VASAR, E. F., Cand Med Sci -- (diss) "Change in the reactivity of the organism with a background of effects of choline and adrenoline substances in general cooling. (Experimental-pharmacological research)." Tartu, 1960. 25 pp; with graphs; (Tartu State Univ); 300 copies; free; (KL, 18-60, 155)

SOLYMOSS, Bela, Dr.; [illegible], Bela, Dr.; [illegible], Pal, Dr.

Causes of atherosclerosis developing in hypertension. Orv. hetil. 98 no.32:373-375 11 Aug 57.

1. A Vasmegye Tanacsa "Markusovszky" Korhaza (igazgato-foorvos: Szvoboda Jeno dr.) I. sz Belosztalyanak (foorvos: Vasarhelyi Bela dr.) es Kozponti Laboratoriumanak (Solymoss Bela dr.) kozlemenye.

(ARTERIOSCLEROSIS, etiol. & pathogen.
hypertension, determ. of blood lipid changes (Hun))
(HYPERTENSION, compl.
arteriosclerosis, determ. of blood lipid changes (Hun))
(LIPIDS, in blood
in arteriosclerosis complicating hypertension (Hun))

VASARHELYI, Bela, dr.

Significance of the qualitative examination of urinary sediment in diagnosis and differential diagnosis of kidney diseases. Orv. hetil. 101 no.9:309-313 F '60.

1. A Vasmegyei Tanacs Markusovszky Korhaza.
(KIDNEY DISEASES urine)

VASARHELYI, Bela, dr.; SOLYMOSS, Bela, dr.

Quantitative determination and evaluation of Sternheimer's cells in chronic pyelonephritis. Orv.hetil. 102 no.34:1594-1597 20 Ag '61.

1. Vas megye Tanacsa Markusovszky Korhaza I. sz. Belosztaly es Kozponti Laboratorium.

(PYELONEPHRITIS urine)

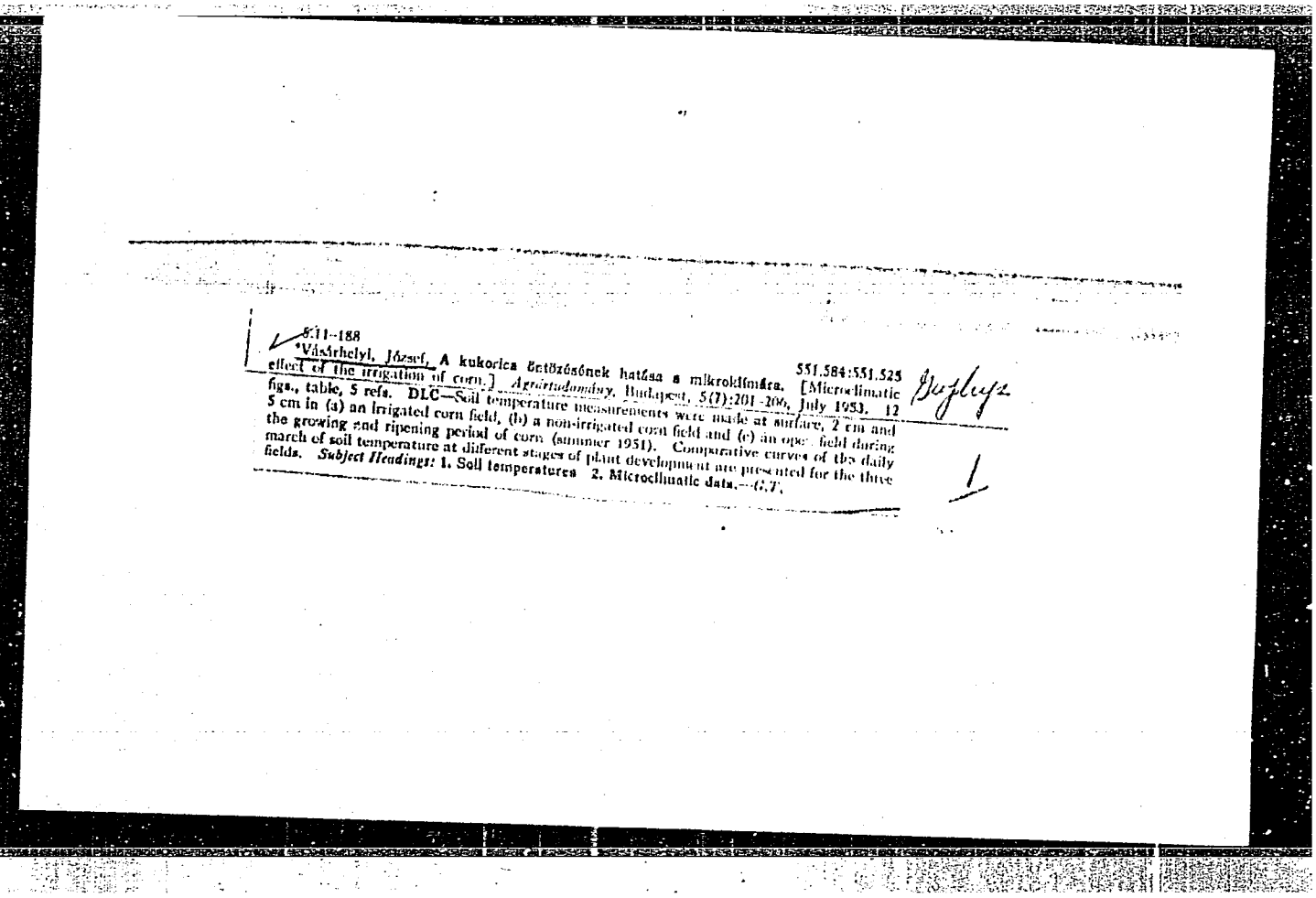
SCHEIBER, Gabor; BANKI, Laszlo; VASARHELYI, Endre; SAVELY, Camillo; MARK, Gergely, kutato

Possibilities for preparing and using pyrethrin containing insecticides in Hungary. Magy kem lap 18 no.11:524-531 N '63.

1. Budapesti Vegyimuvek (for Scheiber, Banki, Vasarhelyi and Savely).
2. Kerteszeti Kutato Intezet (for Mark).

CSIBA, Lajos; VASARHELYI, Istvan; RADETZKY, Jeno; PATKAI, Imre, dr.; TERNYAK, Jeno; SCHAFER, Lajos

Data on the birds of prey. Aquila 69/70:258 '62-'63 [publ. '64].



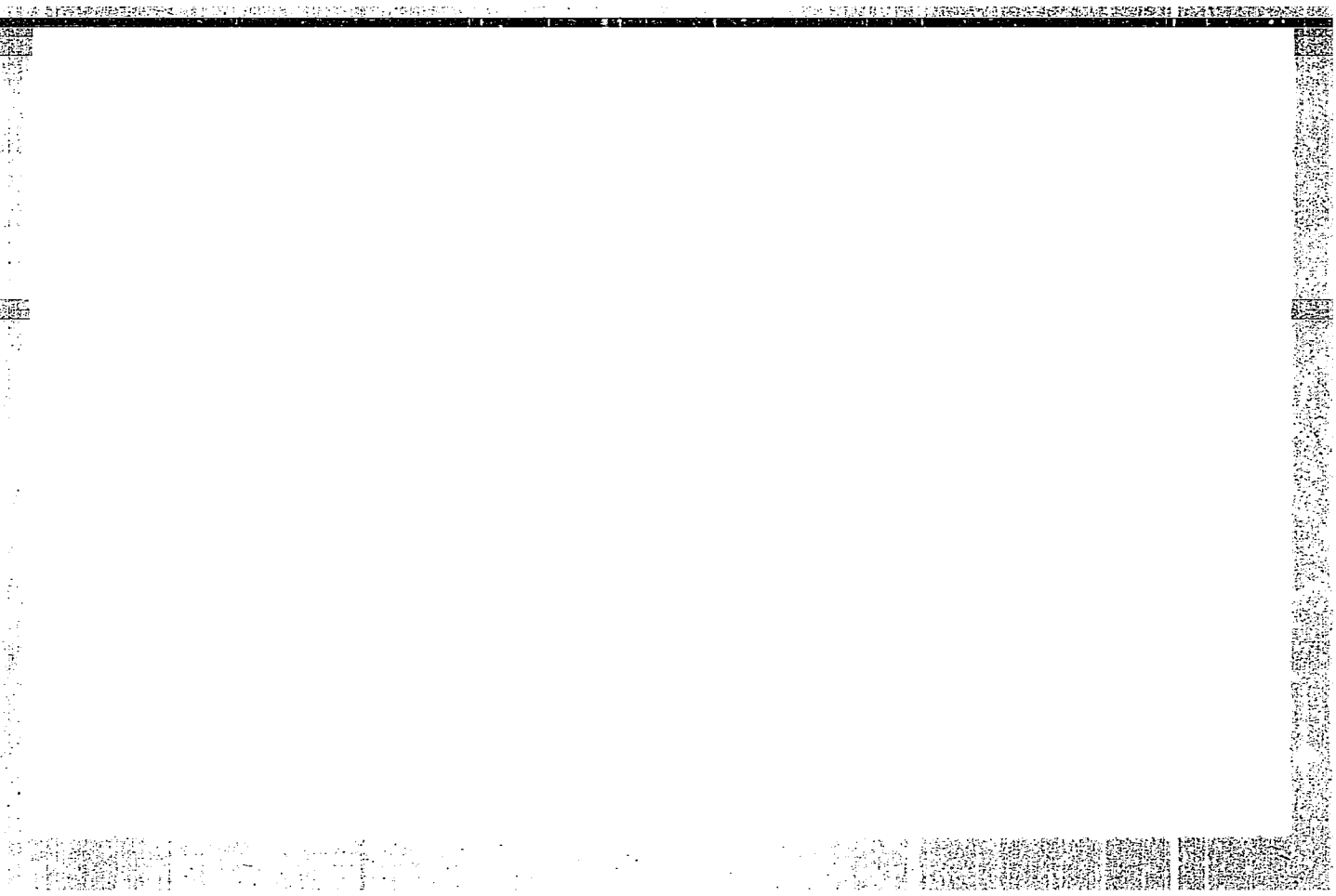
5:11-188

*Vásárhelyi, József, A kukorica öntözésének hatása a mikroklímára. [Microclimatic effect of the irrigation of corn.] *Agrártudomány*, Budapest, 5(7):201-206, July 1953. 12 figs., table, 5 refs. DLC—Soil temperature measurements were made at surface, 2 cm and 5 cm in (a) an irrigated corn field, (b) a non-irrigated corn field and (c) an open field during the growing and ripening period of corn (summer 1951). Comparative curves of the daily march of soil temperature at different stages of plant development are presented for the three fields. *Subject Headings:* 1. Soil temperatures 2. Microclimatic data.—*G.T.*

551.584:551.525

RADVANYI, Otto; VASARHELYI, Istvan; SZEPESVARI, Laszlo; SOMFAI, Lajos

Data on the avifauna of Northern Hungary. Aquila 69/70:247-267. 268 '62-'63 [publ. '64].



APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858720002-8"

VASARHELYI, C.; [illegible], C.

"Effect of the Color of the Soil on the Growth of Cotton", p. 137,
(IPARAG, Vol. 52, No. 3, May/June 1954, Budapest, Hungary)

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 4, No. 3,
March 1955, Uncl.

VASARHELYI, Laszlo

National festival of trade union dance ensembles. Munka 11 no.9: 18-21 S '61.

1. Nepmuvelesi Intezet munkatarsa.

(Hungary--Trade unions)
(Hungary--Dancing--Folk and national dances)

VASARHELYI, M.

"First evaluation of the movement for greater economy by standardardization of sizes launched by our association." Melyepitestudomanyi Szemle, Budapest, Vol. 4, No. 6, June 1954, p. 331.

SO: Eastern European Accessions List, Vol. 3, No. 11, Nov. 1954, L.C.

VASARHELYI, M.

Second evaluation of the movement "More economical measurement" in our association. p. 494.

Vol. 4, no. 9, Sept. 1954.
MELYEPITESTUDOMANYI SZEMLE
Budapest

SOURCE: Monthly list of East European Accession, (EEAL), LC, Vol. 5, No. 3, March, 1956

VASARHELYI, M.

The shearing strength of props made of reinforced steel concrete; a review of an article. p. 445.
(Melyepitestudomanyi Szemle, Vol. 6, no. 10/12, Dec. 1956. Budapest, Hungary)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 9, Sept. 1957. Uncl.

MELCZER, Miklos; VASARHELYI, Pal

Incidence of Streptobacillus moniliformis in the naso-pharyngeal cavity of inbred white and Wistar rats. Kiserletes orvostud. 8 no. 2:168-174 March 56.

1. Pecsi Orvost. Egyetem Borgyog. Klinikaja.

(HEMOPHILUS
Streptobacillus moniliformis, incidence in naso-pharyngeal cavity of inbred rats. (Hun))

VASARHELYI, Pal (Budapest)

Report on the Rome congress and exhibition on technical and scientific documentation. Hir techn 15 no.10:312-313 O '64.

VASARHELYI, Pal

Management mechanization exhibition in London. Hir tech 16 no.3:88-89 Mr '65.

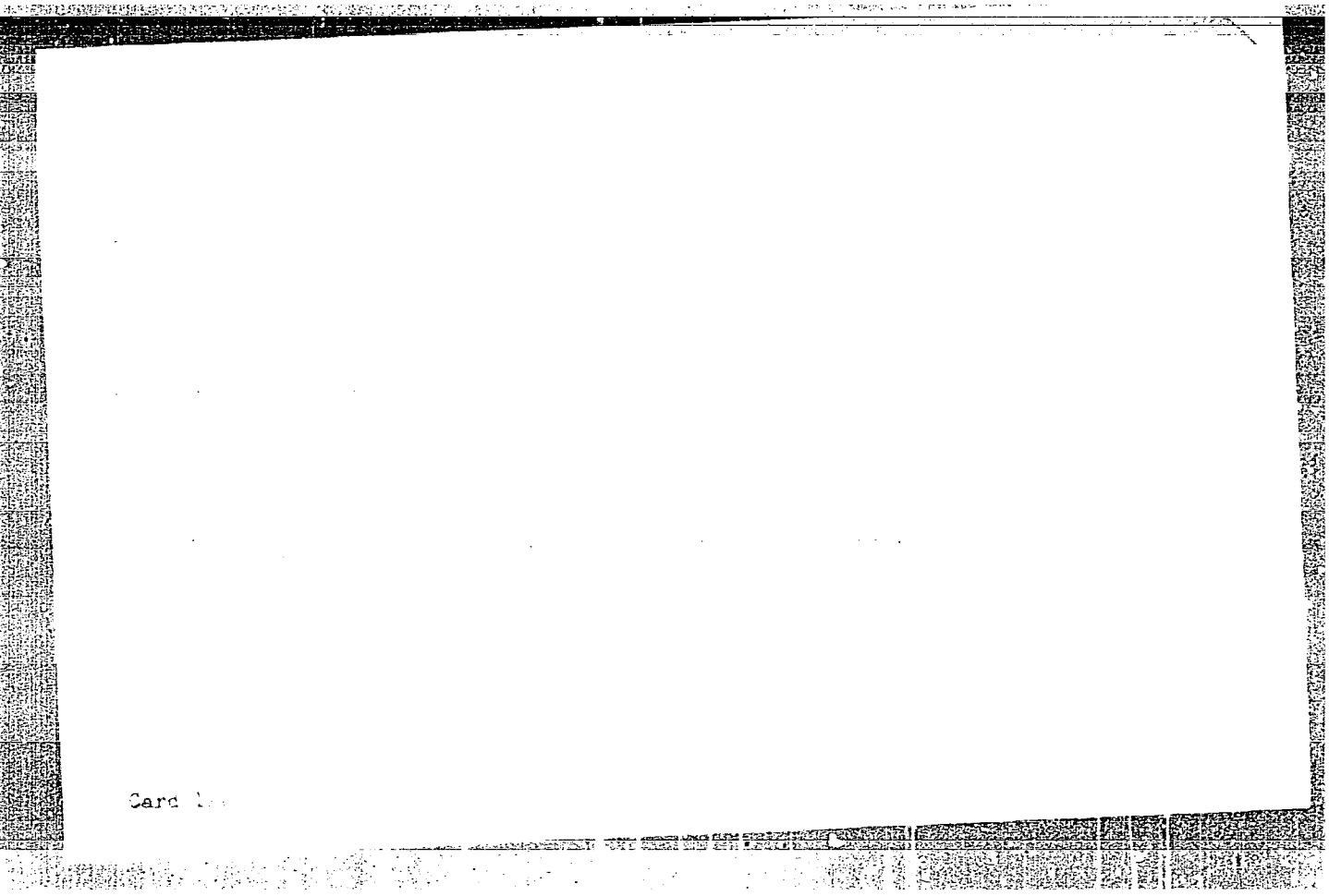
Reviews. Ibid.:94

1. Editori Contributor, "Hiradastechnika", Budapest.

VASARHELYI, Pal

Reviews. Hir techn 16 no.4:116 Ap '65.

1. Editorial assistant, "Hiradastechnika", Budapest.



Card

ACCESSION NR

ASSOCIATION: Central Research Institute for [illegible]

VAS, J.; RATKOVICS, F.; SZEPESVARY, P.

Examination of petroleum-sulfur compounds. IV. Experiments in the field of thermal decomposition of petroleum-sulfur compounds. p.99

MAGYAR KEMIAI FOLYOIRAT. Budapest, Hungary. Vol. 65, no. 3, Mar. 1959

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

Uncl.

VASARI, A.

Traveler's notes about Danish agriculture.

(To be contd.) p. 476 (Sotsialistlik Pollumajandus. Vol. 12, no. 10, Oct. 1957. Tallinn, Estonia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

SZABO, Elek; SARDI, Andras; VASAROS, Laszlo

The effect of ion-exchange on the sodic recovery of uranium ores.
Koz fiz kozl MTA 9 no.5/6:341-346 '61.

HUTAS, Imre, dr.; NYIREDY, Geza, dr.; FERENCZY, Sandor, dr.; VASAROS, Maria, dr.

Respiratory function tests in bronchial dyskinesia. Tuberkulozis 16 no.4/5:149-153 Ap-My '63.

1. A Budapesti Orvostudomanyi Egyetem Tudogyogyaszati Klinikajanak es a Janos Korhaz Rendelointezetenek kozlemenye.
(RESPIRATORY FUNCTION TESTS)
(BRONCHIAL SPASM) (TRACHEAL STENOSIS)
(PULMONARY EMPHYSEMA) (BRONCHOSCOPY)

HUTAS, Imre, dr.; VASAROS, Maria, dr.

Heparin ointment in the prevention of artificial venous thrombosis caused by PAS infusion. Tuberkulozis 16 no.9: 267-268 S '63.

1. Budapesti Orvostudomanyi Egyetem Tudogyogyaszati Klinika (Igazgato: Miskovits Gusztav dr. egyetemi tanar) kozlemenye.
(HEPARIN) (AMINOSALICYLIC ACID)
(THROMBOPHLEBITIS) (INJECTIONS, INTRAVENOUS)
(OINTMENTS)

A RUMANIA/Physical Chemistry. Electrochemistry. B

Abs Jour: Ref Zhur-Khim., No 5, 1959, 14774.

Author : Mercea V., Ursu, I., Vasaru Gh.
Inst :
Title : Study of Electrolysis by Superposing an Alternating Current on a Direct Current.

Orig Pub: Studii si cercetari fiz. Acad. RPR, 1957, 8, No 4, 479-489.

Abstract: An electrolytic cell, permitting the measurement of the potential of a metallic grid placed between the electrodes, has been applied for the study of the polarization of Cu, Zn and brass electrodes in 5% $CuSO_4$ and $ZnSO_4$ solutions. The electrodes and the grid were made of the same metal or alloy. The

Card : 1/2

VASARU G.

Distr: 4E2c(j)

Measurement of the thickness of thin liquid films by absorption of β-radiation. G. Vasaru. *Acad. rep. populare Romîne, Inst. fiz. atomică şi Inst. fiz., Studii cercetări fiz.* 10, 771–80 (1959).—The method of measuring the thickness of sheets by absorption of β-radiation was extended to thin films of liquids. The variation in thickness of the water films with the velocity of flow (down a straight wall) was compared graphically by means of the hypothesis of uniform flow, with laminar repartition of velocities (in the region up to $Re = 110$) and by means of the β-radiation absorption (from a Sr^{90}–Y^{90} source). Since the method is very sensitive (1.0–1.5% error), rapid, and reproducible (once the absorption coeff. has been detd., a calibrating curve can be drawn for the liquid studied, since the thickness can be found in relation to the flow rate) and does not disturb the flow phenomena, the method can be used successfully to measure currents in fluid dynamics. Of course, certain precautions must be taken; the support should be thin enough and of low absorbent material, and in case of undulating flow, the mean velocity at the point of measurement must be taken into account, yielding a mean thickness value.

M. Ben Eliezer

6

2-LJAJ (NB) (MAY)

1

VASARU, Gheorghe

The diffusion-condensation chamber. Studii cerc fiz 11 no.1:175-197 '60. (EEAI 10:1)
(Cloud chamber) (Electric discharges through gases)

S/169/62/000/008/028/090
E202/E392

AUTHORS: Bologa, M. and Vasaru, Gh.

TITLE: Radioactivity of atmospheric residues and dry deposits in Cluj

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 8, 1962, 19, abstract 8B149. (Studii şi cercetări fiz. Acad. RPR", v. 12, no. 3, 1961, 609 - 612)

TEXT: The results of measurements are given.

[Abstracter's note: Complete translation.]

Card 1/1

44857

S/081/62/000/024/007/073
B108/B186

AUTHORS: Vășaru, Gh., Ungureanu, C., Fodor, T.

TITLE: Separation of the binary mixture He-H_2 by means of thermodiffusion

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 24, 1962, 77, abstract 24B535 (Studii și cercetări fiz. Acad.RPR, v. 12, no. 4, 1961, 825 - 838 [Rum.; summaries in Russ. and Fr.])

TEXT: The operation of a metallic, wire-type thermodiffusion column, 2.6m high and 2.2 cm in diameter, is studied using a standard He-H_2 mixture. The operation of the column is described in diagrams illustrating the degree of separation (q) versus time for T_2/T_1 = 2 and 3 (T_1 = 290°K, T_2 is the temperature of the hot wire, °K) and versus pressure p for the range 471 - 970 mm Hg. The experimental dependence of ln q on p is compared with that calculated according to the theory of R. C. Jones and W. H. Furry (Rev. Mod. Phys., v. 18, no. 2, 1946, 151). Their close agreement is demonstrated. The analysis was made by means of gas chromato-

Card 1/2

Separation of the binary ... S/081/62/000/024/007/073
B108/B186

graphy and subsequent measurement of the heat conductivity. The volume of the sample was 6.2 cm^3. Illustrations and diagrams are given of the column, its electrical circuit, and of the unit for preparing the mixture and filling the column. [Abstracter's note: Complete translation.]

Card 2/2

VASARU, Gh.

Preparation of pure nitrogen. Rev chimie Min petr 13 no.4:236-237 Ap '62.

VASARU, Gh.

Optimum conditions of separation in a column of thermal diffusion with warm wire; application to nitrogen isotopes. Studii cerc fiz 13 no.6:947-957 '62.

1. Institutul de fizica atomica, Sectia Cluj.

VASARU, Gh.

Optimum separation conditions in a thermodiffusion column with hot wire; application to nitrogen isotopes. Rev chimie Min petr 13 no.10:592-596 O '62.

VASARU, Gh.

Methods of separating stable isotopes. Pt. 1. Rev chimie Min petr 14 no.4:223-228 Ap '63.

1. Institutul de fizica atomica, sectia Cluj.

VASARU, Gh.

Methods of separating stable isotopes. Pt.2. Rev chimie Min petr 14 no.5:285-289 My '63.

1. Institutul de fizica atomica, Cluj.

VASARU, Gh.

Methods of separating stable isotopes. Pt.3. Rev chimie Min petr 14 no.8:474-478 Ag '63.

1. Institutul de fizica atomica, Sectia Cluj.

VASARU, Gh.

Methods of separating the stable isotopes. Pt.4. Rev chimie Min petr 14 no.10:605-609 0'63

VASARU, Gh.

Methods of separating stable isotopes. Pt. 5. Rev chimie Min petr 15 no. 3: 156-159 Mr '64.

1. Institutul de fizica atomica, Sectia Cluj.

VASARU, Gh.

Methods of separation of stable isotopes. Pt. 6. Rev chimie Min petr 15 no. 5:291-295 My '64.

1. Institute of Atomic Physics, Cluj Section.

VASARU, Gh.

Applications of stable isotopes. Studii cerc fiz 16 no. 6: 701-728 '64.

1. Institute of Nuclear Physics, Cluj.

VASARU, Gh.; BIRSAN, E.T.

Applications of stable isotopes. Pt. 2. Studii cerc fiz 16 no.10
1207-1230 '64.

1. Institute of Atomic Physics, Cluj (for Vasaru). 2. Chair of
Toxicology, Medicopharmaceutical Institute, Cluj (for Birsan).

ACC NR: AP7005410 SOURCE CODE: GE/0025/66/009/010/0301/0306

AUTHOR: Vasaru, Gh.

ORG: Institute of Atomic Physics, Cluj

TITLE: Experimental methods for the determination of the thermal diffusion factor (Survey Report) [Read at the 4th Conference on Stable Isotopes (ASTI), Leipzig, October 1965]

SOURCE: Kernenergie, v. 9, no. 10, 1966, 301-306

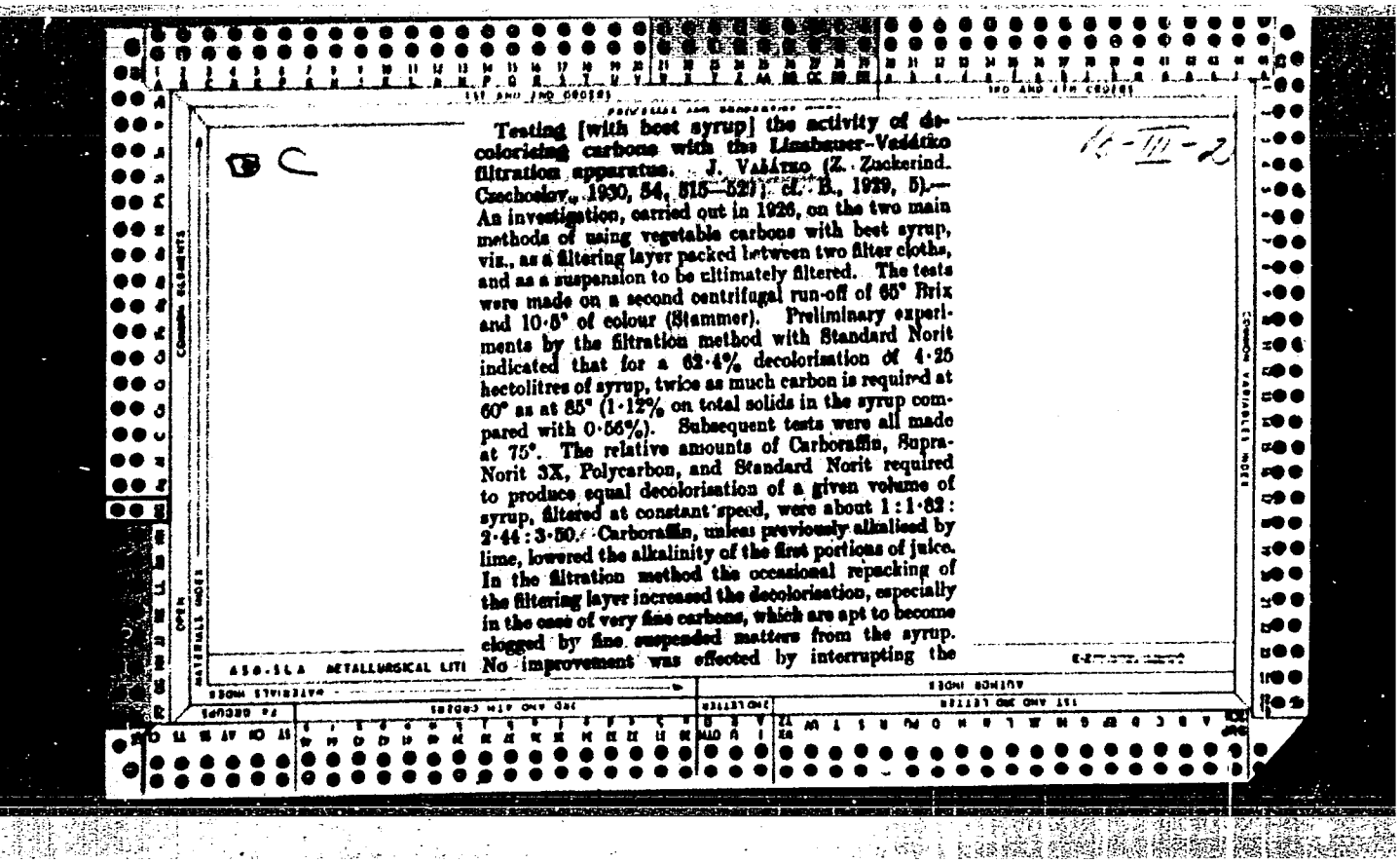
TOPIC TAGS: thermal diffusion, thermal diffusion separation, thermal diffusion factor, isotopic mixture, isotope separation equipment, swing separator

ABSTRACT: The magnitude of the elementary thermal diffusion (TD) effect for a certain isotopic mixture is determined by the TD factor α_T. The author describes three methods used at present for the experimental determination of that factor: 1) the method of the two reservoirs has been used with many gaseous and isotopic systems. It has the advantage of a simple appartaus, but has practical drawbacks because it necessitates gas manipulations and the elementary

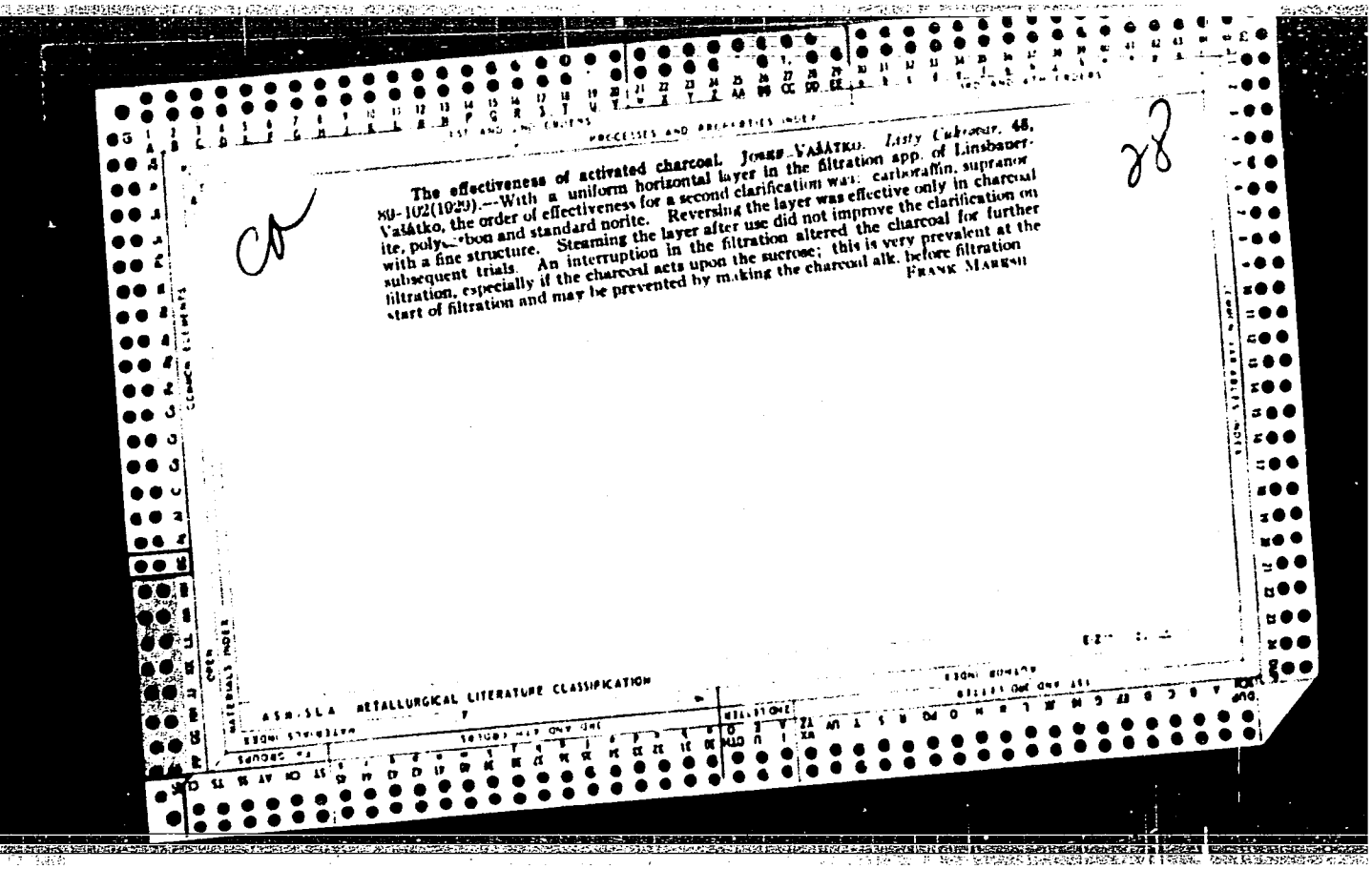
Card 1/2

separation process can be repeated only 4 to 5 times, which leads to a small separation factor and, hence, to not very precise determination of the TD factor. 2) The swing separator method permits a more accurate determination. As it needs small temperature differences between both the cold and the hot ends, rather precise determinations of this factor within small temperature ranges may be performed. The operation time is reduced, and no gas manipulations are necessary while the device is operating. This method is used frequently for the determination of TD factors for isotopic mixtures and for gaseous mixtures. 3) The method of the TD column yields rather accurate results in the case of hydrogen isotopes. In the case of heavier isotopes, the precision diminishes. Because of the practical advantage, the method is recommended in all cases where only qualitative values of α_T are required. Orig. art. has: 6 figures and 40 formulas. [KS]

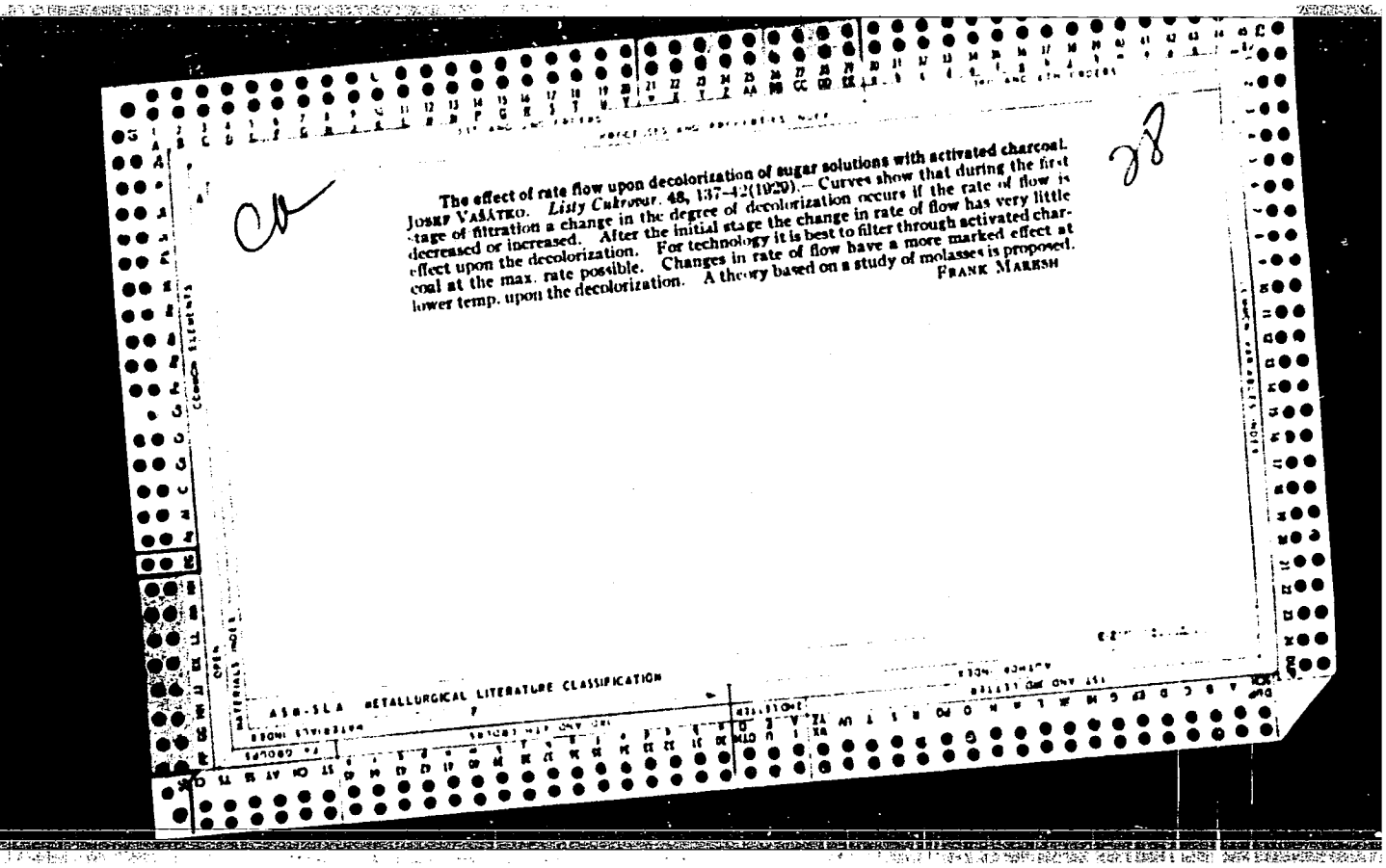
SUB CODE: 18, 20/SUBM DATE: 15Jan66/ORIG REF: 004/OTH REF: 010/



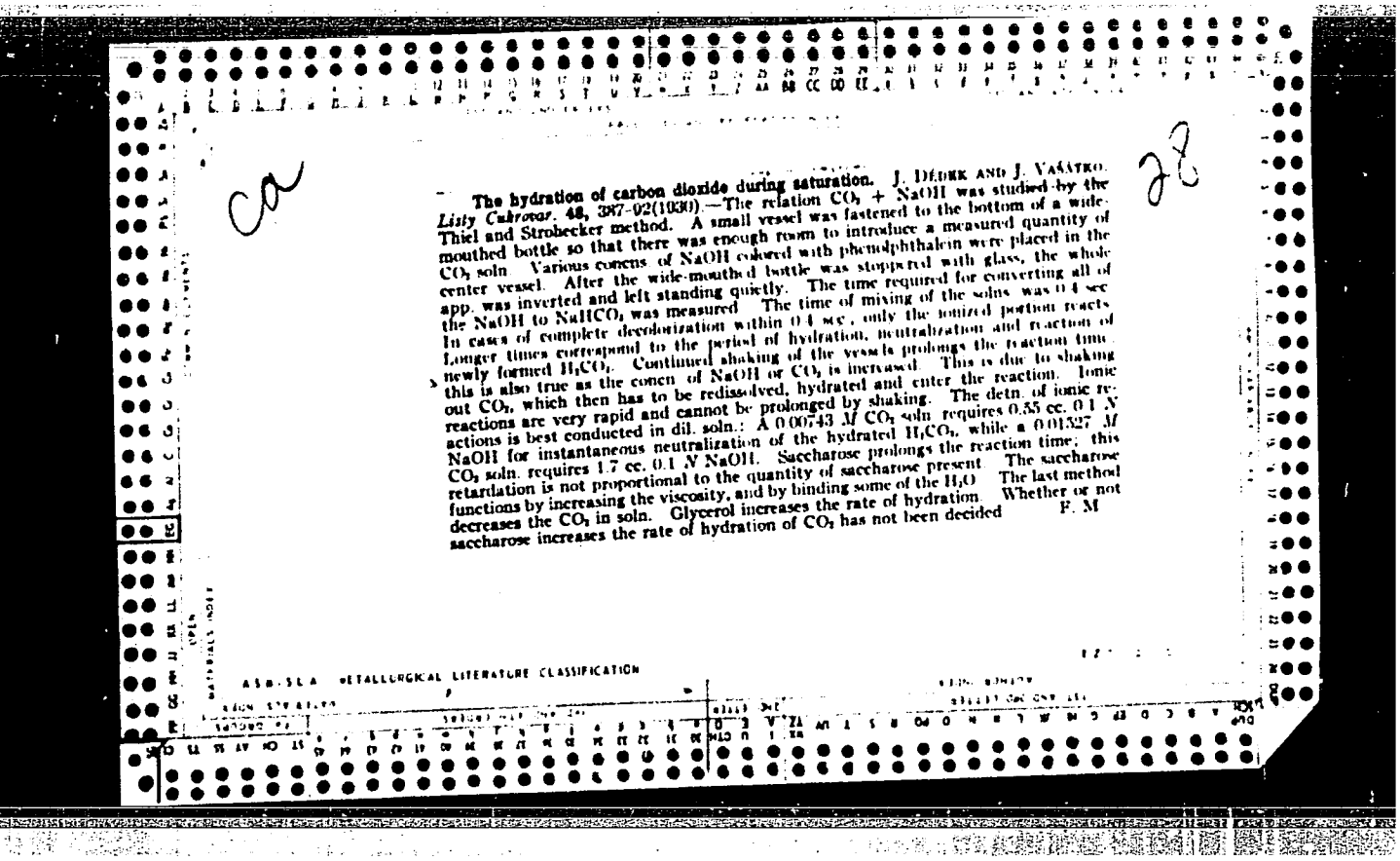
Testing [with beet syrup] the activity of decolorising carbons with the Limbauer-Vaššíko filtration apparatus. J. Vašíko (Z. Zuckerind. Czechoslov., 1930, 54, 515—521); cf. B., 1929, 5).—An investigation, carried out in 1926, on the two main methods of using vegetable carbons with beet syrup, viz., as a filtering layer packed between two filter cloths, and as a suspension to be ultimately filtered. The tests were made on a second centrifugal run-off of 65° Brix and 10·5° of colour (Stammer). Preliminary experiments by the filtration method with Standard Norit indicated that for a 62·4% decolorisation of 4·25 hectolitres of syrup, twice as much carbon is required at 60° as at 85° (1·12% on total solids in the syrup compared with 0·56%). Subsequent tests were all made at 75°. The relative amounts of Carboraffin, Supra-Norit 3X, Polycarbon, and Standard Norit required to produce equal decolorisation of a given volume of syrup, filtered at constant speed, were about 1 : 1·62 : 2·44 : 3·50. Carboraffin, unless previously alkalised by lime, lowered the alkalinity of the first portions of juice. In the filtration method the occasional repacking of the filtering layer increased the decolorisation, especially in the case of very fine carbons, which are apt to become clogged by fine suspended matters from the syrup. No improvement was effected by interrupting the



The effectiveness of activated charcoal. JOSEF VAŠÁTKO. *Listy Cukrovar.* 48, 80-102(1929).—With a uniform horizontal layer in the filtration app. of Linsbauer-Vašátko, the order of effectiveness for a second clarification was: carboraffin, supranor ite, polyc-rbon and standard norite. Reversing the layer was effective only in charcoal with a fine structure. Steaming the layer after use did not improve the clarification on subsequent trials. An interruption in the filtration altered the charcoal for further filtration, especially if the charcoal acts upon the sucrose; this is very prevalent at the start of filtration and may be prevented by making the charcoal alk. before filtration.
FRANK MARSH



The effect of rate flow upon decolorization of sugar solutions with activated charcoal. JOSEF VAŠÁTKO. *Listy Cukrovar.* 48, 137–42(1929).— Curves show that during the first stage of filtration a change in the degree of decolorization occurs if the rate of flow is decreased or increased. After the initial stage the change in rate of flow has very little effect upon the decolorization. For technology it is best to filter through activated charcoal at the max. rate possible. Changes in rate of flow have a more marked effect at lower temp. upon the decolorization. A theory based on a study of molasses is proposed.
FRANK MARESH



The hydration of carbon dioxide during saturation. J. DĚDEK AND J. VAŠÁTKO. *Listy Cukrovar.* 48, 397-02(1930).—The relation CO_2 + NaOH was studied by the Thiel and Strohecker method. A small vessel was fastened to the bottom of a wide-mouthed bottle so that there was enough room to introduce a measured quantity of CO_2 soln. Various concns of NaOH colored with phenolphthalein were placed in the center vessel. After the wide-mouthed bottle was stoppered with glass, the whole app. was inverted and left standing quietly. The time required for converting all of the NaOH to $NaHCO_3$ was measured. The time of mixing of the solns. was 0.4 sec. In cases of complete decolorization within 0.4 sec., only the ionized portion reacts. Longer times correspond to the period of hydration, neutralization and reaction of newly formed H_2CO_3. Continued shaking of the vessels prolongs the reaction time; this is also true as the concn. of NaOH or CO_2 is increased. This is due to shaking out CO_2, which then has to be redissolved, hydrated and enter the reaction. Ionic reactions are very rapid and cannot be prolonged by shaking. The detn. of ionic reactions is best conducted in dil. soln.: A 0.00743 *M* CO_2 soln. requires 0.55 cc. 0.1 *N* NaOH for instantaneous neutralization of the hydrated H_2CO_3, while a 0.01327 *M* CO_2 soln. requires 1.7 cc. 0.1 *N* NaOH. Saccharose prolongs the reaction time; this retardation is not proportional to the quantity of saccharose present. The saccharose functions by increasing the viscosity, and by binding some of the H_2O. The last method decreases the CO_2 in soln. Glycerol increases the rate of hydration. Whether or not saccharose increases the rate of hydration of CO_2 has not been decided. F. M

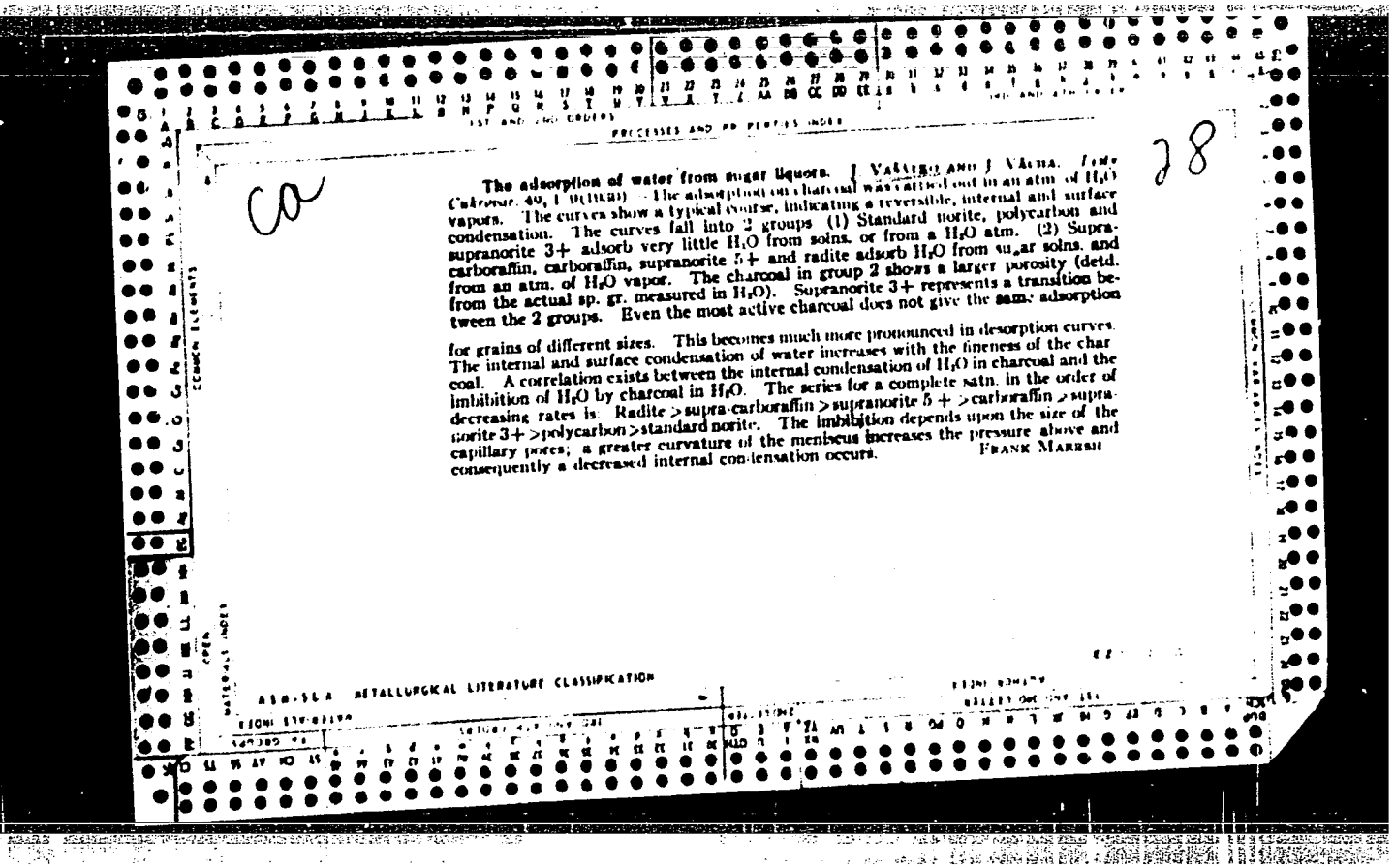
CA

28

The effect of the reacting medium upon the hydration of carbon dioxide in alkaline media. J. Drobr and J. Vašátko. *Listy Chem.* 48, 601 (1954); cf. *C. A.* 24, 2018.—Previous work showed the retarding effect of sucrose upon the reaction CO_2 + NaOH. The same procedure was used; Na tetrachlorophthalein was used as an

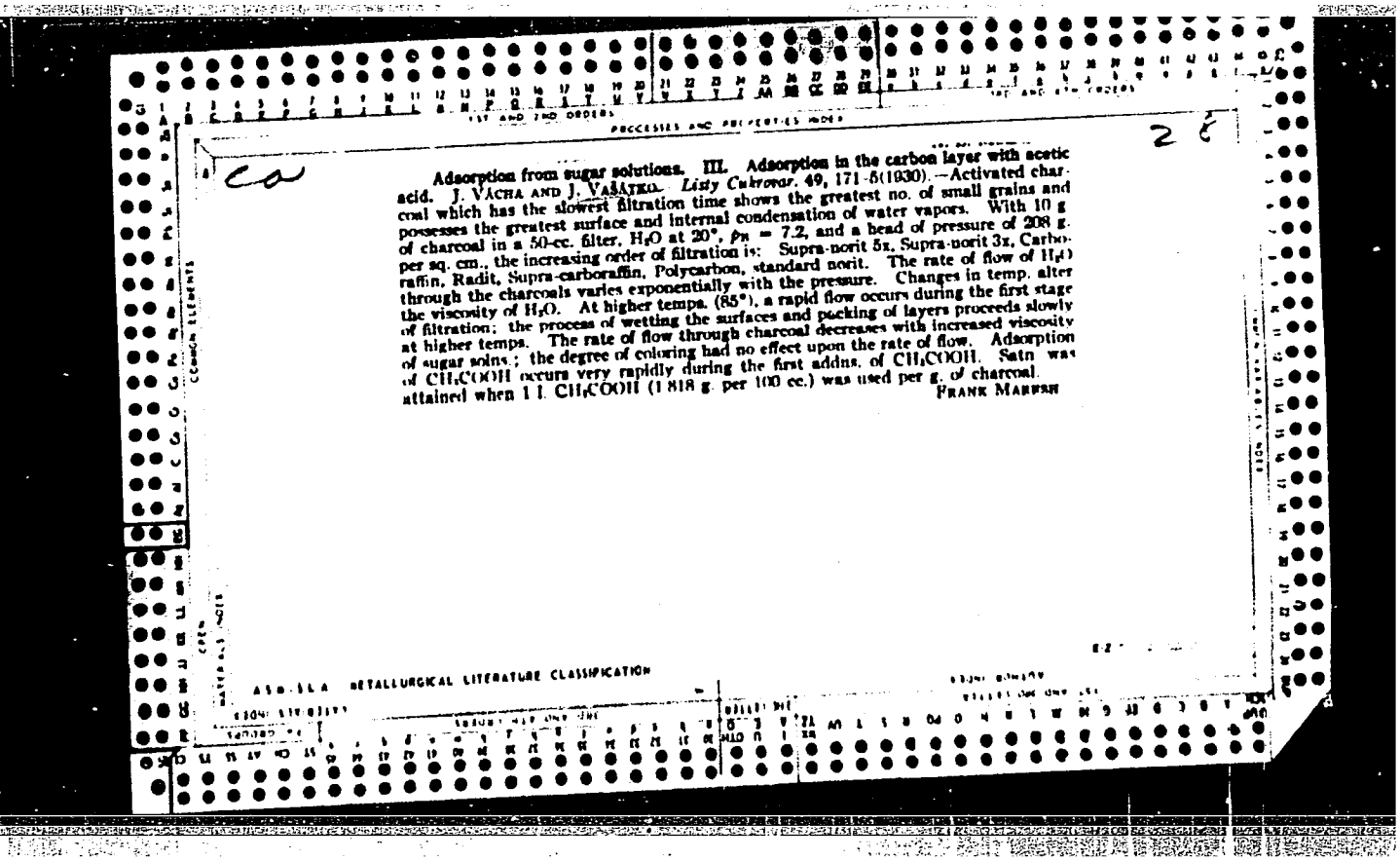
OVER

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



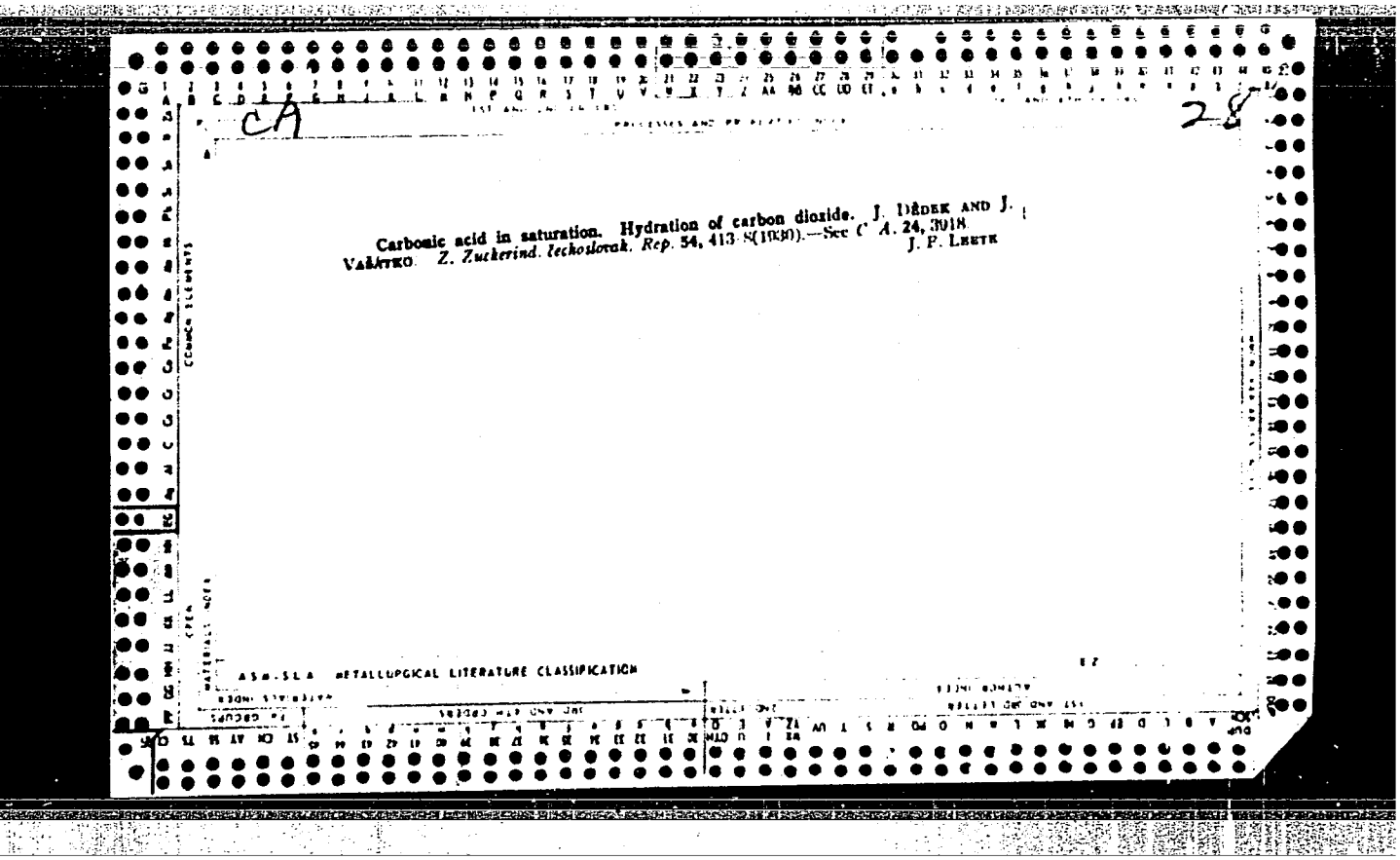
The adsorption of water from sugar liquors. J. VALAŠEK AND J. VÁCHA. *Listy Cukrovar.* 49, 1 9(1931). — The adsorption on charcoal was carried out in an atm. of H_2O vapors. The curves show a typical course, indicating a reversible, internal and surface condensation. The curves fall into 2 groups (1) Standard norite, polycarbon and supranorite 3+ adsorb very little H_2O from solns. or from a H_2O atm. (2) Supra-carboraffin, carboraffin, supranorite 5+ and radite adsorb H_2O from sugar solns. and from an atm. of H_2O vapor. The charcoal in group 2 shows a larger porosity (detd. from the actual sp. gr. measured in H_2O). Supranorite 3+ represents a transition between the 2 groups. Even the most active charcoal does not give the same adsorption for grains of different sizes. This becomes much more pronounced in desorption curves. The internal and surface condensation of water increases with the fineness of the charcoal. A correlation exists between the internal condensation of H_2O in charcoal and the imbibition of H_2O by charcoal in H_2O. The series for a complete satn. in the order of decreasing rates is: Radite > supra-carboraffin > supranorite 5 + > carboraffin > supranorite 3+ > polycarbon > standard norite. The imbibition depends upon the size of the capillary pores; a greater curvature of the meniscus increases the pressure above and consequently a decreased internal condensation occurs.

FRANK MARRAH



Adsorption from sugar solutions. III. Adsorption in the carbon layer with acetic acid. J. VÁCHA AND J. VAŠÁTKO. *Listy Cukrovar.* 49, 171-5(1930).—Activated charcoal which has the slowest filtration time shows the greatest no. of small grains and possesses the greatest surface and internal condensation of water vapors. With 10 g. of charcoal in a 50-cc. filter, H_2O at 20°, p_H = 7.2, and a head of pressure of 208 g. per sq. cm., the increasing order of filtration is: Supra-norit 5x, Supra-norit 3x, Carboraffin, Radit, Supra-carboraffin, Polycarbon, standard norit. The rate of flow of H_2O through the charcoals varies exponentially with the pressure. Changes in temp. alter the viscosity of H_2O. At higher temps. (85°), a rapid flow occurs during the first stage of filtration; the process of wetting the surfaces and packing of layers proceeds slowly at higher temps. The rate of flow through charcoal decreases with increased viscosity of sugar solns.; the degree of coloring had no effect upon the rate of flow. Adsorption of CH_3COOH occurs very rapidly during the first additn. of CH_3COOH. Satn. was attained when 1 l. CH_3COOH (1.818 g. per 100 cc.) was used per g. of charcoal.

FRANK MARVIN



CA

28

Carbonic acid in saturation. Hydration of carbon dioxide. J. Dědek and J. Vaňátko. *Z. Zuckerind. Techoslovak. Rep.* 54, 413-8(1930).—See *C. A.* 24, 3018. J. P. Lerth

1ST AND 2ND ORDERS

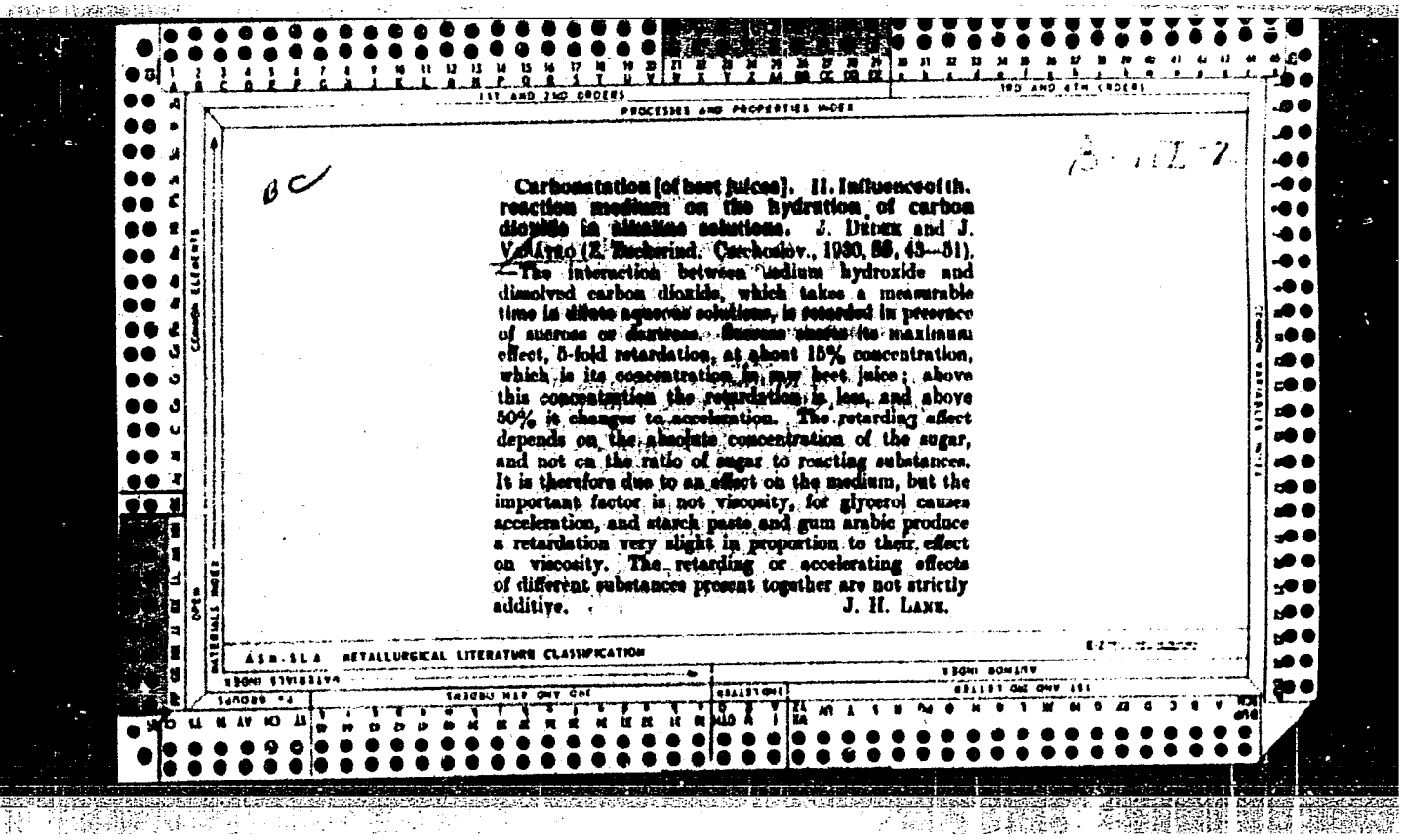
PROCESSES AND PROPERTIES INDEX

BC

Influence of rate of filtration on the decolorisation of sugar solutions by a layer of active carbon. I. Vašátko (Z. Zuckerind. Czechoslov., 1930, 54, 531—536).—In the filtration of sugar juices or syrups through a layer of active carbon under factory conditions, a slow rate of filtration has no advantage in economising carbon, since it does not affect the total work of decolorisation which a given amount of carbon will perform before it is exhausted. Rapid filtration has the great advantage of minimising the filtering area required. Tests described show that even with a quantity of juice or syrup insufficient to exhaust the carbon layer, wide variations in the rate of filtration have practically no influence on the average decolorisation of the whole liquid, and very little influence on the decolorisation of the first portions unless the filtration is carried out at low temperatures.

J. H. Lane.

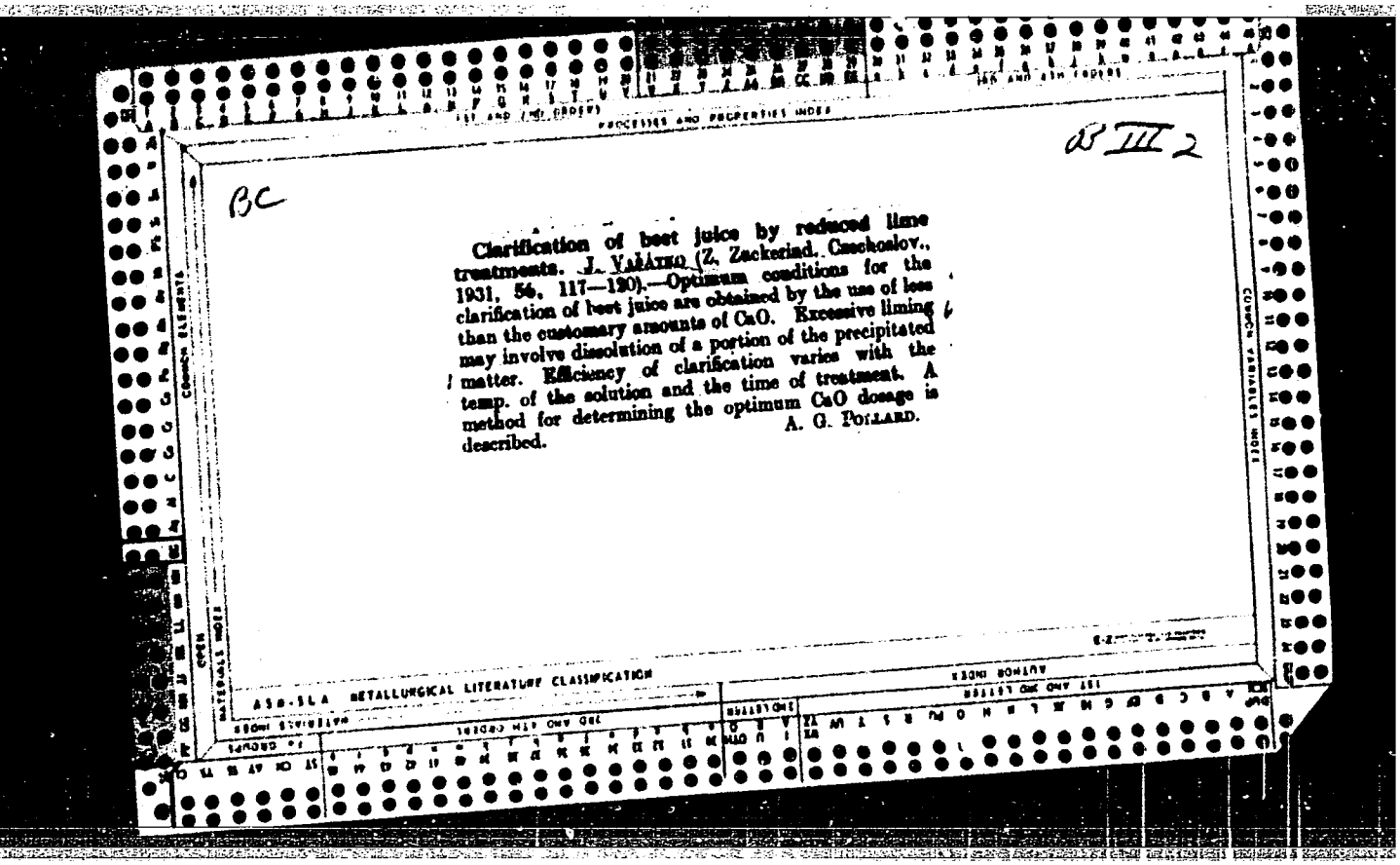
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

Carbonatation [of beet juices]. II. Influence of the reaction medium on the hydration of carbon dioxide in alkaline solutions. J. Dědek and J. Vaňáček (Z. Zuckerind. Czechoslov., 1930, 55, 43—51).—The interaction between sodium hydroxide and dissolved carbon dioxide, which takes a measurable time in dilute aqueous solutions, is retarded in presence of sucrose or dextrose, fructose exerts its maximum effect, 5-fold retardation, at about 15% concentration, which is its concentration in raw beet juice; above this concentration the retardation is less, and above 50% it changes to acceleration. The retarding effect depends on the absolute concentration of the sugar, and not on the ratio of sugar to reacting substances. It is therefore due to an effect on the medium, but the important factor is not viscosity, for glycerol causes acceleration, and starch paste and gum arabic produce a retardation very slight in proportion to their effect on viscosity. The retarding or accelerating effects of different substances present together are not strictly additive.

J. H. Lane.



BC

dB III 2

Clarification of beet juice by reduced lime treatments. J. Vaňátko (Z. Zuckerind. Czechoslov., 1931, 56, 117—120).—Optimum conditions for the clarification of beet juice are obtained by the use of less than the customary amounts of CaO. Excessive liming may involve dissolution of a portion of the precipitated matter. Efficiency of clarification varies with the temp. of the solution and the time of treatment. A method for determining the optimum CaO dosage is described.

A. G. Pollard.

1ST AND 2ND ORDERS

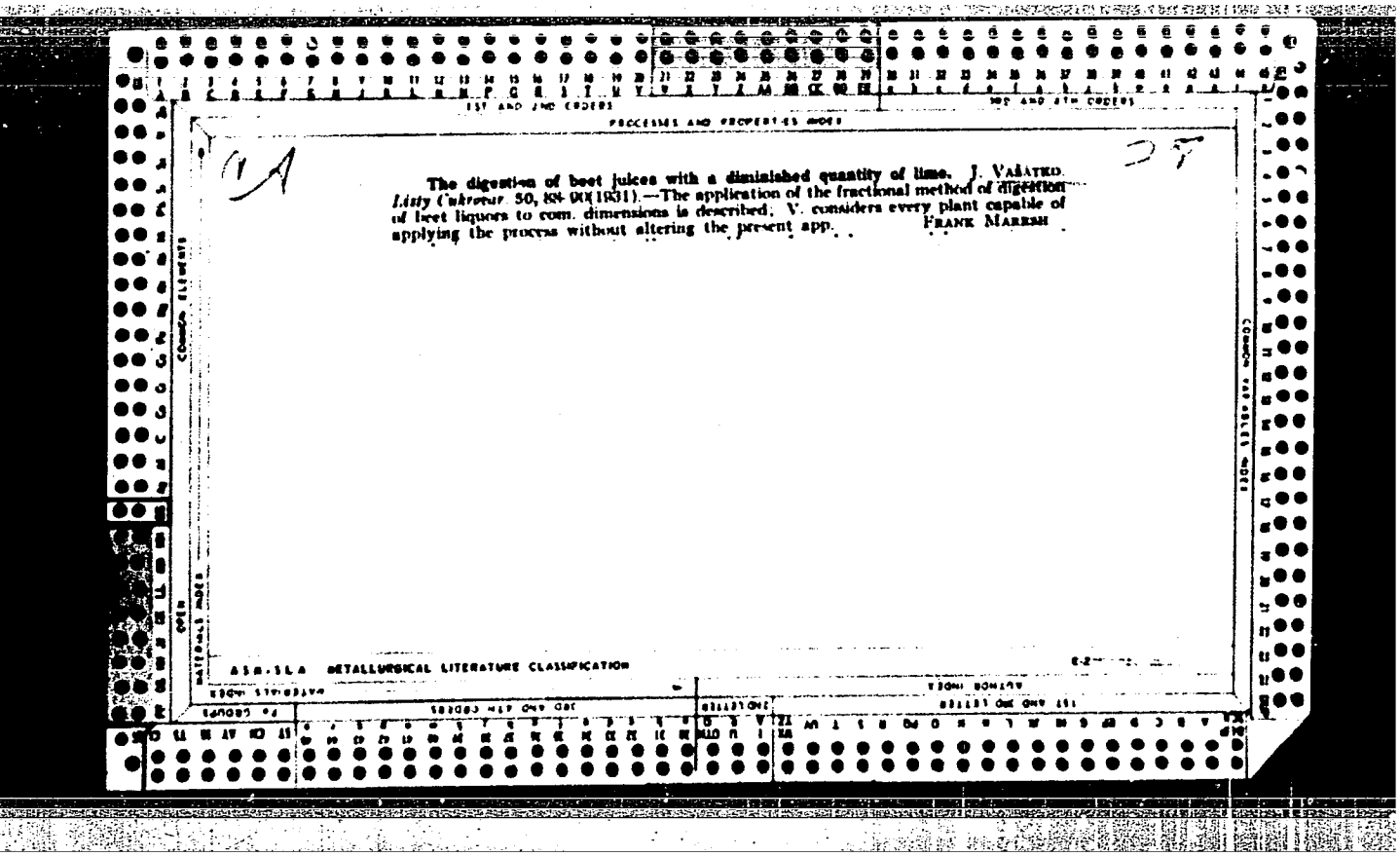
PROCESSES AND PROPERTIES INDEX

Adsorption from sucrose solutions. IV. Sucrose according to the stratum method. J. Vašátko and J. Vacha. *Listy Cukrovar.* 49, 215 (1931); cf. C. A. 24, 4053.—Sucrose solns. lower the decolorizing effect of activated charcoal. Sucrose solns. (d. 1.0884, pH 7.3) at 20° were passed through 10 g. dry charcoal spread out in layers 7–8 mm. thick. The vol. of sucrose passing through the charcoal layers increases linearly with time. The time required for the flow of 50 cc. of the above sucrose soln. varied with different charcoals: standard norite 27 sec., supranorite (S.++) 41 sec., polycarbon 40 sec., supranorite (++) 54 sec., carboraffin 36 sec., supracarboraffin 60 sec., and radite 83 sec. The same values were obtained with water. In dil. solns., sucrose has little effect upon the rate of flow through charcoals. The dry charcoal adsorbs more water than sucrose during early filtration. Plotting the adsorbed sucrose against vol. of soln. filtered showed a typical isotherm with an asymptotic approach at a vol. of 50 cc. of filtered soln. Concd. sucrose solns. deviated greatly from water curves; during the start of filtration water is adsorbed more rapidly than sucrose so that even a neg. adsorption of sucrose may occur. The max. sucrose adsorbed by this layer method is the same as the max. sucrose adsorbed by charcoal in suspension, providing the same ratio of soln. to charcoal exists. Leaching expts. show a complete reversibility of the adsorption of sucrose upon charcoal.

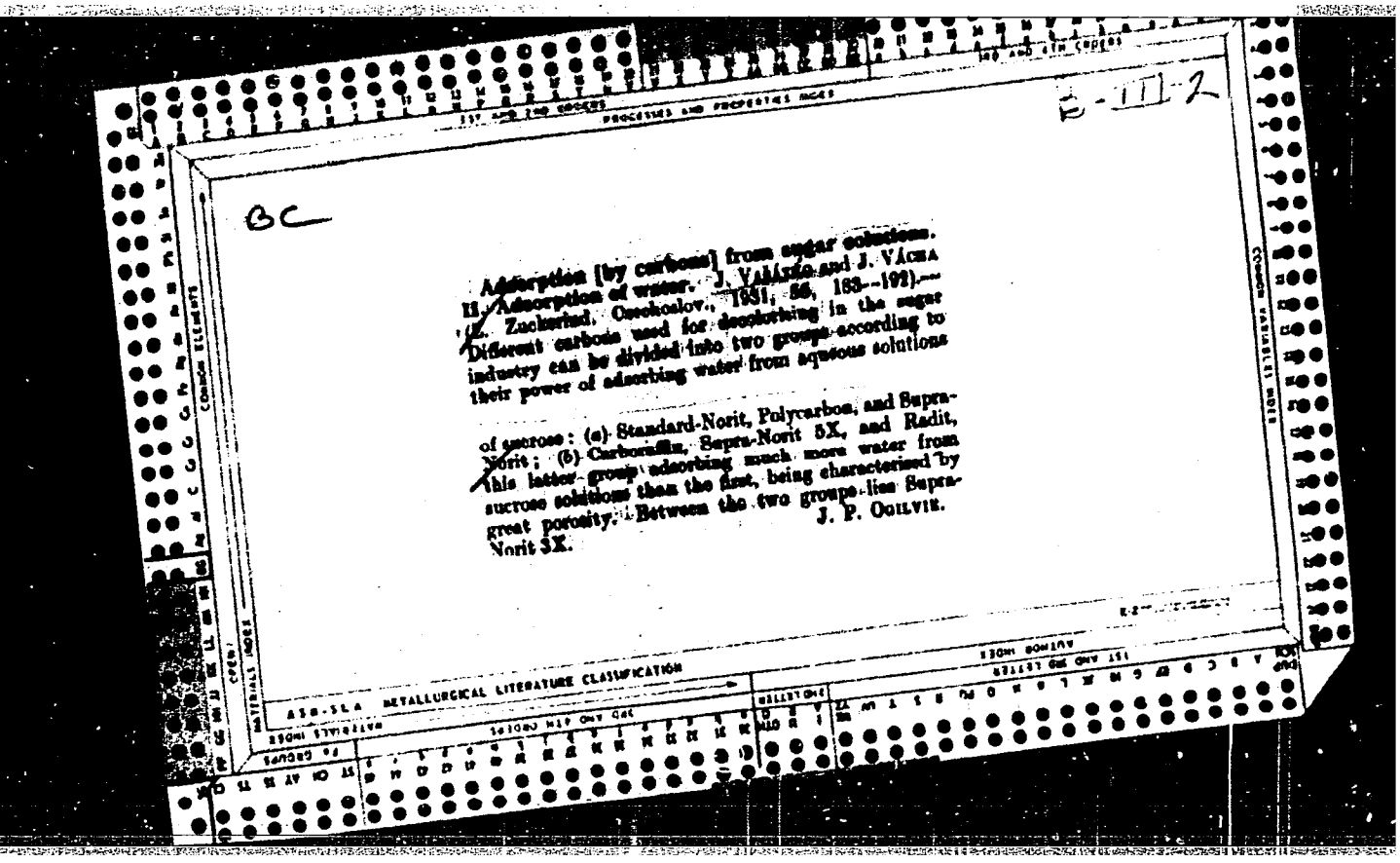
Frank Maresh

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VASATKO, J.
JAROSLAV SOUCEK, Listy Cukrovar, 49, 223-60 (1931)



The digestion of beet juices with a diminished quantity of lime. J. VARÁTKO. *Listy Cukrovar.* 50, 88-90(1931).—The application of the fractional method of digestion of beet liquors to com. dimensions is described; V. considers every plant capable of applying the process without altering the present app. FRANK MARRSH



B-11-2

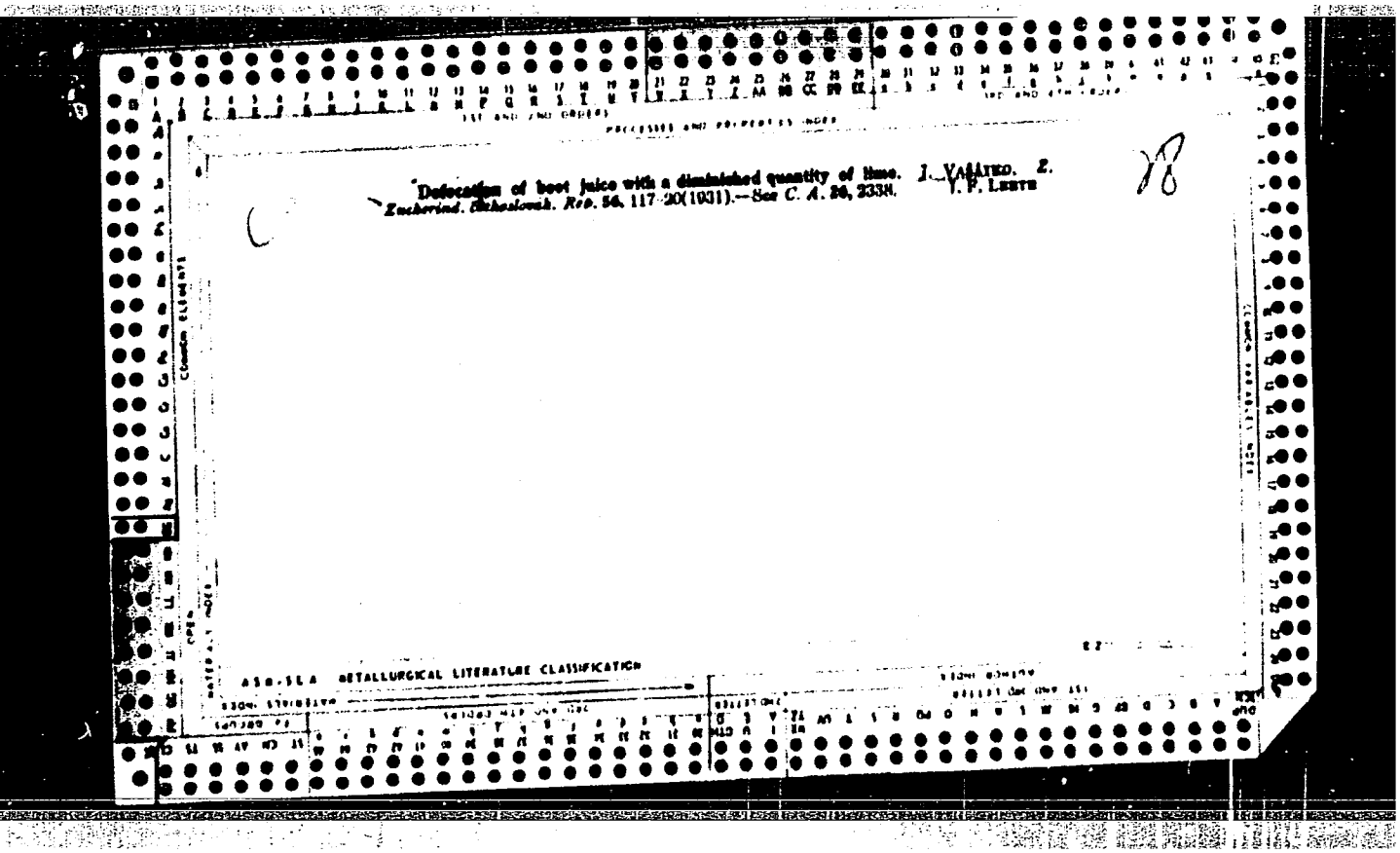
BC

Adsorption [by carbons] from sugar solutions. II. Adsorption of water. J. Vaňásko and J. Vácha (Z. Zuckerind. Cechoslov., 1951, 76, 183—192).—Different carbons used for decolorising in the sugar industry can be divided into two groups according to their power of adsorbing water from aqueous solutions of sucrose: (a) Standard-Norit, Polycarbon, and Supra-Norit; (b) Carbonaffin, Supra-Norit 5X, and Radit, this latter group adsorbing much more water from sucrose solutions than the first, being characterised by great porosity. Between the two groups lies Supra-Norit 3X.

J. P. Ouilvie.

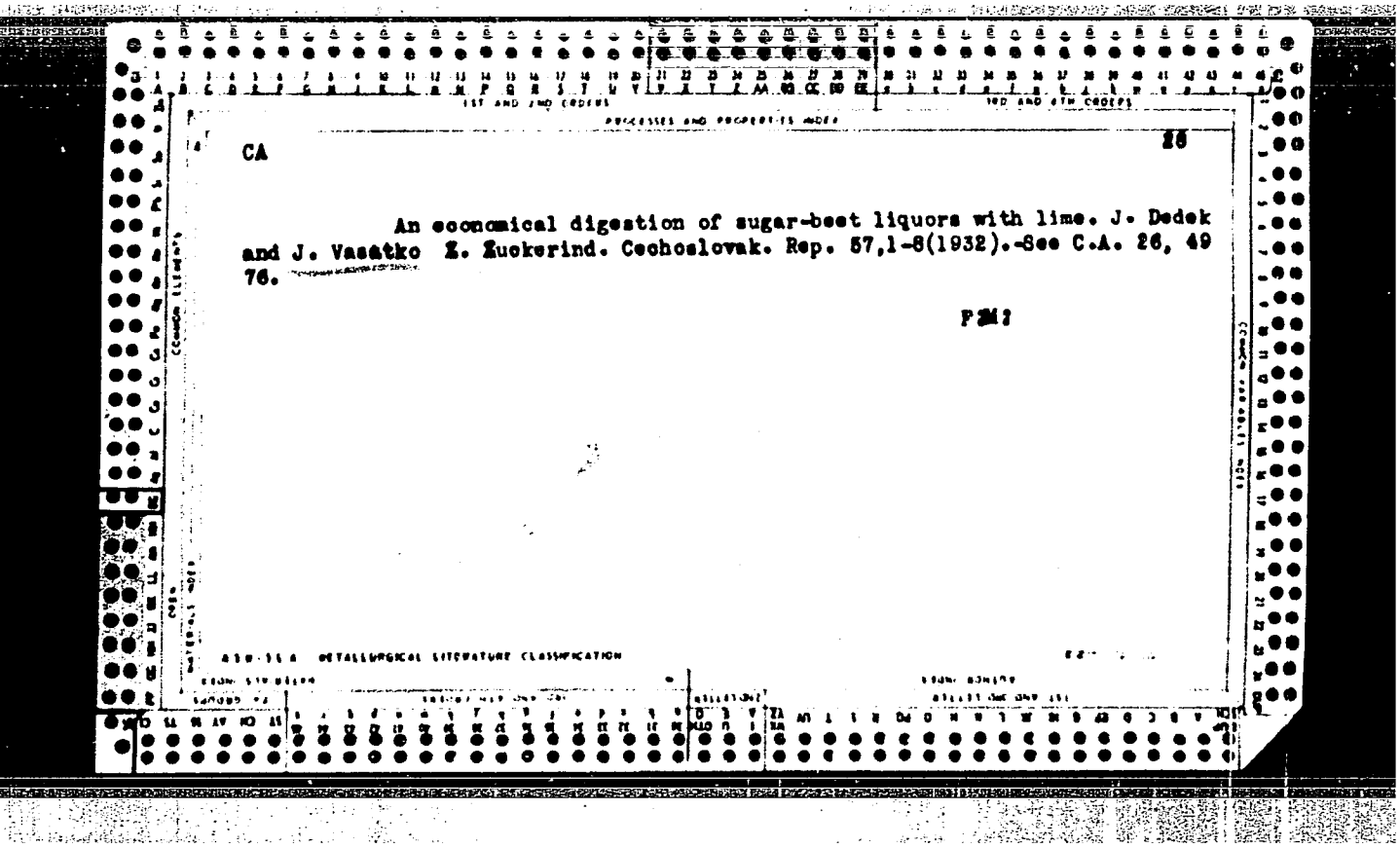
Adsorption from sugar solutions. III. Adsorption in the carbon layer: acetic acid. J. VÁCHA and J. VAŠÁTKO (Z. Zuckerind. Czechoslov., 1931, 55, [illegible]4—338).—The influence of temperature, pressure, and the nature of the solution on the velocity of flow, v, of water through activated charcoal has been determined for a number of different specimens. With increase of particle size v increases, whilst 1/v is related exponentially to the applied pressure; the influence of temperature is relatively greater at the lower pressures. Data are given of the relative rates of flow of water and aqueous solutions of sucrose, molasses, and crude sugar. Measurements of the adsorption of acetic acid by active carbon confirm Dědek's theoretical views on the mechanism of the adsorption (cf. B., 1927, 920). With a constant ratio of adsorbent to solution the maximum adsorption is the same whether determined by the suspension or the layer method. H. F. GILLBE.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Defecation of beet juice with a diminished quantity of lime. J. VASILEO. Z. V. P. LEBTS
Zuckerind. Cukrovarnik. Rep. 56, 117-20(1931).—See C. A. 26, 2338.

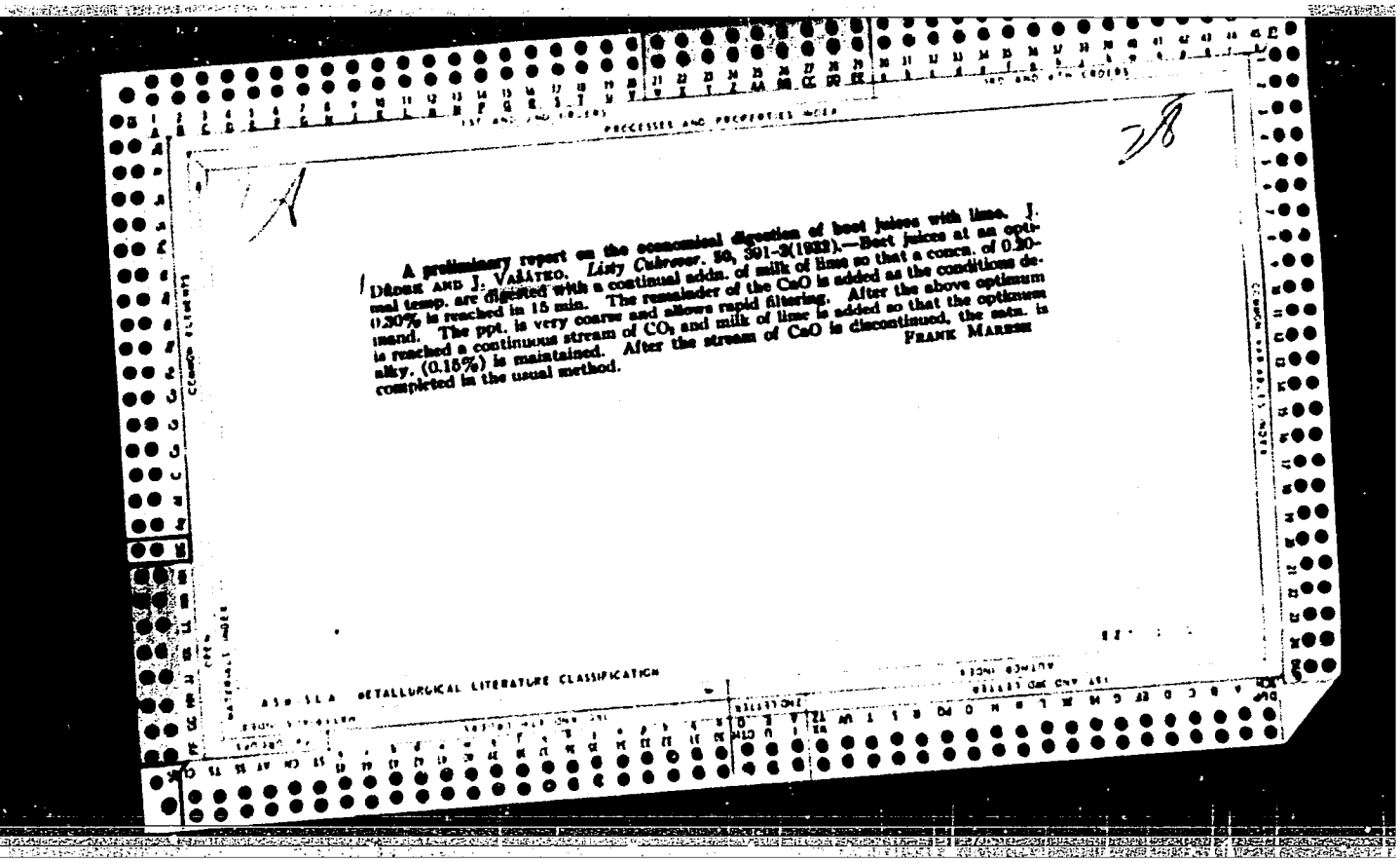
18



CA 25

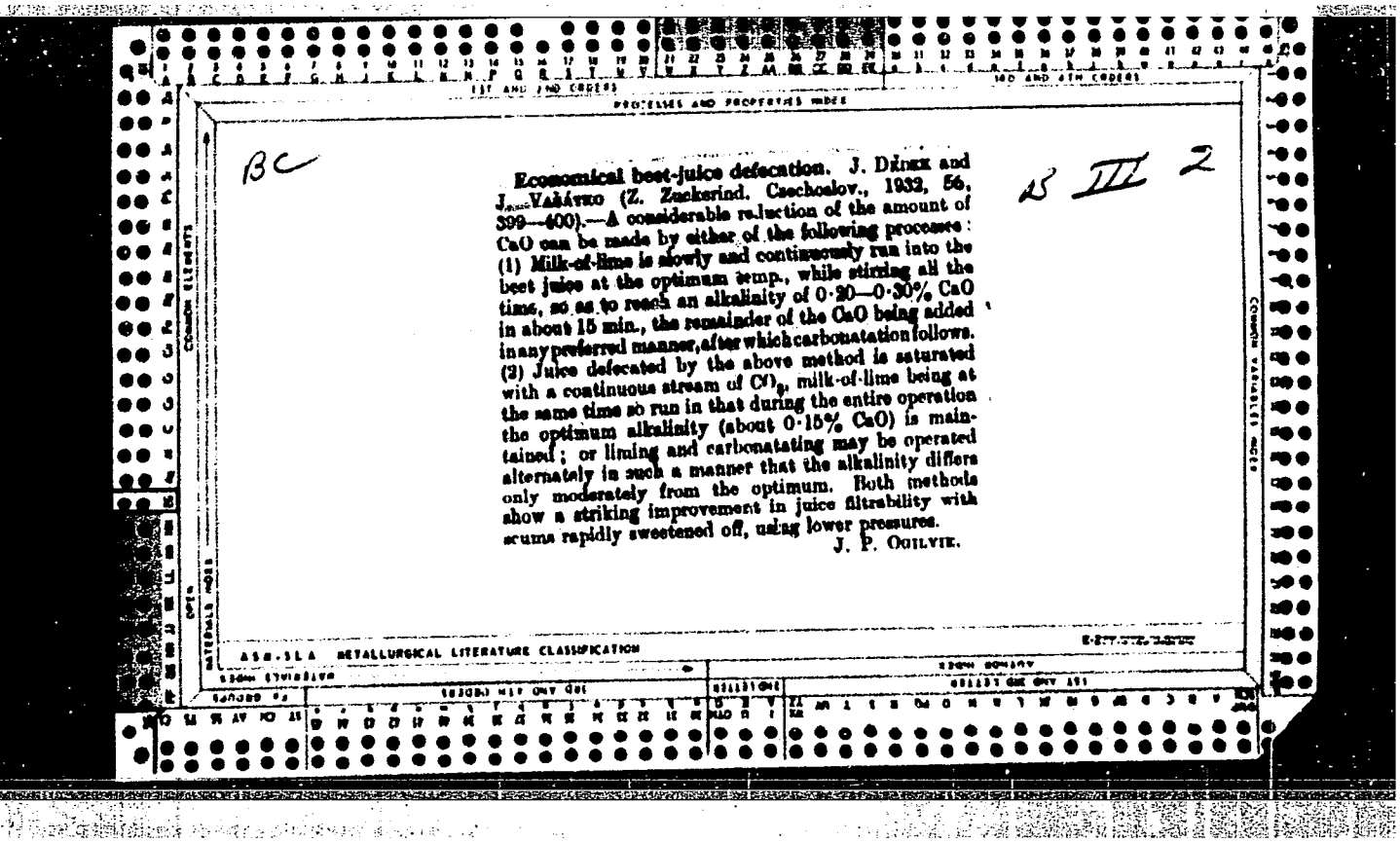
An economical digestion of sugar-beet liquors with lime. J. Dedek and J. Vasatko Z. Zuckerind. Cechoslovak. Rep. 57,1-8(1932).-See C.A. 26, 4976.

PM?



A preliminary report on the economical digestion of beet juices with lime. J. DÉDEK AND J. VAŠÁTKO. *Listy Cukrovar.* 50, 301-3(1932).—Beet juices at an optimal temp. are digested with a continual addn. of milk of lime so that a concn. of 0.30-0.50% is reached in 15 min. The remainder of the CaO is added as the conditions demand. The ppt. is very coarse and allows rapid filtering. After the above optimum is reached a continuous stream of CO_2 and milk of lime is added so that the optimum alky. (0.15%) is maintained. After the stream of CaO is discontinued, the satn. is completed in the usual method.

FRANK MARESH

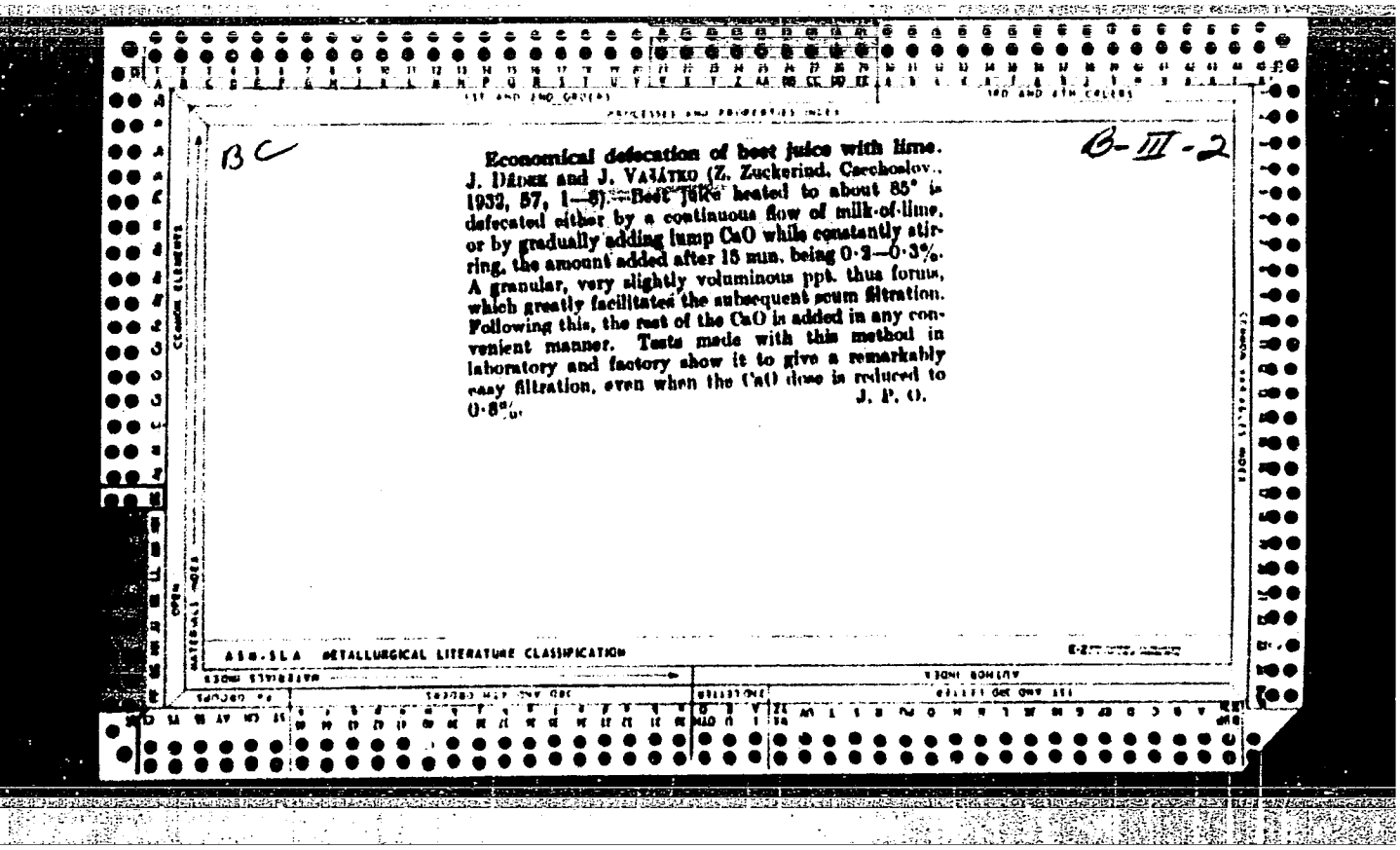


BC

Economical beet-juice defecation. J. Dítěk and J. Vaňátko (Z. Zuckerind. Czechoslov., 1932, 56, 399—400).—A considerable reduction of the amount of CaO can be made by either of the following processes: (1) Milk-of-lime is slowly and continuously run into the beet juice at the optimum temp., while stirring all the time, so as to reach an alkalinity of 0·20—0·30% CaO in about 15 min., the remainder of the CaO being added in any preferred manner, after which carbonatation follows. (2) Juice defecated by the above method is saturated with a continuous stream of CO_2, milk-of-lime being at the same time so run in that during the entire operation the optimum alkalinity (about 0·15% CaO) is maintained; or liming and carbonatating may be operated alternately in such a manner that the alkalinity differs only moderately from the optimum. Both methods show a striking improvement in juice filtrability with scums rapidly sweetened off, using lower pressures.

J. P. Ogilvie.

15 III 2

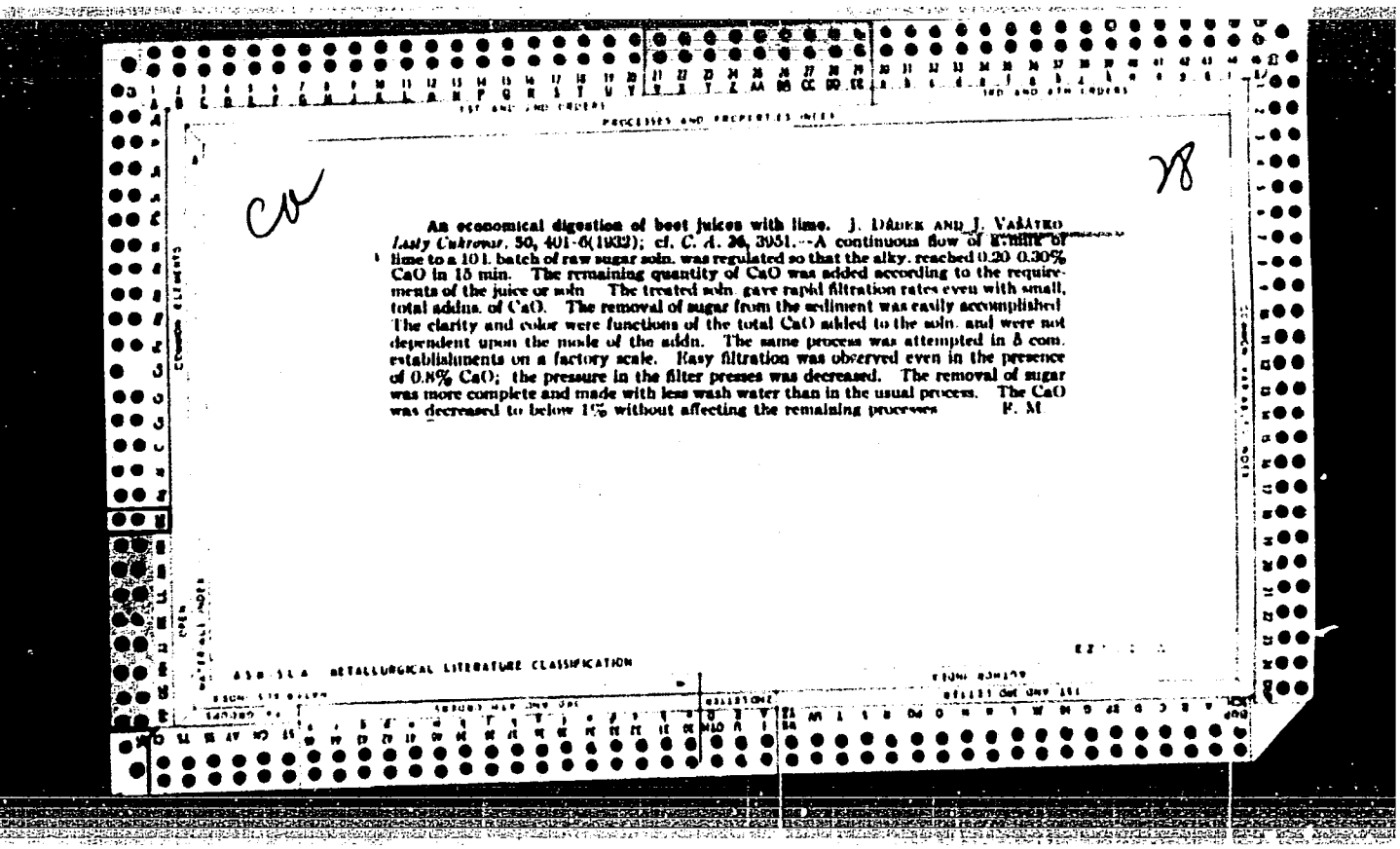


BC

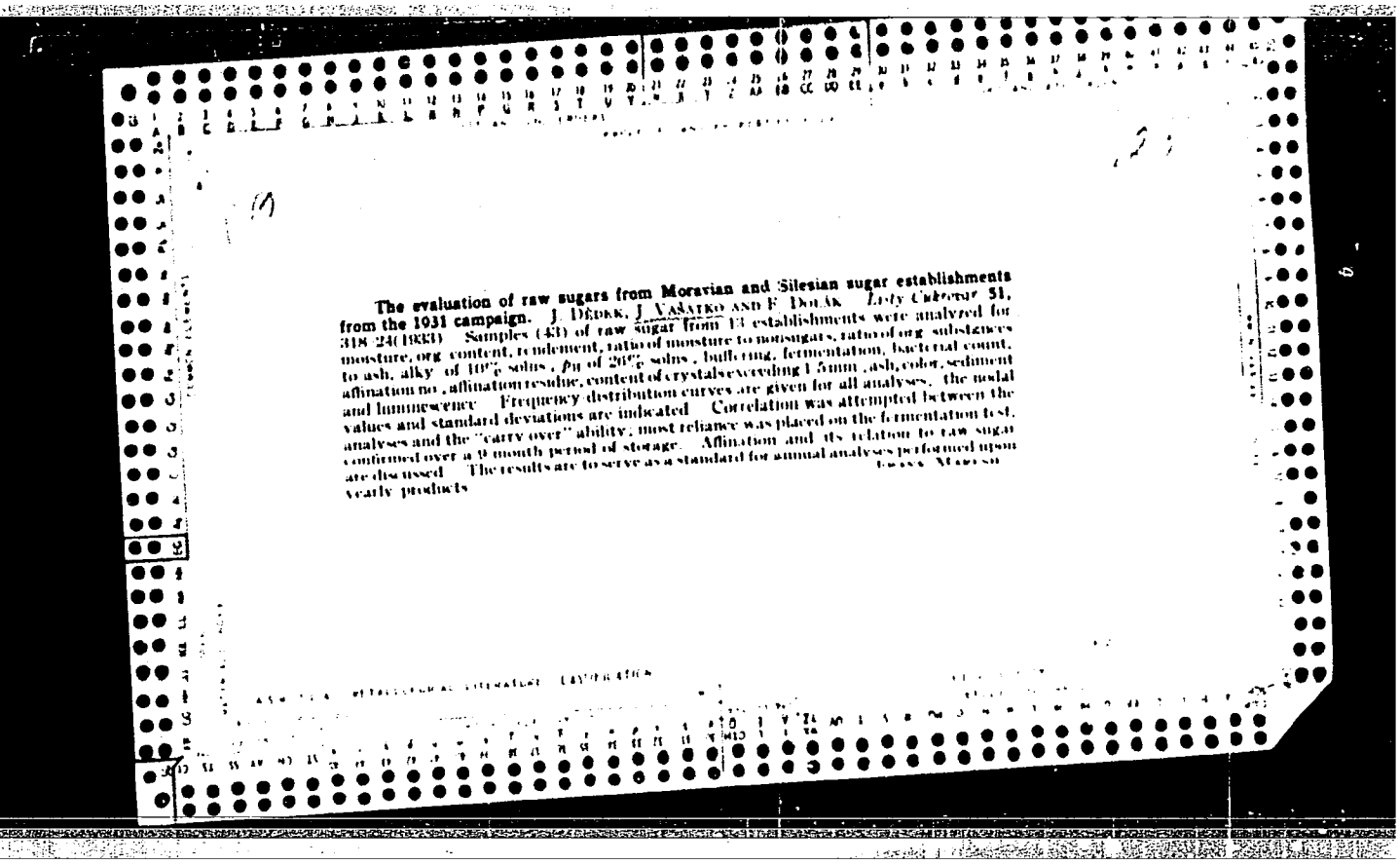
B-III-2

Economical defecation of beet juice with lime. J. DÍDEK and J. VAŠÁTKO (Z. Zuckerind. Czechoslov., 1932, 57, 1—8).—Beet juice heated to about 85° is defecated either by a continuous flow of milk-of-lime, or by gradually adding lump CaO while constantly stirring, the amount added after 15 min. being 0·2—0·3%. A granular, very slightly voluminous ppt. thus forms, which greatly facilitates the subsequent scum filtration. Following this, the rest of the CaO is added in any convenient manner. Tests made with this method in laboratory and factory show it to give a remarkably easy filtration, even when the CaO dose is reduced to 0·8%. J. P. O.

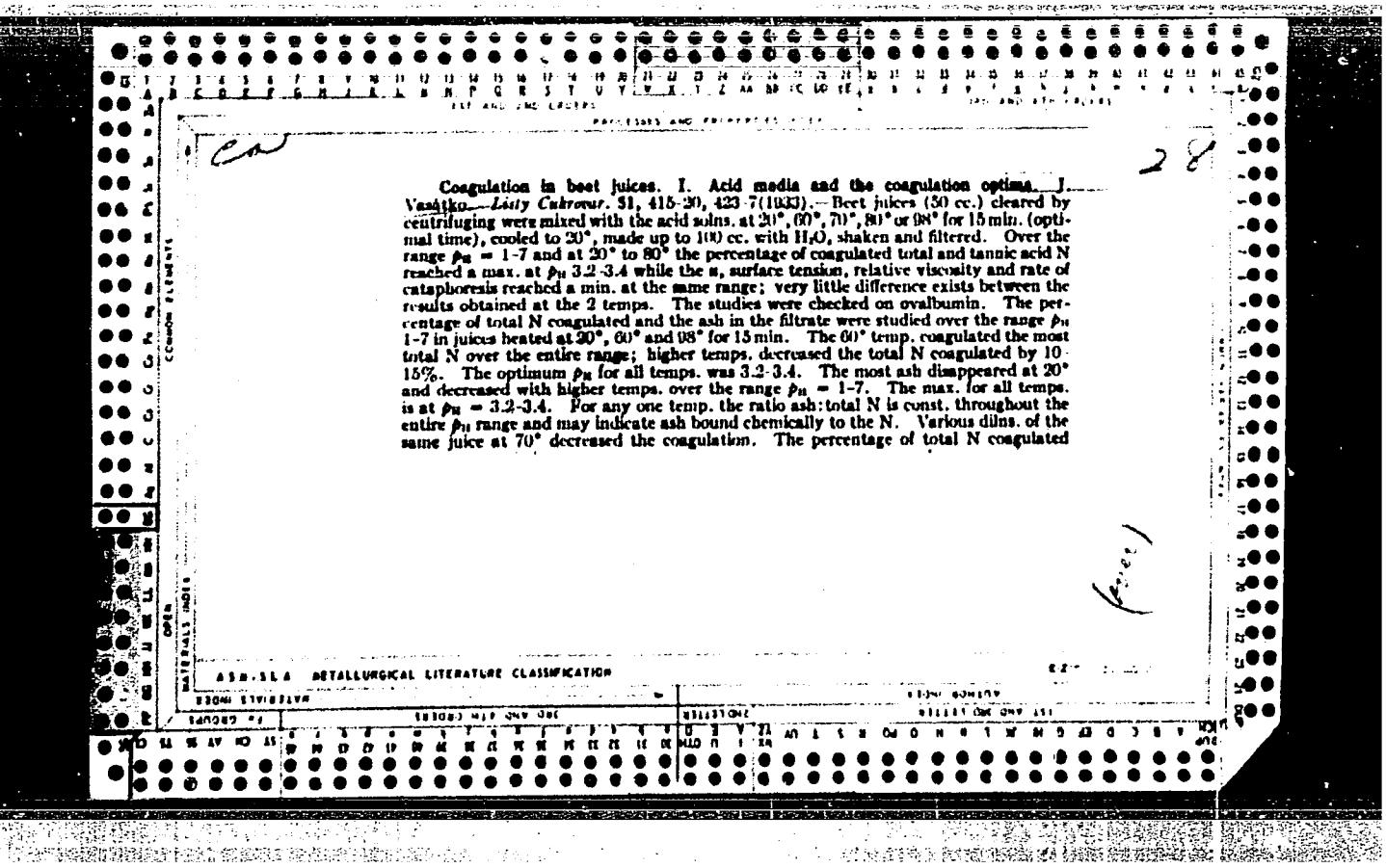
A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION



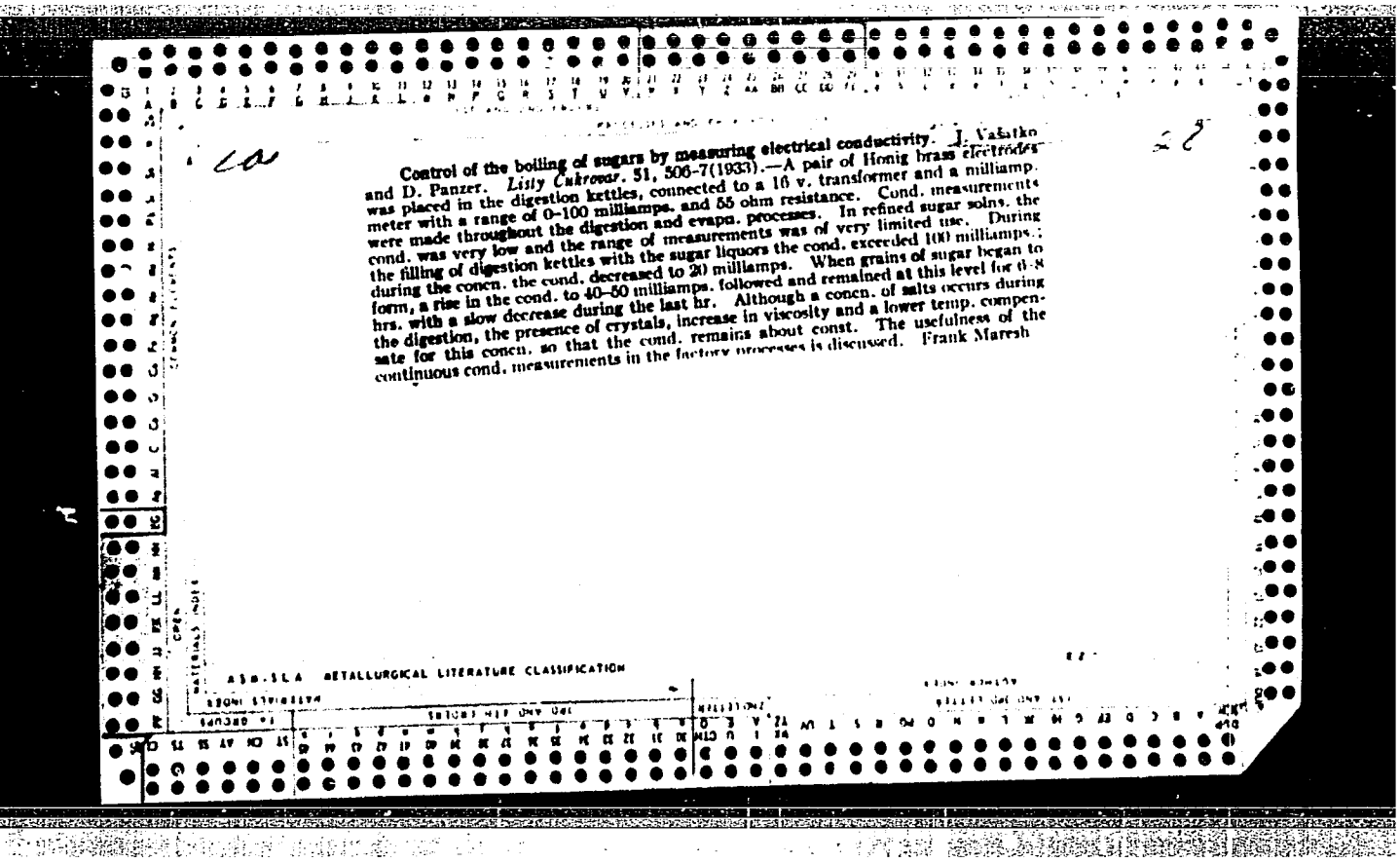
An economical digestion of beet juices with lime. J. DÁDEK AND J. VAŠÁTKO. *Listy Cukrovar.* 50, 401-6(1932); cf. *C. A.* 26, 3951.—A continuous flow of [illegible] of lime to a 10 l. batch of raw sugar soln. was regulated so that the alky. reached 0.20–0.30% CaO in 15 min. The remaining quantity of CaO was added according to the requirements of the juice or soln. The treated soln. gave rapid filtration rates even with small total additns. of CaO. The removal of sugar from the sediment was easily accomplished. The clarity and color were functions of the total CaO added to the soln. and were not dependent upon the mode of the addn. The same process was attempted in 8 com. establishments on a factory scale. Easy filtration was observed even in the presence of 0.8% CaO; the pressure in the filter presses was decreased. The removal of sugar was more complete and made with less wash water than in the usual process. The CaO was decreased to below 1% without affecting the remaining processes. F. M.



The evaluation of raw sugars from Moravian and Silesian sugar establishments from the 1931 campaign. J. DĚDEK, J. VAŠÁTKO AND F. DOLAK *Listy Cukrovar* **51**, 318–24(1933) Samples (43) of raw sugar from 13 establishments were analyzed for moisture, org. content, refinement, ratio of moisture to nonsugars, ratio of org. substances to ash, alky. of 10% solns., *p*H of 20% solns., buffering, fermentation, bacterial count, affination no., affination residue, content of crystals exceeding 1.5 mm., ash, color, sediment and luminescence. Frequency distribution curves are given for all analyses, the modal values and standard deviations are indicated. Correlation was attempted between the analyses and the "carry over" ability; most reliance was placed on the fermentation test, confirmed over a 9 month period of storage. Affination and its relation to raw sugar are discussed. The results are to serve as a standard for annual analyses performed upon yearly products.

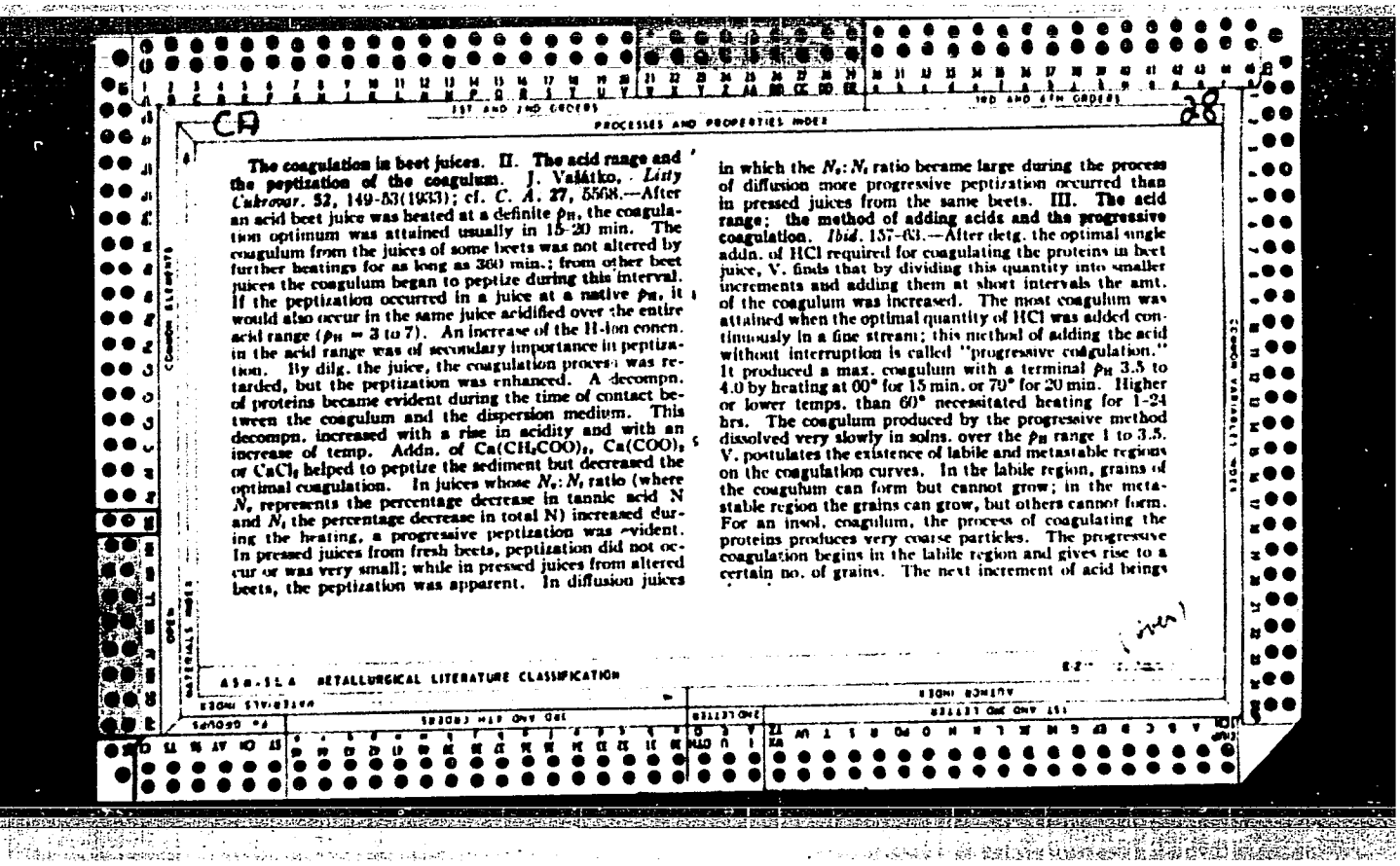


Coagulation in beet juices. I. Acid media and the coagulation optima. J. Vasátko. *Listy Cukrovar.* 51, 415-20, 423-7(1933).—Beet juices (50 cc.) cleared by centrifuging were mixed with the acid solns. at 20°, 60°, 70°, 80° or 98° for 15 min. (optimal time), cooled to 20°, made up to 100 cc. with H_2O, shaken and filtered. Over the range p_H = 1-7 and at 20° to 80° the percentage of coagulated total and tannic acid N reached a max. at p_H 3.2-3.4 while the σ, surface tension, relative viscosity and rate of cataphoresis reached a min. at the same range; very little difference exists between the results obtained at the 2 temps. The studies were checked on ovalbumin. The percentage of total N coagulated and the ash in the filtrate were studied over the range p_H 1-7 in juices heated at 20°, 60° and 98° for 15 min. The 60° temp. coagulated the most total N over the entire range; higher temps. decreased the total N coagulated by 10-15%. The optimum p_H for all temps. was 3.2-3.4. The most ash disappeared at 20° and decreased with higher temps. over the range p_H = 1-7. The max. for all temps. is at p_H = 3.2-3.4. For any one temp. the ratio ash:total N is const. throughout the entire p_H range and may indicate ash bound chemically to the N. Various dilns. of the same juice at 70° decreased the coagulation. The percentage of total N coagulated



Control of the boiling of sugars by measuring electrical conductivity. J. Vašátko and D. Panzer. *Listy Cukrovar.* 51, 306-7(1933).—A pair of Honig brass electrodes was placed in the digestion kettles, connected to a 16 v. transformer and a milliamp. meter with a range of 0–100 milliamps. and 55 ohm resistance. Cond. measurements were made throughout the digestion and evapn. processes. In refined sugar solns. the cond. was very low and the range of measurements was of very limited use. During the filling of digestion kettles with the sugar liquors the cond. exceeded 100 milliamps.; during the concn. the cond. decreased to 20 milliamps. When grains of sugar began to form, a rise in the cond. to 40–50 milliamps. followed and remained at this level for 6–8 hrs. with a slow decrease during the last hr. Although a concn. of salts occurs during the digestion, the presence of crystals, increase in viscosity and a lower temp. compensate for this concn. so that the cond. remains about const. The usefulness of the continuous cond. measurements in the factory processes is discussed. Frank Maresh

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

PROCESSES AND PROPERTIES INDEX

The coagulation in beet juices. II. The acid range and the peptization of the coagulum. J. Valášek. *Listy Cukrovar.* 52, 149-53(1933); cf. *C. A.* 27, 5568.—After an acid beet juice was heated at a definite p_H, the coagulation optimum was attained usually in 15–20 min. The coagulum from the juices of some beets was not altered by further heatings for as long as 360 min.; from other beet juices the coagulum began to peptize during this interval. If the peptization occurred in a juice at a native p_H, it would also occur in the same juice acidified over the entire acid range (p_H = 3 to 7). An increase of the H-ion concn. in the acid range was of secondary importance in peptization. By dilg. the juice, the coagulation process was retarded, but the peptization was enhanced. A decompn. of proteins became evident during the time of contact between the coagulum and the dispersion medium. This decompn. increased with a rise in acidity and with an increase of temp. Addn. of $Ca(CH_3COO)_2$, $Ca(COO)_2$ or $CaCl_2$ helped to peptize the sediment but decreased the optimal coagulation. In juices whose N_o:N_t ratio (where N_o represents the percentage decrease in tannic acid N and N_t the percentage decrease in total N) increased during the heating, a progressive peptization was evident. In pressed juices from fresh beets, peptization did not occur or was very small; while in pressed juices from altered beets, the peptization was apparent. In diffusion juices in which the N_o:N_t ratio became large during the process of diffusion more progressive peptization occurred than in pressed juices from the same beets. **III. The acid range; the method of adding acids and the progressive coagulation.** *Ibid.* 157–63.—After detg. the optimal single addn. of HCl required for coagulating the proteins in beet juice, V. finds that by dividing this quantity into smaller increments and adding them at short intervals the amt. of the coagulum was increased. The most coagulum was attained when the optimal quantity of HCl was added continuously in a fine stream; this method of adding the acid without interruption is called "progressive coagulation." It produced a max. coagulum with a terminal p_H 3.5 to 4.0 by heating at 60° for 15 min. or 70° for 20 min. Higher or lower temps. than 60° necessitated heating for 1–24 hrs. The coagulum produced by the progressive method dissolved very slowly in solns. over the p_H range 1 to 3.5. V. postulates the existence of labile and metastable regions on the coagulation curves. In the labile region, grains of the coagulum can form but cannot grow; in the metastable region the grains can grow, but others cannot form. For an insol. coagulum, the process of coagulating the proteins produces very coarse particles. The progressive coagulation begins in the labile region and gives rise to a certain no. of grains. The next increment of acid brings

A58.51A METALLURGICAL LITERATURE CLASSIFICATION

B-3-2

AC

Conductometric control of [illegible] boiling. S. [illegible], Valášno and D. Panker (Z. [illegible] [illegible] [illegible] 56, 86—88).—Using the Hoxie-Alewijn apparatus (B., 1933, 361), a series of measurements of the electrical conductivity of the [illegible] during the boiling of 1st, 2nd, and 3rd strikes was made with satisfactory results. With refinery strikes no positive results were obtained at first, their conductivity being so low that no readings were indicated, but this was corrected by the use of a variable resistance (cf. Stare, B., 1933, 1075). Curves were obtained showing clearly the crit. points obtained throughout the course of boiling. J. P. O.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

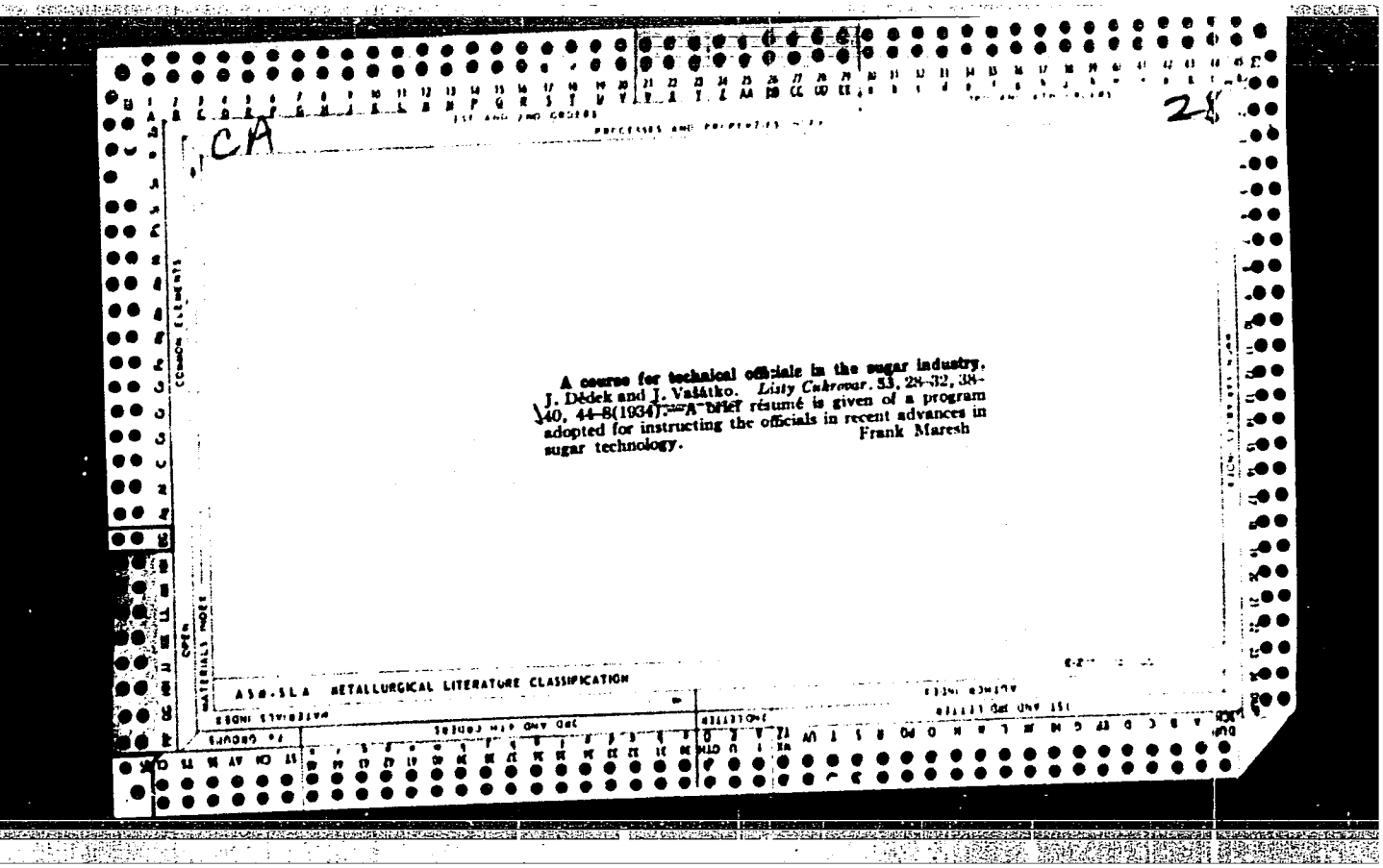
3RD AND 4TH ORDERS

B-3-3

BC

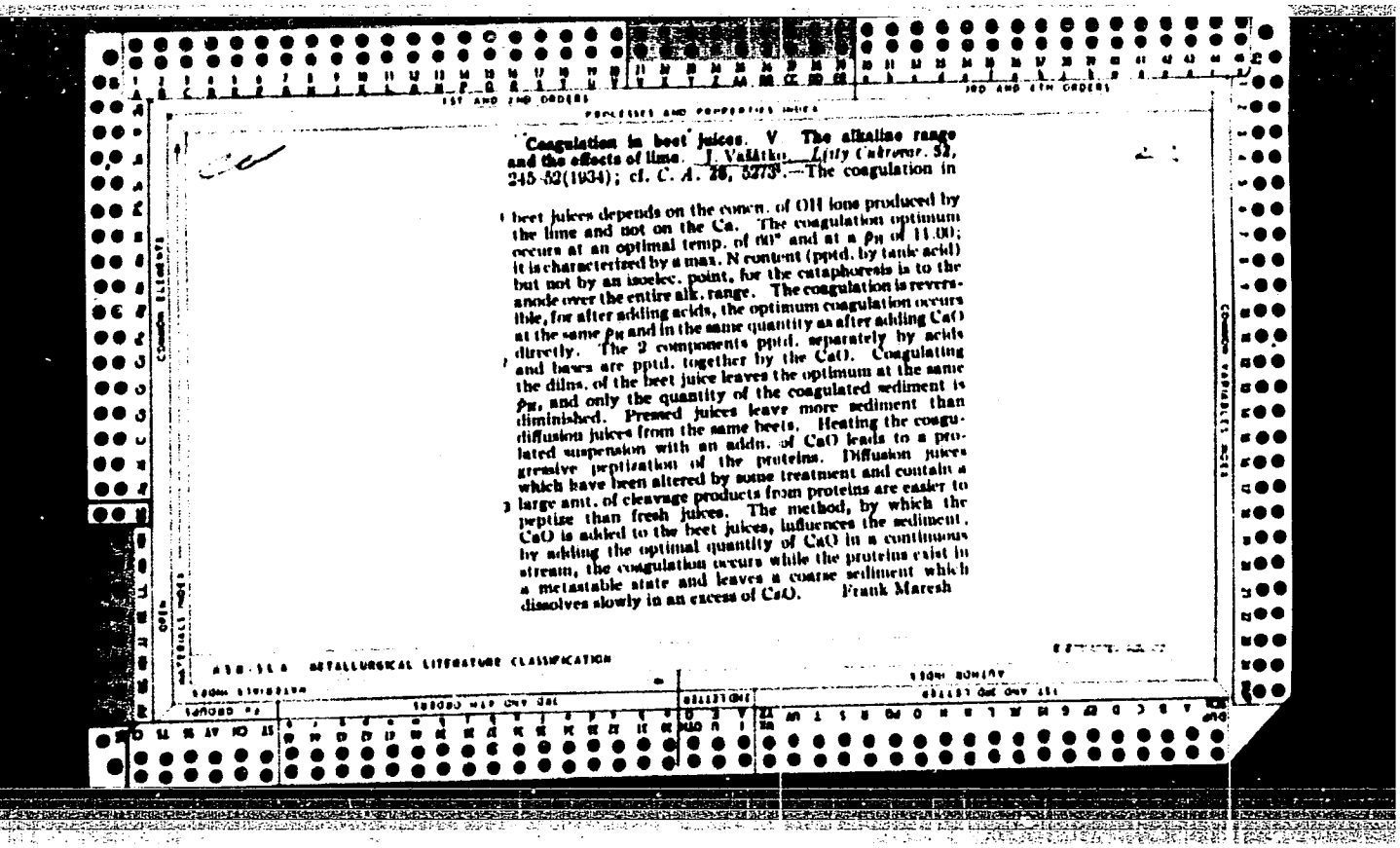
Evaluation of 1931 raw sugars. J. Dědek, J. Vašátko, and F. Doležal (Z. Zuckerind. Czechoslov., 1933, 58, 121—128).—Results of the examination of 43 raw sugars are summarised, the following determinations having been made: moisture, rendement, ash, safety factor, org. matter, alkalinity, p_H val., buffer effect, acidification on storage, bacterial count, affination val., crystal % > 1·5 mm., ash in affinade, colour of affination run-off, turbidity of affinade solution, and luminescence of the affinade. The data obtained were considered insufficiently numerous for decisions on their bearing on affinability, or keeping qualities in storage. J. P. O.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

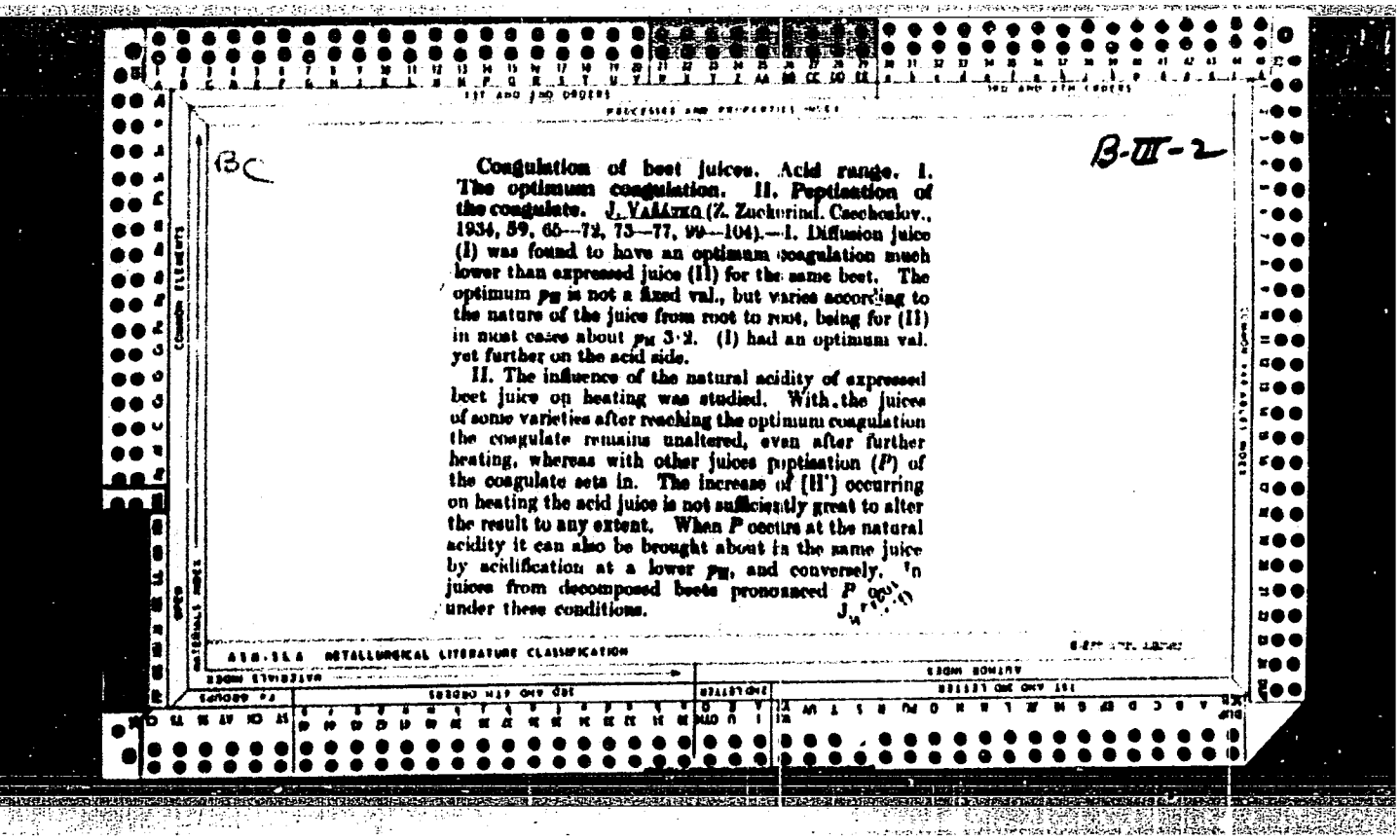


A course for technical officials in the sugar industry. J. Dědek and J. Valášek. *Listy Cukrovar.* 53, 28–32, 38–40, 44–8(1934).—A brief résumé is given of a program adopted for instructing the officials in recent advances in sugar technology.
Frank Maresh

VASATKO, JOSEF,
JOSEF PAZLER, Listy Cukrovar. 52, 131-97 (1934)



Coagulation in beet juices. V. The alkaline range and the effects of lime. J. Vallaton. *Listy Cukrovar.* 52, 245-52(1934); cf. *C. A.* 28, 5273⁸.—The coagulation in beet juices depends on the concn. of OH ions produced by the lime and not on the Ca. The coagulation optimum occurs at an optimal temp. of 80° and at a p_H of 11.00; it is characterized by a max. N content (pptd. by tanic acid) but not by an isoelec. point, for the cataphoresis is to the anode over the entire alk. range. The coagulation is reversible, for after adding acids, the optimum coagulation occurs at the same p_H and in the same quantity as after adding CaO directly. The 2 components pptd. separately by acids and bases are pptd. together by the CaO. Coagulating the dilns. of the beet juice leaves the optimum at the same p_H, and only the quantity of the coagulated sediment is diminished. Pressed juices leave more sediment than diffusion juices from the same beets. Heating the coagulated suspension with an addn. of CaO leads to a progressive peptization of the proteins. Diffusion juices which have been altered by some treatment and contain a large amt. of cleavage products from proteins are easier to peptize than fresh juices. The method, by which the CaO is added to the beet juices, influences the sediment; by adding the optimal quantity of CaO in a continuous stream, the coagulation occurs while the proteins exist in a metastable state and leaves a coarse sediment which dissolves slowly in an excess of CaO. Frank Maresh



BC

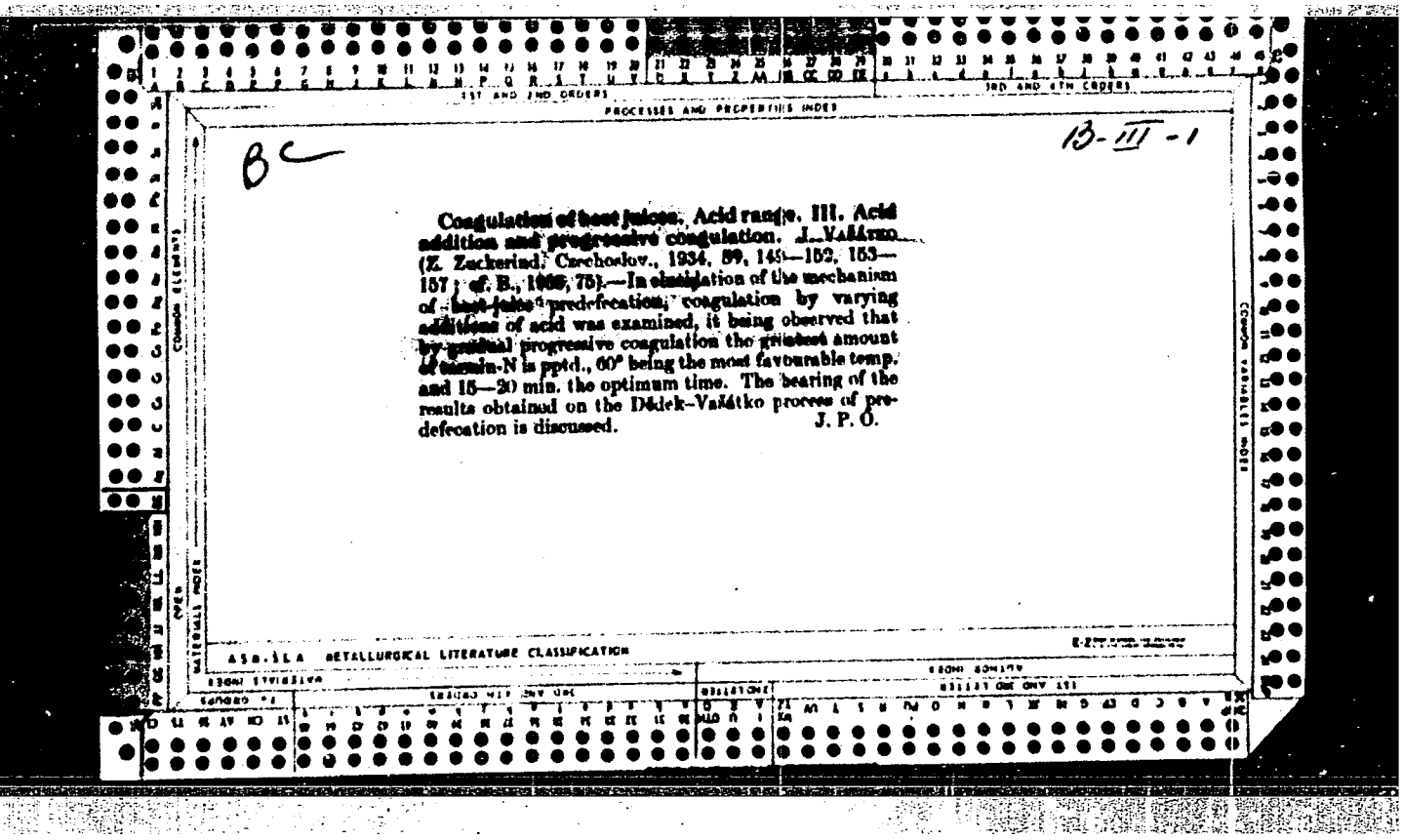
B-III-2

Coagulation of beet juices. Acid range. I. The optimum coagulation. II. Peptisation of the coagulate. J. VAŠÁTKO (Z. Zuckerind. Czechoslov., 1934, 59, 65—72, 73—77, 99—104).—I. Diffusion juice (I) was found to have an optimum coagulation much lower than expressed juice (II) for the same beet. The optimum p_H is not a fixed val., but varies according to the nature of the juice from root to root, being for (II) in most cases about p_H 3·2. (I) had an optimum val. yet further on the acid side.

II. The influence of the natural acidity of expressed beet juice on heating was studied. With the juices of some varieties after reaching the optimum coagulation the coagulate remains unaltered, even after further heating, whereas with other juices peptisation (*P*) of the coagulate sets in. The increase of [II'] occurring on heating the acid juice is not sufficiently great to alter the result to any extent. When *P* occurs at the natural acidity it can also be brought about in the same juice by acidification at a lower p_H, and conversely. In juices from decomposed beets pronounced *P* occurs under these conditions.

J_{W}

A38-11A METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

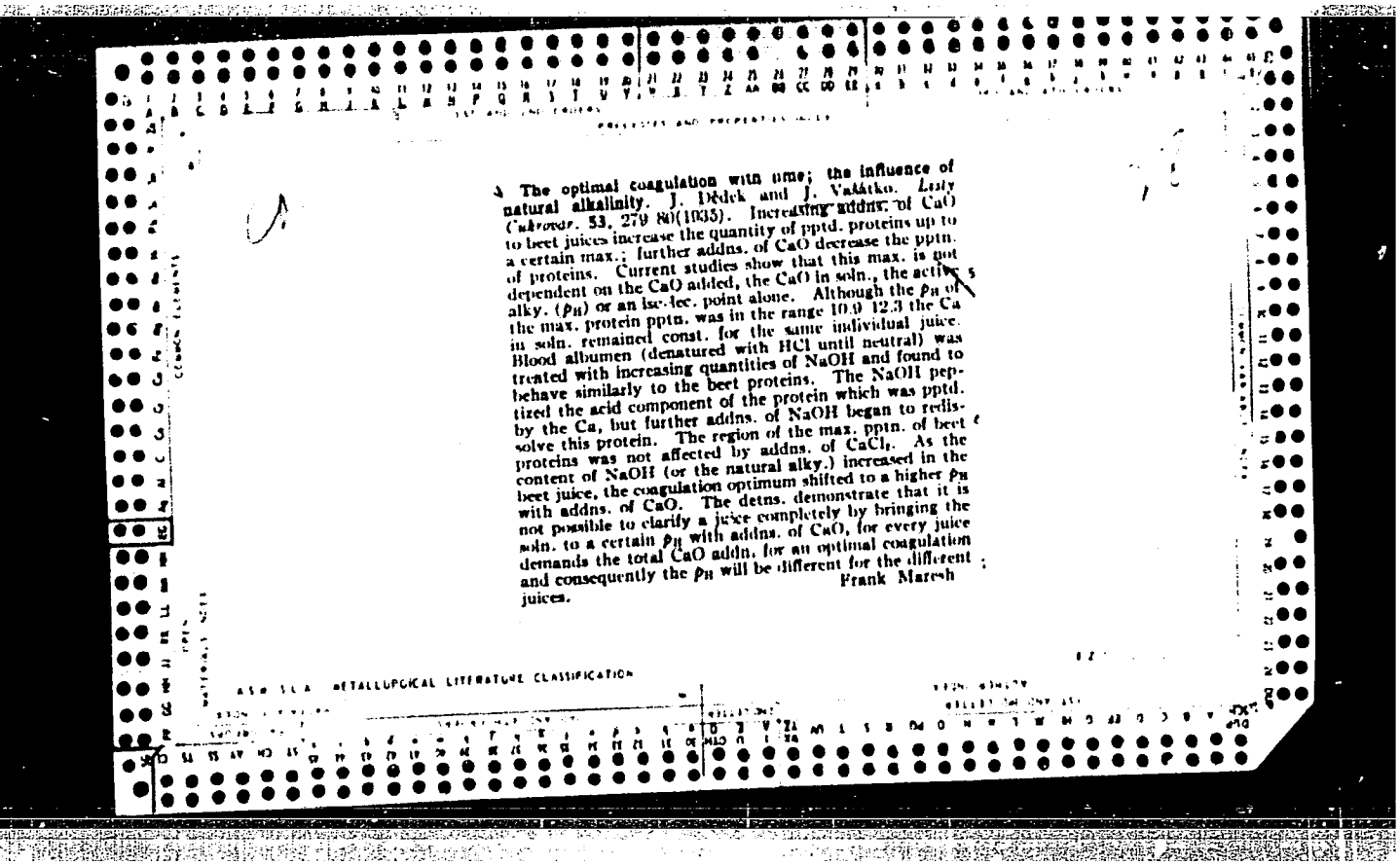
BC

13-III-1

Coagulation of beet juices. Acid range. III. Acid addition and progressive coagulation. J. Vaňátko (Z. Zuckerind. Czechoslov., 1934, 59, 145—152, 153—157; cf. B., 1935, 75).—In elucidation of the mechanism of beet-juice predefecation, coagulation by varying additions of acid was examined, it being observed that by gradual progressive coagulation the greatest amount of amino-N is ppted., 60° being the most favourable temp. and 15—20 min. the optimum time. The bearing of the results obtained on the Dědek–Vaňátko process of predefecation is discussed. J. P. O.

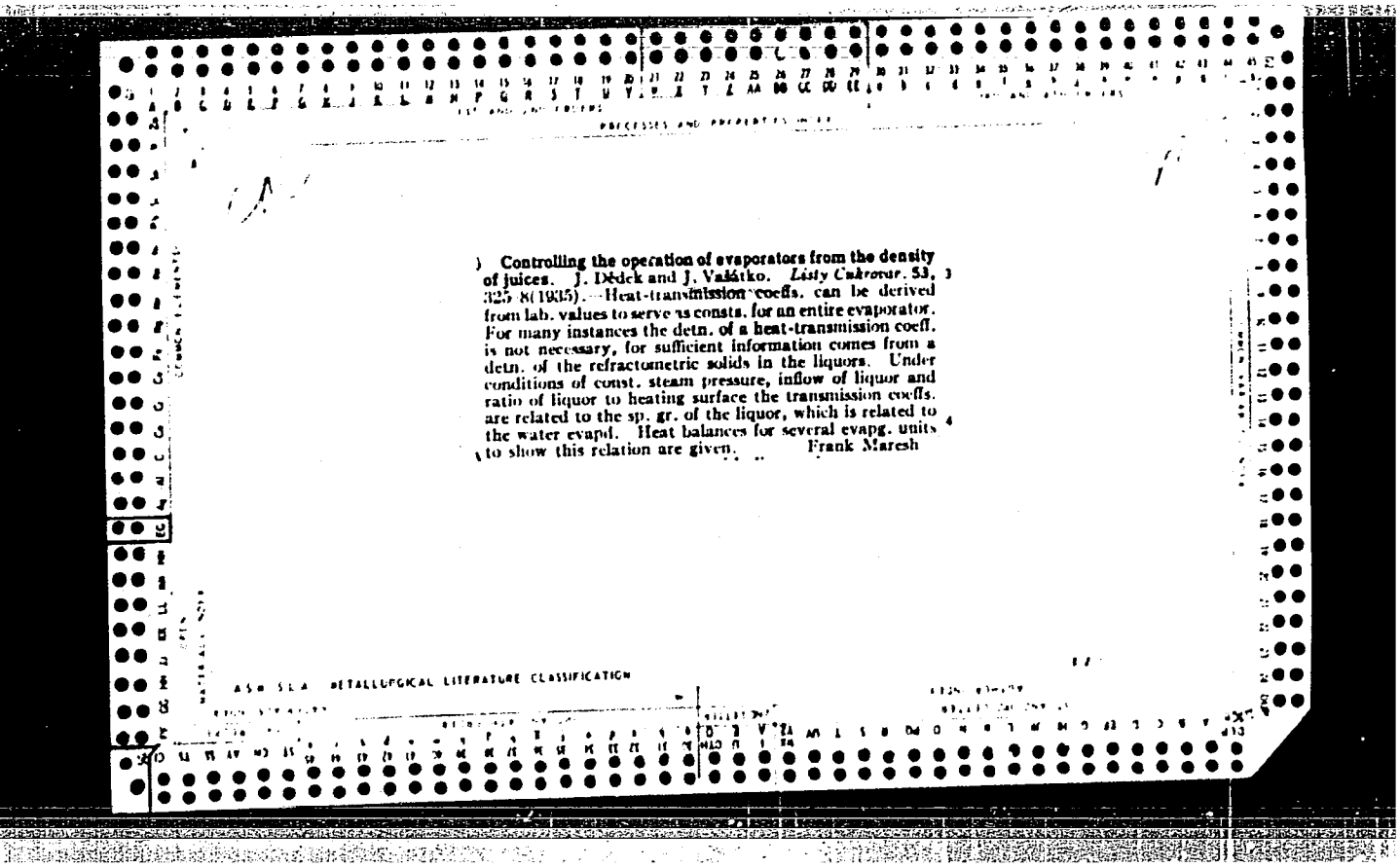
A Sb. SLA METALLURGICAL LITERATURE CLASSIFICATION

VASATKO, J.,
JOSEF PAZLER, Listy Cukrovar. 53, 170-88. (1935)



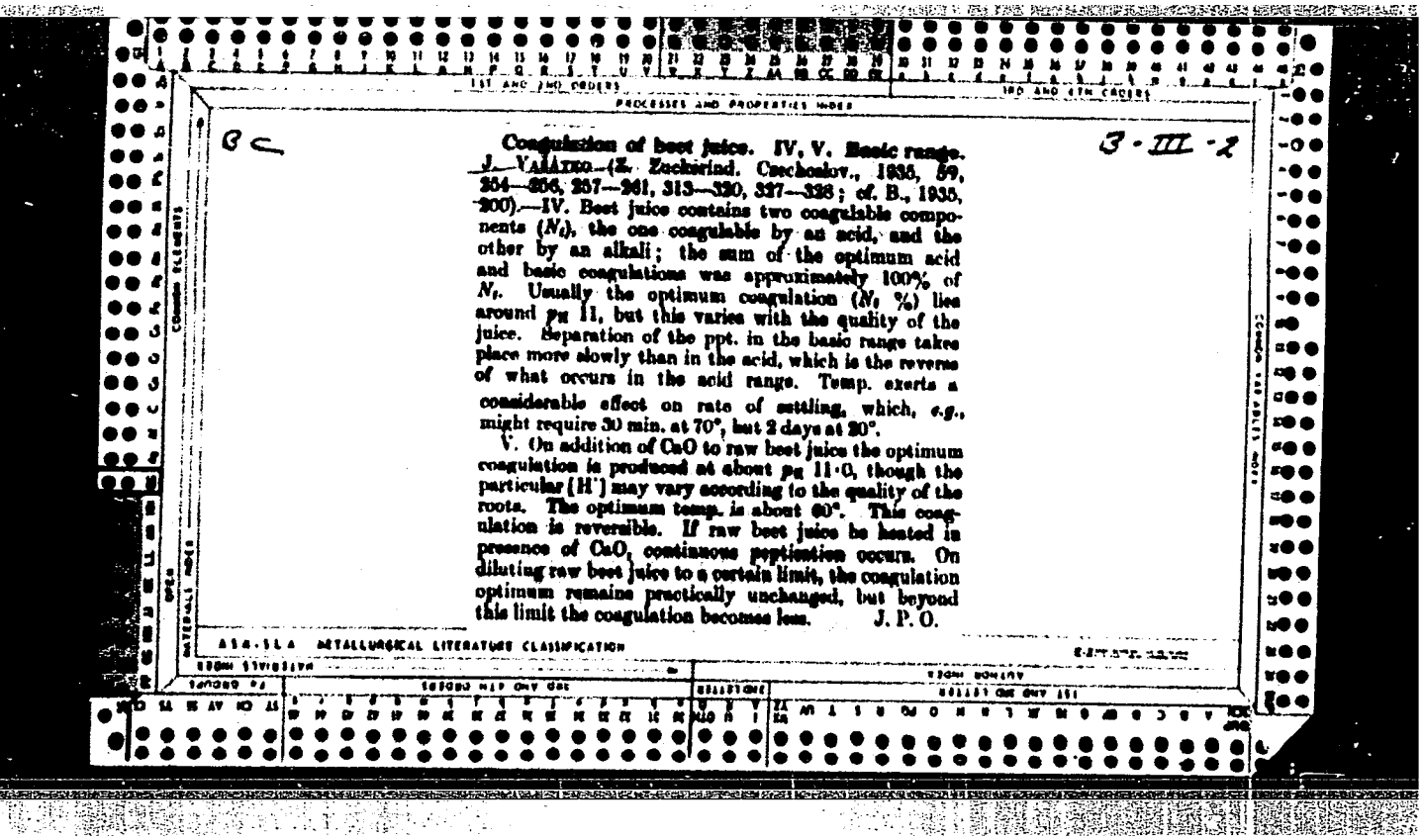
The optimal coagulation with lime; the influence of natural alkalinity. J. Dédek and J. Vaňátko. *Listy Cukrovar.* 53, 279-80(1935). Increasing addns. of CaO to beet juices increase the quantity of pptd. proteins up to a certain max.; further addns. of CaO decrease the pptn. of proteins. Current studies show that this max. is not dependent on the CaO added, the CaO in soln., the active alky. (p_H) or an iso-elec. point alone. Although the p_H of the max. protein pptn. was in the range 10.9-12.3 the Ca in soln. remained const. for the same individual juice. Blood albumen (denatured with HCl until neutral) was treated with increasing quantities of NaOH and found to behave similarly to the beet proteins. The NaOH peptized the acid component of the protein which was pptd. by the Ca, but further addns. of NaOH began to redissolve this protein. The region of the max. pptn. of beet proteins was not affected by addns. of $CaCl_2$. As the content of NaOH (or the natural alky.) increased in the beet juice, the coagulation optimum shifted to a higher p_H with addns. of CaO. The detns. demonstrate that it is not possible to clarify a juice completely by bringing the soln. to a certain p_H with addns. of CaO, for every juice demands the total CaO addn. for an optimal coagulation and consequently the p_H will be different for the different juices.

Frank Maresh



Controlling the operation of evaporators from the density of juices. J. Dědek and J. Valášek. *Listy Cukrovar.* 53, 325-8(1935).—Heat-transmission coeffs. can be derived from lab. values to serve as consts. for an entire evaporator. For many instances the detn. of a heat-transmission coeff. is not necessary, for sufficient information comes from a detn. of the refractometric solids in the liquors. Under conditions of const. steam pressure, inflow of liquor and ratio of liquor to heating surface the transmission coeffs. are related to the sp. gr. of the liquor, which is related to the water evapd. Heat balances for several evapg. units to show this relation are given. Frank Maresh

ASM S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

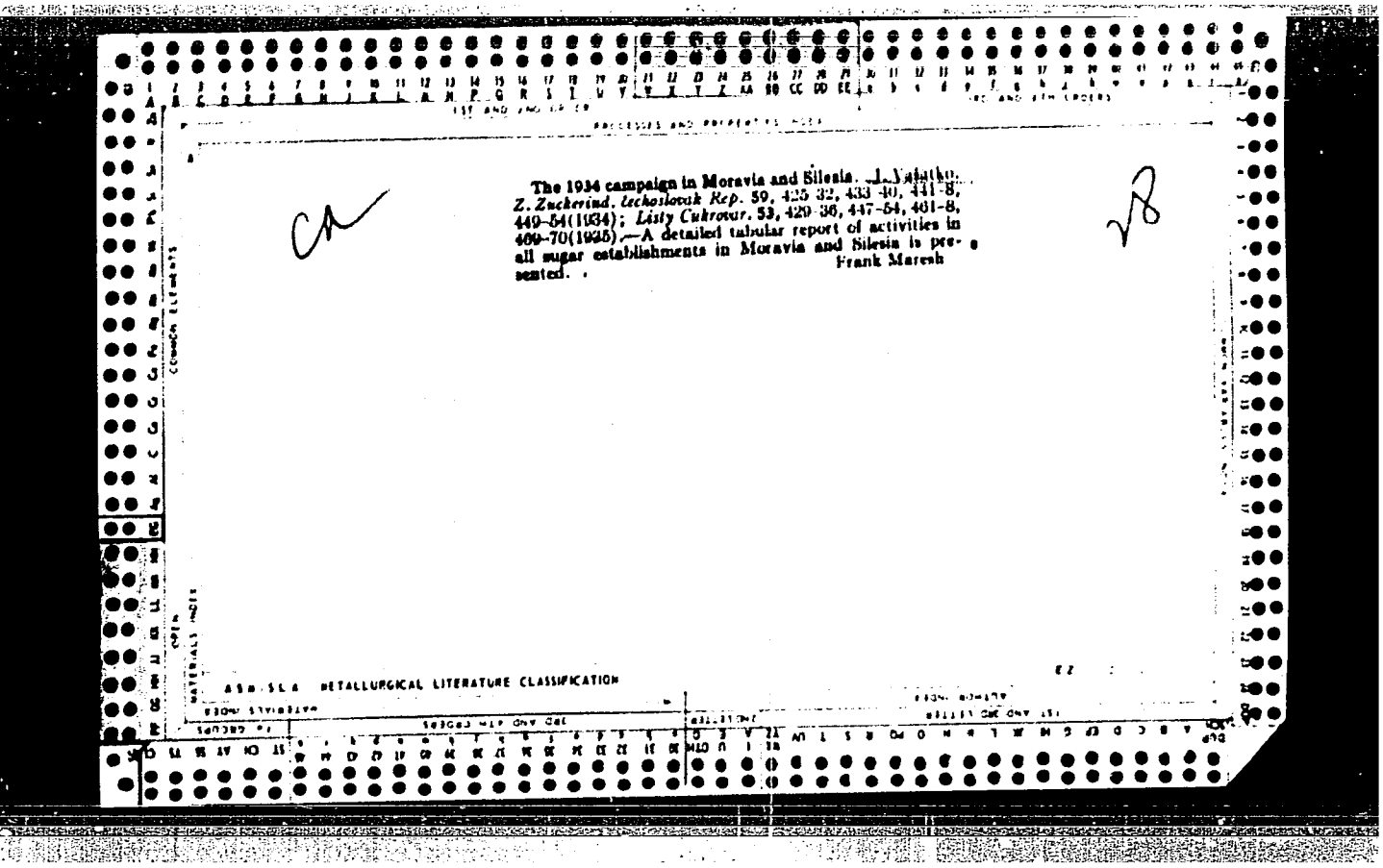


B-

3-III-2

Coagulation of beet juice. IV, V. Basic range. J. VALAŠEK (Z. Zuckerind. Czechoslov., 1935, 59, 354—356, 357—361, 313—320, 327—328; cf. B., 1935, 200).—IV. Beet juice contains two coagulable components (N_1), the one coagulable by an acid, and the other by an alkali; the sum of the optimum acid and basic coagulations was approximately 100% of N_1. Usually the optimum coagulation (N_1 %) lies around p_H 11, but this varies with the quality of the juice. Separation of the ppt. in the basic range takes place more slowly than in the acid, which is the reverse of what occurs in the acid range. Temp. exerts a considerable effect on rate of settling, which, *e.g.*, might require 30 min. at 70°, but 2 days at 20°.

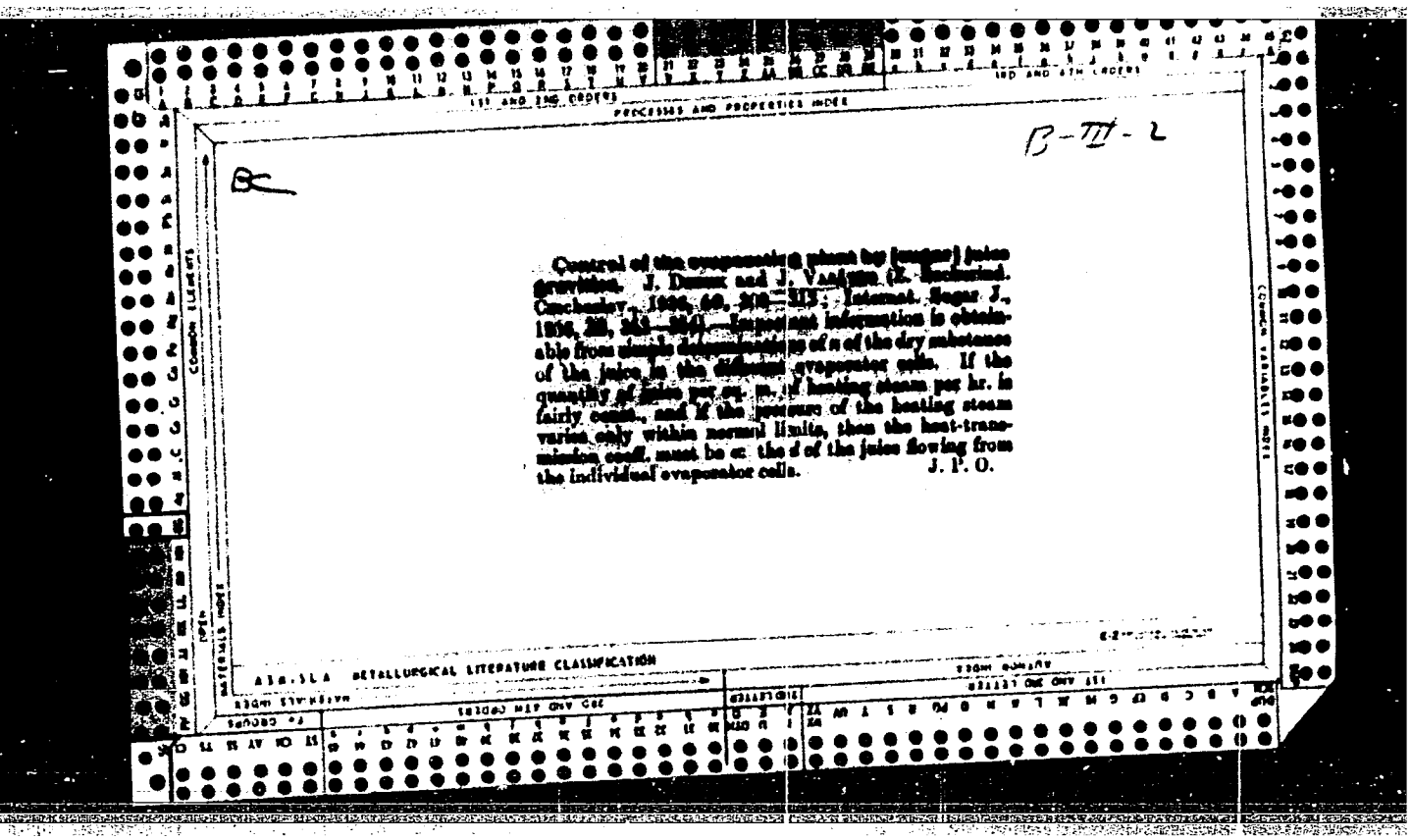
V. On addition of CaO to raw beet juice the optimum coagulation is produced at about p_H 11·0, though the particular [H'] may vary according to the quality of the roots. The optimum temp. is about 60°. This coagulation is reversible. If raw beet juice be heated in presence of CaO, continuous peptisation occurs. On diluting raw beet juice to a certain limit, the coagulation optimum remains practically unchanged, but beyond this limit the coagulation becomes less. J. P. O.



The 1934 campaign in Moravia and Silesia. [illegible] Z. Zuckerind. Techoslovak Rep. 59, 425-32, 433-40, 441-8, 449-54(1934); Listy Cukrovar. 53, 429-36, 447-54, 461-8, 469-70(1935).—A detailed tabular report of activities in all sugar establishments in Moravia and Silesia is presented.

Frank Maresh

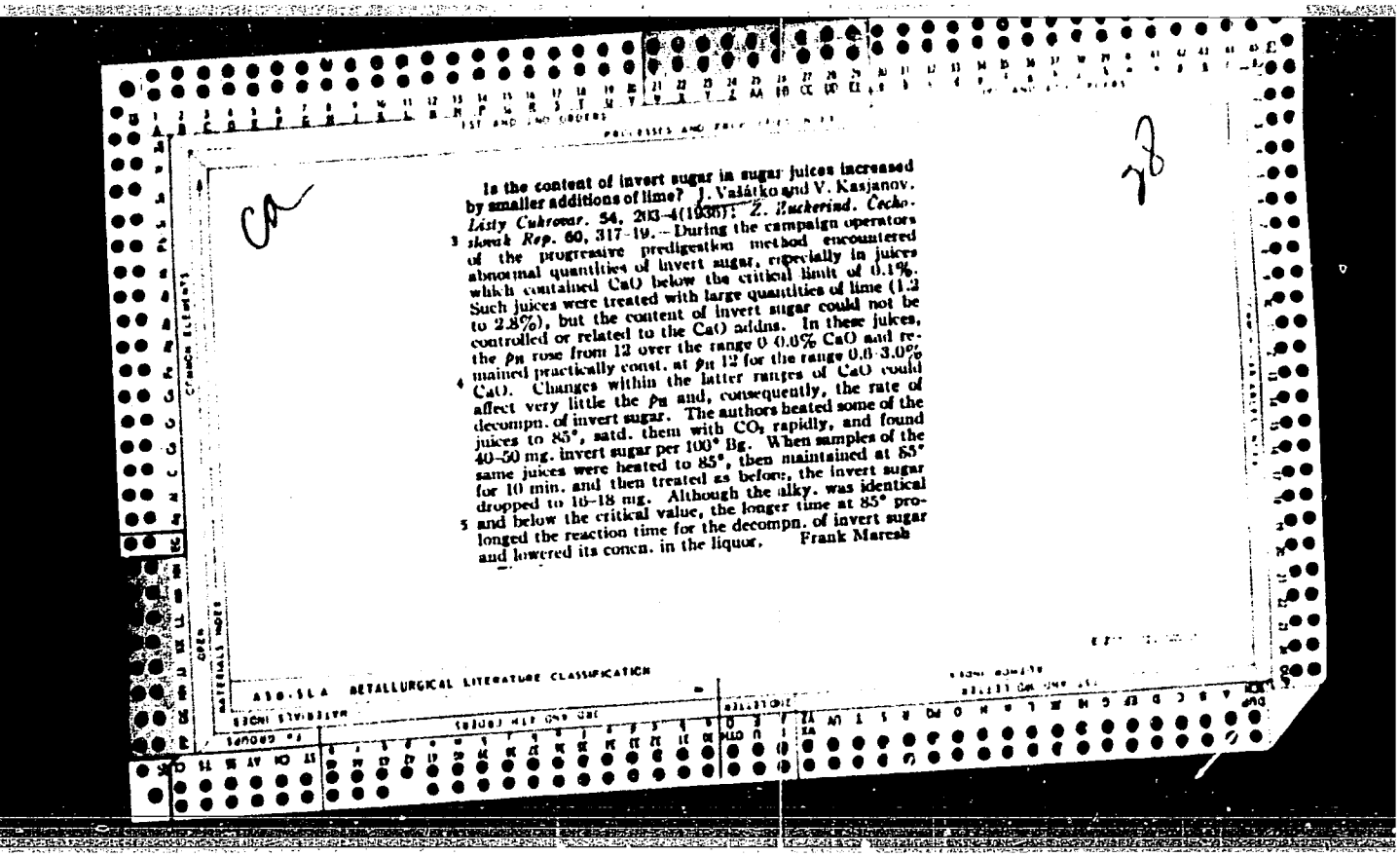
A5a.5L4 METALLURGICAL LITERATURE CLASSIFICATION



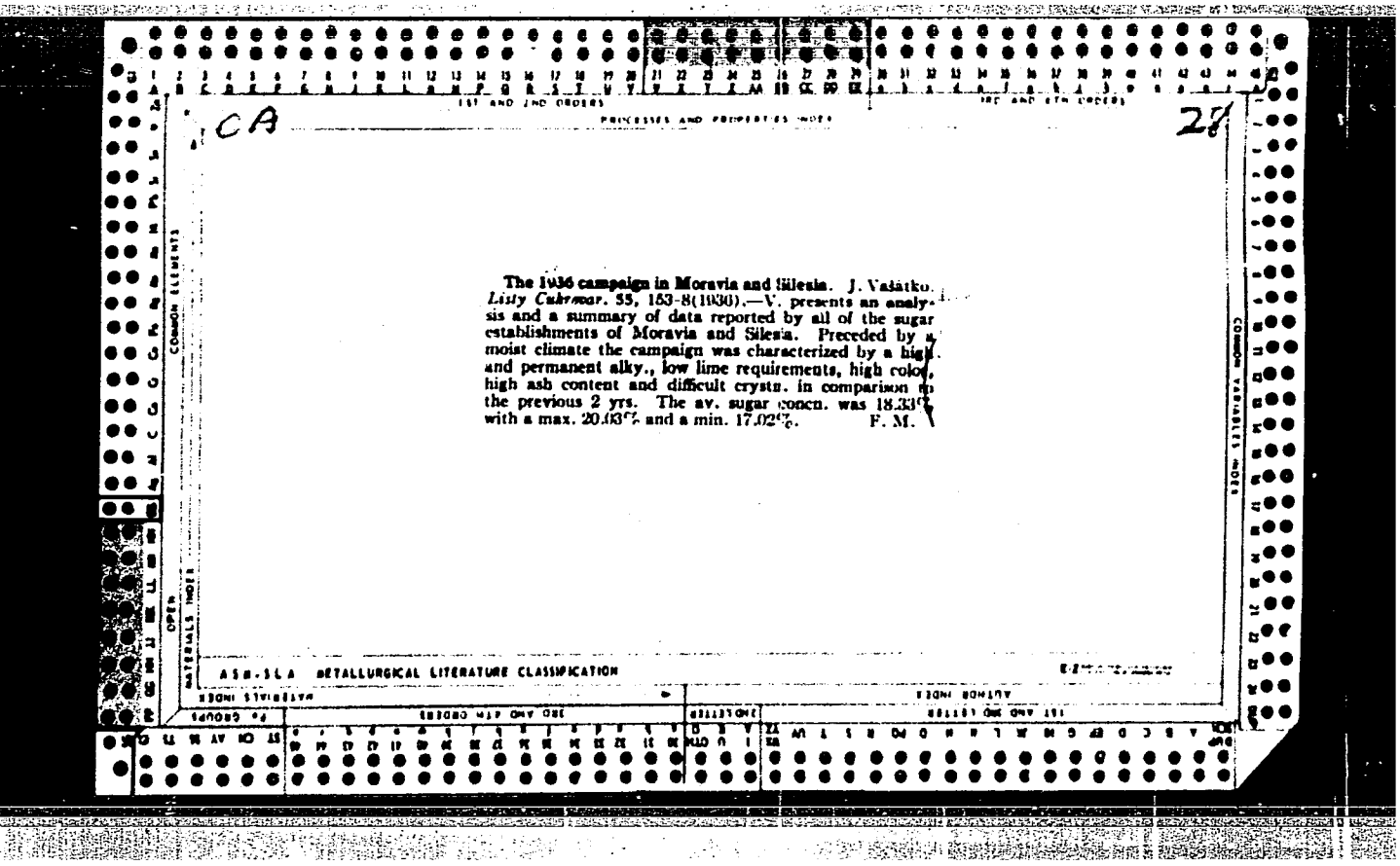
B-III-2

Control of the evaporating plant by [sugar] juice gravities. J. Dumur and J. Vanlerberghe (Z. Zuckerind. Czechoslov., 1956, 80, 319—333; Internat. Sugar J., 1956, 58, 343—344).—Important information is obtainable from simple determinations of *n* of the dry substances of the juice in the different evaporator cells. If the quantity of juice per sq. m. of heating steam per hr. is fairly const., and if the pressure of the heating steam varies only within normal limits, then the heat-transmission coeff. must be ∝ the *n* of the juice flowing from the individual evaporator cells. J. P. O.

A56.SLA METALLURGICAL LITERATURE CLASSIFICATION



Is the content of invert sugar in sugar juices increased by smaller additions of lime? J. Vašátko and V. Kasjanov. *Listy Cukrovar.* 54, 283–4(1936); *Z. Zuckerind. Cechoslovak Rep.* 60, 317–19.—During the campaign operators of the progressive predigestion method encountered abnormal quantities of invert sugar, especially in juices which contained CaO below the critical limit of 0.1%. Such juices were treated with large quantities of lime (1.2 to 2.8%), but the content of invert sugar could not be controlled or related to the CaO addns. In these juices, the p_H rose from 12 over the range 0–0.0% CaO and remained practically const. at p_H 12 for the range 0.0–3.0% CaO. Changes within the latter ranges of CaO could affect very little the p_H and, consequently, the rate of decompn. of invert sugar. The authors heated some of the juices to 85°, satd. them with CO_2 rapidly, and found 40–50 mg. invert sugar per 100° Bg. When samples of the same juices were heated to 85°, then maintained at 85° for 10 min. and then treated as before, the invert sugar dropped to 16–18 mg. Although the alky. was identical and below the critical value, the longer time at 85° prolonged the reaction time for the decompn. of invert sugar and lowered its concn. in the liquor. Frank Maresh

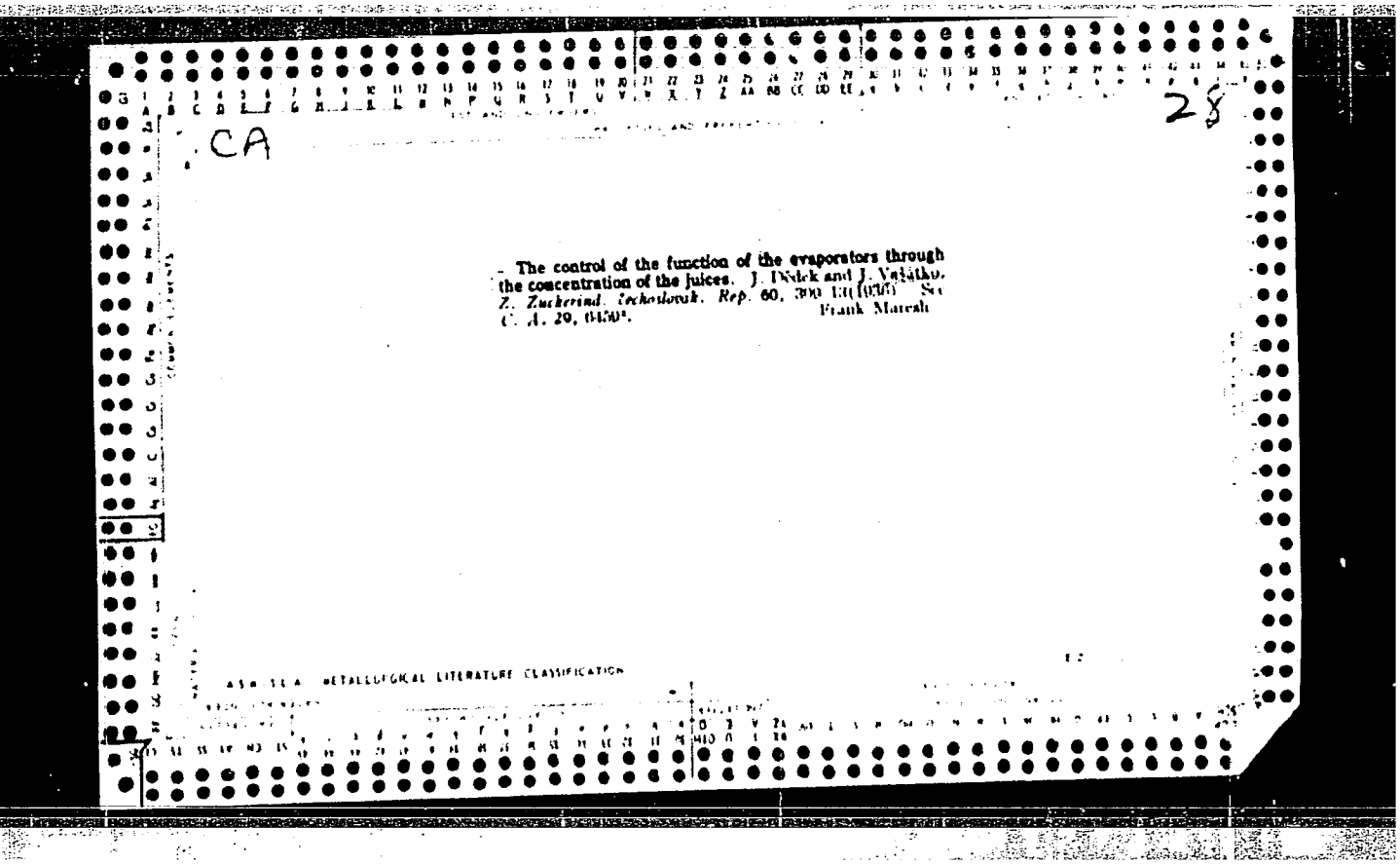


CA

28

The 1936 campaign in Moravia and Silesia. J. Vašátko. *Listy Cukrovar.* 55, 153-8(1930).—V. presents an analysis and a summary of data reported by all of the sugar establishments of Moravia and Silesia. Preceded by a moist climate the campaign was characterized by a high and permanent alky., low lime requirements, high color, high ash content and difficult crystn. in comparison to the previous 2 yrs. The av. sugar concn. was 18.33% with a max. 20.03% and a min. 17.02%. F. M.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

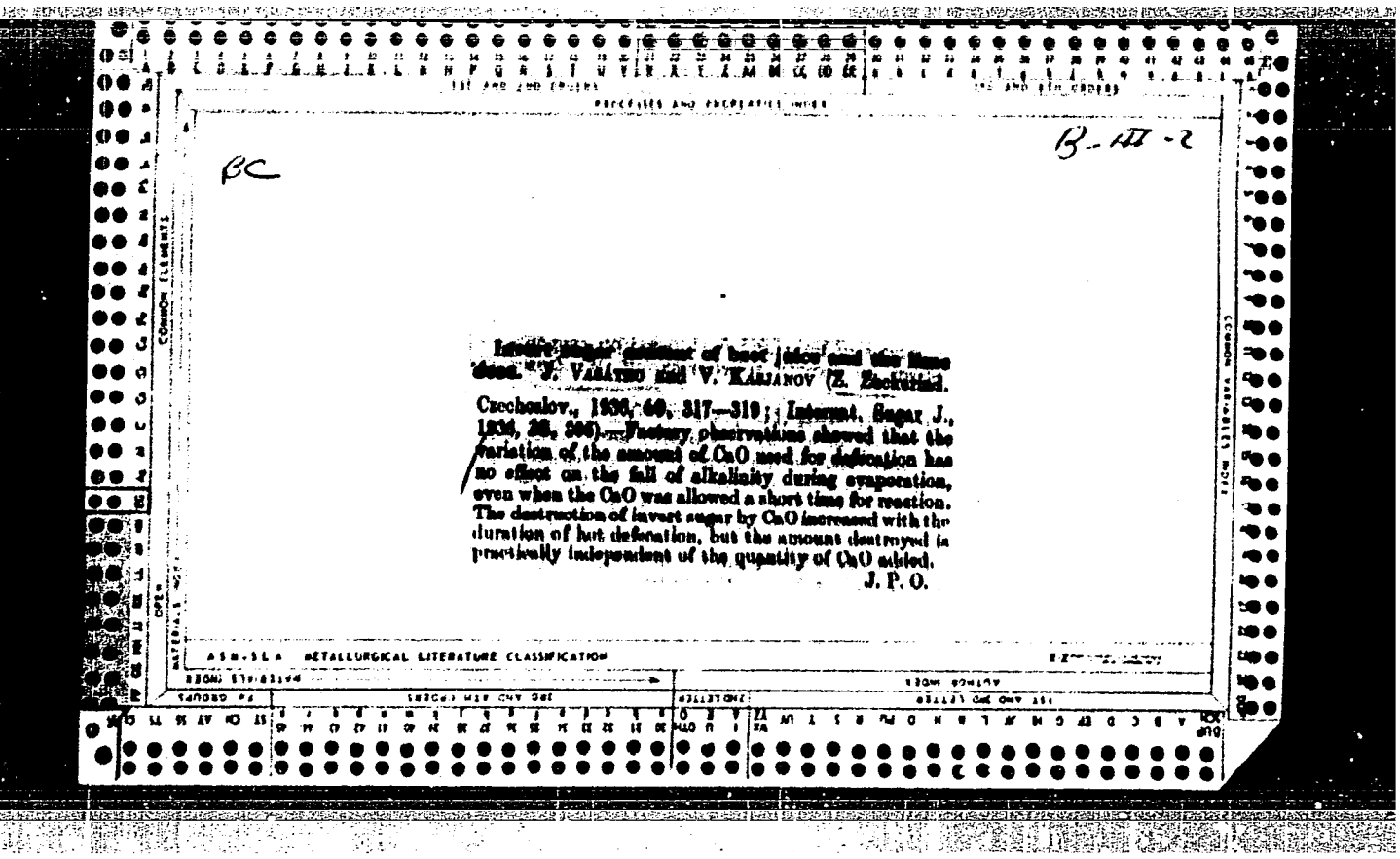


CA

28

– The control of the function of the evaporators through the concentration of the juices. J. Dědek and J. Valášek. *Z. Zuckerind. Cechoslovak. Rep.* 60, 300 131(1936). See *C. A.* 29, 6450[8]. Frank Marcali

ASM SEA METALLURGICAL LITERATURE CLASSIFICATION



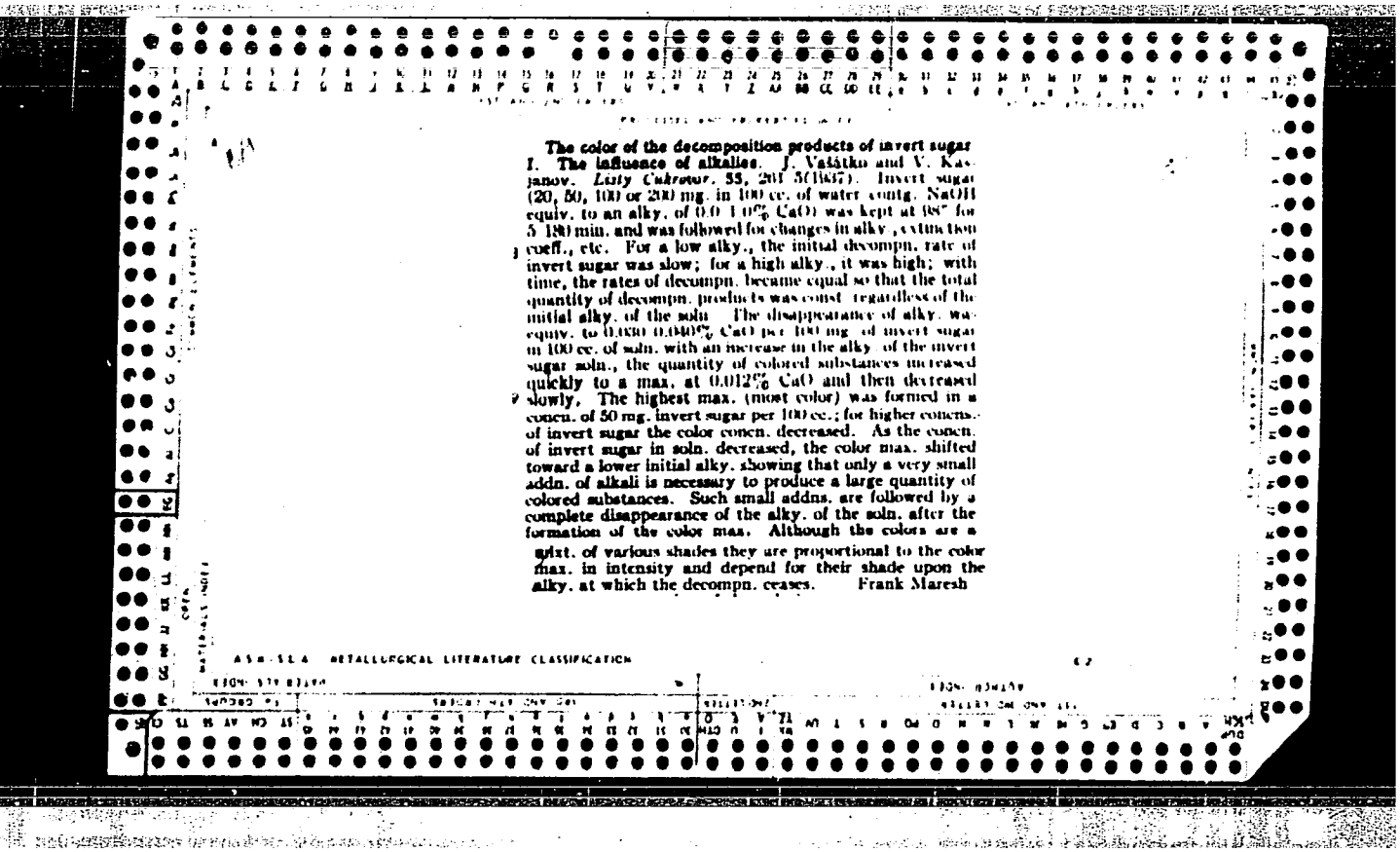
B-III-2

BC

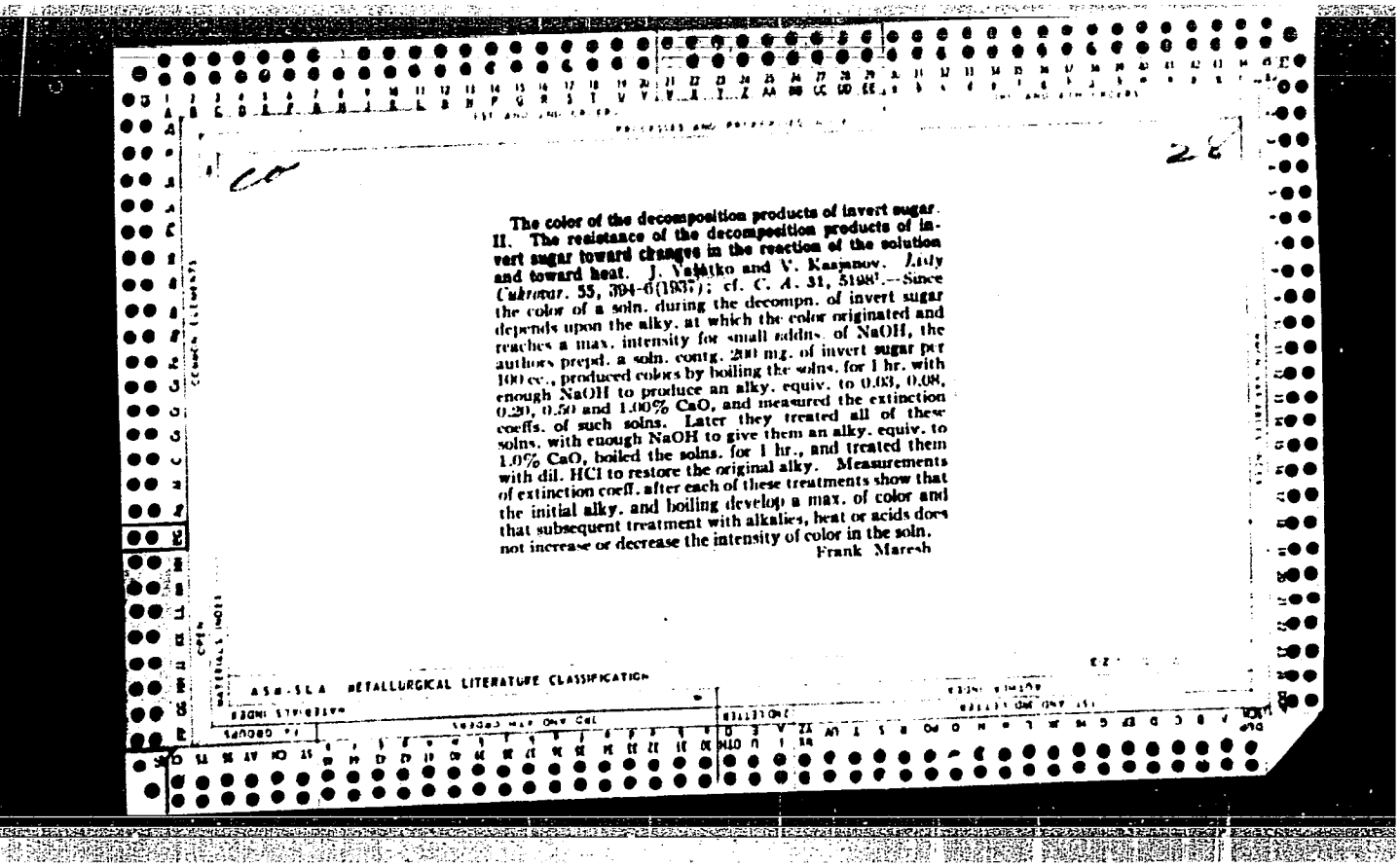
Invert sugar destruction of beet juice and the time factor. V. VAŠÁTKO and V. KARJANOV (Z. Zuckerind. Cechoslov., 1936, 60, 317—319; Internat. Sugar J., 1936, 38, 395).—Factory observations showed that the variation of the amount of CaO used for defecation has no effect on the fall of alkalinity during evaporation, even when the CaO was allowed a short time for reaction. The destruction of invert sugar by CaO increased with the duration of hot defecation, but the amount destroyed is practically independent of the quantity of CaO added.

J. P. O.

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

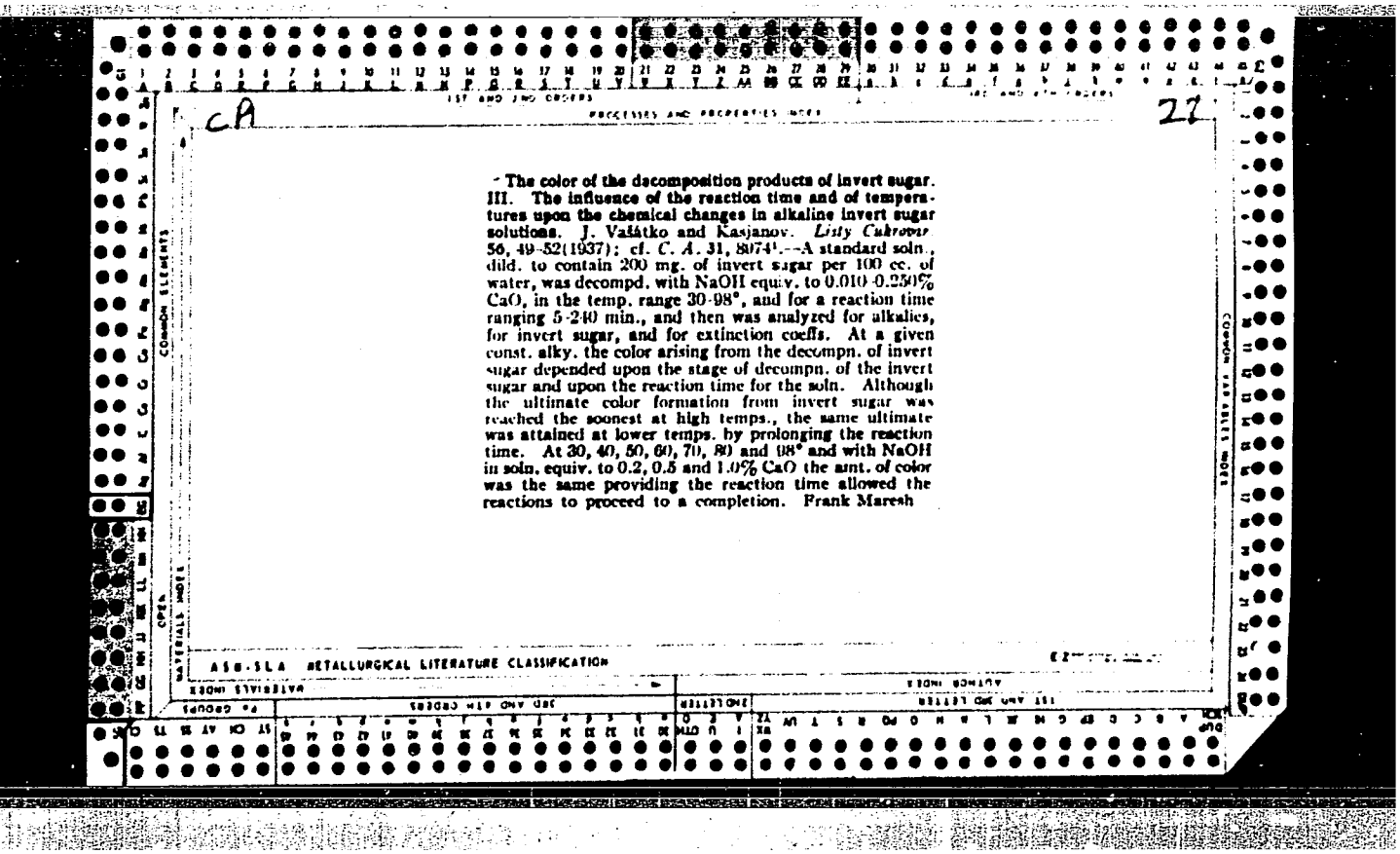


The color of the decomposition products of invert sugar I. The influence of alkalies. J. Vašátko and V. Kasjanov. *Listy Cukrovar.* 55, 201 5(1937). Invert sugar (20, 50, 100 or 200 mg. in 100 cc. of water contg. NaOH equiv. to an alky. of 0.0 1.0% CaO) was kept at 98° for 5 180 min. and was followed for changes in alky., extinction coeff., etc. For a low alky., the initial decompn. rate of invert sugar was slow; for a high alky., it was high; with time, the rates of decompn. became equal so that the total quantity of decompn. products was const. regardless of the initial alky. of the soln. The disappearance of alky. was equiv. to 0.030 0.040% CaO per 100 mg. of invert sugar in 100 cc. of soln. with an increase in the alky. of the invert sugar soln., the quantity of colored substances increased quickly to a max. at 0.012% CaO and then decreased slowly. The highest max. (most color) was formed in a concn. of 50 mg. invert sugar per 100 cc.; for higher concns. of invert sugar the color concn. decreased. As the concn. of invert sugar in soln. decreased, the color max. shifted toward a lower initial alky. showing that only a very small addn. of alkali is necessary to produce a large quantity of colored substances. Such small addns. are followed by a complete disappearance of the alky. of the soln. after the formation of the color max. Although the colors are a mixt. of various shades they are proportional to the color max. in intensity and depend for their shade upon the alky. at which the decompn. ceases. Frank Maresh



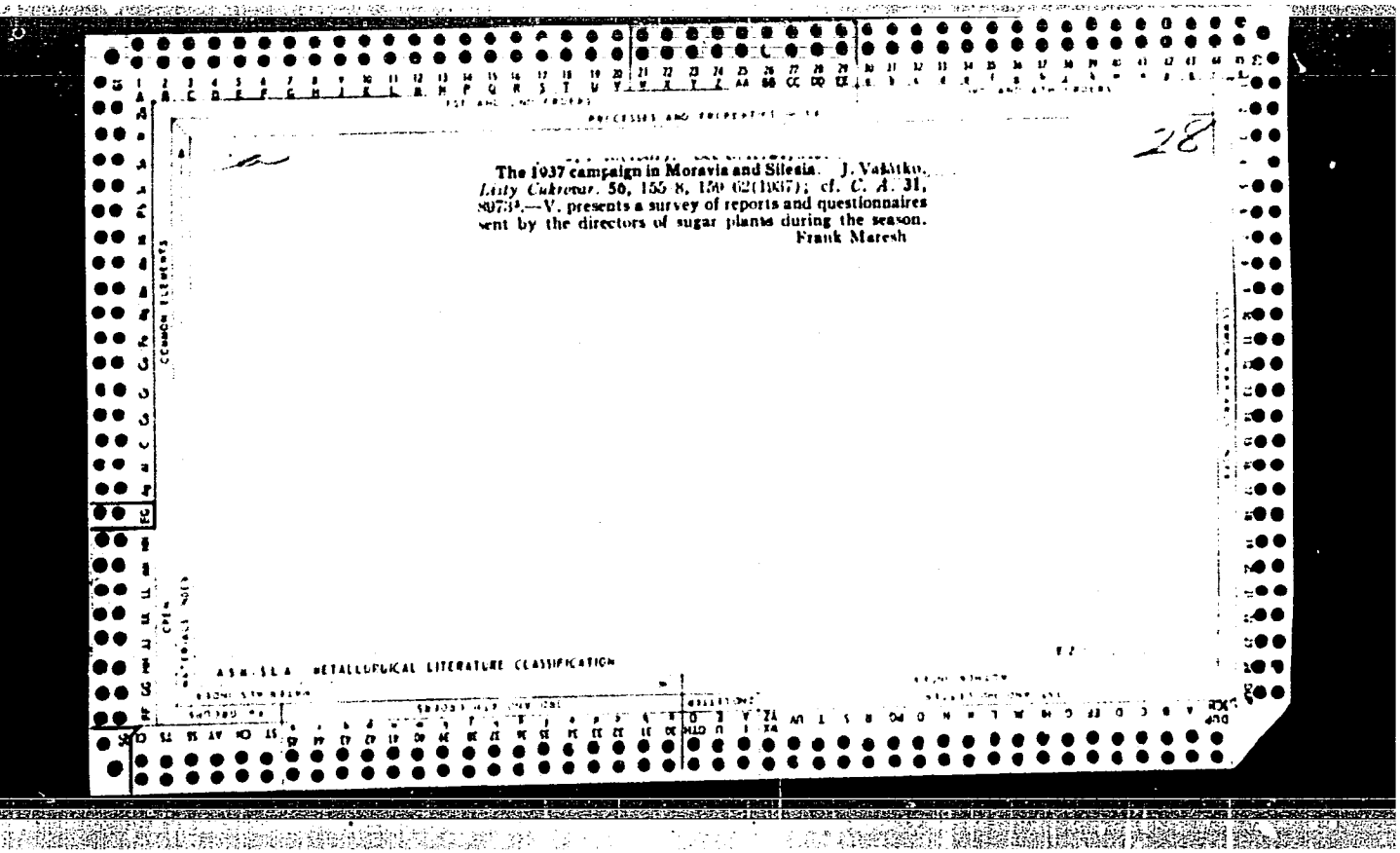
The color of the decomposition products of invert sugar. II. The resistance of the decomposition products of invert sugar toward changes in the reaction of the solution and toward heat. J. Valaško and V. Kasjanov. *Listy Cukrovar.* 55, 394-6(1937); cf. C. A. 31, 5198[1].—Since the color of a soln. during the decompn. of invert sugar depends upon the alky. at which the color originated and reaches a max. intensity for small addns. of NaOH, the authors prepd. a soln. contg. 200 mg. of invert sugar per 100 cc., produced colors by boiling the solns. for 1 hr. with enough NaOH to produce an alky. equiv. to 0.03, 0.08, 0.20, 0.50 and 1.00% CaO, and measured the extinction coeffs. of such solns. Later they treated all of these solns. with enough NaOH to give them an alky. equiv. to 1.0% CaO, boiled the solns. for 1 hr., and treated them with dil. HCl to restore the original alky. Measurements of extinction coeff. after each of these treatments show that the initial alky. and boiling develop a max. of color and that subsequent treatment with alkalies, heat or acids does not increase or decrease the intensity of color in the soln.

Frank Maresh



cA 27

The color of the decomposition products of invert sugar. III. The influence of the reaction time and of temperatures upon the chemical changes in alkaline invert sugar solutions. J. Vašátko and Kasjanov. *Listy Cukrovar.* 56, 49–52(1937); cf. *C. A.* 31, 8074¹.—A standard soln., dild. to contain 200 mg. of invert sugar per 100 cc. of water, was decompd. with NaOH equiv. to 0.010–0.250% CaO, in the temp. range 30–98°, and for a reaction time ranging 5–240 min., and then was analyzed for alkalies, for invert sugar, and for extinction coeffs. At a given const. alky. the color arising from the decompn. of invert sugar depended upon the stage of decompn. of the invert sugar and upon the reaction time for the soln. Although the ultimate color formation from invert sugar was reached the soonest at high temps., the same ultimate was attained at lower temps. by prolonging the reaction time. At 30, 40, 50, 60, 70, 80 and 98° and with NaOH in soln. equiv. to 0.2, 0.5 and 1.0% CaO the amt. of color was the same providing the reaction time allowed the reactions to proceed to a completion. Frank Maresh

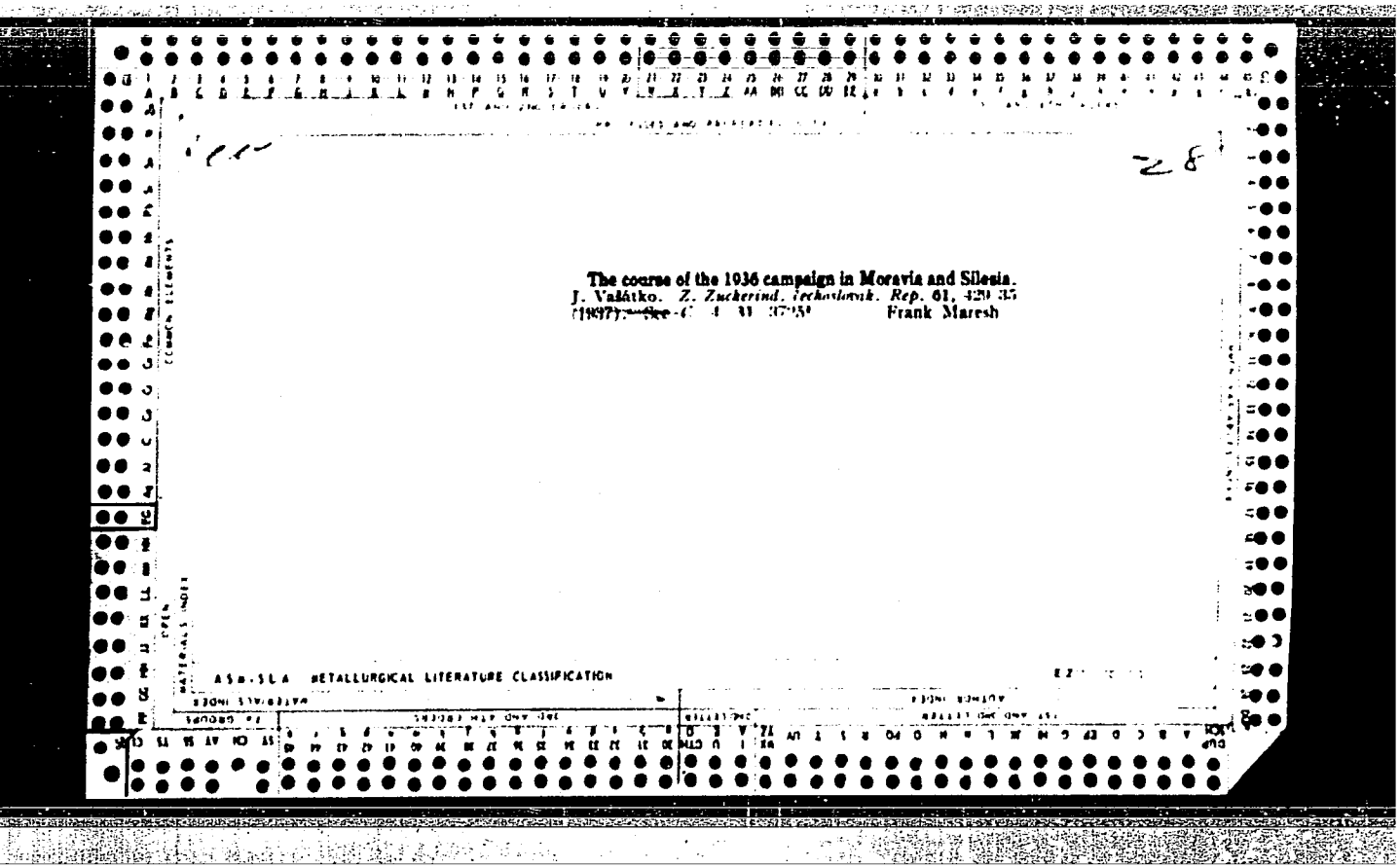


The 1937 campaign in Moravia and Silesia. J. Vaňátko. *Listy Cukrovar.* 56, 155-8, 170-02(1937); cf. *C. A.* 31, 8073⁹.—V. presents a survey of reports and questionnaires sent by the directors of sugar plants during the season.
Frank Maresh

PROCESSES AND PROPERTIES

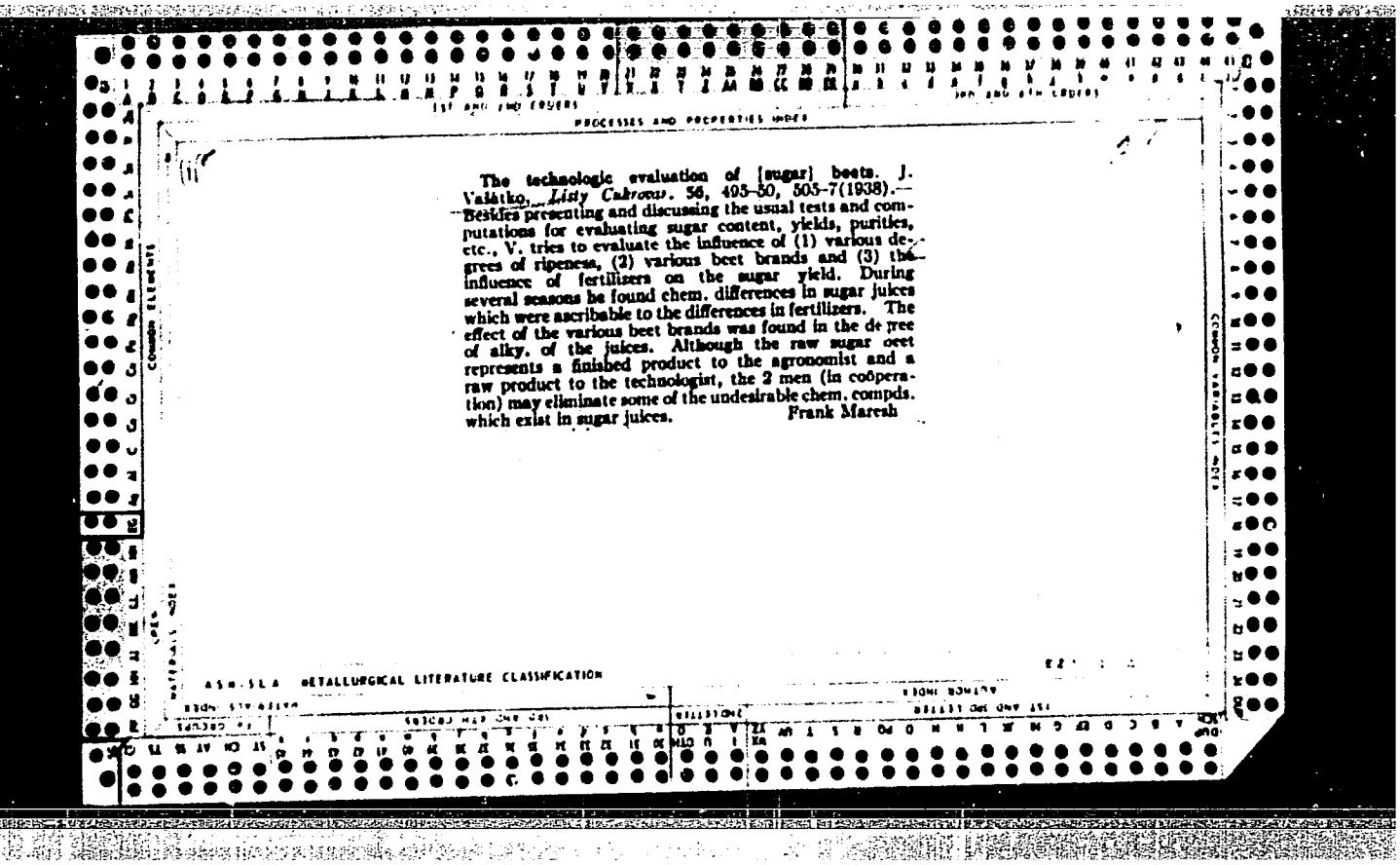
The filterability of predigested beet juices infected with leuconostoc. J. Vašátko and B. Jelinek. *Listy Cukrovar.* 57, 181-5; *Z. Zuckerind. Čechoslovak. Rep.* 63, 275-6 (1940).—During 1937 the poor filtration of sugar diffusion juices and the unusual difficulties in the filter plant were traced by means of the [illegible] microfilter (*C. A.* 30, 7880[a]) to a leuconostoc (*Streptococcus mesenteroides*) (I) infection, the source of the infection and the microorganisms being identified by lab. cultures. Other tests as acidity, etc., were sensitive only in the stages of an advanced infection. A rapid and effective relief came when the diffusion juices were oxidized with 0.05% bleaching powder; this treatment was effective also in juices infected with lactic acid- and acetic acid-producing organisms. Although $KMnO_4$ solns. were beneficial, not all oxidizing agents improved the filtration of the infected juices or showed the beneficial effects of the predigestion: H_2O_2 due to the suspension of air bubbles gave undesirable effects, an aq. kaolin suspension was not satisfactory, mildly acid juices neutralized with $(NH_4)_2CO_3$ did not filter well, and addns. of CH_2O or NaF made the filtration worse. After several transplantations in lab. cultures, I lost its virulence and most of its capsule; sugar juices possess those accessory factors which are responsible for virulence and for the heavy capsule about the cocci. Exts. of figs added to attenuated cultures of I restored their virulence and heavy capsule. Frank Maresh

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

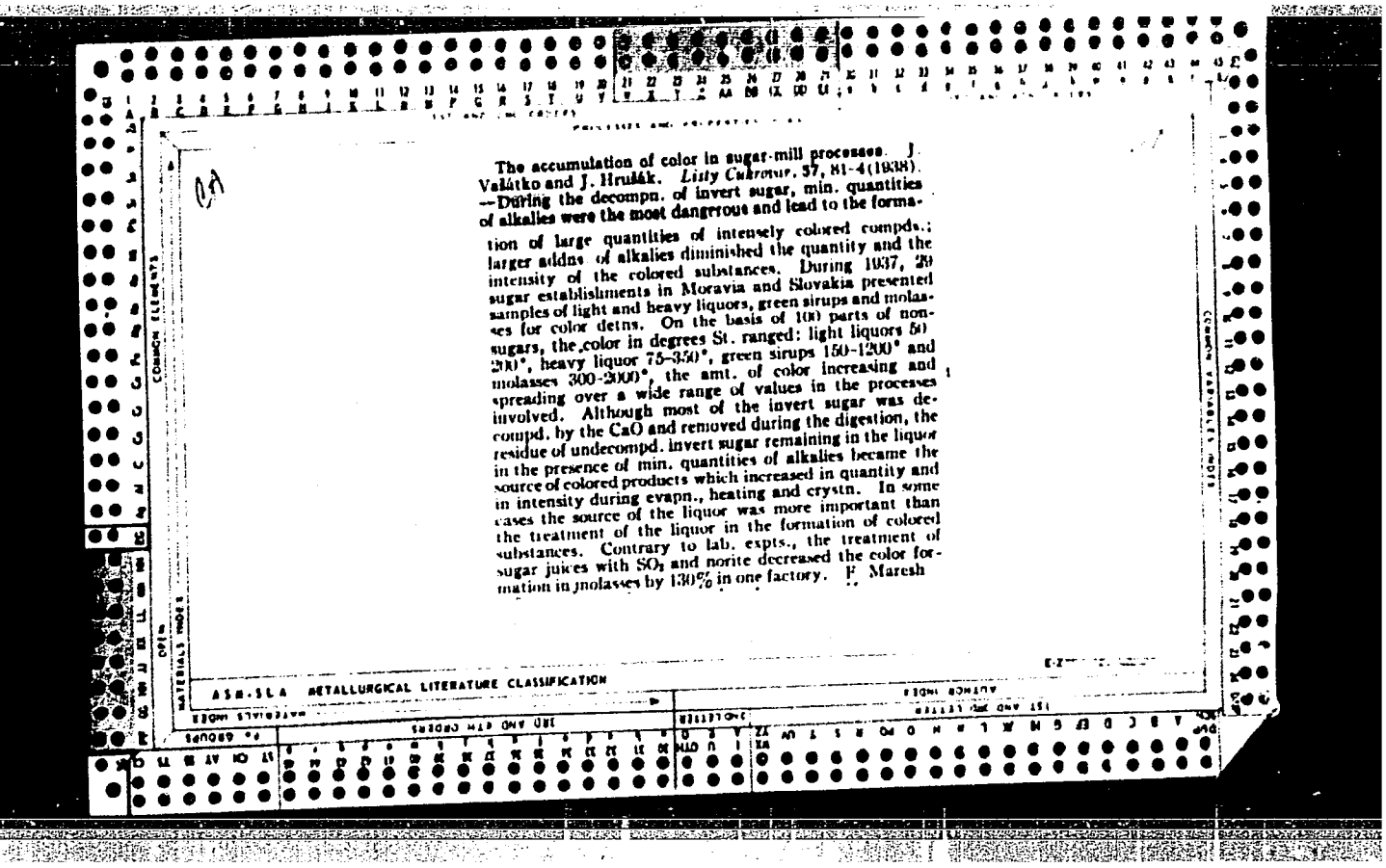


The course of the 1936 campaign in Moravia and Silesia.
J. Vašátko. *Z. Zuckerind. Techoslovak. Rep.* 61, 429-35 (1937). See C. A. 31, 3753.
Frank Maresh

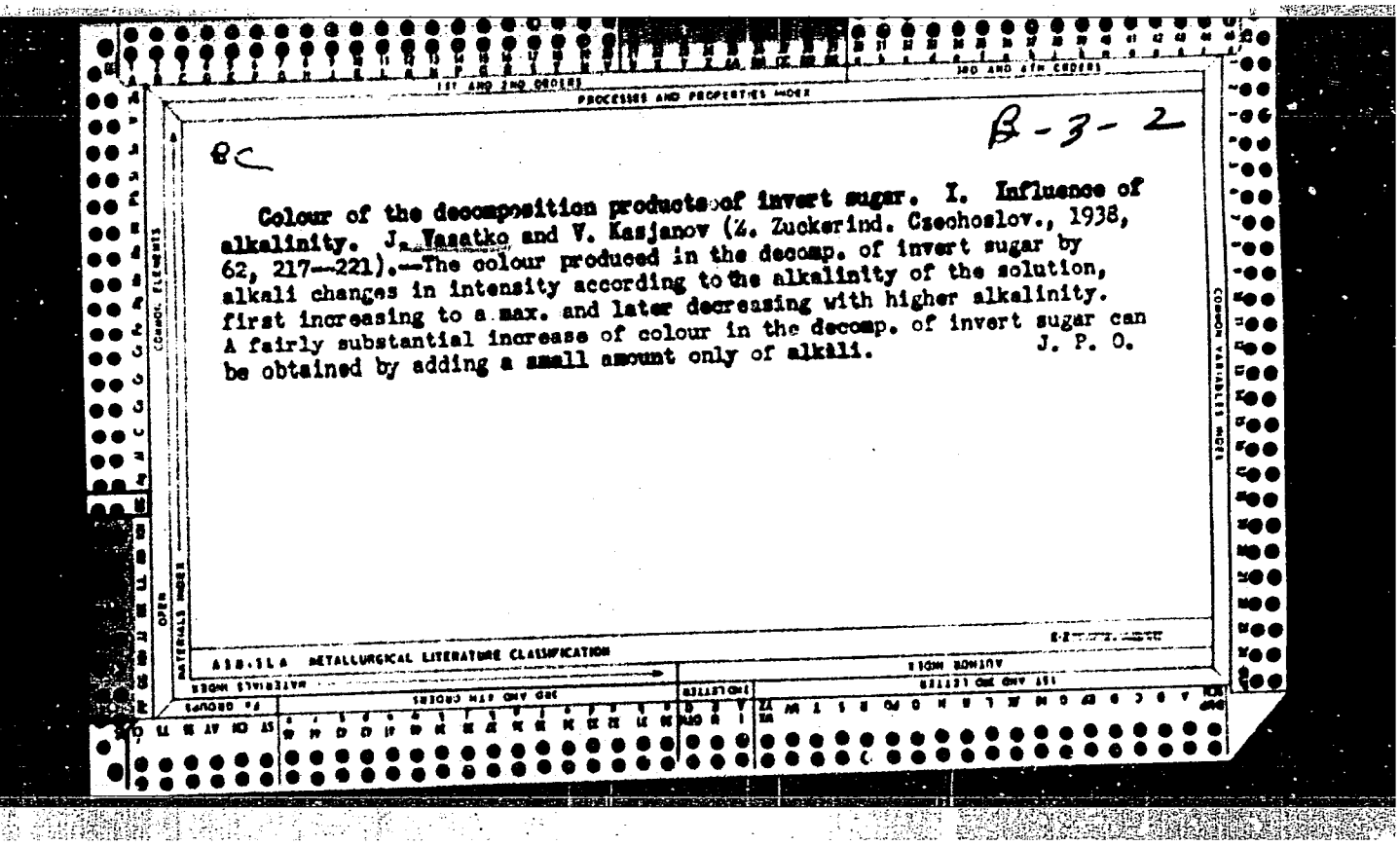
VASATKO, J.,
DEDEK, J., Pub. inst. belge amelioration betterave 6, 477-503
(1938)



The technologic evaluation of [sugar] beets. J. Valáško. *Listy Cukrovar.* 56, 493–50, 505–7(1938).—Besides presenting and discussing the usual tests and computations for evaluating sugar content, yields, purities, etc., V. tries to evaluate the influence of (1) various degrees of ripeness, (2) various beet brands and (3) the influence of fertilizers on the sugar yield. During several seasons he found chem. differences in sugar juices which were ascribable to the differences in fertilizers. The effect of the various beet brands was found in the degree of alky. of the juices. Although the raw sugar beet represents a finished product to the agronomist and a raw product to the technologist, the 2 men (in coöperation) may eliminate some of the undesirable chem. compds. which exist in sugar juices. Frank Maresh



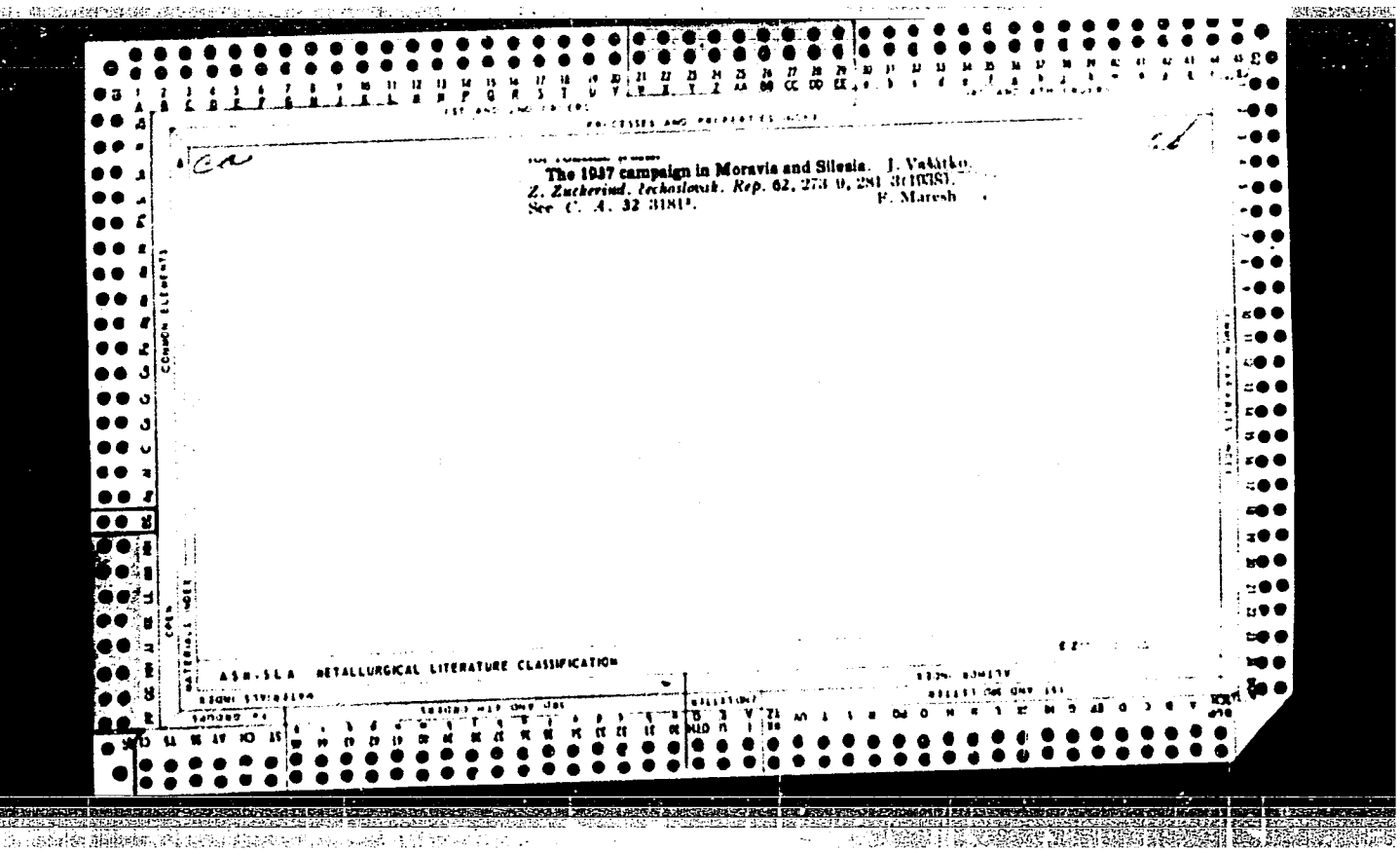
The accumulation of color in sugar-mill processes. J. Valášek and J. Hrušák. *Listy Cukrovar.* 57, 81-4(1938). —During the decompn. of invert sugar, min. quantities of alkalies were the most dangerous and lead to the formation of large quantities of intensely colored compds.; larger addns of alkalies diminished the quantity and the intensity of the colored substances. During 1937, 20 sugar establishments in Moravia and Slovakia presented samples of light and heavy liquors, green sirups and molasses for color detns. On the basis of 100 parts of non-sugars, the color in degrees St. ranged: light liquors 50-200°, heavy liquor 75-350°, green sirups 150-1200° and molasses 300-2000°, the amt. of color increasing and spreading over a wide range of values in the processes involved. Although most of the invert sugar was decompd. by the CaO and removed during the digestion, the residue of undecompd. invert sugar remaining in the liquor in the presence of min. quantities of alkalies became the source of colored products which increased in quantity and in intensity during evapn., heating and crystn. In some cases the source of the liquor was more important than the treatment of the liquor in the formation of colored substances. Contrary to lab. expts., the treatment of sugar juices with SO_2 and norite decreased the color formation in molasses by 130% in one factory. F. Maresh

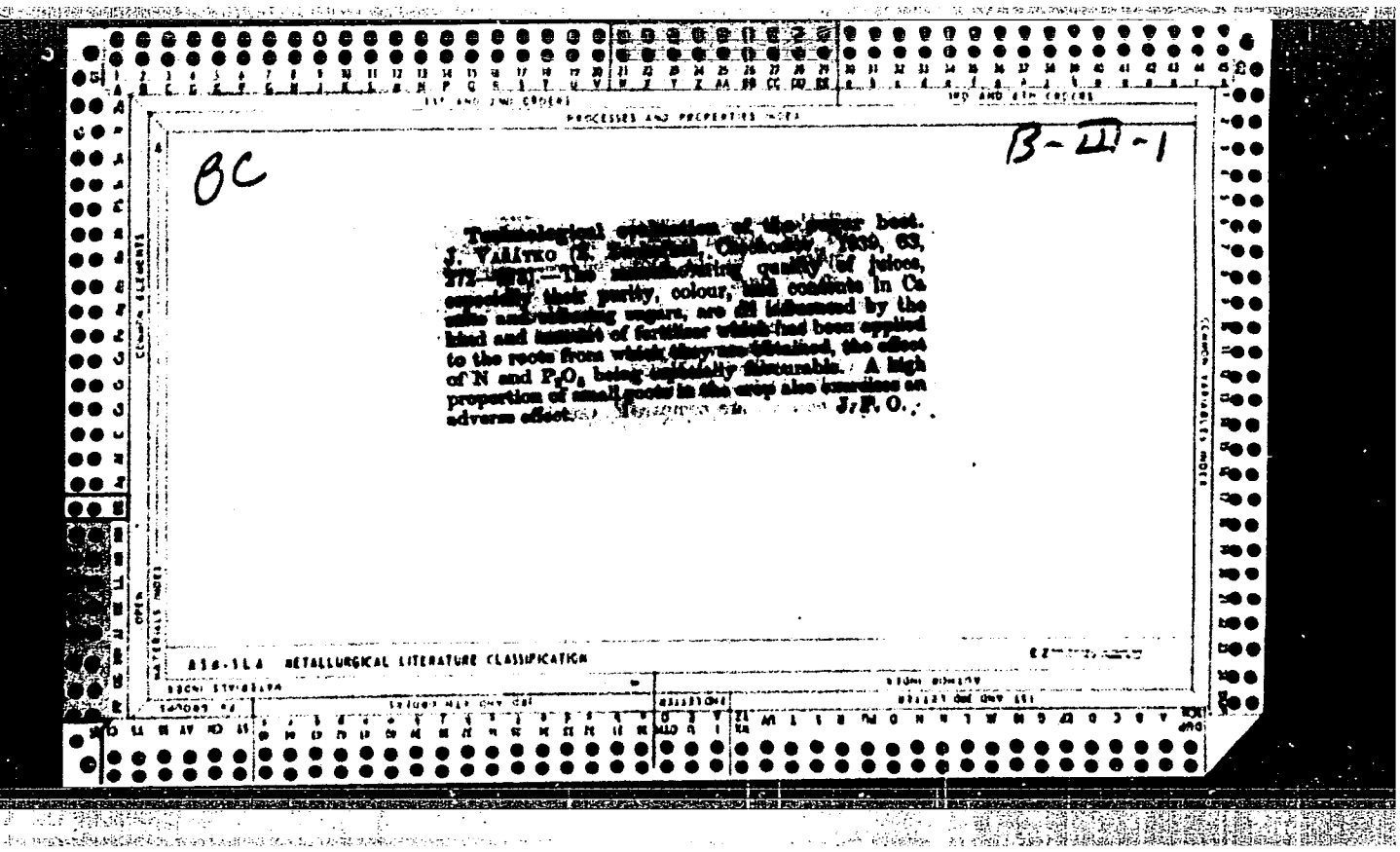


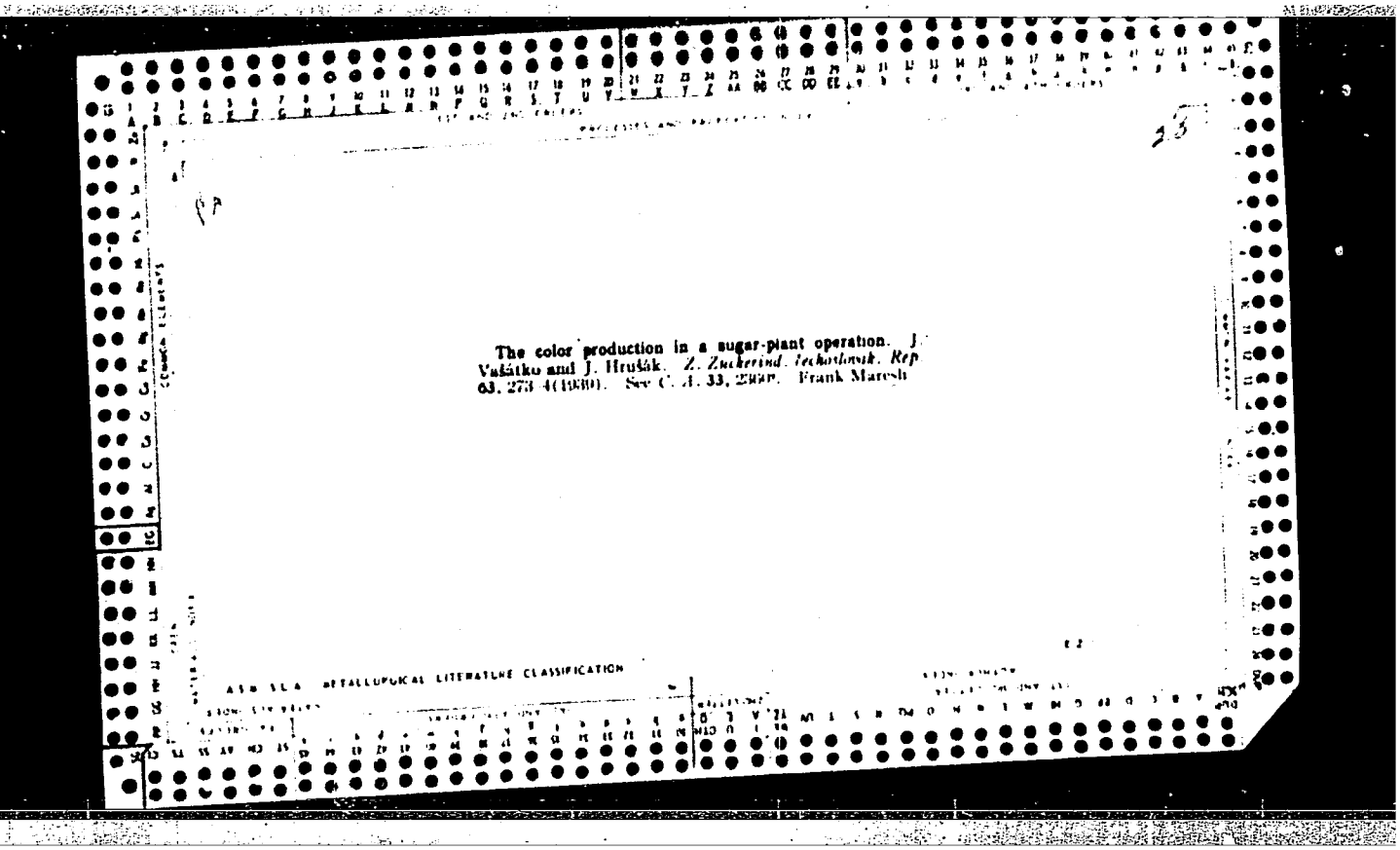
B-3-2

8C

Colour of the decomposition products of invert sugar. I. Influence of alkalinity. J. Vasatko and V. Kasjanov (Z. Zuckerind. Czechoslov., 1938, 62, 217—221).—The colour produced in the decomp. of invert sugar by alkali changes in intensity according to the alkalinity of the solution, first increasing to a max. and later decreasing with higher alkalinity. A fairly substantial increase of colour in the decomp. of invert sugar can be obtained by adding a small amount only of alkali. J. P. O.







The color production in a sugar-plant operation. J. Vašátko and J. Hrušák. *Z. Zuckerind. Techoslovak. Rep* 63, 273-4(1939). See C. A. 33, 2989⁸. Frank Marsh

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION