~ GP (1955)(German summary).—A yellowish clay in dacite tuff is shown by chem. analysis and x-ray study to consist of montmorillonite and cristobalite. M. Fleischer

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZO, Vendelin, dr.

Gibbsite from the Markusovce area in eastern Slovakia.
Sbor VST Kosice 2: 145-150 '62.

1. Laboratorium pre vyskum nerastnych surovin pri banickej fakulte, Vysoka skola technicka, Kosice.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

Radzo, Vendelin

CZECH

Clays from eastern Slovakia. Vendelin Radzo (Tech. Hochschule, Košice, Czech.). *Geol. Proces* No. 37, 06-107 (1954)(German summary).—A chem. analysis, data on dehydration, and x-ray powder photographs show that the clays from Svinica and Kuzmice are predominantly Ca montmorillonites. Beta-cristobalite was present in 1 sample.

Michael Fleischer

GP

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZEWICKI, K.

Journal of Applied Chemistry
April 1954
Industrial Inorganic Chemistry

Choice of deoxidation method for high-speed steels in a basic electric arc furnace. K. Radzwicki (*Biul. Inf. Inst. Minist. Hutnict.*, 1953, 4, No. 7, 25—28; *Hutnik*, 1953, 20, No. 7; *J. Iron Steel Inst.*, 1954, 176, 107).—Three methods of deoxidising high-speed steel were tested: (1) deoxidation under a white slag by adding electrode C powder; (2) deoxidation under a carbide slag; and (3) two-stage deoxidation under a white slag first with C powder and then with powdered Fe–Si. The structure, quantity of non-metallic inclusions, and cutting properties of steels produced by these methods were examined. The steel produced by all three methods was of equal quality, but for economic and technical reasons the third method is most suitable because the finishing stage is shorter and electricity consumption is smaller. R. B. CLARKE.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

Distr: 4E2c

5486 669:184

Radźwicki K. The LD Process Developed at the Institute of Iron Metallurgy on Quarter Technical Scale for a 250 kg. Test Converter.

„Opracowanie technologii procesu LD w skali ćwierćtechnicznej w próbnym konwertorze 250 kg. w Instytucie Metalurgii Żelaza". Hutnik. No. 6, 1957 (Biul. Inf. IMŻ), pp. 18—23, 3 figs., 2 tabs.

To gain experience with the converter oxygen process (LD processes) tests were carried out at the Institute of Iron Metallurgy, running the process on a quarter-technical scale in a 250 kg capacity converter specially designed for the purpose. The tests showed that the most advantageous composition of pig-iron was: the maximum proportion of manganese with not more than 0.8% Si, 0.3% P and 0.06% S. The oxidation of impurities in pig-iron was very rapid, the highest rate of carbon oxidation being obtained between the 7th and the 17th minute of oxygen blasting. Phosphorus and sulphur were eliminated to the extent of 80.2% and 61.3% respecitvely. The percentage of good ingots was 80.6% which, in view of the small amount of metal in the process, seems to be a very promising result. The process was characterized by a high flame (up to 2 m) which gradually dropped and at one moment disappeared in the mouth of the converter. This marked the end of the process and the oxygen blast was shut off.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

[illegible] Y[illegible]YA, S. B.

"Instructions for the Inspection of Cotton for Virus Diseases," in Collection of Instructions for Quarantine Inspection of Agricultural and Forest Crops, State Office of External and Internal Quarantine of Plants, Moscow, 1935, pp. 95-103. [illegible] 47 Ef6 (Co-Author: DUNIN [illegible])

So: SIRA-51-90-53, 15 Dec. 1953

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, Kazimierz, doc., mgr., inz.

Acceleration of metallurgical reactions in a steel bath by means of blowing into it powdered substances or by mixing it with slag. Wiad hutn 18 no. 2:40-42. F '62

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

Ev Abs.

B/5 Ferrous Metallurgy

Effect of design and size of ingot moulds on their life. K. Radzwicki (*Prace Badaw. Ghorn. Inst. Metal. Odlewn.*, 1950, No. 4, 285—308; *J. Iron Steel Inst.*, 1951, 168, 417).—The effect of individual design factors on the life of ingot moulds and on the steel solidification process is analysed with special reference to moulds used in Polish steel plants.

R. B. CLARKE.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

CA

/

Utilization of poor domestic iron ores. K. Radźwicki (Central. Związek Przemysłu Hutniczego, Katowice, Poland). *Hutnik* 15, 151-7(1948)(in Polish). -The production of iron from poor ores by Krupp's "direct process" as well as by smelting in elec. and open-hearth furnaces was studied. The economic aspects of these methods are discussed.

Edward A. Ackermann

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

PROCESSES AND PROPERTIES INDEX

217-D Slag Control in Openhearth Furnaces. (In Polish.) K. Radzwicke and F. Fiołkowna. *Prace Głównego Instytutu Metalurgii*, v. 3, no. 1, 1951, p. 1-9.

Difficulties encountered with the slag-pancake method. Potentiometric, conductometric and volumetric methods for evaluating slag basicity were compared. A volumetric method was chosen. (D2, ST)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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C a
1951

4

Slag control in basic open-hearth furnaces. K. Radzwicki and F. Fiołkowna. *Prace Głów. Inst. Met.* 3, No. 1, 1-9 (1951).—The visual method for detg. the basicity of slags outlined in previous work (Ludkiewicz, *et al.*, *Ibid.* 1, No. 2, 155-61(1949); *C.A.* 43, 6134c) is too subjective and relies too much on the observational powers of the furnace man. In order to select a more objective and yet rapid estn. of the basicity 3 methods were compared: detn. of the cond. of a slag ext., potentiometric detn. of the pH of a slag ext., and titration of a slag ext. with 0.1 *N* H_2SO_4. The results were plotted against $CaO/(SiO_2 + P_2O_5)$ and the graphs analyzed mathematically. Of the 3 methods compared, the conductometric was the least reliable and required more time (39 min.) than the 2 others. The 2 other methods gave results of the same accuracy and required 35 and 34 min., resp. Of these, the potentiometric pH detn. requires more expensive app. and more expert observation, while the titration method requires simple app. and is easier to carry out.

M. Hosch

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A

D

50-D. **Effect of Design and Size of Ingot Moulds on Their Life.** (In Polish.) K. Radzwicki. *Prace Badawcze Glownego Instytutu Metalurgii i Odlewnictwa*, v. 2, No. 4, 1950, p. 285-308.

Effect of individual design factors on life of ingot molds and on the steel solidification process. Design and life of ingot molds used in Polish steel plants, and some recommendations for their standardization and redesign. (D9, ST)

METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

Misc.

(Polish). K. RADZWICKI, W. MADEJ, and W. STROSCZAK: "Briquetting of Ore Fines for Steel Plants." (*Prace Głównego Instytutu Metalurgii*, 1951, No. 3, pp. 173-181.)

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Ores - Mining & Treatment

S

Briquetting of Ores Fines for Steel Plants. K. Radzwicki, W. Madej, and W. Stromczak. (*Prace Głównego Inst. Met.*, 1951, No. 3, 173-181). [In Polish.] Very good results were obtained in briquetting ore concentrates by Jarcho's method (used in U.S.S.R.) in which fines are mixed with small amounts of iron filings, water, and sodium chloride (0·5-1%). The method is based on corrosion processes which bind ore particles together. The highest strength of briquettes and the shortest time of hardening are obtained when the components are mixed so as to obtain the highest temperature increase during the corrosion process. Best results are obtained if the mix is pressed when at its highest temperature. However, sodium chloride is objectionable due to the destructive influence of alkali on refractory linings. Experiments were therefore made in which CaO, HCl, $MgCl_2$, H_2SO_4, ferrous sulphate, and spent pickling liquor were used as substitutes for sodium chloride. Investigations were made with ore concentrates containing Fe 71·2%, SiO_2 1·57%, CaO 2·29%, MgO 0·43%, P 0·13%, and S 0·039%. In laboratory experiments cylindrical briquettes (dia. and height about 50 mm., weight about 400 g.) were made at a pressure of 250 kg./sq. cm. Industrial briquettes (250 × 130 × 65 mm. weighing 6·7 kg.) were made on a brick-making machine at the same pressure. Fresh briquettes were left in the air under cover, and samples were tested every day for strength to follow the process of hardening. Minimum requirements for a briquette were taken from Russian practice, namely: (1) Compression strength min. 50 kg./sq. cm.; (2) shatter test: a briquette dropped twice on a steel plate from a height of 2 m. must not produce more than 10% fines (below 5 mm.); (3) porosity not more than 5-10%; (4) briquettes must not crumble when

order

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

B

2263* Effect of Design and Size of Ingot Molds on Their Life. In Polish. K. Radzwicki. *Prace Badawcze Głównego Instytutu Metalurgii i Odlewnictwa*, v. 2, no. 4, 1950, p. 285-308.

Effect of individual design factors on life of ingot molds and on the steel solidification process is discussed. Design and life of ingot molds used in Polish steel plants are analyzed and some recommendations for their standardization and redesign are given. Numerous diagrams, graphs, and tables.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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29

TRANSLATIONS IN COURSE OF PREPARATION

61. K. RADZWICKI, W. MADEJ, and W. STRONZAK: "Briquetting of Ore Fines for Steel Plants." (*Prace Głównego Instytutu Metalurgii*, 1951, No. 3, pp. 173-181).

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

TRANSLATION SERVICE:

No. 435(Polish). K. Radzwicki and J. Kozielski: "Diffusion Deoxidation with Coke in the Basic Open-Hearth Furnace." (Prace Glównego Instytuto Metalurgii 1951, No. 4, pp. 267-277).

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

BC

B 2
5

Slag control in open-hearth furnace. K. Radzwicki and K. Fiolkowna (*Prace Badaw. Ogrom. Inst. Metal. Odlewn.*, 1951, No. 1, 1–47; *J. Iron Steel Inst.*, 1951, 168, 418). Difficulties arising in the pancake method of slag control due to crumbling of slag samples and to photographs not clearly showing the main characteristics of the patterns are discussed. Other control methods, *e.g.*, conductometric, potentiometric, and volumetric titrations of aq. extracts of slag, are compared and their suitability for evaluating slag basicity is discussed. A volumetric titration method using 0·1 N-H_2SO_4 is proposed for use in steel-works laboratories.

R. B. Clarke

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

PROCESSES AND PROPERTIES INDEX

7

PROPER UTILIZATION OF ALLOY STEEL SCRAP. K. Radzwicki. (Hutnik, 1948, vol. 15, July-Aug., pp. 300-303). (In Polish). The economic utilization of alloy steel scrap is discussed and efficient methods are proposed. High-frequency furnaces are shown to be the best for the remelting process.

W.J.W.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

Slag Control in Open-Hearth Furnace. K. Kozlowski and K. Fiolkowna. (Prace Badawcze Glownego Instytutu Metalurgii, 1951, No. 1, pp. 1-97). [In Polish]. The introduction and wide application of the pancake method of slag control met with some difficulties due to the crumbling of slag samples and to photographs not showing the main characteristics of the patterns clearly enough. Other methods such as conductometric, potentiometric, and volumetric titrations of aqueous extracts of slag are compared, and their suitability for evaluation of slag basicity discussed. A volumetric titration method using 0·1 N sulphuric acid was proposed as being accurate enough and easy to apply in steelworks laboratories.—V. G.

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1ST AND 2ND ORDERS

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7

The Effect of Design and Size of Ingot Moulds on Their Life. K. Radzwicki. (Prace Badawcze Glownego Instytutu Metalurgii i Odlewnictwa, 1950, No. 4, pp. 245-308). [In Polish]. The effect of individual design factors on the life of ingot moulds and on the steel solidification process is described. The design and life of ingot moulds used in Polish steel plants are analysed. V. G.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

Increasing the Durability of the Open-Hearth Furnace. K. Radźwicki. (Hutnik, 1949, vol. 16, May-June, pp. 181-183). [In Polish]. The author gives a short review of thermal processes in the open-hearth furnace, discusses means of increasing the life, and makes practical suggestions in this respect.—W. J. W.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

Briquetting of Ores Fines for Steel Plants. K. Radzwicki, W. Madej, and W. Stromczak. (*Prace Glownego Inst. Met.*, 1951, No. 3, 173–181). [In Polish]. Very good results were obtained in briquetting ore concentrates by Jarecki's method (used in U.S.S.R.) in which fines are mixed with small amounts of iron filings, water, and sodium chloride (0·5–1%). The method is based on corrosion processes which cement ore particles together. The highest strength of briquettes and the shortest time of hardening are obtained when the components are mixed so as to obtain the highest temperature increase during the corrosion process. Best results are obtained if the mix is pressed when at its highest temperature. However, sodium chloride is objectionable due to the destructive influence of alkali on refractory linings. Experiments were therefore made in which CaO, HCl, $MgCl_2$, H_2SO_4, ferrous sulphate, and spent pickling liquor were used as substitutes for sodium chloride. Investigations were made with ore concentrates containing Fe 71·2%, SiO_2 1·57%, CaO 2·29%, MgO 0·43%, P 0·13%, and S 0·039%. In laboratory experiments cylindrical briquettes (dia. and height about 50 mm., weight about 400 g.) were made at a pressure of 250 kg./sq. cm. Industrial briquettes (250 × 130 × 65 mm. weighing 6–7 kg.) were made on a brick-making machine at the same pressure. Fresh briquettes were left in the air under cover, and samples were tested every day for strength to follow the process of hardening. Minimum requirements for a briquette were taken from Russian practice, namely: (1) Compression strength min. 50 kg./sq. cm.; (2) shatter test: a briquette dropped twice on a steel plate from a height of 2 m. must not produce more than 10% fines (below 5 mm.); (3) porosity not more than 5–10%; (4) briquettes must not crumble when kept for 3 min. at 1500° C. Other requirements were: Fe 62% min.; SiO_2 8% max.; 5% max. of other slag-producing components; water 2% max. (including combined water 0·5% max.); P 0·03% max.; and S 0·03% max. In the first trials CaO was used as a binder without iron filings as the formation of $CaCO_3$ during hardening was expected to provide briquettes of sufficient strength. The results were unsatisfactory. In further experiments the Jarecki method was followed. The proportions of ore, iron filings, and water were 100/7/7 or 100/7/6. Briquettes made with HCl or $MgCl_2$ were unsatisfactory. Acetic acid (more than 0·15%) produced strong briquettes. For economic reasons this reagent could not be used on an industrial scale. Briquettes made with H_2SO_4 (0·2%) were strong (compression test above 110 kg./sq. cm., shatter test 5–6%), resisted atmospheric influence, stood up to loading and transport very well and, when added to the open-hearth bath, retained their shape and showed oxidising properties as good as the best lump ore. Ferrous sulphate and spent pickling liquor also gave satisfactory results. When spent liquor is used, the moisture content of the concentrates must not be higher than 3–4%. When H_2SO_4 or spent pickling liquor is used, 0·02 to 0·03% of sulphur is introduced into briquettes. This does not cause serious difficulty in using these briquettes in steelmaking and it is considered less detrimental than the destructive influence of alkali on refractory linings. v. u.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

Met Rev
1951

B Raw Materials and
Ore Preparation

270-B. Briquetting of Ore Fines for Steel Plants. (In Polish.) K. Radzwicki, W. Madej and W. Stronczak. *Polish Glownego Instytutu Metalurgii*, v. 3, No. 3, 1951, p. 173-181.

Details of laboratory and industrial tests. Jarchos method was modified by replacement of NaCl with H_2SO_4 or spent pickle liquor containing H_2SO_4. (B17, Fe.)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

Met. Rev.
1951

D - Ferrous Reduction
And Refining

190 D Diffusion Deoxidation With Coke in the Basic Openhearth Furnace. (In Polish.) K. Radzwicki and J. Kozielski. *Prace Głównego Instytutu Metalurgii*, v. 1, No. 4, 1951, p. 267-277.

Mechanical properties of open-hearth steel are said to be inferior to those of electric furnace steels because of greater content of oxygen and nonmetallic inclusions. Application of diffusion deoxidation with coke to eliminate the difference in quality. Other advantages. (D2, S1.)

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PROCESSES AND PROPERTIES INDEX

14

Control of the Quality of Steel Plant Products. K. Radziwicki. (Hutnik, 1949, vol. 16, Sept.-Oct., pp. 366-370). [In Polish]. The author gives a brief account of the control of the quality of steel-plant products. The purpose of the production records for each particular cast is suggested and the items in these records are discussed.—W. J. W.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

13512* Briquetting of Ore Fines for Steel Plants (In Polish.) K. Radzwicki, W. Madej, and W. Stronczak. *Prace Glownego Instytutu Metalurgii*, v. 3, no. 3, 1951, p. 173-181

Gives details of laboratory and industrial tests on the above. Jarcho's method was modified by replacement of NaCl with H_2SO_4. Tables and graphs

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

13554* Diffusion Deoxidation With Coke in the Basic Openhearth Furnace (In Polish) K. Radzwicki and J. Kozielski. *Prace Głównego Instytutu Metalurgii* v. 1 no. 4 1951 p. 207-277

Mechanical properties of openhearth steel are said to be inferior to those of electric-furnace steels because of greater content of oxygen and nonmetallic inclusions. Describes application of above process to eliminate the difference in quality. Other advantages are cited.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

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3RD AND 4TH ORDERS

S

7

Diffusion Deoxidation with Coke in the Basic Open-Hearth Furnace. K. Radzwicki and J. Kozielski. (*Prace Głównego Inst. Met.*, 1931, 3, 4, 267–278). [In Polish]. Deoxidation of the bath with coke in the basic open-hearth furnace is discussed. The procedure was as follows: When the necessary degree of decarburization was obtained, coke breeze or fines were thrown on to the slag. Deoxidation of the slag caused oxides from the metal to diffuse into the slag. This coke addition was repeated three times and the steel then finished in the usual manner. The results for 18 heats in a 50-ton furnace with coke deoxidation are given. The following conclusions are drawn: (1) Diffusion deoxidation is more efficient than deoxidation by precipitation; (2) addition of coke to the slag during deoxidation does not cause recarburization of the bath, nor the return of phosphorus from slag to metal; (3) the quality of metal is improved so that steel deoxidized by this diffusion method has properties similar to those of electric furnace steel; (4) the iron oxide content of the slag is diminished; (5) when the decarburization process is intensified during the oxidation period, diffusion deoxidation does not increase the heat time; and (6) diffusion deoxidation considerably reduces deoxidizer and ferro-alloy consumption; the manganese losses in deoxidation are reduced by 50%.—v. u.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

PROCESSES AND PROPERTIES INDEX

6

UTILIZATION OF DOMESTIC LOW-GRADE IRON ORES. K. Radzwicki (Hutnik, 1948, vol. 15, Apr., pp. 153-157). (In Polish). Experiments in the utilization of low-grade Polish iron ores are described. By means of the Krupp-Renn process a product suitable for use in the open-hearth and electric furnaces has been made.

W.J.W.

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ca

9

The influence of some metallurgical factors on the austenite grain size and the hardening of steel. Kazimierz Radźwicki. *Hutnik* 11, 215-36(1939); *Chem. Zentr.* 1939, II, 2582.—Methods of hardening and the development and regulation of grain size are considered in detail. The influence of the reaction in the ladle on the grain size in Martin steel was investigated as was also the influence of admixts. (Cr, W, Mo, V, Ti, and Al) on the depth of hardening, the limiting permissible hardening temp., and the max. grain size. The following optimum amts. of these elements are given: V, 0.19-0.21%, Ti, 0.19-0.23%, and Al, 0.05%. The influence of the duration of the time under white slag on the grain size and the readiness with which the metal could be hardened was also studied. In general, the depth of hardening increased more rapidly with increase in temp. the longer (30, 60, 90 min.) the steel was treated at about 1400° with white slag. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

Co

19

Use of present-day refractories in basic open-hearth furnaces. K. Radzwiki. *Hutnik* 7, 297-302(1935); *Ceram. Abstracts* 15, 244(1936). M. W. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

SELESI, D.; RAFAJLOVIC, A.

From the entomological collection of Prof. A. Taubert (Subotica). Zbor prir Mat srp 25:155-182 '63

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Acceleration of the first slag forming process from melting furnace charge by feeding the metal bath with oxygen during the melting period. Hutnik P 28 no.12:467-468 D '61.

Diminution of chromium losses in melting stainless steel by means of the recovery method with the application of oxygen. Ibid.:468-470

New technology of bearing steel melting. Ibid.:470-471

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K.; ZAK, H.

Production of vacuum decarbonized and nitrogen hardened ferro-alloys. Biul inf inst metal zel no.1:5-8 '63.

1. Institute of Iron Metallurgy, Gliwice.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Technological progress in electric furnaces and steel plants during the years 1961-1962. Hutnik P 30 no.12:416-419 [illegible] '63.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Technological progress in the intensification of the open-hearth process as based on data from 1961 and 1962 literature. Hutnik 31 no.3:100-102 Mr '64.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Intensification of the open-hearth process due to the use of high-caloric fuels as seen in the light of the production of 1961 and 1962. Hutnik P 31 no. 4:137-138 Ap '64.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

[illegible], K., doc. [illegible].

Technological progress in the open-hearth process as seen in the light of literature for the years 196[illegible]-1963. Hutnik 31 no.12:[illegible] '64.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Development of the oxygen converter process during the years 1961-1962. Hutnik P 31 no.1/2:54-58 Ja-F'64

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Progress in vacu m metallurgy during the years 1961-1962.
Hutnik P 30 no. 4: 126-128 Ap '63.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZIWIŁŁ, K., doc.

Progress in the technology and heating of open-hearth furnaces during the years 1961-1962. Hutnik P 30 no. 5:159-160 My '63.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, Kazimierz, mgr inz.

Vacuum degassing of liquid steel. Wiad hut 19 no.7/8: 191-195 Jl/Ag '63.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, Kazimierz, doc. mgr.inz.

Vacuum degassing of low-carbon steel. Wiad hut 19 no.9: 238-240 S'63.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Development of design and efficiency of open-hearth furnaces in the light of technological literature during 1961 and 1962. Hutnik P 30 no. 11: 376-377 N '63.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Progress in continuous steel casting in 1961-1962. Hutnik P 30 no.6:194-198 Je '63.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, Kazimierz, doc. mgr inz.

Basic hot blast cupola as source of the liquid charge for a steel mill. Wiad hut 15 no. 3:70-72 Mr '64.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, Kazimierz, doc. mgr inż.

Influence of vacuum degasing on the quality of steel for mass utilization. Wiad hut 16 no7/8:212-215 Jl-Ag 1960.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, Kazimierz, mgr inż.

Operation of open-hearth furnaces with liquid metal charges from cupolas. Wiad hut 19 no.11:314-315 N'63.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, Kazimierz, doc. mgr inż.

Resolutions and recommendations of the all-Union conference of steel engineers of the U.S.S.R. Wiad hut 15 no.10:305-308 O '64.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, Kazimierz, doc. mgr inz.

Influence of intensified cooling on the output and heat consumption of open-hearth furnaces. Wiad hut 19 no.12: 339-341 D'63.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Progress in the production of ferroalloys in the light of publications from 1961-1962. Hutnik P 30 no.7/8:266-268 Jl/Ag'63.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K.

Technical progress in steel casting and riser heating in the light of publications during the years 1961-1962. Hutnik P 30 no.9:309-310 S '63.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Development of the use of the Kaldo and Rotor processes (1961-1962). Hutnik P 30 no.3:92-94 Mr '63.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

"Technical progress in ferrous metallurgy of the U.S.S.R.; cast steel production" by G.N. Ojksa [G.N. Oiksa]. Reviewed by K. Radzwicki. Hutnik P 29 no.5:188-189 My '62.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Development of vacuum metallurgy based on publications from 1960 and 1961. Hutnik P 29 no.7/8:290-293 Jl-Ag '62.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

New steel process improves the properties of steel and alloys for important purposes. Hutnik P 29 no.5:186-188 My '62.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K. dr.

Development of the oxygen [illegible] process (LD) as based on publications from the years 19[illegible] and 19[illegible]. Hutnik P 29 no.6: 230-233 Je '62.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, K., doc.

Testing liquid effectiveness of electric steel in a ladle with synthetic limestone-clay slags. Hutnik P 29 no.2:73-75 F '62.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

[redacted] RADZIYEVSKIY, V. V.

USSR/Astronomy - Cosmogony 1 Jun 53

"Problem of the Origin of the Protoplanetary Cloud in O. Yu. Shmidt's Cosmogonical Theory," V. V. Radziyevskiy, Yaroslavl State Pedagog Inst imeni Ushinskiy

DAN SSSR, Vol 90, No 4, pp 517-520

Analyses the mechanism governing the capture of cosmic dust by the Sun, which mechanism is based on the increase of the effective (reduced) mass M' of the Sun; here capture ($dH/dt < 0$), or rejection ($dH/dt > 0$), in the two-body problem means the appearance of the change in sign of specific energy H of one body relative to the other. Acknowledges advice of B. Yu. Levin and O. Yu. Shmidt; the latter ~~of-whom~~ presented ~~this paper~~ 24 Mar 53.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.

Radzievskii, V. V. General solution of a case of the problem of three bodies. Doklady Akad. Nauk SSSR (N.S.) 91, 1309–1311 (1953). (Russian)

Consider a homogeneous spherical cosmic cloud of constant density and two quasi-particles moving inside this cloud under the action of their mutual attraction and attraction toward the center of the cloud. The author shows that, if the density of the cloud is sufficiently small, so that one may neglect the resistance of the medium, the problem of relative motion of the two bodies can be solved by quadratures for arbitrary initial conditions.

E. Leimanis (Vancouver, B. C.).

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V. V.

AID P - 846

Subject : USSR/Astronomy

Card 1/1 Pub. 8 - 5/13

Author : Radziyevskiy, V. V.

Title : On the Question of Disintegration of Meteoric "Twins"

Periodical : Astron. zhur., v. 31-5, 433-435, S-O 1954

Abstract : Demonstrates the inadequacy of the method and results of M. Plavec's research concerning the velocity of disintegration of meteor "twins", giving corrected data. Formulae, table, 8 references of which 4 are Russian and 2 Czechoslovakian.

Institution : Yaroslav State Pedagogic Institute im. K. D. Ushinskiy

Submitted : Ja 25, 1954

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V. V.

AID P - 847

Subject : USSR/Astronomy

Card 1/1 Pub. 8 - 6/13

Author : Radziyevskiy, V. V.

Title : General Solution of the Non-Limited Problem of Three Bodies under Newtonian-Hook Interaction

Periodical : Astron. zhur., v. 31-5, 436-441, S-O 1954

Abstract : Discusses the possible study of the three bodies problem by the method of substitution of the law of force. A general solution of the unlimited problem is given for two bodies under gravitational intereffect of Newton's law and the third body attracted to them by forces proportional to the distances. Results applied to prove the impossibility or difficulty of disintegration of stellar systems in the Galaxy. 22 formulae, 6 theorems, one Russian reference.

Institution : Yaroslav State Pedagogic Institute im. K. D. Ushinskiy

Submitted : Ja 25, 1954

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V. V.

USSR/ Astronomy

Card : 1/1

Authors : Radziyevsky, V. V.

Title : The mechanical process of the disintegration of asteroids and meteorites.

Periodical : Dokl. AN SSSR, 97, Ed. 1, 49 - 52, July 1954

Abstract : The reasons why the rotation of asteroides and meteorites, subjected to the effect of solar rays, will either accelerate continuously or decelerate are explained. In the case of acceleration, the increase of the latter will continue until the body disintegrates due to the increased centrifugal forces of inertia. A method for calculating the maximum angular velocities and the duration of disintegration (in years) for bodies of various shapes and dimensions, at various distances from the sun, is demonstrated and a corresponding table is shown. Three references; one of these is a USSR reference, by the same author, published in Journal for Astronomy, Vol. 29, Ed. 2, 162, (1952).

Institution : The K. D. Ushinsky Pedagogical Institute of the City of Yaroslavl

Presented by : Academician, O. Yu. Schmidt, March 1954

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

MASLIFEVSKIY, V. V.

"Celestial Mechanics of Radiating Bodies. (Problems of Photogravitational Celestial Mechanics). "Acad Sci USSR, Main Astronomical Observatory, Leningrad, 1955. (Dissertation for the Degree of Doctor of Mathematical Sciences)

SO: M-972, 20 Feb 56

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.: GIMMEL'FARB, B.N.

Imaginary paradoxes of astronomical aberration. Biul.VAGO no.18:9-12 '56. (MLRA 10:1)

(Aberration)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.

3

Radzievskii, V. V. Tensor of radiation pressure. Astr. Z. 33 (1956), 129–136. (Russian. English summary)

It is shown by means of an example that electromagnetic radiation pressure must sometimes satisfy [illegible] which preclude its being a tensor. In [illegible] pressure at a point is a tensor only [illegible] for this Cartesian coordinate systems having a common origin at the point and with respect to which the directions of radiation propagation lie in the first octant. Consequences of this result for the calculation of the radiation pressure of stars are discussed, the most important being that at a point lying on or near a closed radiating surface or in its interior, radiation pressure is not a tensor.

R. N. Goss (San Diego, Calif.).

Yaroslavl' State Pedagogical Inst im K.D. Ushinskiy

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

AUTHOR: Radziyevskiy V.V. and Gel'fgat, B.Ye. 33-4-7/19

TITLE: The Restricted Problem of two Bodies of Variable Mass. (Ob ogranichennoy zadache dvukh tel peremennoy massy).

PERIODICAL: Astronomicheskiy Zhurnal, 1957, Vol.34, No.4, pp.581-587 (USSR).

ABSTRACT: Jeans has shown ("Cosmogony and Astronomy") that the following relationships hold for any law of change in the mass of the sun:

$$ma = \text{const.}$$
$$e = \text{const.}$$

where m is the mass of the sun (a function of time), a is the semi-major axis of the elliptic orbit being described at the instant by a satellite of a very small mass ("Cosmogony and Astronomy", C.U.P. 1928, page 291). It is claimed that this result is based on a simplification, the justification of which is not obvious. Jeans assumed that "the average value of 1/r taken over a complete revolution is 1/a" (where r = the modulus of the radius vector as a planet). This, however, will only be the case for an unperturbed Keplerian motion. The real trajectory in the problem of two bodies with

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variable mass is not a conic section and its representation by an osculating conic section must be treated with caution.

The rigorous solution of the problem has so far been only given for two special cases of the law of variation of mass. (Cf. Meshcherskiy Ref. 5)

At the present time it is usual to assume that the loss of mass by a star may be represented by

$$\frac{dm}{dt} = \left(- \alpha m^n,\right)$$

where α, m are constants. Meshcherskiy considered n = 2 and n = 3. In the present paper the problem is re-examined once more. It is shown that the problem may be solved for $-\infty \leqslant n \leqslant \infty$ if the solutions for $1 \leqslant n_1 \leqslant 3$ are known, where $n_1 = (3-2n)/(2-n)$. This introduces a considerable simplification of the problem. The result is obtained by a transformation of the usual equations of motion into a more convenient form. For any value of n such a transformation reduces the above problem to the case of two bodies of constant mass the

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The Restricted Problem of Two Bodies of Variable Mass. 53-4-7/19

motion of which is perturbed by two small forces one of which is proportional to speed, and acts like a "frictional force", and the other is a quasi-elastic central force which is attractive for $n < 3/2$ and repulsive for $n > 3/2$. The latter is absent for $n = 0$ or $n = 3/2$.

New special cases are found of the integrability of differential equations of motion of a material particle in the attractive field of a central body the mass of which changes with time and which is surrounded by a gravitating and resisting atmosphere. In particular, it is shown that if the mass of the central body changes exponentially while the resisting medium has a constant density then a periodic motion in a conic section is possible.

There are 1 figure, no tables, and 9 references 6 of which are Slavic.

SUBMITTED: November, 1, 1956.

ASSOCIATION: Yaroslav State Pedagogical Institute, named after K.D. Ushinskii. (Yaroslavskiy Gosudarstvennyy Pedagogicheskiy Institut im. K. D. Ushinskogo).

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The Restricted Problem of Two Bodies of Variable Mass.

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RADZIYEVSKIY, V.V.

Effect of the anisotropy of overradiation on the inclinations of heliocentric orbits. Biul.VAGO no.23:26-30 '58. (MIRA 11:11)

1. Yaroslavskiy gosudarstvennyy pedagogicheskiy institut im. K.D. Ushinskogo.
(Solar radiation) (Solar system)

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SOV/33-35-4-8/25

3(1)

AUTHOR: Radziyevskiy, V.V.

TITLE: On the Period- Eccentricity Correlation (O korrelyatsii period- ekstsentrisitet)

PERIODICAL: Astronomicheskiy zhurnal, 1958, Vol 35, Nr 4, pp 597-604 (USSR)

ABSTRACT: The author deduces a new formula for the relation between the period of rotation and the eccentricity of the orbit of binaries. This formula is in good coincidence with the observations. The author demonstrates that the observed correlation between the two parameters cannot be explained by the selection effect; the cited investigations are those carried out by B.M.Shebigolev [Ref 3], V.M.Loseva [Ref 5], V.A.Krat [Ref 6], S.V.Nekrasova [Ref 7], and P.P.Parenago [Ref 8]. The new formula of the author can be simply interpreted. There are 1 table, and 25 references, 11 of which are Soviet, 10 English, 3 American, and 1 German.

ASSOCIATION: Gor'kovskiy gosudarstvennyy pedagogicheskiy institut imeni A.M.Gor'kogo (Gor'kiy State Pedagogical Institute imeni A.M. Gor'kiy)

SUBMITTED: March 20, 1957

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.

47-58-2-12/30

AUTHORS: Zimin, A.V., Radziyevskiy, V.V. and Sokolov, S.A.

TITLE: Device for Determining the Ephemerides of an Earth Satellite (Priboor dlya opredeleniya efemeridy sputnika)

PERIODICAL: Fizika v Shkole, 1958, Nr 2, pp 59 - 61 (USSR)

ABSTRACT: This device consists of globe with its axle fixed in a box which contains the activating mechanism. The angle of inclination of the earth axis is equal to the angle of inclination of the sputnik's orbit to the equator. On the vertical plane, the orbit of the sputnik is fixed with a bent wire. This wire turns around the earth with the help of a handle and cog system. There is 1 figure.

ASSOCIATION: Pedagogicheskiy Institut, Gor'kiy (The Pedagogical Institute Gor'kiy)

AVAILABLE: Library of Congress

Card 1/1 1. Satellite vehicle trajectories-Determination 2. Satellite vehicle models-USSR

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.; KAGAL'NIKOVA, I.I.

Nature of gravitation. Biul.VAGO no.26:3-14 '60. (MIRA 13:10)

1. Gor'kovskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva i Yaroslavskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva.
(Gravitation)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V.; ARTEM'YEV, A.V.

Influence of solar radiation pressure on the motion of artificial earth satellites. Astron.zhur. 38 no.5:994-996 S-O '61. (MIRA 14:9)

1. Yaroslavskiy gosudarstvennyy pedagogicheskiy institut im. K.D. Ushinskogo.

(Artificial satellites--Orbits)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

S/556/62/000/031/001/004
I023/I223

AUTHOR: Radziyevskiy, V.V.

TITLE: Two inclinometers for the measurements of the gravitational effect

SOURCE: Vsesoyuznoye astronomo - geodezicheskoye obshchestvo. Byulleten' no. 31(38). Moscow, 1962, 3-14

TEXT: Previous attempts to measure the absorption of gravitation by a material screen are described. The change in the weight of a body during a solar eclipse (the screening effect of the moon) is calculated and is found to be equal to $\Delta P = 5x10^5 xhxPx$ cosZ and the inclination of the vertical (plumb line) is $\alpha = 5x10^5 xhx$ sin Z (P-weight of the body, h-the absorption coefficient and Z is the zenith angle of the sun during eclipse). An attempt to measure

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I023/I223

Two inclinometers for....

the change in the weight did not give any conclusive results. Two inclinometers are described; the experimental results obtained during the eclipse of February 15, 1961 are given in a following paper. The design of the inclinometers was done according to the following lines: 1.) the sensitivity should be variable in a wide range; 2.) the period of free vibrations should not be influenced by a change in the sensitivity; 3.) the period of free vibrations should be large (minutes or tens of minutes); 4.) in order to make the inclinometer usable for other purposes, the period of free vibrations should be variable without influencing the sensitivity. The first inclinometer is a horizontal pendulum suspended by two perpendicular bifillars. The only degree of freedom is rotation in a horizontal plane. Near the pendulum is placed a second exactly similar one. Between them is hanging a light mirror. The equation

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I023/I223

Two inclinometers for ...

of motions is given. The second inclinometer is vertical pendulum suspended by two bifillars. The equation of motion is written and analyzed. A calibration device is described. There are 6 figures.

ASSOCIATION: Yaroslavskiy gosudarstvennyy pedagogicheskiy institut im. K.D. Ushinskogo, Yaroslavskoye otdeleniye vsesoyunogo astronomo geodezicheskogo obshchestva (Yaroslavl' State Pedagogical Institute im. K.D. Ushinskiy, Yaroslav section of the All-Union Astronomo-Geodesical Society)

SUBMITTED: February, 1961

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

KAGAL'NIKOVA, L.I.; RADZIYEVSKIY, V.V.; CHERNIKOV, Yu.A.; CHERNYSHOV, V.I.; SHUVALOV, V.V.

Observation of the gravity effect of the solar eclipse of February 15, 1961 in Yaroslavl. Biul. VAGO no.31:15-17 '62. (MIRA 16:4)

1. Yaroslavskiy gosudarstvennyy pedagogicheskiy institut imeni K.D. Ushinskogo i Yaroslavskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva.
(Yaroslavl—Eclipses, Solar) (Gravity)

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ACCESSION NR: AP5006007 S/0033/65/042/001/0124/0128

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B

AUTHOR: Artem'yev, A.V.; Radziyevskiy, V.V.

TITLE: Origin of the axial rotation of planets

SOURCE: Astronomicheskiy zhurnal, v. 42, no. 1, 1965, 124-128

TOPIC TAGS: Laplace hypothesis, planetary rotation, planetary rotational axis, cosmogony, protoplanetary cloud

ABSTRACT: Since publication of the Laplace hypothesis and until recently, it was assumed that the Keplerian motion of particles forming the circumsolar disk of photoplanetary matter was incompatible with the direct axial rotation of planets condensing from it. In order to explain the latter phenomenon, it has been necessary to assume a solid-body character of the rotation of the photoplanetary cloud or part of it (which always has met with the objection that the density and the viscous adhesion of the particles were inadequate) or special artificial models of conglomeration of the planets had to be invoked. A number of these explanations are examined and their defects pointed out. This paper demonstrates that the direct axial rotation is the result of the Keplerian distribution of the velocities of particles of the photoplanetary cloud. It already has been shown by V.S. Safronov (Voprosy kosmogonii, VIII, 150, 1962) and K.E. Edgeworth (Monthly Notices Roy. Astron. Soc.,

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ACCESSION NR: AP5006007

106, 470, 1946) that the total kinetic moment of particles moving in Keplerian orbits and at some distance r from an arbitrarily selected center is positive. The authors use this as a point of departure, developing the idea further and proving that particles moving in Keplerian orbits, upon falling toward a planet, impart to it a positive moment of momentum, rather than a negative moment of momentum, as has been assumed until now. The proof begins with examination of an idealized case when all particles move in circular Keplerian orbits in planes forming such small angles with the plane of the planet's orbit that the paths of the particles in the immediate neighborhood of the latter can be considered coplanar. This simplification is then used as a base for incorporating an allowance for the influence of the gravitational field of the planet. After further development of this approach it is shown that quantitative computations lead to periods of axial rotation which, for the main planets of the solar system, coincide with the actual periods. Orig. art. has: 16 formulas and 1 figure.

ASSOCIATION: Yaroslavskiy gosudarstvennyy pedagogicheskiy institut (Yaroslav State Pedagogic Institute)

SUBMITTED: 15Jul62 ENCL: 00 SUB CODE: AA

NO REF SOV: 003 OTHER: 002

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L 47299-65 EWT(1)/EEC(s)/EWP(m)/FS(v)-3/EEC(j)/EEC(r)/EWG(v)/EWA(d) Pc-4/Pe-5/Pq-4/Pg-4/Pae-2 GW

ACCESSION NR: AP5010436 UR/0033/65/042/002/0424/0432 60 59 B

AUTHOR: Vinogradova, V.P.; Radziyevskiy, V.V.

TITLE: Acceleration of the satellites of Mars and stabilization of artificial earth satellite orbits

SOURCE: Astronomicheskiy zhurnal, v. 42, no. 2, 1965, 424-432

TOPIC TAGS: Mars, Deimos, Phobos, artificial earth satellite, earth satellite orbit, planetary satellite, light pressure, radiation pressure

ABSTRACT: It is demonstrated that the secular variations of the Martian satellites Deimos and Phobos can be attributed to light pressure, assuming that these satellites are aspherical. Aspherical artificial earth satellites, depending on their form and orientation, also are subject to either deceleration or acceleration by light pressure. The use of light pressure for the compensation of atmospheric acceleration would make it possible to stabilize a satellite orbit at a height at which the air density $\rho = 2 \cdot 10^{-17}$ g/cm^3. This conclusion is drawn from an analysis of the special case of an orbit lying in theplane of the ecliptic, but the method suggested can easily be generalized for orbits of other inclinations. Analysis of the special aspherical satellite considered leads to the conclusion that orbital stabilization is possible at about 800 km, where the annual energy loss by the satellite

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ACCESSION NR: AP5010436

due to its deceleration by the air would be greater than 10^8 ergs per 1 cm^2 of its midsection. With respect to the orbital behavior of the natural satellites of Mars, it is shown that if they are aspherical there will be an effect considerably exceeding the Poynting-Robertson effect and for certain special forms the transverse component of radiation pressure would exceed the Poynting-Robertson effect by many orders of magnitude and become virtually equal to the force of total light pressure. In contrast to the Poynting-Robertson effect, depending on the orientation of the satellite, there can be a resultant acceleration or deceleration which can explain the secular change in the periods of the Martian satellites. (Phobos experiences acceleration and Deimos deceleration). As a working hypothesis, it is assumed that the satellites are hexahedrons, gigantic ice crystals, but the demonstration given in this paper would be applicable to satellites of granite or other material or for other aspherical configurations. Orig. art. has: 30 formulas, 1 figure, and 3 tables. [08]

ASSOCIATION: Yaroslavskiy gosudarstvennyy pedagogicheskiy institut imeni K. D. Ushinskogo (Yaroslavl State Pedagogic Institute)

SUBMITTED: 29Nov63 ENCL: 00 SUB CODE: AA, SV

NO REF SOV: 004 OTHER: 001 ATD PRESS: 3254

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZIYEVSKIY, V.V., prof.

Gravitation energy should be in the service of man. Zem. i vsel. 1 no.3:76-79 My-Je '65. (MIRA 18:8)

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L 44709-66 EWT(d)/EWP(m)/EWT(1)/T/EEC(k)-2/ESS-2 IJP(c) TT/JKT/JT/GW
ACC NR: AP6030740 SOURCE CODE: UR/0384/65/000/003/0076/0079

AUTHOR: Radziyevskiy, V. V. (Professor)

ORG: none

TITLE: Energy of gravitation to the service of man

SOURCE: Zemlya i vselennaya, no. 3, 1965, 76-79

TOPIC TAGS: gravitation effect, interplanetary flight, spacecraft trajectory, Jupiter planet, Earth gravity, moon, Mars planet, Uranus planet

ABSTRACT: Some twenty years ago, two Soviet scientists, Academician O. Yu. Shmidt and Professor N. N. Pariyskiy, suggested that a celestial body could be trapped by two other bodies and ejected beyond their gravitational fields. As a result of this ejection, the potential energy of the two remaining bodies would decrease and the surplus energy could be carried away by the third body. This theory met with a great deal of skepticism when first advanced. It seemed doubtful that celestial bodies, whether stars or cosmic dust, could be trapped and ejected in this way under the existing conditions of our galaxy. It was pointed out that the existence of an initial trajectory, which a third body would have to follow while using the potential gravity of two celestial bodies, is highly improbable. The question now arises whether these unlikely conditions could be created by man: could not the third body be a spacecraft ejected into interplanetary space by the gravitational energy

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ACC NR: AP6030740

of some of the members of the solar system? Concrete examples are given to illustrate this idea. For reasons of simplicity, the flight trajectories are plotted from sections of the Keplerian orbits. The flight into interstellar space follows a "two-stage" orbit: Earth-Jupiter-space (see Fig. 1).

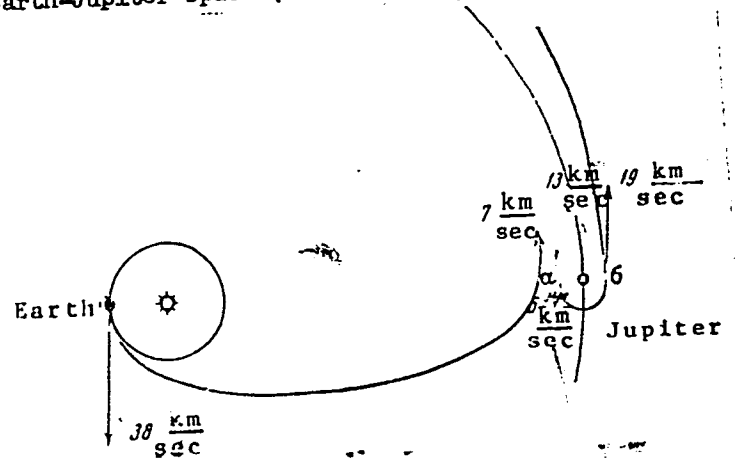

Fig. 1. Interstellar flight following "two-stage" orbit: Earth - Jupiter - space.

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A spacecraft moving along a semielliptical trajectory tangential to the Earth's orbit in its perihelion, and to Jupiter's orbit in its aphelion, requires an initial velocity of 38 km/sec. This means that a spacecraft should have 8.5 km/sec velocity relative to the Earth. If this velocity is in the same direction as the Earth (whose velocity is 29.5 km/sec), the spacecraft will have a total initial velocity of 38 km/sec and will reach the orbit of the planet Jupiter. Its velocity by that time will drop to 7 km/sec. The time of the launching should be computed so that the spacecraft would reach Jupiter's orbit slightly ahead of the planet, which moves at 13 km/sec. The velocity of the spacecraft relative to Jupiter at point α will thus be 6 km/sec, but it will be in the opposite direction. The spacecraft will have the same relative velocity at the opposite point α after making a pass around the planet. In relation to the sun, however, the spacecraft will already have a velocity of 13 + 6 = 19 km/sec, more tnan enough to escape into interplanetary space along a hyperbola. A spacecraft without the energy supplied by Jupiter would require an additional velocity of 12.5 rather than 8.5 km/sec (the total velocity must be 42 km/sec) in order to go from Earth's orbit into interplanetary space. The excess-energy requirements would thus be almost doubled (the kinetic energy is proportional to the square of the velocity).

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The energy required to attain additional velocity can be further reduced by using a "multistage" trajectory whereby the spacecraft is "refueled" with gravitational energy near the Moon, Mars, Jupiter, and Uranus. In this case, it would not even be necessary to propel the spacecraft beyond the Earth's gravitational pull. All that would be required would be to launch a reverse Earth satellite with its apogee in the region of the lunar orbit (see Fig. 2). After approaching the Moon during its full phase, the

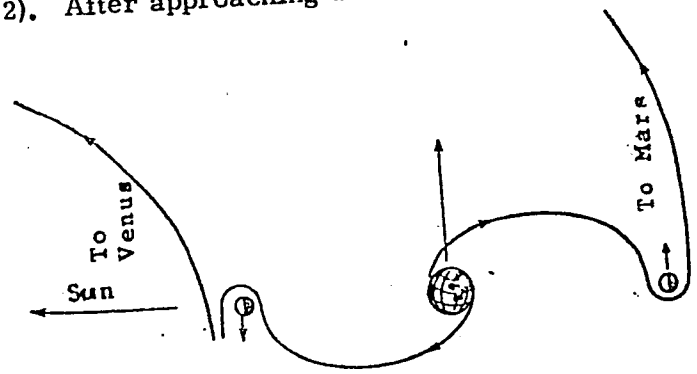

Fig. 2. Initial stage of "multistage" trajectory into space.

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ACC NR: AP6030740

spacecraft will already have a velocity approaching that needed to fly to Mars, Jupiter, Uranus, and into interplanetary space. In-flight corrections would have to be performed at certain points in the trajectory. They would require a minimum amount of fuel. Conversely, on its return flight the spacecraft would have to give part of its potential energy back to the planets.

A rough estimate has shown that a flight to Venus would merely require an "elastic impact" of the spacecraft with the Moon during its new phase. During such an "impact" the gravitational energy of the Moon would enhance the kinetic energy of the spacecraft only in relation to the Earth. Relative to the Sun, however, its energy would be decreased, hence enabling the spacecraft to fly to the minor planets.

The "elastic impact" effect described above opens wide possibilities for computing a variety of flight paths along which spacecraft would be supplied with gravitational energy from the celestial bodies it encounters in its path. In view of the rapid technological advances there is no longer any doubt that the energy of gravitation will soon be put to the service of mankind. Orig. art. has: 3 figures. [ATD PRESS: 4119-F]

SUB CODE: 22, 03 / SUBM DATE: none

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

ACC NR: AP7008807 SOURCE CODE: UR/0033/67/044/001/0166/0177

AUTHOR: Radziyevskiy, V. V.

ORG: Gorkiy State Pedagogical Institute im. M. Gorkiy (Gor'kovskiy gosudarstvennyy pedagogicheskiy institut)

TITLE: The gravitational capture of cosmic dust by the sun and planets and the evolution of the circumterrestrial cloud

SOURCE: Astronomicheskiy zhurnal, v. 44, no. 1, 1967, 166-177

TOPIC TAGS: cosmic dust, planet, space density, particle, zodiacal cloud, geocentric orbit, GRAVITATION FIELD, SOLAR ACTIVITY, ZODIACAL LIGHT

ABSTRACT: The inevitability of a permanent, purely gravitational capture of cosmic dust by the Sun with the help of planets and by planets with the help of their satellites is proved without any hypothetical assumptions. An approximate quantitative computation is made of the captured mass, which for every auxiliary body depends only on the space density (ρ) of the captured matter and the velocity of the particles at infinity (V_∞). At a density of the galactic medium $\rho \geq 4 \cdot 10^{27}$ and $V_\infty \leq 2 \cdot 10^6$, the Sun, due to the Jovian group of planets, captures an amount of material which is wholly sufficient for maintaining the zodiacal cloud. The Earth, with the help of the Moon, captures an amount of zodiacal matter which exceeds that necessary

UDC: 523.59

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ACC NR: AP7008807

for maintaining the circumterrestrial cloud of the observed density by a factor of three. It is proposed that a small fraction of the particles captured by the Earth acquire geocentric orbits with an eccentricity close to zero. Due to the planetocentric effect of radiative deceleration, such particles gradually "spiral" toward the Earth, forming a circumterrestrial dust cloud with a density inversely proportional to the third power of the distance from the center of the planet. The elongation of the geocentric orbits of the majority of captured particles is such that the perihelion parts of the orbits are located in the zone of the Earth's radiation belt. Here the particles are subjected to intense fragmentation leading to a sharp increase of the relative role of solar ray light pressure. As a result, the apolheion parts of the orbits of the products of fragmentation are outside the zone of the Earth's influence. The products of fragmentation are expelled by light pressure and form the gas-dust tail. The total mass of the tail is estimated and found to be wholly sufficient (of the order of three tons) for maintaining several observed optical effects. [BA]

Orig. art. has: 41 formulas and 2 figures.

SUB CODE: 03/ SUBM DATE: 03Jan66/ ORIG REF: 012/ OTH REF: 003

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RADZMIŃSKI, A

707. INTRACRANIAL COMPLICATIONS IN THE COURSE OF OTITIS MEDIA IN INFANTS - Powikłaniat wewnątrzczaszkowe w przebiegu zapalenia ucha środkowego u niemowląt - Radzmiński A. and Kmita S. I. Klin. Chor. Dzieci i Otolaryngol. A. M., Łódź - PEDIAT. POL. 1957, 32/3 (237-244)

The authors presented a description of 3 cases of intracranial complications of aural origin in infants in the form of large abscesses of the brain diagnosed post mortem. On the basis of the cases under observation the authors came to the following conclusion: (1) Premature infants or those born in pathological labour ran a greater risk of intracranial complications in the course of otitis media than infants born in normal conditions. That is why the treatment should be carried out in clinical conditions. (2) The appearance of paresis of the facial nerve, nystagmus or meningeal symptoms may be the early sign of the changes in the brain tissue. (3) The changes in the brain tissue in infants often arise haematogenically in the course of otitis media of the septicaemia type which is favoured by the presence of the embryonal tissue in the middle ear in infants.

(XI, 7, 8)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZIMINSKI, Aleksander, prof. dr. med.

Use of polyester mesh in closing of esophageal defects. Otolaryng. Pol. 18 no.1:53-56 '64.

1. Z Kliniki Otolaryngologicznej Akademii Medycznej w Lodzi (Kierownik: prof. dr med. A. Radziminski).

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZO, V.; PTAK, J.; CINCZROVA, M.

Palgorskite from the magnesite quarry of Dubrava, west of Jelseva, in Slovakia, p. 59

Prague, Ustredni ustav geologicky. VESTNIK. Prague, Czechoslovakia, Vol. 34, no.1 1959

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 11, Nov. 1959

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZO, V.

GEOGRAPHY & GEOLOGY

Periodicals: GEOLOGICKE PRACE; ZPRAVY. No. 12, 1958

RADZO, V. A recent find of molybdenite in the biotitic granodiorite of the Cerna Hora Mountains near Tahanovce, southwest of Kosice. p.43.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5, May1959, Unclass.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZO, VENDELIN

Czechoslovakia/Cosmochemistry - Geochemistry. Hydrochemistry, D

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 64130

Author: Radzo, Vendelin

Institution: None

Title: Investigation of the Clays of Eastern Slovakia

Original Periodical: Výskum ilov vychodneho Slovenska, Geol. prace, 1954, No 37, 66-107; Slovak; Russian and German resumés

Abstract: By modern methods (chemical, thermal, dehydration, roentgenometric, electron microscopy and technological) a study has been made of the bentonite clays from 2 deposits, Svinitsa and Kuzmitse (in the area of the town Koshitse). Svinitsa clay forms a lenticular body in the sandy marl and tuffitic deposits of the Tortonian. Composition: Ca-montmorillonite and quartz essentially in colloidal form. Proportions of the oxides: 0.10 MgO·0.17 CaO·Al_2O_3·6.81 SiO_2·4.91 H_2O. Kuzmitse clay forms several lenticular bodies in sandy marl and tuffitic rocks containing lignite assumed

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

Czechoslovakia/Cosmochemistry - Geochemistry. Hydrochemistry, D

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61314

Abstract: to be of Sarmatian age. Composition: Ca-montmorillonite and β-cristobalite. In both cases the montmorillonite was formed on decomposition of volcanic ash from which were formed the andesite tuffs and tuffites. Due to the basic composition of the feldspar material contained in the ash a saturation of montmorillonite with calcium took place. Excess of silica was deposited in the form of quartz. The β-cristobalite has been retained in the initial form. Considerable amounts of alkalies render the Svinitsa clay of low refractory nature.

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[illegible], V.

"[illegible] Hrabovec."

[illegible]; [illegible], [illegible], [illegible], No. 4, [illegible].

Monthly list of EAST EUROPEAN ACCESSIONS INDEX (EMAI), Library of Congress, Vol. [illegible], No. [illegible], August, [illegible].

Unclassified.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZO, Vendelin

Bentonite from near Nižný Hrabovec. Vendelin Radzo (Tech. Hochschule, Kosice, Czech.). ~~Geol. Práce 4, 78-81~~ GP (1955)(German summary).—A yellowish clay in dacite tuffs is shown by chem. analysis and x-ray study to consist of montmorillonite and cristobalite. M. Fleischer

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZO, Vendelin, dr.

Gibbsite from the Markusovce area in eastern Slovakia.
Sbor VST Kosice 2: 145-150 '62.

1. Laboratorium pre vyskum nerastnych surovin pri banickej fakulte, Vysoka skola technicka, Kosice.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

Radzo, Vendelin

CZECH

Clays from eastern Slovakia. Vendelin Radzo (Tech. Hochschule, Košice, Czech.). *Geol. Proces* No. 37, 06-107 (1954)(German summary).—A chem. analysis, data on dehydration, and x-ray powder photographs show that the clays from Svinica and Kuzmice are predominantly Ca montmorillonites. Beta-cristobalite was present in 1 sample.

Michael Fleischer

GP

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZEWICKI, K.

Journal of Applied Chemistry
April 1954
Industrial Inorganic Chemistry

Choice of deoxidation method for high-speed steels in a basic electric arc furnace. K. Radzwicki (*Biul. Inf. Inst. Minist. Hutnict.*, 1953, 4, No. 7, 25—28; *Hutnik*, 1953, 20, No. 7; *J. Iron Steel Inst.*, 1954, 176, 107).—Three methods of deoxidising high-speed steel were tested: (1) deoxidation under a white slag by adding electrode C powder; (2) deoxidation under a carbide slag; and (3) two-stage deoxidation under a white slag first with C powder and then with powdered Fe–Si. The structure, quantity of non-metallic inclusions, and cutting properties of steels produced by these methods were examined. The steel produced by all three methods was of equal quality, but for economic and technical reasons the third method is most suitable because the finishing stage is shorter and electricity consumption is smaller. R. B. CLARKE.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

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5486 669:184

Radźwicki K. The LD Process Developed at the Institute of Iron Metallurgy on Quarter Technical Scale for a 250 kg. Test Converter.

„Opracowanie technologii procesu LD w skali ćwierćtechnicznej w próbnym konwertorze 250 kg. w Instytucie Metalurgii Żelaza". Hutnik. No. 6, 1957 (Biul. Inf. IMŻ), pp. 18—23, 3 figs., 2 tabs.

To gain experience with the converter oxygen process (LD processes) tests were carried out at the Institute of Iron Metallurgy, running the process on a quarter-technical scale in a 250 kg capacity converter specially designed for the purpose. The tests showed that the most advantageous composition of pig-iron was: the maximum proportion of manganese with not more than 0.8% Si, 0.3% P and 0.06% S. The oxidation of impurities in pig-iron was very rapid, the highest rate of carbon oxidation being obtained between the 7th and the 17th minute of oxygen blasting. Phosphorus and sulphur were eliminated to the extent of 80.2% and 61.3% respecitvely. The percentage of good ingots was 80.6% which, in view of the small amount of metal in the process, seems to be a very promising result. The process was characterized by a high flame (up to 2 m) which gradually dropped and at one moment disappeared in the mouth of the converter. This marked the end of the process and the oxygen blast was shut off.

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[illegible] Y[illegible]YA, S. B.

"Instructions for the Inspection of Cotton for Virus Diseases," in Collection of Instructions for Quarantine Inspection of Agricultural and Forest Crops, State Office of External and Internal Quarantine of Plants, Moscow, 1935, pp. 95-103. [illegible] 47 Ef6 (C.-[illegible] DU[illegible])

So: SIRA-[illegible]-90-53, 15 Dec. 1953

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

RADZWICKI, Kazimierz, doc., mgr., inz.

Acceleration of metallurgical reactions in a steel bath by means of blowing into it powdered substances or by mixing it with slag. Wiad hutn 18 no. 2:40-42. F '62

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

Ev Abs.

B/5 Ferrous Metallurgy

Effect of design and size of ingot moulds on their life. K. Radzwicki (*Prace Badaw. Ghorn. Inst. Metal. Odlewn.*, 1950, No. 4, 285—308; *J. Iron Steel Inst.*, 1951, 168, 417).—The effect of individual design factors on the life of ingot moulds and on the steel solidification process is analysed with special reference to moulds used in Polish steel plants.

R. B. CLARKE.

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CA

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Utilization of poor domestic iron ores. K. Radźwicki (Central. Związek Przemysłu Hutniczego, Katowice, Poland). *Hutnik* 15, 151-7(1948)(in Polish). -The production of iron from poor ores by Krupp's "direct process" as well as by smelting in elec. and open-hearth furnaces was studied. The economic aspects of these methods are discussed.

Edward A. Ackermann

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

PROCESSES AND PROPERTIES INDEX

217-D Slag Control in Openhearth Furnaces. (In Polish.) K. Radzwicke and F. Fiołkowna. *Prace Głównego Instytutu Metalurgii*, v. 3, no. 1, 1951, p. 1-9.

Difficulties encountered with the slag-pancake method. Potentiometric, conductometric and volumetric methods for evaluating slag basicity were compared. A volumetric method was chosen. (D2, ST)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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C a
1951

4

Slag control in basic open-hearth furnaces. K. Radzwicki and F. Fiołkowna. *Prace Głów. Inst. Met.* 3, No. 1, 1-9 (1951).—The visual method for detg. the basicity of slags outlined in previous work (Ludkiewicz, *et al.*, *Ibid.* 1, No. 2, 155-61(1949); *C.A.* 43, 6134c) is too subjective and relies too much on the observational powers of the furnace man. In order to select a more objective and yet rapid estn. of the basicity 3 methods were compared: detn. of the cond. of a slag ext., potentiometric detn. of the pH of a slag ext., and titration of a slag ext. with 0.1 *N* H_2SO_4. The results were plotted against $CaO/(SiO_2 + P_2O_5)$ and the graphs analyzed mathematically. Of the 3 methods compared, the conductometric was the least reliable and required more time (39 min.) than the 2 others. The 2 other methods gave results of the same accuracy and required 35 and 34 min., resp. Of these, the potentiometric pH detn. requires more expensive app. and more expert observation, while the titration method requires simple app. and is easier to carry out.

M. Hosch

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A

D

50-D. **Effect of Design and Size of Ingot Moulds on Their Life.** (In Polish.) K. Radzwicki. *Prace Badawcze Glownego Instytutu Metalurgii i Odlewnictwa*, v. 2, No. 4, 1950, p. 285-308.

Effect of individual design factors on life of ingot molds and on the steel solidification process. Design and life of ingot molds used in Polish steel plants, and some recommendations for their standardization and redesign. (D9, ST)

METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

Misc.

(Polish). K. RADZWICKI, W. MADEJ, and W. STROSCZAK: "Briquetting of Ore Fines for Steel Plants." (*Prace Głównego Instytutu Metalurgii*, 1951, No. 3, pp. 173-181.)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

Ores - Mining & treatment

S

Briquetting of Ores Fines for Steel Plants. K. Radzwicki, W. Madej, and W. Stromczak. (*Prace Glownego Inst. Met.*, 1951, No. 3, 173-181). [In Polish.] Very good results were obtained in briquetting ore concentrates by Jarcho's method (used in U.S.S.R.) in which fines are mixed with small amounts of iron filings, water, and sodium chloride (0·5-1%). The method is based on corrosion processes which bind ore particles together. The highest strength of briquettes and the shortest time of hardening are obtained when the components are mixed so as to obtain the highest temperature increase during the corrosion process. Best results are obtained if the mix is pressed when at its highest temperature. However, sodium chloride is objectionable due to the destructive influence of alkali on refractory linings. Experiments were therefore made in which CaO, HCl, $MgCl_2$, H_2SO_4, ferrous sulphate, and spent pickling liquor were used as substitutes for sodium chloride. Investigations were made with ore concentrates containing Fe 71·2%, SiO_2 1·57%, CaO 2·29%, MgO 0·43%, P 0·13%, and S 0·039%. In laboratory experiments cylindrical briquettes (dia. and height about 50 mm., weight about 400 g.) were made at a pressure of 250 kg./sq. cm. Industrial briquettes (250 × 130 × 65 mm. weighing 6·7 kg.) were made on a brick-making machine at the same pressure. Fresh briquettes were left in the air under cover, and samples were tested every day for strength to follow the process of hardening. Minimum requirements for a briquette were taken from Russian practice, namely: (1) Compression strength min. 50 kg./sq. cm.; (2) shatter test: a briquette dropped twice on a steel plate from a height of 2 m. must not produce more than 10% fines (below 5 mm.); (3) porosity not more than 5-10%; (4) briquettes must not crumble when

order

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B

2263* Effect of Design and Size of Ingot Molds on Their Life. In Polish. K. Badzwicki. *Prace Badawcze Głównego Instytutu Metalurgii i Odlewnictwa*, v. 2, no. 1, 1950, p. 285-308.

Effect of individual design factors on life of ingot molds and on the steel solidification process is discussed. Design and life of ingot molds used in Polish steel plants are analyzed and some recommendations for their standardization and redesign are given. Numerous diagrams, graphs, and tables.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

29

TRANSLATIONS IN COURSE OF PREPARATION

61. K. RADZWICKI, W. MADEJ, and W. STRONZAK: "Briquetting of Ore Fines for Steel Plants." (*Prace Głównego Instytutu Metalurgii*, 1951, No. 3, pp. 173-181).

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

TRANSLATION SERVICE:

No. 435(Polish). K. Radzwicki and J. Kozielski: "Diffusion Deoxidation with Coke in the Basic Open-Hearth Furnace." (Prace Glównego Instytuto Metalurgii 1951, No. 4, pp. 267-277).

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

BC

B 2
5

Slag control in open-hearth furnace. K. Radzwicki and K. Fiolkowna (*Prace Badaw. Ogrom. Inst. Metal. Odlewn.*, 1951, No. 1, 1–47; *J. Iron Steel Inst.*, 1951, 168, 418). Difficulties arising in the pancake method of slag control due to crumbling of slag samples and to photographs not clearly showing the main characteristics of the patterns are discussed. Other control methods, *e.g.*, conductometric, potentiometric, and volumetric titrations of aq. extracts of slag, are compared and their suitability for evaluating slag basicity is discussed. A volumetric titration method using 0·1 N-H_2SO_4 is proposed for use in steel-works laboratories.

R. B. Clarke

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES INDEX

7

PROPER UTILIZATION OF ALLOY STEEL SCRAP. K. Radzwicki. (Hutnik, 1948, vol. 15, July-Aug., pp. 300-303). (In Polish). The economic utilization of alloy steel scrap is discussed and efficient methods are proposed. High-frequency furnaces are shown to be the best for the remelting process.

W.J.W.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

PROCESSES AND PROPERTIES INDEX

Slag Control in Open-Hearth Furnace. K. Kozlowski and K. Fiolkowna. (Prace Badawcze Glownego Instytutu Metalurgii, 1951, No. 1, pp. 1-97). [In Polish]. The introduction and wide application of the pancake method of slag control met with some difficulties due to the crumbling of slag samples and to photographs not showing the main characteristics of the patterns clearly enough. Other methods such as conductometric, potentiometric, and volumetric titrations of aqueous extracts of slag are compared, and their suitability for evaluation of slag basicity discussed. A volumetric titration method using 0·1 N sulphuric acid was proposed as being accurate enough and easy to apply in steelworks laboratories.—V. G.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

S

7

The Effect of Design and Size of Ingot Moulds on Their Life. K. Radzwicki. (Prace Badawcze Glownego Instytuto Metalurgii i Odlewnictwa, 1950, No. 4, pp. 245-308). [In Polish]. The effect of individual design factors on the life of ingot moulds and on the steel solidification process is described. The design and life of ingot moulds used in Polish steel plants are analysed. V. G.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

Increasing the Durability of the Open-Hearth Furnace. K. Radźwicki. (Hutnik, 1949, vol. 16, May-June, pp. 181-183). [In Polish]. The author gives a short review of thermal processes in the open-hearth furnace, discusses means of increasing the life, and makes practical suggestions in this respect.—W. J. W.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

Briquetting of Ores Fines for Steel Plants. K. Radzwicki, W. Madej, and W. Stromczak. (*Prace Glownego Inst. Met.*, 1951, No. 3, 173–181). [In Polish]. Very good results were obtained in briquetting ore concentrates by Jarecki's method (used in U.S.S.R.) in which fines are mixed with small amounts of iron filings, water, and sodium chloride (0·5–1%). The method is based on corrosion processes which cement ore particles together. The highest strength of briquettes and the shortest time of hardening are obtained when the components are mixed so as to obtain the highest temperature increase during the corrosion process. Best results are obtained if the mix is pressed when at its highest temperature. However, sodium chloride is objectionable due to the destructive influence of alkali on refractory linings. Experiments were therefore made in which CaO, HCl, $MgCl_2$, H_2SO_4, ferrous sulphate, and spent pickling liquor were used as substitutes for sodium chloride. Investigations were made with ore concentrates containing Fe 71·2%, SiO_2 1·57%, CaO 2·29%, MgO 0·43%, P 0·13%, and S 0·039%. In laboratory experiments cylindrical briquettes (dia. and height about 50 mm., weight about 400 g.) were made at a pressure of 250 kg./sq. cm. Industrial briquettes (250 × 130 × 65 mm. weighing 6–7 kg.) were made on a brick-making machine at the same pressure. Fresh briquettes were left in the air under cover, and samples were tested every day for strength to follow the process of hardening. Minimum requirements for a briquette were taken from Russian practice, namely: (1) Compression strength min. 50 kg./sq. cm.; (2) shatter test: a briquette dropped twice on a steel plate from a height of 2 m. must not produce more than 10% fines (below 5 mm.); (3) porosity not more than 5–10%; (4) briquettes must not crumble when kept for 3 min. at 1500° C. Other requirements were: Fe 62% min.; SiO_2 8% max.; 5% max. of other slag-producing components; water 2% max. (including combined water 0·5% max.); P 0·03% max.; and S 0·03% max. In the first trials CaO was used as a binder without iron filings as the formation of $CaCO_3$ during hardening was expected to provide briquettes of sufficient strength. The results were unsatisfactory. In further experiments the Jarecki method was followed. The proportions of ore, iron filings, and water were 100/7/7 or 100/7/6. Briquettes made with HCl or $MgCl_2$ were unsatisfactory. Acetic acid (more than 0·15%) produced strong briquettes. For economic reasons this reagent could not be used on an industrial scale. Briquettes made with H_2SO_4 (0·2%) were strong (compression test above 110 kg./sq. cm., shatter test 5–6%), resisted atmospheric influence, stood up to loading and transport very well and, when added to the open-hearth bath, retained their shape and showed oxidising properties as good as the best lump ore. Ferrous sulphate and spent pickling liquor also gave satisfactory results. When spent liquor is used, the moisture content of the concentrates must not be higher than 3–4%. When H_2SO_4 or spent pickling liquor is used, 0·02 to 0·03% of sulphur is introduced into briquettes. This does not cause serious difficulty in using these briquettes in steelmaking and it is considered less detrimental than the destructive influence of alkali on refractory linings. v. u.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010006-2

Met Rev
1951

B Raw Materials and
Ore Preparation

270-B. Briquetting of Ore Fines for Steel Plants. (In Polish.) K. Radzwicki, W. Madej and W. Stronczak. *Polish Glownego Instytutu Metalurgii*, v. 3, No. 3, 1951, p. 173-181.

Details of laboratory and industrial tests. Jarchos method was modified by replacement of NaCl with H_2SO_4 or spent pickle liquor containing H_2SO_4. (B17, Fe.)

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Met. Rev.
1951

D - Ferrous Reduction
And Refining

390 D Diffusion Deoxidation With Coke in the Basic Openhearth Furnace. (In Polish.) K. Radzwicki and J. Kozielski. *Prace Głównego Instytutu Metalurgii*, v. 1, No. 4, 1951, p. 267-277.

Mechanical properties of open-hearth steel are said to be inferior to those of electric furnace steels because of greater content of oxygen and nonmetallic inclusions. Application of diffusion deoxidation with coke to eliminate the difference in quality. Other advantages. (D2, S1)

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Control of the Quality of Steel Plant Products. K. Radziwicki. (Hutnik, 1949, vol. 16, Sept.-Oct., pp. 366-370). [In Polish]. The author gives a brief account of the control of the quality of steel-plant products. The purpose of the production records for each particular cast is suggested and the items in these records are discussed.—W. J. W.

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13512* Briquetting of Ore Fines for Steel Plants (In Polish.) K. Radzewicz, W. Madej, and W. Stromczak. *Prace Glownego Instytutu Metalurgii*, v. 3, no. 3, 1951, p. 173-181

Gives details of laboratory and industrial tests on the above. Jarcho's method was modified by replacement of NaCl with H_2SO_4. Tables and graphs

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13554* **Diffusion Deoxidation With Coke in the Basic Openhearth Furnace** (In Polish) K. Radzwicki and J. Kozielski. *Prace Głównego Instytutu Metalurgii* v. 3 no. 4 1951 p. 207-217

Mechanical properties of openhearth steel are said to be inferior to those of electric-furnace steels because of greater content of oxygen and nonmetallic inclusions. Describes application of above process to eliminate the difference in quality. Other advantages are cited.

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Diffusion Deoxidation with Coke in the Basic Open-Hearth Furnace. K. Radzwicki and J. Kozielski. (*Prace Głównego Inst. Met.*, 1931, 3, 4, 267–278). [In Polish]. Deoxidation of the bath with coke in the basic open-hearth furnace is discussed. The procedure was as follows: When the necessary degree of decarburization was obtained, coke breeze or fines were thrown on to the slag. Deoxidation of the slag caused oxides from the metal to diffuse into the slag. This coke addition was repeated three times and the steel then finished in the usual manner. The results for 18 heats in a 50-ton furnace with coke deoxidation are given. The following conclusions are drawn: (1) Diffusion deoxidation is more efficient than deoxidation by precipitation; (2) addition of coke to the slag during deoxidation does not cause recarburization of the bath, nor the return of phosphorus from slag to metal; (3) the quality of metal is improved so that steel deoxidized by this diffusion method has properties similar to those of electric furnace steel; (4) the iron oxide content of the slag is diminished; (5) when the decarburization process is intensified during the oxidation period, diffusion deoxidation does not increase the heat time; and (6) diffusion deoxidation considerably reduces deoxidizer and ferro-alloy consumption; the manganese losses in deoxidation are reduced by 50%.—v. u.

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UTILIZATION OF DOMESTIC LOW-GRADE IRON ORES. K. Radzwicki (Hutnik, 1948, vol. 15, Apr., pp. 153-157). (In Polish). Experiments in the utilization of low-grade Polish iron ores are described. By means of the Krupp-Renn process a product suitable for use in the open-hearth and electric furnaces has been made.

W.J.W.

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The influence of some metallurgical factors on the austenite grain size and the hardening of steel. Kazimierz Radźwicki. *Hutnik* 11, 215-36(1939); *Chem. Zentr.* 1939, II, 2582.—Methods of hardening and the development and regulation of grain size are considered in detail. The influence of the reaction in the ladle on the grain size in Martin steel was investigated as was also the influence of admixts. (Cr, W, Mo, V, Ti, and Al) on the depth of hardening, the limiting permissible hardening temp., and the max. grain size. The following optimum amts. of these elements are given: V, 0.19-0.21%, Ti, 0.19-0.23%, and Al, 0.05%. The influence of the duration of the time under white slag on the grain size and the readiness with which the metal could be hardened was also studied. In general, the depth of hardening increased more rapidly with increase in temp. the longer (30, 60, 90 min.) the steel was treated at about 1400° with white slag. M. G. Moore

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Use of present-day refractories in basic open-hearth furnaces. K. Radzwiki. *Hutnik* 7, 297-302(1935); *Ceram. Abstracts* 15, 244(1936). M. W. B.

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SELESI, D.; RAFAJLOVIC, A.

From the entomological collection of Prof. A. Taubert (Subotica). Zbor prir Mat srp 25:155-182 '63

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RADZWICKI, K., doc.

Acceleration of the first slag forming process from melting furnace charge by feeding the metal bath with oxygen during the melting period. Hutnik P 28 no.12:467-468 D '61.

Diminution of chromium losses in melting stainless steel by means of the recovery method with the application of oxygen. Ibid.:468-470

New technology of bearing steel melting. Ibid.:470-471

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RADZWICKI, K.; ZAK, H.

Production of vacuum decarbonized and nitrogen hardened ferro-alloys. Biul inf inst metal zel no.1:5-8 '63.

1. Institute of Iron Metallurgy, Gliwice.

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RADZWICKI, K., doc.

Technological progress in electric furnaces and steel plants during the years 1961-1962. Hutnik P 30 no.12:416-419 [illegible] '63.

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RADZWICKI, K., doc.

Technological progress in the intensification of the open-hearth process as based on data from 1961 and 1962 literature. Hutnik 31 no.3:100-102 Mr '64.

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RADZWICKI, K., doc.

Intensification of the open-hearth process due to the use of high-caloric fuels as seen in the light of the production of 1961 and 1962. Hutnik P 31 no. 4:137-138 Ap '64.

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[illegible], K., doc. [illegible].

Technological progress in the open-hearth process as seen in the light of literature for the years 196[illegible]-1963. Hutnik 31 no.12:[illegible] '64.

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Development of the oxygen converter process during the years 1961-1962. Hutnik P 31 no.1/2:54-58 Ja-F'64

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Progress in vacu m metallurgy during the years 1961-1962.
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Progress in the technology and heating of open-hearth furnaces during the years 1961-1962. Hutnik P 30 no. 5:159-160 My '63.

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Vacuum degassing of liquid steel. Wiad hut 19 no.7/8: 191-195 Jl/Ag '63.

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Vacuum degassing of low-carbon steel. Wiad hut 19 no.9: 238-240 S'63.

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RADZWICKI, K., doc.

Development of design and efficiency of open-hearth furnaces in the light of technological literature during 1961 and 1962. Hutnik P 30 no. 11: 376-377 N '63.

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Progress in continuous steel casting in 1961-1962. Hutnik P 30 no.6:194-198 Je '63.

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Basic hot blast cupola as source of the liquid charge for a steel mill. Wiad hut 15 no. 3:70-72 Mr '64.

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Influence of vacuum degasing on the quality of steel for mass utilization. Wiad hut 16 no7/8:212-215 Jl-Ag '60.

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Operation of open-hearth furnaces with liquid metal charges from cupolas. Wiad hut 19 no.11:314-315 N'63.

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Resolutions and recommendations of the all-Union conference of steel engineers of the U.S.S.R. Wiad hut 15 no.10:305-308 O '64.

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Influence of intensified cooling on the output and heat consumption of open-hearth furnaces. Wiad hut 19 no.12: 339-341 D'63.

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Progress in the production of ferroalloys in the light of publications from 1961-1962. Hutnik P 30 no.7/8:266-268 Jl/Ag'63.

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Technical progress in steel casting and riser heating in the light of publications during the years 1961-1962. Hutnik P 30 no.9:309-310 S '63.

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Development of the use of the Kaldo and Rotor processes (1961-1962). Hutnik P 30 no.3:92-94 Mr '63.

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"Technical progress in ferrous metallurgy of the U.S.S.R.; cast steel production" by G.N. Ojksa [G.N. Oiksa]. Reviewed by K. Radzwicki. Hutnik P 29 no.5:188-189 My '62.

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Development of vacuum metallurgy based on publications from 1960 and 1961. Hutnik P 29 no.7/8:290-293 Jl-Ag '62.

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New steel process improves the properties of steel and alloys for important purposes. Hutnik P 29 no.5:186-188 My '62.

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RADZWICKI, K. dos.

Development of the oxygen [illegible] process (LD) as based on publications from the years [illegible] and 19[illegible]. Hutnik P 29 no.6: 230-233 Je [illegible]62.

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Testing liquid effectiveness of electric steel in a ladle with synthetic limestone-clay slags. Hutnik P 29 no.2:73-75 F '62.

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