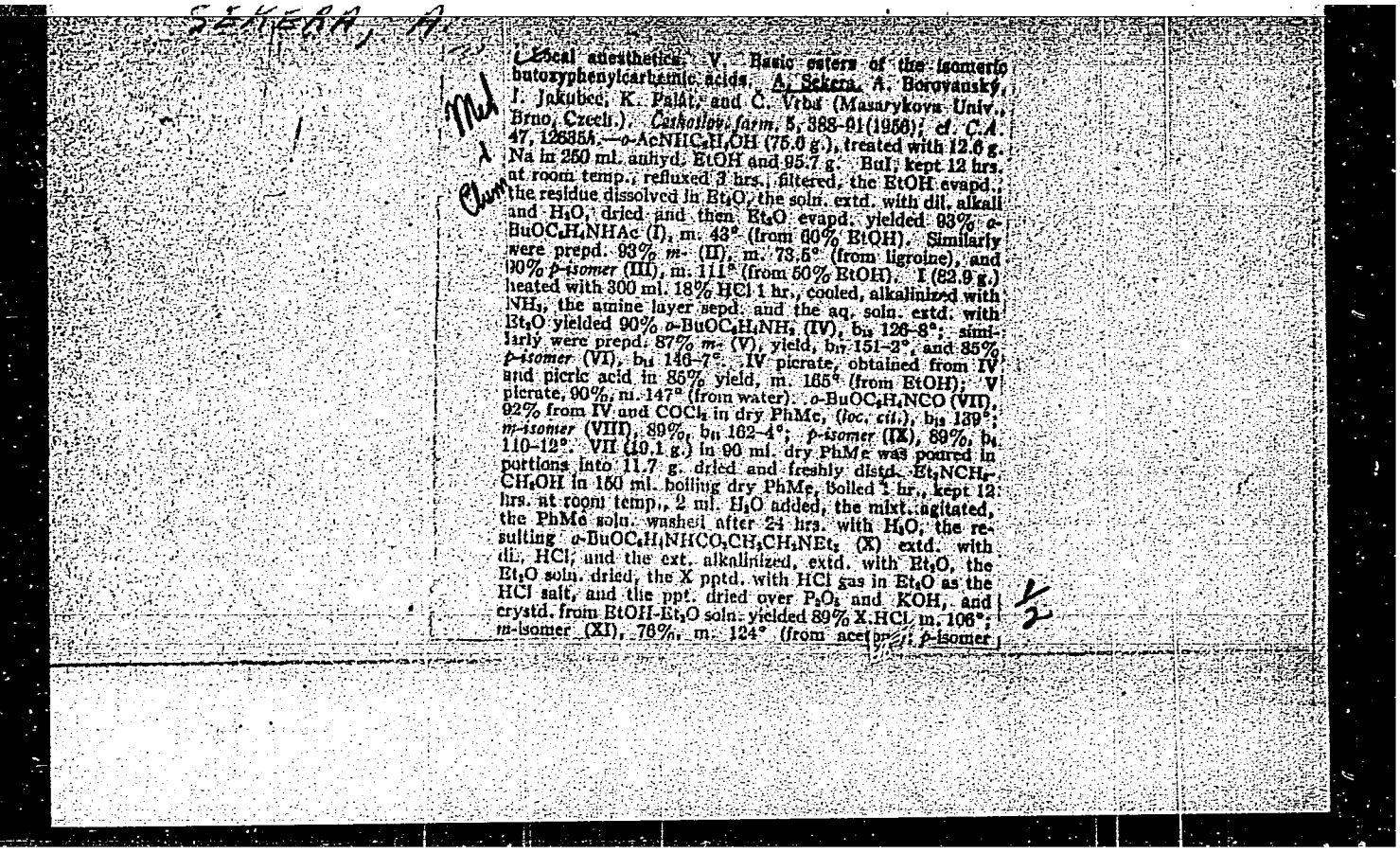


Local anesthetics. V. Basic esters of the isomeric butoxyphenylcarbamic acids. A. Sekera, A. Borovanský, J. Jakubec, K. Palát, and Č. Vrba (Masarykova Univ., Brno, Czech.). *Českoslov. farm.* 5, 388-91 (1956); *cf. C.A.* 47, 12685h.—*o*-AcNHC$_6$H$_4$OH (75.0 g.), treated with 12.6 g. Na in 250 ml. anhyd. EtOH and 95.7 g. BuI, kept 12 hrs. at room temp., refluxed 3 hrs., filtered, the EtOH evapd., the residue dissolved in Et$_2$O, the soln. extd. with dil. alkali and H$_2$O, dried and then Et$_2$O evapd. yielded 93% *o*-BuOC$_6$H$_4$NHAc (I), m. 43° (from 60% EtOH). Similarly were prepd. 93% *m*- (II), m. 73.5° (from ligroine), and 90% *p*-*isomer* (III), m. 111° (from 50% EtOH). I (62.9 g.) heated with 300 ml. 18% HCl 1 hr., cooled, alkalinized with NH$_3$, the amine layer sepd. and the aq. soln. extd. with Et$_2$O yielded 90% *o*-BuOC$_6$H$_4$NH$_2$ (IV), b$_{15}$ 126–8°; similarly were prepd. 87% *m*- (V), yield, b$_{17}$ 151–2°, and 85% *p*-*isomer* (VI), b$_{14}$ 146–7°. IV picrate, obtained from IV and picric acid in 85% yield, m. 165° (from EtOH); V picrate, 90%, m. 147° (from water). *o*-BuOC$_6$H$_4$NCO (VII), 92% from IV and COCl$_2$ in dry PhMe, (*loc. cit.*), b$_{13}$ 139°; *m*-*isomer* (VIII), 89%, b$_{11}$ 162–4°; *p*-*isomer* (IX), 89%, b$_4$ 110–12°. VII (19.1 g.) in 90 ml. dry PhMe was poured in portions into 11.7 g. dried and freshly distd. Et$_2$NCH$_2$CH$_2$OH in 150 ml. boiling dry PhMe, boiled 1 hr., kept 12 hrs. at room temp., 2 ml. H$_2$O added, the mixt. agitated, the PhMe soln. washed after 24 hrs. with H$_2$O, the resulting *o*-BuOC$_6$H$_4$NHCO$_2$CH$_2$CH$_2$NEt$_2$ (X) extd. with dil. HCl, and the ext. alkalinized, extd. with Et$_2$O, the Et$_2$O soln. dried, the X pptd. with HCl gas in Et$_2$O as the HCl salt, and the ppt. dried over P$_2$O$_5$ and KOH, and crystd. from EtOH-Et$_2$O soln. yielded 89% X.HCl, m. 106°; *m*-isomer (XI), 76%, m. 124° (from acet[illegible]); *p*-isomer

(XII), 86%, m. 173° (from Me_2CO-AcOEt). The most interesting pharmacol. effect was shown by XI, which was twice as toxic as cocaine, but 50 times as effective in surface anesthesia as cocaine and 70 times as effective as procaine in infiltration anesthesia. K. Macek

Ales Sekera, Alas

Condensation products of monosaccharides with halogenated aldehydes, especially glucose with chloral. Alois Borovanský and Aleš Sekera. Czech. 85,596, Mar. 15, 1956. Adding to a soln. of 30 g. glucose in 170 g. $CCl_3CH(OH)_2$ at 70–80° with stirring 0.1 g. H_2SO_4 and 130 ml. $CHCl_3$, boiling the homogenous mixt. with continuous removal of H_2O by azeotropic distn. (21.6 ml.), distg. the solvent, cooling to 60°, stirring 15 min. at 60°, sepg. the pptd. β-glucochloralose (5–6 g., m. 230–2°), and adjusting the mother liquors to pH 6–7 with 0.1*N* NaOH gave 15–17 g. α-glucochloralose, m. 182–4°. L. J. Urbánek

2

SEKERA, A.

A new group of highly active local anesthetics. K. Palát, A. Sekera, and Č. Vrba (Masaryk Univ., Brno, Czech.). *Experientia* 12, 273–4(1956)(in German).—The following were synthesized and tested for local and infiltration anesthesia: 2-diethylaminoethyl α-(4-ethoxyphenyl)phenylacetate-HCl, m. 186°; 2-diethylaminoethyl α-(4-butoxyphenyl)phenylacetate-HCl, m. 146–7°; 2-diethylaminoethyl α-(3-butoxyphenyl)phenylacetate-HCl (I), m. 116–19°; 2-diethylaminoethyl α-(2-butoxyphenyl)phenylacetate-HCl, m. 136°; 2-diethylaminoethyl bis(4-ethoxyphenyl)acetate-HCl, m. 134–6°; 2-diethylaminoethyl bis(4-butoxyphenyl)-acetate-HCl, m. 109–15°; 2-diethylaminoethyl bis(3-butoxyphenyl)acetate-HCl, m. 97–8°. All were superior as anesthetics to cocaine and procaine. I was particularly effective. D. S. Farner

SEKERA, A

EXCERPTA MEDICA Sec.2 Vol.10/3 Physiology March 57

1381. SEKERA A. and VRBA Č. Inst. für Pharmazeut. Chem., Masaryk-Univ. und Pharmakol. Inst., Fak. für Veterinärmed., Brno. *Beziehungen zwischen physikalisch-chemischen Eigenschaften und lokalanästhetischer Wirksamkeit. Relationship between physico-chemical properties and local anaesthetic activity NATURWISSENSCHAFTEN 1956, 43/13 (303-304) Tables 1

Thirty basic, ester-substituted, carbamic acid derivatives were investigated for their relationship between local anaesthetic activity and physico-chemical properties. The alkyl, phenyl, tolyl, xylyl, alkoxyphenyl and naphthyl derivatives were studied. Sixteen of the compounds investigated had local anaesthetic activity, 14 did not. Surface, infiltration, and conduction anaesthetic activity was compared with surface activity in buffered and non-buffered solutions, absorbability, lipoid solubility and ability to flocculate colloids. Relatively good, but not quantitative correlation was found between local anaesthetic activity and the above physico-chemical properties. The correlation between surface and infiltration anaesthetic activity and physico-chemical properties was better than the relationship between conduction anaesthesia and physico-chemical properties. The correlation coefficients ranged from 0.6 to 0.9. Foldes - Pittsburgh, Pa.

SEKERA

CZECHOSLOVAKIA / Chemical Technology. Drugs. Vitamins. Anti- H
biotics.

Abs Jour: Ref Zhur-Khimiya, No 22, 1958, 74959.

Author : Sekera, Krachmarova.
Inst : ~~Not given.~~
Title : Application of Koffler's Micromethods for the Control of Drugs. IV. Identification of Chemical Drugs Recently Included in the Czechoslovakian Pharmacopeia, Second Edition.

Orig Pub: Ceskosl. farmac., 1957, 6, No. 5, 255-262.

Abstract: By the Koffler's block method, the following constants were determined for 61 individual chemical compounds in the Czechoslovakian Pharmacopeia,

Card 1/2

Abs Jour: Ref Zhur-Khimiya, No 22, 1958, 74959.

Abstract: Second Edition: melting point, refractive indeces (RI) in a pure state as well as in eutectic mixtures (1:1) with azobenzene, benzyl, acetyl anilide, phenacetin, benzanilide, salophen and dicyandiamide. In addition to this, RI were calculated for a series of compounds at 150°C.

Communication III, see: R. Zh. Khim., 1958, 4391.

Card 2/2

SEKERA, A.

4

Local anaesthetics. XIII. Basic substituted propiophenone. M. Celadník, K. Palát, A. Sekera and C. Vrba. (*Arch. Pharm., Berl.* 1957, 290, 151—159).—A series of 13 basic substituted alkoxypropiophenones have been prepared and pharmacologically tested. The compounds are structurally related to Falicain, and are derived by substitution in the basic part of the molecule, or by replacing the propoxy- with a butoxy-group in the *o*- or *m*-position. All these compounds, except *m*-nitrophenyl β-(*N*-piperidyl)ethyl ketone hydrochloride, are as active as cocaine or procaine. *m*-Butoxyphenyl β-(*N*-piperidyl)ethyl ketone hydrochloride has a surface activity 25 times that of cocaine, with an infiltration activity 29 times that of procaine; it is twice as toxic as Falicain. G. R. WHALLEY.

SEKERA, A.

COUNTRY : Czechoslovakia G-2
CATEGORY :

ABS. JOUR. : RZKhim., No. 20 1959, No. 71492

AUTHOR : Sekera A.; Pavlicek R.; Vrba C.
INST. : Not given
TITLE : A Study of Local Anesthetics. Article IX. Synthesis of Some New β-Alkoxyethoxy-carbanilates and of Aminated β-Alkoxyethoxycinchonamides.

ORIG. PUB. : Bull Soc chim. France, 1959, 72, 401-404 *

ABSTRACT : In order to determine the relation between the chemical structure and local anesthetic activity, following substituted carbanilates were synthesized: $RC_6H_4NHCOOCH_2CH_2N(C_2H_5)_2$ (Ia-e, here and subsequently a: R = o- $CH_3OCH_2CH_2O$, b: R = m- $CH_3OCH_2CH_2O$, c: R = o- $C_2H_5OCH_2CH_2O$, d: R = m- $C_2H_5OCH_2CH_2O$, and e: R = p- $C_2H_5OCH_2CH_2O$), analogues of sevicaine bases (II a-b), and also sevicaine (IIc-base). Among I-chlorides the most active were found to be Ia and Ic chlorides, which had activities (surface

CARD: 1/9

* Ceskosl. farmac., 1958, 7, #8, 448-450.

22

C-2

COUNTRY : Czechoslovakia

CATEGORY :

ABS. JOUR. : RZKhim., No. 20 1959, No. 71492

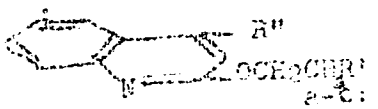
AUTHOR :

INST. :

TITLE :

CITT. SOURCE :

ABSTRACT



II a: R' = OCH_3
b: R' = OC_2H_5
c: R' = C_2H_5
d-t: R" = $ClNHCH_2CH_2N(C_2H_5)_2$

$CH_3OCH_2CH_2Cl$ (24% yield, b.p. 93°) was synthesized by reacting $(CH_3)_2SO_4$ with $HOCH_2CH_2Cl$. The latter when heated for 15 hours with NaI and acetone, gives $CH_3OCH_2CH_2I$ (90% yield, b.p. 137-138°). The reaction of $SOCl_2$ with $C_2H_5OCH_2CH_2OH$ in the presence of dimethylaniline yields

CARD: 3/9

13

G-2

COUNTRY : Czechoslovakia
CATEGORY :

AUS. JOUR. : RZKhim., No. 20 1959, No. 71492

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : 150/0.05; c, 64, 138/0.1; d, 71, 187/0.75, m.p. 54.5°; e, 85, 172/0.25, m.p. 72°; IVa, 78, 110/0.1; b, 71, 112/0.11; c, 72, 93/0.05; d, 59, 110/0.05; e, 86, 101/0.1; Va, 65, 80/0.07; b, 82, 91/0.11; c, 71, 90/0.21; d, 81, 125/0.06; e, 63, 90/0.07. In order to prepare I, V was heated in moisture-free toluene with an equimolar quantity of $(C_2H_5)_2NCH_2CH_2OH$. Subsequent addition of toluene solution of HCl precipitated I-chloride. If one fails to obtain chloride crystals the toluene solution may be extracted with 10% HCl. The extract

CARD: 5/9

24

G-2

COUNTRY : Czechoslovakia
CATEGORY :
ABS. JOUR. : Referat. Zh. 20 1959, No. 71492
AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : ...VI yield depend to a large extent on the degree of comminution of Na. Upon the reduction with LiAlH4 in ether, $(C_2H_5)_2NCH_2CN$ gives VI with a 54% yield, b.p. 81-83/25 mm. Catalytic reduction of $(C_2H_5)_2NCH_2CN$ in the presence of various catalysts, at pressures ranging from 20 to 100 atm and at 20-80°C failed to produce any VI. 0.18 mole of 2-oxyeinchonine [synthesized from acetylisatin with a 57% yield, m.p. 325° (not corrected)] was treated for 3 hours with 0.5 moles of $POCl_3$, raising the bath temperature gradually from 120° to 150°. The resulting

CARD: 79

25

G-2

COUNTRY : Czechoslovakia
CATEGORY :

ABS. JOUR. : RZKhim., No. 20 1959, No. 71492

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : PCl_3 was distilled off and moisture-free toluene was added to the residue. The mixture was then again distilled. The yield of 2-chlorocinchoninic (VII-acid) was 86%, m.p. 82° (not verified, from toluene). Into a solution of an alcoholate composed of 2g-atoms Na, and 50 ml n-C_4H_9OH, $CH_3OCH_2CH_2OH$ (X) or $C_2H_5COH_2CH_2OH$ were added 7g of diethyl aminoethylamide-VII, the mixture was then heated for 2.5 hours, and the corresponding II was isolated. (X was synthesized from CH_3OH and ethylene oxide in the presence of conc. H_2SO_4, b.p. 123-125°).

CARD: 8/9

ORIG. PUB. :

ABSTRACT : Listed below are the substance, % yield, m.p. (from petroleum ether), and chlorides m.p.: IIa, 82, 79, 138; b. 81, 83.5 (not verified); c. 95, 82.5 (not verified), 94. If not specified the melting points cited were corrected. Determination of M.P. was done in a Kofler block. Article X, see RZKhim, 1958, #10, 30921.

-- G. Braz

CARD: 9/9

26

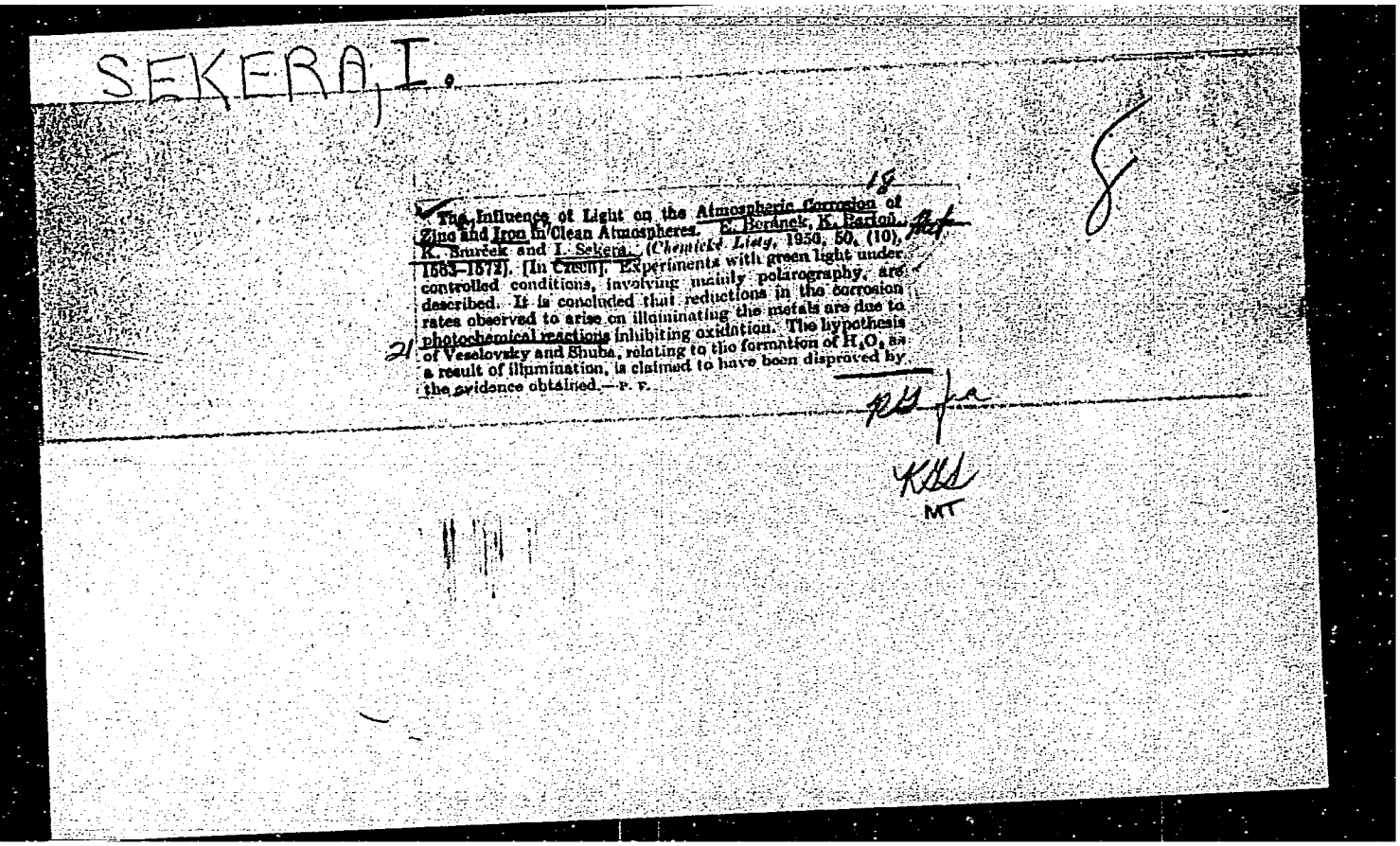
Chem
4

SEKERA, H. A.

Chemical Abstracts
Vol. 48 No. 5
Mar. 10, 1954
Pharmaceuticals, Cosmetics, and Perfumes.

Anthelmintics of natural origin. III. Helenin. A. Sekera and V. Rahm (Univ. Brno, Czech.). *Ceskoslov. farm.* 2, 22-4(1953); cf. *C.A.* 47, 8071a.—A review on chemistry and effect, with 19 references. D. Hubíková

P-31-54



SEKERA, I.

18

The Influence of Light on the Atmospheric Corrosion of Zinc and Iron in Clean Atmospheres. E. Beránek, K. Bartoň, K. Brunek and I. Sekera. (*Chemické Listy*, 1956, 50, (10), 1563–1572). [In Czech]. Experiments with green light under controlled conditions, involving mainly polarography, are described. It is concluded that reductions in the corrosion rates observed to arise on illuminating the metals are due to photochemical reactions inhibiting oxidation. The hypothesis of Veselovsky and Shuba, relating to the formation of H_2O_2 as a result of illumination, is claimed to have been disproved by the evidence obtained.—P. F.

21

KBB
MT

SHIRA, J.

"Significance of Game for Nutrition and the Health of People." p. 120 (Vyziva Lidu, Vol. 8, no. 7/8, July/Aug. 1953, Praha)

SO: Monthly List of East European Accessions, Vol. 3, no. 2, Library of Congress, Feb. 1954, Uncl.

SEKERA, J.

Effort to resume and improve the breeding of the Czech pheasant. p. 133.

Vol. 7, 1954
PRACE VYZKUMNYCH USTAVU LESNICKYCH CSR.
Praha, Czechoslovakia

So: Eastern European Accession Vol. 5 No. 4 April 1956

SEKERA, J.

"Problems of raising partridges."

VESTNIK. Praha, Czechoslovakia, Vol. 5, No. 7/8, 1958,

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959.

Unclassified.

SEKERA, J.

"Protection of small animals during the forage harvesting." p.152.

VESTNIK. Praha, Czechoslovakia, Vol. 6, No. 3, 1959

Monthly list of East European Accession Index (EEIA), Library of Congress, Vol. 8, No. 7, July, 1959, Unclas

BARTEK, Z., inz.; MACHACEK, K.; SEKERA, J.

Professional magnifying apparatus Agrand. Jemna mech opt 8 no.9:295-300 S '63.

SEKERA, ZDANEK

80-175 551.593.7

Sekera, Zdenek. Polarization of skylight. *Handbuch der Physik*, Berlin, 48:288-328, 1957. 20 figs., numerous foot-refs., bibliog. p. 327-328, table, 8 eqs. DWB (N236)—A thorough treatise on every aspect of skylight polarization, including theory, measurements and applications. The ARAGO, BREWSTER and BABINET points are considered, the MIE and RAYLEIGH theories and the radiative transfer theory discussed at length for a molecular atmosphere, a turbid atmosphere, etc. Actual variations in horizontal and vertical, for various sun heights, dispersion in narrow spectral ranges, twilight polarization and other anomalies such as due to KRAKATOA eruption included in treatment. The effect of ground inflection with a high albedo (0.80) on position of the neutral points is discussed and nomograms showing values for these positions under various albedos presented on p. 302-3. *Subject Headings:* 1. Skylight polarization 2. Albedo effects on neutral points.—*Z.S.*

STADNIK, V.M.; SEKERESH, Ye.Yu.

Activity of a catalyst in the presence of superimposed electric and magnetic fields. Kin. i kat. 5 no.3:430-433 My-Je '64. (MIRA 17:11)

1. Uzhgorodskiy gosudarstvennyy universitet.

36524
S/081/62/000/006/022/117
B171/B101

11.1210

AUTHORS: Stadnik, P. M., Sekeresh, Ye. Yu., Grodzitskiy, V. V.

TITLE: Effects of electric field on some catalytic processes carried out on metallic or semiconducting catalysts

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 6, 1962, 59, abstract 6B414 (Dokl. i soobshch. Uzhgorodsk. un-t. Ser. khim., no. 4, 1961, 25-26)

TEXT: The authors indicate that, in the oxidation of methane on ZnO and on the mixture of 60 % ZnO + 40 % CuO as well as in the oxidation of a mixture of propane and butane on metallic Pt, the electric charge of the catalyst affects the discharge of CO_2. Variations of the CO_2 yield, amounting to 0.5-2 %, were found. [Abstracter's note: Complete translation.]

X

Card 1/1

SEKERIN, A.K.

Methods of straightening track on heaving ground. Put' i put. khoz. no.10:34-35 O '57. (MLRA 10:11)

1. Starshiy inzhener distantsii (Irkutsk).
(Railroads--Track)

SEKERKA, B; SPEVAK, A.; FRIEDRICH, K.

Infrared indication in gas chromatography.

P. 602. (CHEMICKY PRUMYSL) (Praha, Czechoslavakia) Vol. 7, no. 11, Nov. 1957

SO: Monthly Index of East European Accession (EEAI) LC, Vol. 7, No. 5, May 1958

CZECHOSLOVAKIA/Fitting Out of Laboratories. Instruments. F.
Their Theory, Construction, and Use.

Abs Jour : Ref Zhur - Khimiya, No 9, 1958, 28586

Author : Sekerka, B., Spevak, A., and Friedrich, K.
Inst : -
Title : Infrared Indication in Gas Chromatography.

Orig Pub : Chem Prumysl, 7, No 11, 602-604 (1958) (in Czech with summaries in English and Russian)

Abstract : The results obtained from the utilization of thermistors in the dispersion-free IR-indication of the components of mixtures analyzed by gas-liquid partition chromatography are discussed.

Card 1/1

Country : Czechoslovakia F
Category : Laboratory Equipment. Instrumentation.

Abs. Jour. : Ref. Zhur.-Khimiya No. 6, 1959 19262

Author : Sekerka, B.
Institut. :
Title : A Negative-Filtration Dispersion-Free Infrared Gas Analyser with a Bolometer Indicator.

Orig Pub. : Automatisace, 1958, No 8, 257-261

Abstract : Brief description of the principles of operation and arrangement of dispersion-free gas analyzers of positive- and (in greater detail) of negative-filtration, including the vuos-Rybitvi gas analyzer. Descriptions of sources and indicators of radiation (thermistors and a special large-surface bolometer), triple cascade amplifier and registering device. -- Ya. Satunovskiy.

Card: 1/1

S/263/62/000/024/002/002
E194/E455

AUTHORS: Váňa, J., Sekerka, B., Varcl, Z.

TITLE: Measurement of the surface temperature of rotating shafts

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk, Izmeritel'naya tekhnika, no.24, 1962, 30, abstract 32.24.185. (Automatizace, v.5, no.6, 1962, 169-171) (Czech.)

TEXT: The Nauchno-issledovatel'skiy institut organicheskogo sinteza ChSSR (Scientific Research Institute of Organic Synthesis of the Czechoslovak Republic) has developed a device for contactless temperature measurement of the surfaces of rotating shafts. The sensitive element is a platinum wire 0.02 mm diameter, wound on a mica former of 7 x 40 mm, 0.05 mm thick in a dust-proof mount. The wire resistance at 20°C is 750 ohms. Temperature is measured by resistance change as indicated by a Wheatstone bridge, the time constant of the device being no more than 20 seconds. The operating current of 1 mA is from two cells which can supply 15 sensitive elements for six months. The sensitive elements are placed 1 mm from the shaft surface and

Card 1/2

measure temperatures in the range 20 to 150°. Temperatures can be registered as chart recordings from six points on the shaft and as meter readings from nine. If the distance of the sensitive element from the shaft surface varies by ± 0.5 mm the error of measurement is ± 5° at 114°. The practical accuracy at temperatures up to 200°C is ± 2°. The device is calibrated by comparison with a contact pick-up or by the "zero distance" method.

[Abstracter's note: Complete translation.]

Card 2/2

VANA, J., inz.; SEKERKA, B.; VARCL, Z.

Measuring the surface temperature of revolving cylinders. Automatizace 5 no.3:70-72, 79 Mr '62.

1. Vyzkumny ustav organickych syntez, Pardubice-Rybitvi.

SEKERKA, I.

Chemical Abst.
Vol. 48
Apr. 10, 1954
Analytical Chemistry

9

Use of complexons in chemical analysis. XXXVIII. Determination of uranium by the titration of ammonia with hypobromite. Ivan Sekerka and Jan Vořlíček (Výzk. ústav, Uhlíněves, Czech.). Chem. Listy 47, 512-15(1953); cf. C.A. 48, 3104f.—To det. U, mix the soln. of UO_2^{++} with 5% complexon III soln., ppt. with aq. NH_3 in slight excess, filter off the ppt. after 1 hr., wash out NH_3 loss with EtOH, dissolve the ppt. in a satd. soln. of $NaHCO_3$ and titrate with 0.05N $Ca(OCl)_2$ after the addn. of 0.5 g. KBr, with potentiometric or polarometric indication. Tl and Be do not interfere, V causes high values. It is possible to det. U in the presence of PO_4^{---}. XL. Reductometric determination of silver. Rudolf Přibil, Jan Doležal, and Vladimír Simon (Charles Univ., Prague, Czech.). Ibid. 1017-22.—Increased reduction ability of Fe^{++} in the presence of complexon III (I) (oxidation-reduction potential FeY^{--}/FeY^{-} at pH 4-6.5 is 0.117 v.) is used for the potentiometric and polarometric detn. of Ag with $FeSO_4$. To 5-100 mg. Ag add 0.1M I to keep the ratio Ag/I 1:1, adjust the pH to 5 with the acetate buffer (5-10 ml.), dil. to 0.005M Ag concn., and titrate with 0.1M $FeSO_4$. The detn. can be applied to samples contg., in addn. to at least 5 mg. Ag, up to 200 mg. Pb, 50 mg. Cu, 50 mg. Bi, and 50 mg. Cd, if sufficient I is added to bind the metals. XLI. Colorimetric determination of uranium with dibenzoylmethane. Rudolf Přibil and Miroslav Jelínek. Ibid. 1326-32.—The highly selective method for the detn. of UO_2 is based on its extn. with AcOEt soln. of Bz_2CH_2 and colorimetric detn. Shake a 20-ml. sample contg. 0.05-0.5 mg. U 5 min. with 10 ml. 0.5% soln. of Bz_2CH_2 in AcOEt (I) and shake the aq. layer 10 min. with 15 ml. of the reagent. To the exts. add a few drops of EtOH, make up to 25 ml., and measure the color at 410 mμ against the soln. I. If other cations are present in the sample (contg. up to 0.5 mg.), acidify slightly and treat with 5% soln. of complexon III. Excess complexon is bound by 1% $Ca(NO_3)_2$, the soln. neutralized with NH_3 to pH 7, and extd. 3 times for 10 min. with 5, 10, and 10 ml. I. M. Hudlický

SEKERKA, I.

Czechoslovakia/ Physical Chemistry - Electrochemistry B-12

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11369

Author : Sekerka I., Vorlicek J.
Title : Study of Corrosion. I. Polarographic Investigation of Metal Corrosion

Orig Pub : Korrosionsstudium. I. Ein Beitrag zur polarographischen Verfolgung der Metallkorrosion.
Sb. chekhosl. khim. rabot, 1954, 19, No 6, 1335-1338 (German)

Abstract : See RZhKhim, 1956, 50381

1/1

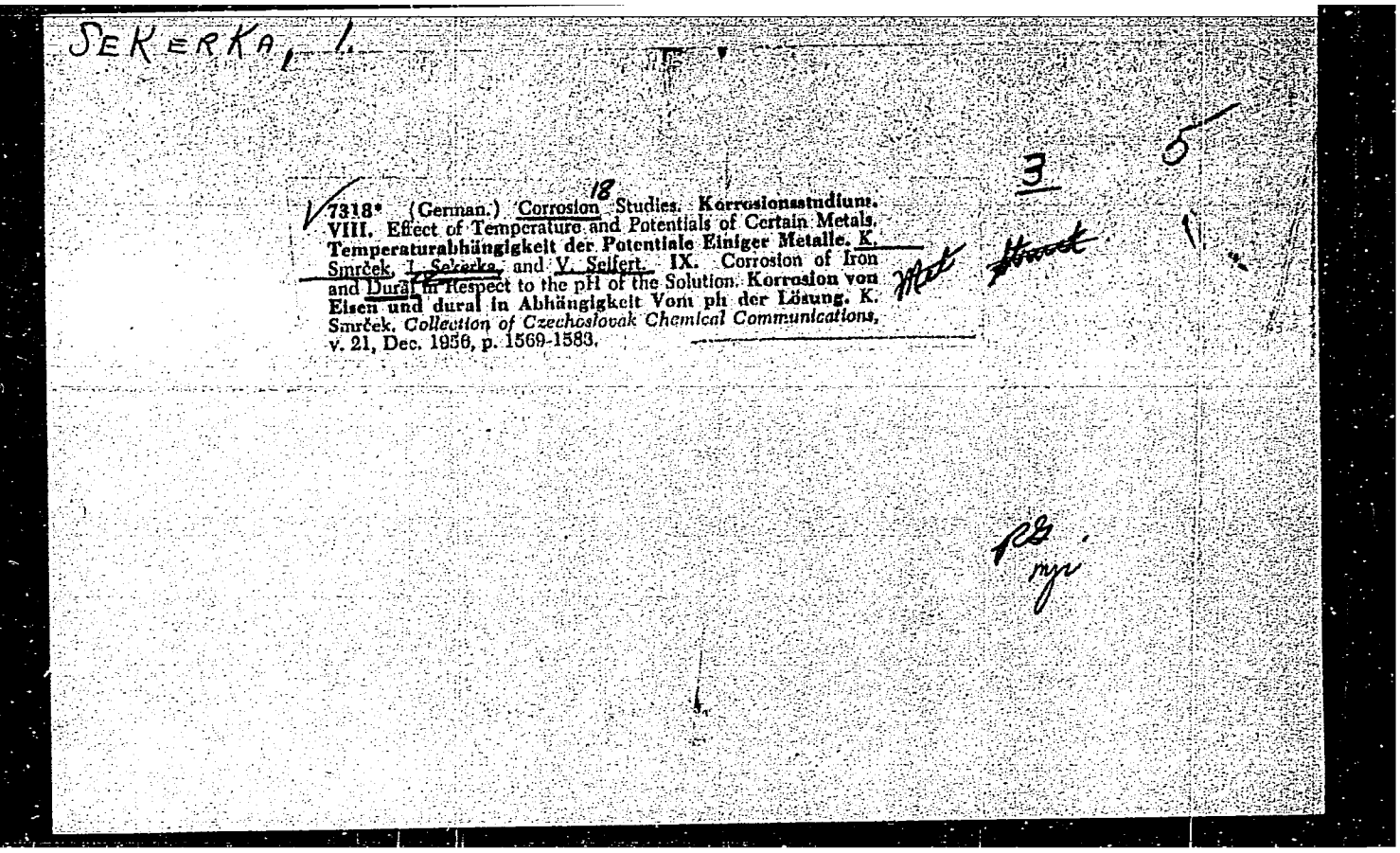
SEKERKA, I.

Corrosion studies. I. Polarographic study of metal corrosion. I. Sekerka and J. Vorlíček (Výzkumný ústav ochrany [illegible]). *Chem. Listy* 48, 920–2 (1954).—At −0.6 v. the wave which appears between the 2 reduction waves of O in neutral media is not due to the percarbonic acid (cf. Van Rysselberghe, *et al.*, *C.A.* 42, 4118a) but to methyl red. The wave height is a linear function of the concn. of methyl red. E. Erdős

Sekerka, Ivan

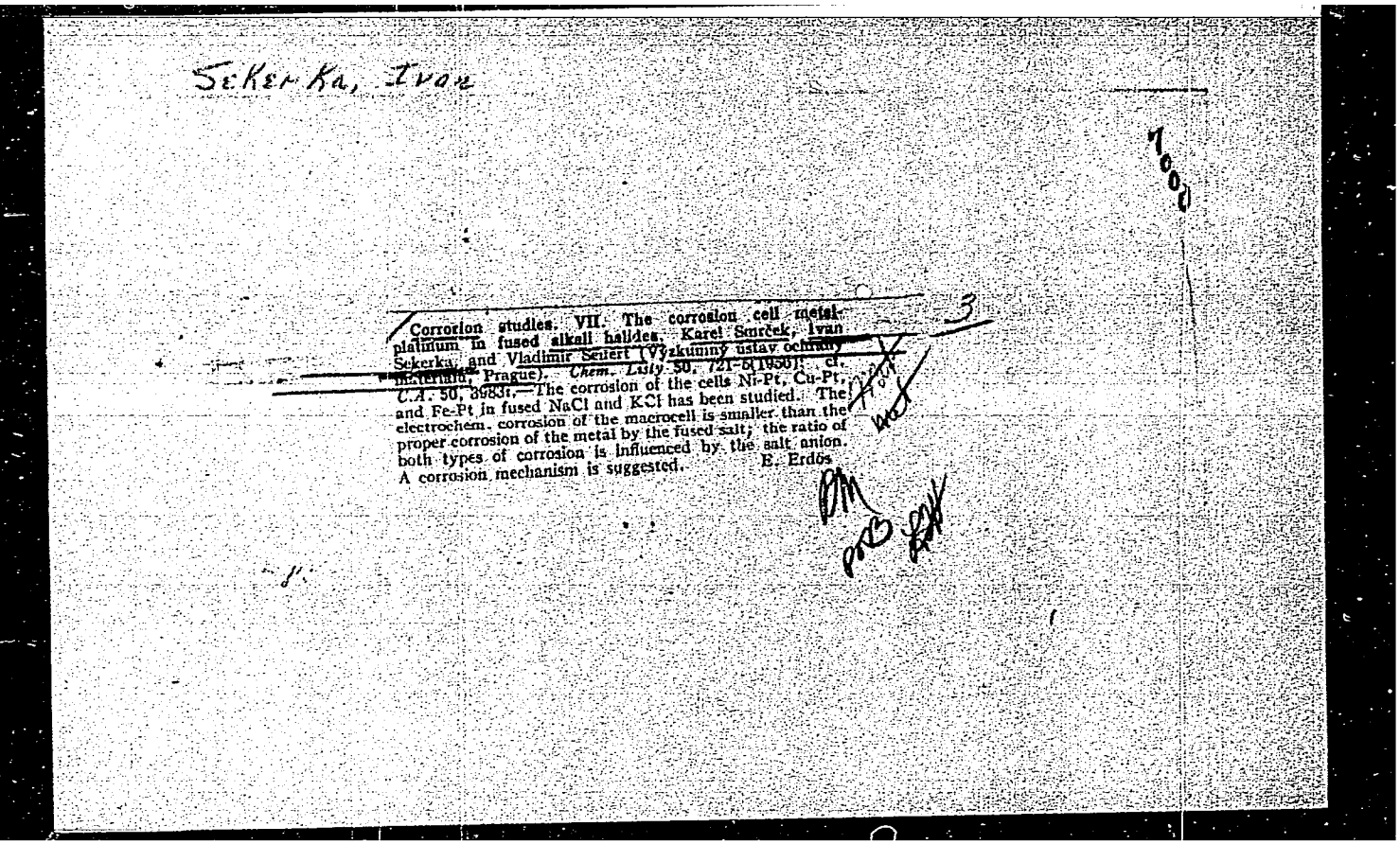
888

Formation of hydrogen peroxide on mechanically stressed metals in aqueous medium. Vladimír Seifert, Karel Smrček, Jan Voříšek, and Ivan Sekerka (Výzkumný Ústav Ochrany Materiálu G. A. [redacted], Prague). *Hutnické Listy* 10, 595–600(1955).—During mech. stressing of metals in aq. medium H_2O_2 is formed by ultrasonic waves that appear during the deterioration of the metallic microstructure. This was shown by polarographic detn. of the increase of H_2O_2 in the soln. and by photographic records of the stressed material. Petr Schneider



SEKERKA, I.

7318* (German.) Corrosion Studies. Korrosionsstudium. VIII. Effect of Temperature and Potentials of Certain Metals. Temperaturabhängigkeit der Potentiale Einiger Metalle. K. Smrček, I. Sekerka, and V. Selfert. IX. Corrosion of Iron and Dural in Respect to the pH of the Solution. Korrosion von Eisen und dural in Abhängigkeit Vom ph der Lösung. K. Smrček. *Collection of Czechoslovak Chemical Communications*, v. 21, Dec. 1956, p. 1569-1583.



Sekerka, Ivan

Corrosion studies. VII. The corrosion cell metal-platinum in fused alkali halides. Karel Smrček, Ivan Sekerka, and Vladimír Seifert (Výzkumný ústav ochrany materiálů, Prague). *Chem. Listy* 50, 721-5(1956)! cf. *C.A.* 50, 3983f.—The corrosion of the cells Ni-Pt, Cu-Pt, and Fe-Pt in fused NaCl and KCl has been studied. The electrochem. corrosion of the macrocell is smaller than the proper corrosion of the metal by the fused salt; the ratio of both types of corrosion is influenced by the salt anion. A corrosion mechanism is suggested. E. Erdős

Sekerka, I.

CHEMICKE LISTY

Chemical Journal (Czechoslovakia)

Vol 50 (80), Nr 8, August, 1956 (pp 1203-1346)

SMRCEK, K., SEKERKA, I., SEIFERT, V.: Corrosion Studies VIII. Temperature Dependence of the Electrode Potentials of Some Metals

The temperature changes of potentials of some metals were investigated. Results of measurements can be used for the study of thermogalvanic cells. Temperature changes could be divided into 4 categories. The course of these changes is given by the properties of the formed corrosion products.

SEKERKA, I

SEKERKA, I. : SMRCEK, K.

Corrosion, research on it and its prevention.

p. 519 (Chemie) Vol. 9, No. 4, Aug. 1957, Czechoslovakia

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC. - VOL. 7, No. 1, Jan. 1958

SEKERKA I.

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and Their Application. Corrosion. Protection From Corrosion. H-4

Abs Jour : RfZhur - Khimiya, No 8, 1958, 25465

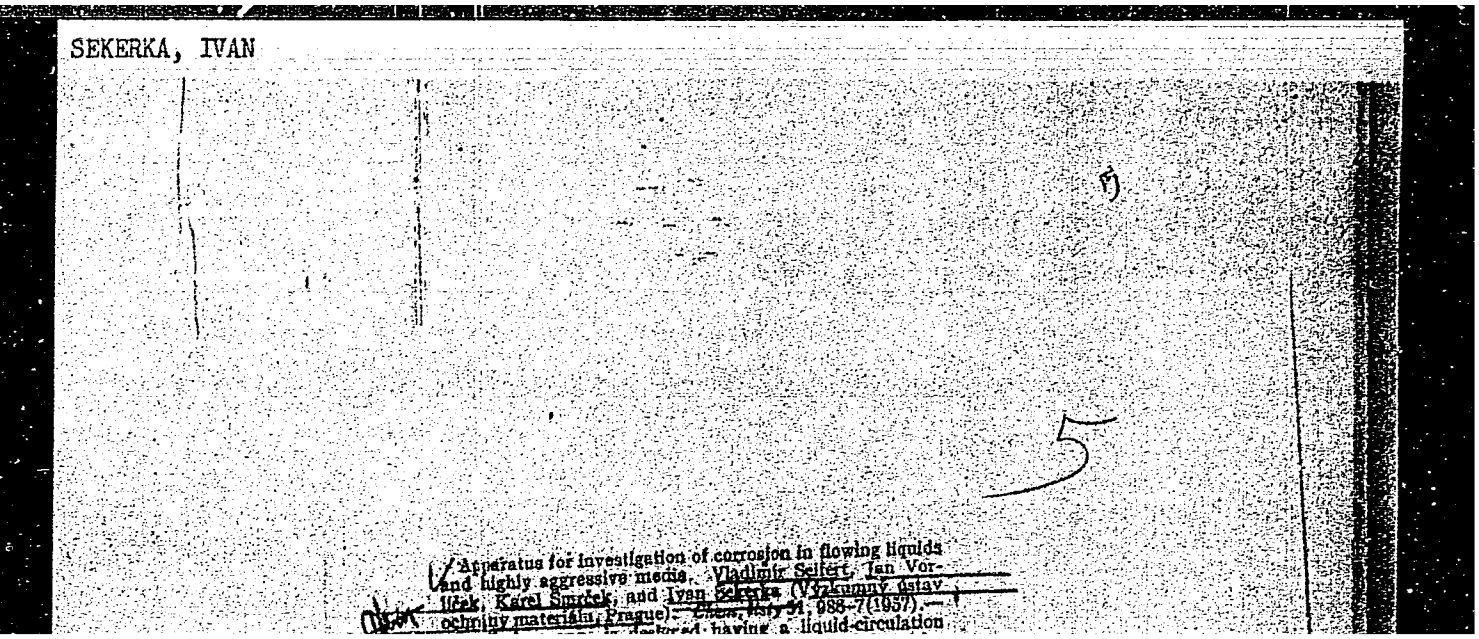
Author :
X. Barton K., Beranek E.
XI. Beranek E., Barton K., Smrcek K., Sekerka I.
XII. Sekerka I., Vanicek O.
XIII. Sekerka I., Smrcek K.

Inst : -

Title : Corrosion Studies. X. Mechanism of Corrosion of Metals in Humid Atmosphere Contaminated with Sulfur Dioxide. XI. Effect of Light on Corrosion of Zinc and Iron Under Atmospheric Conditions. XII. Effect of Stress on Rate of Dissolution of Metals. XIII. Rate of Corrosion of Zinc in Solutions of Chlorides and Resulting Corrosion Products.

Orig Pub : Sb. chekhosl. khim. rabot, 1957, 22, No 2, 356-367, 368-378; No 3, 705-711, 712-720; Transl.-Chem. listy, 1956, 50, No 9, 1388-1389; No 10, 1563-1572; No 11, 1683-1688, 1689-1695. Abstract: See RZhKhim, 1957, 59687.

Card 1/1



SEKERKA, IVAN

Apparatus for investigation of corrosion in flowing liquids and highly aggressive media. Vladimír Seifert, Jan Vorlíček, Karel Smrček, and Ivan Sekerka (Výzkumný ústav ochranný materiálu, Prague). Chem. listy 51, 988-7(1957). — [illegible] having a liquid-circulation

pump, a saturator, a heater, and an exchangeable vessel for samples. M. Hudlický

conf

CZECHOSLOVAKIA / Chemical Technology. Chemical Products and Their Applications. Corrosion. Corrosion Control. H

Abs Jour: Ref Zhur-Khimiya, 1959, No 4, 12110.

Author : Smrcek, Karel; Sekerka, Ivan; Seifert, Vladimir.
Inst : Not given.
Title : Corrosion Resistance of Aluminum and Its Alloys in Aqueous Solutions of Hydrogen Sulfide.

Orig Pub: Chem. prumysl, 1958, 8, No 6, 297-301.

Abstract: The resistance to corrosion of Al (99.5%) and its alloys: AlMg 3, AlMn and AlSi (10% Si) in aqueous solutions of H_2S, temperature 20-100°, and pressures 1-8 at was investigated. It was established that Al-alloys are resistant under those conditions; but, during their contact with admixtures in a solution with elementary sulfur and sulfides of heavy

Distr: 4E2c

Corrosion studies. XVIII. Processes governing the kinetics of dissolving of metal. Ivan Sekerka, Karel Smrček, Jan Vorlíček, and Eduard Beránek (Výzkumný ústav ochrany materiálů G. V. Akimova, Prague). *Chem. listy* 52, 1206–11(1958); cf. *C.A.* 52, 19811*c*.—The dissolving of metals in acids or bases may be controlled by 2 steps according to the concn.: up to the concn. 0.1*N* the rate is controlled by the diffusion of H^+ ions to the metal surface; at concns. greater than 0.5*N* the rate controlling step is the discharging of H^+ ions, and in the range from 0.1 up to 0.5*N* the dissolving action is controlled by both steps. Activation energies for some metals and media were detd. in all 3 ranges mentioned. XIX. Kinetics of dissolving of metal. Karel Smrček, Ivan Sekerka, Jaroslav Průšek, Eduard Beránek, and Jan Vorlíček. *Ibid.* 1212–17.—The time dependence and temp. dependence of the dissolving rate of metals in aq. solns. at const. concn. of the aggressive component was detd. in cases where no insol. reaction products are formed on the metal surface. The kinetic equation is of the zeroth order. The results are expressed by an empirical equation in the form: $\log K = a_1 \exp(a_2 c) - a_3 T^{-1} \exp(a_4 c) + \log t - 7$, where K is the amt. of the metal dissolved in the time t, at abs. temp. T, and c is the concn. of the soln. The applicability range of this equation is discussed. XX. Effect of light on the kinetics of corrosion processes. *Ibid.* 1218–21.—Light accelerates the corrosion process in which no layers of corrosion products are formed on the metal surface. Light energy increases the rate of the process (both cathodic and anodic) but does not change its mechanism.

E. Erdős

8
1

CZECH/34-59-11-13/28

AUTHORS: Číhal, Vladimír and Sekerka, Ivan

TITLE: Problems of Corrosion in Heterogeneous Nuclear Reactors

PERIODICAL: Hutnické listy, 1959, Nr 11, pp 978 - 984

ABSTRACT: The authors review briefly, mainly on the basis of published American, Russian and, to some extent, Czechoslovak (Refs 10,11,15,19,26) work, corrosion problems in carbon dioxide- and water-cooled reactors. J. Lazunov proposed a eutectic alloy of Mg and Ca, which has a higher resistance to oxidation than Mg, and it also has favourable casting properties. The most widely used materials for carbon dioxide-cooled reactors are Mg and Be alloys and alloy steels. Classical Mg alloys of the Magnox type are suitable for temperatures of 430-460 °C; for higher temperatures Be or stainless steels have to be used. Al and Ni alloys and Zircalloy-type Zr alloys have a satisfactory resistance to corrosion in water at 300 °C. Austenitic stainless steels have a very good corrosion resistance up to 560 °C.

Card 1/2

CZECH/54-59-11-15/28

Problems of Corrosion in Heterogeneous Nuclear Reactors

There are 11 figures and 36 references, of which 7 are Czech, 18 English, 3 German, 4 Soviet, 3 French and 1 Swedish

ASSOCIATION: Státní výzkumný ústav ochrany materiálu G.V.Akimova, Praha (State Research Institute for the Protection of Materials (G.V. Akimov), Prague)

SUBMITTED: September 1, 1959

Card 2/2

SEKERKA, Milan, inz.

Ratchet mechanism for circular intermittent movement with precision division. Stroj vyr 12 no.10:753-754 O '64.

1. Strojarske a metalurgicke zavody National Enterprise, Dubnica nad Vahom.

COUNTRY : CZECHOSLOVAKIA
CATEGORY : Chemical Technology. Chemical Products and Their Uses. Part 3. Synthetic and Natural*
ABS. JOUR. : RZKhim., No. 1 1960, No. 2148
AUTHOR : Zahradníček, H.; Sekerková, D.; Benešová, S.
INST. : -
TITLE : Use of Mixed Indicators in Analysis of Medicinal Preparations. I. Quantitative Determination of Sodium Bicarbonate
ORIG. PUB. : Českosl. farmac., 1958, 7, No 8, 438-440
ABSTRACT : A comparison of the quantitative determination of $NaHCO_3$, using methyl orange, with determination in the presence of modified mixed indicators, namely, dimethyl yellow - methylene blue and methyl orange - indigo carmine, was carried out. The advantage of the above-named mixed

*Medicinal Substances. Galenicals and Medicinal Forms

CARD: 1/2

H-58

II

COUNTRY :
CATEGORY :

ABS. JOUR. : RZKhim., No. 1 1960, No. 2140

[illegible] :
[illegible] :
[illegible] :

ORIG. PUB. :

ABSTRACT : Indicators is the precision of the transition of color which produces more accurate results. As compared with the method of the Czechoslovak [illegible] 2. the proposed method is more [illegible] for determining [illegible] in small weighed portions, using more diluted solutions and a mixture of methyl orange - indigo carmine as catalysers.-- From authors' summary

[illegible] 2/2

PORGES, E.; Technicka spolupraca: SEKEROVA, K., prom. farm.

Preparation of sphingomyelin from ethereal brain extract.
Bratisl. lek. listy 45 no.6:353-356 30 S '65.

1. Katedra lekarskej chemie Lek. fak. Univerzity Komenskeho v Bratislave (veduci prof. RNDr. J. Kubis).

DROPPA, J. (Bratislava, KUNZ, Zochova, 18/b); KAVCOVA, E.; SEKEROVA, M.; STRNISKO, M.

Hearing test in braziers. Lek.obzor 3 no.10:597-605 1954.

1. Z Ontologickej kliniky SU v Bratislave.
(OCCUPATIONAL DISEASES,
hearing disord. in braziers)
(HEARING DISORDERS,
in braziers)

POLAND / Physical Chemistry. Electrochemistry. B

Abs Jour: Zhur-Khimiya, No 21, 1958, 70254.

Author : Sekersky, S.
Inst : Not given.
Title : The Mechanism of the Polarographic Reduction of $[Hg(CN)_4]^{2-}$.

Orig Pub: Roczn. chem., 1956, 30 No. 4, 1083 - 1094.

Abstract: The polarographic reduction of 0.002 M $[Hg(CN)_4]^{2-}$ (I) was studied in NaCN (up to 1.5M) without additions and in the presence of various amounts of NaCl, KCl, $BaCl_2$ and $(C_4H_9)_4NI$ (II). In a series of cases, gelatine was added to the solutions (0.005%). At E being more negative than - 1.3v (saturated calomel electrode) current minimums were noted, which were deeper at decreased concentration, charge and radius of the foreign ion and also at an

Card 1/2

Abs Jour: Ref Zhur-Khimiya, No 21, 1958, 70254.

Abstract: increased concentration of CN^- (at a constant ionic strength of the solution). In a presence of II an acceleration of the reduction of I was noted in the E range where adsorption of II occurs. The results are explained as being affected by an electrostatic repulsion of the anion from a negatively charged Hg surface (RZhKhim, 1954, 35684) whereupon it is assumed that, at low concentrations of CN^- prior to the electrode reaction, a dissociation of I takes place, and therefore no current minimum has been noted.

Card 2/2

but it is highly increase at an increase of this energy to 220 to 680 MeV. In order to explain this behaviour of $\sigma_{Si^{31}}$, the authors investigate all sorts of reactions of the production of Si^{31} on the occasion of irradiation of silicon by protons. The yield of Si^{31} in the fission of admixtures in the silicon cannot provide an essential contribution to $\sigma_{Si^{31}}$. But the reaction $Si^{30}(d,p)Si^{31}$ doubtlessly takes an important part in the production of Si^{31}. At high energies of the bombarding particles the reaction $Si^{30}(p,\pi^+)Si^{31}$ joins in the process, in which reaction energy-rich positive pions fly off. The cross-section of the reaction $Si^{30}(p,\pi^+)Si^{31}$ can provide an estimation of the yield of pions with the highest energy at the intraction of protons with silicon nuclei. The experiment toascertain the reaction (p,π^+) by the radiochemical method in lage heavy nuclei. (e.g. germanium and bismuth) had no success. There are 2 figures, 1 table, and 14 references, 7 of which are Slavic.

ASSOCIATION: Institute for Geochemistry and Analytical Chemistry imeni V.I. Vernadskiy of the AN USSR(Institut geokhimii i analiticheskoy khimii im.V.I.Vernadskogo Akademii nauk SSSR)
Institute for Nuclear Researche of the Polish AS (Institut yadernykh issledovaniy Pol'skoy Akademii nauk)

Radiochemical Investigation of the Reaction $Si^{30}(\gamma,\pi^+)Si^{31}$. 20-1-15/42

PRESENTED: July 8, 1957, by A. P. Vinogradov, Academician

SUBMITTED: March 5, 1957

AVAILABLE: Library of Congress

Card 3/3

SEKERSKI, S.

Distr: 4E2c(m)/4E3c 2 cys

Separation of some rare earths by reversed-phase-partition chromatography. S. Sekerskii and I. Fidelis (Inst. Nuclear Research, Warsaw). *J. Chromatog.* 4, 60–4(1960); cf. *CA* 54, 9584*h*.—Small amts. of rare earths were sepd. rapidly at room temp. on tributyl phosphate as the stationary phase with HNO_3 as the mobile phase. The HNO_3 used for elution was 15.8*M* for Ce–Nd–Pm, 15.1*M* for Ce–Pm–Sm–Eu–Gd–Tb, and 11.5*M* for Eu–Tb–Y. Martin Jacobson

L 10263-63 EWT(1)/BDS--AFFTC/ASD
ACCESSION NR: AP3000558 S/0109/63/008/005/0772/0779

AUTHOR: Sveshnikov, A. G.; Sekerzh-Zen'kovich, S. Ya. 52

TITLE: Waves in a bent waveguide 26

SOURCE: Radiotekhnika i elektronika, v. 8, no. 5, 1963, 772-779

TOPIC TAGS: bent waveguides, mode degeneration in waveguides

ABSTRACT: A mathematical investigation is presented of the propagation of electromagnetic waves in a gradually bent circular metal waveguide with a deformed surface of the bend. A set of differential equations describes the propagation, including the degeneration of the mode H sub 01 into the mode E sub 11 within the bent section. A correction for this degeneration is determined and interpreted in terms of additional deformations that must be introduced in the waveguide in order to prevent the mode degeneration. The resulting formulae have been verified, with a numerical example, on a "high-speed computer". Orig. art. has: 46 equations.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Physics Department, Moscow State University)

Card 1/2

ACC NR: AT6035246 SOURCE CODE: UR/3043/66/000/005/0210/0226

AUTHOR: Sveshnikov, A. G.; Volkov, B. I.; Sekerzh-Zen'kovich, S. Ya.

ORG: none

TITLE: On waveguide bend

SOURCE: Moscow. Universitet. Vychislitel'nyy tsentr. Sbornik rabot, no. 5, 1966. Vychislitel'nyye metody i programmirovaniye (Computing methods and programming), 210-226

TOPIC TAGS: waveguide, waveguide component, electromagnetic wave, wave propagation

ABSTRACT: This paper applies the general method of investigating the propagation of electromagnetic oscillations in waveguides of complex form to the study of a number of specific problems involving waveguide bend. These problems are of great practical interest and many articles have been devoted to them, but most results are qualitative in nature. The algorithm of numerical solution developed in this paper makes it possible by means of high-speed computers to derive effectively numerical characteristics of the physical process in question. The particular cases studied are (1) waveguide bent on a plane curve, low deformation, and cross sections of the arms are circles of the same radius; (2) waveguide bent on arc of a circle, circular cross section; (3) bend with slight deformation. The mathematical problem is to find electrical and magnetic fields satisfying (1) inside the waveguide the Maxwell equations

Card 1/2

$$\operatorname{rot}\vec{H} = -ik\vec{E},$$

$$\operatorname{rot}\vec{E} = ik\vec{H},$$

(2) on the waveguide surface Σ the boundary condition

$$[\vec{E}n]|_{\Sigma} = 0,$$

(3) conditions of excitation and radiation in infinity

$$\{\vec{E}_n^{(0)}, \vec{H}_n^{(0)}\}$$

are normal waves of the rectilinear sections of the waveguide. Orig. art. has: 47 formulas, 1 table, and 7 figures.

SUB CODE: 09, 20/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 001

SEREZH-ZEN'KOVICH, T. Ya.

"Some Problems Concerning the Theory of the Propagation of Tidal Waves." Cand Phys-Math Sci, Marine Hydrophysics Inst, Acad Sci USSR, 27 Dec 54 (VM, 15 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556 , 24 Jun 55

SEKERZH-ZEN'KOVICH, T. Ya.

AUTHOR: Sekerzh-Zen'kovich, T. Ya. 49-4-8/23

TITLE: On the propagation of a tide wave in straits. (K zadache o rasprostranenii prilivnoy volny v prolive).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1957, No.4, pp. 493-503 (USSR)

ABSTRACT: On the basis of the simplest possible assumption, the problem is considered of propagation of a tide wave in straits taking into consideration the Coriolis force. It is assumed that at both exits from the straits the regimes of the level fluctuations are known and the propagation of these fluctuations along the straits are studied. Simpler regimes of fluctuation are considered which are periodic functions of time. The length of the straits is not considered arbitrary and is determined in such a way that the solution can be arrived at by means of relatively simple computation. A channel of the length ℓ, a width b and a constant depth h is considered, assuming that the channel turns about a vertical axis with a constant angular speed ω; from both sides the channel communicates with containers in which the wave processes are known and the task is to study the propagation of these wave processes inside the channel. For simplifying the

Card 1/2

On the propagation of a tide wave in straits. 49-4-8/23

analysis the case is chosen for which at one end of the channel the level changes in accordance with the simple harmonic law A cos σt and at the other according to the law B cos (σt - ε), where σ is the frequency, ε the initial phase, A and B the amplitudes. For these conditions, it is necessary to determire the rise of the free surface inside the channel; mathematically this involves solution of the differential equation of propagation of long waves given by Sretenskiy, L.N. (Ref.2). A general solution of this differential equation is difficult and, therefore, the solution is arrived at for a particular case and the obtained results are then used for solving the general problem. Co-tidal maps, based on Eq.(29), p.498, of the propagation of tide water are plotted for a number of cases, assuming that the phase shift ε and the amplitude ratio B/A are known.

Card 2/2 There are 17 figures and 2 references, one of which is Slavic.

SUBMITTED: August 1, 1956.

ASSOCIATION: Ac.Sc. USSR Marine Hydrophysics Institute. (Akademiya Nauk SSSR Morskoy Gidrofizicheskiy Institut).

AVAILABLE: Library of Congress.

SEKERZH-ZEN'KOVICH, T.Ya.

Propagation of initial disturbances over a free surface and on the interface of a liquid composed of two layers of different density. Trudy MGI 17:48-58 '59. (MIRA 12:10)
(Hydrodynamics)

SEKERZH-ZEN'KOVICH, T.Ya.

Advance of a free tide wave in a channel of variable depth.
Trudy MGI 18:85-93 '59. (MIRA 13:5)
(Waves)

SEKERZH-ZEN'KOVICH, T.Ya.

Symmetrical oscillations of two liquid layers covering a sphere and rotating with different angular velocities. Trudy MGI 18:94-112 '59. (MIRA 13:5)
(Hydrodynamics)

SRETENSKIY, L.N.; SEKERZH-ZEN'KOVICH, Ya.I.

Cauchy-Poisson problems for waves of finite amplitude.
Dokl.AN SSSR 133 no.3:544-545 Jl '60. (MIRA 13:7)

1. Morskoy gidrofizicheskiy institut Akademii nauk SSSR.
2. Chlen-korrespondent AN SSSR (for Sretenskiy).
(Fluid dynamics)

SERGEYEV-ZEN'KOVICH, YA. I.

SERGEYEV-ZEN'KOVICH, YA. I.

K raschetu na ustoichivost' lista fanery, kak anizotropnoi plastinki. (TSAGI. Trudy, 1931, no. 76, p. 3-26)

Summary in English.

Title tr.: Problem of stability of plywood as an anisotropic plate.

QA911 M65 no. 76

SO: Aeronutical Science and Aviation in the Soviet Union, Library of Congress, 1955

S

ZEKERZH#ZEN'KOVICH, A.I.

Obobshchennaia skhema Kirkhogfa i ee primenenie k izucheniiu poliary Lilientalia. Moskva, 1935. 23 p., tables, diagrs. (TSAGI. Trudy, no. 170)

Title tr.: The generalized form of Kirchhoff's law and its application to the study of Lilienthal's curve.

QA911.M65 no.170

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress. 1955

SEKERZH-ZENKovich, M.I.

LAVRENT'EV, M.A., A. I. SEKERZH-ZEN'KOVICH AND V.N. SHEPELEV.

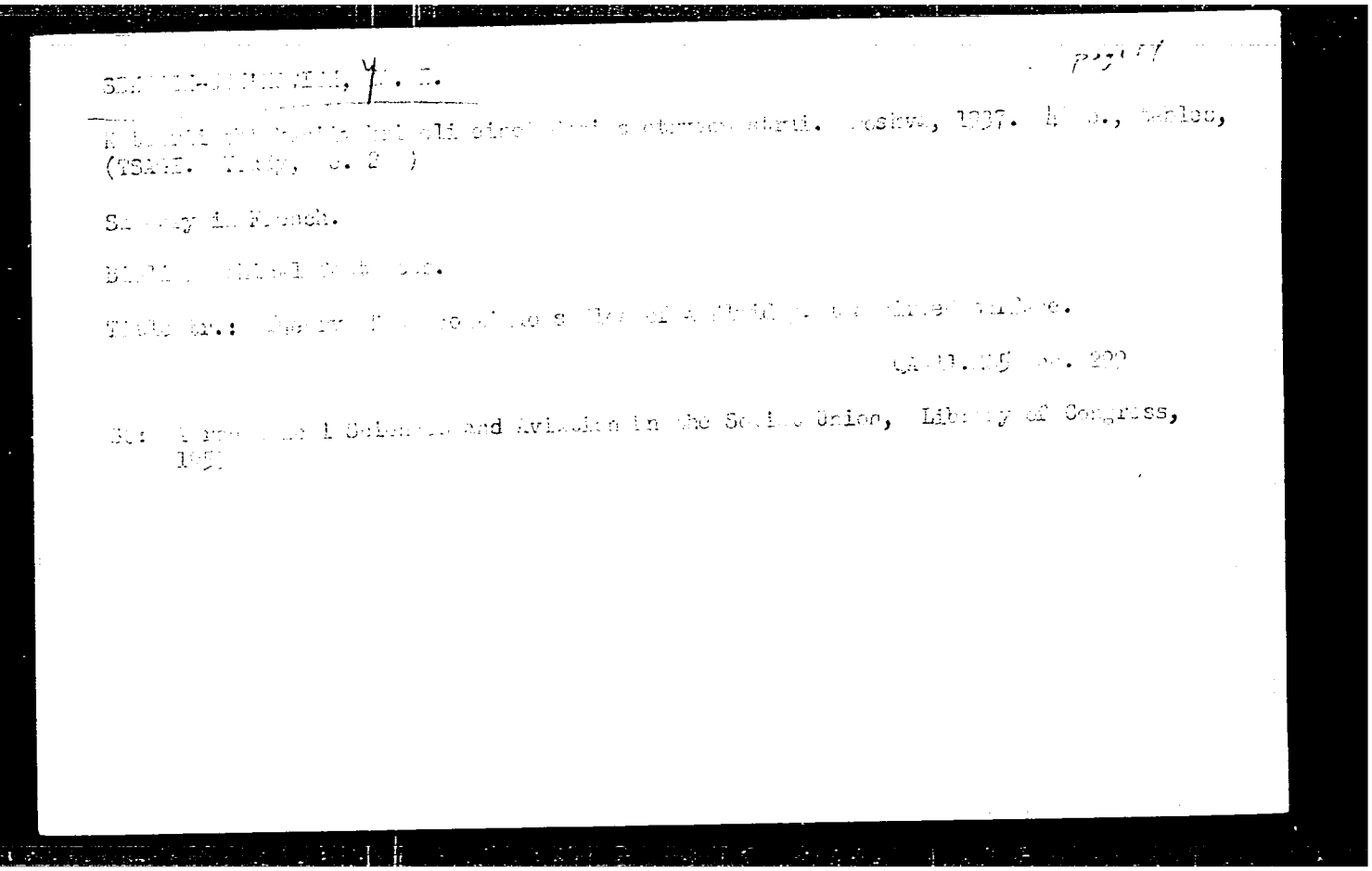
K teorii biplannoi korobki dryl'ev. Moskva, 1935. 38 p. diagrs. (TSAGI. Trudy, no. 153

Summary in English.

Title tr.: Biplane Theory.

QA911.M65 no.153

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955



SEKERZH-ZEN'KOVICH, IA.I.

K teorii obtekaniia krivolineinoi dugi s otryvom strui. Moskva, 1937.
48 p., tables. (TSAGI. Trudy, no. 299)

Summary in French.
Bibliographical footnotes.

Title tr.: Theory of discontinuous flow of a fluid past a curved surface.
TA911. M45 no. 299

30. Aeronautical Science and Aviation in the Soviet Union. Library of Congress, 1955.

E [illegible], Y. [illegible] ZEN'KOVICH, YA. [illegible]

Ob [illegible] zadache [illegible] reshenii [illegible] (TsAGI. Trudy, no. 3[illegible])

Title tr.: [illegible] problem of the flow around a [illegible] of flow.

[illegible]

SO: [illegible] and Aviation in the Soviet Union, Library of Congress, 1955

[illegible] - ZHUKOVSKIY, N.Ye.

Ob analiticheskom prodolzhenii resheniya zadachi obtekaniya krivolineinoi dugi s otryvom strui. Moskva, 1918. (TsAGI. Trudy, no. 354)

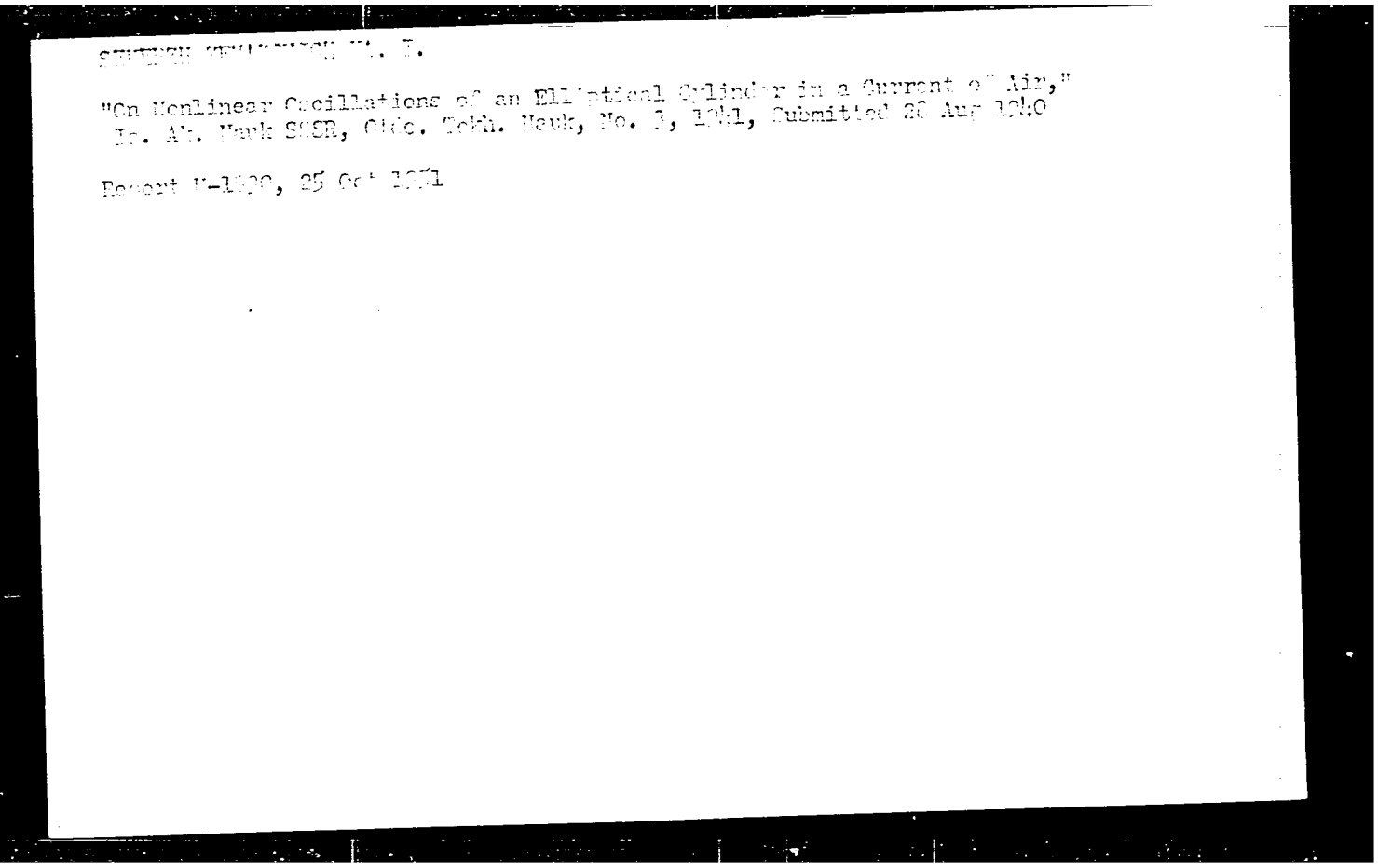
Title tr.: Continuation of the analytical solution of the problem of the flow around a two-dimensional curve and of the discontinuation of flow.
NCF

SO. Aeronautical Science and Aviation in the Soviet Union. Library of Congress, 1955..

[redacted], M. I.

"On the Nonlinear Oscillations of an Elliptical Cylinder in A Current of Air," Ir. AN. Mauk, SSSR, Otdel Tekh. Mauk, No. 2, 1941. Submitted 27 Aug. 1940.

Report M-1513, 27 Oct. 1951.



[redacted] M. I.

"On Nonlinear Oscillations of an Elliptical Cylinder in a Current of Air,"
Iz. Ak. Nauk SSSR, Otdc. Tekh. Nauk, No. 3, 1941, Submitted 20 Aug 1940

Report M-1020, 25 Oct 1951

SEKERZH-ZEN'KOVICH, Ya.I.

A.116

586. J. I. Sekerzh-Zenkovich, "On the theory of stationary waves of finite amplitude on the surface of a heavy fluid" (in Russian), *Notes Acad. Sci. USSR (Doklady Ak. Nauk SSSR)* Nov. 1, 1947, vol. 58, no. 4, pp. 551–553.

In order to investigate the exact form of the wave mentioned in the title, the author, using Lagrangian coordinates, introduces a parameter into the functions describing the motion of the particles. These functions, which must satisfy appropriate differential equations and boundary conditions, are holomorphic in the parameter and uniquely determined for sufficiently small values of the parameter. Also, a velocity potential exist. for the flow. The author next expands his functions in power of the parameter, keeping terms through the fourth power. From this he is able to obtain approximately the shape of the surface wave, which he finds to be close to a trochoid. He also finds that there are no truly fixed nodes, the nodal points oscillating back and forth. Proofs for these statements will presumably be given in a more detailed presentation. J. V. Wehausen, USA

A.116

SEKERZH_ZEN'KOVICH, YA. I.

USSR/Physics
Standing Waves
Fluids - Noncompressible

Nov 1947

"Theory of Standing Waves with Terminal Amplitude on the Surface of Heavy Liquids," Ya. I. Sekerzh-Zen'kovich, Marine Hydrophysical Laboratory, Academy of Sciences of the USSR, 3 pp

"Dok Ak Nauk" Vol LVIII, No 4

Author discusses dense flow of a heavy ideal noncompressible liquid, which is limited only on top of a free surface, on which there is a constant pressure p = 0. He determines a more exact type of standing wave with terminal amplitude on the above described

38896

USSR/Physics (Contd)

Nov 1947

liquid. To his knowledge, there have been only two other articles on the same subject. Submitted by Academician V. V. Shuleykin, 8 May 1947.

38896

SEKERZH-ZENKOVICH, Ya. I.
Ya. I.
H
SEKERZ-ZENKOVICH
Ya. I.

Math. Reviews, Vol. 11, No. —

Sekerž-Zen'kovič, Ya. I. On the influence of the form of the shore line on the strength of the monsoon field. Izvestiya Akad. Nauk SSSR. Ser. Geograf. Geofiz. 13, 194–211 (1949). (Russian)

Sulcikin is said to have set up for the so-called temperature anomaly $\tau(x, y)$ caused in winter by the transfer of accumulated heat from the sea to the atmosphere the following differential equations:

$$(1)\qquad \frac{\partial^2\tau}{\partial x^2}+\frac{\partial^2\tau}{\partial y^2}-x_1^2\tau+b^2=0,$$

$$(2)\qquad \frac{\partial^2\tau}{\partial x^2}+\frac{\partial^2\tau}{\partial y^2}-x_2^2\tau=0,$$

where $x_1^2=(\sigma+\alpha)/(AH)$, $x_2^2=\sigma/(AH)$, $b^2=\alpha\tau_\infty/(AH)$. Here σ denotes a coefficient which characterizes the dissipation of heat into interplanetary space; α, a coefficient characteristic for the transfer of heat from sea to atmosphere; τ_∞, the free surface temperature of the water which is supposed to be constant; A, a coefficient connected with the turbulence of the air and H the height of the active monsoon layer. The first equation must be satisfied over the sea, the second over the continent. The boundary-value problem consists here of the equations (1) and (2) and the boundary condition which assigns a constant value to the function $\tau(x, y)$ along the shore line of the island. The author gives the solution in the cases of an elliptic island and a parabolic peninsula. It is shown that against an acute cape the strength of a monsoon field increases greatly.

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

SEKERZH-ZENKOVICH, Ya. I.

Sekerž-Zen'kovič, Ya. I. On the theory of standing waves of finite amplitude on the surface of a heavy fluid. Doklady Akad. Nauk SSSR (N.S.) 58, 551–553 (1947). (Russian)

In order to investigate the exact form of the waves mentioned in the title, the author, using Lagrangian coordinates, introduces a parameter into the functions describing the motion of the particles. These functions, which must satisfy appropriate differential equations and boundary conditions, are holomorphic in the parameter and uniquely determined for sufficiently small values of the parameter. Also, a velocity potential exists for the flow. The author next expands his functions in powers of the parameter, keeping terms through the fourth power. From this he is able to obtain approximately the shape of the surface wave, which he finds to be close to a trochoid. He also finds that there are no truly fixed nodes, the nodal points oscillating back and forth. [Reproduced (by permission of the editors) from Applied Mechanics Reviews.] *J. V. Wehausen.*

Source: Mathematical Reviews, Vol 10, No. 9

SEKERZH-ZEN'KOVICH, Ya. I.

3900

Sekerž-Zen'kovič, Ya. I. Composite standing waves of finite amplitude on the surface of a heavy liquid of infinite depth. Izvestiya Akad. Nauk SSSR. Ser. Geofiz. 1951, no. 5, 68–83 (1951). (Russian)

In earlier papers [Doklady Akad. Nauk SSSR (N.S.) 58, 551–553 (1947); Izvestiya Akad. Nauk SSSR. Ser. Geograf. Geofiz. 15, 57–73 (1951); these Rev. 10, 646; 12, 870] the author has treated gravity waves of finite amplitude by using Lagrangian coordinates and expanding in a power series in a parameter. In the present paper he expands in a double series in two parameters in such a way that the linear terms give the sum of two sinusoidal (i.e. linearized) waves. Computation of the coefficients is given through the third power of the parameters. The form of the free surface is then given explicitly, retaining terms of the second order. Perhaps the most striking feature of the solution is the presence of "difference" and "summation" waves representing an interaction between the linearized waves. As in the earlier papers, there are no fixed nodes and the free surface is never completely flat. *J. V. Wehausen* (Providence, R. I.).

Source: Mathematical Reviews, Vol 13 No. 4

SEKERZH-ZEN'KOVICH, Ya. I.

Sekerž-Zen'kovič, Ya. I. On the theory of standing waves of finite amplitude on the surface of a heavy liquid of finite depth. Izvestiya Akad. Nauk SSSR. Ser. Geograf. Geofiz. 15, 57–73 (1951). (Russian)

In an earlier paper [Doklady Akad. Nauk SSSR (N.S.) 58, 551–553 (1947); these Rev. 10, 646] the author considered the problem of the title for water of infinite depth. The same method is applied in this paper for water of finite depth, and similar results are obtained. Lagrangian coordinates are used and the quantities of interest are expanded in a power series in a parameter ϵ, where $\epsilon = 0$ corresponds to the standing waves obtained by the linearized theory. The

(1944); these Rev. 7, 348].

J. V. Wehausen.

Source: Mathematical Reviews, Vol 12 No. 10

SEKERZH*ZEN'KOVICH, Ya. I.

"The Influence of the Form of the Shore Line on the Intensity of a Monsoon Field", Iz Ak Nauk SSSR, Ser Geograf i geofiz, Vol. 13, No. 3, pp 194-212, 1949.

SEKERZH-ZEN'KOVICH, YA. I.

PA 193T37

USSR/Geophysics - Standing Waves Sep/Oct 51

"Complex Standing Waves of Finite Amplitude on the Surface of Heavy Fluid of Infinite Depth," Ya. I. Sekerzh-Zen'kovich, Marine Hydrophys Inst, Acad Sci USSR

"Iz Ak Nauk, Ser Geofiz" No 5, pp 68-83

Presents method of accurate soln in form of power series in 2 small parameters. Establishes number of properties of nonlinear standing wave. Gives approx formula relating wave length, amplitude and frequency. Author refers to his

193T37

USSR/Geophysics - Standing Waves (Contd) Sep/Oct 51

previous works ("Dok Ak Nauk SSSR" Vol LVIII, No 4, 1947; Iz Ak Nauk, Ser Geog i Geofiz" No 1, 1951). Submitted 12 Jun 51.

193T37

SEKERZH-ZEN'KOVICH, Ya. I. 176T47

USSR/Geophysics - Hydrodynamics Jan/Feb 51

"Theory of Standing Waves of Finite Amplitude on the Surface of a Heavy Liquid of Finite Depth," Ya. I. Sekerzh-Zen'kovich, Marine Hydrophys Inst, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Geog i Geofiz" Vol XV, No 1, pp 57-73

Describes method of precise soln of subject problem. Soln has form of power series of small parameter. Three 1st approximations are performed. Establishes sequence of properties of nonlinear standing wave differing from wave of linear theory. In particular gives approximative formula relating wave length, its amplitude, frequency of oscillations and depth of pool.

176T47

USSR/Physics - Hydrodynamics, Standing Waves 1 Sep 52

"Three-Dimensional Problem Concerning Standing Waves of Finite Amplitude on the Surface of a Heavy Liquid," Ya. I. Sekerzh-Zen'kovich, Maritime Hydrophys Inst, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol 86, No 1, pp 35-38

Considers the 3-dimensional motion of a heavy ideal incompressible liquid which has above it only a free surface, in which liquid the pressure is const and equal to zero. Gives an exact soln to the problem concerning the 3-dimensional standing waves of finite amplitude on the surface of this liquid. To the author's knowledge, only an approx soln of this problem has appeared in the literature, namely, that of W. Penney and Price (Phil Trans Roy Soc London, A, No 882,244,254, 1952). Submitted by Acad V. V. Shuleykin.

234T102

SEKERZH-ZEN'KOVICH, YA. I.

234T102

SEKERZH-ZENKOVICH, Ya. I.

USSR/Physics - Hydrodynamics of Waves 1 Mar 53

"Spatial Problem of Determining Stationary Waves of Finite Amplitude," L.N. Sretenskiy, Corr Mem Acad Sci USSR, Moscow State U

DAN SSSR, Vol 89, No 1, pp 25-28

Problem was previously treated by Ya. I. Sekerzh-Zenkovich (DAN SSSR, Vol 86, No 1 (1952) and W.G. Penney and A. Price (Phil Trans Roy Soc London (A) 224,882 (1952)). Author outlines summary of his computation determining steady-state periodic waves on surface of a 3-dimensional stream. Received 29 Nov 52.

259T79

SEKERZH-ZEN'KOVICH, YA. I.

USSR/Mathematics - Subsonic velocity circulation FD-837

Card 1/1 : Pub. 85 - 2/14

Author : Sekerzh-Zen'kovich, Ya. I. (Moscow)

Title : Problem of the flow, with circulation, around a circular cylinder for subsonic velocities

Periodical : Prikl, mat. i mekh., 18, 399-408, Jul/Aug 1954

Abstract : Applies the method of A. I. Nekrasov ("Plane parallel motion of a gas at subsonic velocities." PMM, Vol 8, No 4, 1944), which he employed to solve plane problems of the flow of a gas around bodies, to the case of flow with circulation. Establishes the fundamental equation of the problem. Reference: L. K. Kudryashov, "Flow of a plane parallel current of gas around ellipse," PMM, 11, No. 1, 1947.

Institution : --

Submitted : April 2, 1954

SEKERZH-ZEN'KOVICH, Ya.I.

Theory of stationary capillary waves of finite amplitude. Dokl. AN SSSR 109 no.5:913-915 Ag. 1956. (MLRA 9:100

1. Morskoy gidrofizicheskiy institut Akademii nauk SSSR. Predstavleno akademikom V.V. Shuleykinym.
(Capillarity) (Wave-motion, Theory of)

Sekerzh-Zen'kovich, Ya. I. 124-1957-10-11622 D

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 10, p 61 (USSR)

AUTHOR: Sekerzh-Zen'kovich, Ya. I.

TITLE: Investigation According to Hydrodynamic Theory of Waves With Finite Amplitude (Issledovaniya po gidrodinamicheskoy teorii voln konechnoy amplitudy)

ABSTRACT: Bibliographic entry on the Author's dissertation for the degree of Doctor of Physical-Mathematical Sciences at the In-t Mekhan., AN SSSR (Institute of Mechanics, USSR Academy of Sciences), Moscow, 1957.

ASSOCIATION: In-t Mekhan., AN SSSR (Institute of Mechanics, USSR Academy of Sciences) Moscow

Card 1/1

AUTHOR: Sekerzh-Zen'kovich, Ya .I. (Moscow) 40-21-6-16/18

TITLE: On the Theory of Borda Nozzle for Gases (K teorii nasadka Borda dlya gaza)

PERIODICAL: Prikladnaya Matematika i Mekhanika, 1957, Vol 21, Nr 6, pp 850-855 (USSR)

ABSTRACT: Chaplygin [Ref 1] considered the problem of the flow of gases under subsonic velocity out of an infinitely extended receptacle with plane walls, these walls forming a certain angle with each other. From this general problem the author singles out the special case of parallel plane walls, which have a certain distance. This corresponds exactly to the exhaust out of the so-called borda nozzle . It can be shown that in this special case simplified formulas for the calculation of the jet contraction can be derived. Also the form of the free jet after the separation can be calculated. The results are presented in tables. The considered case is mathematically distinguisched by the occurrence of singularities during the determination of the equation of the free jet. Therefore the velocity potential must be determined at first, then the data of the free jet can be calculated. There are 4 figures,

Card 1/2

On the Theory of Borda Aperture for Gases 40-21-6-16/18

2 tables, and 5 references, 2 of which are Soviet, and 3 English.

ASSOCIATION: Institut mekhaniki Akademii nauk SSSR (Institute of Mechanics, AS USSR)

SUBMITTED: July 25, 1957

AVAILABLE: Library of Congress

Card 2/2 1. Nozzles-Theory 2. Gas flow-Velocity

Card 2/2

SEKERZH-ZENKOVICH, YA. I.

3(9) P.7 PHASE I BOOK EXPLOITATION SOV/3012

Akademiya nauk SSSR. Morskoy gidrofizicheskiy institut

Fizika morya (Physics of the Sea) Moscow, Izd-vo AN SSSR, 1959. 95 p. (Series: Its: Trudy, Vol 17) Errata slip inserted. 1,300 copies printed.

Ed.: A. A. Ivanov, Doctor of Physical and Mathematical Sciences; Ed. of Publishing House: N. D. Yershova; Tech. Ed.: I. N. Guseva.

PURPOSE: This issue of the Institute's Transactions is intended for oceanographers, hydrographers, and geophysicists.

COVERAGE: This collection of articles treats problems in physics of the sea. Individual papers discuss wave and tide hydrodynamics, free surface perturbations, the Black Sea tsunami of 1927, and the characteristics of the vertical stability of water masses in the Iceland-Faroe Islands-Great Britain area. A paper by I. I. Stas' proposes solving the problem of the decreasing level of the Caspian Sea by diverting waters of the

Card 1/3

Sea of Azov by canal through the Kumo-Manychskaya valley. References accompany individual articles.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

Card 3/3

TM/mmh
1-28-60

SEKERZH-ZEN'KOVICH, Ya.I.

Cauch-Poisson's problem for a liquid sphere and a layer of liquid surrounding a solid sphere. Trudy MGI 15:3-16 '59. (MIRA 12:6)

(Fluid mechanics)

SERGEZH-ZENKOVICH, YA. I.

PHASE I BOOK EXPLOITATION SOV/5353

Akademiya nauk SSSR. Morskoy gidrofizicheskiy institut

Teoriya voln i techeniy (Theory of Waves and Currents) Moscow, 1959. 171 p. (Series: Its: Trudy, tom 18) Errata slip inserted. 1,200 copies printed.

Resp. Ed.: L. N. Sretenskiy, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: K. P. Gurov; Tech. Ed.: T. P. Polenova.

PURPOSE: This issue of the Transactions of the Marine Hydrophysical Institute is intended for hydrologists, geophysicists, and theoretical physicists.

COVERAGE: This collection of 10 articles deals with problems in the theory of waves and currents. An analysis is made of several types of waves of finite amplitude on surfaces with different parameters. The propagation of a free tidal wave and a tsunami, as well as the motion of liquids over spherical

Card 1/4

SOV/5353

Theory of Waves and Currents

Card 3/4

SEKERZH-ZEN'KOVICH, Ya. I., SRETENSKIY, L. N. (Moscow)

"The Cauchy-Poisson Problem for Waves of Finite Amplitude."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

0.0000

77797
OSV/2-15-1-4/27

AUTHOR: Sekerzh-Zenkovich, Ya. I.

TITLE: Aleksandr Ivanovich Nekrasov (to his 70th birthday)

PERIODICAL: Uspekhi matematicheskikh nauk, 1960, Vol 15, Nr 1, pp 153-162 (USSR)

ABSTRACT: A. I. Nekrasov, an eminent Soviet scientist in mathematics, mechanics, and aviation, was born December 9, 1888 in Moscow and died May 21, 1957. He was graduated from the Moscow Gymnasium in 1901, from the Physicomathematical Faculty of Moscow University in 1906, received 2 master's degrees in 1909 and 1911, became an assistant professor in astronomy and mathematics in 1912, associate professor in 1918, and full professor in 1922 at Moscow University, where he remained till his death. Simultaneously, he also taught in a number of other institutes and held office or engineering positions

Card 1/2

Aleksandr Ivanovich Nekrasov (to his 70th birthday)

77797
SOV/42-15-1--/27

In various state institutions. He became a member of the Academy of Sciences of the USSR in 1946, received a title "Deserved Scientist of the Russian Federal Republic" in 1947, and Stalin Prize in 1951. He published 41 papers on wave theory in liquids, integral calculus, aerodynamics, and aviation, 19 textbooks, and 8 translations of foreign scientific literature.

Card 2/2

85522

S/020/60/133/003/024/031/XX
B019/B067

16.7600 16.3500

AUTHORS: Sretenskiy, L. N., Corresponding Member of the AS USSR, and Sekerzh-Zen'kovich, Ya. I.

TITLE: The Cauchy-Poisson Problem for Finite-amplitude Waves

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 3, pp. 544 - 545

TEXT: The horizontal surface of an infinitely deep heavy liquid which is enclosed by two walls is given a certain initial velocity which is different at the various points of the surface. The authors determine the resulting motion of the liquid by taking full account of the boundary conditions of the problem on the open surface of the liquid, i.e., they study not only infinitely small motions. By using the method of Lindstedt-Poincaré from celestial mechanics, this problem is solved by means of Lagrange variables, a, b, and t. If $\xi(a, b, t)$ and $\eta(a, b, t)$ are the deviations of the liquid particles from their coordinates a, b at the beginning of motion, the following set of equations is valid for the determination of these deviations:

Card 1/3

The Cauchy-Poisson Problem for Finite-amplitude Waves

S/020/60/133/003/024/031/XX
B019/B067

$$\partial^2\xi/\partial t^2 = -\partial H/\partial a + D(\eta, H)/D(a, b)$$
$$\partial^2\eta/\partial t^2 = -\partial H/\partial b - D(\xi, H)/D(a, b)$$
$$\partial\xi/\partial a + \partial\eta/\partial b = -D(\xi, \eta)/D(a, b),$$

where $H = (p/\varrho) + g(b + \eta)$; p = hydrodynamic pressure, and ϱ = density. For the initial velocity potential the following ansatz is made

$$\varphi(a,b) = \sum_{n=1}^{\infty} \varepsilon^n A_n e^{nb} \cos na$$ from which the coefficients of the series

$$\xi = \varepsilon\xi_1 + \varepsilon^2\xi_2 + \ldots \qquad \eta = \varepsilon\eta_1 + \varepsilon^2\eta_2 + \ldots$$
$$H = \varepsilon H_1 + \varepsilon^2 H_2 + \ldots$$

may be computed. These coefficients are obtained in the form of trigonometric series, and are arranged according to the arguments $w_1 \ldots w_2$. The following relations holds for w_i:

$w_i = (\sigma_{io} + \varepsilon\sigma_{i1} + \varepsilon^2\sigma_{i2} + \ldots)t$ $(i = 1,2,\ldots)$. In determining the functions ξ_i, η_i, H_i, and σ errors may easily occur, and the authors

Card 2/3

85522

The Cauchy-Poisson Problem for Finite-amplitude Waves

S/020/60/133/003/024/C31/XX
B019/B067

finally suggest the following equation of hydrodynamics:

$$(1 + \partial\xi/\partial a)\partial\xi/\partial t + (\partial\eta/\partial t)\partial\eta/\partial a = -\partial\varphi/\partial a - \partial\chi/\partial a$$
$$(\partial\xi/\partial t) + (1 + \partial\eta/\partial b)\partial\eta/\partial t = -\partial\varphi/\partial b - \partial\chi/\partial b;$$

$\chi = \int_0^t (\frac{p - p_0}{\rho} + g(b+\eta) - \frac{1}{2} V^2)dt$, where V characterizes the velocity. These equations were used to calculate the coefficients of (1). $\varphi(a,b)$ was obtained as a sine series of the variable a.

ASSOCIATION: Morskoy gidrofizicheskiy institut Akademii nauk SSSR (Hydrophysical Marine Institute of the Academy of Sciences USSR)

SUBMITTED: May 7, 1960

Card 3/3

NEKRASOV, Aleksandr Ivanovich [deceased]; PAVLIKHINA, M.A.; SEKERZH-ZEN'KOVICH, Ya.I., otv. red. toma; KRASIL'SHCHIKOVA, Ye.A., red.; SLEZKIN, N.A., red.; SMIRNOV, L.P., red.; RYVKIN, A.Z., red. izd-va; ASTAF'YEVA, G.A., tekhn. red.

[Collected works] Sobranie sochinenii. Moskva, Izd-vo Akad. nauk SSSR. Vol.1. 1961. 442 p. (MIRA 15:1)
(Aerodynamics) (Hydrodynamics)