BALEJ, J.; PASEKA, J.; VONDRAK, J.

Determining the physical and chemical properties of alkali metal amalgams. Pt.2. Coll Cz Chem 28 no.2:528-30 F '63.

1. Institut fur anorganische Chemie, Tschechoslowakische Akademie der Wissenschaften, Prag.

VONDRAK, J.

Economy in planning electrotechnical equipment.

p. 343 (ELEKTROTECHNIK) Vol. 12, no. 11, Nov. 1957, Praha, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 3, March 1958

CZECHOSLOVAKIA

BALEJ, J; PASEKA, I; VONDRAK, J.

Institute of Anorganic Chemistry of the Czechoslovak Academy of Sciences, Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications, Vol 8, 1963, pp 2242-2244

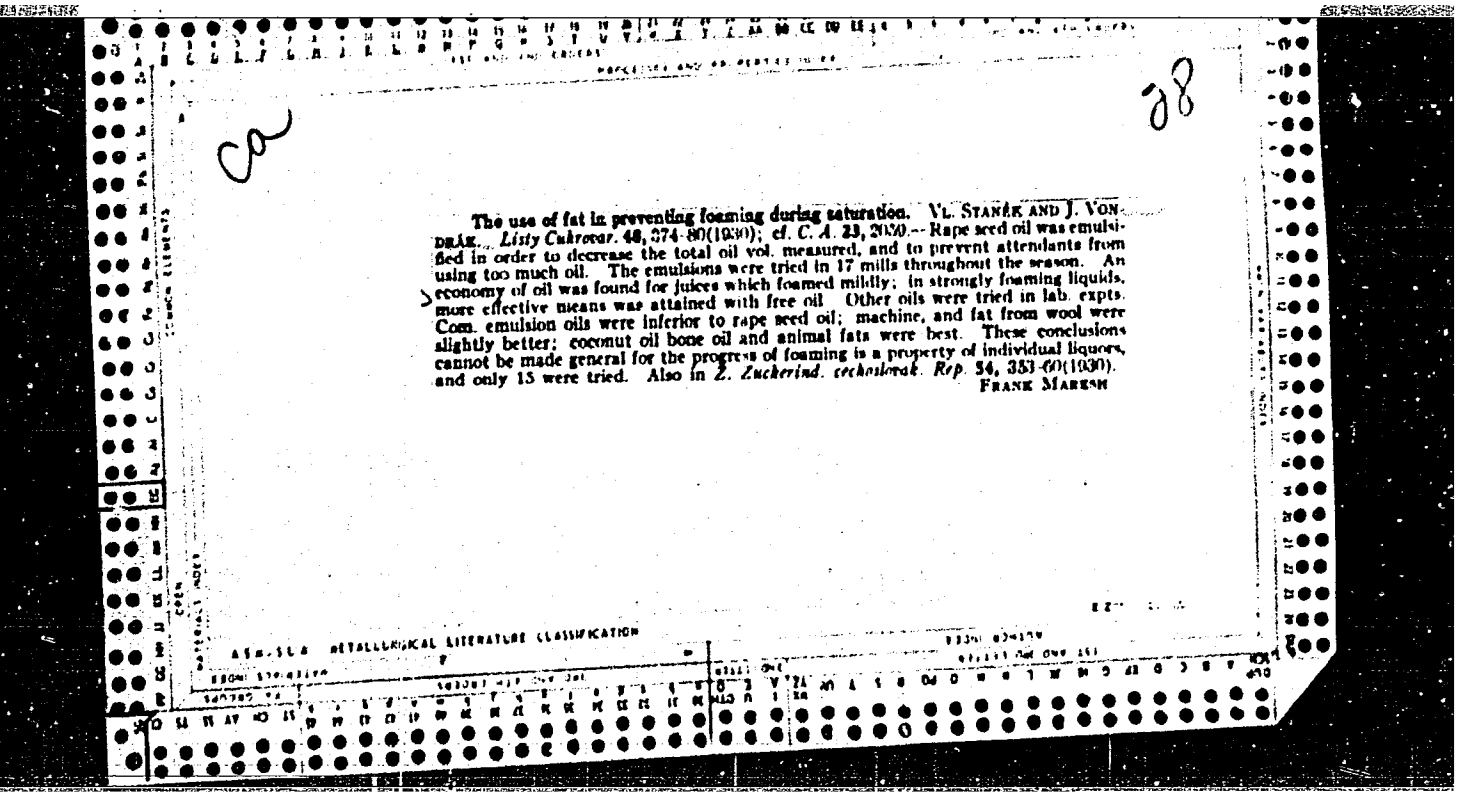
"Determination of Physical-Chemical Properties of Amalgamates of the Alkali Metals. III. Viscosity of Natrium and Cadium Amalgamates."

VONDRAKOVA, I.; VINTERA, J.; KRCILKOVA, M.

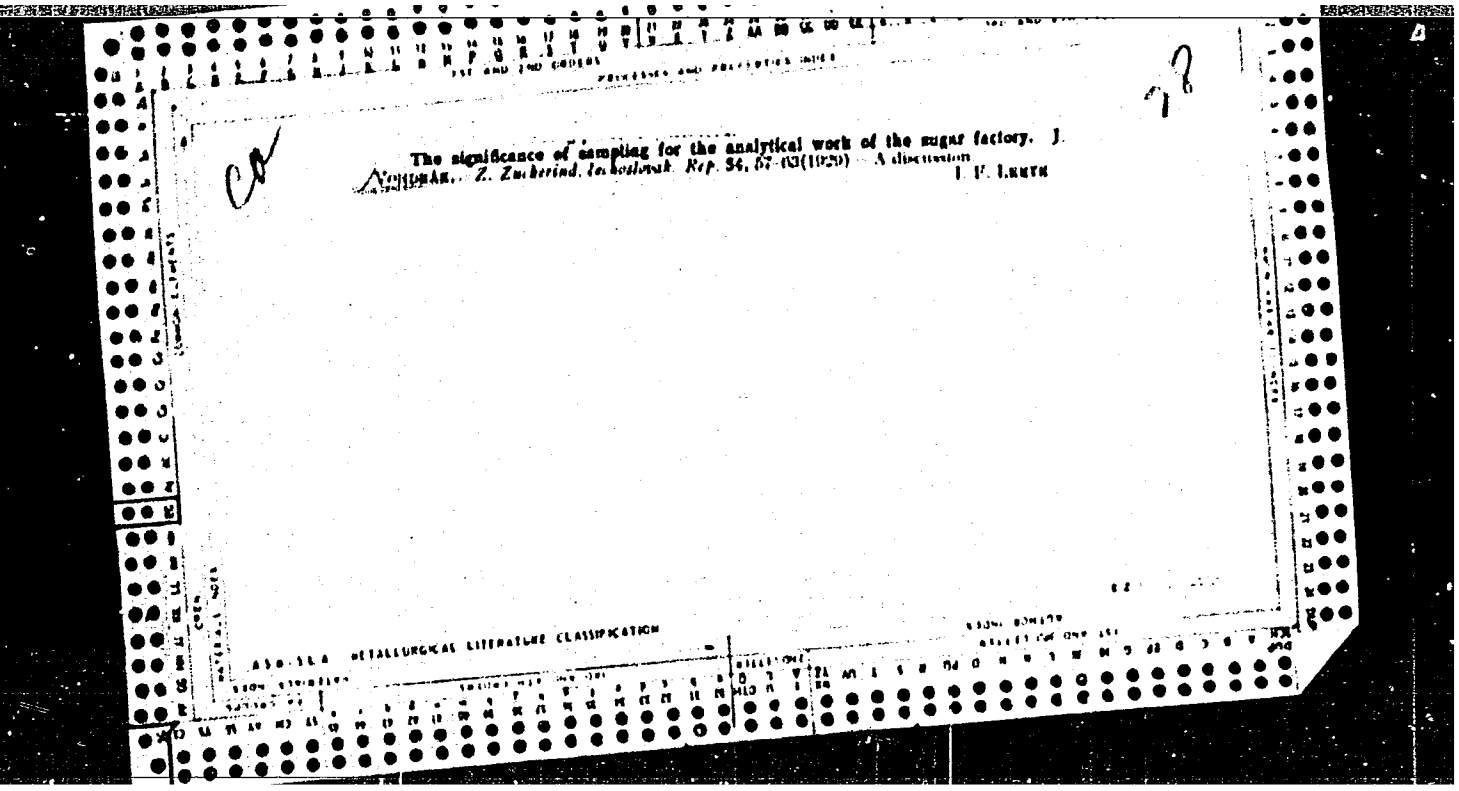
Results of prednisone therapy of acute rheumatic fever. Cesk. pediat. 13 no.8:704-707 5 Sept 58.

1. IV. detska klinika v Praze, prednosta prof. dr. Fr. Blacek. I.V., Praha II, Karlovu 2.

(RHEUMATIC FEVER, ther.
prednisone & salicylates (Cz))
(PREDNISONE, ther. use
rheum. fever, with salicylates (Cz))
(SALICYLATES, ther. use
rheum. fever, with prednisone (Cz))

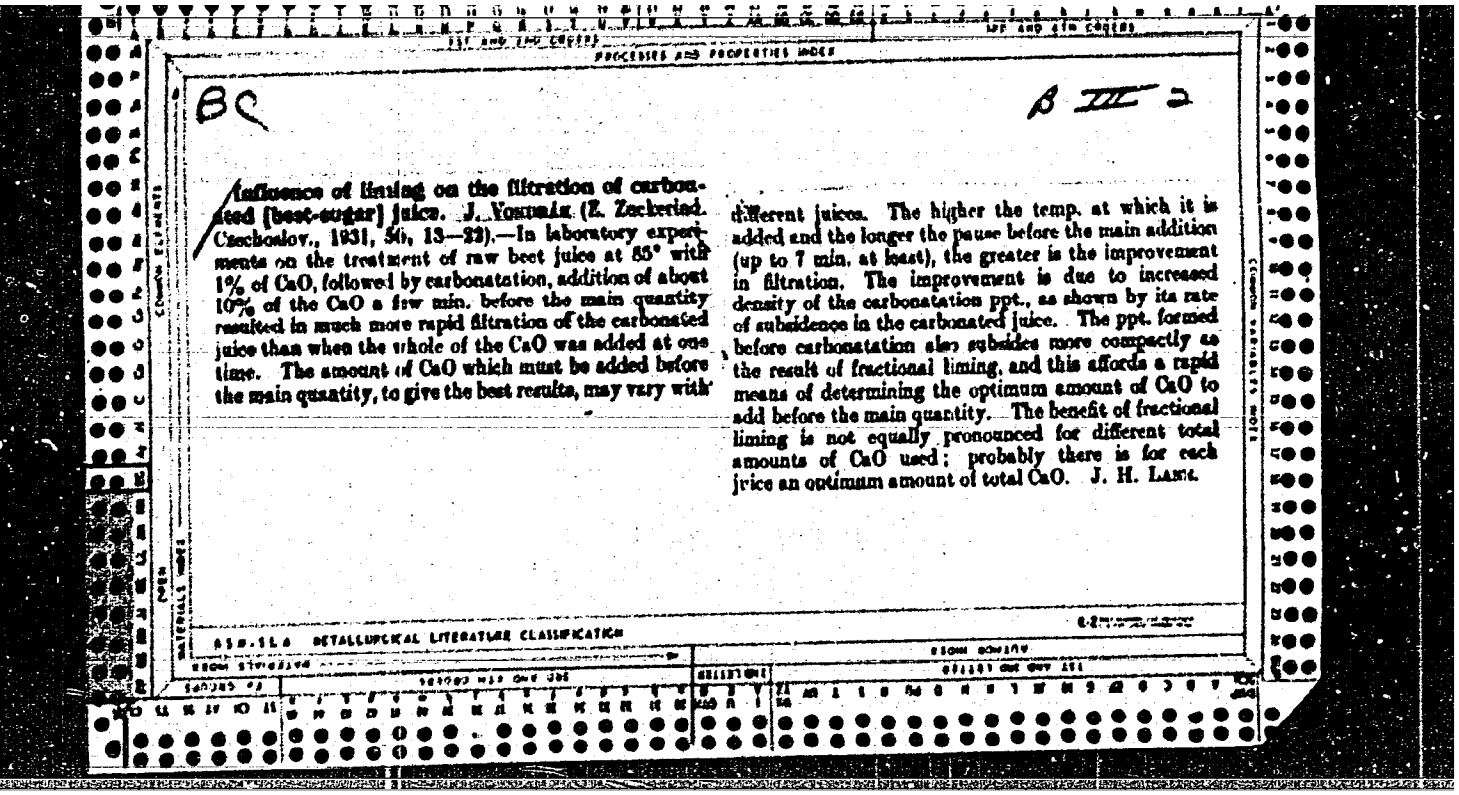


The use of fat in preventing foaming during saturation. VL. STANĚK AND J. VONDRÁK. *Listy Cukrovar.* **48**, 374-80(1930); cf. *C. A.* **23**, 2030.—Rape seed oil was emulsified in order to decrease the total oil vol. measured, and to prevent attendants from using too much oil. The emulsions were tried in 17 mills throughout the season. An economy of oil was found for juices which foamed mildly; in strongly foaming liquids, more effective means was attained with free oil. Other oils were tried in lab. expts. Coco. emulsion oils were inferior to rape seed oil; machine, and fat from wool were slightly better; coconut oil bone oil and animal fats were best. These conclusions cannot be made general for the progress of foaming is a property of individual liquors, and only 15 were tried. Also in *Z. Zuckerind. cechoslovak. Rep.* **54**, 353-60(1930).
FRANK MARESH



The significance of sampling for the analytical work of the sugar factory. J.
Z. Zuckerind. Tschechoslowak. Rep. 54, 67-93(1929). A discussion.
J. F. LAUTH

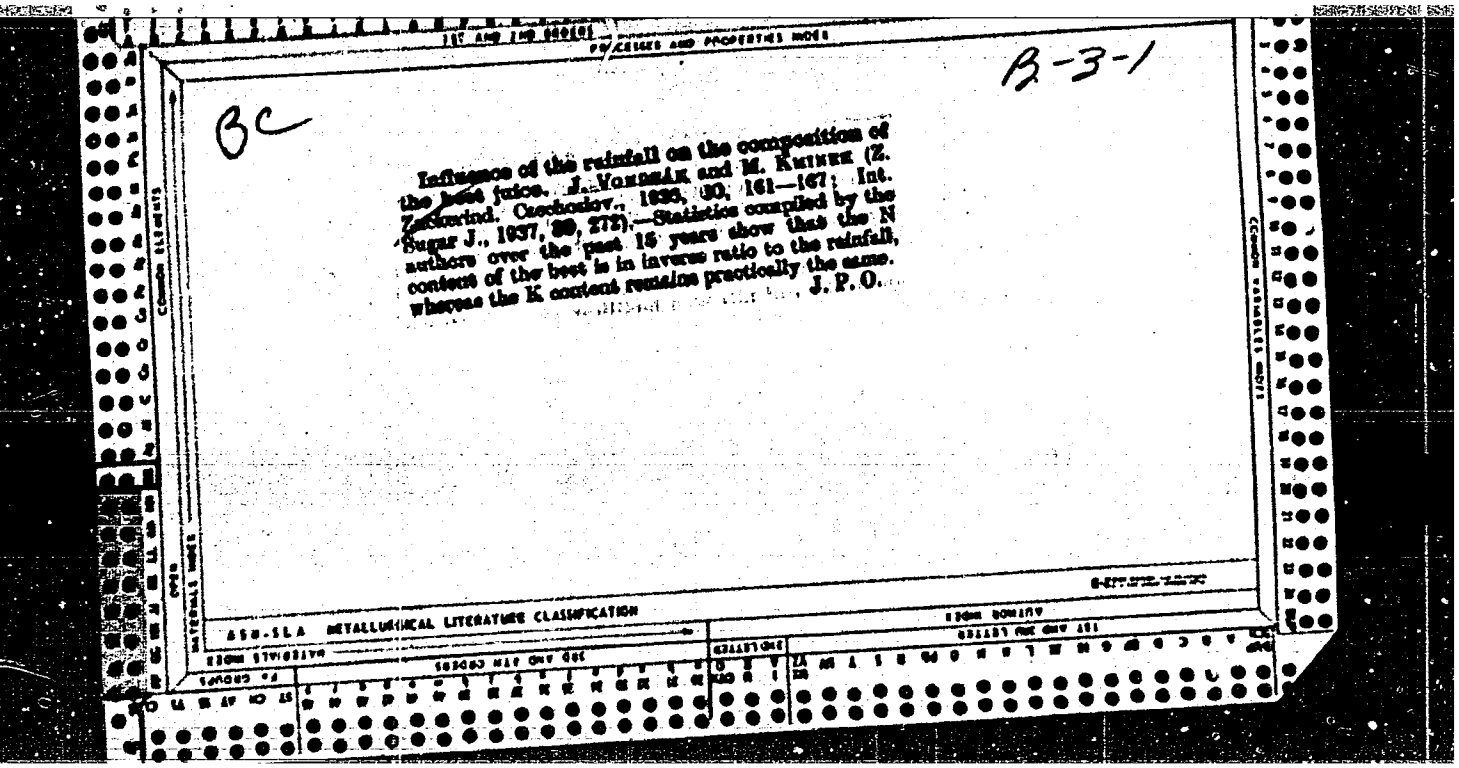
A50-51A METALLURGICAL LITERATURE CLASSIFICATION



BC

B III 2

Influence of liming on the filtration of carbonated [beet-sugar] juice. J. Vondrák. (Z. Zuckerind. Czechoslov., 1931, 56, 13—22).—In laboratory experiments on the treatment of raw beet juice at 85° with 1% of CaO, followed by carbonatation, addition of about 10% of the CaO a few min. before the main quantity resulted in much more rapid filtration of the carbonated juice than when the whole of the CaO was added at one time. The amount of CaO which must be added before the main quantity, to give the best results, may vary with different juices. The higher the temp. at which it is added and the longer the pause before the main addition (up to 7 min. at least), the greater is the improvement in filtration. The improvement is due to increased density of the carbonatation ppt., as shown by its rate of subsidence in the carbonated juice. The ppt. formed before carbonatation also subsides more compactly as the result of fractional liming, and this affords a rapid means of determining the optimum amount of CaO to add before the main quantity. The benefit of fractional liming is not equally pronounced for different total amounts of CaO used; probably there is for each juice an optimum amount of total CaO. J. H. Lane.

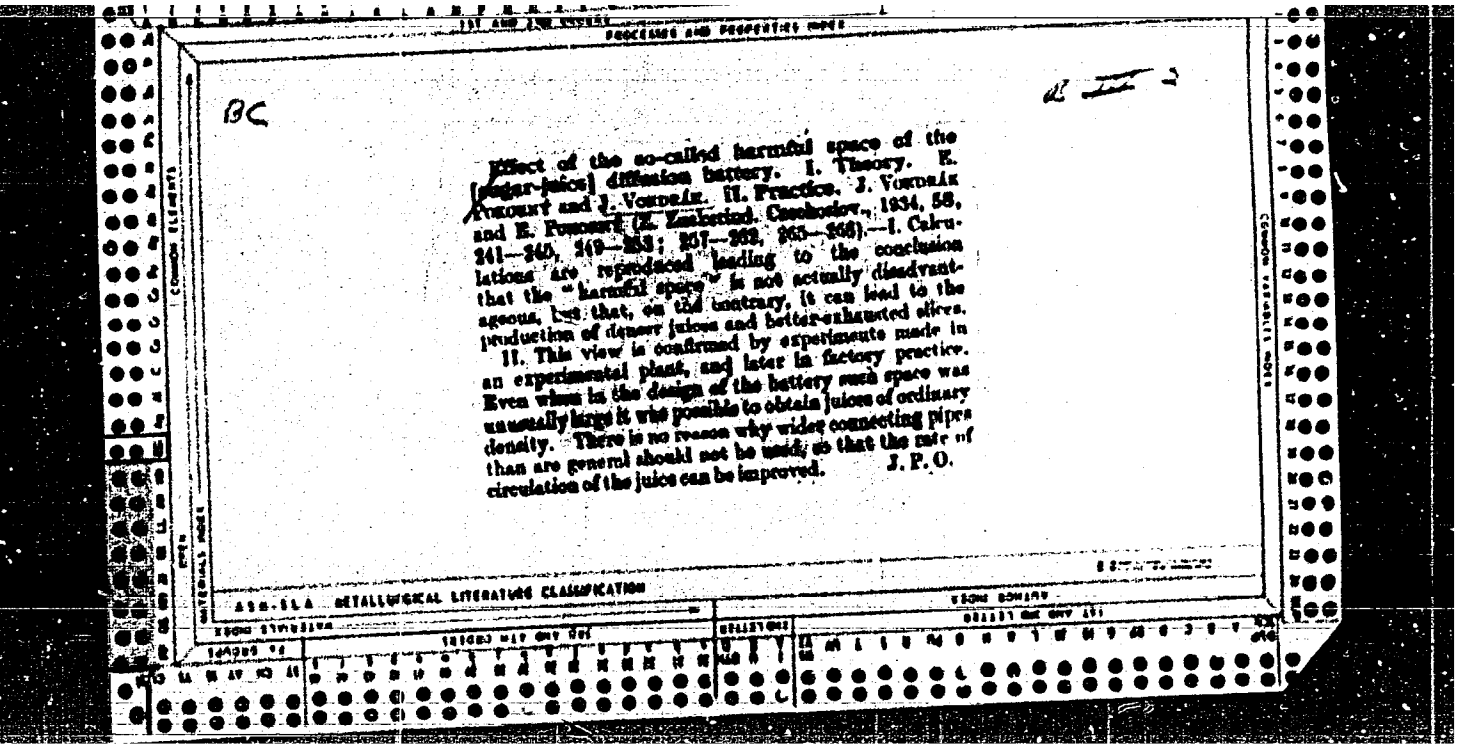


B-3-1

BC

Influence of the rainfall on the composition of the beet juice. J. Vondrák and M. Knížek (Z. Zuckerind. Czechoslov., 1936, 60, 161—167; Int. Sugar J., 1937, 39, 272).—Statistics compiled by the authors over the past 15 years show that the N content of the beet is in inverse ratio to the rainfall, whereas the K content remains practically the same. J. P. O.

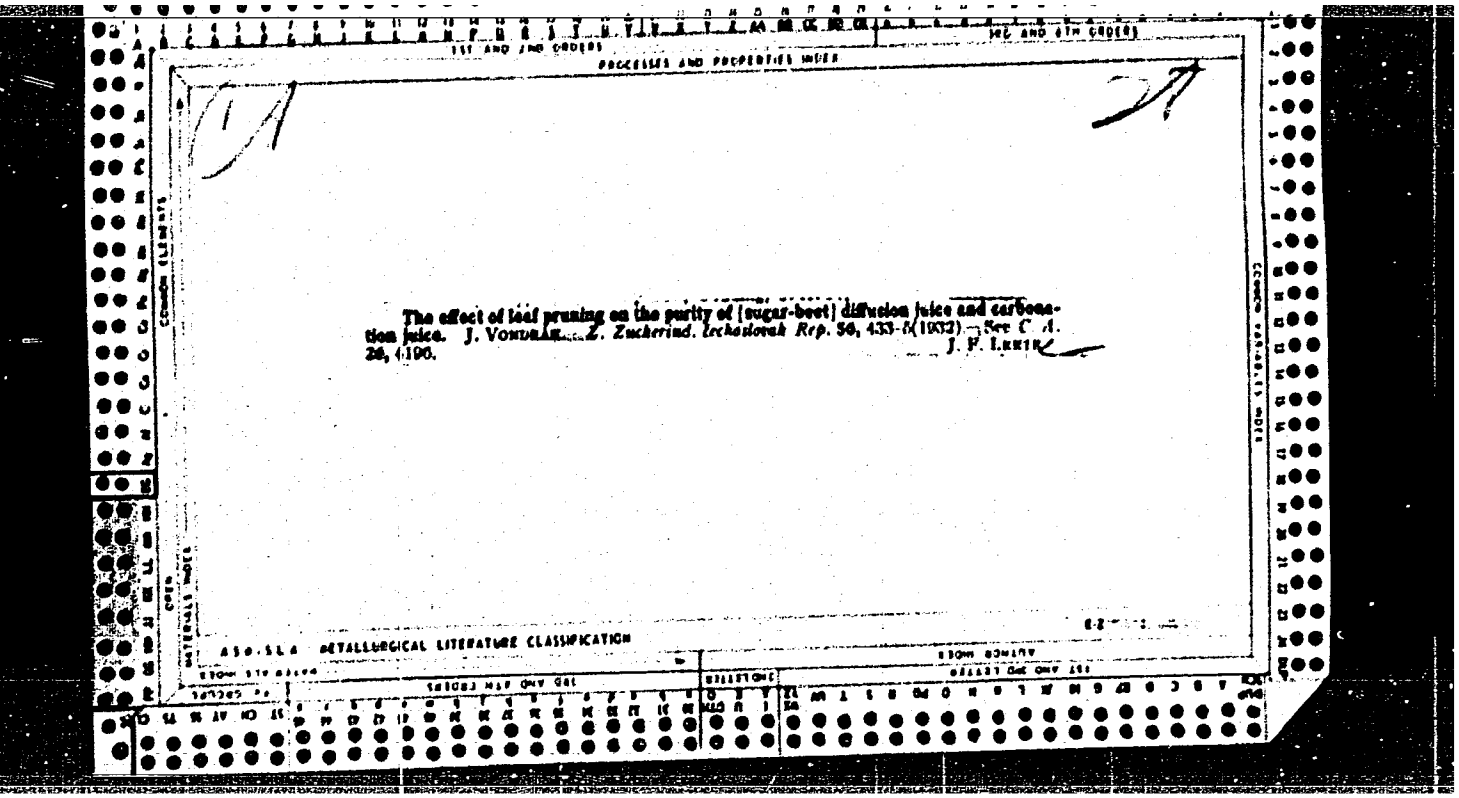
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

Effect of the so-called harmful space of the [sugar-juice] diffusion battery. I. Theory. E. Pennart and J. Vervaln. II. Practice. J. Vervaln and E. Pennart (E. Zemledel. Casopisov., 1934, 58, 241—260, 349—353; 357—362, 365—368).—I. Calculations are reproduced leading to the conclusion that the "harmful space" is not actually disadvantageous, but that, on the contrary, it can lead to the production of denser juices and better-exhausted slices.

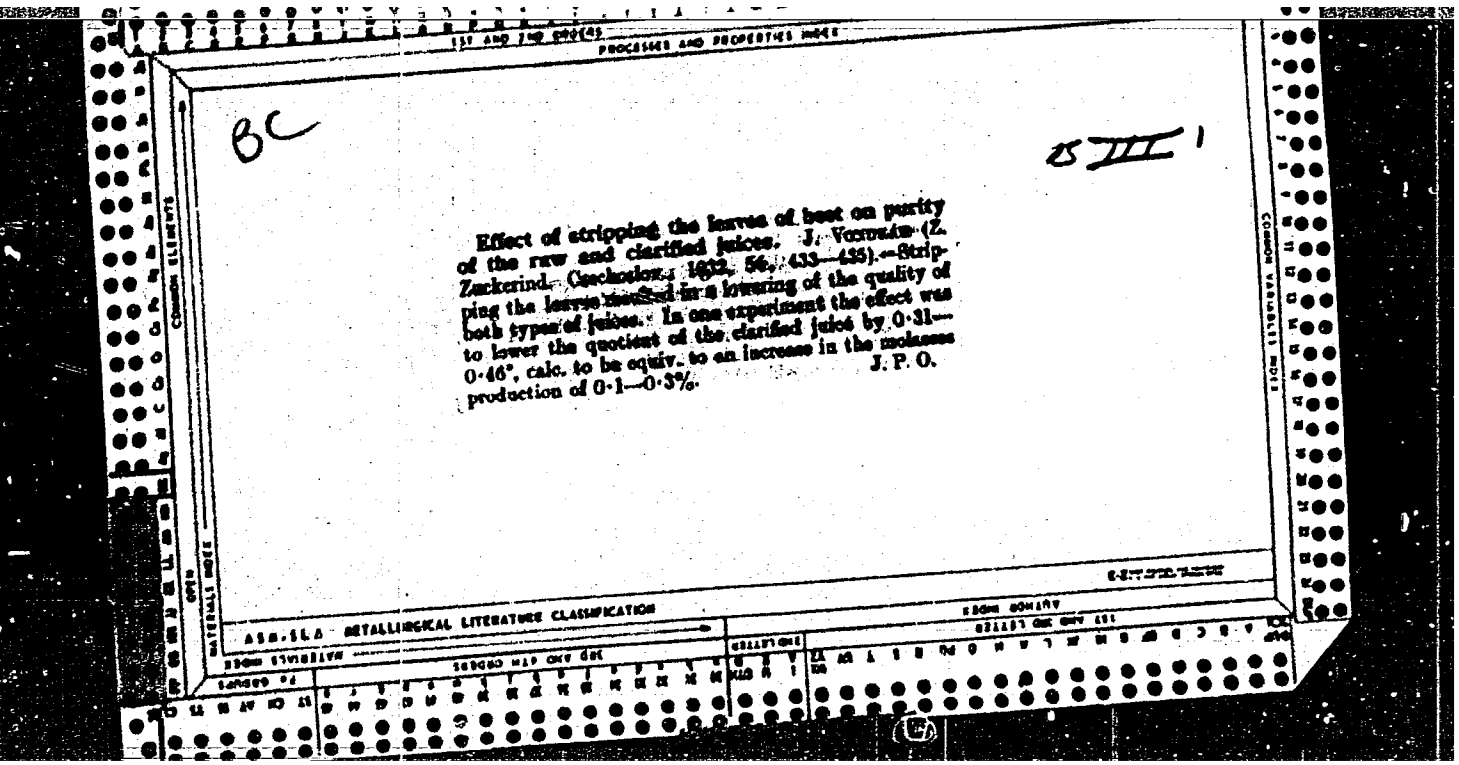
II. This view is confirmed by experiments made in an experimental plant, and later in factory practice. Even when in the design of the battery much space was unusually large it was possible to obtain juices of ordinary density. There is no reason why wider connecting pipes than are general should not be used, so that the rate of circulation of the juice can be improved. J. P. O.



The effect of leaf pruning on the purity of [sugar-beet] diffusion juice and carbonation juice. J. Vondrák. *Z. Zuckerind. Tschechoslowak Rep.* 56, 433-8(1932). See *C. A.* 26, 4190.

J. F. Lehr

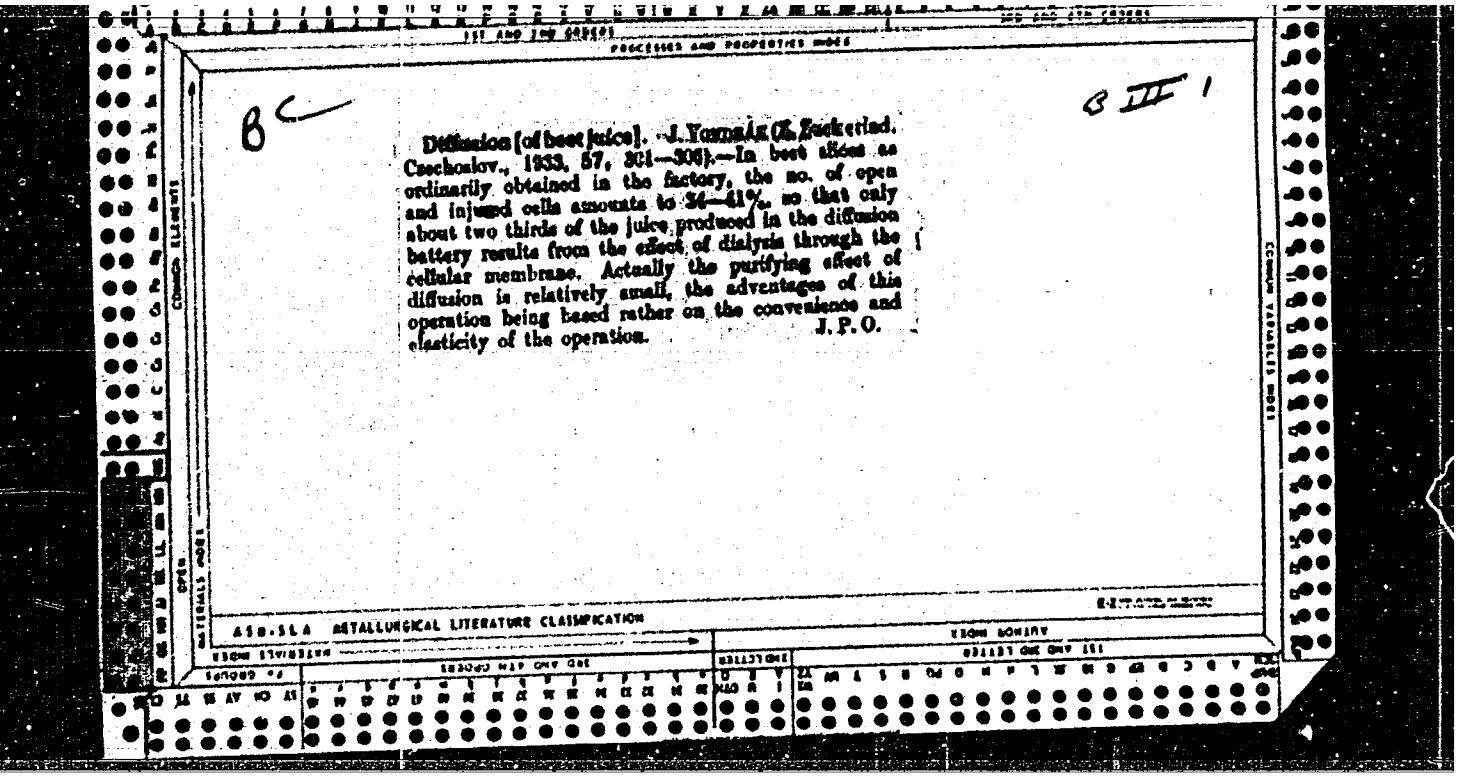
ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

D III 1

Effect of stripping the leaves of beet on purity of the raw and clarified juices. J. Vorreiter (Z. Zuckerind. Czechoslov., 1932, 56, 433—435).—Stripping the leaves resulted in a lowering of the quality of both types of juice. In one experiment the effect was to lower the quotient of the clarified juice by 0·31—0·46°, calc. to be equiv. to an increase in the molasses production of 0·1—0·3%. J. P. O.

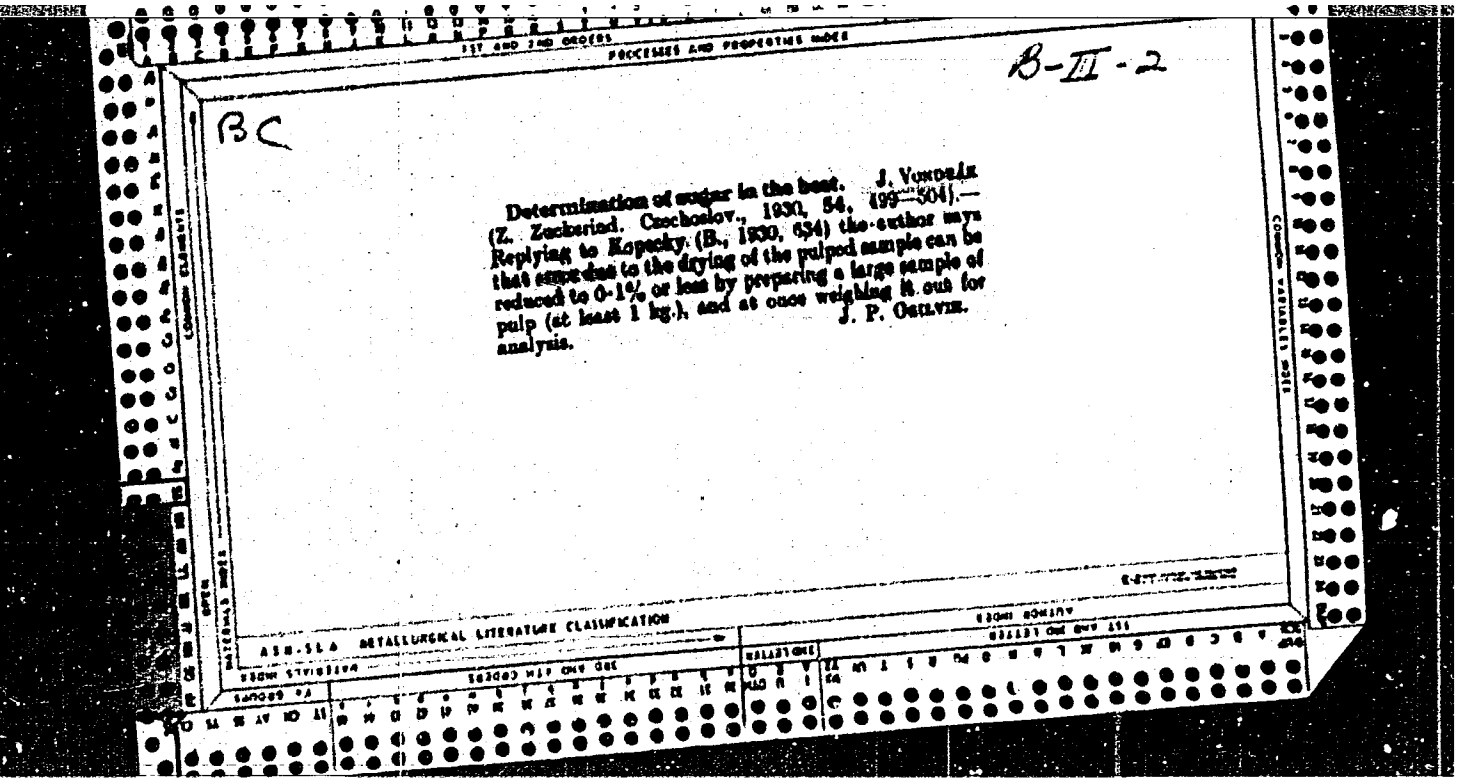


B C

B III 1

Diffusion [of beet juice]. J. Tomasík (K. Začek et al.). Cechoslov., 1933, 57, 301—306).—In beet slices as ordinarily obtained in the factory, the no. of open and injured cells amounts to 36—41%, so that only about two thirds of the juice produced in the diffusion battery results from the effect of dialysis through the cellular membrane. Actually the purifying effect of diffusion is relatively small, the advantages of this operation being based rather on the convenience and elasticity of the operation. J. P. O.

A58.51A METALLURGICAL LITERATURE CLASSIFICATION

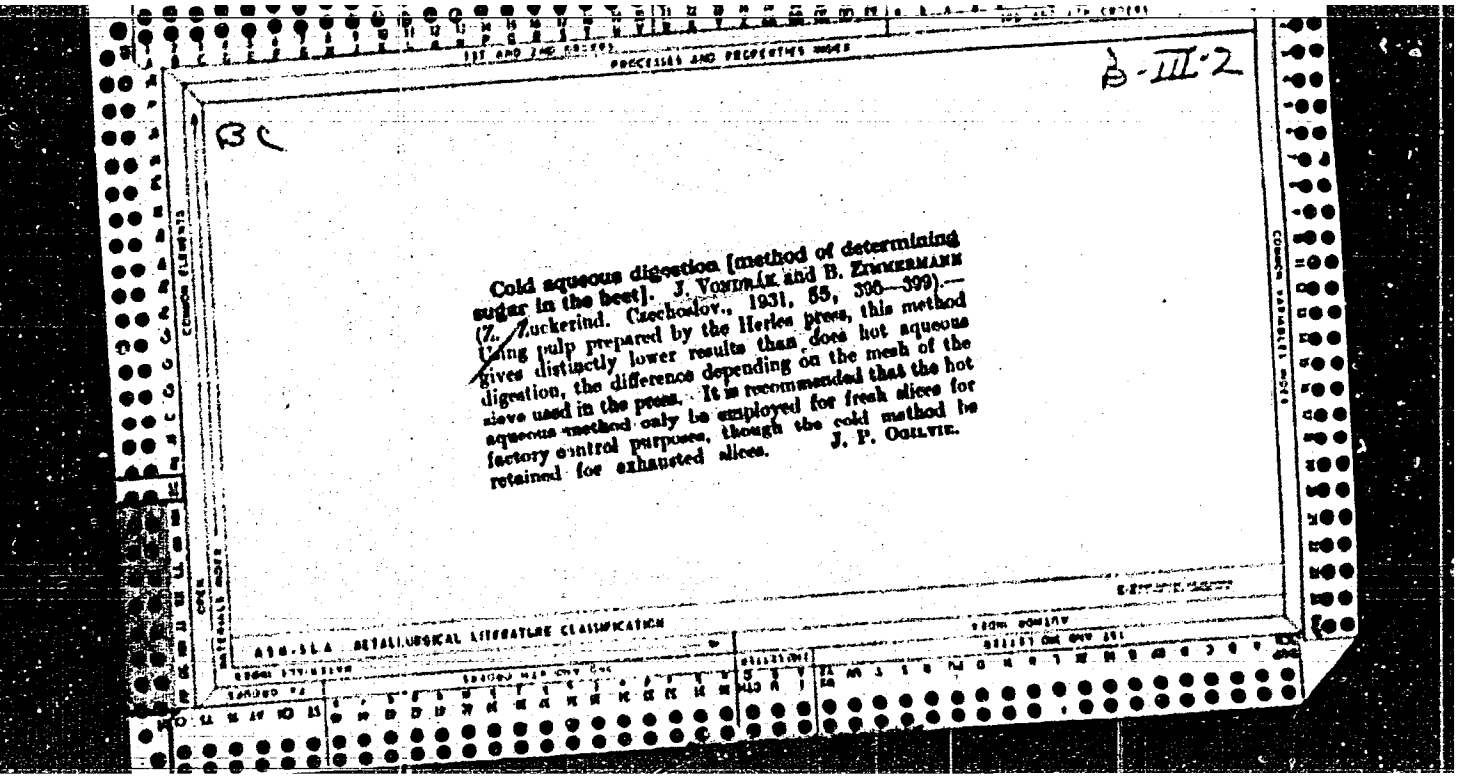


B-II-2

BC

Determination of sugar in the beet. J. Vavrdík (Z. Zuckerind. Czechoslov., 1930, 54, 499—504).—Replying to Kopecky (B., 1930, 634) the author says that errors due to the drying of the pulped sample can be reduced to 0·1% or less by preparing a large sample of pulp (at least 1 kg.), and at once weighing it out for analysis. J. P. Ogilvie.

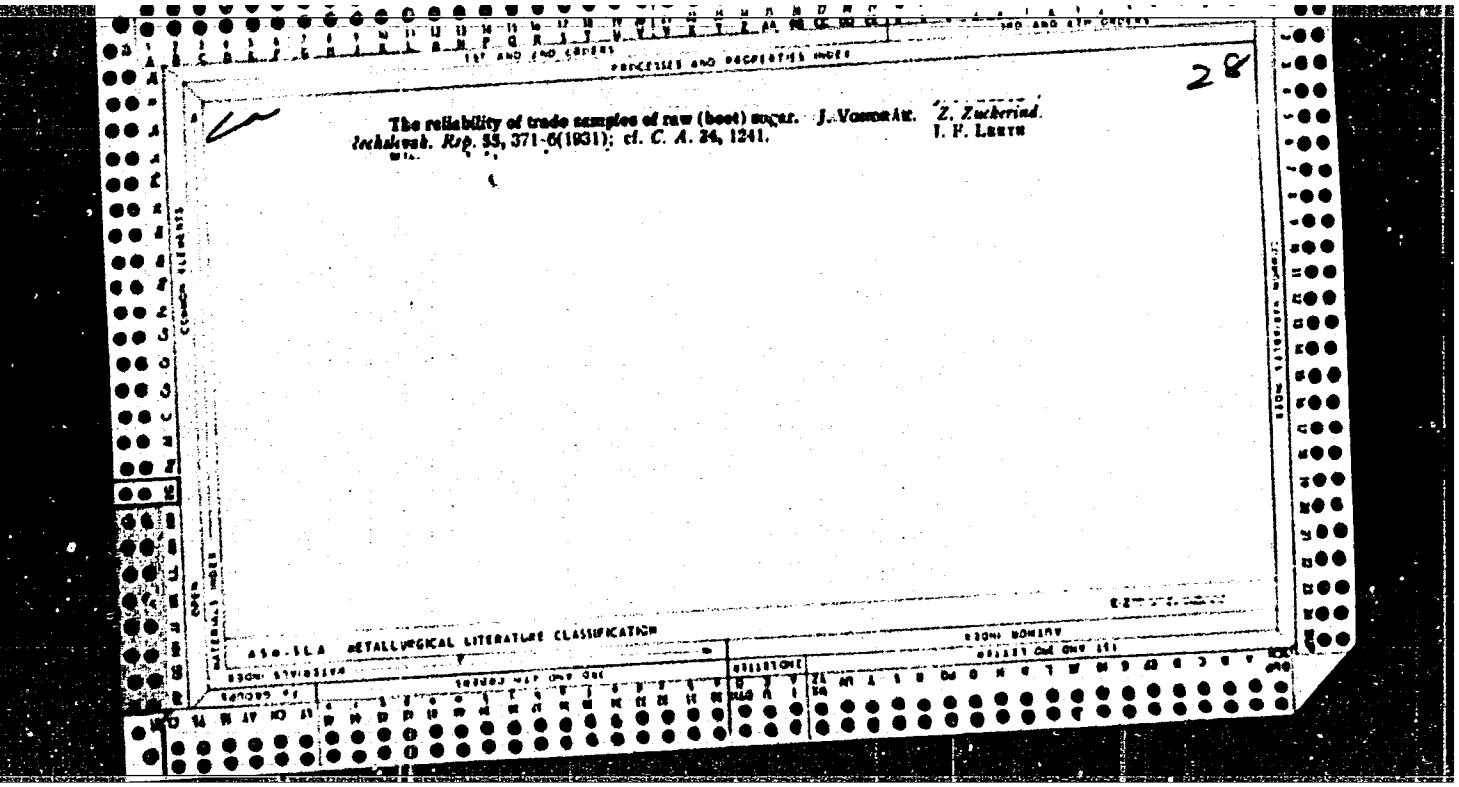
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



B-III-2

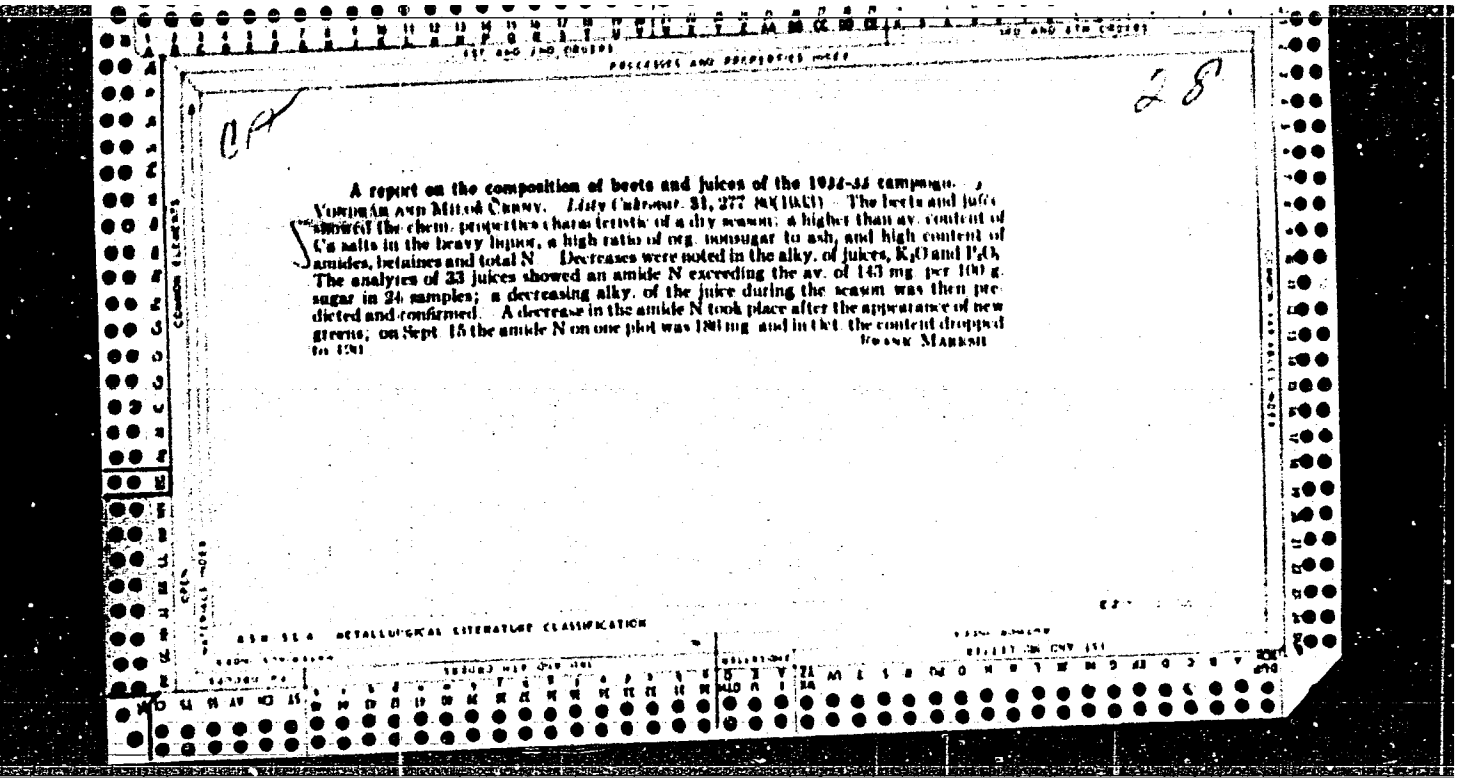
B C

Cold aqueous digestion [method of determining sugar in the beet]. J. Vondrák and B. Zimmermann (Z. Zuckerind. Czechoslov., 1931, 55, 396—399).—Using pulp prepared by the Herles press, this method gives distinctly lower results than does hot aqueous digestion, the difference depending on the mesh of the sieve used in the press. It is recommended that the hot aqueous method only be employed for fresh slices for factory control purposes, though the cold method be retained for exhausted slices. J. P. Ogilvie.

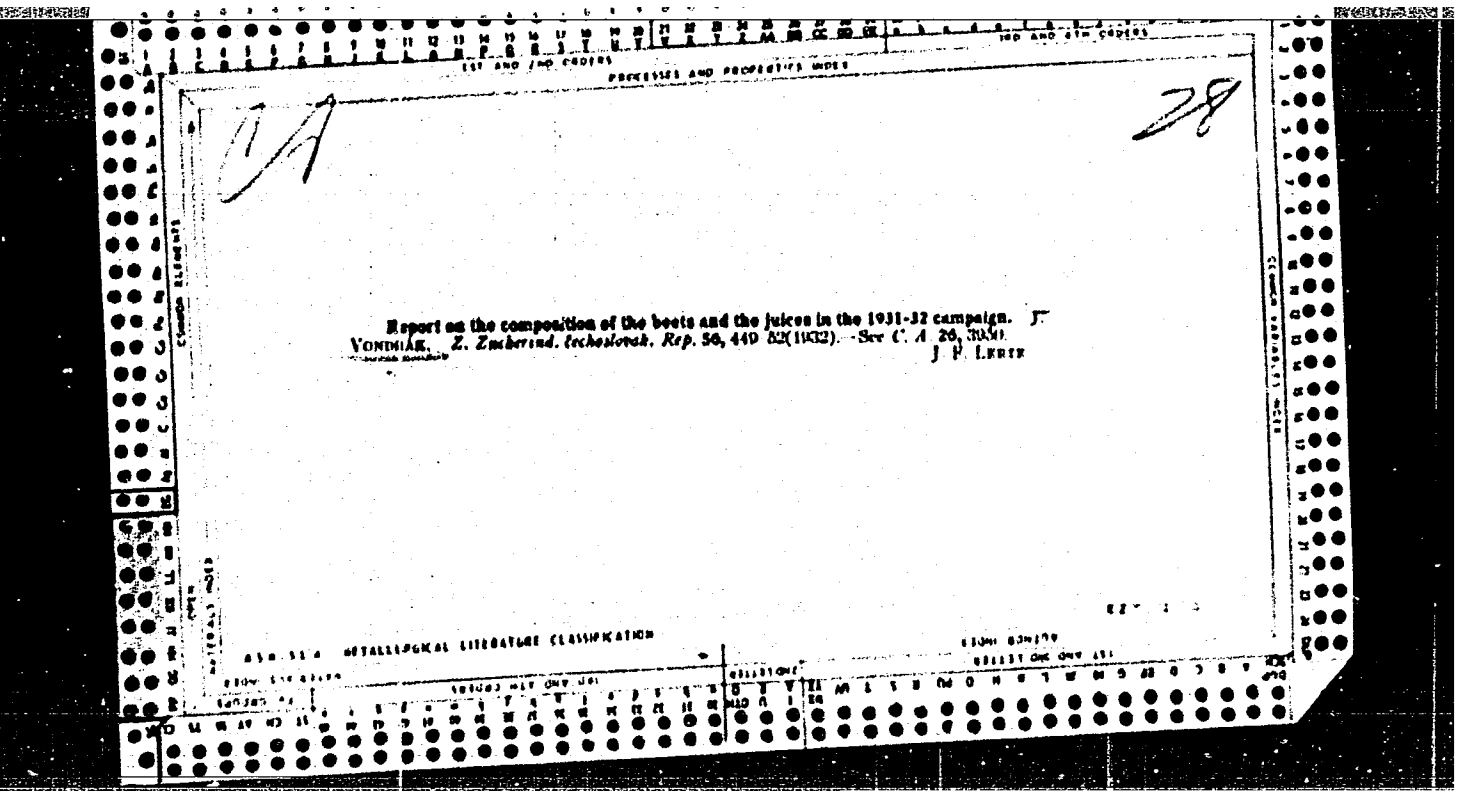


28

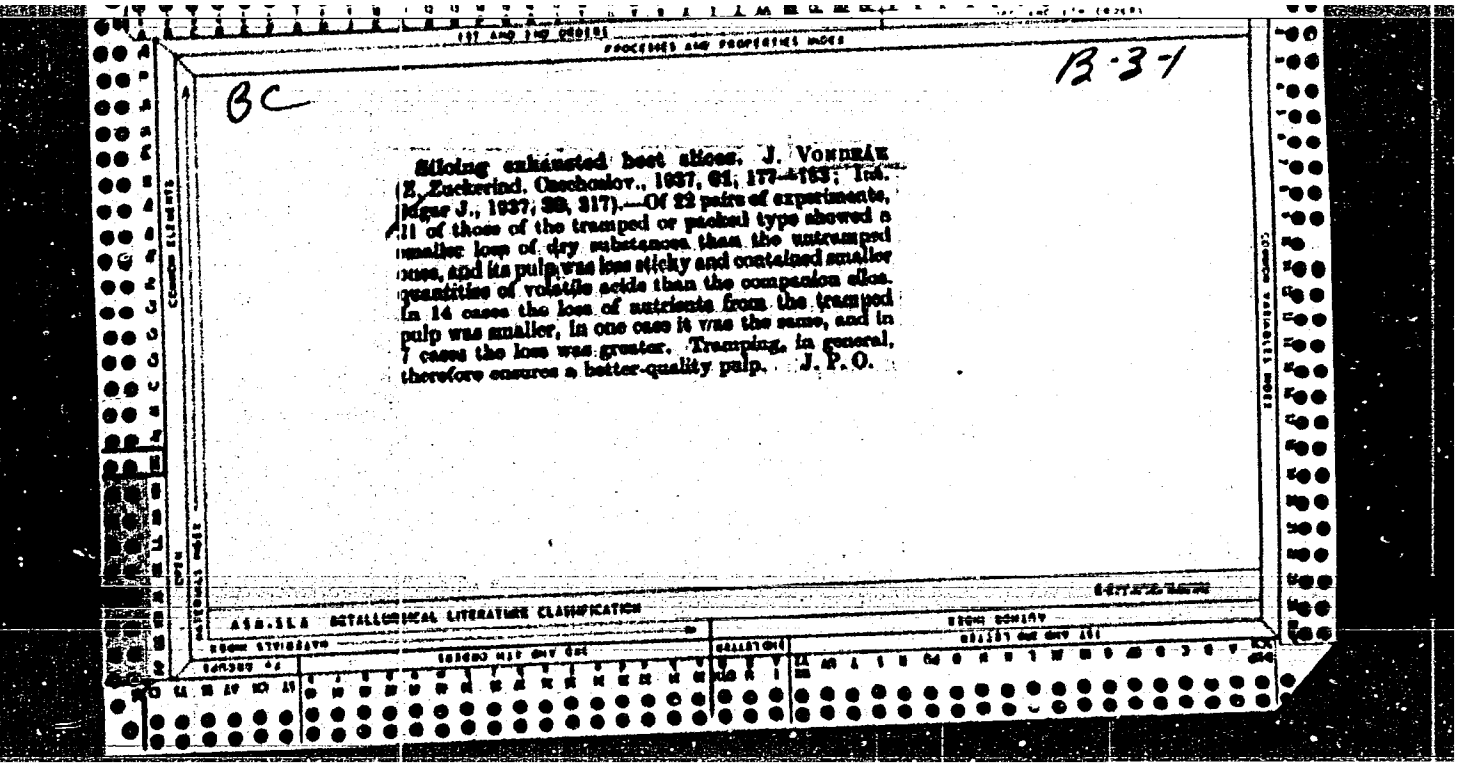
The reliability of trade samples of raw (beet) sugar. J. Vonna Att. Z. Zuckerind. Tschekosl. Rep. 55, 371-6(1931); cf. C. A. 24, 1241. I. F. Laucs



A report on the composition of beets and juices of the 1934-35 campaign. [illegible] Youngman and Milton Cranny. *Utah Cultivator* 31, 277 pp(1935). The beets and juices showed the chem. properties characteristic of a dry season; a higher than av. content of Ca salts in the heavy liquor, a high ratio of reg. sucrose to ash, and high content of amides, betaines and total N. Decreases were noted in the alky. of juices, K_2O and P_2O_5. The analyses of 33 juices showed an amide N exceeding the av. of 143 mg. per 100 g. sugar in 24 samples; a decreasing alky. of the juice during the season was then predicted and confirmed. A decrease in the amide N took place after the appearance of new greens; on Sept. 15 the amide N on one plot was 180 mg. and in that the content dropped to 130. Frank Manuel



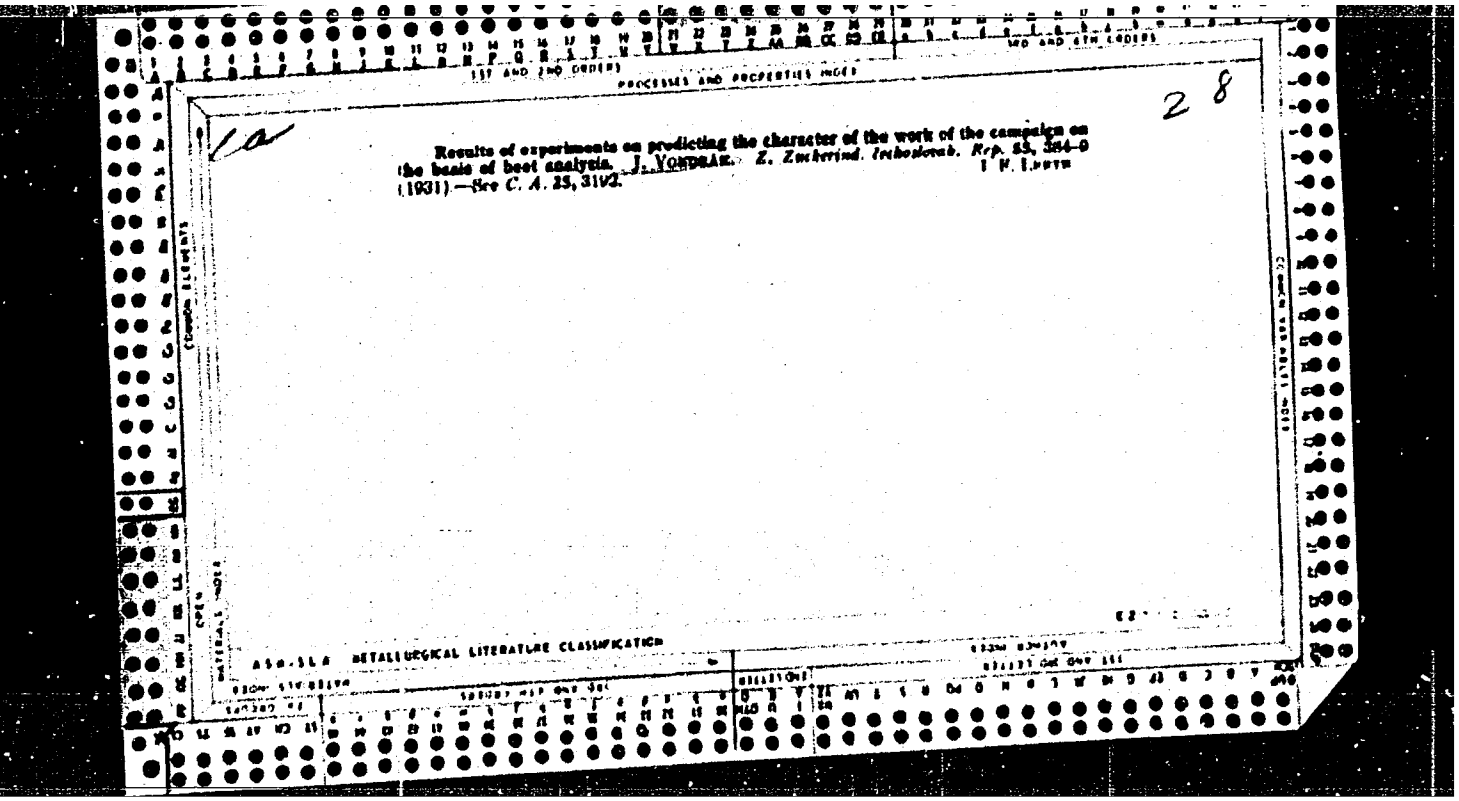
Report on the composition of the beets and the juices in the 1931-32 campaign.
VONDRÁK, *Z. Zuckerind. Tschechoslovak. Rep.* 56, 449-52(1932). See *C. A.* 26, 3050.
J. P. LERTS



BC

B-31

Siloing exhausted beet slices. J. VONDRÁK & Z. Zuckerind. Czechoslov., 1937, 61, 177–183; Int. Sugar J., 1937, 39, 317).—Of 22 pairs of experiments, 11 of those of the tramped or piebal type showed a smaller loss of dry substances than the untramped ones, and its pulp was less sticky and contained smaller quantities of volatile acids than the companion slice. In 14 cases the loss of nutrients from the tramped pulp was smaller, in one case it was the same, and in 7 cases the loss was greater. Tramping, in general, therefore ensures a better-quality pulp. J. P. O.

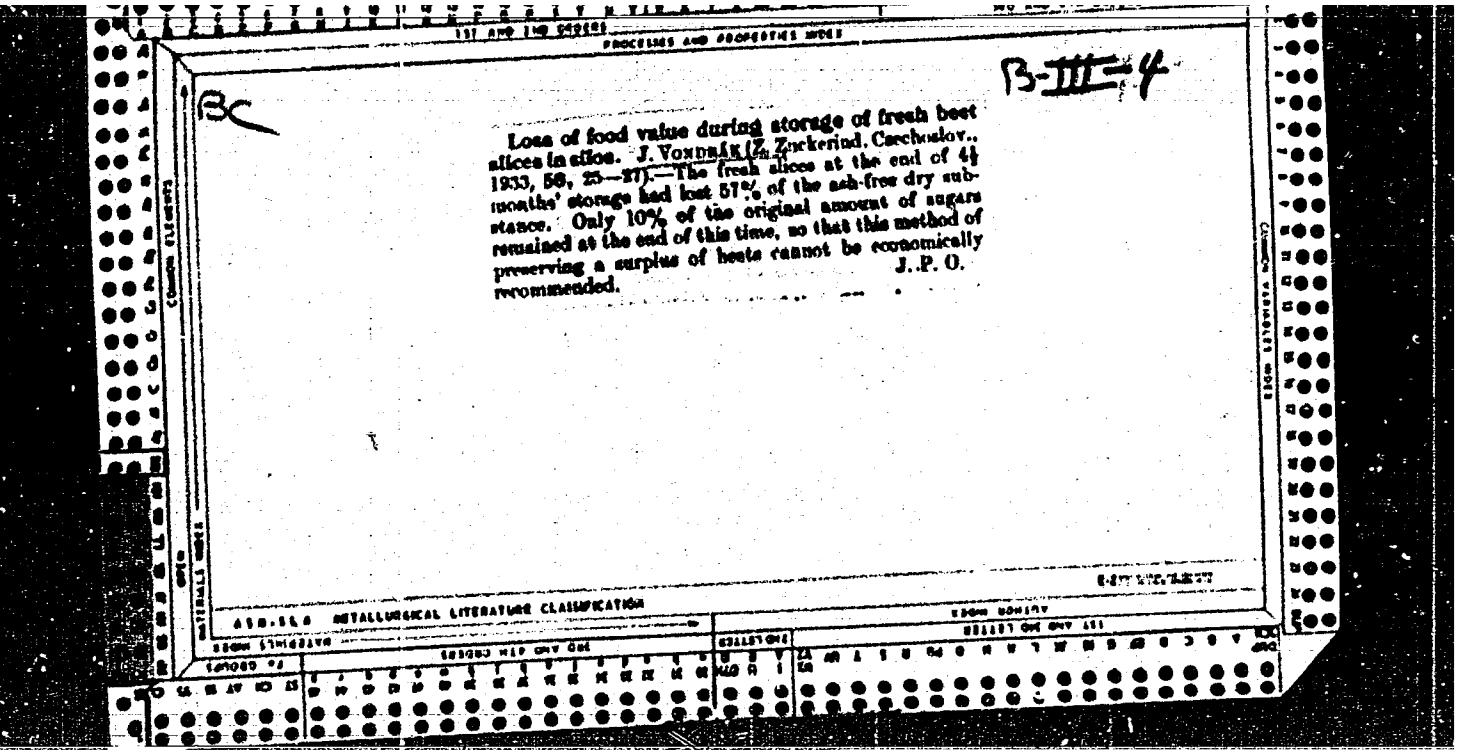


1a

28

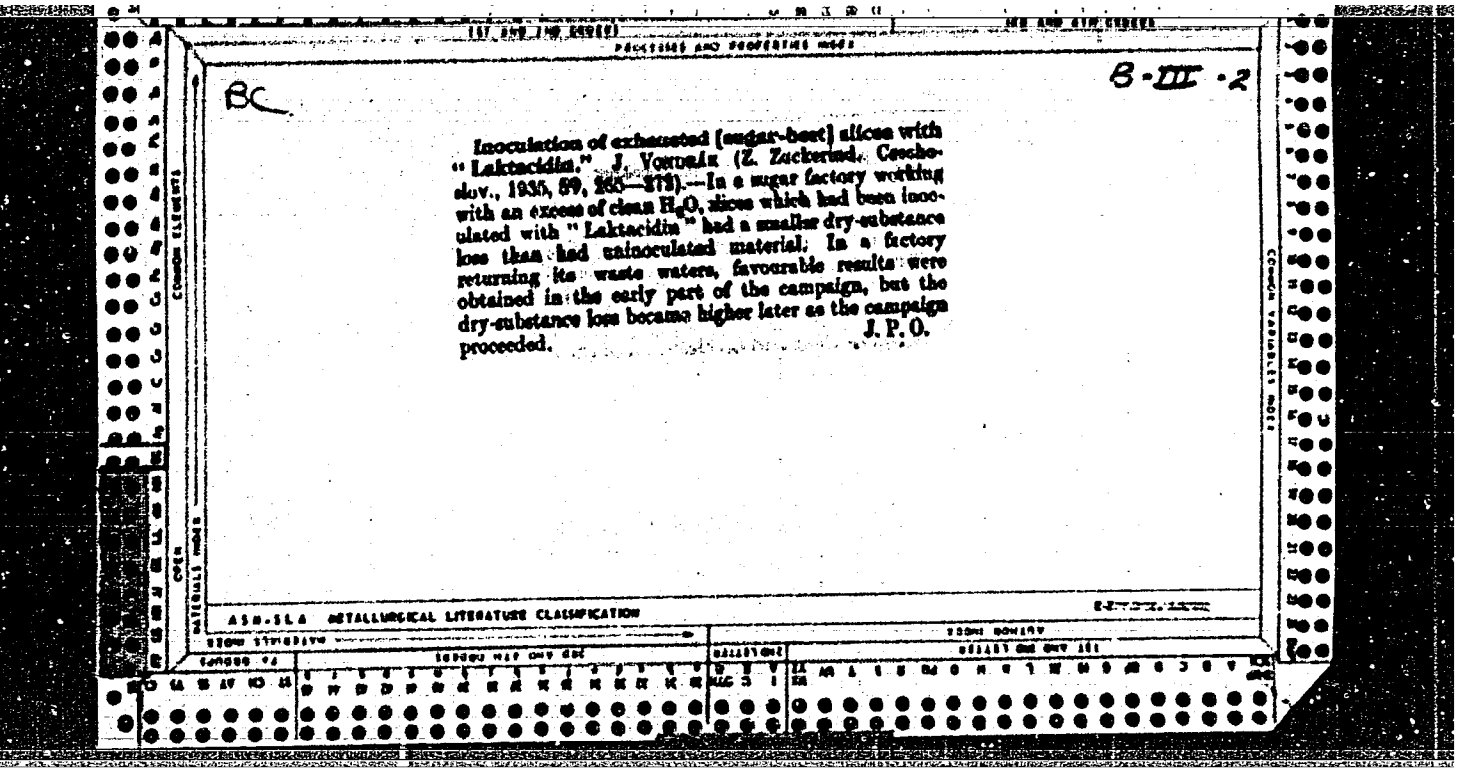
Results of experiments on predicting the character of the work of the campaign on the basis of beet analysis. J. Vondrák. *Z. Zuckerind. Tschechoslovak. Rep.* 55, 384–9 (1931).—See *C. A.* 25, 3192.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



B-III-4

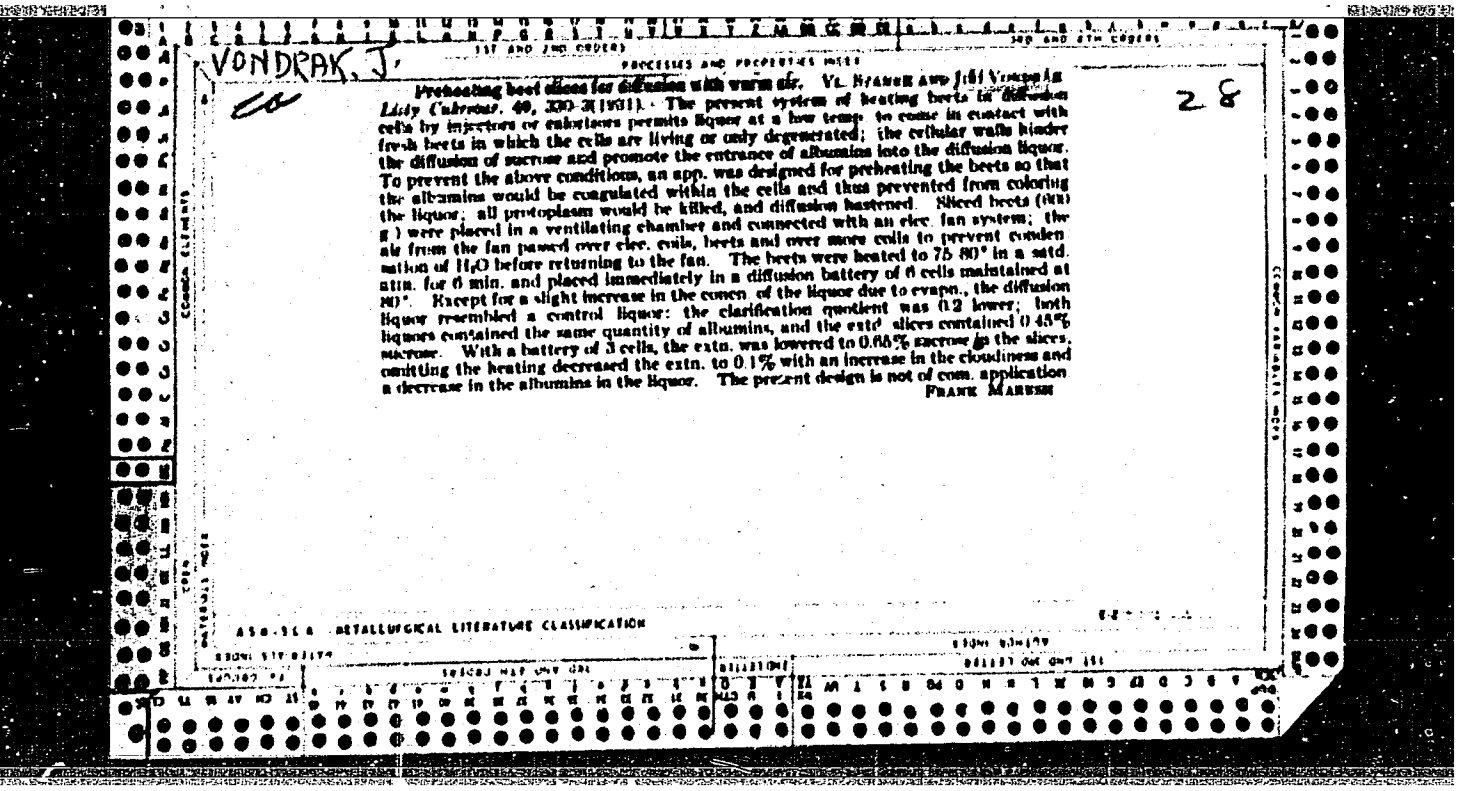
Loss of food value during storage of fresh beet slices in silos. J. Vondrák (Z. Zuckerind. Czechoslov., 1933, 58, 25—37).—The fresh slices at the end of 4½ months' storage had lost 57% of the ash-free dry substance. Only 10% of the original amount of sugars remained at the end of this time, so that this method of preserving a surplus of beets cannot be economically recommended. J. P. O.



BC

B-III-2

Inoculation of exhausted [sugar-beet] slices with "Laktacidin." J. Vondrák (Z. Zuckerind. Cechoslov., 1935, 59, 365—372).—In a sugar factory working with an excess of clean H_2O, slices which had been inoculated with "Laktacidin" had a smaller dry-substance loss than had uninoculated material. In a factory returning its waste waters, favourable results were obtained in the early part of the campaign, but the dry-substance loss became higher later as the campaign proceeded. J. P. O.

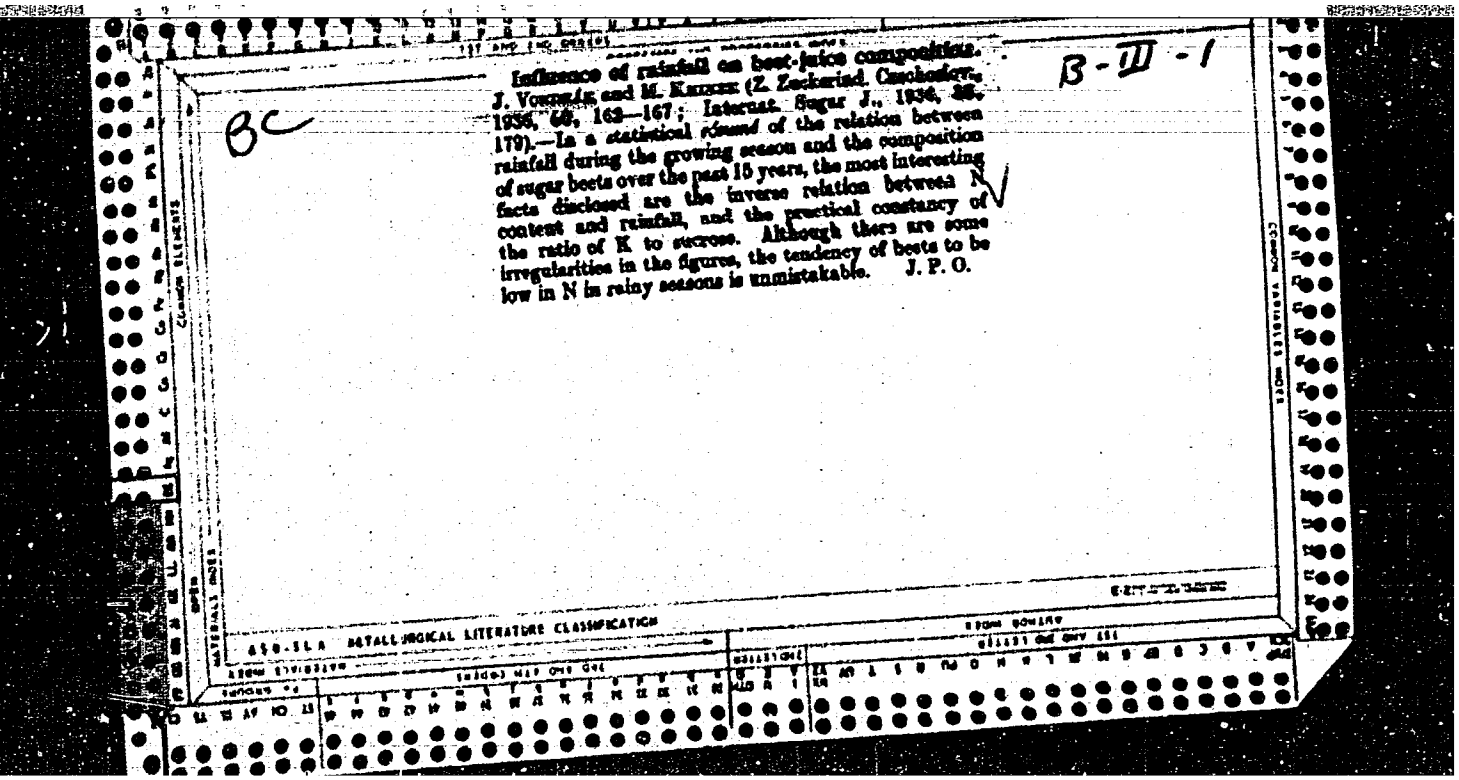


VONDRAK, J.

28

Preheating beet slices for diffusion with warm air. VL. HRADEK AND JIŘÍ VONDRÁK *Listy Cukrovar.* 49, 330-3(1931). The present system of heating beets in diffusion cells by injection of exhaust steam permits liquor at a low temp. to come in contact with fresh beets in which the cells are living or only degenerated; the cellular walls hinder the diffusion of sucrose and promote the entrance of albumins into the diffusion liquor. To prevent the above conditions, an app. was designed for preheating the beets so that the albumins would be coagulated within the cells and thus prevented from coloring the liquor; all protoplasm would be killed, and diffusion hastened. Sliced beets (800 g.) were placed in a ventilating chamber and connected with an elec. fan system; the air from the fan passed over elec. coils, beets and over more coils to prevent condensation of H_2O before returning to the fan. The beets were heated to 75-80° in a satd. atm. for 6 min. and placed immediately in a diffusion battery of 6 cells maintained at 80°. Except for a slight increase in the concn. of the liquor due to evapn., the diffusion liquor resembled a control liquor: the clarification quotient was 0.2 lower; both liquors contained the same quantity of albumins, and the extd. slices contained 0.45% sucrose. With a battery of 3 cells, the extn. was lowered to 0.66% sucrose in the slices, omitting the heating decreased the extn. to 0.1% with an increase in the cloudiness and a decrease in the albumins in the liquor. The present design is not of com. application.

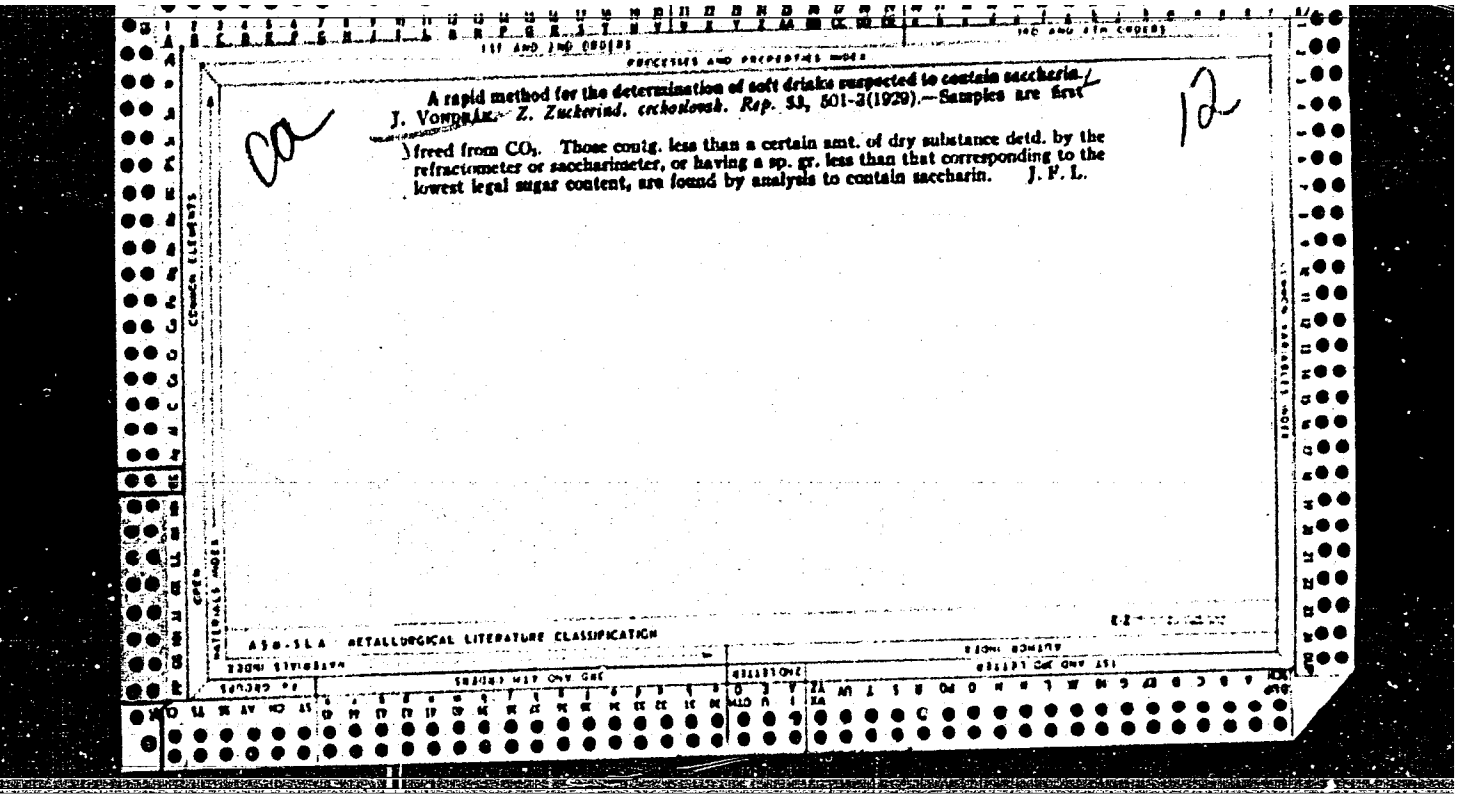
FRANK MARESH



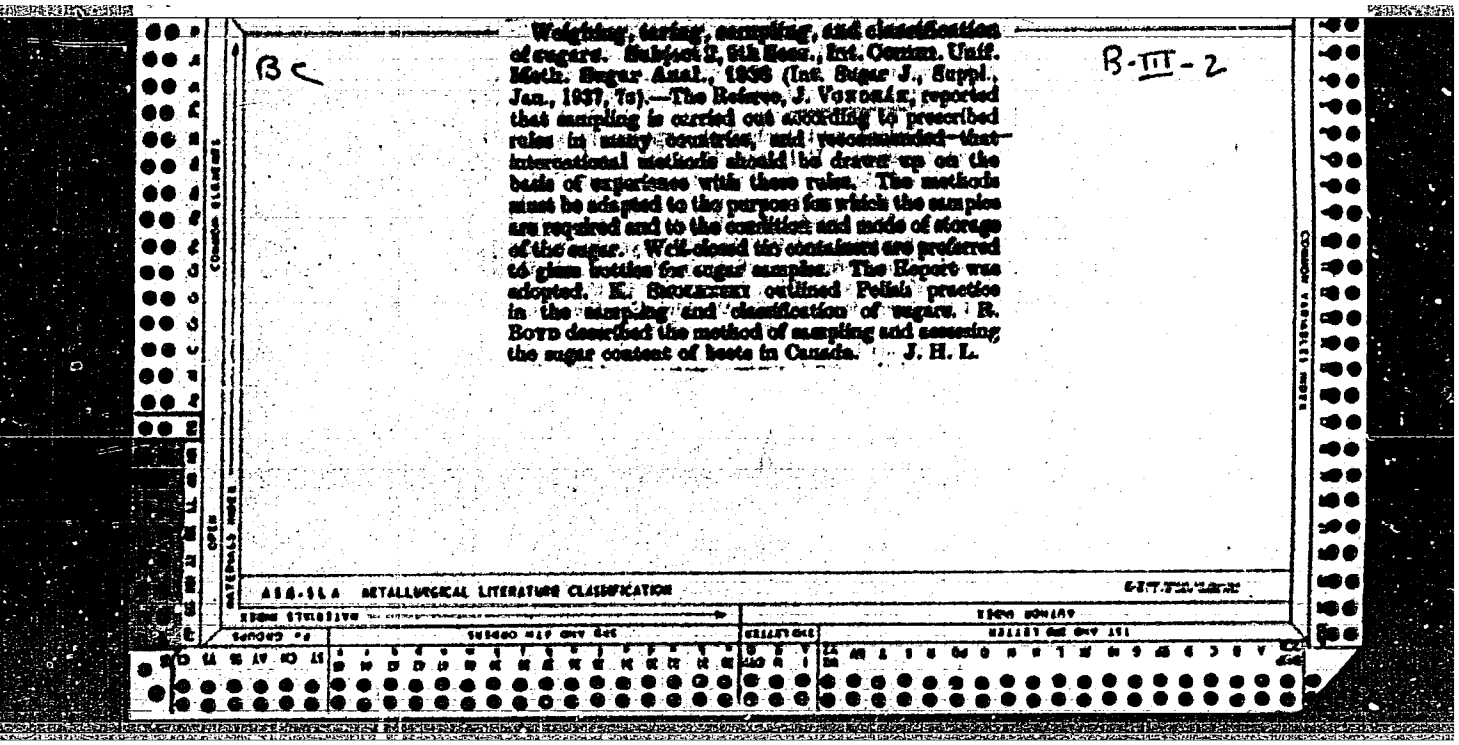
BC

B-III-1

Influence of rainfall on beet-juice compositions. J. Vosmik and M. Kaucky (Z. Zuckerind. Cechoslov., 1936, 60, 163—167; Internat. Sugar J., 1936, 38, 179).—In a *statistical résumé* of the relation between rainfall during the growing season and the composition of sugar beets over the past 15 years, the most interesting facts disclosed are the inverse relation between N content and rainfall, and the practical constancy of the ratio of K to sucrose. Although there are some irregularities in the figures, the tendency of beets to be low in N in rainy seasons is unmistakable. J. P. O.

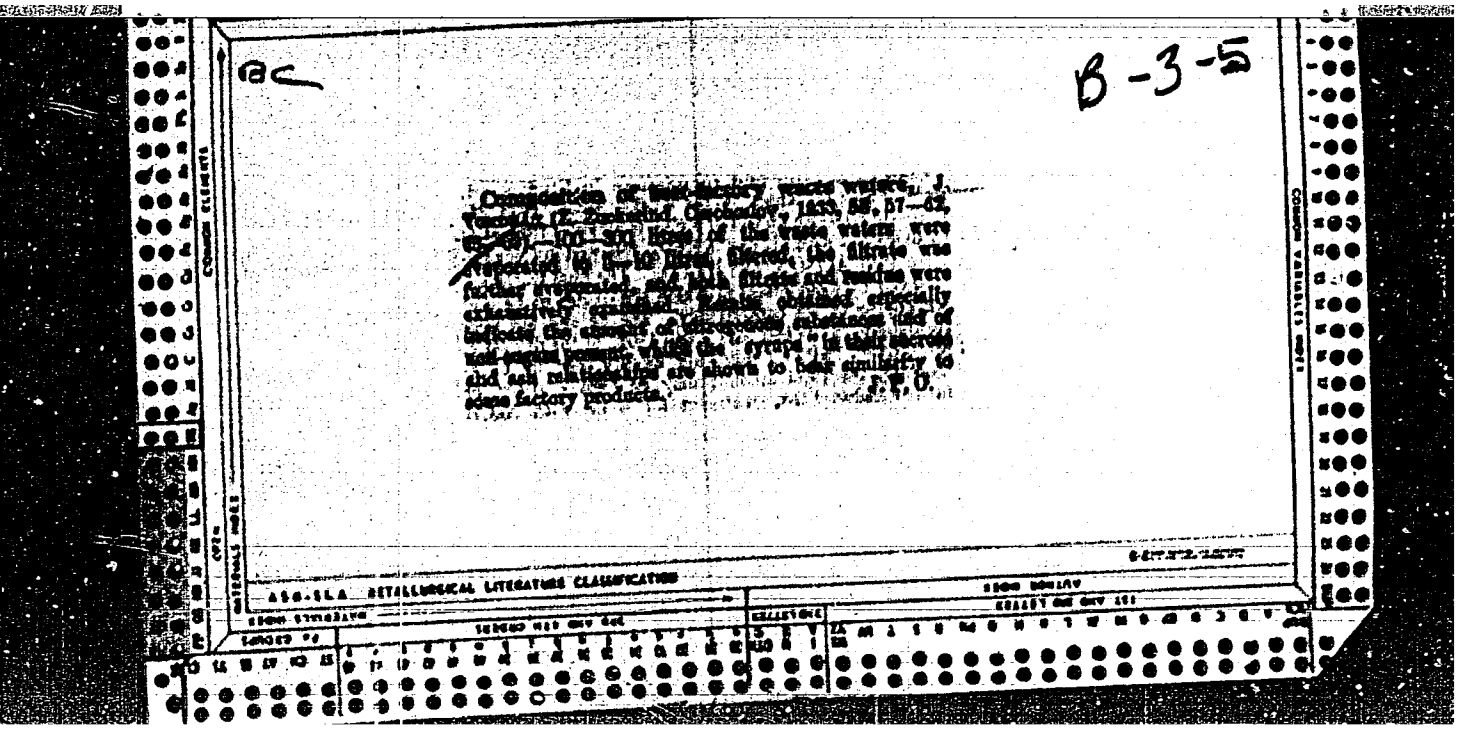


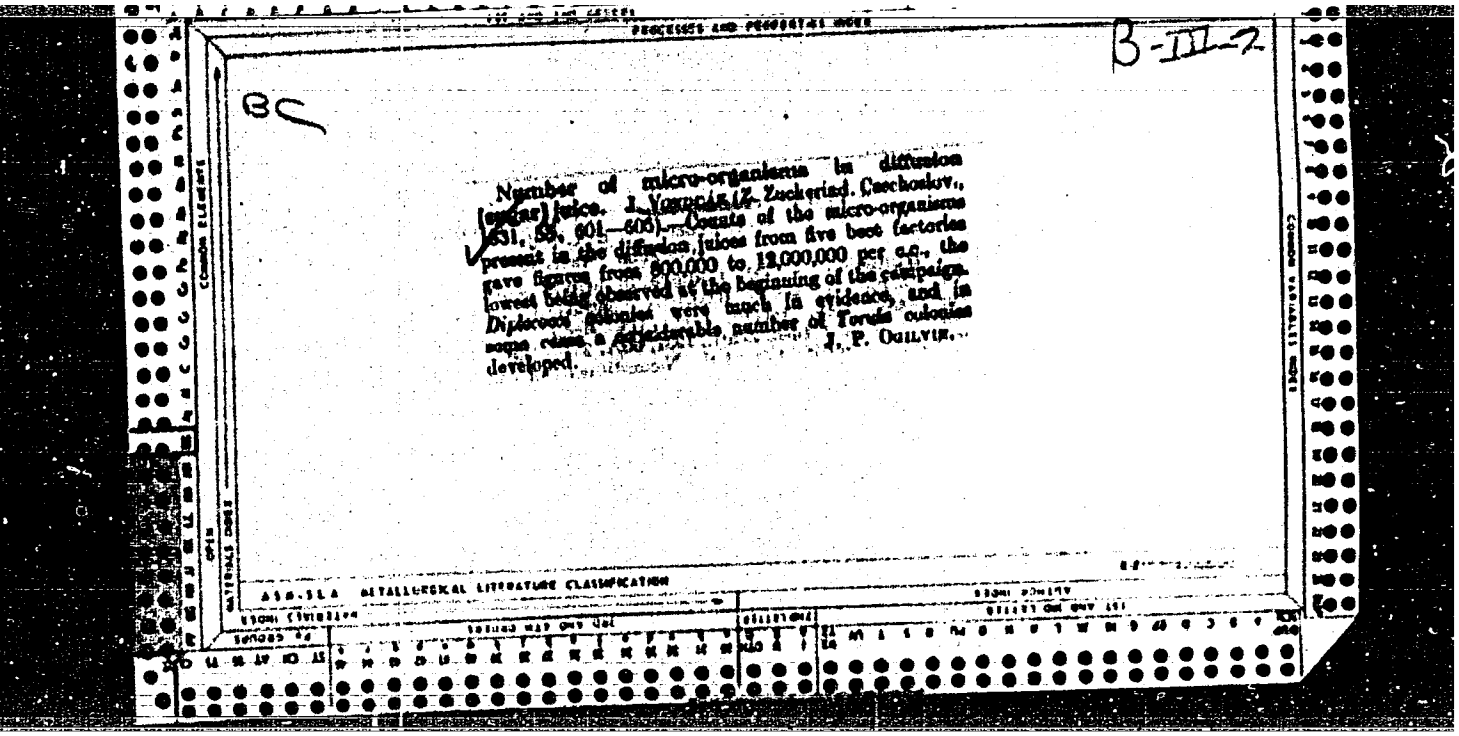
A rapid method for the determination of soft drinks suspected to contain saccharin. J. Vondrák. *Z. Zuckerind. cechoslovak. Rep.* 53, 501-3(1929).—Samples are first freed from CO_2. Those contg. less than a certain amt. of dry substance detd. by the refractometer or saccharimeter, or having a sp. gr. less than that corresponding to the lowest legal sugar content, are found by analysis to contain saccharin. J. F. L.



Weighing, tarring, sampling, and classification of sugars. Subject 2, 5th Rep., Int. Comm. Unif. Meth. Sugar Anal., 1936 (Int. Sugar J., Suppl., Jan., 1937, 7s).—The Referee, J. Vavrouš, reported that sampling is carried out according to prescribed rules in many countries, and recommended that international methods should be drawn up on the basis of experience with these rules. The methods must be adapted to the purpose for which the samples are required and to the condition and mode of storage of the sugar. Well-closed tin containers are preferred to glass bottles for sugar samples. The Report was adopted. E. Saillard outlined Polish practice in the sampling and classification of sugars. R. Boyd described the method of sampling and assessing the sugar content of beets in Canada. J. H. L.

B-III-2

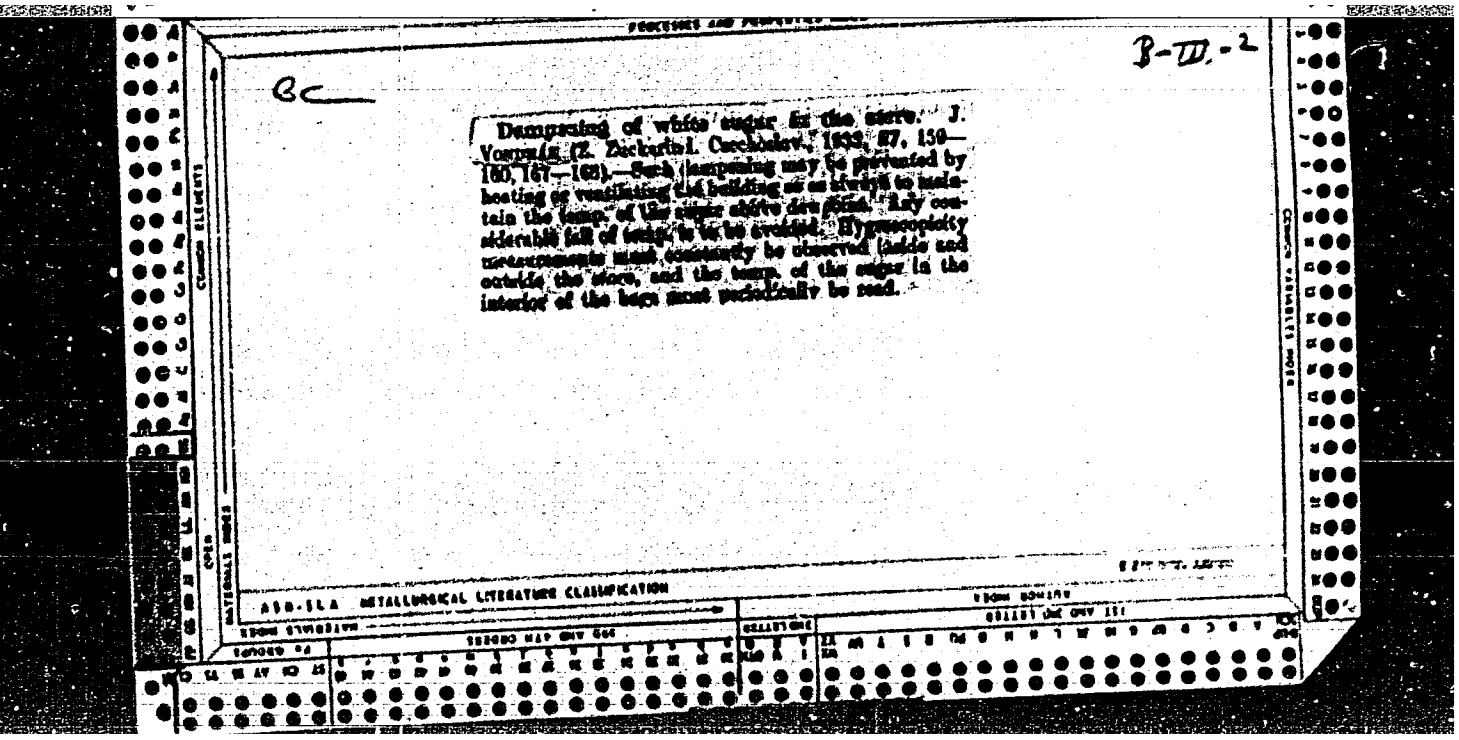




B-III-2

BC

Number of micro-organisms in diffusion [sugar] juice. J. Vaněček. Zuckerind. Czechoslov., 1931, 56, 601—606).—Counts of the micro-organisms present in the diffusion juices from five beet factories gave figures from 900,000 to 12,000,000 per c.c., the lowest being observed at the beginning of the campaign. *Diplococci* principles were much in evidence, and in some cases a considerable number of Torula colonies developed. J. P. Ouilvie.

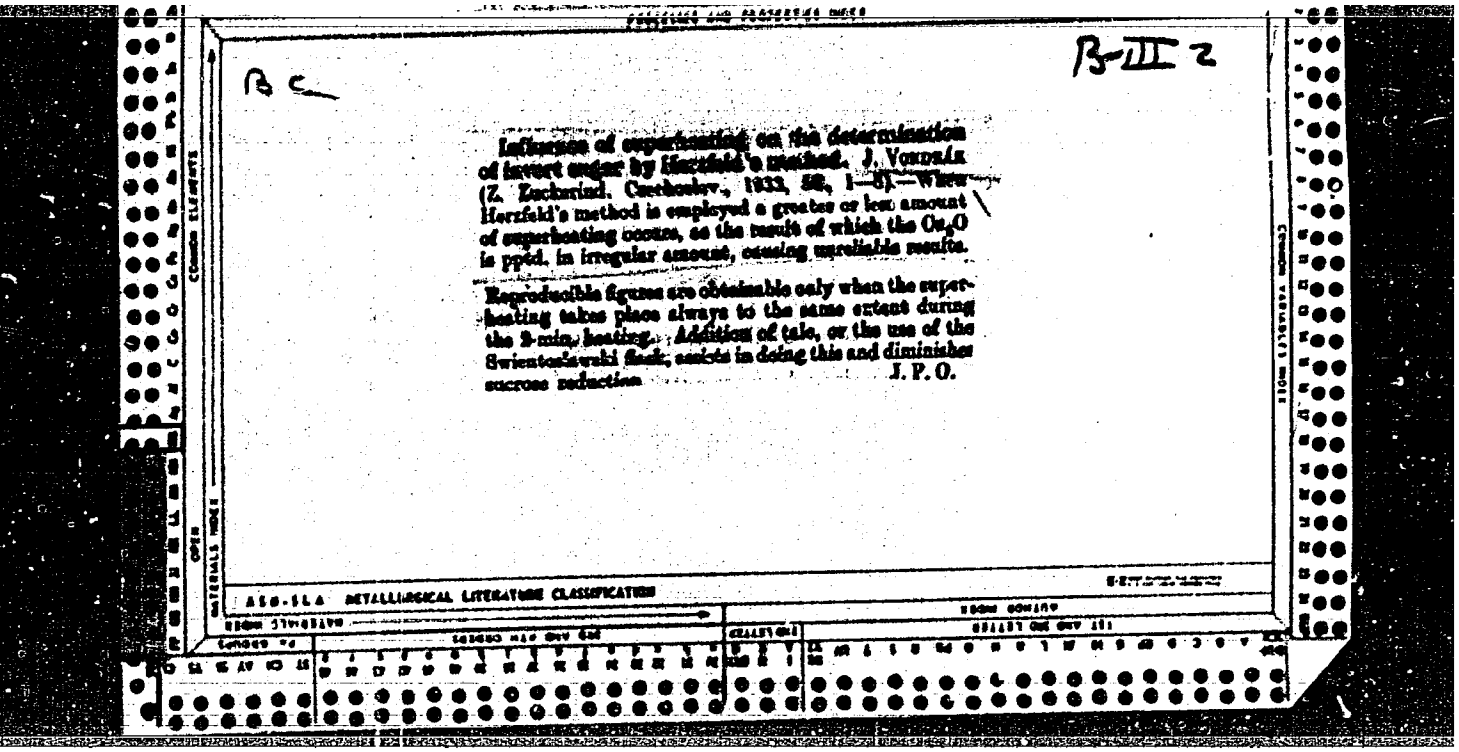


B-III.-2

Bc

Dampening of white sugar in the store. J. Vorpahl. (Z. Zuckerind. Cechoslov., 1959, 87, 159—160, 161—162).—Such dampening may be prevented by heating or ventilating the building as an attempt to maintain the temp. of the sugar above dew point. Any considerable fall of temp. is to be avoided. Hygroscopicity measurements must constantly be observed inside and outside the store, and the temp. of the sugar in the interior of the bags must periodically be read.

ASB-ILA METALLURGICAL LITERATURE CLASSIFICATION



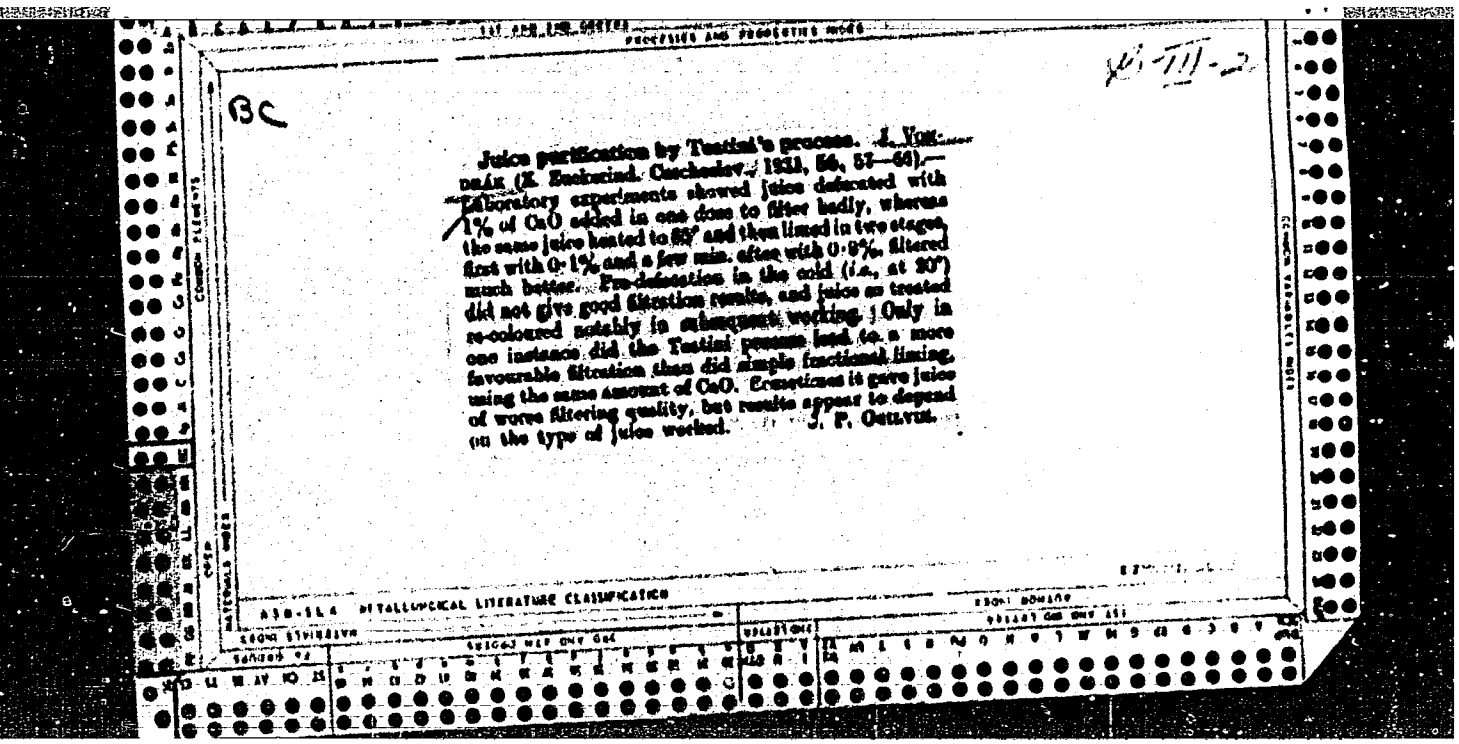
B-III 2

B C

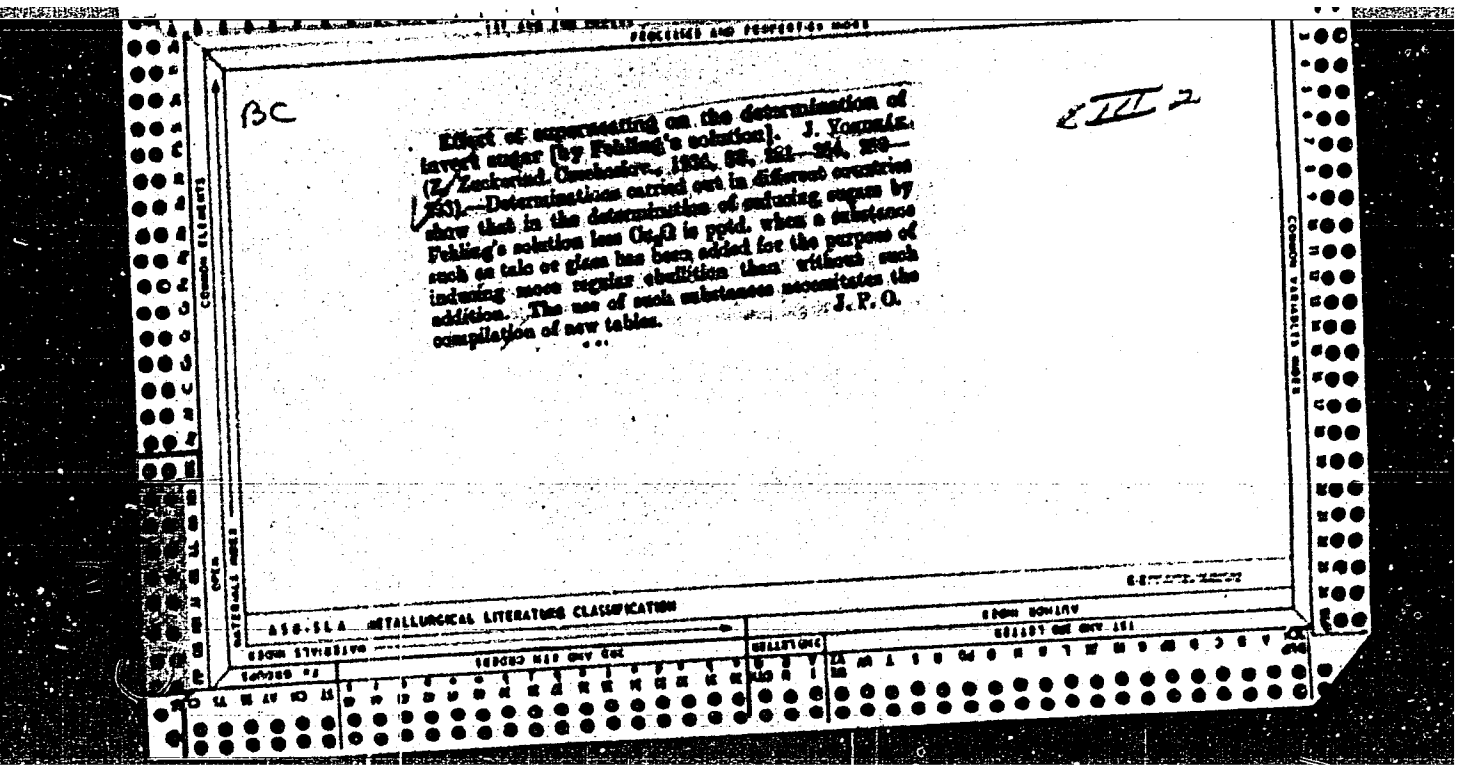
Influence of superheating on the determination of invert sugar by Herzfeld's method. J. Vondrák (Z. Zuckerind. Cechoslov., 1933, 58, 1—6).—When Herzfeld's method is employed a greater or less amount of superheating occurs, as the result of which the Cu_2O is ppd. in irregular amount, causing unreliable results.

Reproducible figures are obtainable only when the superheating takes place always to the same extent during the 3-min. heating. Addition of talc, or the use of the Swientoslawski flask, assists in doing this and diminishes sucrose reduction. J. P. O.

A50-51A METALLURGICAL LITERATURE CLASSIFICATION



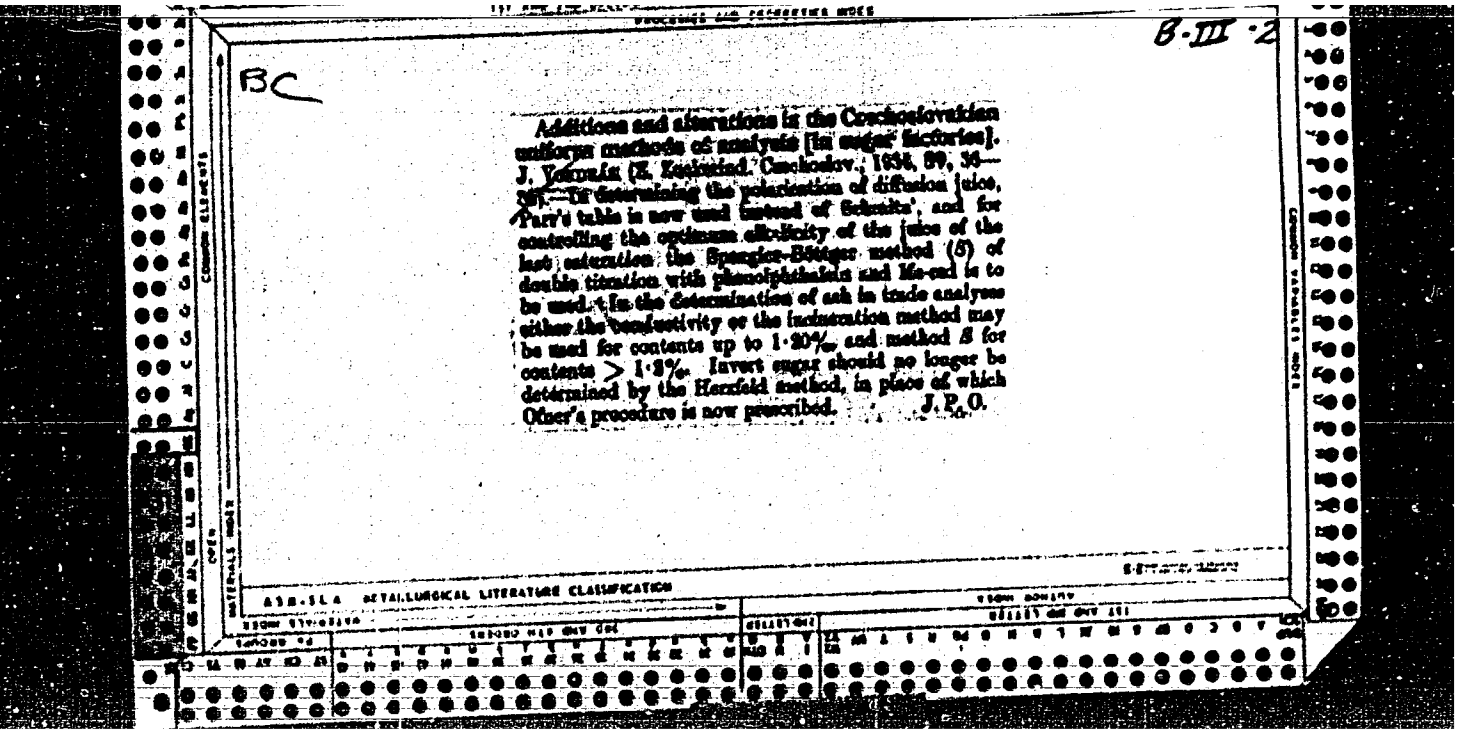
Juice purification by Tastini's process. J. Von.... Denix (Z. Zuckerind. Czechoslov., 1911, 56, 57—64).— Laboratory experiments showed juice defecated with 1% of CaO added in one dose to filter badly, whereas the same juice heated to 85° and then limed in two stages, first with 0·1% and a few min. after with 0·9%, filtered much better. Pre-defecation in the cold (*i.e.*, at 20°) did not give good filtration results, and juice so treated re-coloured notably in subsequent working. Only in one instance did the Tastini process lead to a more favourable filtration than did simple fractional liming, using the same amount of CaO. Occasionally it gave juice of worse filtering quality, but results appear to depend on the type of juice worked. J. F. Guthrie.



BC

Effect of superroasting on the determination of invert sugar [by Fehling's solution]. J. Voorman. (Z. Zuckerind. Cechoslov., 1934, 58, 521–524, 529–533).—Determinations carried out in different countries show that in the determination of reducing sugars by Fehling's solution less Cu_2O is pptd. when a substance such as talc or glass has been added for the purpose of inducing more regular ebullition than without such addition. The use of such substances necessitates the compilation of new tables. J. P. O.

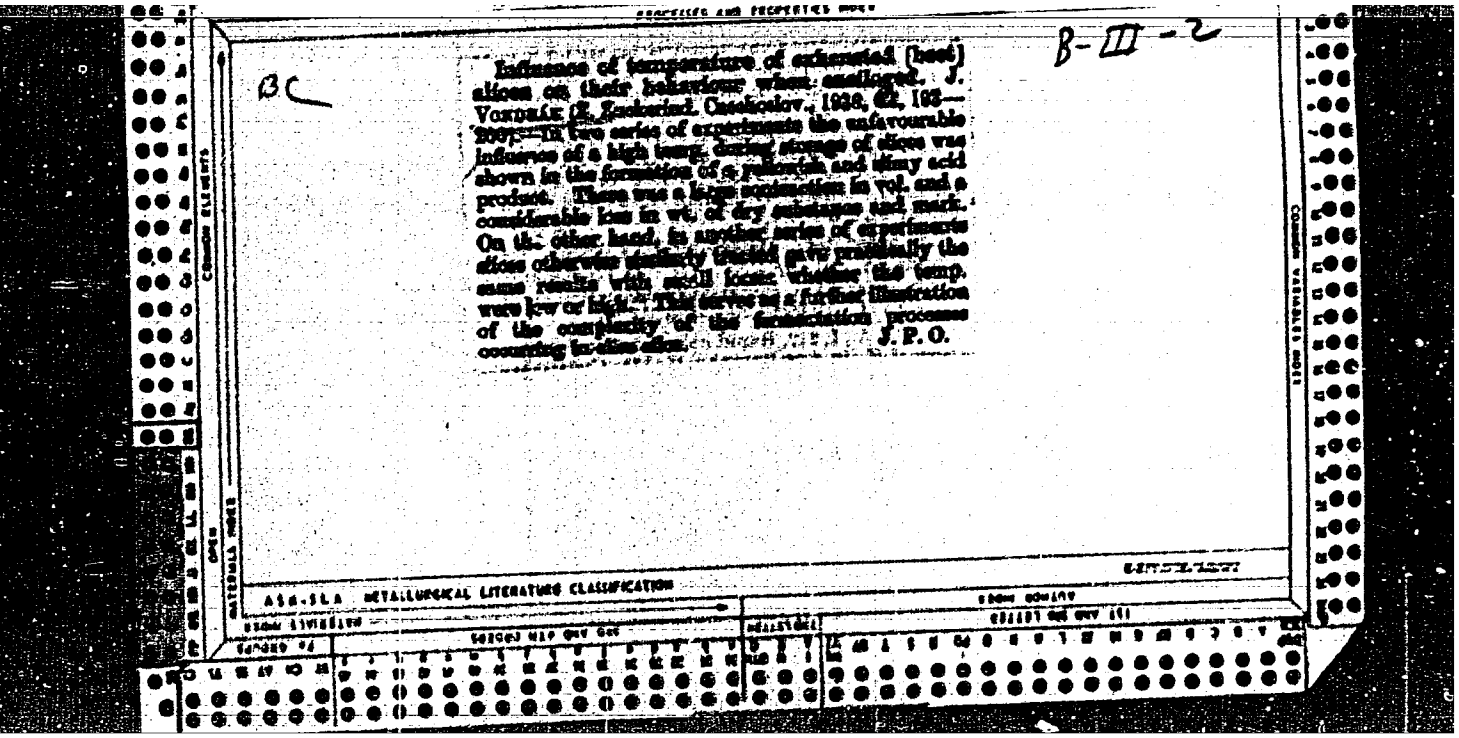
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



B-III-2

BC

Additions and alterations in the Czechoslovakian uniform methods of analysis [in sugar factories]. J. Vavrinín [K. Zaviněná]. Cukrovar., 1938, 89, 36—39.—In determining the polarisation of diffusion juice, Part's table is now used instead of Schmitz', and for controlling the optimum alkalicity of the juice of the last saturation the Spengler-Böttger method (5) of double titration with phenolphthalein and Me-ora is to be used. In the determination of ash in trade analyses either the conductivity or the incineration method may be used for contents up to 1·20%, and method 5 for contents > 1·2%. Invert sugar should no longer be determined by the Herzfeld method, in place of which Ofner's procedure is now prescribed. J. P. O.



B-III-2

BC

Influence of temperature of estimated (heat) alices on their behaviour when anaërobiol. J. Vorobjak (Z. Zoobakter. Ontobiolov., 1938, 32, 102—109).—In two series of experiments the unfavourable influence of a high temp. during storage of slices was shown in the formation of a polymide and slimy acid product. There was a large contraction in vol. and a considerable loss in wt. of dry substance and nitr. On the other hand, in another series of experiments slices otherwise similarly treated gave practically the same results with small losses whether the temp. were low or high. This serves as a further illustration of the complexity of the fermentation processes occurring in slices also. J. P. O.

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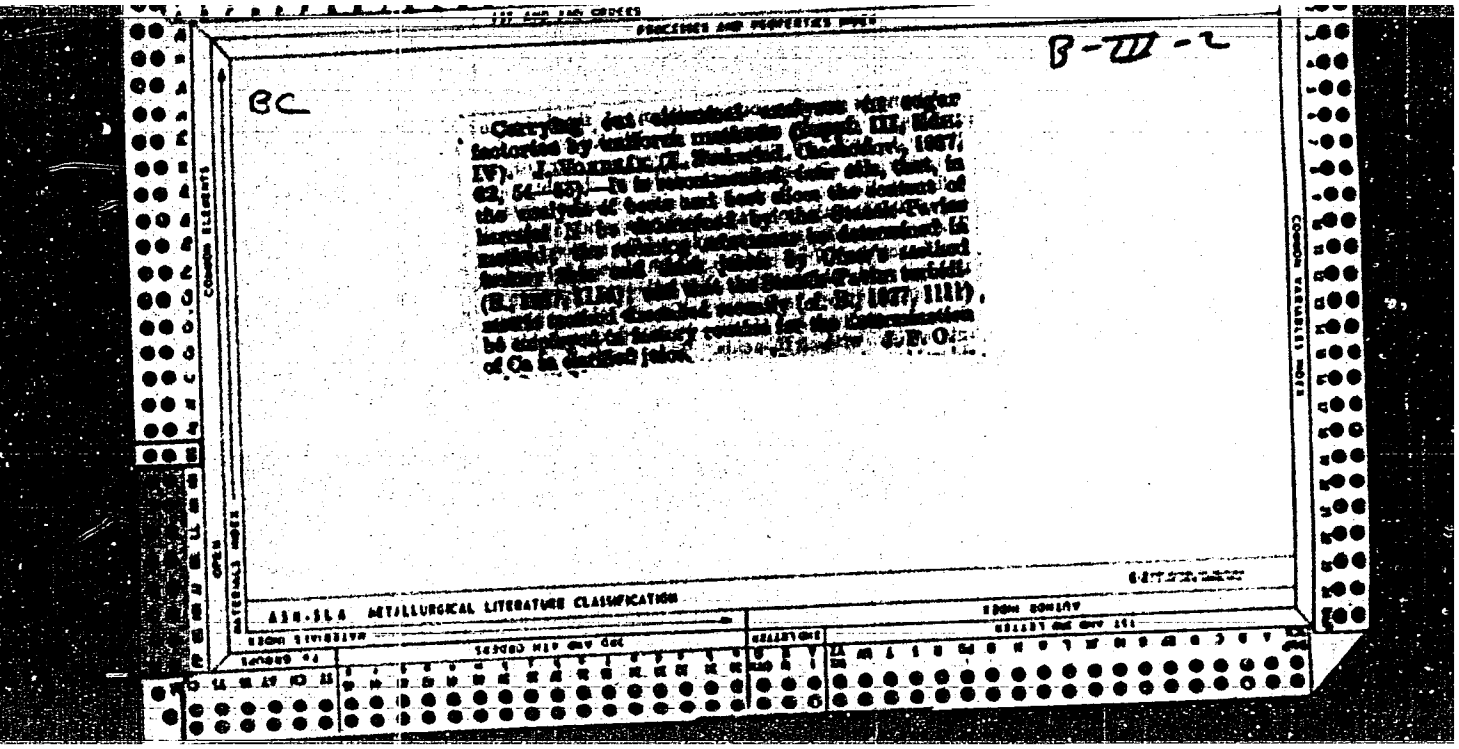
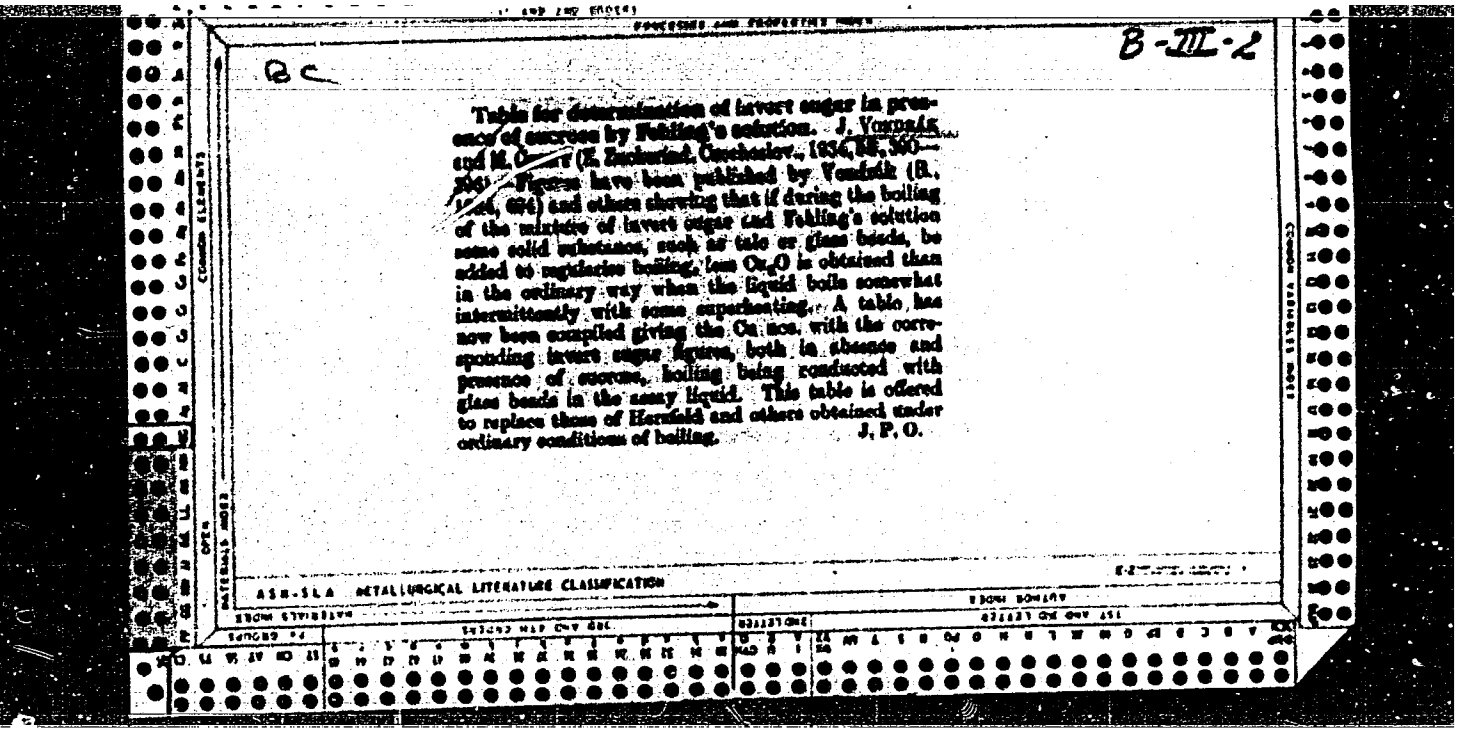


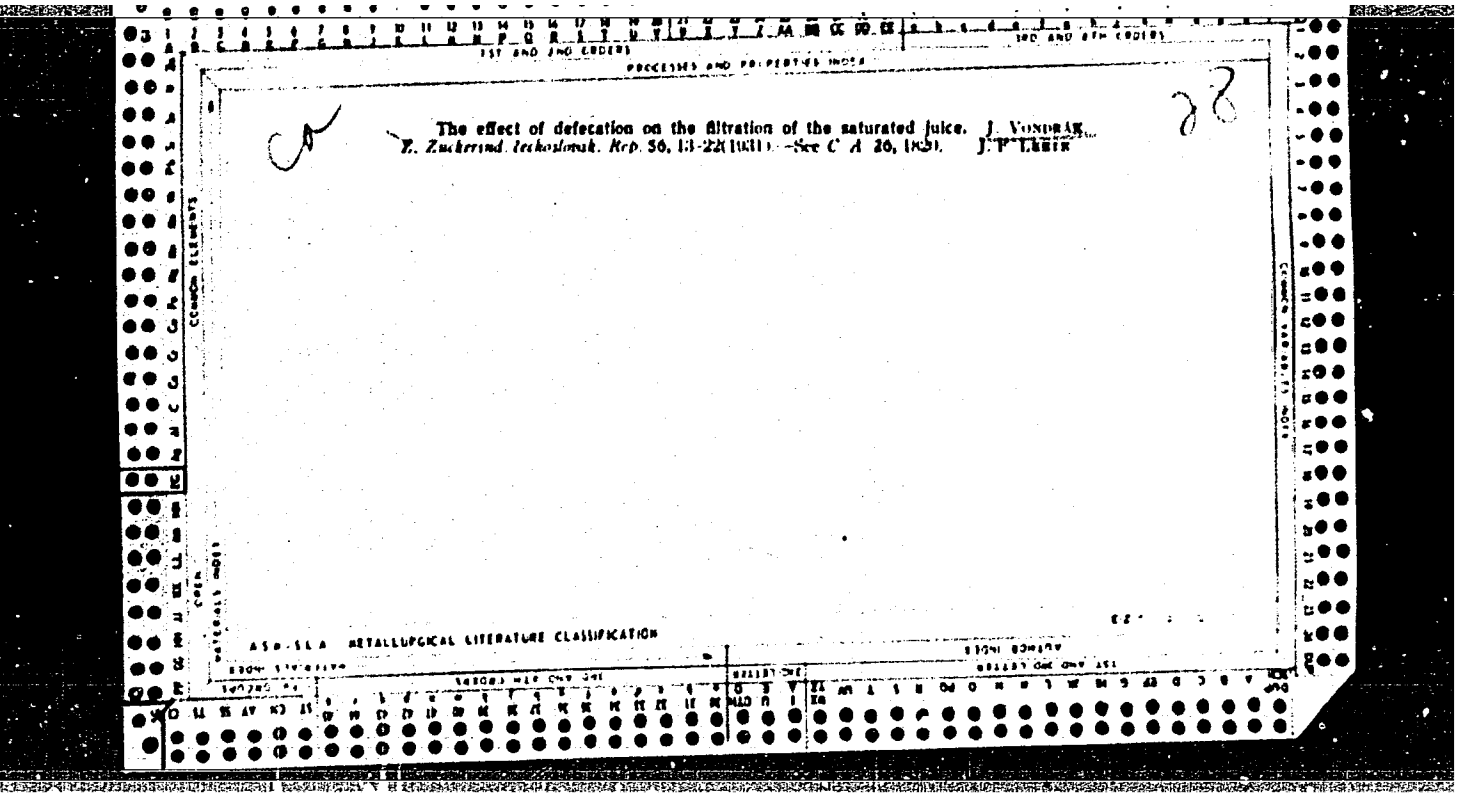


B-III-2

Bc

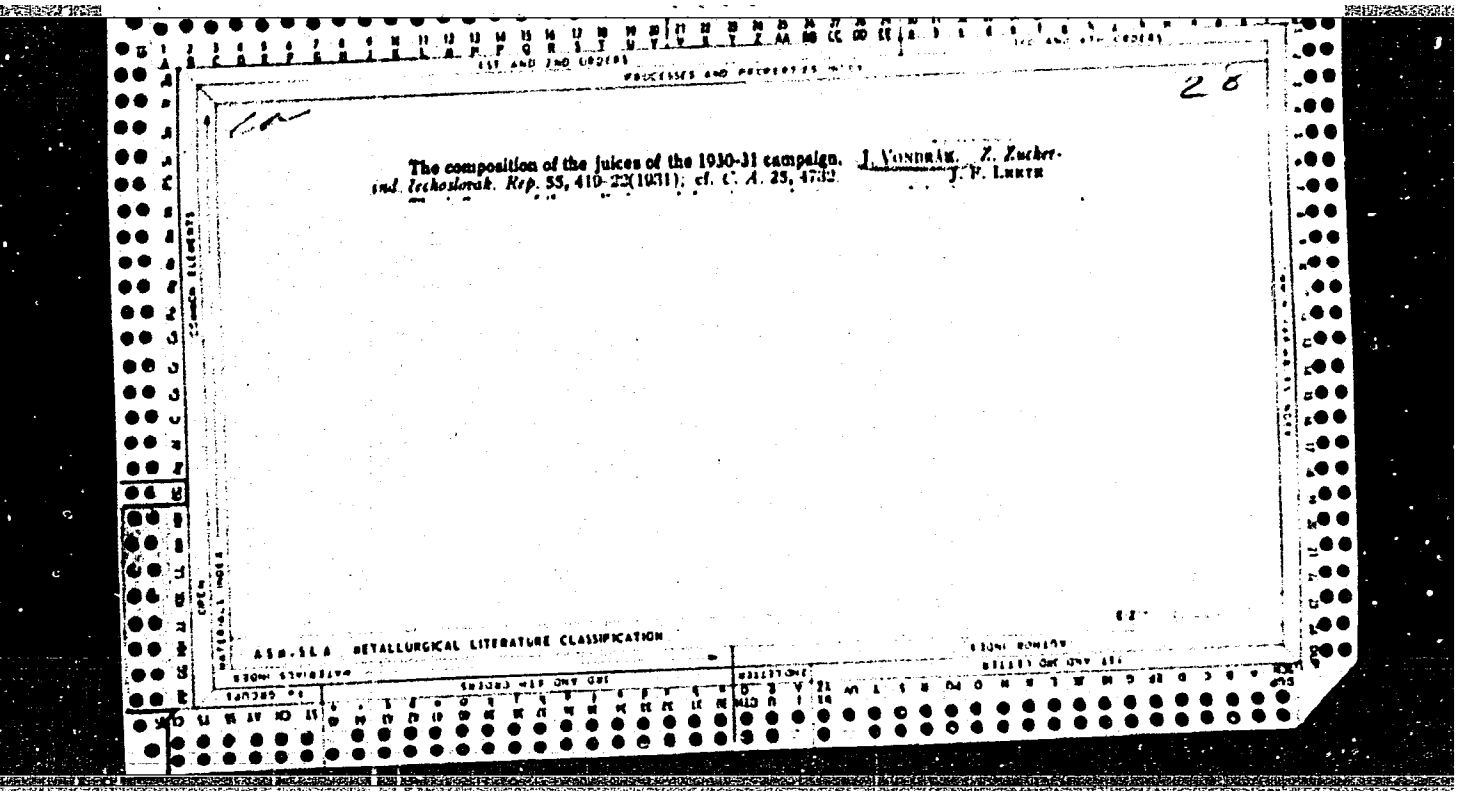
Table for determination of invert sugar in presence of sucrose by Fehling's solution. J. Vonnák and M. O[illegible] (Z. Zuckerind. Czechoslov., 1934, 58, 360—366). Figures have been published by Vondrák (B., [illegible], 634) and others showing that if during the boiling of the mixture of invert sugar and Fehling's solution some solid substance, such as talc or glass beads, be added to regularize boiling, less Cu_2O is obtained than in the ordinary way when the liquid boils somewhat intermittently with some superheating. A table has now been compiled giving the Cu nos. with the corresponding invert sugar figures, both in absence and presence of sucrose, boiling being conducted with glass beads in the assay liquid. This table is offered to replace those of Hernfeld and others obtained under ordinary conditions of boiling. J. P. O.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



The effect of defecation on the filtration of the saturated juice. J. Vondrák. *Z. Zuckerind. Tschechoslovak. Rep.* 56, 13-22(1931). -See *C. A.* 26, 1859. J. F. Lehrle

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



The composition of the juices of the 1930-31 campaign. J. Vondrák, Z. Zucker. *Ind. Technologist. Rep.* 55, 410-22(1931); cf. C. A. 25, 4732.

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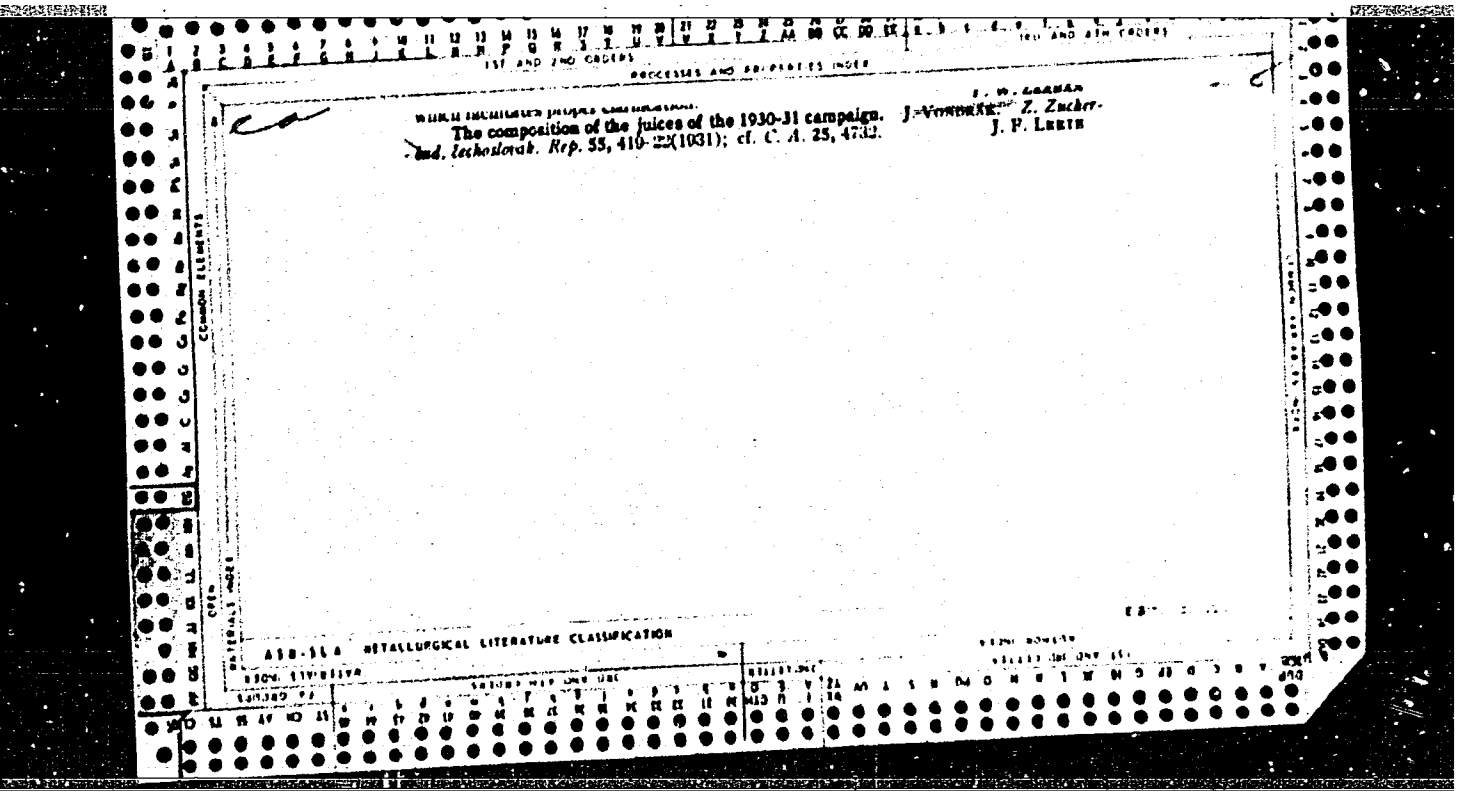
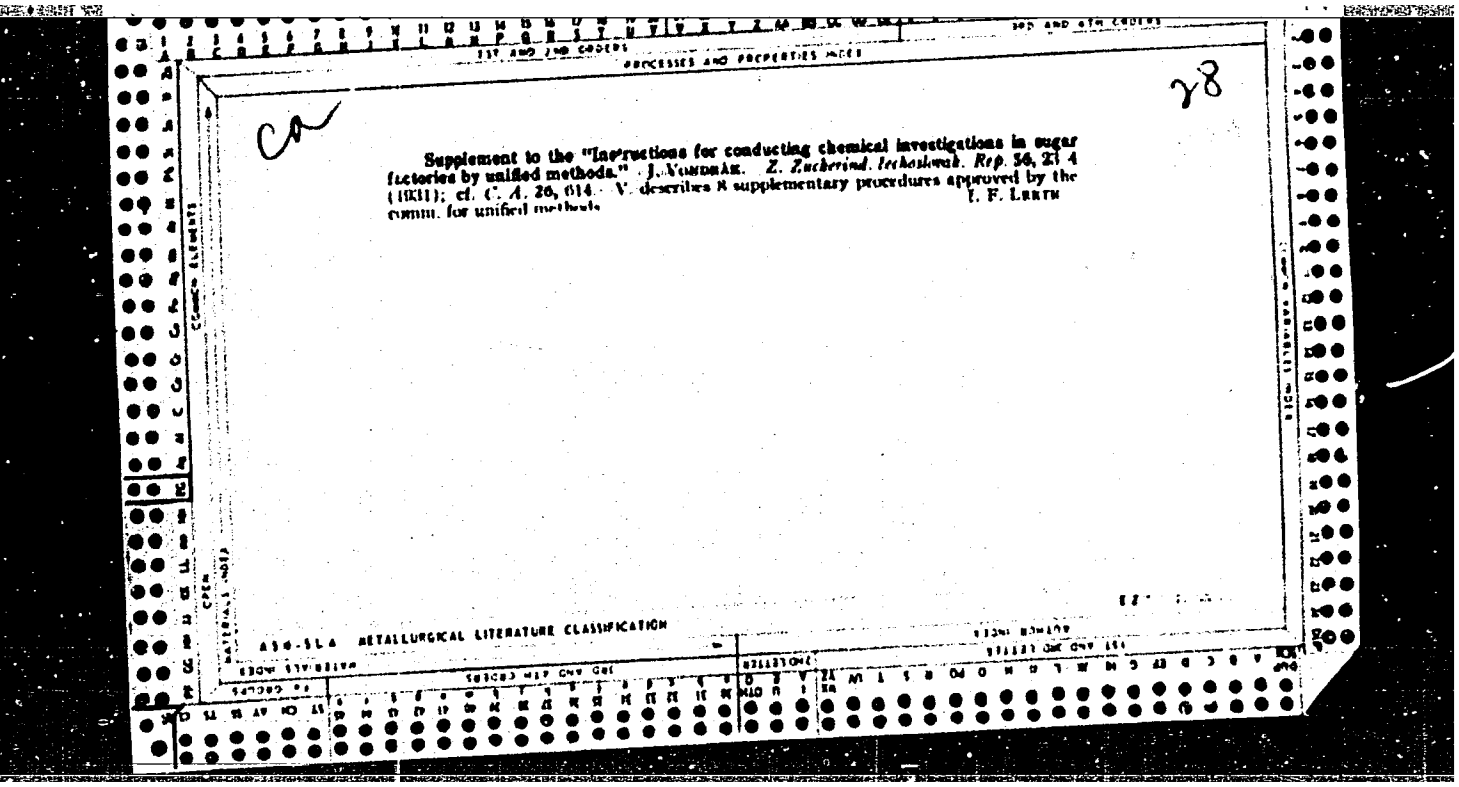
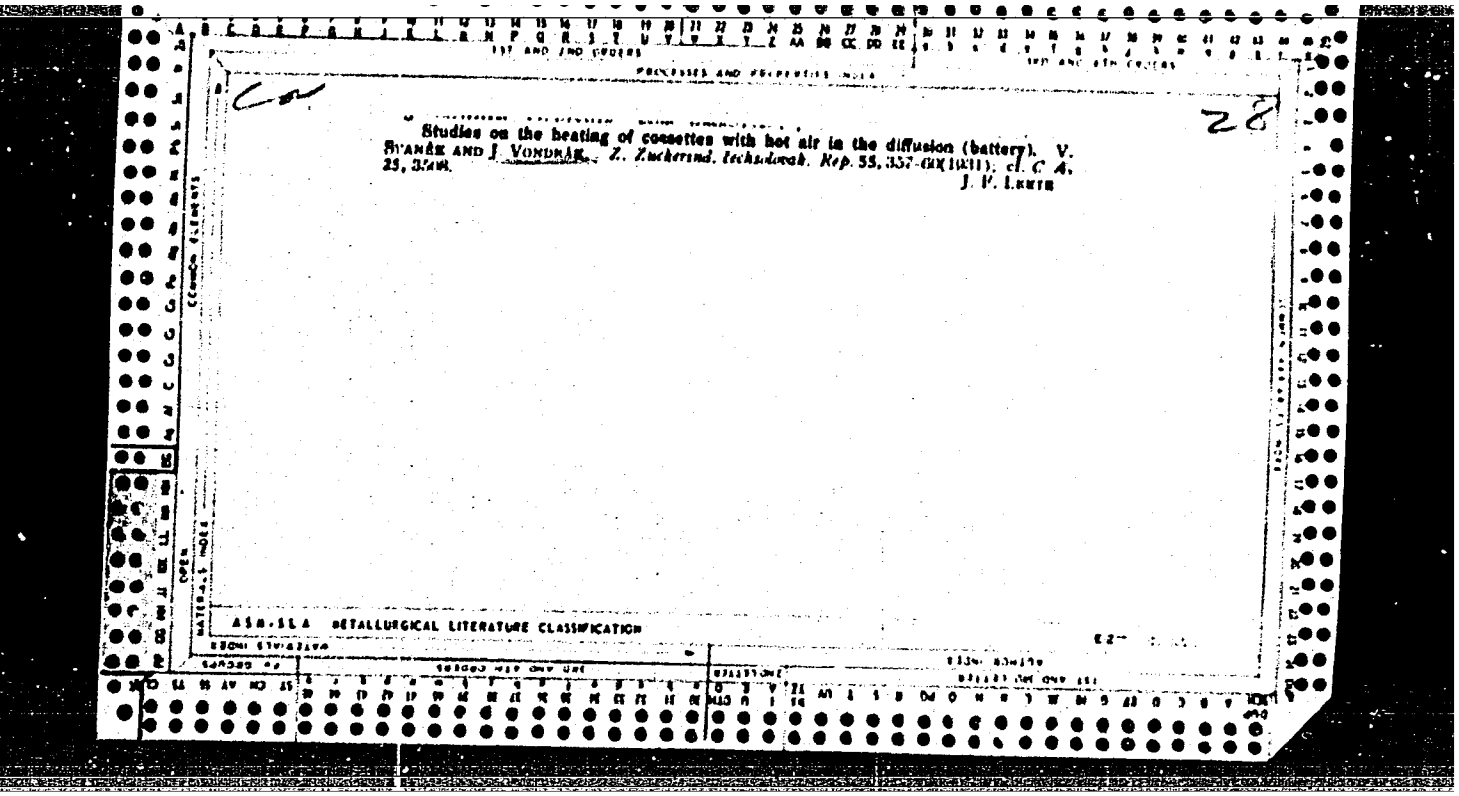


The composition of the juices of the 1930-31 campaign. J. Vondrák, Z. Zacher-
Ind. Techoslovak. Rep. 55, 410-22(1931); cf. C. A. 25, 4732. J. F. Leeth



Supplement to the "Instructions for conducting chemical investigations in sugar factories by unified methods." J. Vuorinen. *Z. Zuckerind. Tschechoslowak. Rep.* 56, 214 (1931); cf. *C. A.* 26, 614. V. describes 8 supplementary procedures approved by the comm. for unified methods.
I. F. Lurie



Studies on the heating of cassettes with hot air in the diffusion (battery). V.
Svanek and J. Vondrak. *Z. Zuckerind. tschechoslovak. Rep.* 55, 357-60(1931); *cf. C. A.* 25, 3544.
J. F. Lewis

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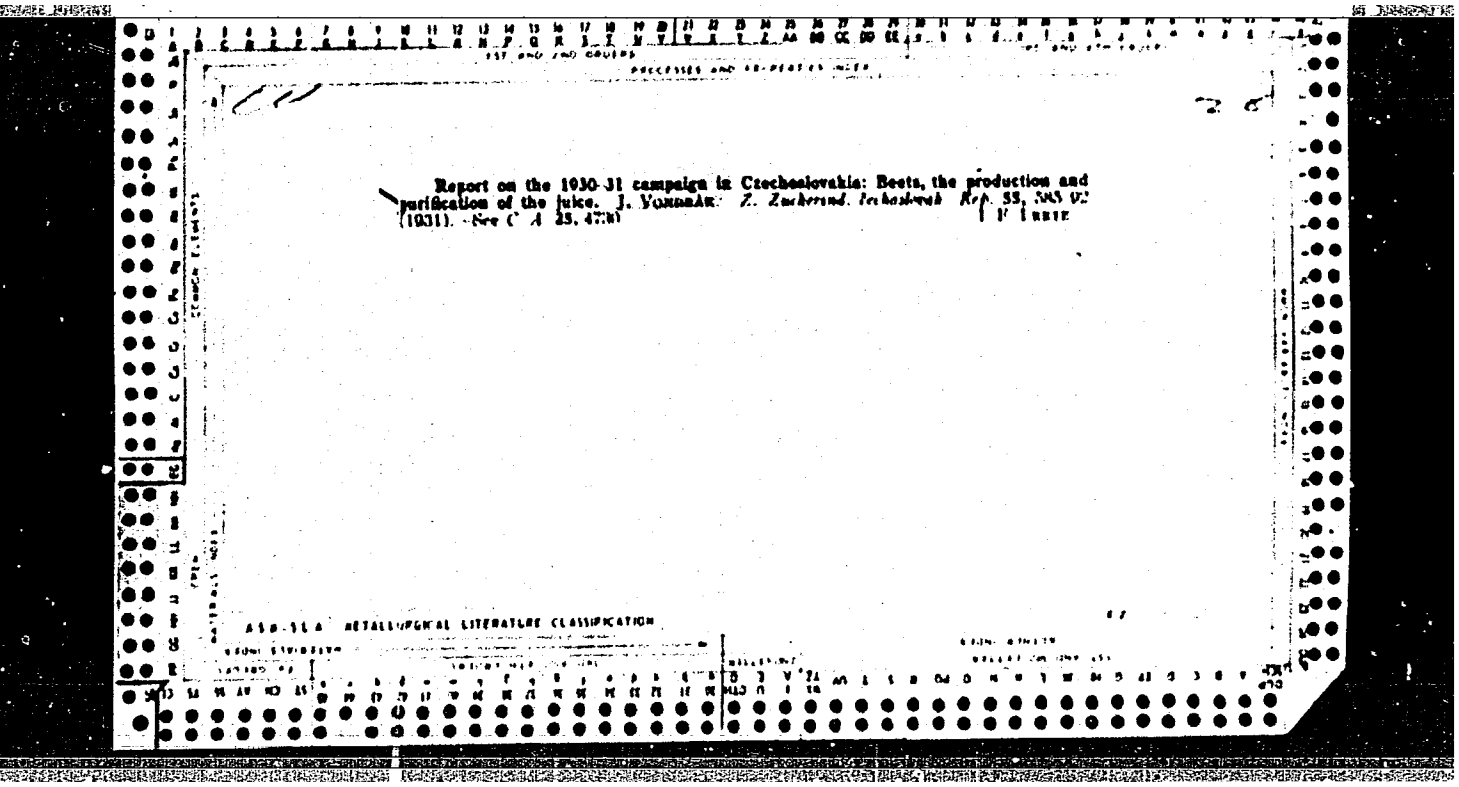
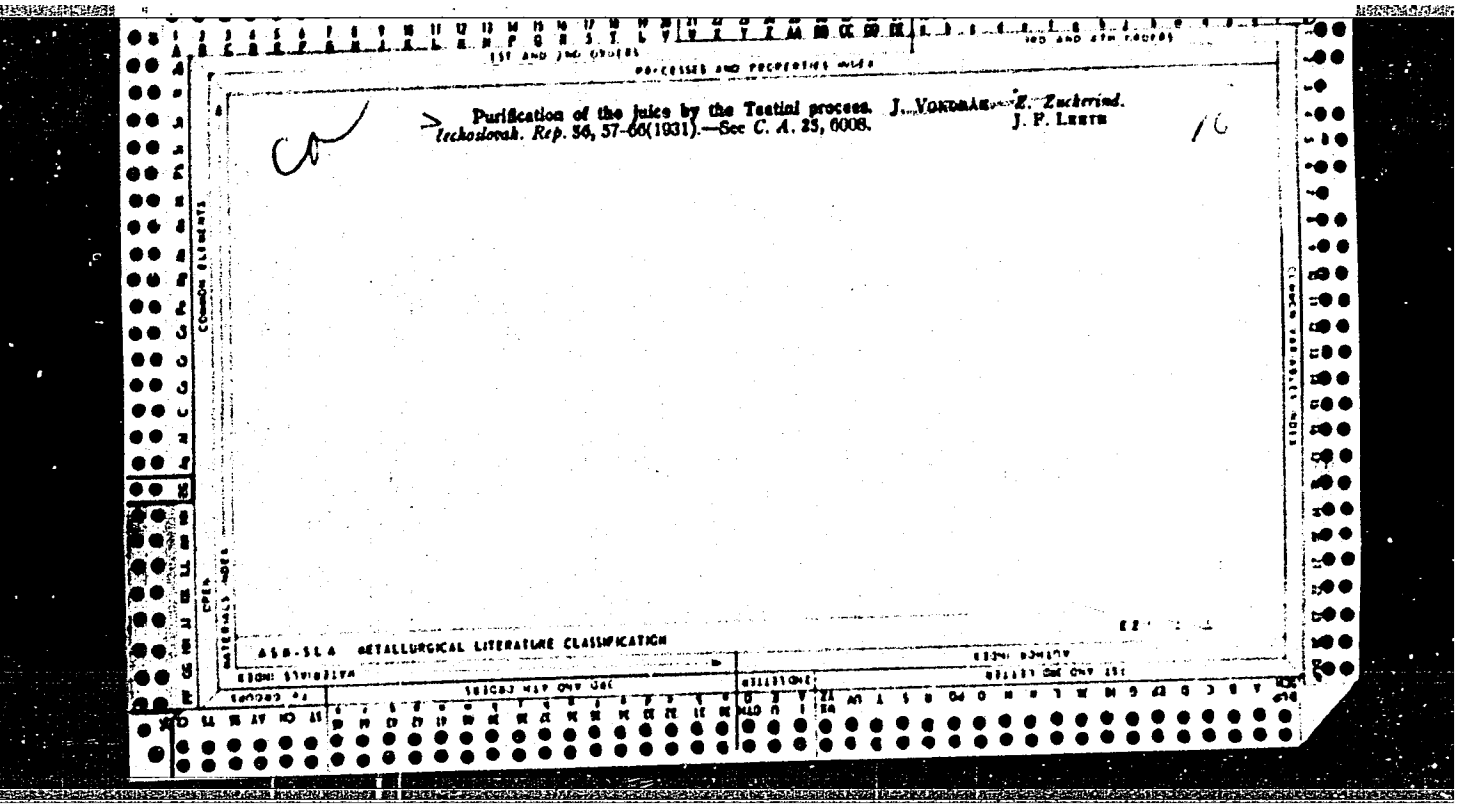
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Report on the 1930-31 campaign in Czechoslovakia: Beets, the production and purification of the juice. J. Vonnák. *Z. Zuckerind. Tschechoslowak. Rep.* 55, 585 (1931). See *C. A.* 25, 4736.



Purification of the juice by the Testini process. J. Vondrák and E. Zuckerind. *Techoslovak. Rep.* 56, 57-66(1931).—See *C. A.* 25, 6008. J. P. Lerth

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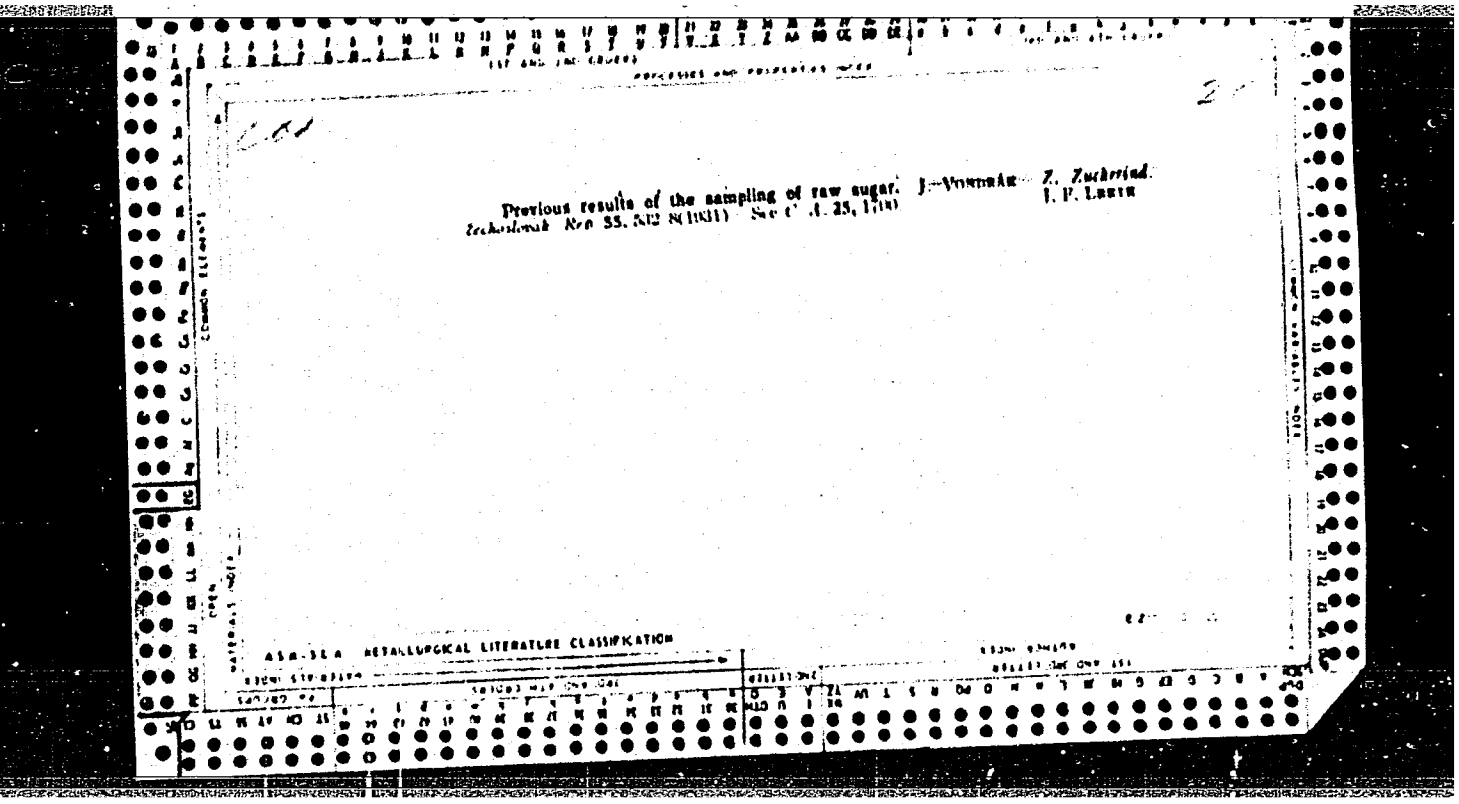
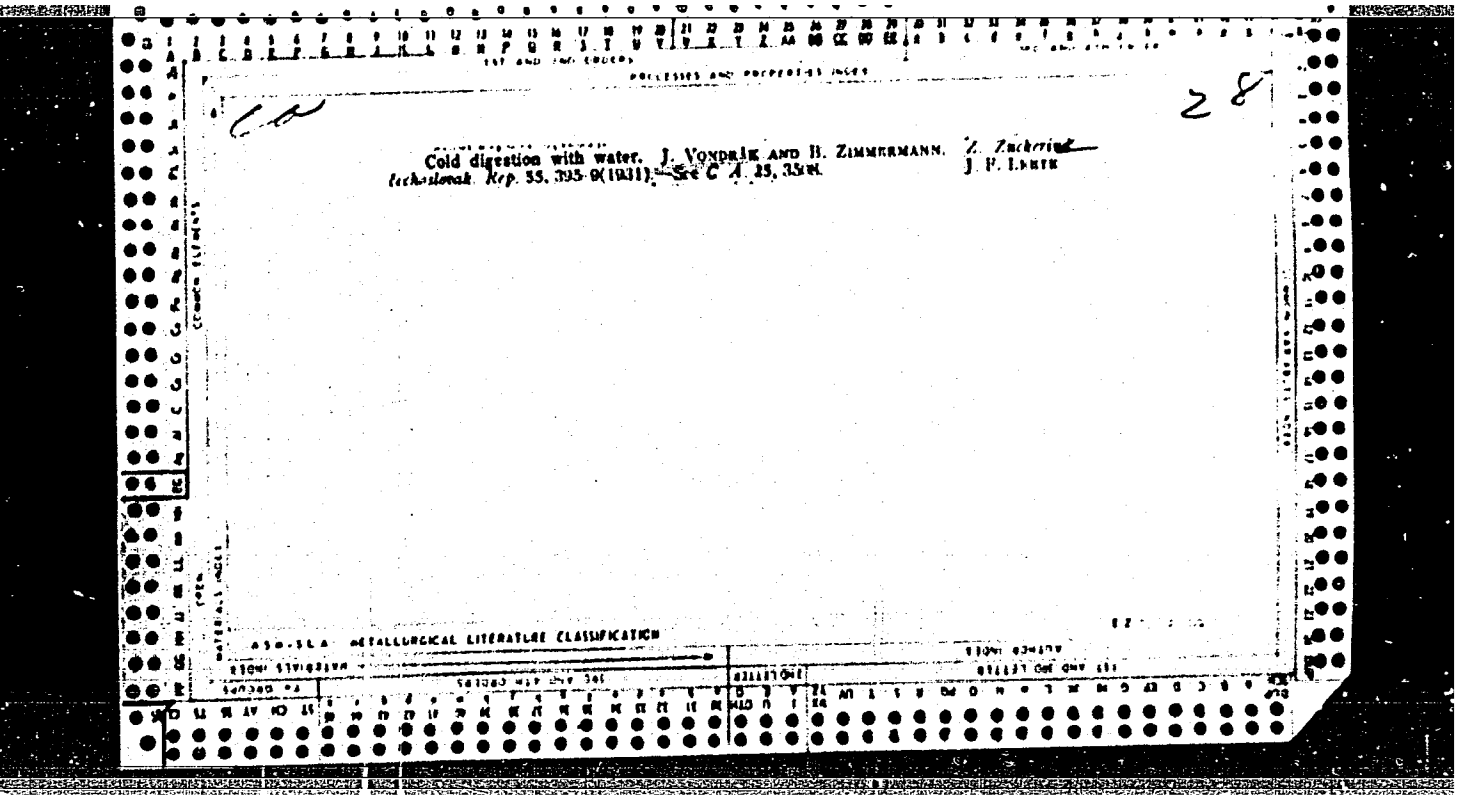
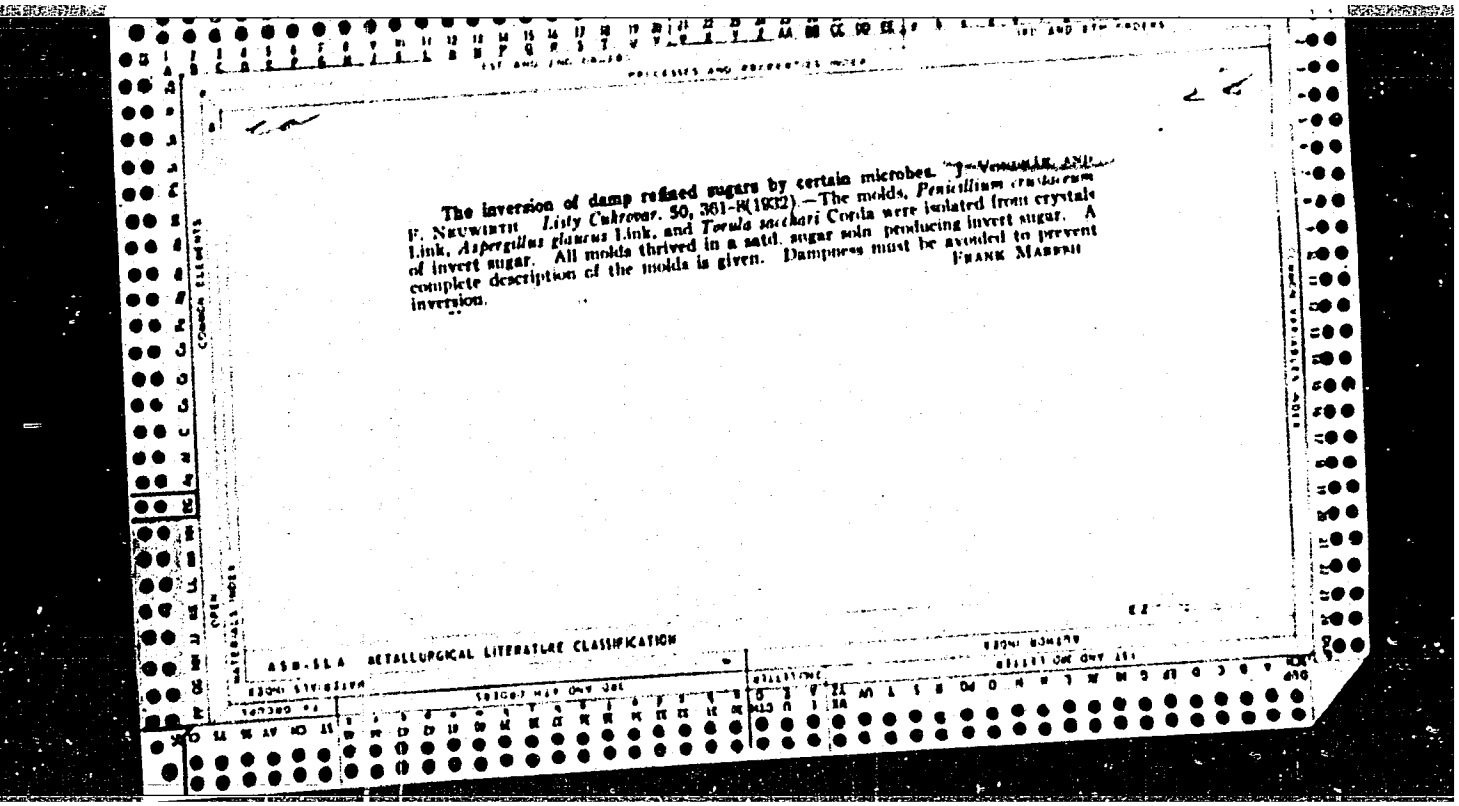
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



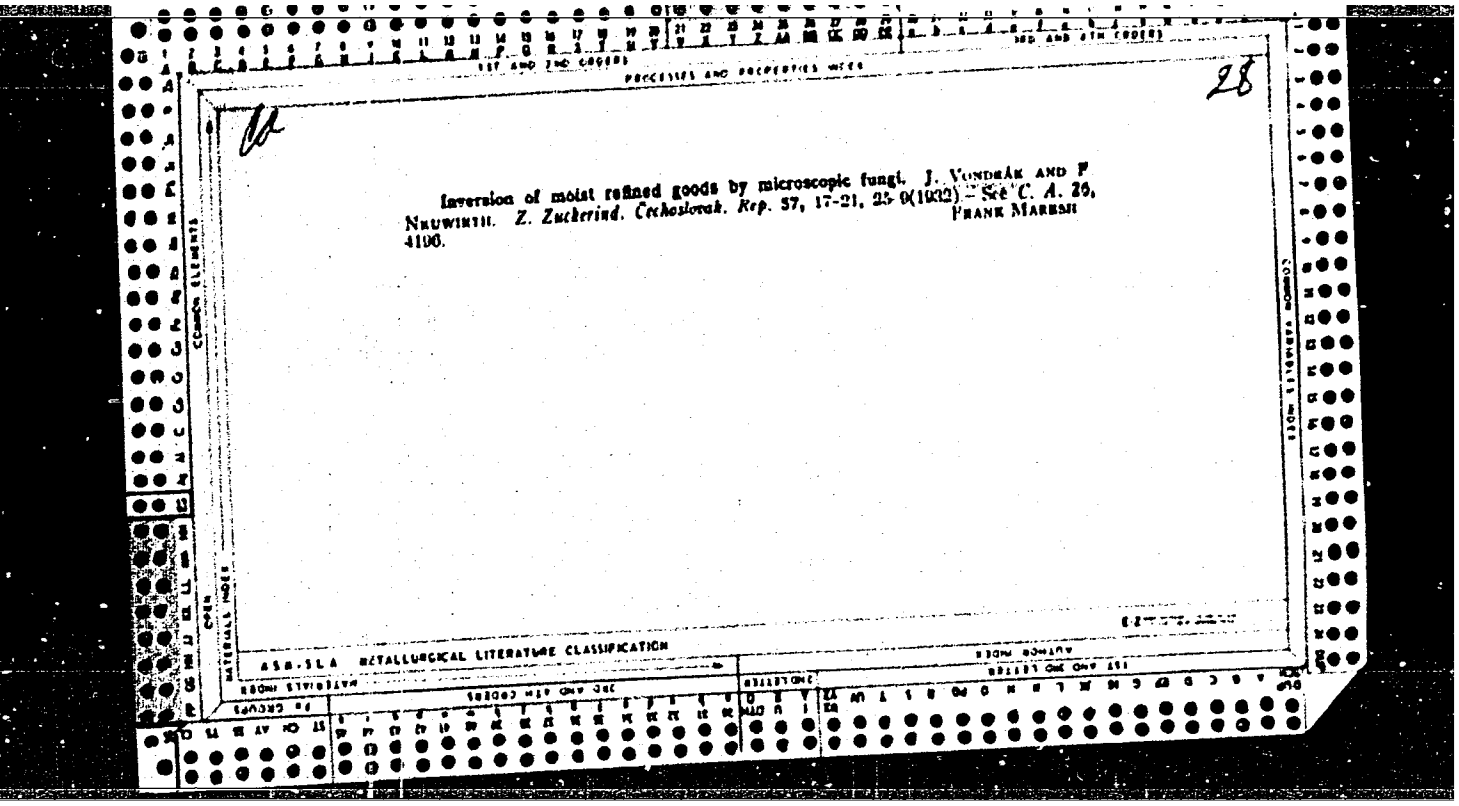


Cold digestion with water. J. Vondrák and B. Zimmermann. *Z. Zuckerind. Tschechoslowak. Rep.* 55, 393-9(1931). See *C. A.* 25, 3518.



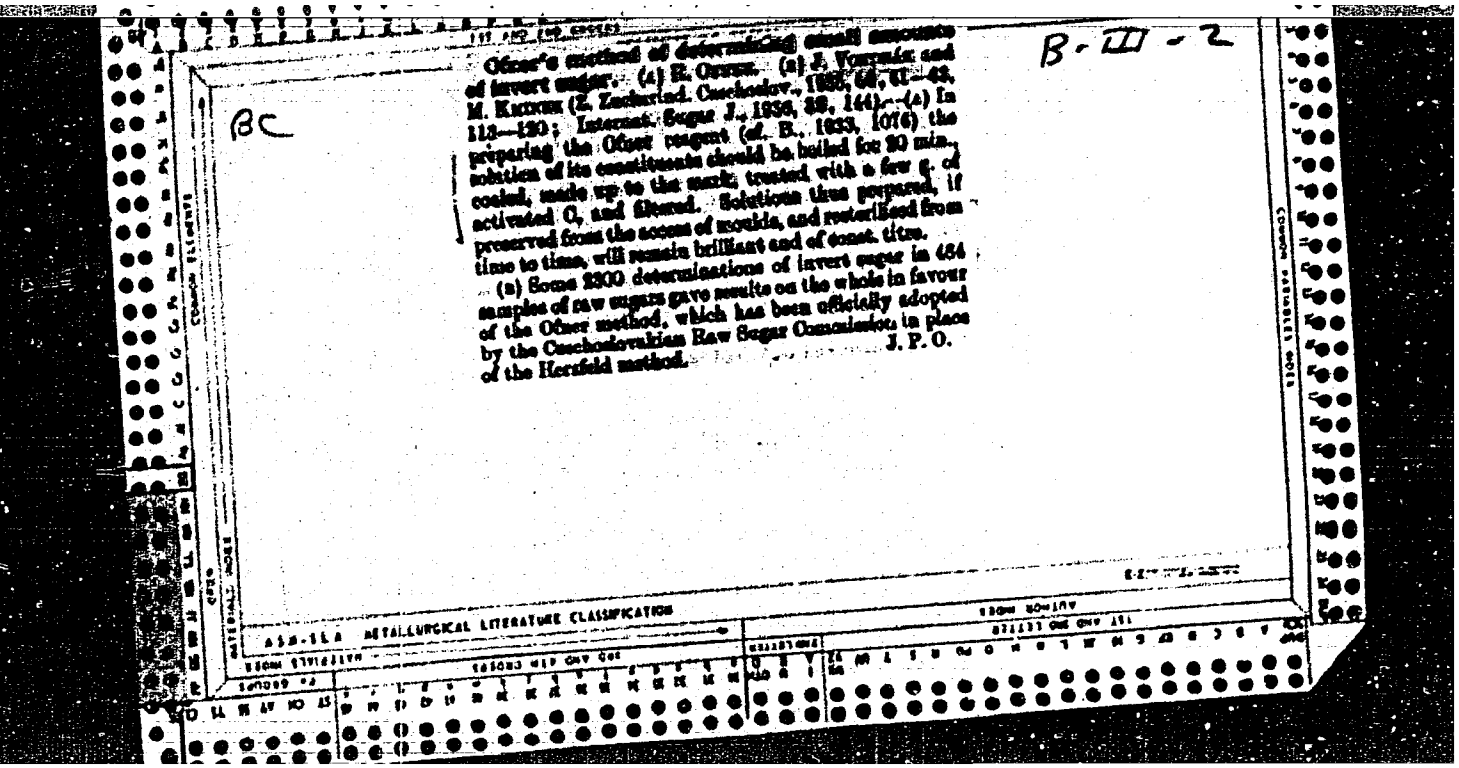
The inversion of damp refined sugars by certain microbes. J. Verona, F. Neuweirth *Listy Cukrovar.* 50, 361-8(1932).—The molds, *Penicillium* Link, *Aspergillus glaucus* Link, and *Torula sacchari* Cordia were isolated from crystals of invert sugar. All molds thrived in a satd. sugar soln producing invert sugar. A complete description of the molds is given. Dampness must be avoided to prevent inversion. FRANK MARSH

ASB-ELA METALLURGICAL LITERATURE CLASSIFICATION



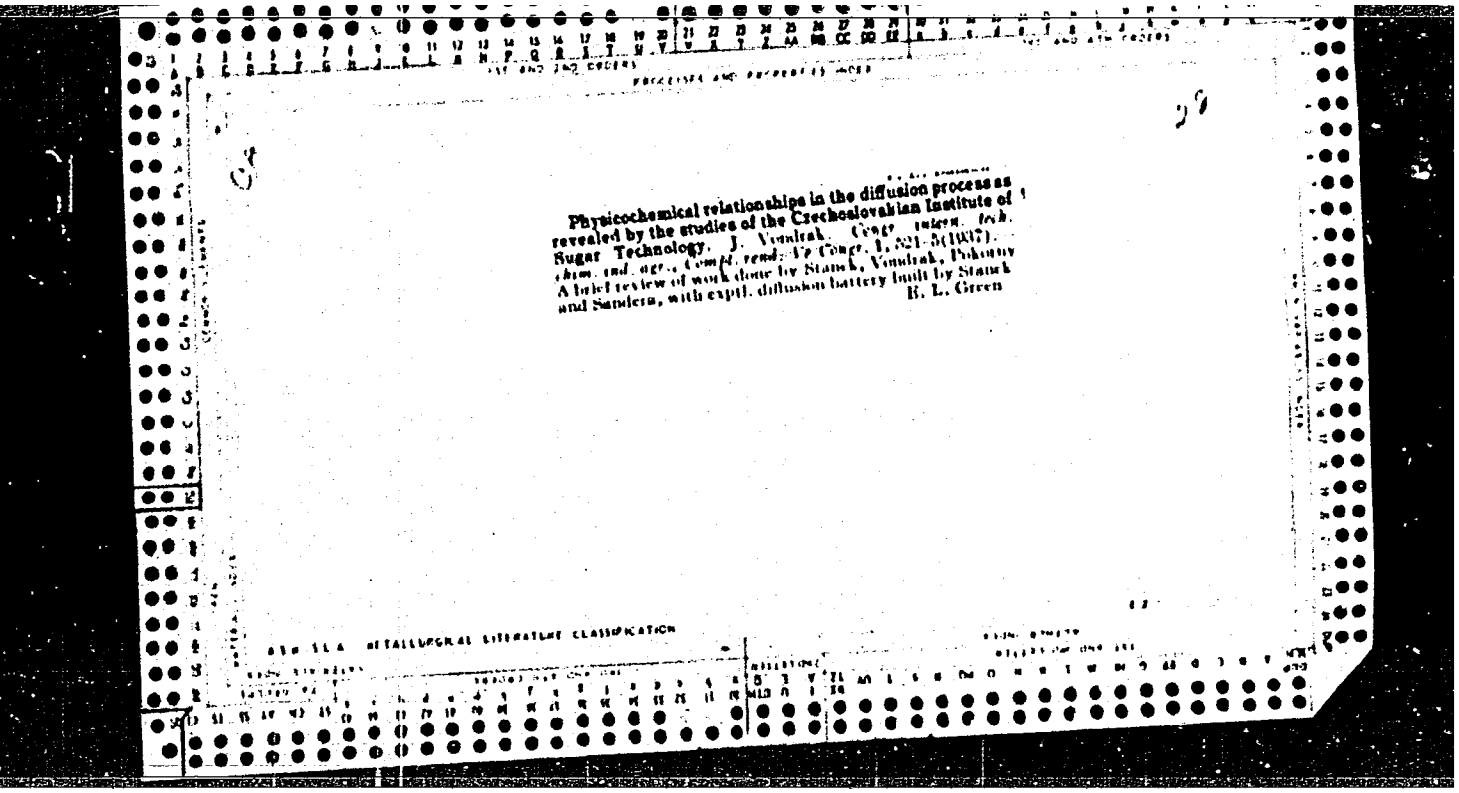
Inversion of moist refined goods by microscopic fungi. J. Vondrák and F. Neuwirth. *Z. Zuckerind. Cechoslovak. Rep.* 57, 17-21, 23-9(1932). — See *C. A.* 26, 4100.

FRANK MARESH

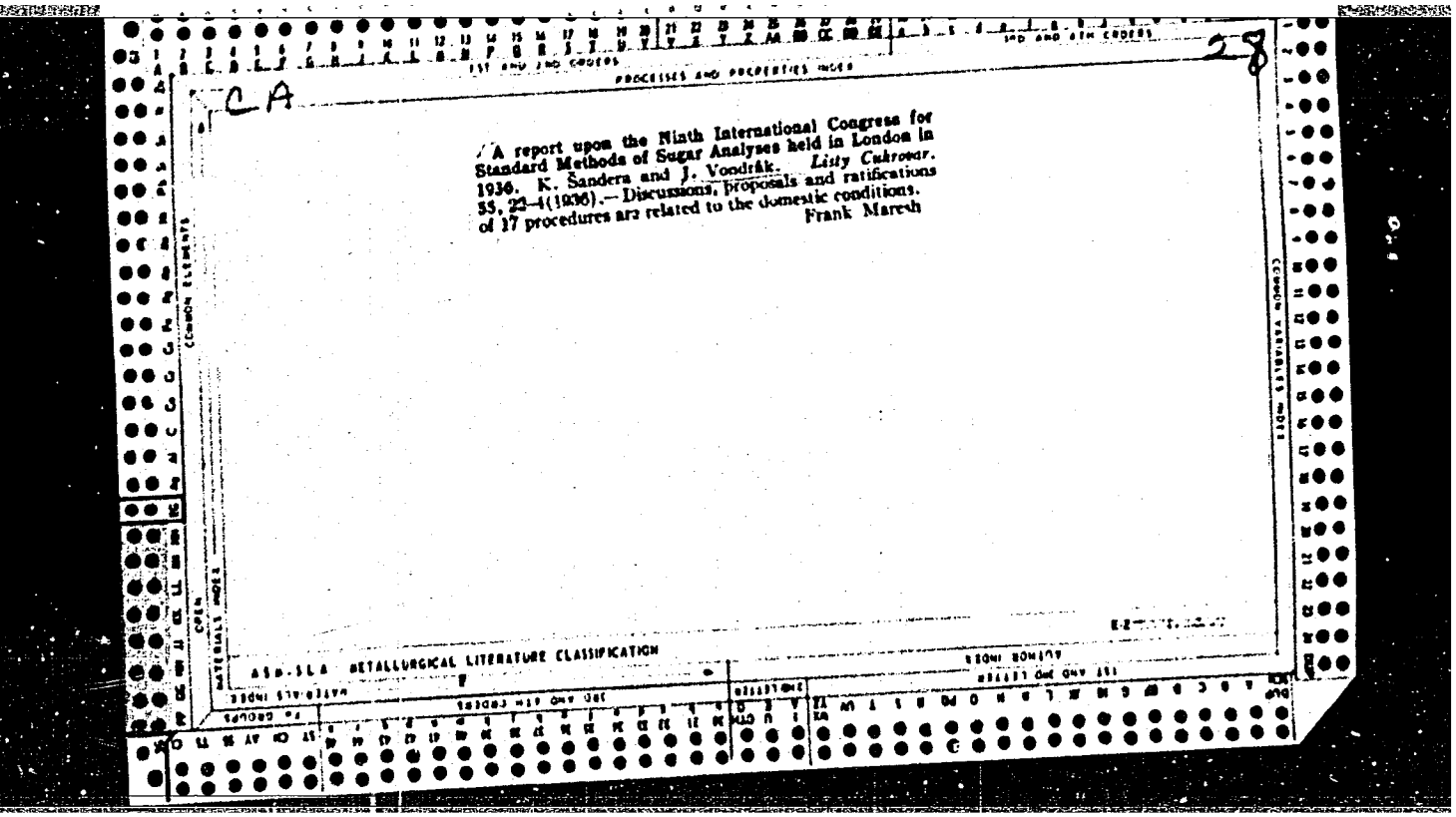


Ofner's method of determining small amounts of invert sugar. (a) E. Ofner. (a) J. Formánek and M. Kaucký (Z. Zuckerind. Czechoslov., 1933, 58, 11—43, 113—130; Internat. Sugar J., 1933, 35, 144).—(a) In preparing the Ofner reagent (cf. B., 1933, 1016) the solution of its constituents should be boiled for 30 min., cooled, made up to the mark, treated with a few g. of activated C, and filtered. Solutions thus prepared, if preserved from the access of moulds, and sterilised from time to time, will remain brilliant and of const. titre.

(a) Some 2300 determinations of invert sugar in 454 samples of raw sugars gave results on the whole in favour of the Ofner method, which has been officially adopted by the Czechoslovakian Raw Sugar Commission, in place of the Herzfeld method. J. P. O.



Physicochemical relationships in the diffusion process as revealed by the studies of the Czechoslovakian Institute of Sugar Technology. J. Vondrak. Cent. inform. tech. chim. ind. agric. Compt. rend. 1e Congr. 1, 321-5(1937). A brief review of work done by Stanek, Vondrak, Pokorny and Sanders, with exptl. diffusion battery built by Stanek.
B. L. Green



CA

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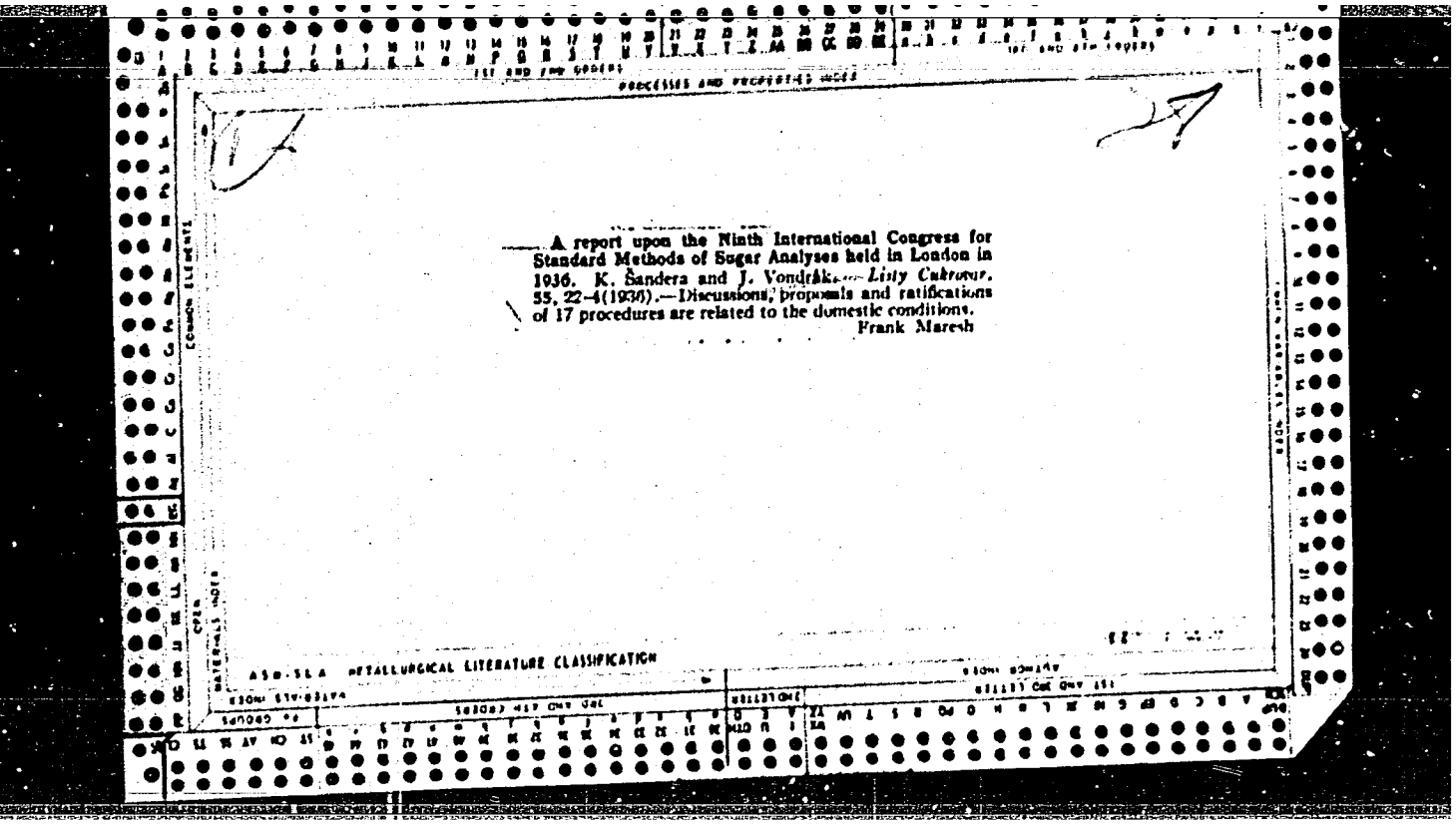
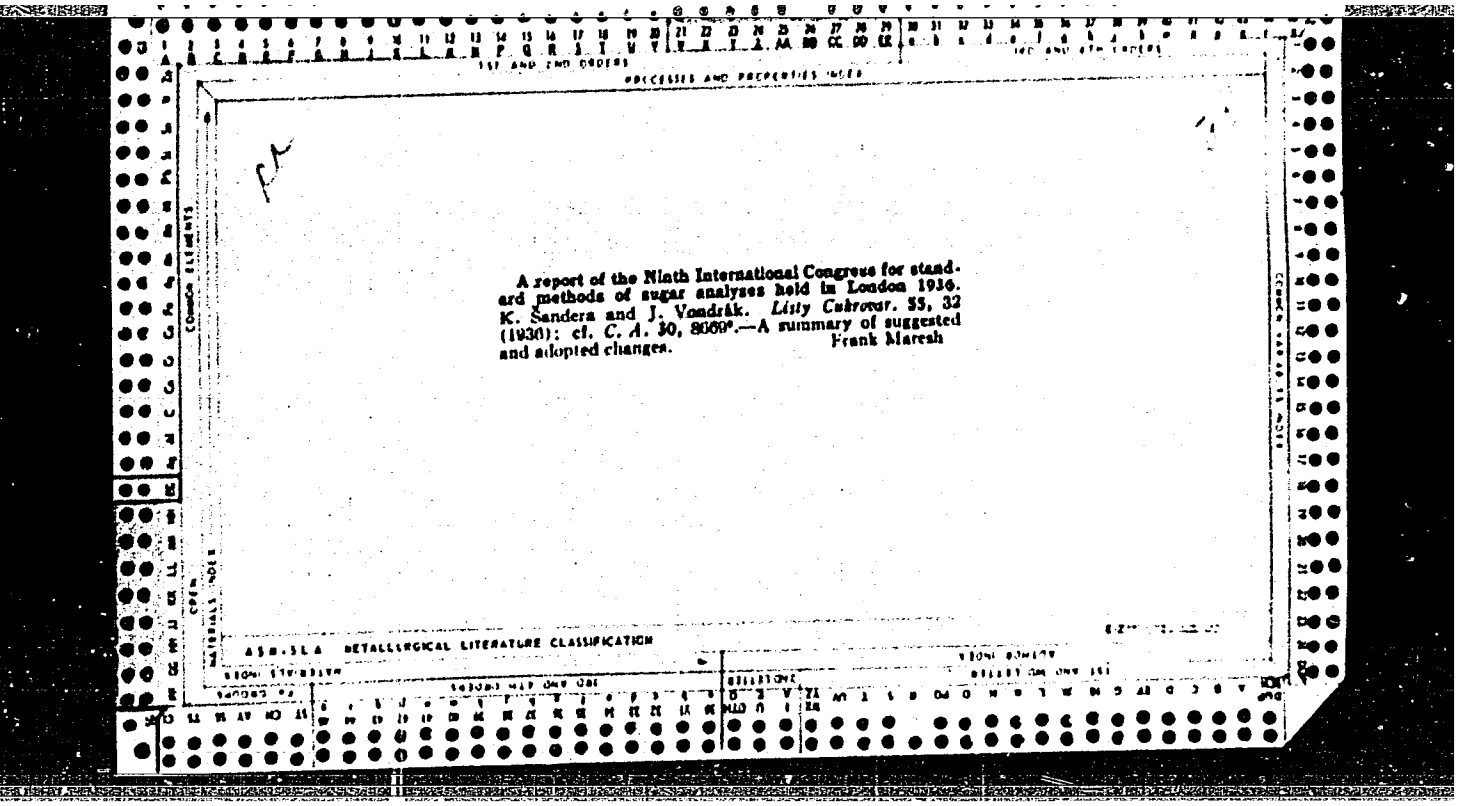
A report upon the Ninth International Congress for Standard Methods of Sugar Analyses held in London in 1936. K. Sanders and J. Voodrák. *Listy Cukrovar.* 55, 23–4(1936).—Discussions, proposals and ratifications of 27 procedures are related to the domestic conditions.
Frank Maresh

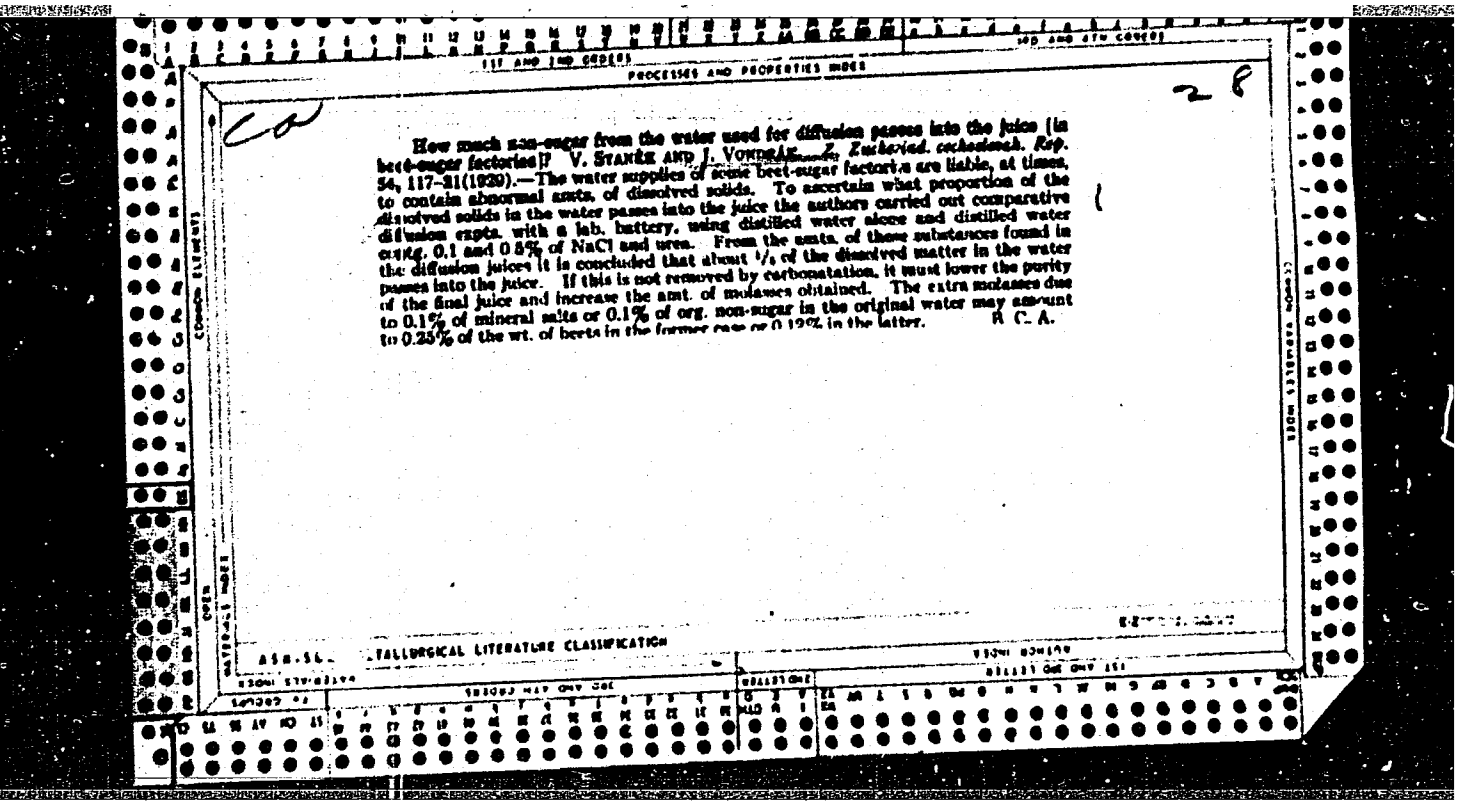


A report upon the Ninth International Congress for Standard Methods of Sugar Analyses held in London in 1936. K. Sandera and J. Vondrák.—*Listy Cukrovar.* 55, 22–4(1936).—Discussions, proposals and ratifications of 17 procedures are related to the domestic conditions.

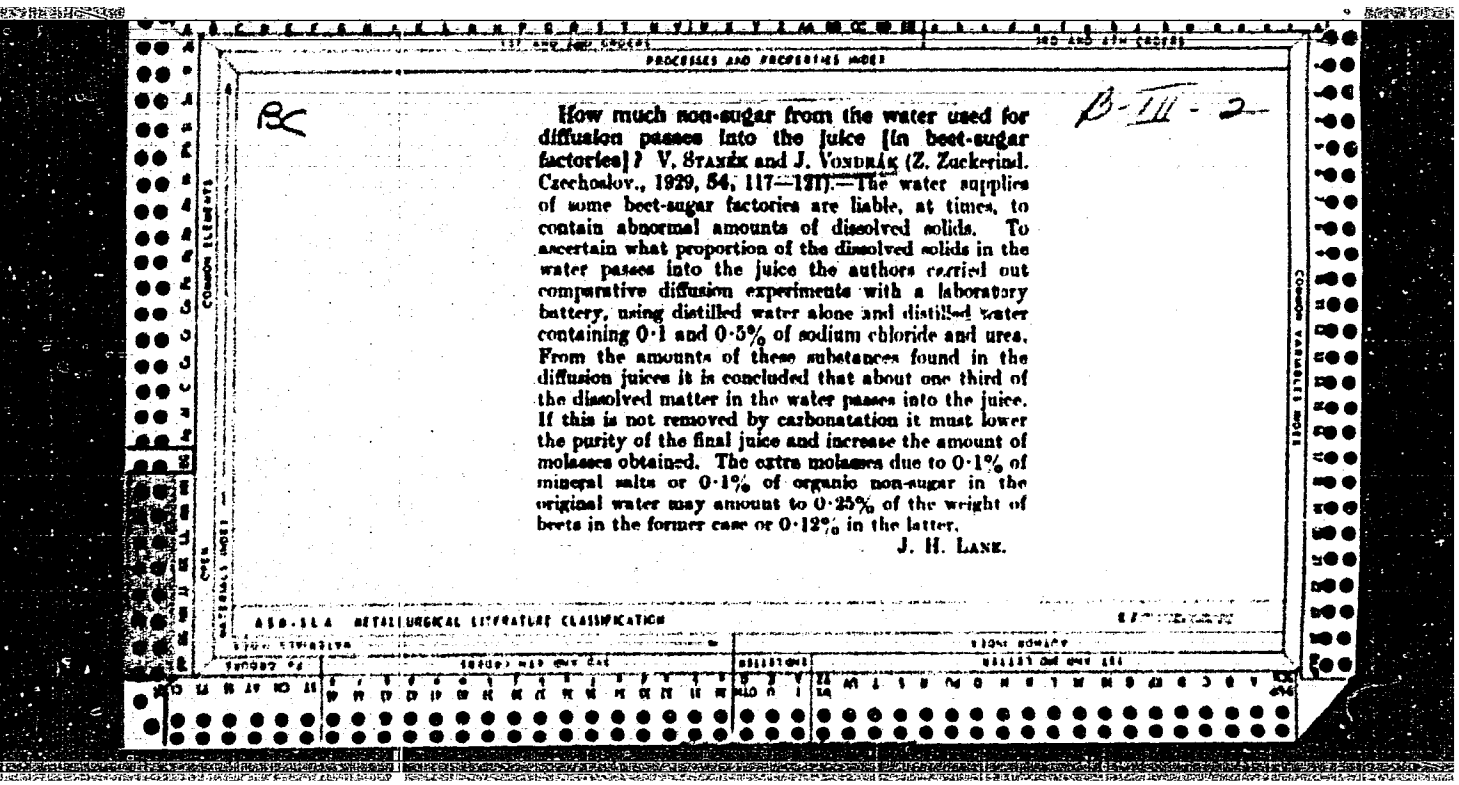
Frank Maresh



A report of the Ninth International Congress for standard methods of sugar analyses held in London 1936. K. Sanders and J. Vondrák. *Listy Cukrovar.* 55, 32 (1930); cf. *C. A.* 30, 8069⁹.—A summary of suggested and adopted changes. Frank Maresh



How much non-sugar from the water used for diffusion passes into the juice [in beet-sugar factories]? V. STANĚK AND J. VONDRÁK. *Z. Zuckerind. cechoslovak. Rep.* 54, 117–21(1929).—The water supplies of some beet-sugar factories are liable, at times, to contain abnormal amts. of dissolved solids. To ascertain what proportion of the dissolved solids in the water passes into the juice the authors carried out comparative diffusion expts. with a lab. battery, using distilled water alone and distilled water containing 0.1 and 0.8% of NaCl and urea. From the amts. of these substances found in the diffusion juices it is concluded that about ½ of the dissolved matter in the water passes into the juice. If this is not removed by carbonatation, it must lower the purity of the final juice and increase the amt. of molasses obtained. The extra molasses due to 0.1% of mineral salts or 0.1% of org. non-sugar in the original water may amount to 0.25% of the wt. of beets in the former case or 0.19% in the latter. R. C. A.

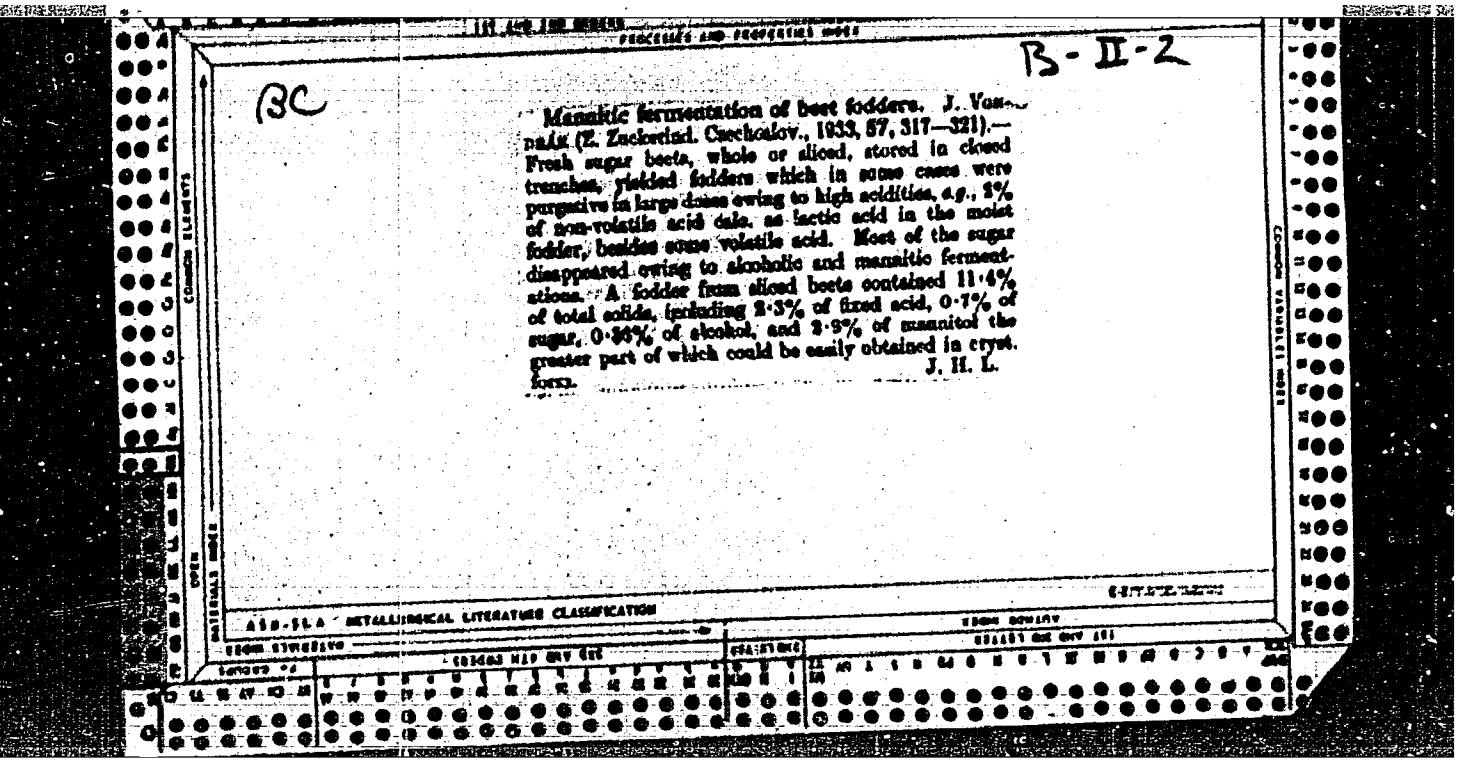


B-III-2

How much non-sugar from the water used for diffusion passes into the juice [in beet-sugar factories]? V. Stanĕk and J. Vondrák (Z. Zuckerind. Czechoslov., 1929, 54, 117—121).—The water supplies of some beet-sugar factories are liable, at times, to contain abnormal amounts of dissolved solids. To ascertain what proportion of the dissolved solids in the water passes into the juice the authors carried out comparative diffusion experiments with a laboratory battery, using distilled water alone and distilled water containing 0·1 and 0·5% of sodium chloride and urea. From the amounts of these substances found in the diffusion juices it is concluded that about one third of the dissolved matter in the water passes into the juice. If this is not removed by carbonatation it must lower the purity of the final juice and increase the amount of molasses obtained. The extra molasses due to 0·1% of mineral salts or 0·1% of organic non-sugar in the original water may amount to 0·25% of the weight of beets in the former case or 0·12% in the latter.

J. H. Lane.

VONDRAK, J.
F. HERLES, Z. Zuckerind Czechoslov, 1932, 57, 33-36

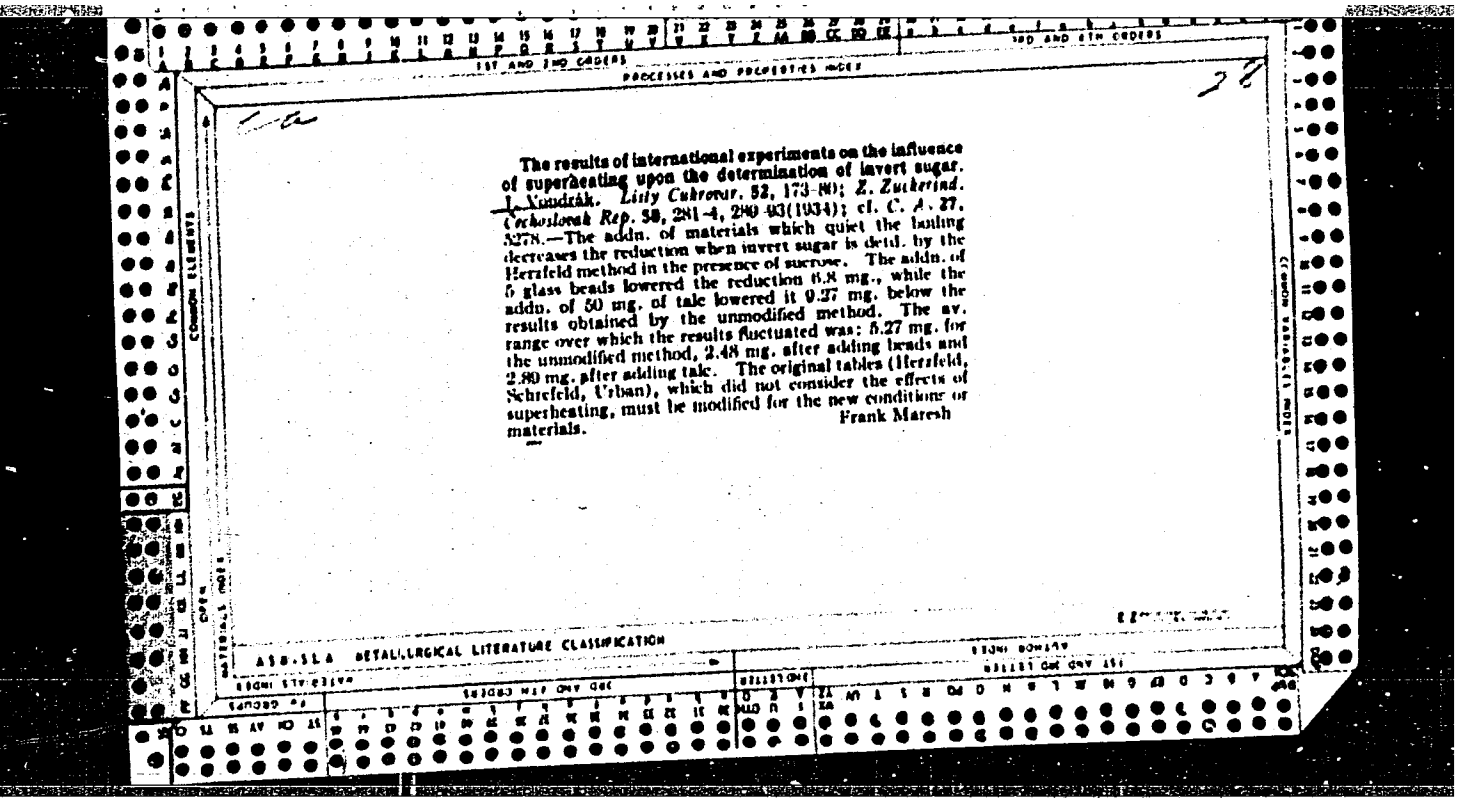


B-II-2

BC

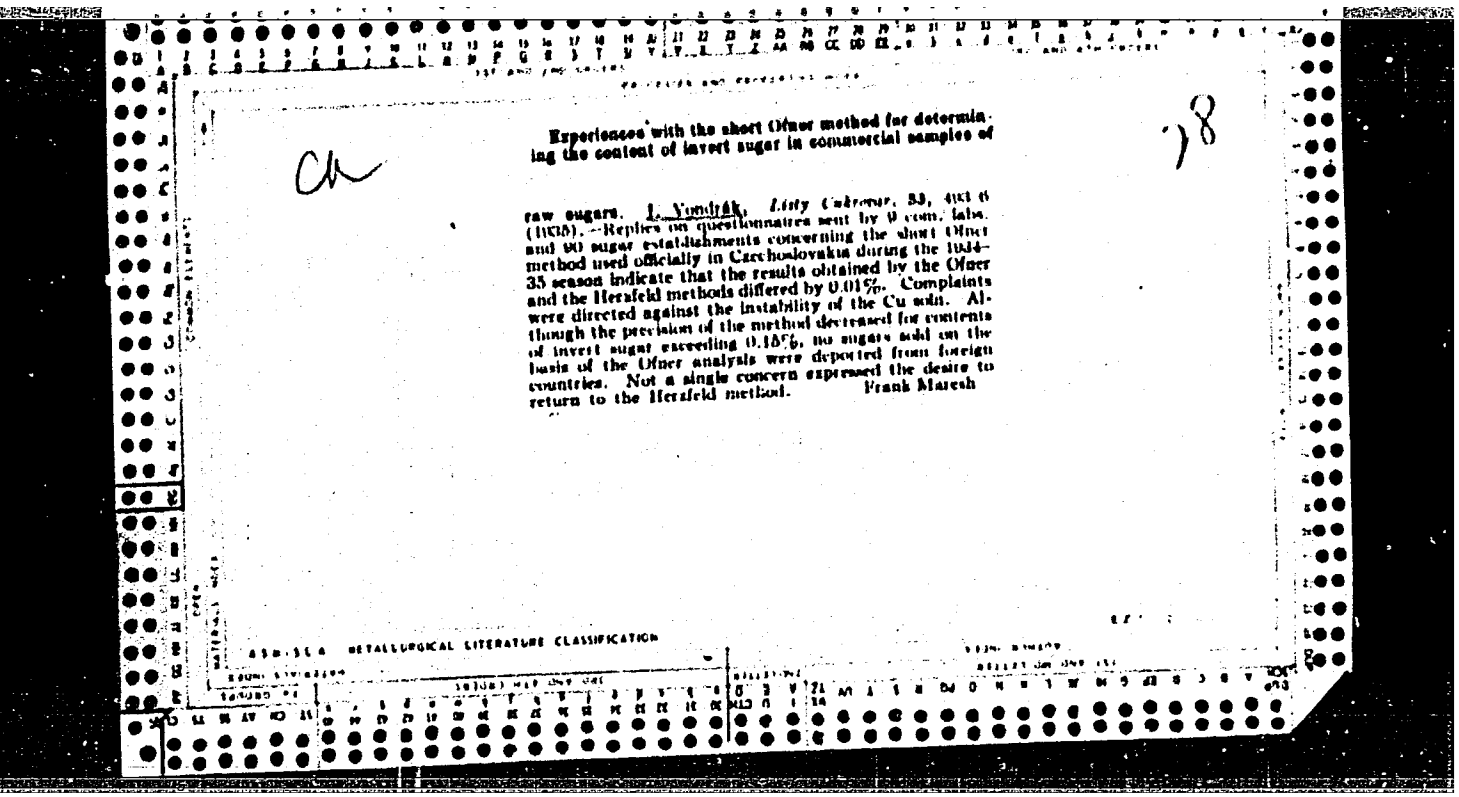
Mannitic fermentation of beet fodders. J. Vanpák (Z. Zuckerind. Czechoslov., 1933, 57, 317—321).—Fresh sugar beets, whole or sliced, stored in closed trenches, yielded fodders which in some cases were purgative in large doses owing to high acidities, *e.g.*, 2% of non-volatile acid calc. as lactic acid in the moist fodder, besides some volatile acid. Most of the sugar disappeared owing to alcoholic and mannitic fermentations. A fodder from sliced beets contained 11·4% of total solids, including 2·3% of fixed acid, 0·7% of sugar, 0·36% of alcohol, and 2·9% of mannitol the greater part of which could be easily obtained in cryst. form.

J. H. L.

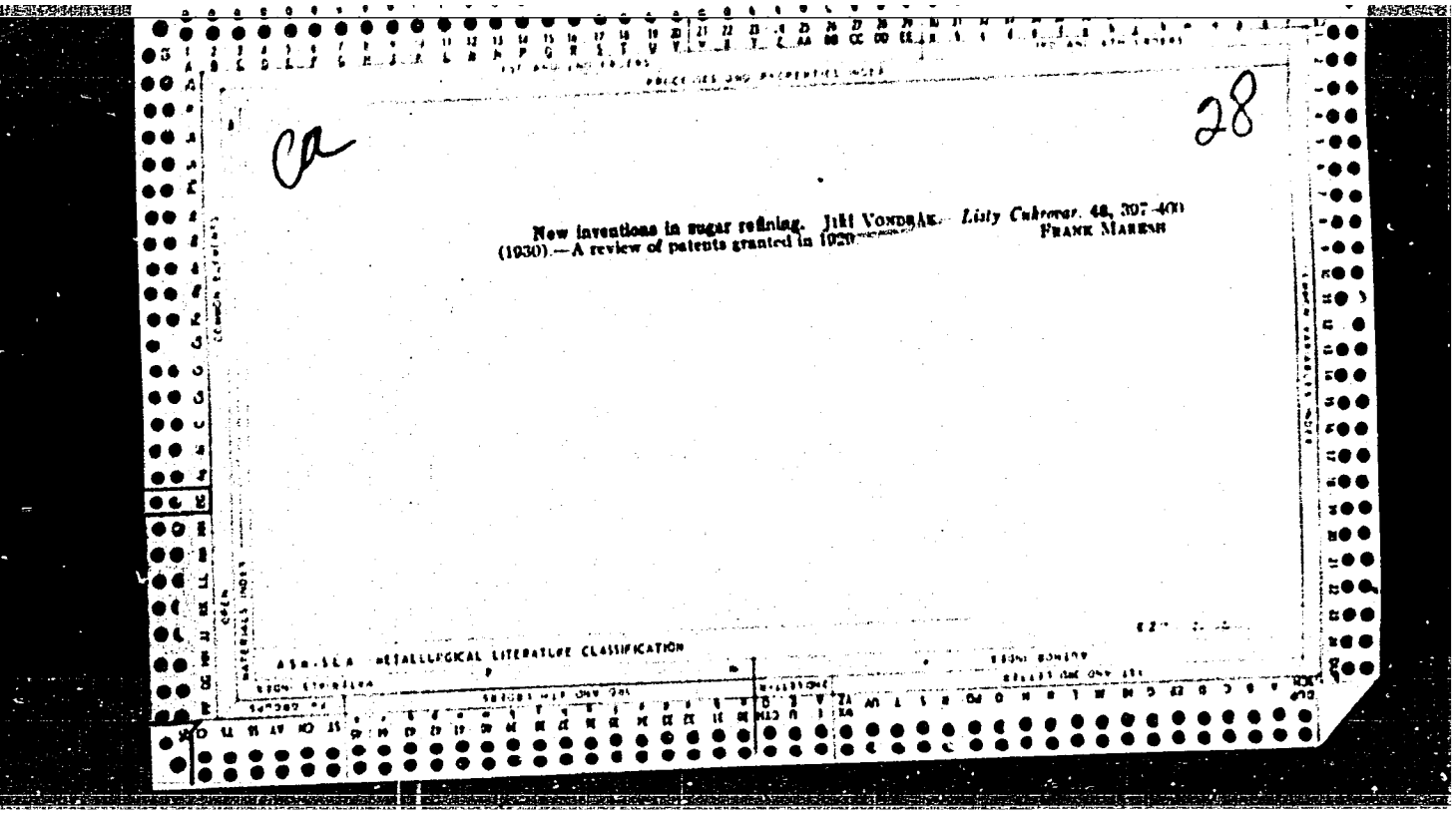


The results of international experiments on the influence of superheating upon the determination of invert sugar. J. Vondrák. *Listy Cukrovar.* 52, 173-80; *Z. Zuckerind. Cechoslovak Rep.* 58, 281-4, 289-93(1934); cf. C. *A.* 27, 3278.—The addn. of materials which quiet the boiling decreases the reduction when invert sugar is detd. by the Herzfeld method in the presence of sucrose. The addn. of 5 glass beads lowered the reduction 6.8 mg., while the addn. of 50 mg. of talc lowered it 9.27 mg. below the results obtained by the unmodified method. The av. range over which the results fluctuated was: 5.27 mg. for the unmodified method, 2.48 mg. after adding beads and 2.89 mg. after adding talc. The original tables (Herzfeld, Schrefeld, Urban), which did not consider the effects of superheating, must be modified for the new conditions or materials.

Frank Maresh



Experiences with the short Ofner method for determining the content of invert sugar in commercial samples of raw sugars. L. Vondrák. *Listy Cukrovar.* 53, 401 6 (1935). —Replies on questionnaires sent by 9 com. labs. and 90 sugar establishments concerning the short Ofner method used officially in Czechoslovakia during the 1934–35 season indicate that the results obtained by the Ofner and the Herzfeld methods differed by 0.01%. Complaints were directed against the instability of the Cu soln. Although the precision of the method decreased for contents of invert sugar exceeding 0.15%, no sugars sold on the basis of the Ofner analysis were deported from foreign countries. Not a single concern expressed the desire to return to the Herzfeld method. Frank Marsh



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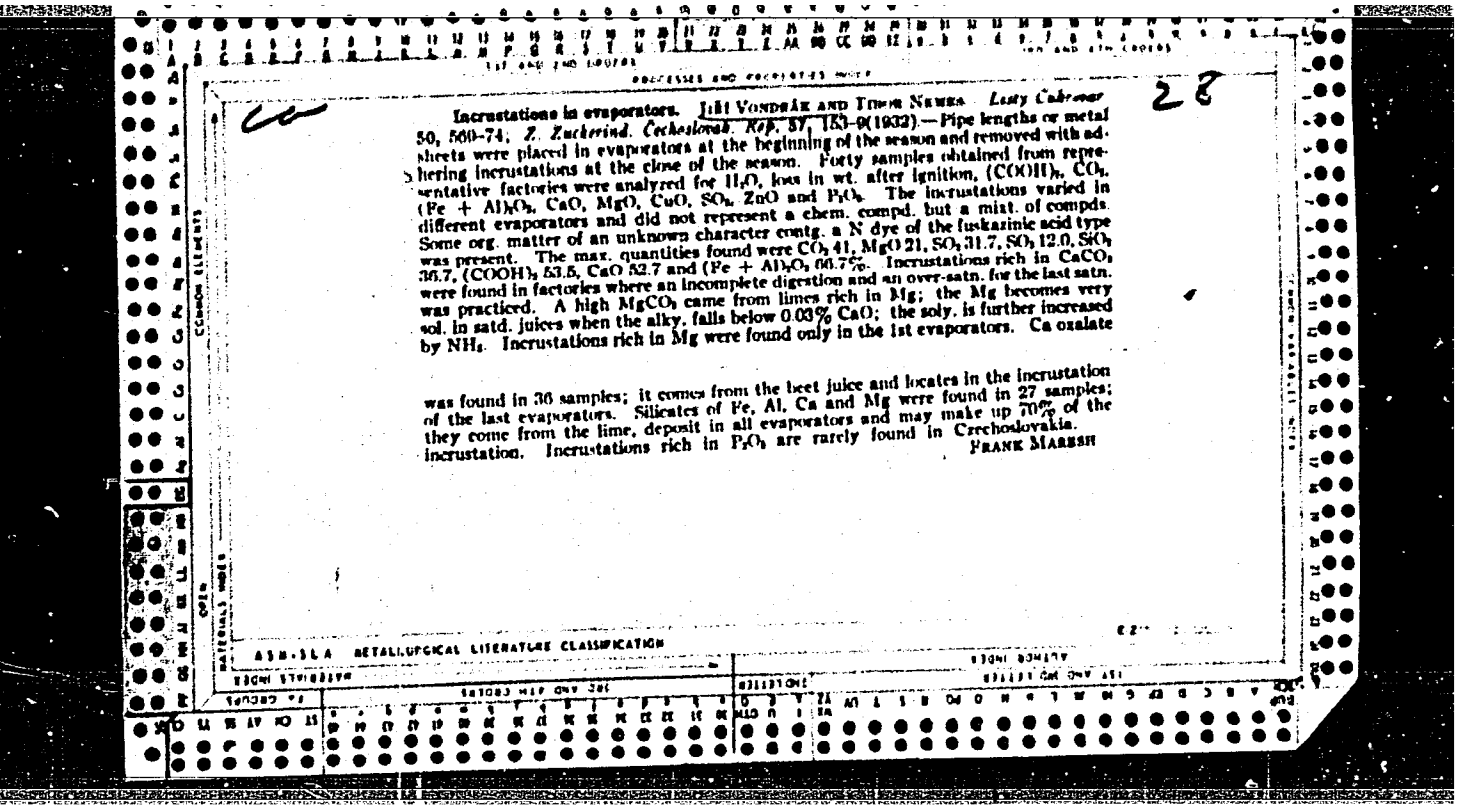
28

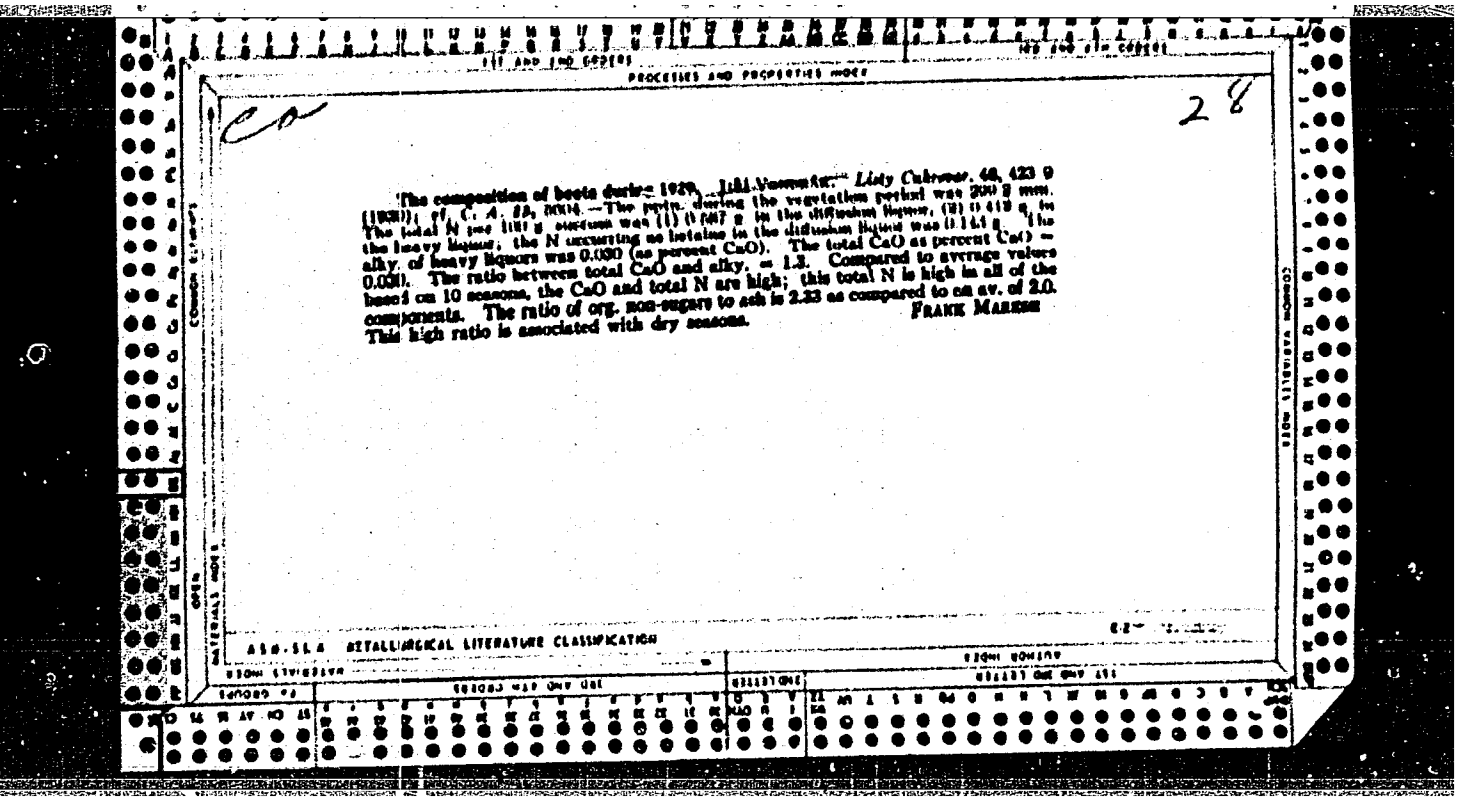
New inventions in sugar refining. JIŘÍ VONDŘÁK. *Listy Cukrovar.* 48, 397–401 (1930).—A review of patents granted in 1929. FRANK MARESH

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Incrustations in evaporators. JIŘÍ VONDRÁK AND TOMÁŠ NEMEC. *Listy Cukrovar* 50, 560–74; *Z. Zuckerind. Cechoslovak. Rep.* 57, 153–9(1932).—Pipe lengths or metal sheets were placed in evaporators at the beginning of the season and removed with adhering incrustations at the close of the season. Forty samples obtained from representative factories were analyzed for H_2O, loss in wt. after ignition, $(COOH)_2$, CO_2, $(Fe + Al)_2O_3$, CaO, MgO, CuO, SO_3, ZnO and P_2O_5. The incrustations varied in different evaporators and did not represent a chem. compd. but a mixt. of compds. Some org. matter of an unknown character contg. a N dye of the fuskazinic acid type was present. The max. quantities found were CO_2 41, MgO 21, SO_3 31.7, SO_3 12.0, SiO_2 36.7, $(COOH)_2$ 53.5, CaO 52.7 and $(Fe + Al)_2O_3$ 66.7%. Incrustations rich in $CaCO_3$ were found in factories where an incomplete digestion and an over-satn. for the last satn. was practiced. A high $MgCO_3$ came from limes rich in Mg; the Mg becomes very sol. in satd. juices when the alky. falls below 0.03% CaO; the soly. is further increased by NH_3. Incrustations rich in Mg were found only in the 1st evaporators. Ca oxalate was found in 36 samples; it comes from the beet juice and locates in the incrustation of the last evaporators. Silicates of Fe, Al, Ca and Mg were found in 27 samples; they come from the lime, deposit in all evaporators and may make up 70% of the incrustation. Incrustations rich in P_2O_5 are rarely found in Czechoslovakia.

FRANK MARESH



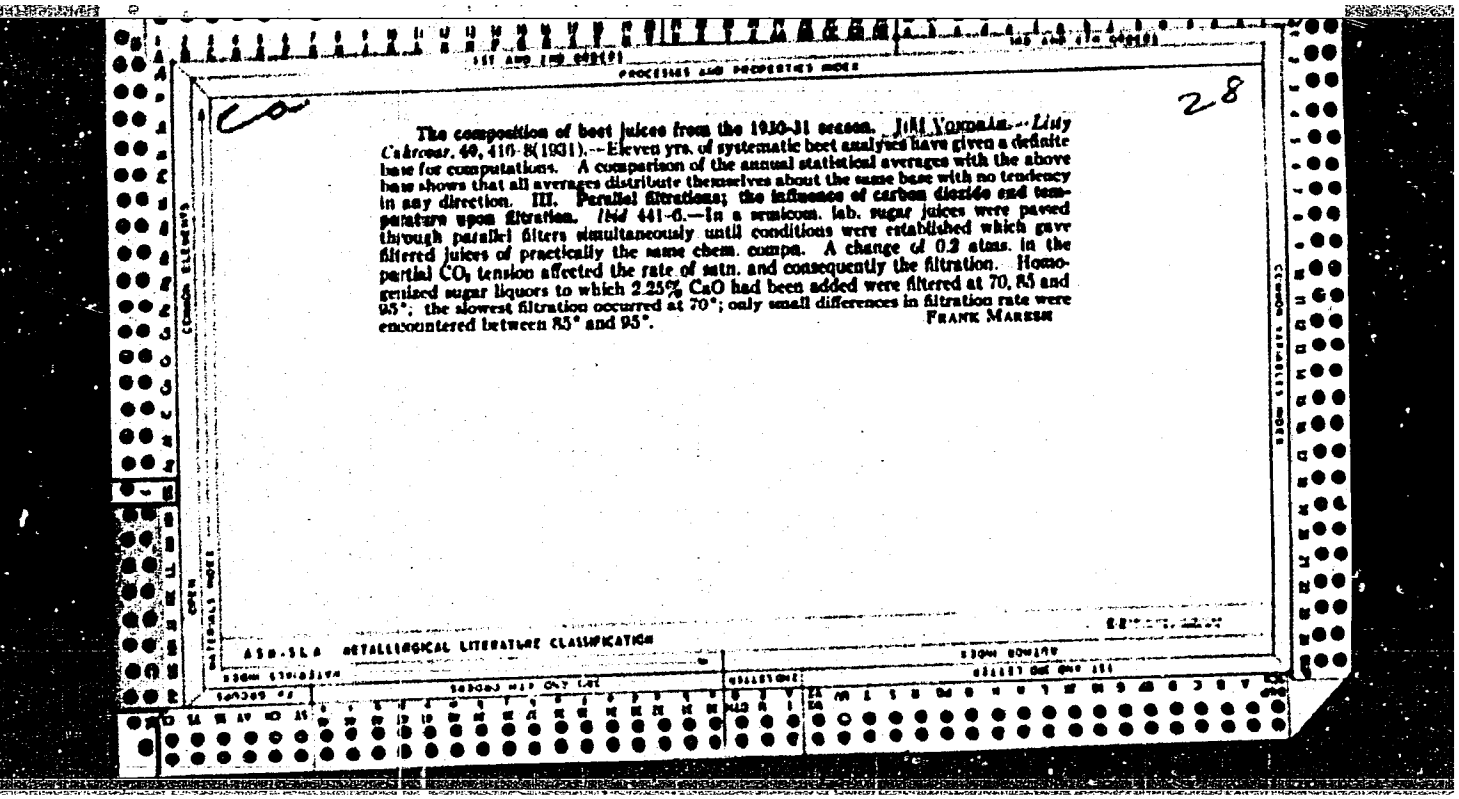
PROCESSES AND PROPERTIES INDEX

28

The composition of beets during 1939. [Old Vermont] *Listy Cukrovar.* 60, 423 9 (1942). cf. *C. A.* 38, 3014.—The precip. during the vegetation period was 200 mm. The total N per liter of medium was (1) 0.047 g. in the diffusion liquor, (2) 0.019 g. in the heavy liquor; the N occurring as betaine in the diffusion liquor was 0.164 g. The alky. of heavy liquors was 0.030 (as percent CaO). The total CaO as percent CaO — 0.031). The ratio between total CaO and alky. = 1.3. Compared to average values based on 10 seasons, the CaO and total N are high; this total N is high in all of the components. The ratio of org. non-sugars to ash is 2.23 as compared to an av. of 2.0. This high ratio is associated with dry seasons.

FRANK MARSIK

A58-5L4 METALLURGICAL LITERATURE CLASSIFICATION



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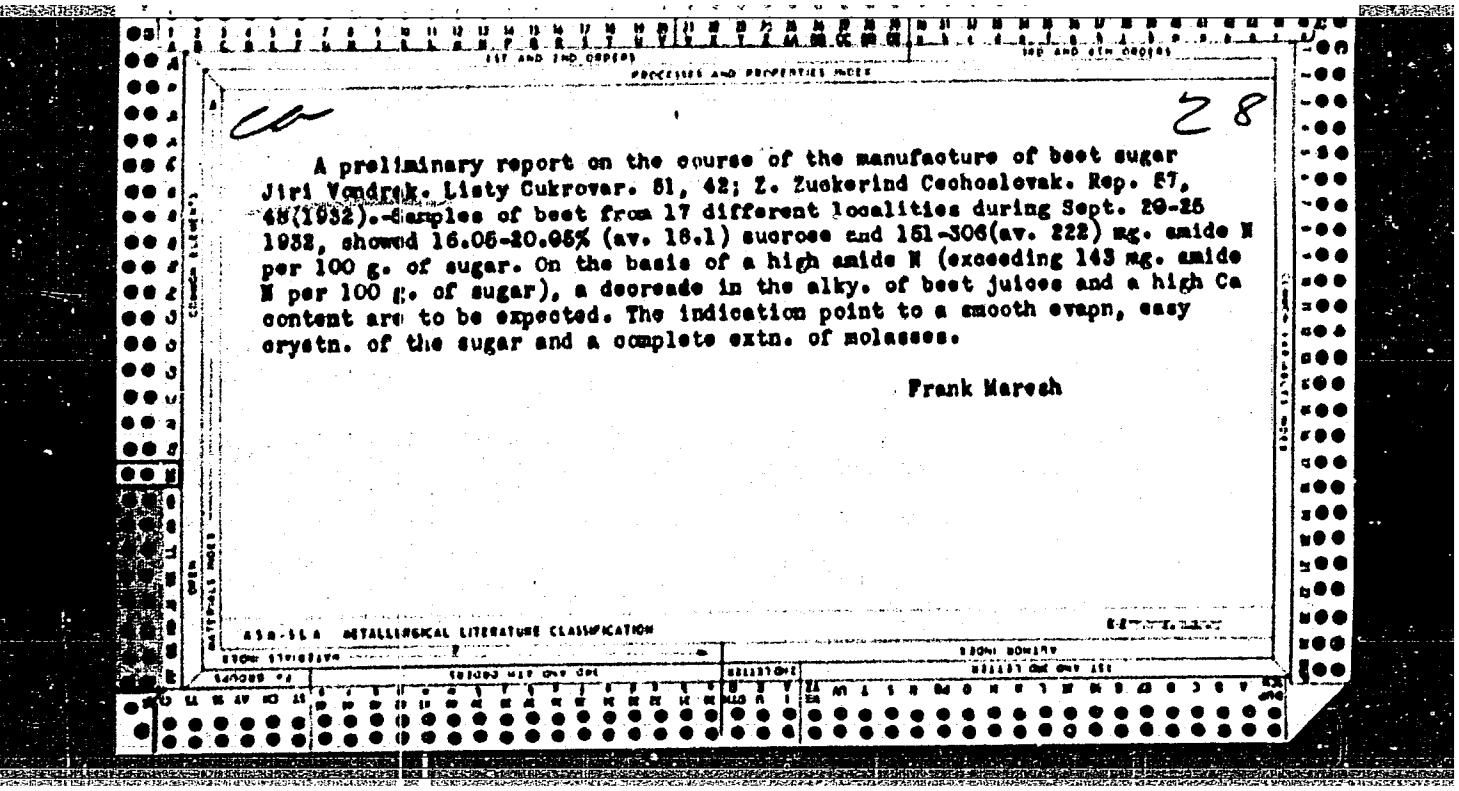
The composition of beet juices from the 1930-31 season. J. H. Vorman.—*Listy Cukrovar.* 49, 416-8(1931).—Eleven yrs. of systematic beet analyses have given a definite base for computations. A comparison of the annual statistical averages with the above base shows that all averages distribute themselves about the same base with no tendency in any direction. **III. Parallel filtrations; the influence of carbon dioxide and temperature upon filtration.** *Ibid* 441-6.—In a semicom. lab. sugar juices were passed through parallel filters simultaneously until conditions were established which gave filtered juices of practically the same chem. compn. A change of 0.2 atms. in the partial CO_2 tension affected the rate of satn. and consequently the filtration. Homogenized sugar liquors to which 2.25% CaO had been added were filtered at 70, 85 and 95°; the slowest filtration occurred at 70°; only small differences in filtration rate were encountered between 85° and 95°.

FRANK MARESH

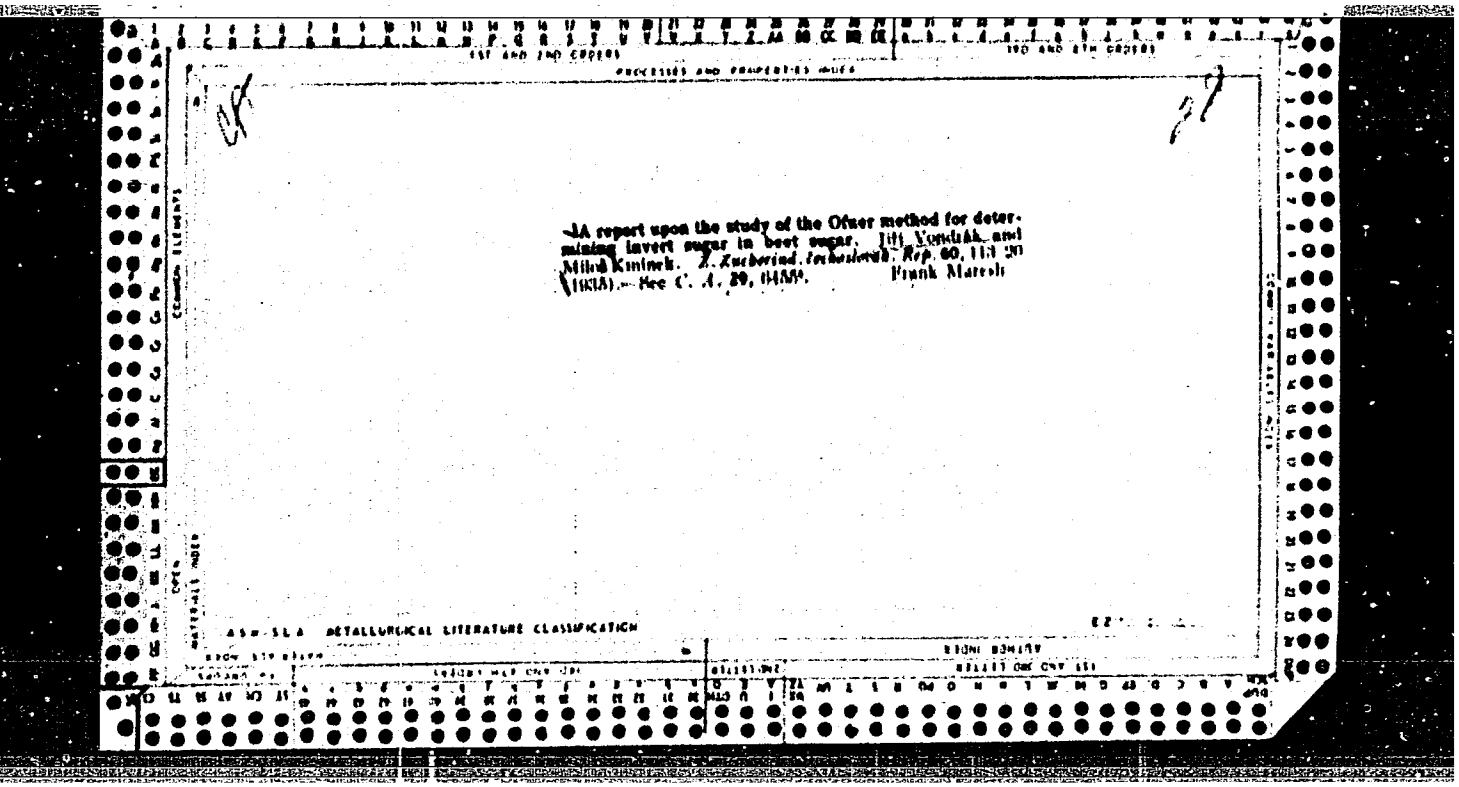
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



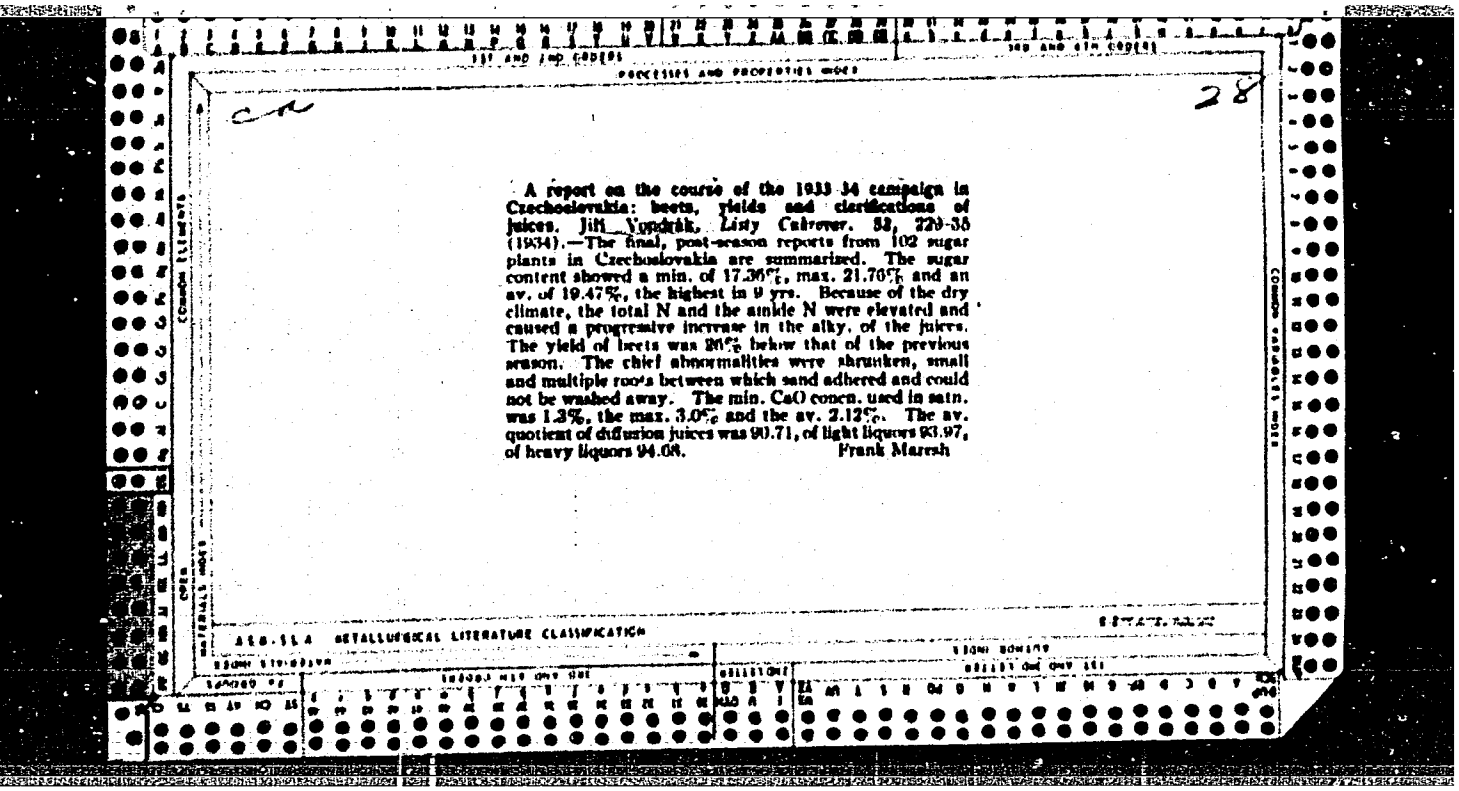
28

A preliminary report on the course of the manufacture of beet sugar Jiri Vondrak. Listy Cukrovar. 51, 42; Z. Zuckerind Cechoslovak. Rep. 57, 48(1932).-Samples of beet from 17 different localities during Sept. 20-25 1932, showed 16.06-20.05% (av. 18.1) sucrose and 151-306(av. 222) mg. amide N per 100 g. of sugar. On the basis of a high amide N (exceeding 143 mg. amide N per 100 g. of sugar), a decrease in the alky. of beet juices and a high Ca content are to be expected. The indication point to a smooth evapn, easy crystn. of the sugar and a complete extn. of molasses.

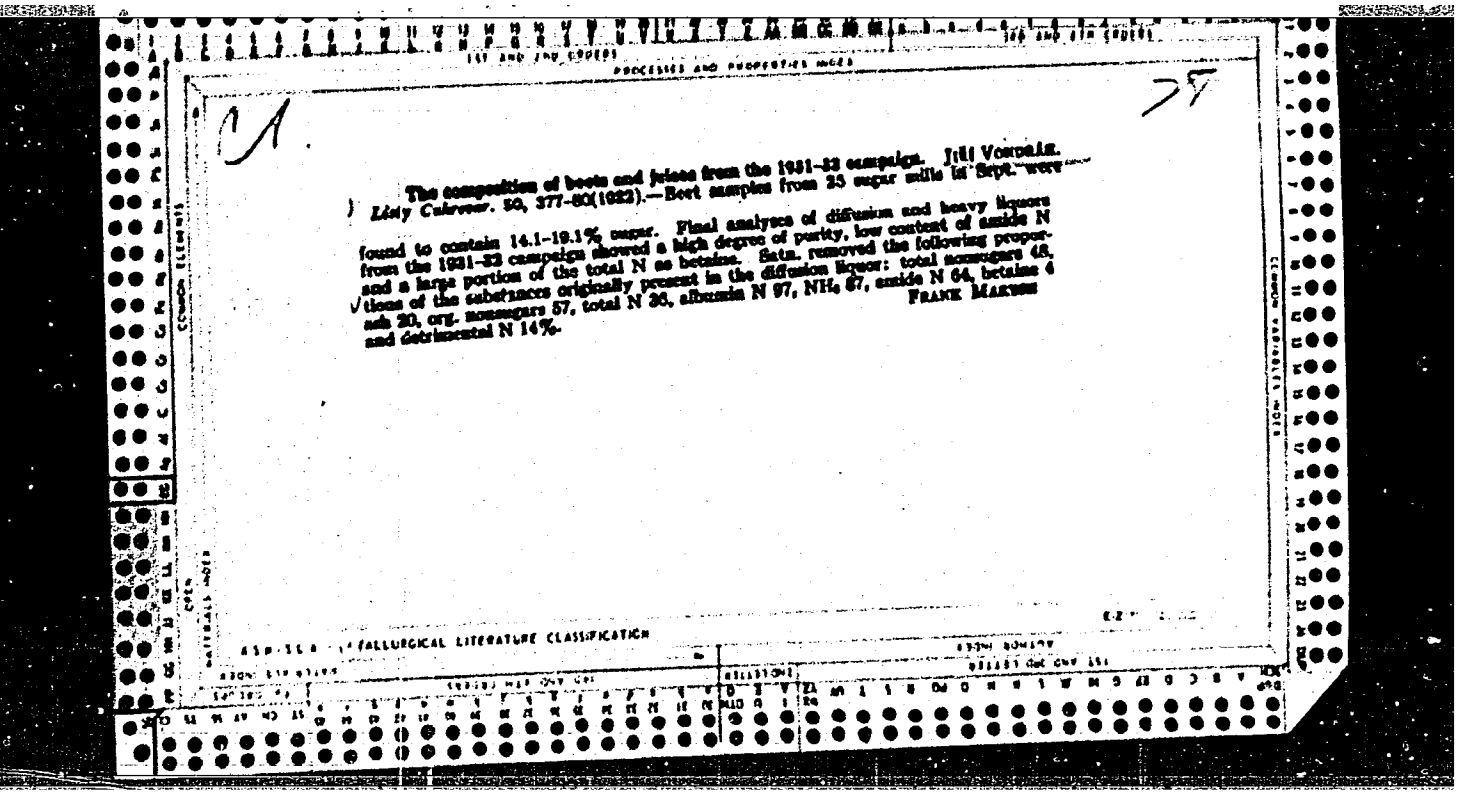
Frank Marosh



A report upon the study of the Ofner method for determining invert sugar in beet sugar. Jiří Vondrák and Miloš Kuthník. *Z. Zuckerind. tschechoslowak. Rep.* 60, 111-20 (1935).—See *C. A.*, 29, 6445⁸. Frank Marsh

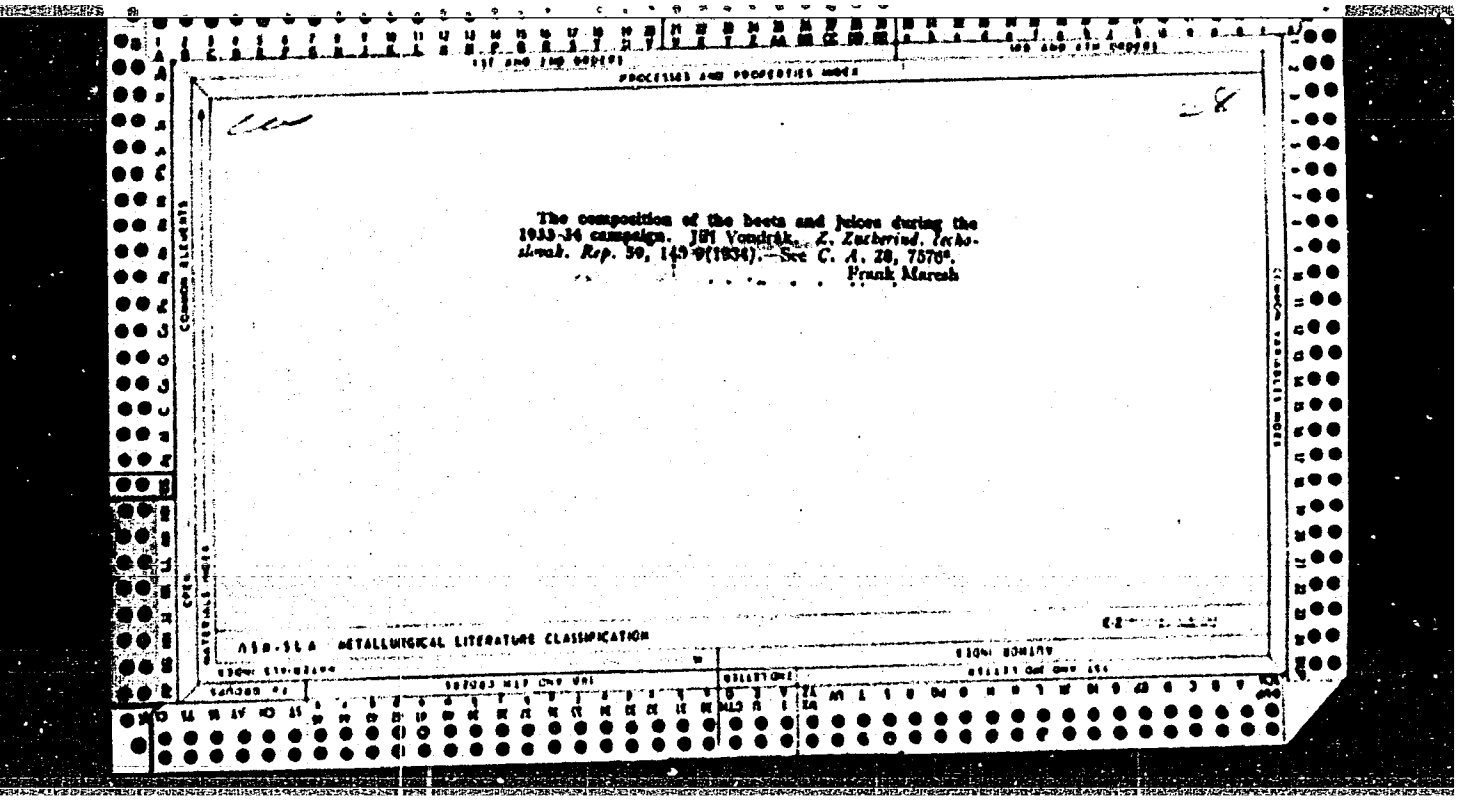


A report on the course of the 1933-34 campaign in Czechoslovakia: beets, yields and clarifications of juices. Jiří Vyskočil. *Listy Cukrovar.* 53, 229-38 (1934).—The final, post-season reports from 102 sugar plants in Czechoslovakia are summarized. The sugar content showed a min. of 17.36%, max. 21.76% and an av. of 19.47%, the highest in 9 yrs. Because of the dry climate, the total N and the amide N were elevated and caused a progressive increase in the alky. of the juices. The yield of beets was 26% below that of the previous season. The chief abnormalities were shrunken, small and multiple roots between which sand adhered and could not be washed away. The min. CaO concn. used in satn. was 1.3%, the max. 3.0% and the av. 2.12%. The av. quotient of diffusion juices was 90.71, of light liquors 93.97, of heavy liquors 94.08. Frank Maresh



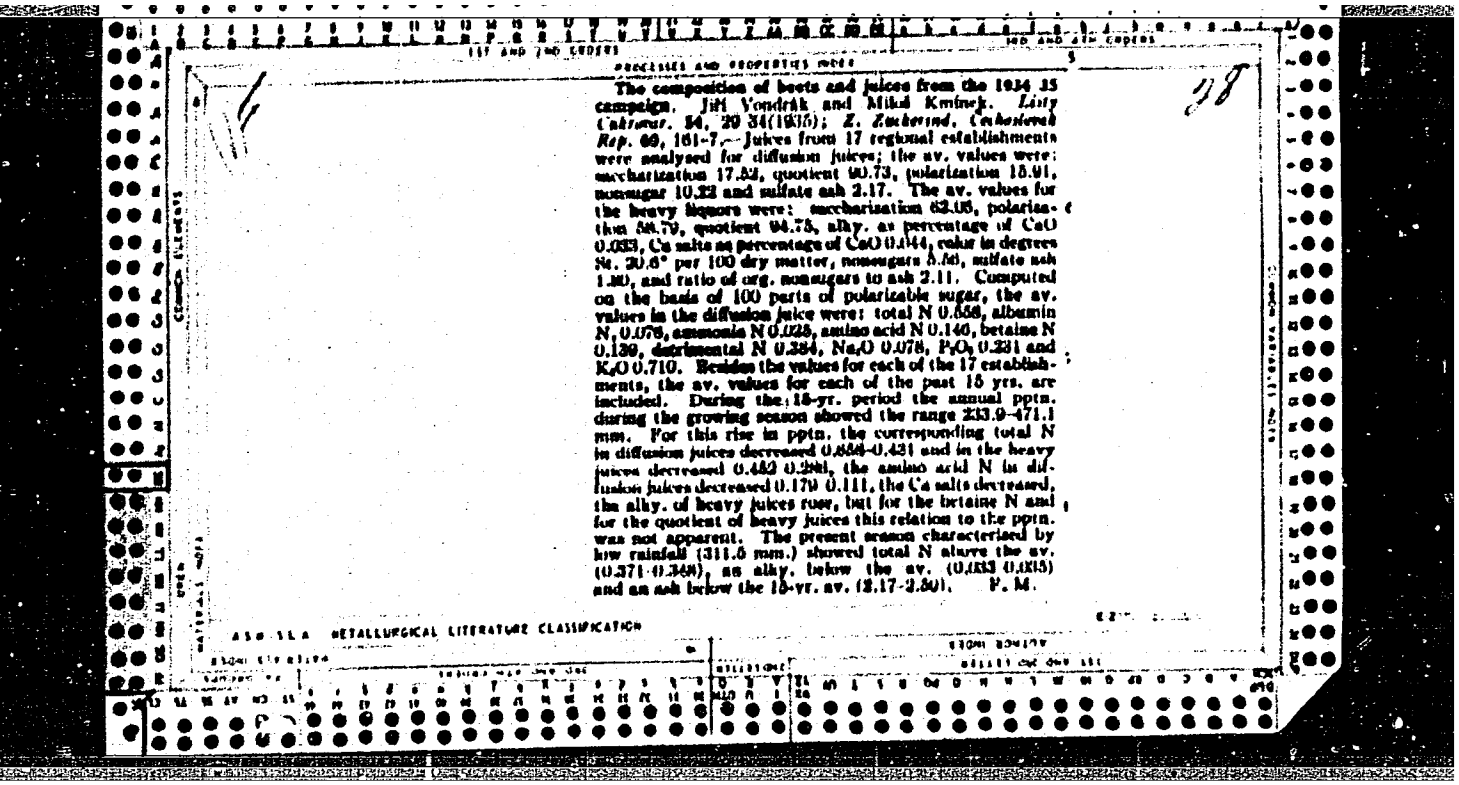
The composition of beets and juices from the 1931–32 campaign. Jiří Vondřich. *Listy Cukrovar.* 50, 377–80(1932).—Beet samples from 25 sugar mills in Sept. were found to contain 14.1–19.1% sugar. Final analyses of diffusion and heavy liquors from the 1931–32 campaign showed a high degree of purity, low content of amide N and a large portion of the total N as betaine. Satn. removed the following proportions of the substances originally present in the diffusion liquor: total nonsugars 48, ash 20, org. nonsugars 57, total N 36, albumin N 97, NH_3 87, amide N 64, betaine 4 and detrimental N 14%.

FRANK MARTUS

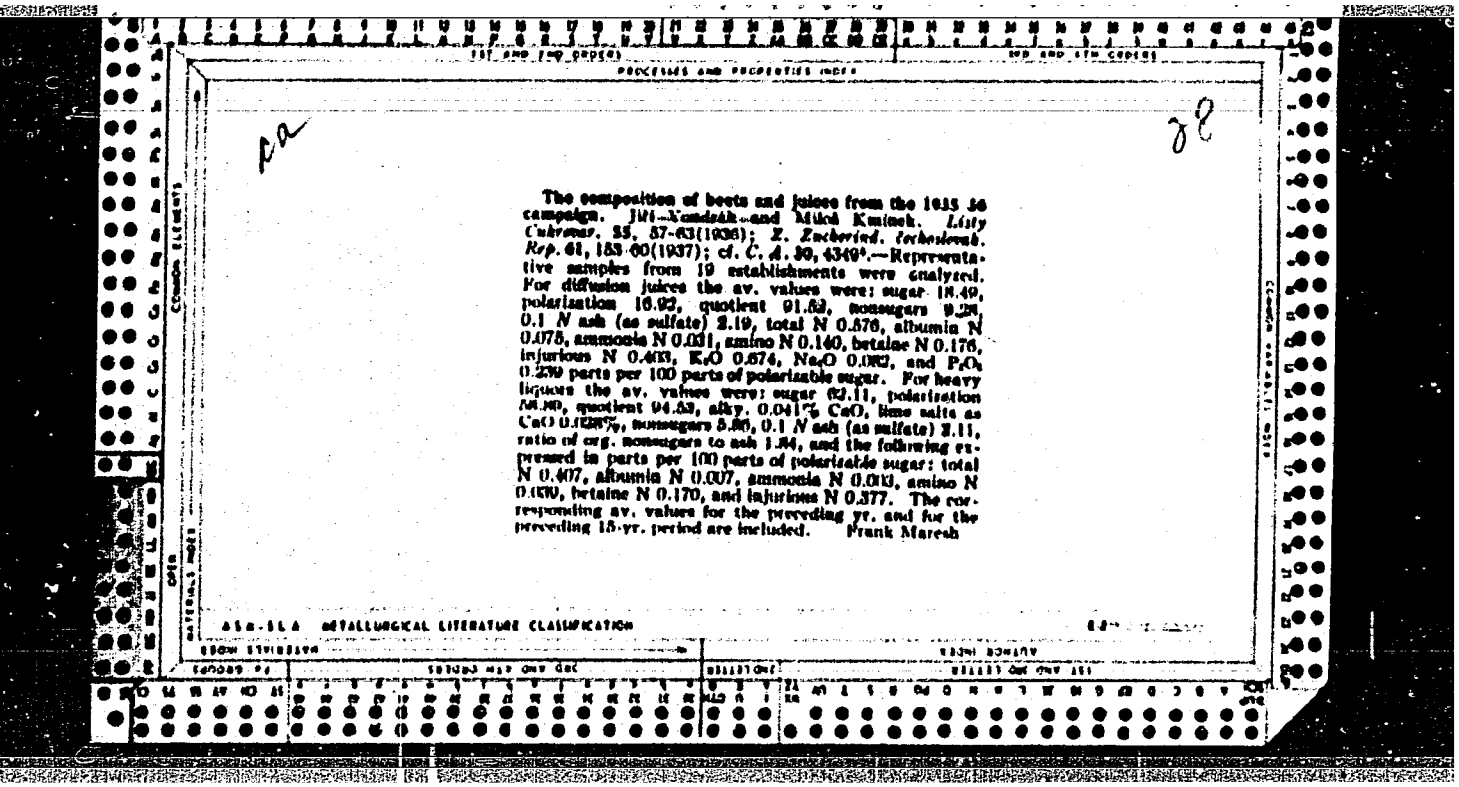


The composition of the beets and juices during the 1933-34 campaign. JH Vondrák, Z. Zucherind. Tschoslovak. Rep. 59, 145-9(1934). See C. A. 28, 7570⁸.
Frank Marsh

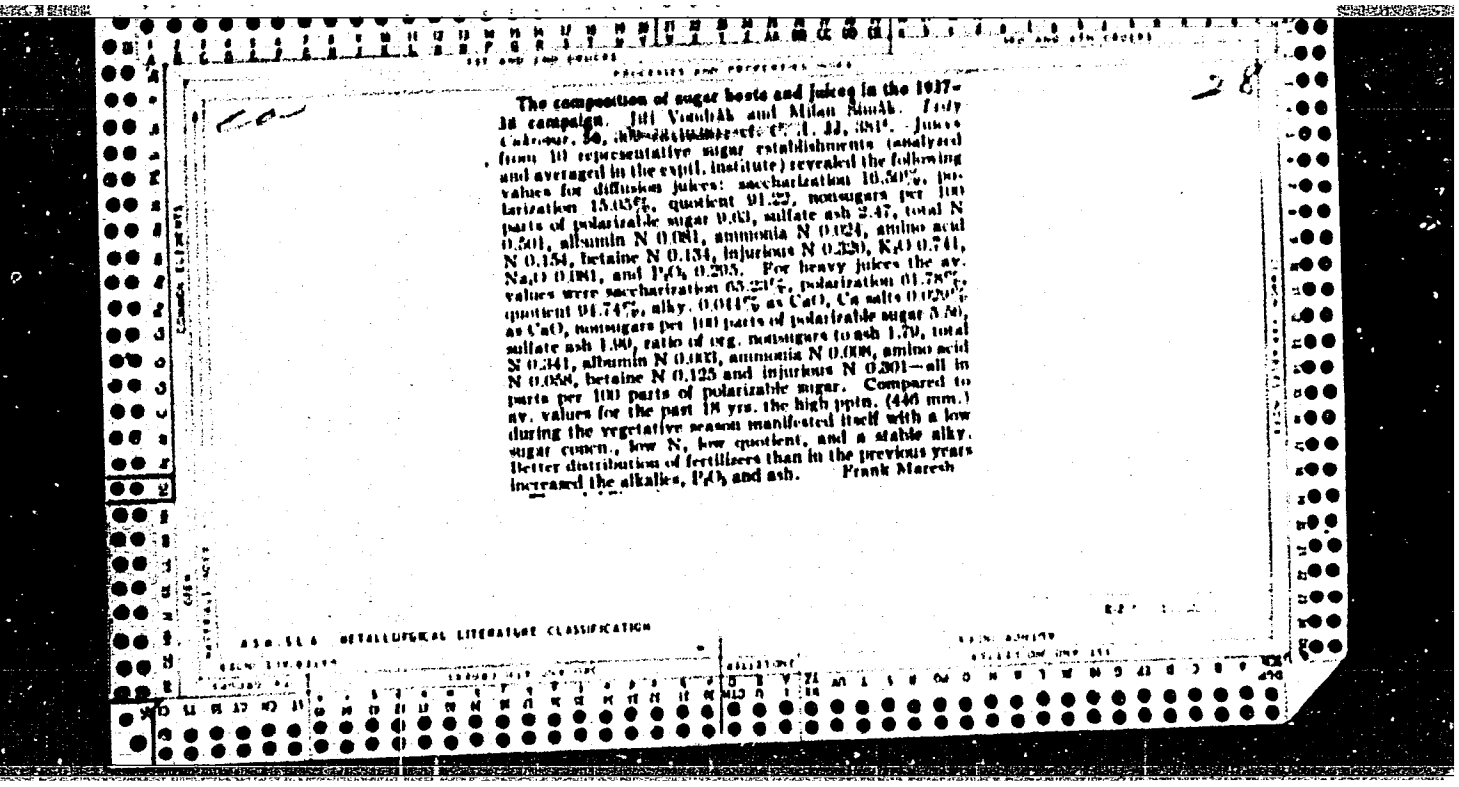
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



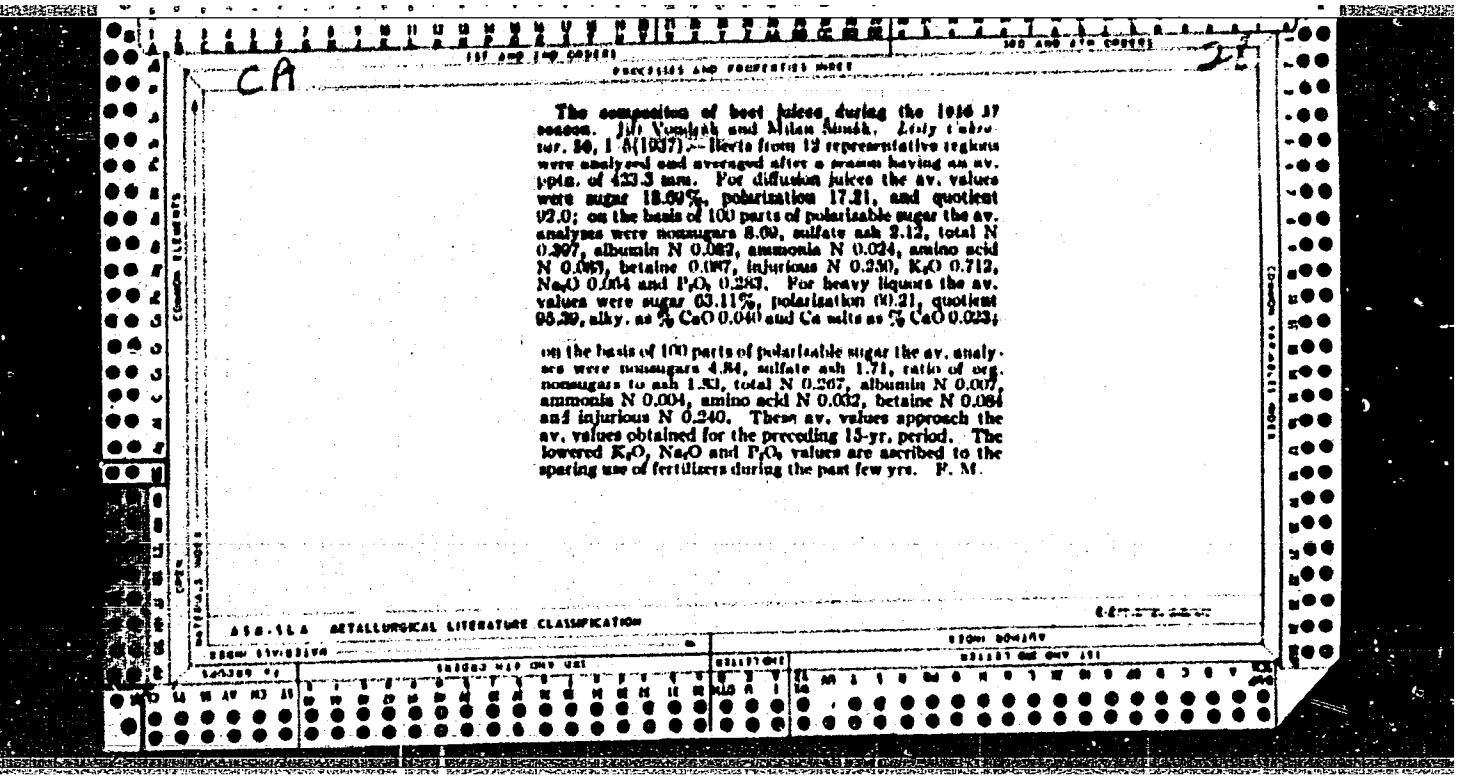
The composition of beets and juices from the 1934 35 campaign. Jiří Vondrák and Miloš Kminek. *Listy Cukrovar.* 54, 29 34(1935); *Z. Zuckerind. Cechoslovak Rep.* 60, 161-7.—Juices from 17 regional establishments were analysed for diffusion juices; the av. values were: saccharization 17.52, quotient 80.73, polarization 15.91, nonsugar 10.22 and sulfate ash 2.17. The av. values for the heavy liquors were: saccharization 62.05, polarization 58.79, quotient 94.75, alky. as percentage of CaO 0.033, Ca salts as percentage of CaO 0.144, color in degrees Ni. 20.6° per 100 dry matter, nonsugars 5.66, sulfate ash 1.80, and ratio of org. nonsugars to ash 2.11. Computed on the basis of 100 parts of polarizable sugar, the av. values in the diffusion juice were: total N 0.558, albumin N, 0.078, ammonia N 0.025, amino acid N 0.146, betaine N 0.139, detrimental N 0.384, Na_2O 0.078, P_2O_5 0.231 and K_2O 0.710. Besides the values for each of the 17 establishments, the av. values for each of the past 15 yrs. are included. During the 15-yr. period the annual pptn. during the growing season showed the range 233.9–471.1 mm. For this rise in pptn. the corresponding total N in diffusion juices decreased 0.558–0.431 and in the heavy juices decreased 0.482 0.291, the amino acid N in diffusion juices decreased 0.179 0.111, the Ca salts decreased, the alky. of heavy juices rose, but for the betaine N and for the quotient of heavy juices this relation to the pptn. was not apparent. The present season characterized by low rainfall (311.5 mm.) showed total N above the av. (0.571–0.368), an alky. below the av. (0.033 0.035) and an ash below the 15-yr. av. (2.17–2.50). P. M.



The composition of beets and juices from the 1935 36 campaign. Jiří Kendelík and Miloš Kminek. *Listy Cukrovar.* 55, 57-63(1936); *Z. Zuckerind. československ. Rep.* 61, 183-90(1937); cf. *C. A.* 30, 4349⁹.—Representative samples from 19 establishments were analyzed. For diffusion juices the av. values were: sugar 18.49, polarization 16.92, quotient 91.53, nonsugars 9.28, 0.1 *N* ash (as sulfate) 2.19, total N 0.576, albumin N 0.078, ammonia N 0.031, amino N 0.140, betaine N 0.176, injurious N 0.403, K_2O 0.674, Na_2O 0.082, and P_2O_5 0.230 parts per 100 parts of polarizable sugar. For heavy liquors the av. values were: sugar 62.11, polarization 58.80, quotient 94.53, alky. 0.041% CaO, lime salts as CaO 0.128%, nonsugars 5.80, 0.1 *N* ash (as sulfate) 3.11, ratio of org. nonsugars to ash 1.84, and the following expressed in parts per 100 parts of polarizable sugar: total N 0.407, albumin N 0.007, ammonia N 0.013, amino N 0.150, betaine N 0.170, and injurious N 0.377. The corresponding av. values for the preceding yr. and for the preceding 15-yr. period are included. Frank Maresh



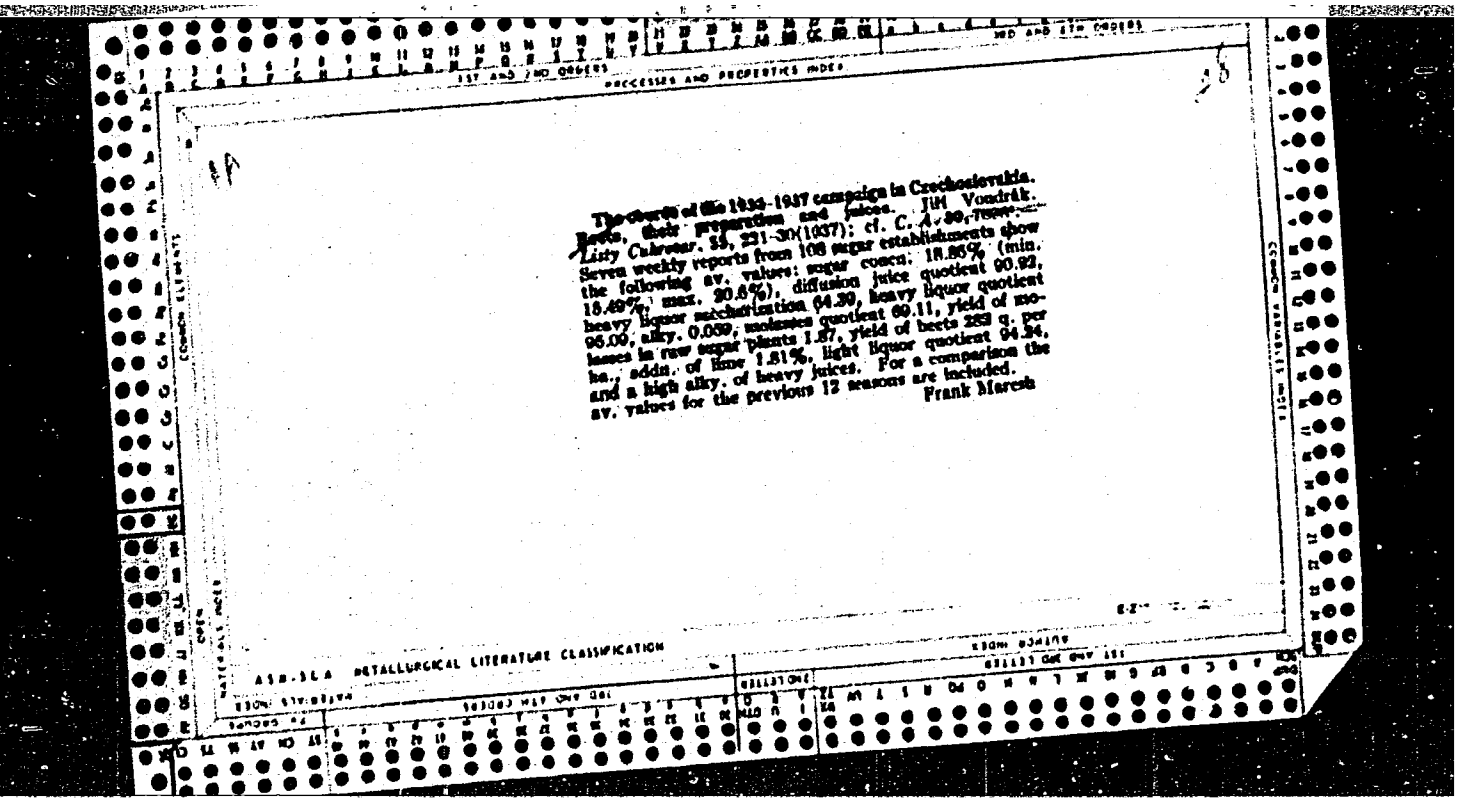
The composition of sugar beets and juices in the 1937-38 campaign. Jiří Vondrák and Milan Mináč. *Listy Cukrovar.* 56, [illegible] (1938). Juices from 10 representative sugar establishments (analyzed and averaged in the exptl. institute) revealed the following values for diffusion juices: saccharization 10.50%, polarization 15.05%, quotient 91.29, nonsugars per 100 parts of polarizable sugar 9.83, sulfate ash 2.47, total N 0.201, albumin N 0.081, ammonia N 0.024, amino acid N 0.154, betaine N 0.134, injurious N 0.230, K_2O 0.741, Na_2O 0.081, and P_2O_5 0.205. For heavy juices the av. values were saccharization 65.21%, polarization 01.78%, quotient 91.74%, alky. 0.041% as CaO, Ca salts 0.020% as CaO, nonsugars per 100 parts of polarizable sugar 8.50, sulfate ash 1.80, ratio of sug. nonsugars to ash 1.70, total N 0.241, albumin N 0.083, ammonia N 0.008, amino acid N 0.058, betaine N 0.125 and injurious N 0.201—all in parts per 100 parts of polarizable sugar. Compared to av. values for the past 18 yrs. the high ppts. (446 mm.) during the vegetative season manifested itself with a low sugar concn., low N, low quotient, and a stable alky. Better distribution of fertilizers than in the previous years increased the alkalies, P_2O_5 and ash. Frank Maresh



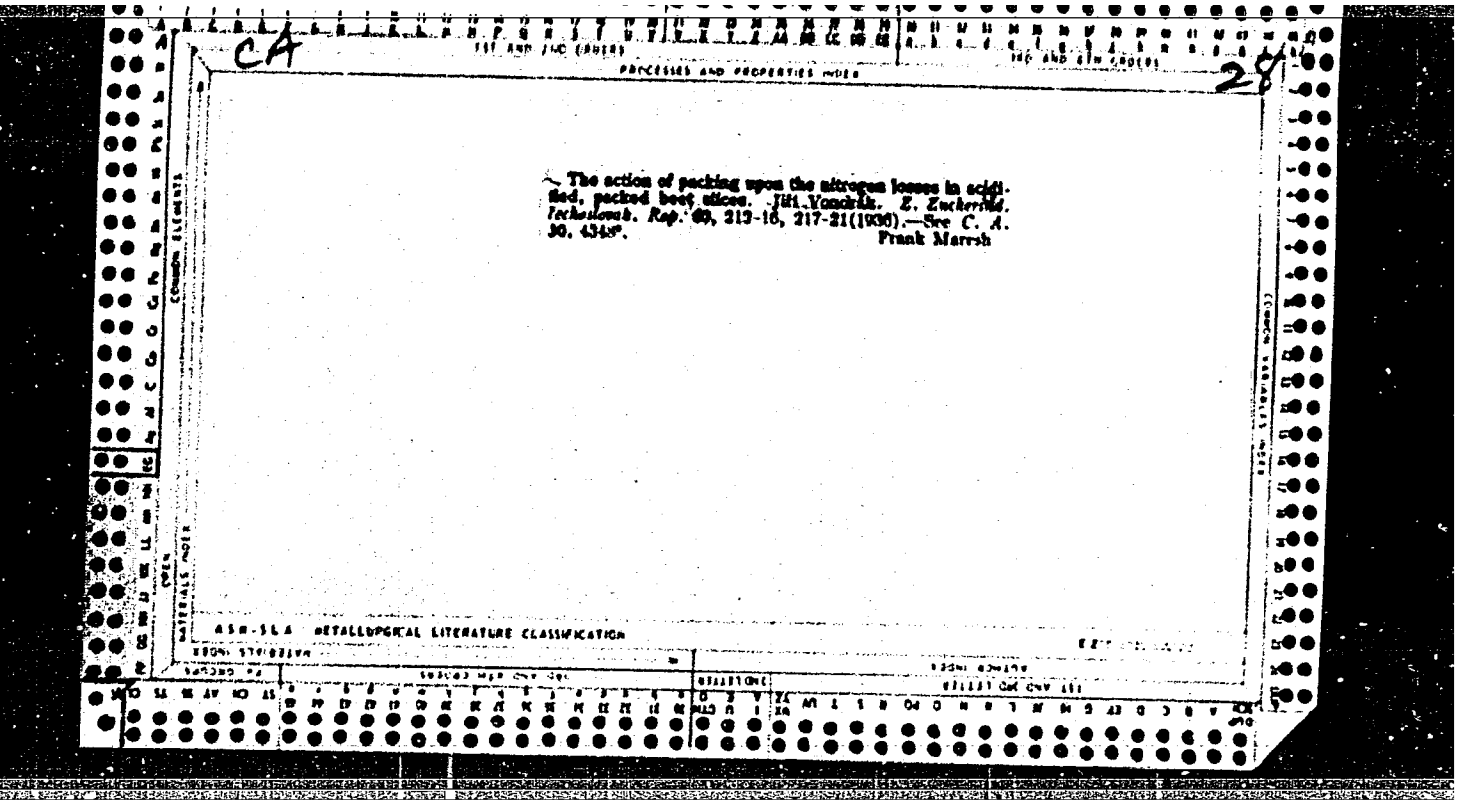
CA

The composition of beet juices during the 1936 37 season. Jiří Vondrák and Milan Šimák. *Listy Cukrovar.* 56, 1–6(1937).—Juices from 12 representative regions were analyzed and averaged after a season having an av. ppta. of 423.3 mm. For diffusion juices the av. values were sugar 18.09%, polarization 17.21, and quotient 92.0; on the basis of 100 parts of polarizable sugar the av. analyses were nonsugars 8.09, sulfate ash 2.12, total N 0.307, albumin N 0.082, ammonia N 0.024, amino acid N 0.085, betaine 0.087, injurious N 0.230, K_2O 0.712, Na_2O 0.004 and P_2O_5 0.283. For heavy liquors the av. values were sugar 63.11%, polarization 60.21, quotient 95.39, alky. as % CaO 0.040 and Ca salts as % CaO 0.023; on the basis of 100 parts of polarizable sugar the av. analyses were nonsugars 4.84, sulfate ash 1.71, ratio of org. nonsugars to ash 1.83, total N 0.267, albumin N 0.007, ammonia N 0.004, amino acid N 0.032, betaine N 0.084 and injurious N 0.240. These av. values approach the av. values obtained for the preceding 15-yr. period. The lowered K_2O, Na_2O and P_2O_5 values are ascribed to the sparing use of fertilizers during the past few yrs. F. M.

A50-1LA METALLURGICAL LITERATURE CLASSIFICATION



The results of the 1936-1937 campaign in Czechoslovakia. Beets, their preparation and juices. JM Vondrák. Listy Cukrovar. 55, 231-30(1937); cf. C. A. 30, 7999. Seven weekly reports from 108 sugar establishments show the following av. values: sugar concn. 18.86% (min. 18.49%; max. 20.6%), diffusion juice quotient 90.92, heavy liquor saccharization 94.30, heavy liquor quotient 96.00, alky. 0.039, molasses quotient 60.11, yield of molasses in raw sugar plants 1.87, yield of beets 289 q. per ha., addn. of lime 1.81%, light liquor quotient 94.84, and a high alky. of heavy juices. For a comparison the av. values for the previous 12 seasons are included.
Frank Hlavsa

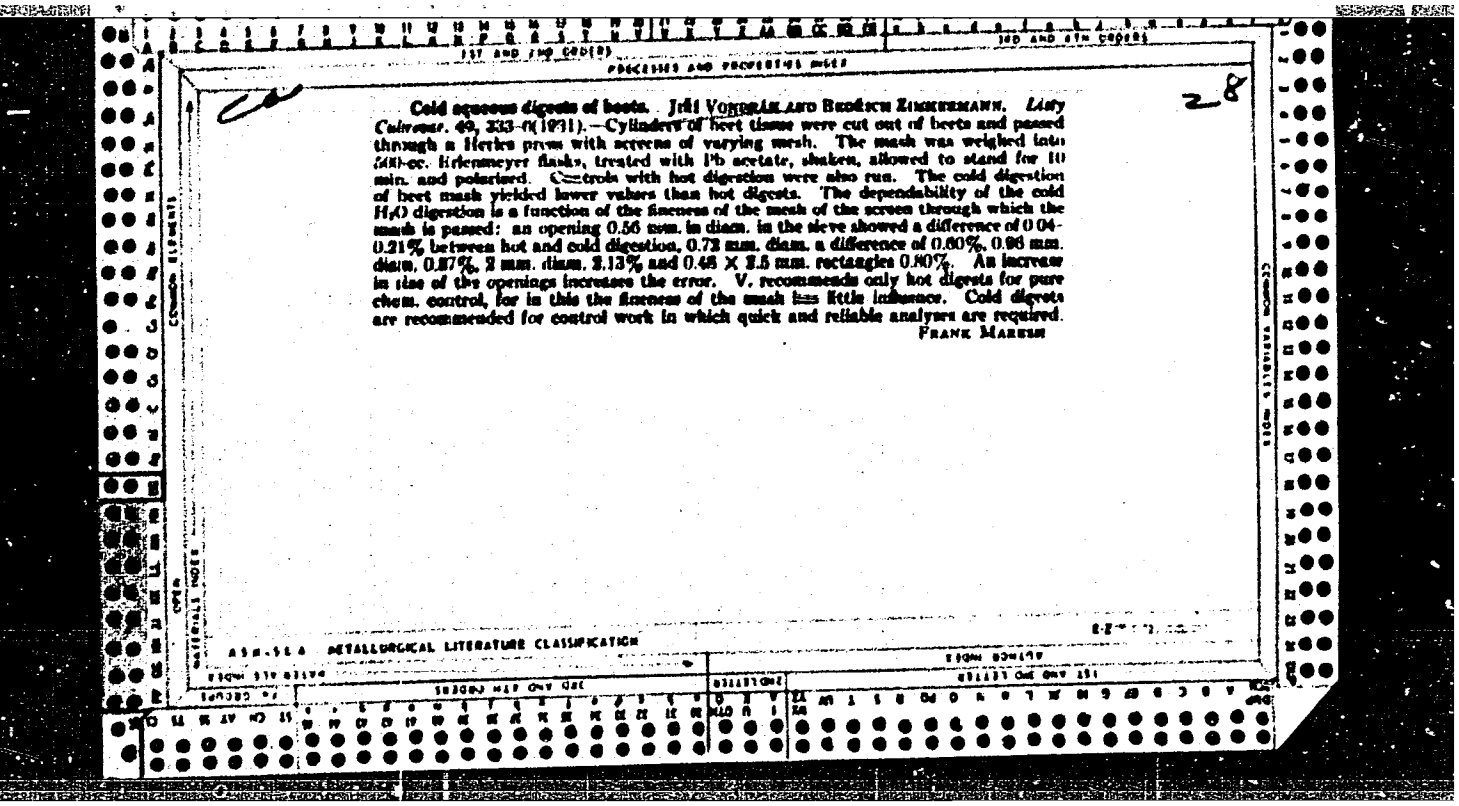


CA

28

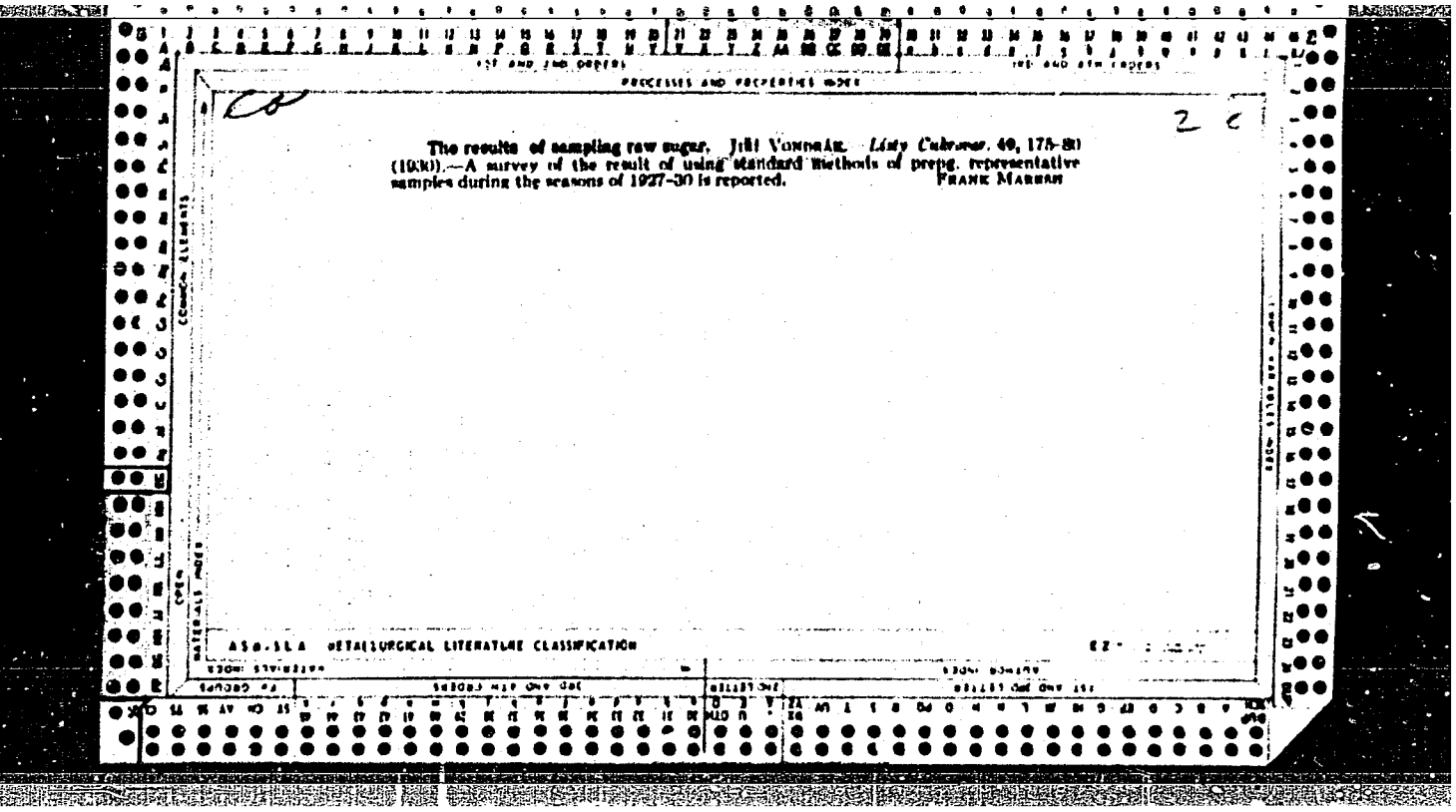
The action of packing upon the nitrogen losses in acidified, packed beef slices. Jiří Vonchák, E. Zuckerfeld. *Technologie. Rep.* 69, 213-16, 217-21(1936).—See *C. A.* 30, 4345⁹.
Frank Marrsh

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

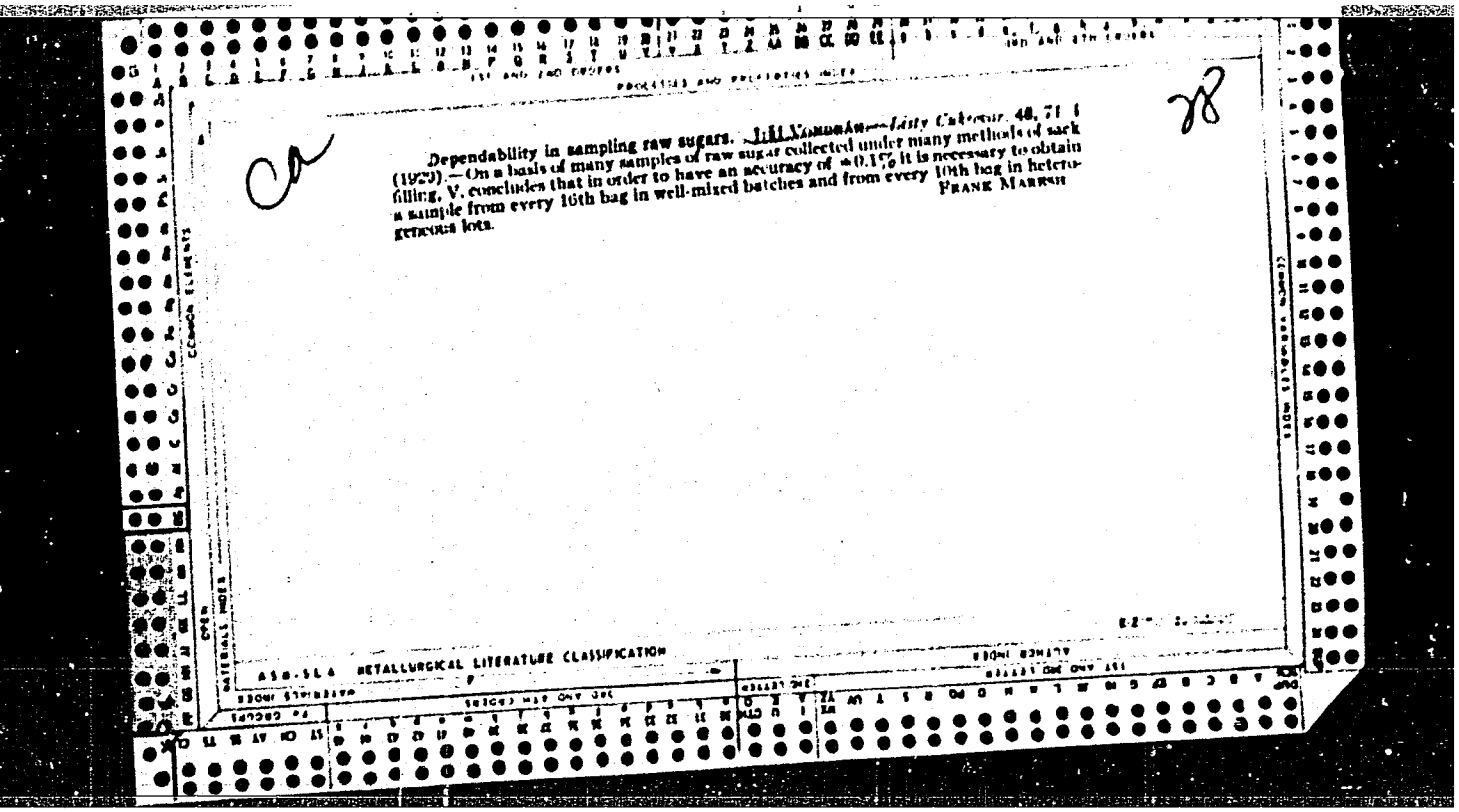


Cold aqueous digests of beets. Jiří Vondrák and Bedřich Zimmermann. *Listy Cukrovar.* 49, 333–6(1931).—Cylinders of beet tissue were cut out of beets and passed through a Herles press with screens of varying mesh. The mash was weighed into 200-cc. Erlenmeyer flasks, treated with Pb acetate, shaken, allowed to stand for 10 min. and polarized. Controls with hot digestion were also run. The cold digestion of beet mash yielded lower values than hot digests. The dependability of the cold H_2O digestion is a function of the fineness of the mash of the screen through which the mash is passed: an opening 0.56 mm. in diam. in the sieve showed a difference of 0.04–0.21% between hot and cold digestion, 0.72 mm. diam. a difference of 0.60%, 0.96 mm. diam. 0.87%, 2 mm. diam. 2.13% and 0.48 × 2.5 mm. rectangles 0.80%. An increase in size of the openings increases the error. V. recommends only hot digests for pure chem. control, for in this the fineness of the mash has little influence. Cold digests are recommended for control work in which quick and reliable analyses are required.

Frank Marsik



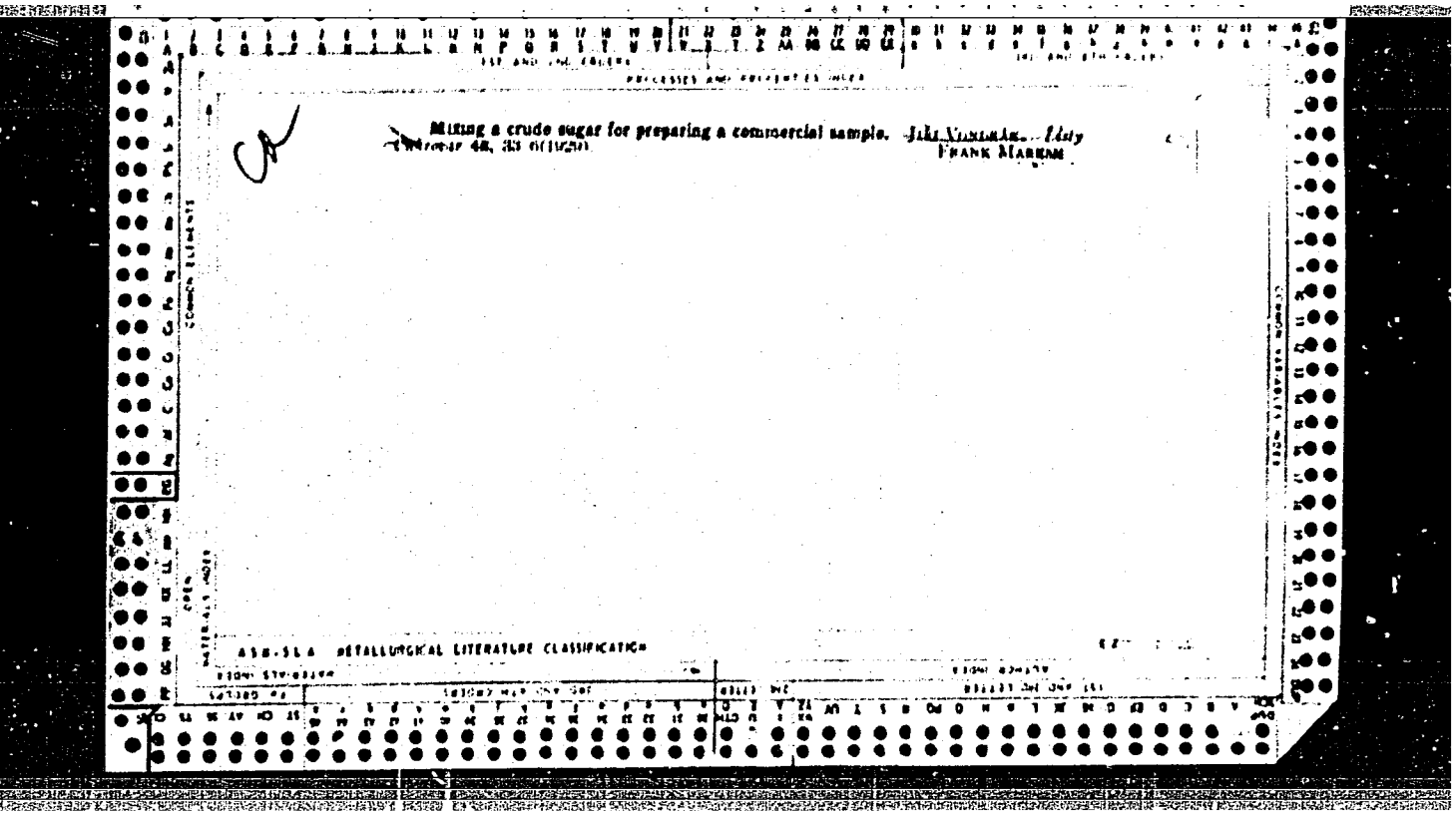
The results of sampling raw sugar. JILL VONDRAK. *Listy Cukrovar.* 49, 175–80 (1930).—A survey of the result of using standard methods of prepg. representative samples during the seasons of 1927–30 is reported. FRANK MARSAN

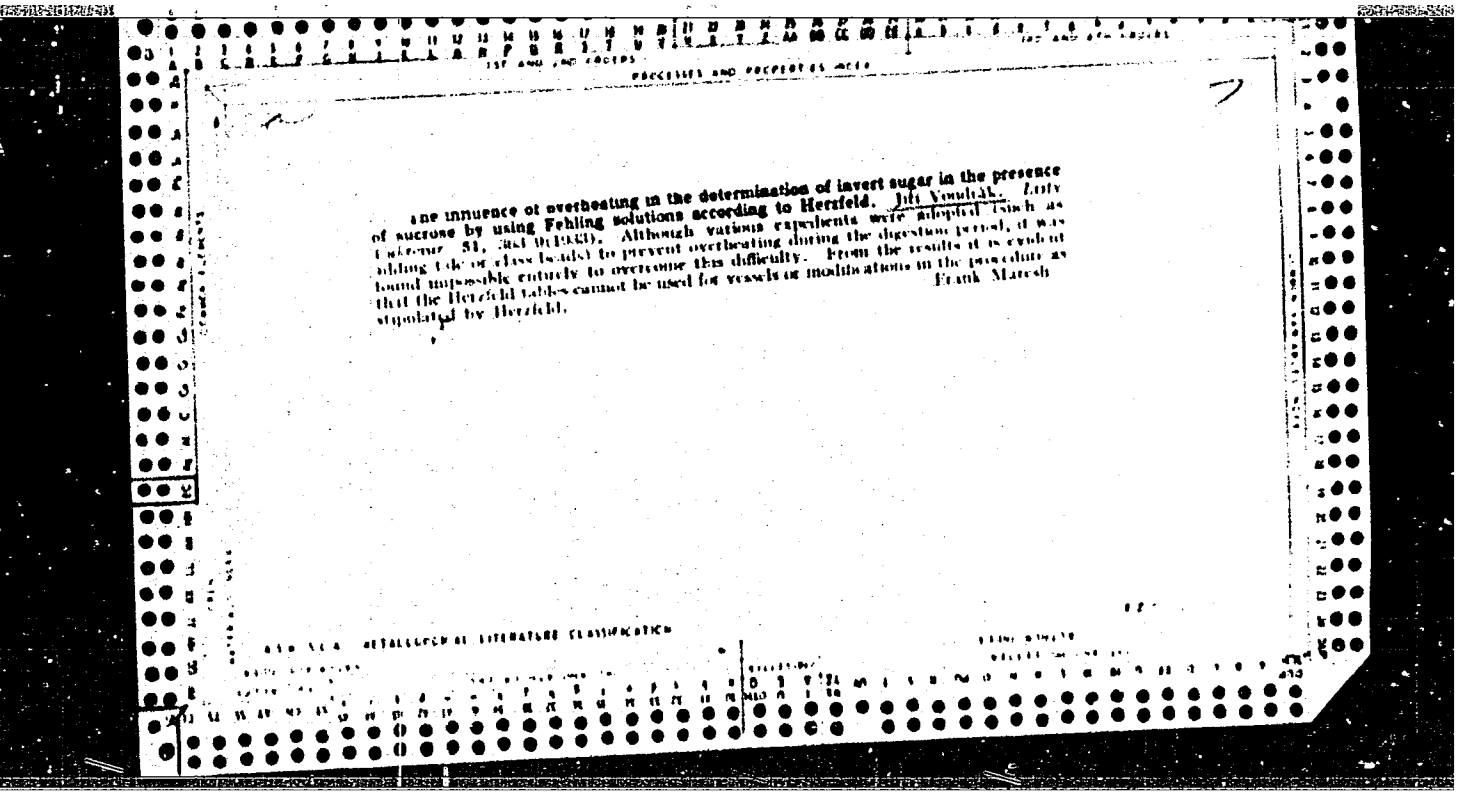


Dependability in sampling raw sugars. [illegible] *Int. Sugar J.*, 41, 71 (1939).—On a basis of many samples of raw sugar collected under many methods of sack filling, V. concludes that in order to have an accuracy of ±0.1% it is necessary to obtain a sample from every 16th bag in well-mixed batches and from every 10th bag in heterogeneous lots.

FRANK MARWIN

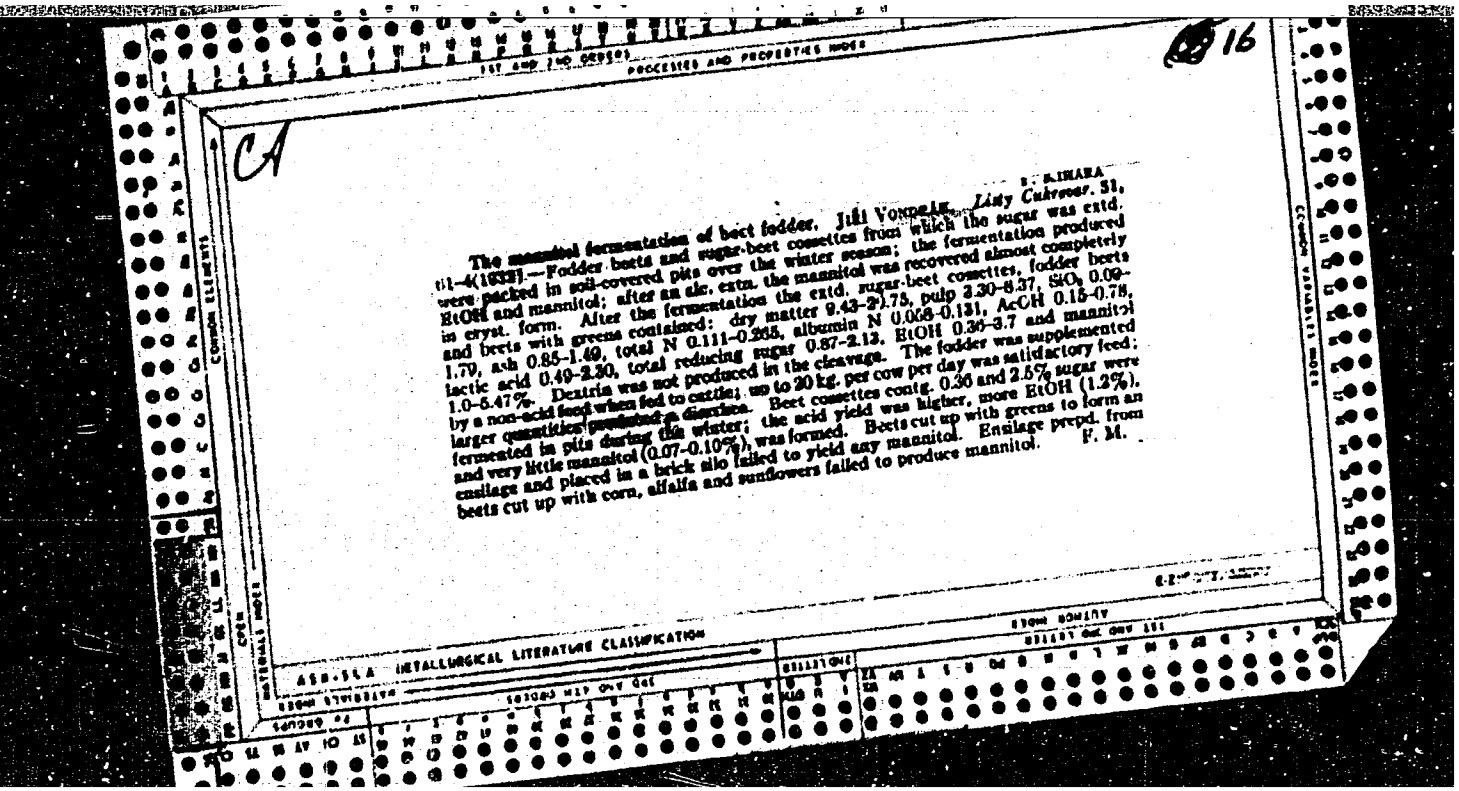
A58-5L4 METALLURGICAL LITERATURE CLASSIFICATION





The influence of overheating in the determination of invert sugar in the presence of sucrose by using Fehling solutions according to Herzfeld. Jiří Vondrák. Listy Cukrovar. 51, 181-91(1933). Although various expedients were adopted (such as adding talc or glass beads) to prevent overheating during the digestion period, it was found impossible entirely to overcome this difficulty. From the results it is evident that the Herzfeld tables cannot be used for vessels or modifications in the procedure as stipulated by Herzfeld.

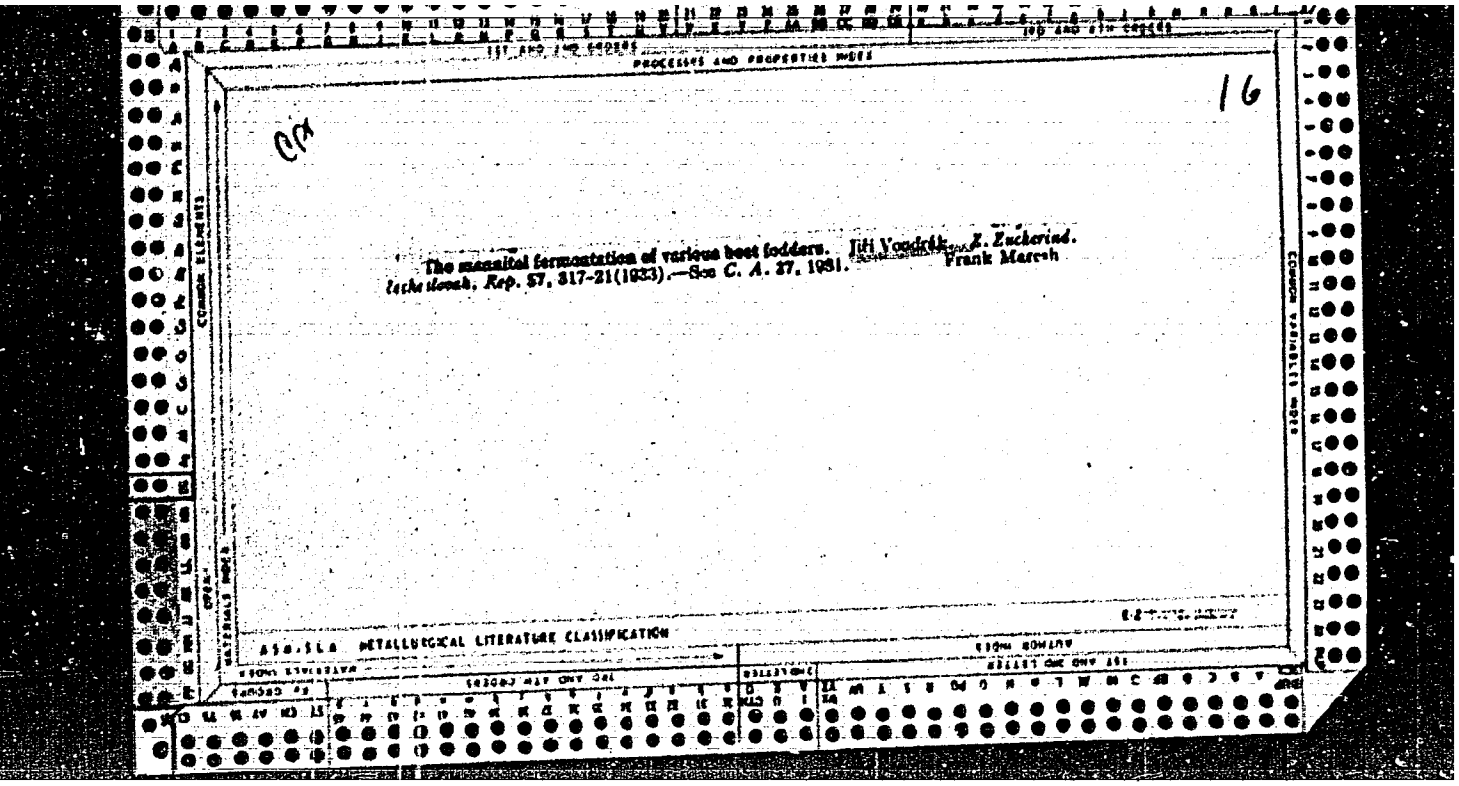
Frank Marsh



CA

16

The mannitol fermentation of beet fodder. Jiří Vondrák. *Listy Cukrovar.* 51, 111–4(1933).—Fodder beets and sugar-beet cossettes from which the sugar was extd. were packed in soil-covered pits over the winter season; the fermentation produced EtOH and mannitol; after an air. extn. the mannitol was recovered almost completely in cryst. form. After the fermentation the extd. sugar-beet cossettes, fodder beets and beets with greens contained: dry matter 9.43–21.75, pulp 3.30–8.37, SiO_2 0.09–1.79, ash 0.85–1.49, total N 0.111–0.265, albumin N 0.068–0.131, AcOH 0.15–0.78, lactic acid 0.49–2.30, total reducing sugar 0.87–2.13, EtOH 0.36–3.7 and mannitol 1.0–5.47%. Dextrin was not produced in the cleavage. The fodder was supplemented by a non-acid feed when fed to cattle; up to 20 kg. per cow per day was satisfactory feed; larger quantities produced a diarrhea. Beet cossettes contg. 0.36 and 2.5% sugar were fermented in pits during the winter; the acid yield was higher, more EtOH (1.2%), and very little mannitol (0.07–0.10%), was formed. Beets cut up with greens to form an ensilage and placed in a brick silo failed to yield any mannitol. Ensilage prepd. from beets cut up with corn, alfalfa and sunflowers failed to produce mannitol. F. M.



16

The mannital fermentation of various beet fodders. Jiří Vondrák, Z. Zucherind. Frank Marcsh
Lechnosk. Rep. 57, 317-21(1933).—See C. A. 27, 1981.

A50.51A METALLURGICAL LITERATURE CLASSIFICATION

BALEJ, J.; PASEKA, I.; VONDRAK, J.

Determination of physical-chemical properties of alkali metal amalgams. Pt.3. Coll Cz Chem 28 no.8:2242-2244 Ag '63.

1. Institut fur anorganische Chemie, Tschechoslowakische Akademie der Wissenschaften, Prag.

BALEJ, Jan; VONDRAK, Jiri; KOUDELKA, Vojtech; PASEKA, Ivo

Device for measurement of the gas evolution and flow velocity. Chem listy 57 no. 12: 1284-1288 D '63.

1. Ustav anorganicke chemie, Ceskoslovenska akademie ved, Praha (for all except Koudelka).
2. Prazska akumulatorka, n.p., Mlada Boleslav (for Koudelka).

Vondrák J.

Electric properties of lead(II) oxide. Jiří Vondrák (Vysoká škola chem.-technol., Prague). Chem. listy 51, 1025-8(1957).—Crystals of the rhombic modification of PbO were prepd. and some properties of this amphoteric semiconductor were studied: i.e., the type and magnitude of its conductance, photoelec. effect, rectifying effect, transistor effect, and the formation of the rectifying transitor *n-p*. E. Erdős

4

CZECHOSLOVAKIA

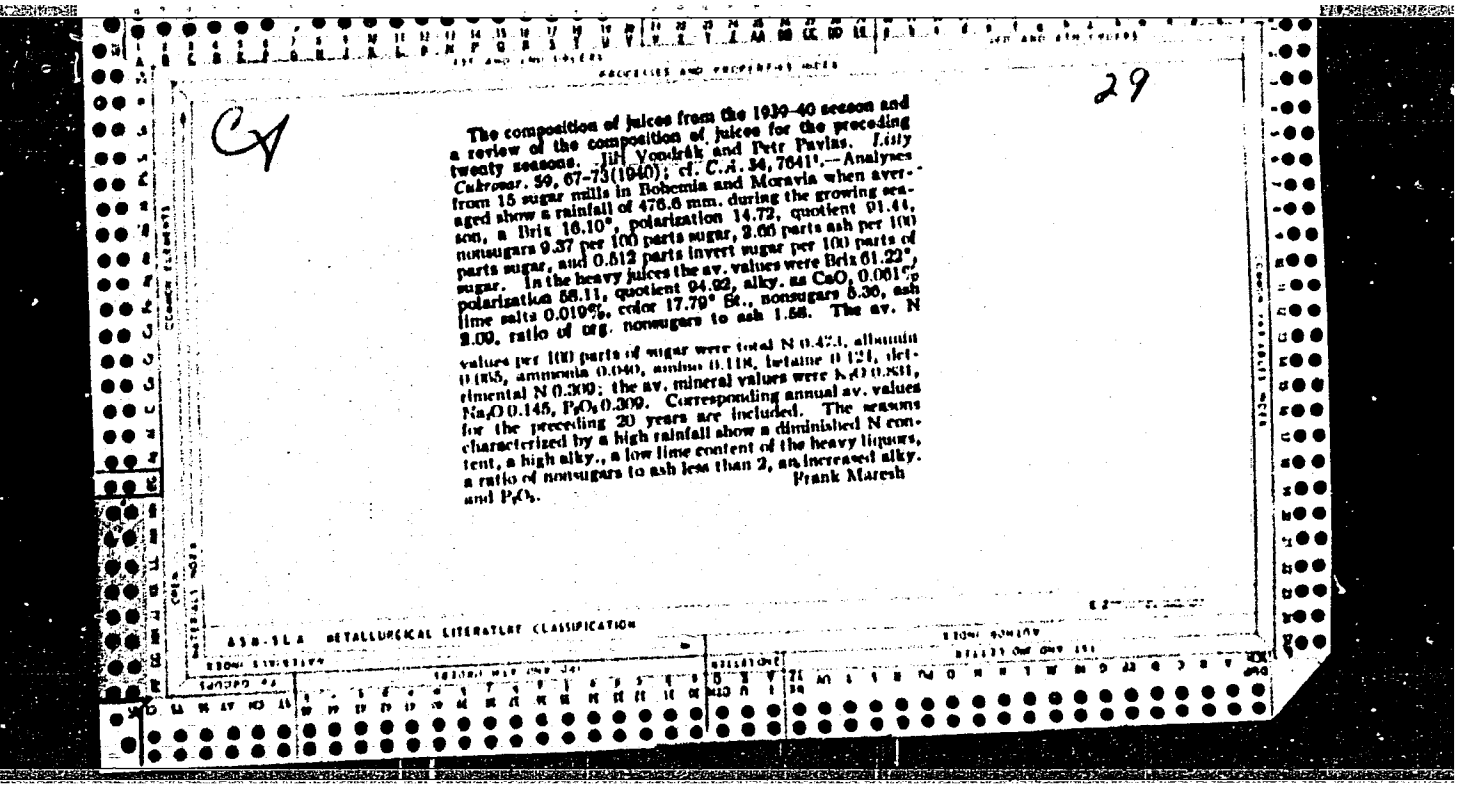
PASEKA, I.; BALEJ, J.; VONDRAK, J.; REGNER, A.

Institute of Inorganic Chemistry, Czechoslovak Academy of Sciences (Institut für anorganische Chemie, Tschechoslowakische Akademie der Wissenschaften), Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications, No 10, October 1966, pp 3859-3868

"Kinetics of anode solubility of sodium amalgams on a vertical flowing electrode."

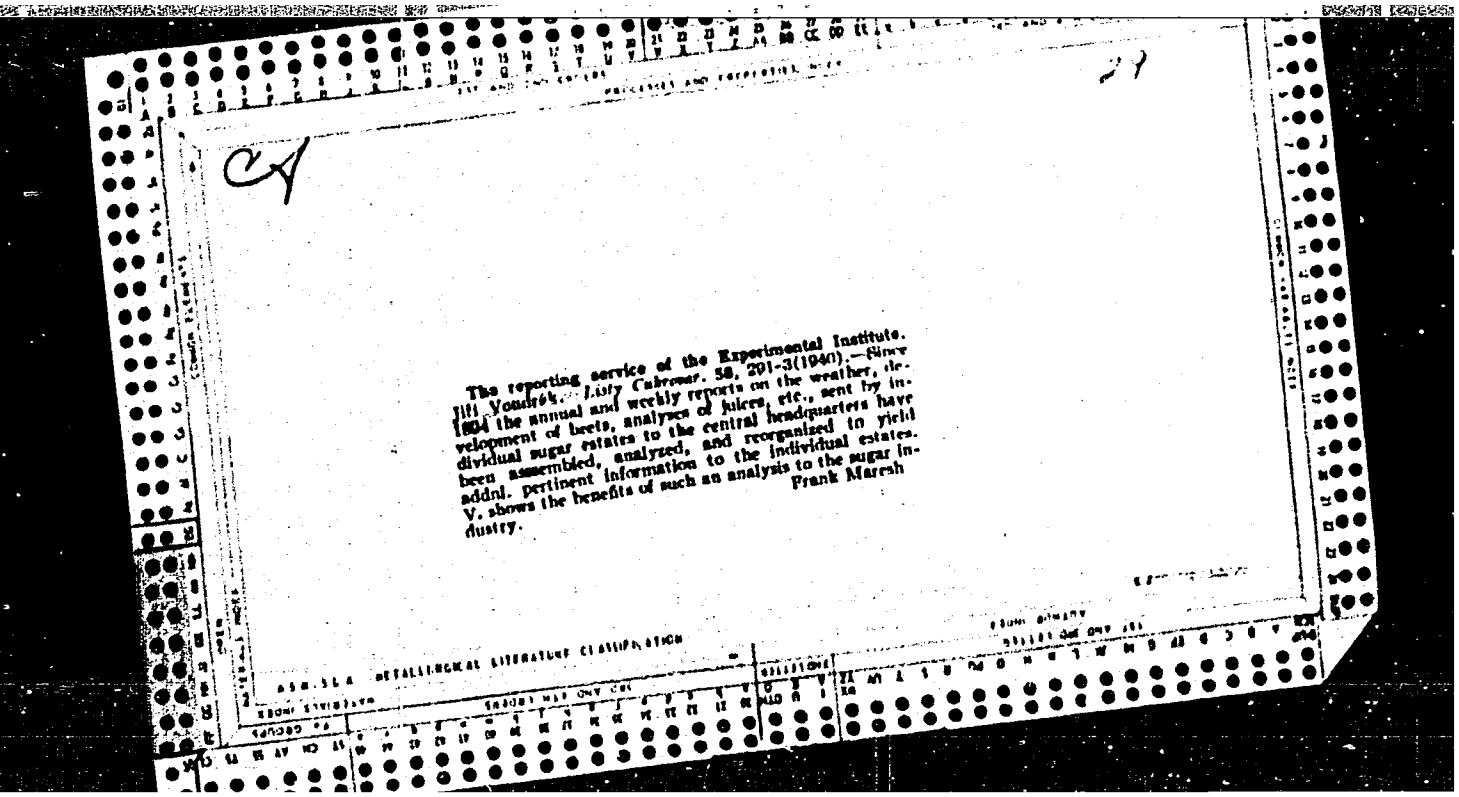
(4)



29

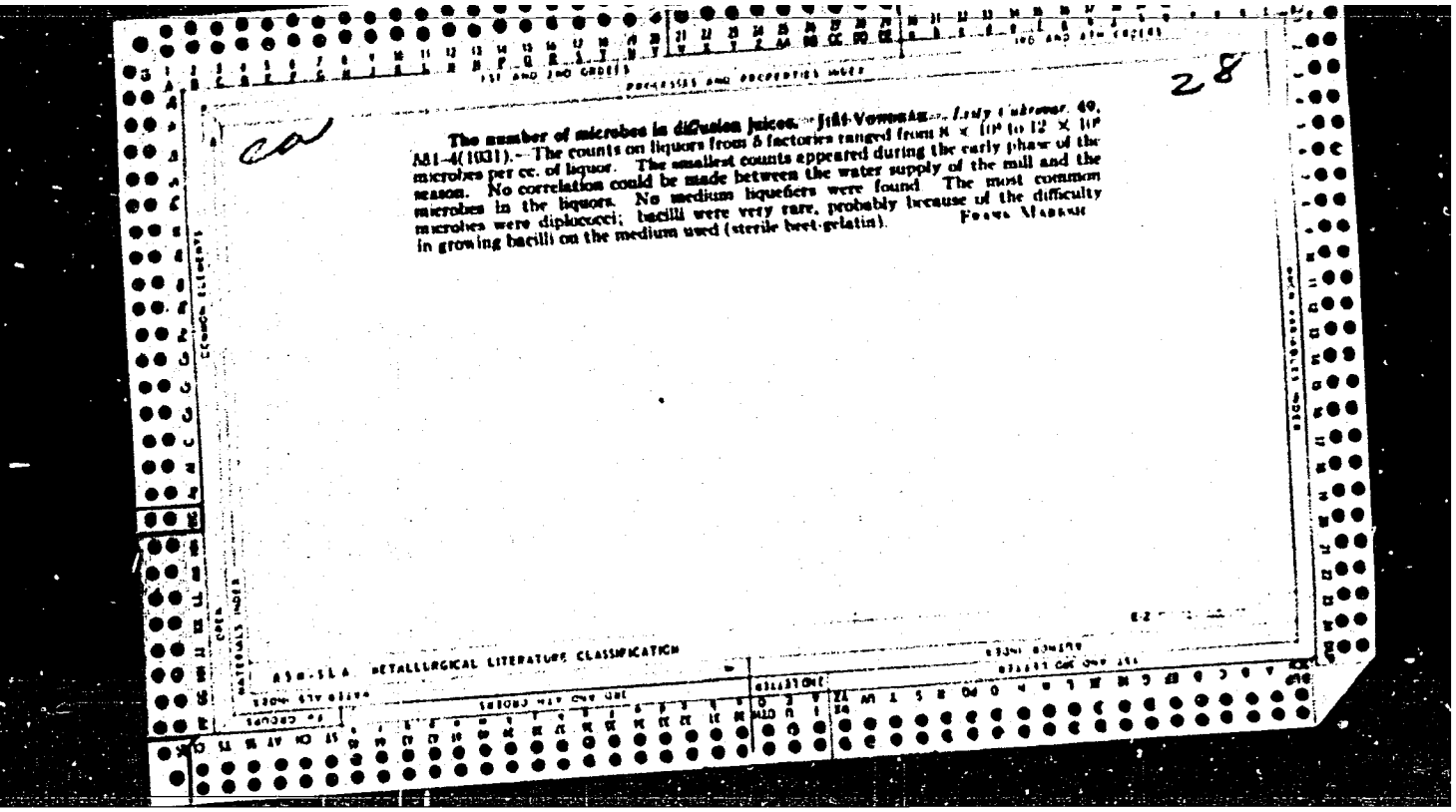
The composition of juices from the 1939–40 season and a review of the composition of juices for the preceding twenty seasons. Jiří Vondrák and Petr Pavlas. *Listy Cukrovar.* 59, 67–73(1940); cf. *C.A.* 34, 7641⁹.—Analyses from 15 sugar mills in Bohemia and Moravia when averaged show a rainfall of 476.6 mm. during the growing season, a Brix 16.10°, polarization 14.72, quotient 91.44, nonsugars 9.37 per 100 parts sugar, 2.66 parts ash per 100 parts sugar, and 0.612 parts invert sugar per 100 parts of sugar. In the heavy juices the av. values were Brix 61.22°, polarization 56.11, quotient 94.92, alky. as CaO 0.061%, lime salts 0.010%, color 17.79° St., nonsugars 5.36, ash 2.09, ratio of org. nonsugars to ash 1.58. The av. N values per 100 parts of sugar were total N 0.423, albumin 0.185, ammonia 0.040, amino 0.118, betaine 0.124, elemental N 0.309; the av. mineral values were K_2O 0.831, Na_2O 0.145, P_2O_5 0.209. Corresponding annual av. values for the preceding 20 years are included. The seasons characterized by a high rainfall show a diminished N content, a high alky., a low lime content of the heavy liquors, a ratio of nonsugars to ash less than 2, an increased alky. and P_2O_5.

Frank Maresh



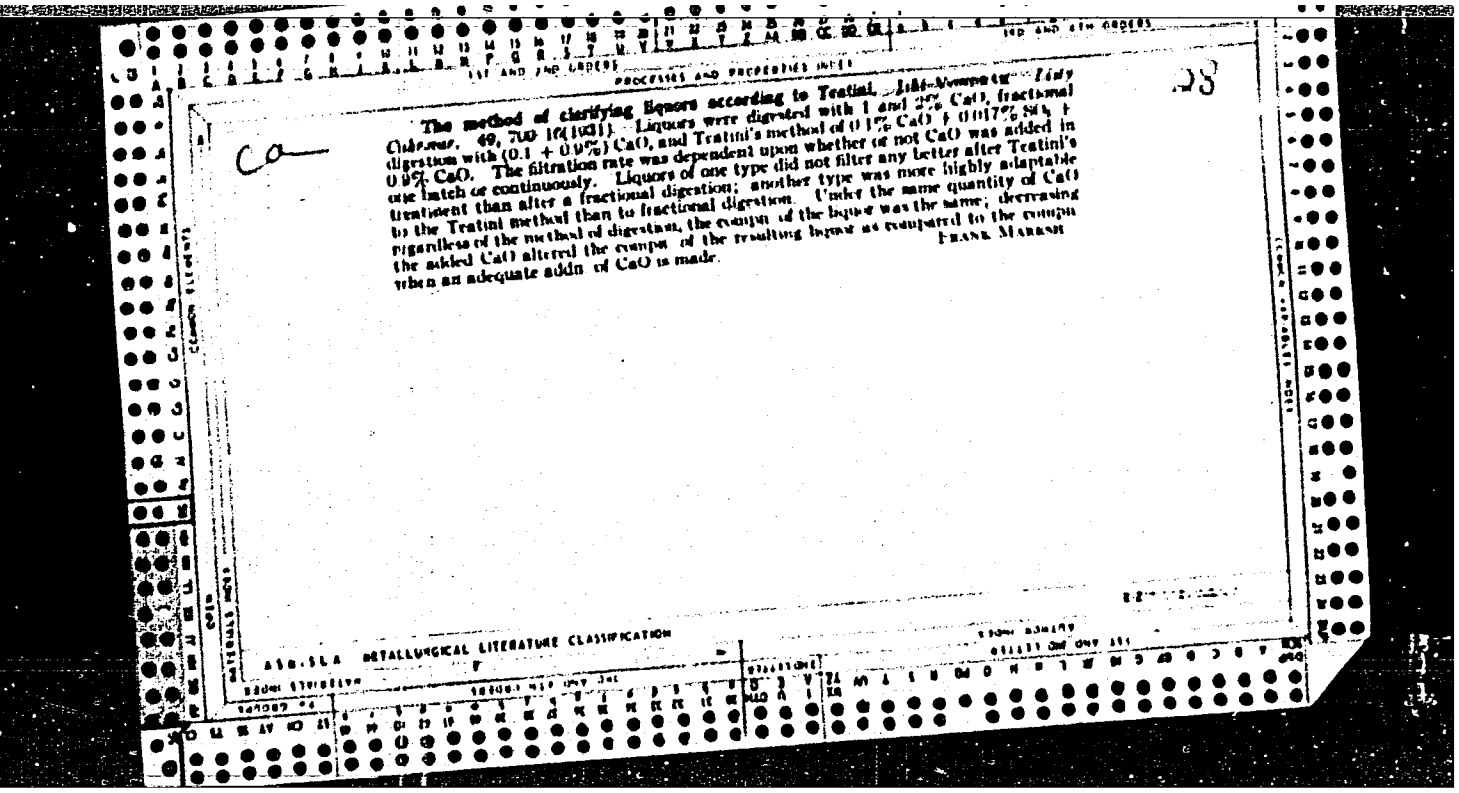
The reporting service of the Experimental Institute. Jiří Vondřák. *Listy Cukrovar.* 58, 291-3(1940).—Since 1934 the annual and weekly reports on the weather, development of beets, analyses of juices, etc., sent by individual sugar estates to the central headquarters have been assembled, analyzed, and reorganized to yield addnl. pertinent information to the individual estates. V. shows the benefits of such an analysis to the sugar industry.

Frank Marsh



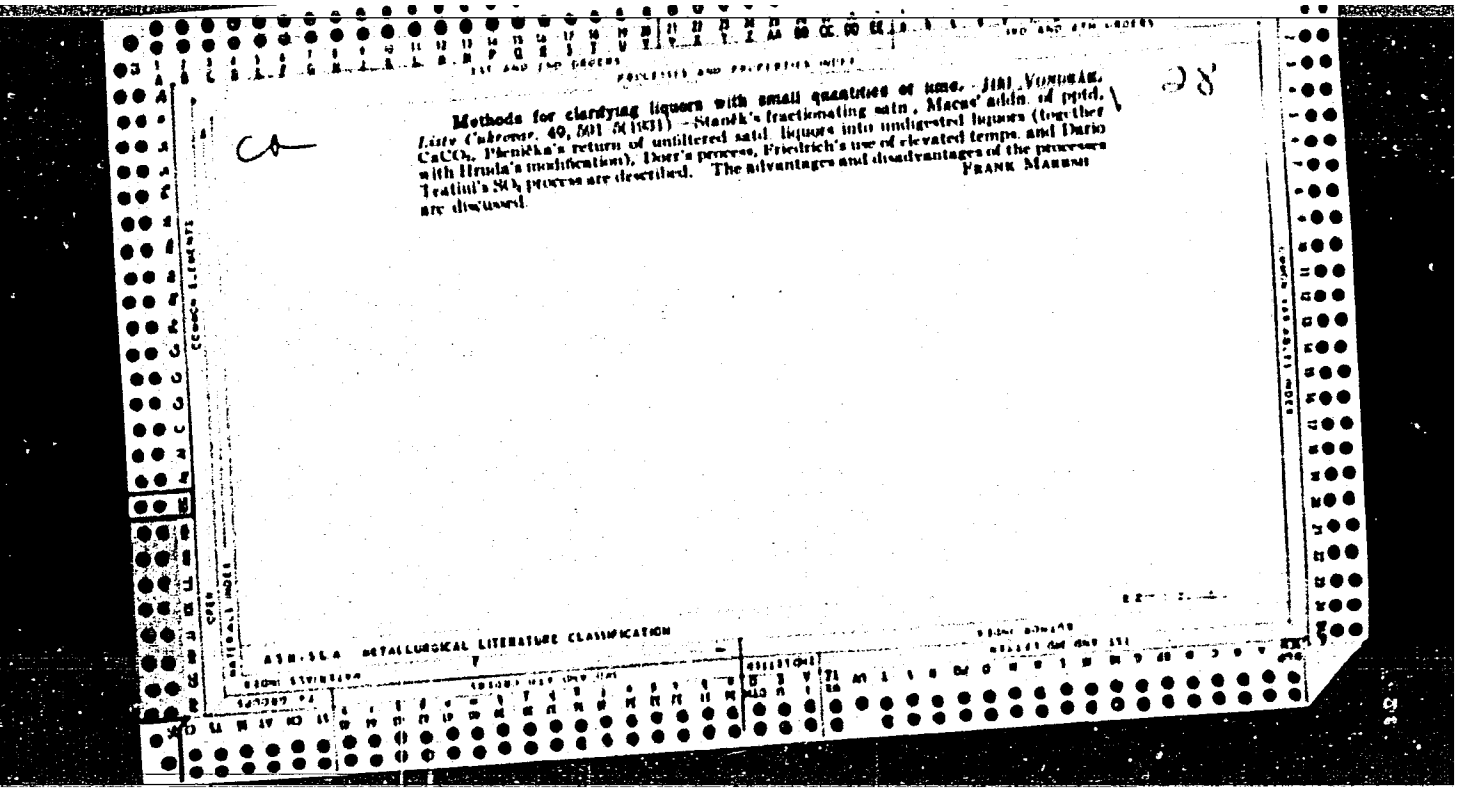
28

The number of microbes in diffusion juices. Jilk-Vowinckel. *Listy Cukrovar.* 49, A81-4(1931).—The counts on liquors from 5 factories ranged from 8 × 10⁶ to 12 × 10⁶ microbes per cc. of liquor. The smallest counts appeared during the early phase of the season. No correlation could be made between the water supply of the mill and the microbes in the liquors. No medium liquefiers were found. The most common microbes were diplococci; bacilli were very rare, probably because of the difficulty in growing bacilli on the medium used (sterile beet-gelatin). Fowler Marshall



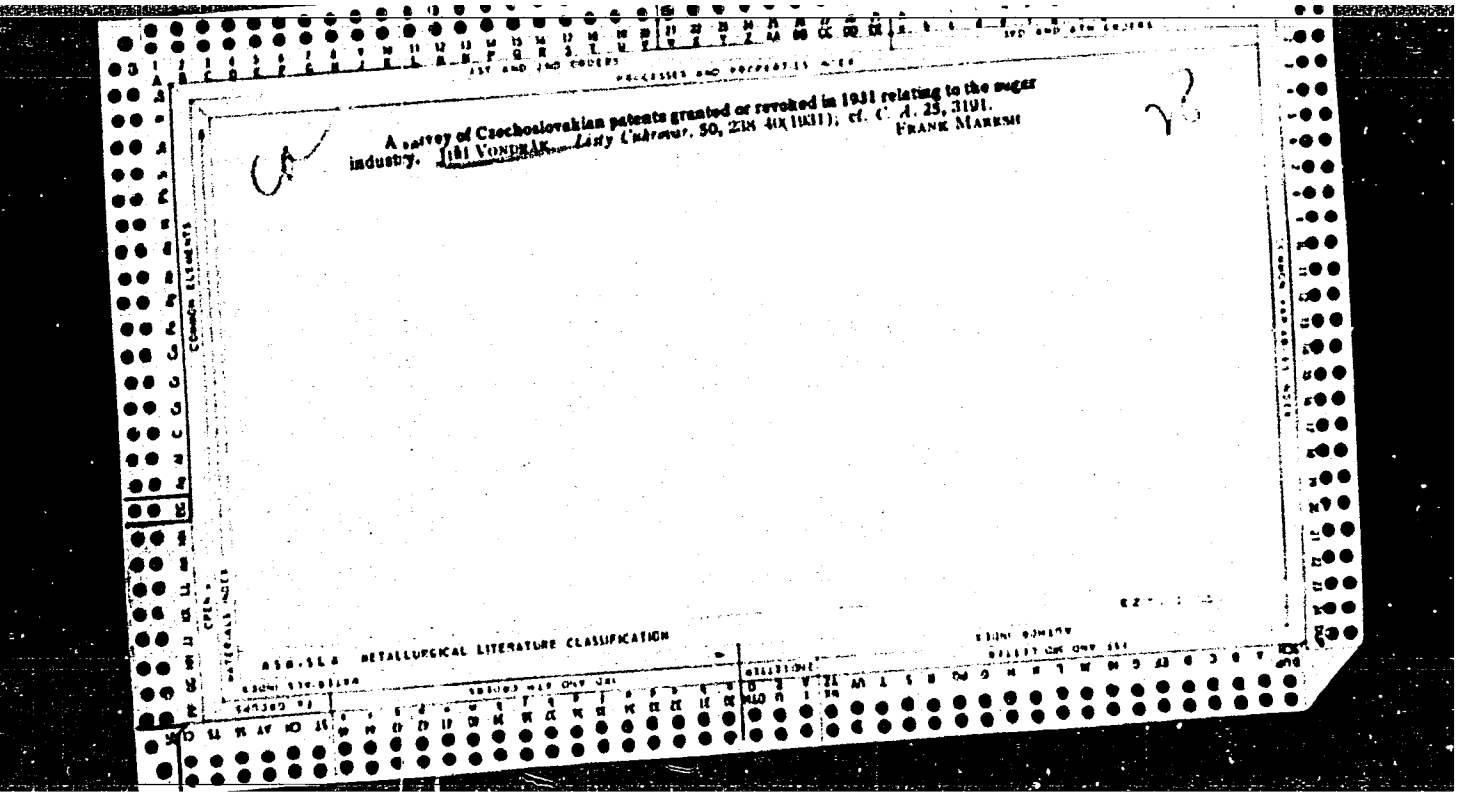
The method of clarifying liquors according to Teatini, Ital. Zucker Chim. 49, 700-10(1931). Liquors were digested with 1 and 2% CaO, fractional digestion with (0.1 + 0.9%) CaO, and Teatini's method of 0.17% CaO + 0.017% SiO2 + 0.9% CaO. The filtration rate was dependent upon whether or not CaO was added in one batch or continuously. Liquors of one type did not filter any better after Teatini's treatment than after a fractional digestion; another type was more highly adaptable to the Teatini method than to fractional digestion. Under the same quantity of CaO regardless of the method of digestion, the evapn. of the liquor was the same; decreasing the added CaO altered the evapn. of the resulting liquor as compared to the evapn when an adequate addn of CaO is made.

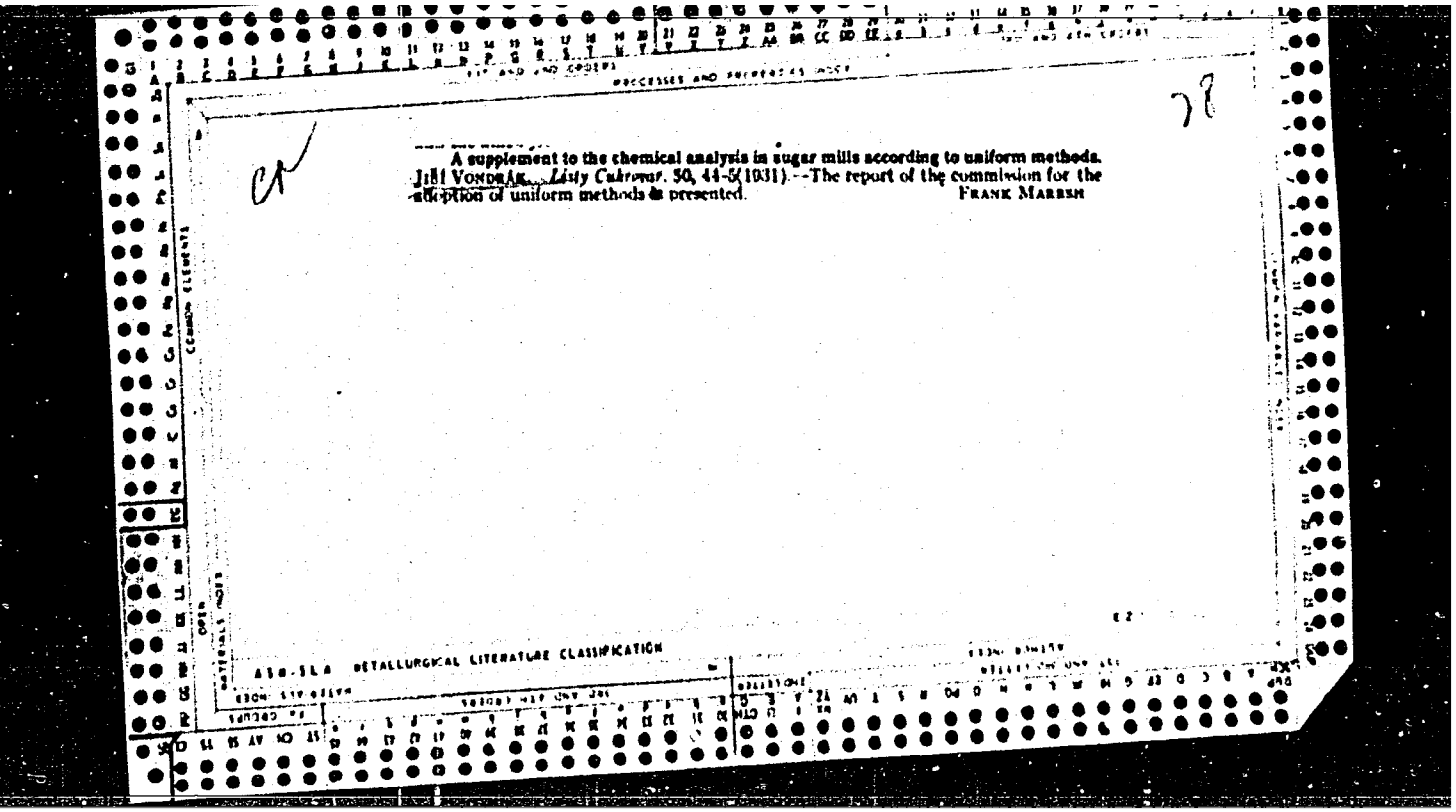
Frank Manasse



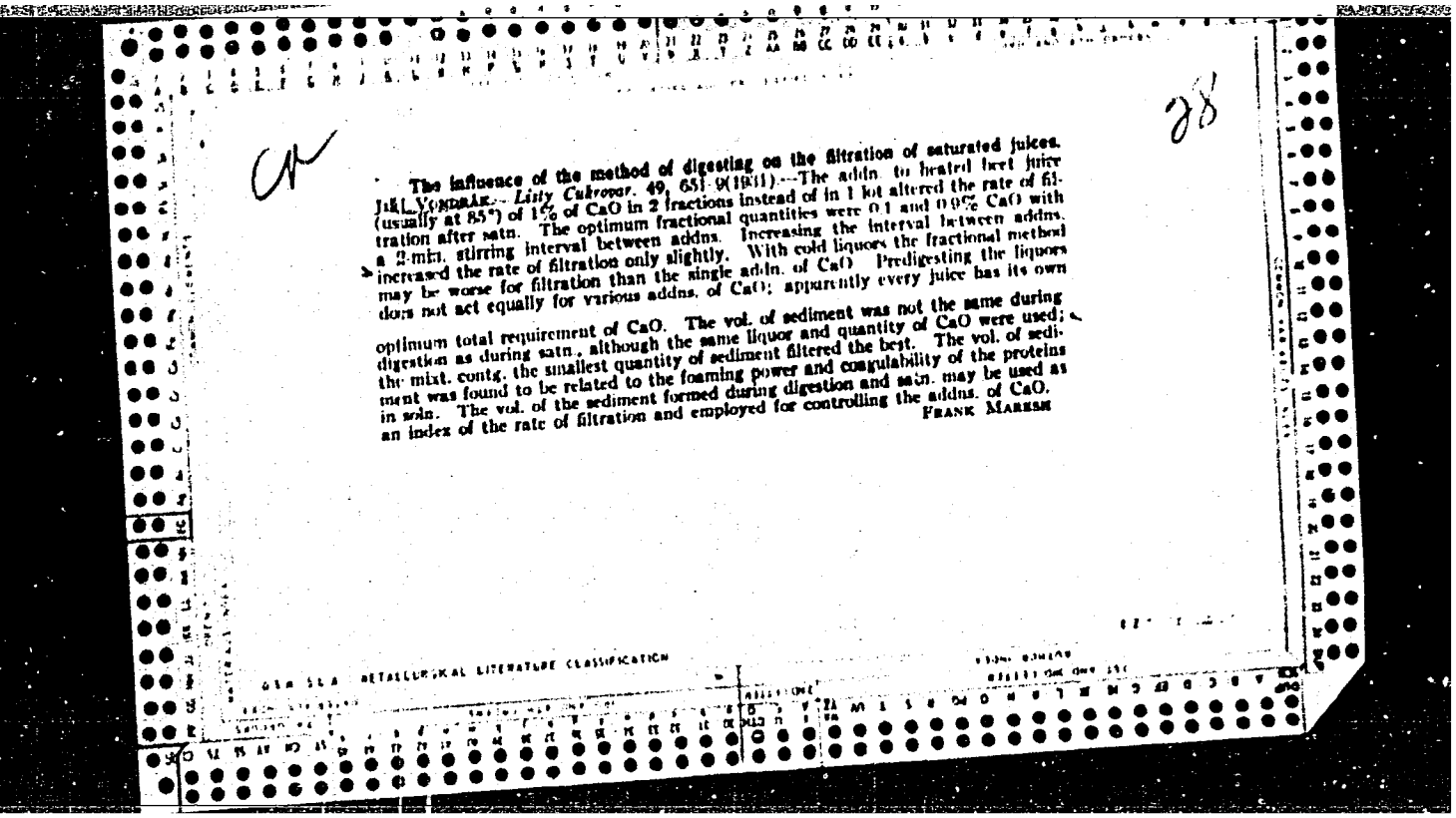
Methods for clarifying liquors with small quantities of lime. - Jiří Vondrák. *Listy Cukrovar.* 49, 501–8 (1931). — Stanĕk's fractionating satn., Macné' addn. of ppted. CaCO$_3$, Pleníčka's return of unfiltered satd. liquors into undigested liquors (together with Hruda's modification), Dorr's process, Friedrich's use of elevated temps. and Dario Teatini's SO$_2$ process are described. The advantages and disadvantages of the processes are discussed.

FRANK MARSHALL

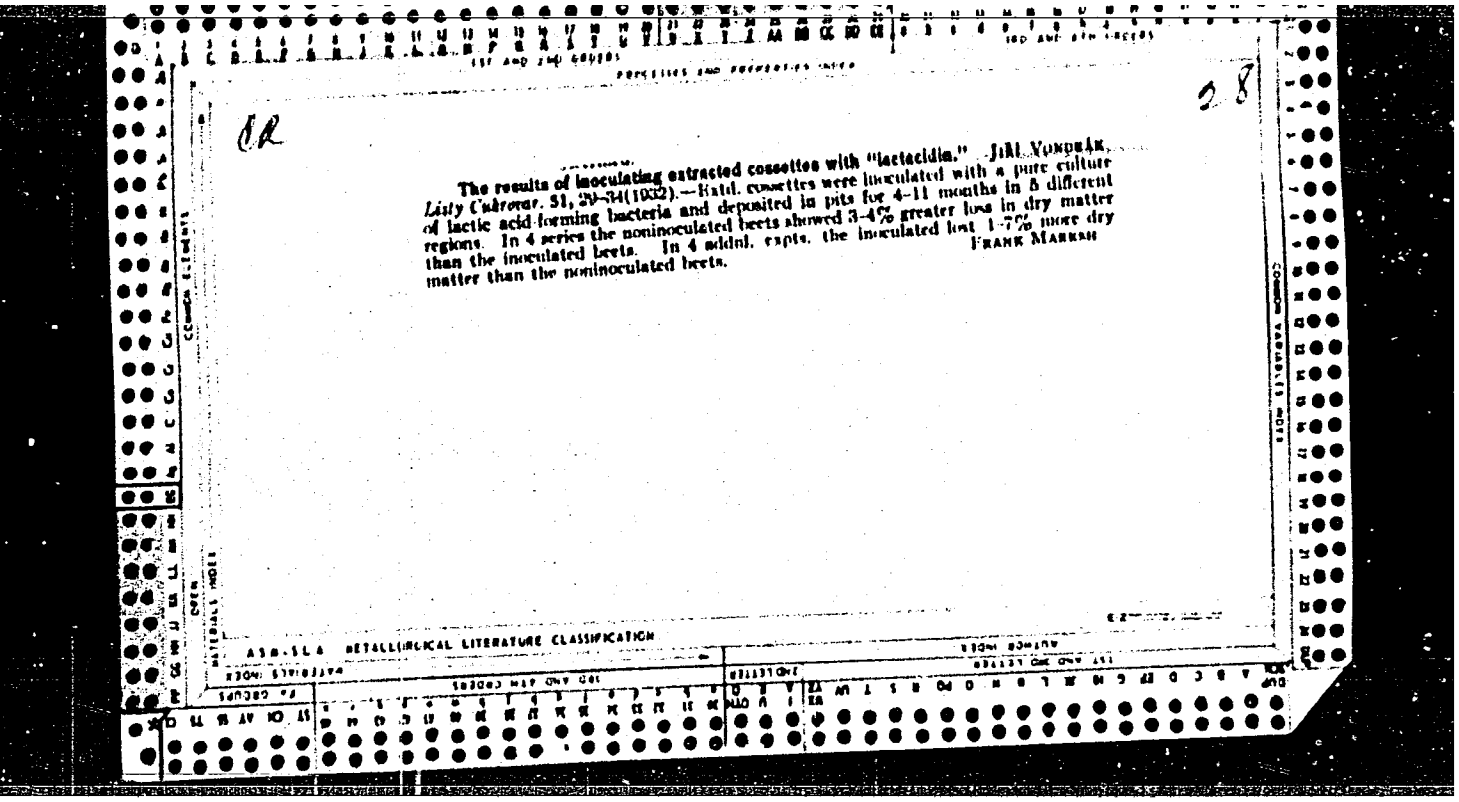




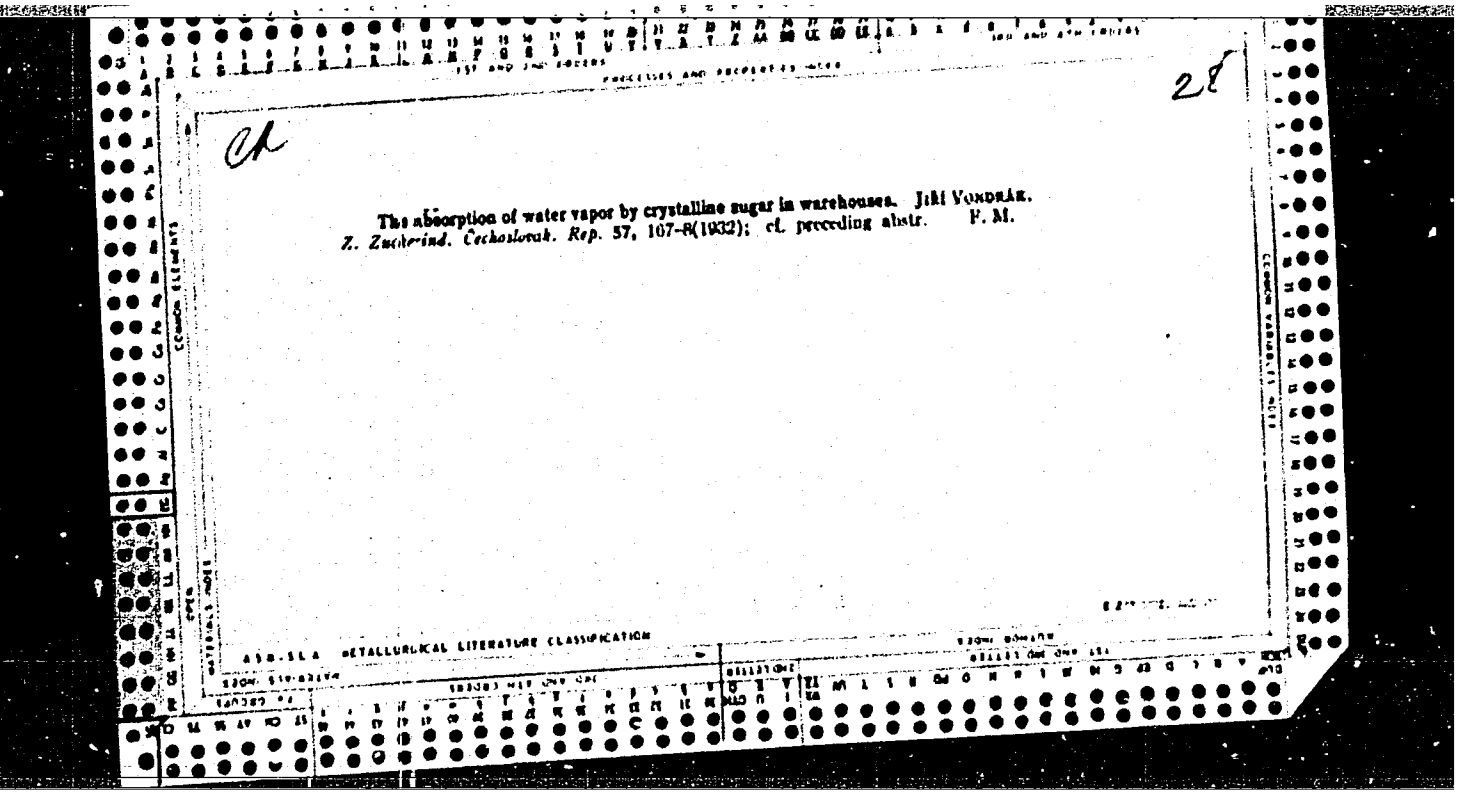
A supplement to the chemical analysis in sugar mills according to uniform methods. Jiří Vondrák. *Listy Cukrovar.* 50, 44-5(1931).--The report of the commission for the adoption of uniform methods is presented. FRANK MARESH



The influence of the method of digesting on the filtration of saturated juices. JAK. VONDRÁK. *Listy Cukrovar.* 49, 651–9(1931).—The addn. to heated beet juice (usually at 85°) of 1% of CaO in 2 fractions instead of in 1 lot altered the rate of filtration after satn. The optimum fractional quantities were 0.1 and 0.9% CaO with a 2-min. stirring interval between addns. Increasing the interval between addns. increased the rate of filtration only slightly. With cold liquors the fractional method may be worse for filtration than the single addn. of CaO. Predigesting the liquors does not act equally for various addns. of CaO; apparently every juice has its own optimum total requirement of CaO. The vol. of sediment was not the same during digestion as during satn., although the same liquor and quantity of CaO were used; the mixt. contg. the smallest quantity of sediment filtered the best. The vol. of sediment was found to be related to the foaming power and coagulability of the proteins in soln. The vol. of the sediment formed during digestion and satn. may be used as an index of the rate of filtration and employed for controlling the addns. of CaO.
FRANK MARESH



The results of inoculating extracted cossettes with "lactacidin." JIŘÍ VONDRÁK. *Listy Cukrovar.* 51, 29–34(1932).—Extd. cossettes were inoculated with a pure culture of lactic acid-forming bacteria and deposited in pits for 4–11 months in 5 different regions. In 4 series the noninoculated beets showed 3–4% greater loss in dry matter than the inoculated beets. In 4 addnl. expts. the inoculated lost 1–7% more dry matter than the noninoculated beets.
FRANK MARKUS



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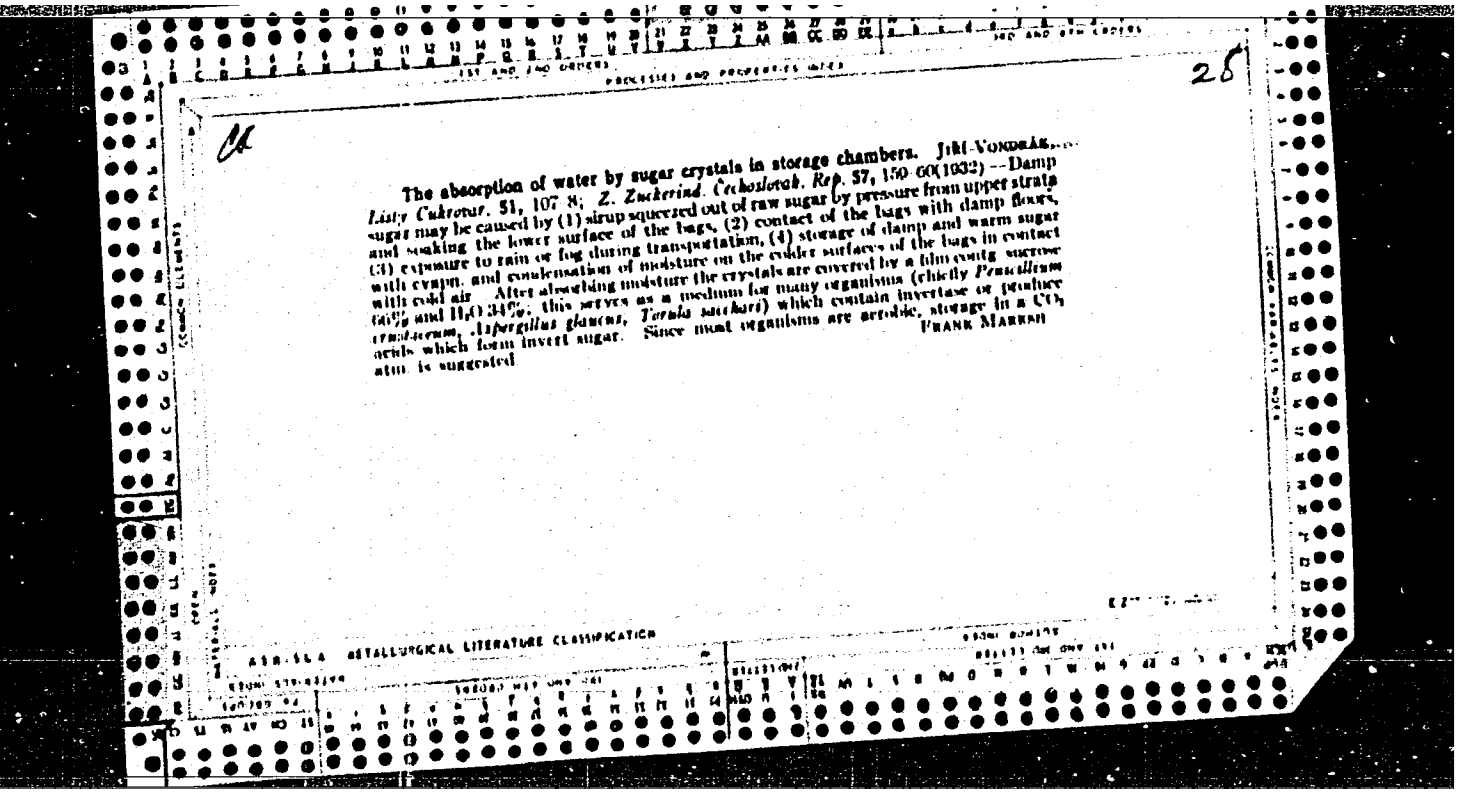
The absorption of water vapor by crystalline sugar in warehouses. Jiří Vondrák. *Z. Zuckerind. Cechoslovak. Rep.* 57, 107–8(1932); cf. preceding abstr. F. M.



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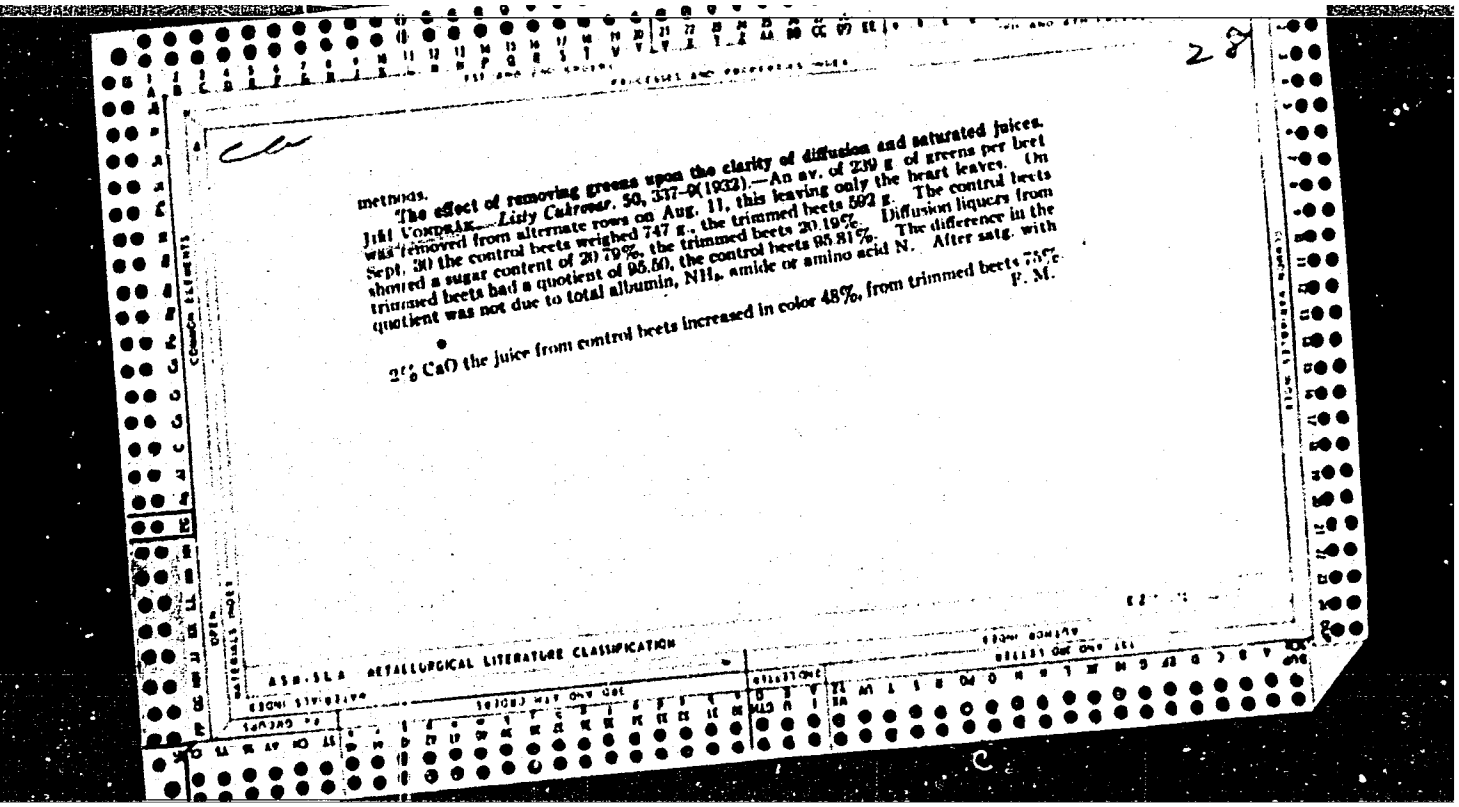
CA

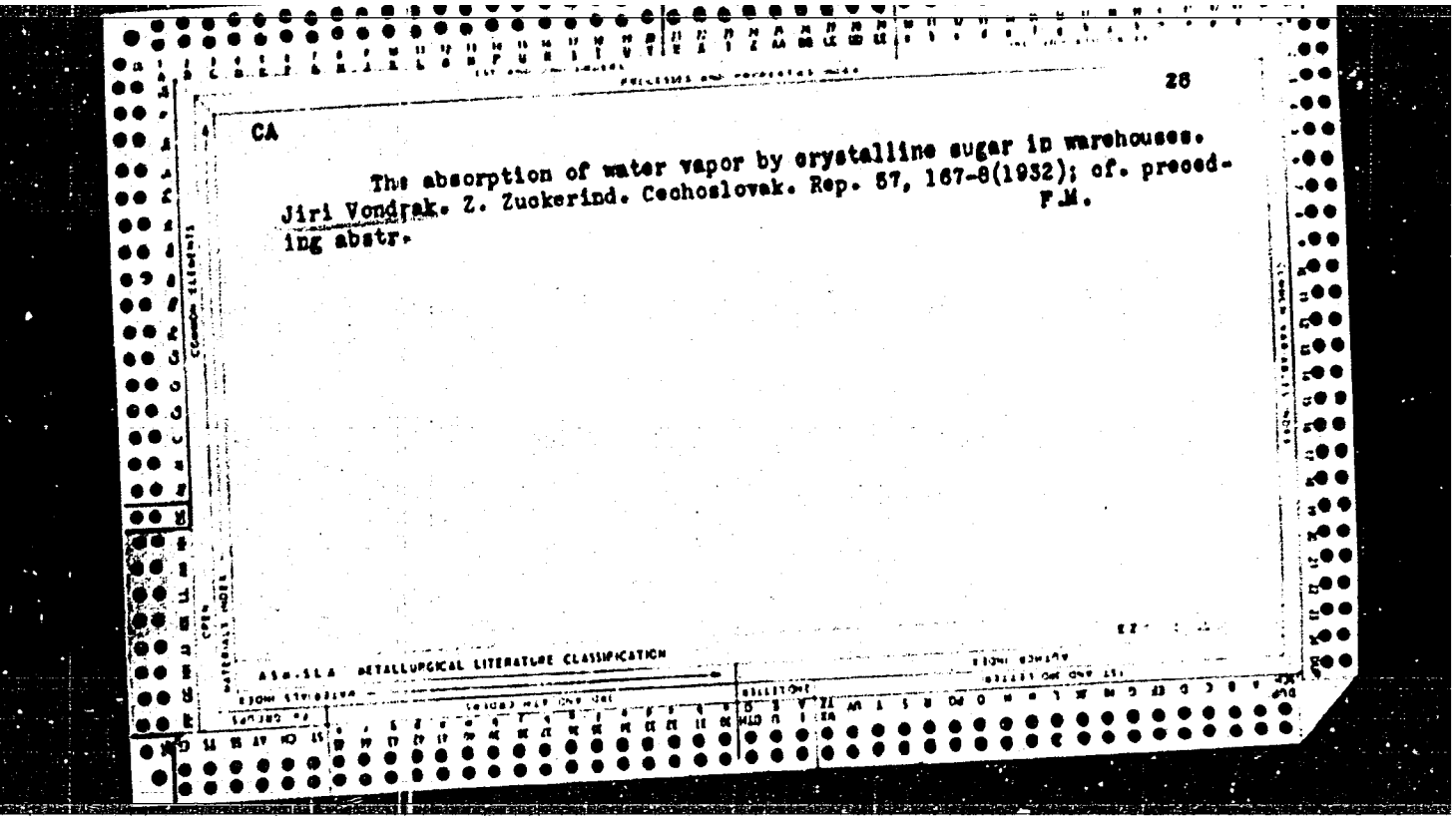
The absorption of water by sugar crystals in storage chambers. JIŘÍ VONDRÁK. *Listy Cukrovar.* 51, 107–8; *Z. Zuckerind. Cechoslovak. Rep.* 57, 159–60(1932).—Damp sugar may be caused by (1) sirup squeezed out of raw sugar by pressure from upper strata and soaking the lower surface of the bags, (2) contact of the bags with damp floors, (3) exposure to rain or fog during transportation, (4) storage of damp and warm sugar with cryst. and condensation of moisture on the colder surfaces of the bags in contact with cold air. After absorbing moisture the crystals are covered by a film cont'g sucrose (60% and 11.0–34%; this serves as a medium for many organisms (chiefly *Penicillium crustaceum*, *Aspergillus glaucus*, *Torula saccharo*) which contain invertase or produce acids which form invert sugar. Since most organisms are aerobic, storage in a CO_2 atm. is suggested.

FRANK MARKUS



methods.

"The effect of removing greens upon the clarity of diffusion and saturated juices. Jiří Vondrák.—*Listy Cukrovar.* 50, 337–9(1932).—An av. of 239 g. of greens per beet was removed from alternate rows on Aug. 11, this leaving only the heart leaves. On Sept. 30 the control beets weighed 747 g., the trimmed beets 592 g. The control beets showed a sugar content of 20.79%, the trimmed beets 20.19%. Diffusion liquors from trimmed beets had a quotient of 95.60, the control beets 95.81%. The difference in the quotient was not due to total albumin, NH_3, amide or amino acid N. After satg. with 2% CaO the juice from control beets increased in color 48%, from trimmed beets 75%. P. M.



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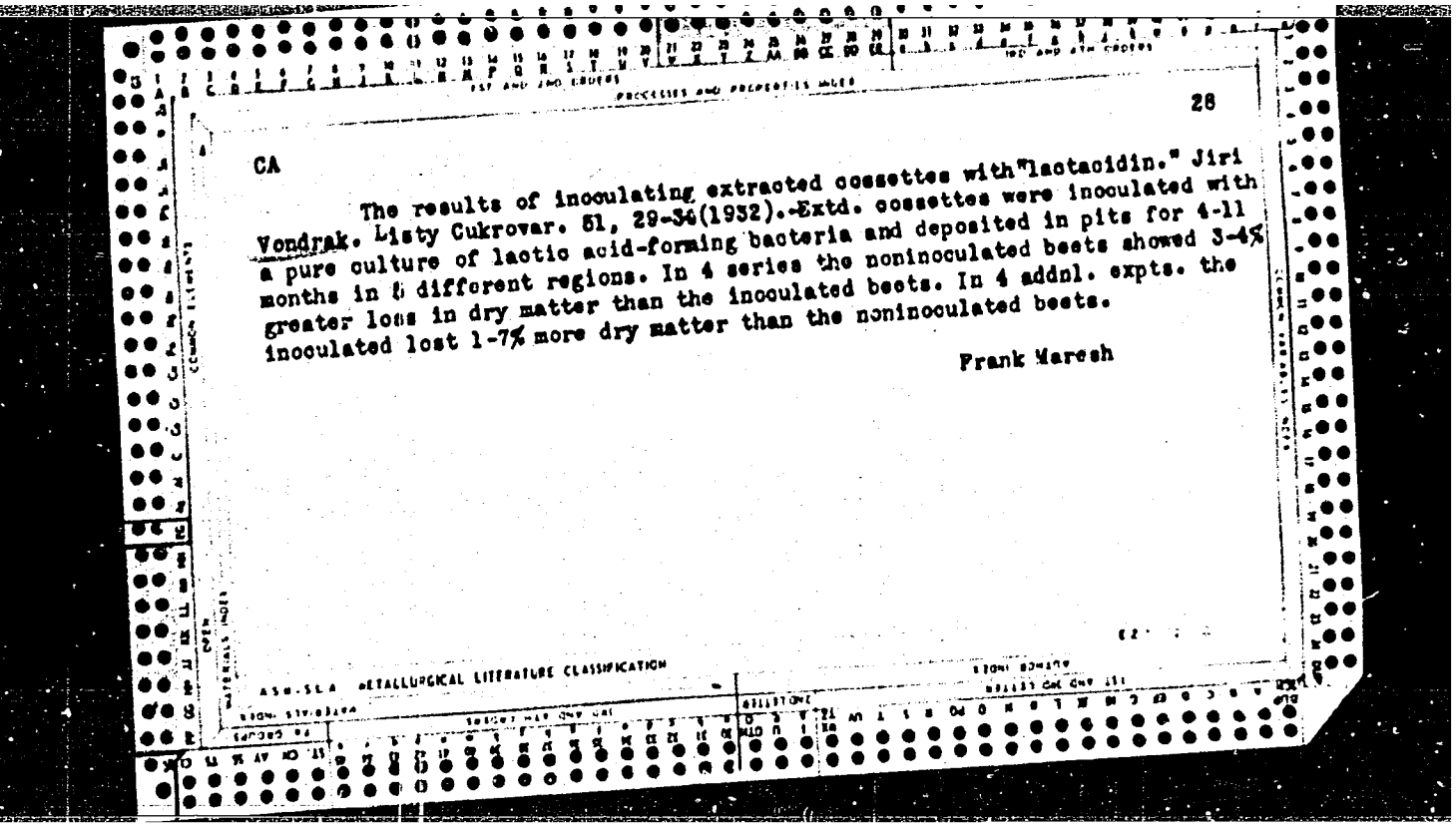
CA

The absorption of water vapor by crystalline sugar in warehouses. Jiri Vondrak. Z. Zuckerind. Cechoslovak. Rep. 57, 167-8(1932); cf. preceding abstr. F.M.

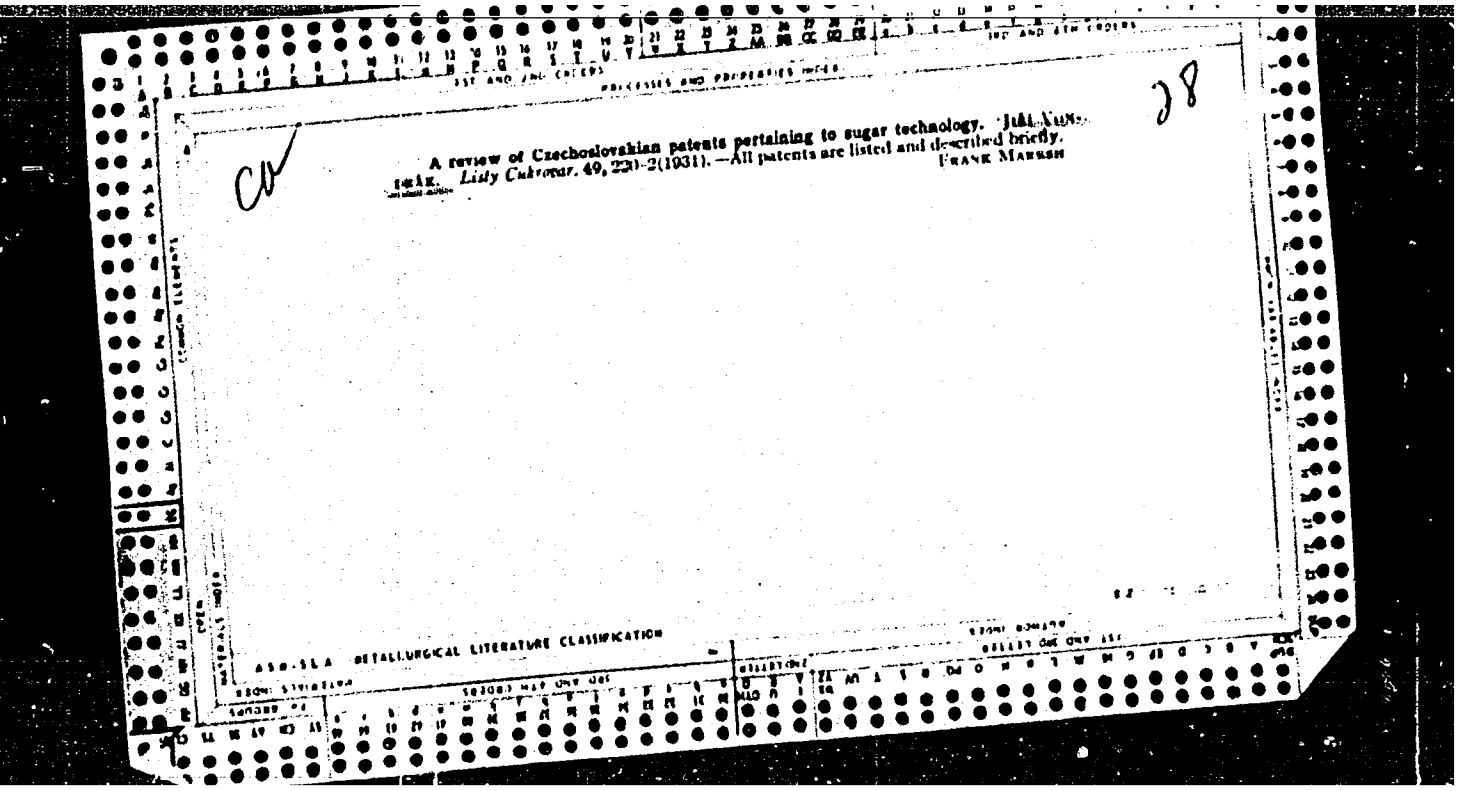


28

CA

The results of inoculating extracted cossettes with "lactacidin." Jiri Vondrak. Listy Cukrovar. 51, 29-34(1932).-Extd. cossettes were inoculated with a pure culture of lactic acid-forming bacteria and deposited in pits for 4-11 months in 6 different regions. In 4 series the noninoculated beets showed 3-4% greater loss in dry matter than the inoculated beets. In 4 addnl. expts. the inoculated lost 1-7% more dry matter than the noninoculated beets.

Frank Maresh



A review of Czechoslovakian patents pertaining to sugar technology. Jul. Kuns.
Listy Cukrovar. 49, 231-2(1931).—All patents are listed and described briefly.
FRANK MARSHALL

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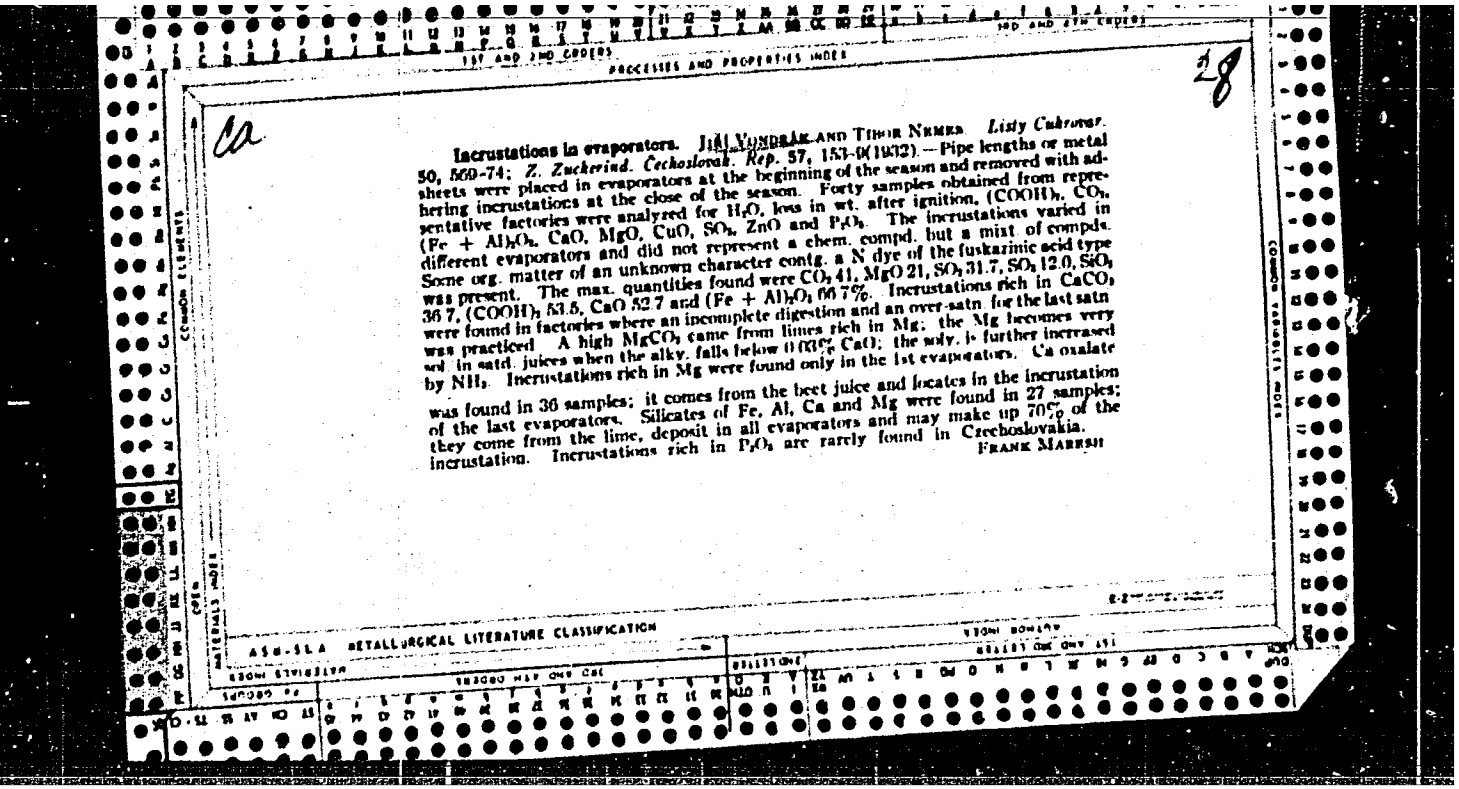
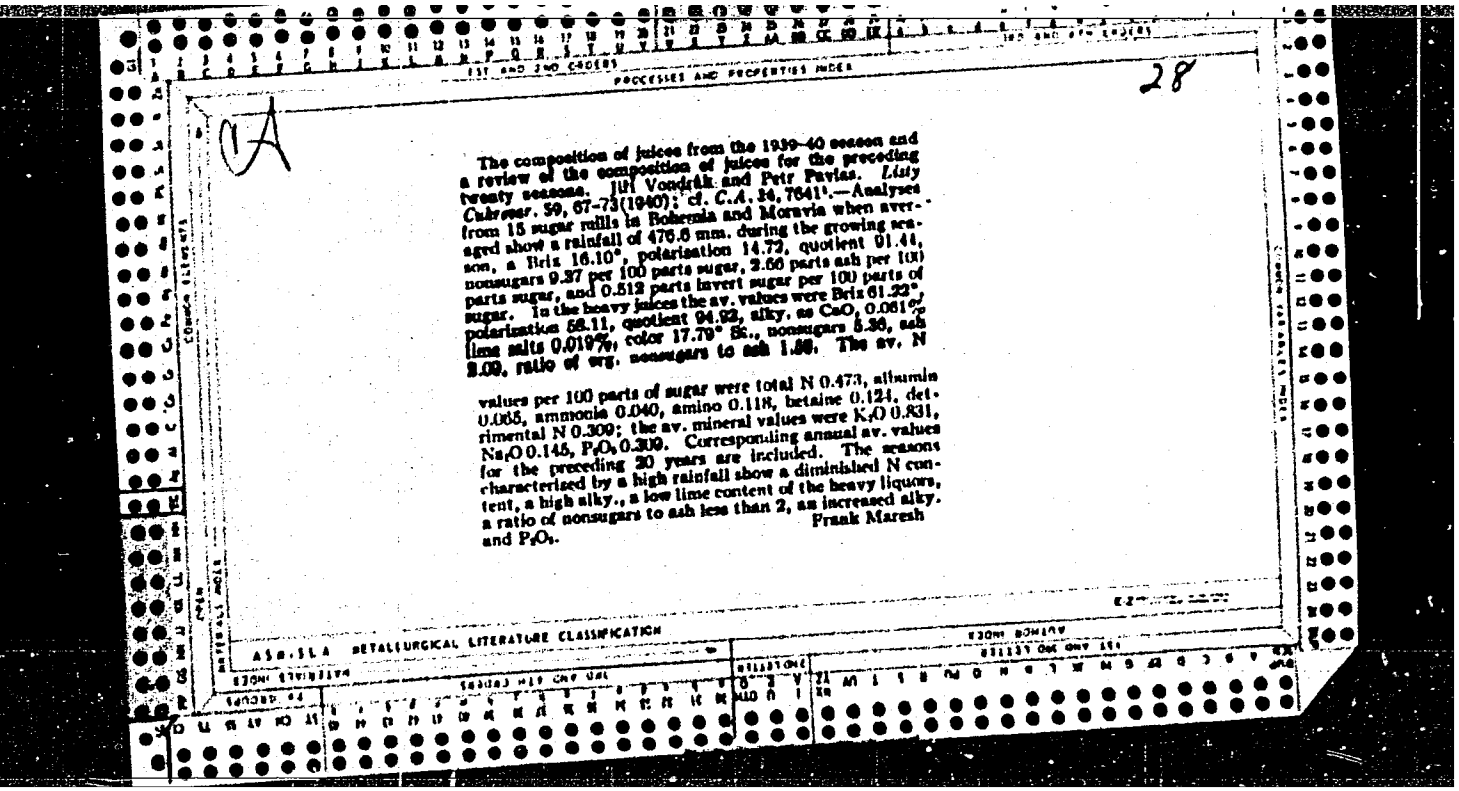
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Incrustations in evaporators. JIŘÍ VONDRÁK AND TIBOR NEMEŠ. *Listy Cukrovar.* 50, 569-74; *Z. Zuckerind. Cechoslovak. Rep.* 57, 153-9(1932).—Pipe lengths or metal sheets were placed in evaporators at the beginning of the season and removed with adhering incrustations at the close of the season. Forty samples obtained from representative factories were analyzed for H_2O, loss in wt. after ignition, $(COOH)_2$, CO_2, $(Fe + Al)_2O_3$, CaO, MgO, CuO, SO_3, ZnO and P_2O_5. The incrustations varied in different evaporators and did not represent a chem. compd. but a mixt. of compds. Some org. matter of an unknown character contg. a N dye of the fuskazinic acid type was present. The max. quantities found were CO_2 41, MgO 21, SO_3 31.7, SO_3 12.0, SiO_2 36.7, $(COOH)_2$ 53.5, CaO 52.7 and $(Fe + Al)_2O_3$ 66.7%. Incrustations rich in $CaCO_3$ were found in factories where an incomplete digestion and an over-satn. for the last satn. was practiced. A high $MgCO_3$ came from limes rich in Mg; the Mg becomes very sol. in satd. juices when the alky. falls below 0.03% CaO; the sol'y. is further increased by NH_3. Incrustations rich in Mg were found only in the 1st evaporators. Ca oxalate was found in 36 samples; it comes from the beet juice and locates in the incrustation of the last evaporators. Silicates of Fe, Al, Ca and Mg were found in 27 samples; they come from the lime, deposit in all evaporators and may make up 70% of the incrustation. Incrustations rich in P_2O_5 are rarely found in Czechoslovakia.

FRANK MARESH



PROCESSES AND PROPERTIES INDEX

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1A

The composition of juices from the 1939–40 season and a review of the composition of juices for the preceding twenty seasons. Jiří Vondrák and Petr Pavlas. *Listy Cukrovar.* 59, 67–73(1940); cf. *C.A.* 34, 7641⁹.—Analyses from 15 sugar mills in Bohemia and Moravia when averaged show a rainfall of 476.6 mm. during the growing season, a Brix 16.10°, polarisation 14.72, quotient 91.44, nonsugars 9.37 per 100 parts sugar, 2.66 parts ash per 100 parts sugar, and 0.512 parts invert sugar per 100 parts of sugar. In the heavy juices the av. values were Brix 61.22°, polarisation 58.11, quotient 94.92, alky. as CaO 0.061%, lime salts 0.019%, color 17.79° St., nonsugars 5.30, ash 2.09, ratio of wg. nonsugars to ash 1.86. The av. N values per 100 parts of sugar were total N 0.473, albumin 0.065, ammonia 0.040, amino 0.118, betaine 0.124, detrimental N 0.309; the av. mineral values were K_2O 0.831, Na_2O 0.145, P_2O_5 0.300. Corresponding annual av. values for the preceding 20 years are included. The seasons characterised by a high rainfall show a diminished N content, a high alky., a low lime content of the heavy liquors, a ratio of nonsugars to ash less than 2, an increased alky. and P_2O_5.

Frank Maresh

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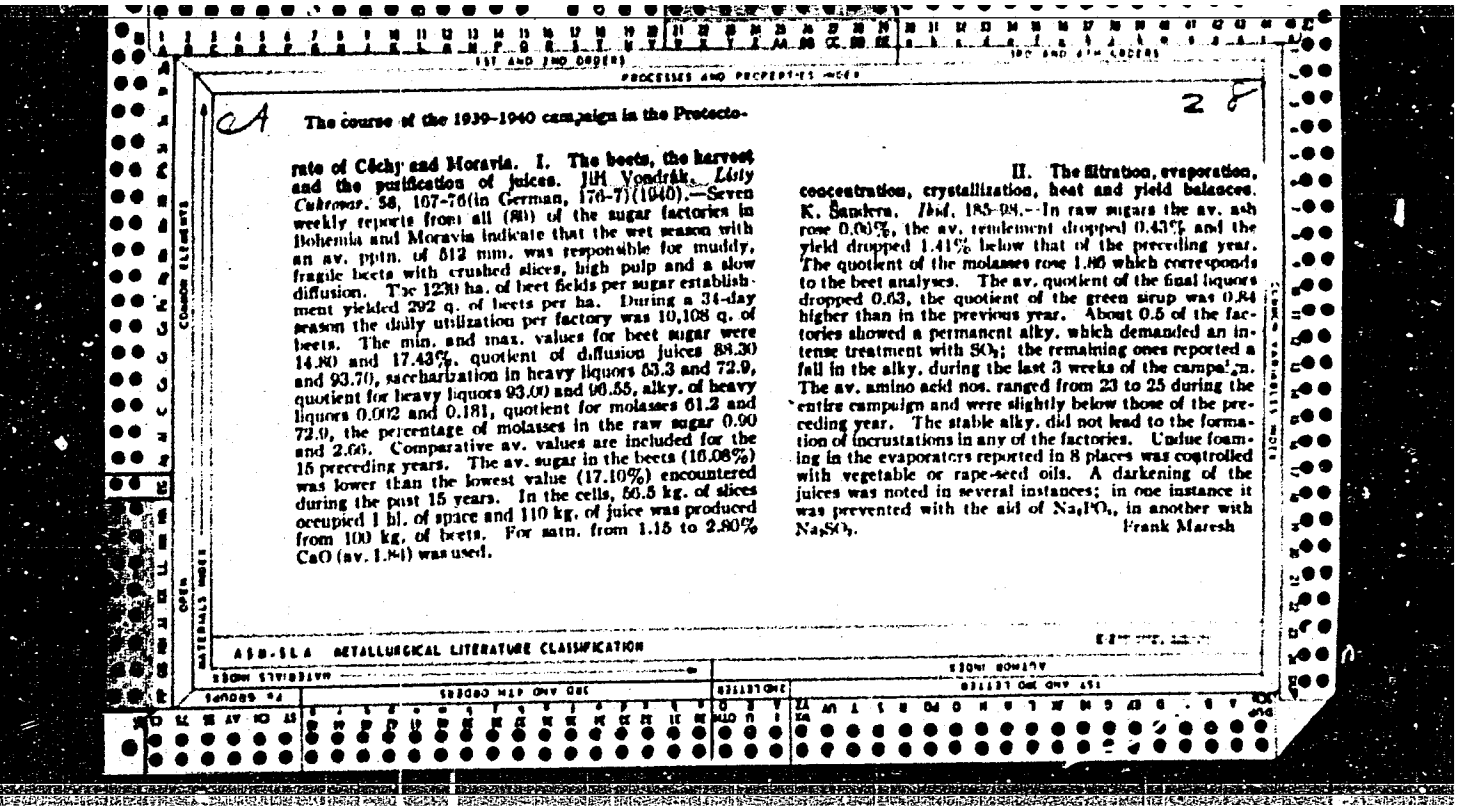

PROCESSES AND PROPERTIES INDEX

2 F

The course of the 1939–1940 campaign in the Protectorate of Čechy and Moravia. I. The beets, the harvest and the purification of juices. JH Vondrák. *Listy Cukrovar.* 58, 107-76(in German, 176-7)(1940).—Seven weekly reports from all (80) of the sugar factories in Bohemia and Moravia indicate that the wet season with an av. ptin. of 512 mm. was responsible for muddy, fragile beets with crushed slices, high pulp and a slow diffusion. The 1230 ha. of beet fields per sugar establishment yielded 292 q. of beets per ha. During a 34-day season the daily utilization per factory was 10,108 q. of beets. The min. and max. values for beet sugar were 14.80 and 17.43%, quotient of diffusion juices 88.30 and 93.70, saccharization in heavy liquors 65.3 and 72.9, quotient for heavy liquors 93.00 and 96.55, alky. of heavy liquors 0.002 and 0.181, quotient for molasses 61.2 and 72.9, the percentage of molasses in the raw sugar 0.90 and 2.66. Comparative av. values are included for the 15 preceding years. The av. sugar in the beets (16.08%) was lower than the lowest value (17.10%) encountered during the past 15 years. In the cells, 56.5 kg. of slices occupied 1 hl. of space and 110 kg. of juice was produced from 100 kg. of beets. For satn. from 1.15 to 2.90% CaO (av. 1.84) was used.

II. The filtration, evaporation, concentration, crystallization, heat and yield balances. K. Sandera. *Ibid.* 185-98.—In raw sugars the av. ash rose 0.06%, the av. reducment dropped 0.43% and the yield dropped 1.41% below that of the preceding year. The quotient of the molasses rose 1.86 which corresponds to the beet analyses. The av. quotient of the final liquors dropped 0.63, the quotient of the green sirup was 0.84 higher than in the previous year. About 0.5 of the factories showed a permanent alky. which demanded an intense treatment with SO_2; the remaining ones reported a fall in the alky. during the last 3 weeks of the campaign. The av. amino acid nos. ranged from 23 to 25 during the entire campaign and were slightly below those of the preceding year. The stable alky. did not lead to the formation of incrustations in any of the factories. Undue foaming in the evaporators reported in 8 places was controlled with vegetable or rape-seed oils. A darkening of the juices was noted in several instances; in one instance it was prevented with the aid of Na_3PO_4, in another with Na_2SO_3.

Frank Maresh

A§B-§L4 METALLURGICAL LITERATURE CLASSIFICATION