SPACINSKY, S.

GORNER, F.; SPACINSKY, S.

Effect of lowered surface tension of calcium hypochlorite solution on its microbicide action. J. Hyg. Epidem., Praha 1 no.2:179-189 1957.

1. Regional Institute of Hygiene, Bratislava.
(ANTISEPTICS, eff.
calcium hypochlorite, eff. of lowered surface tension on microbicide action)
(MICROORGANISMS, eff. of drugs on
calcium hypochlorite, eff. of lowered surface tension on microbicide action)

SPALOVA, A.; BUTESKA, I.

Semiquantitative spectrographic analysis of minor elements in underlying clays containing titanium. II. A preliminary report. p.211.
(PRAGUE, Vol. 32, no. 3, 1957, Praha, Czechoslovakia.)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 12, December 1957. Incl.

RUBESKA, Ivan; SPACKOVA, Alena; ZEMLICKA, Jan

Use of semiquantitative spectrochemical analysis for geochemical examination of clay sediments. Sbor chem tech no.3, part 2:285-306 '59.

1. Ustredni ustav geologicky, Praha a Katedra mineralogie, Vysoka skola chemicko-technologicka, Praha.

SPACKOVA, A.

(14)

Prague, Casopis pro Mineralogii a Geologii, Vol VII, No 2, 62.

Copyright: Publishing House of the Czechoslovak Academy of Sciences (Nakladatelstvi Ceskoslovenska akademie ved), 1962.

1. "Estimating the Volume of the Individual Minerals in Barrandienum Ores," Otto CEJCHAN; pp 121-129.

2. "Remarks on the Find of Ammonite Fauna in the Tesin-Hradiste Layers of the Moravian-Silesian Beskyds," Helena ELIASOVA; pp 130-131.

3. "Mineralogy of Cadmium in a No Ba Deposite in North Vietnam," Zdenek JOHAN of the Ores Research Institute (Ustav pro vyzkum rud), Prague; pp 132-138.

4. "New Finds of Phaetonellus Dentatulus (Novak. 1890) in the Barrandienum near Lodenice," Jiri KRIZ; pp 139-144.

5. "Remarks on the Algonquin Formation of the Northern Portion of the Vltava-River Valley," Pavel ROHLICH; pp 145-157.

6. "Local Spectrographic Microanalysis of Mineralogical Cuts," Ivan RUBESKA and Alena SPACKOVA of the Central Geological Institute (Ustredni ustav geologicky), Prague; pp 158-164.

7. "Movements on the Border Between the Middle and Upper Devonian in the Bohemian Massive," Karl-Armin TROGER and Pavel ROHLICH; pp 165-175.

8. "Fossilized Conic Karst Near Hranice, Moravia," Jaroslav TYRACEK of the Central Geological Institute, Prague; pp 176-185.

9. "Geology and Selenology," Konrad BENES; pp 186-188.

10. "Bacteria in the Recent Sea Sediments," Zdenek KUKAL; pp 189-192.

11. "Adjustment of Comparative Spectrum Tables for Another Type of Spectrograph Using the Example of Kalinin's Atlas for the Q-24 Spectrograph," Rudolf ROST; pp 193-194.

12. "Note on the Yellow Molybdic Ochre from Krupka in Bohemia," Frantisek CECH of the Mineralogical Institute, Charles University (Mineralogicky ustav, Karlova Universita), Prague; pp 195-197. [English summary]

SPACKOVA, Alena

Spectrographic determination of silver in sulphide ores. Chem anal 7 no.2:423-428 '62

1. Ustredni ustav geologicky, Praha, Czechoslovakia.

SPACKOVA, Alena, dr. (Praha I, Hradebni 9, Czechoslovakia)

Spectrographic determination of gallium (and barium, nickel, cobalt, and bismuth, respectively) in rocks. Acta chimica Hung 30 no.3:341-349 '62.

1. Zentralgeologisches Institut, Praha.

HUNGARY

KREJCI, E., SPACKOVA, A.; Balneological Institute of Karls University, Prague and Central Geological Institute, Prague, CSSR [original language version not given].

"Determination of Gold in Various Solvents by Spectrography."

Budapest, Acta Chimica Academiae Scientiarum Hungaricae, Vol 38, No 2, 1963, pages 103-113.

Abstract: [German article, authors' English summary] Two methods have been developed for the spectrographic determination of minute amounts of gold in various liquid, mainly serum and urine samples. The first method is based on the analysis of the ash obtained by combustion of the samples. The second method measures the amount of gold in the biological liquids dropped on the graphite electrodes, by direct spectrography. This latter procedure is especially suitable for routine serial analyses. 4 Eastern European references.

1/1

SPACKOVA, A.

"Spectral analysis of minerals and rocks" by H.Moenke. Reviewed by A.Spackova. Chem listy 57 no.10:1088-1089 O '63.

SPACKOVA, Alena, RNDr., kandidatka chemickych ved; RYBAKOVA, Bohumila

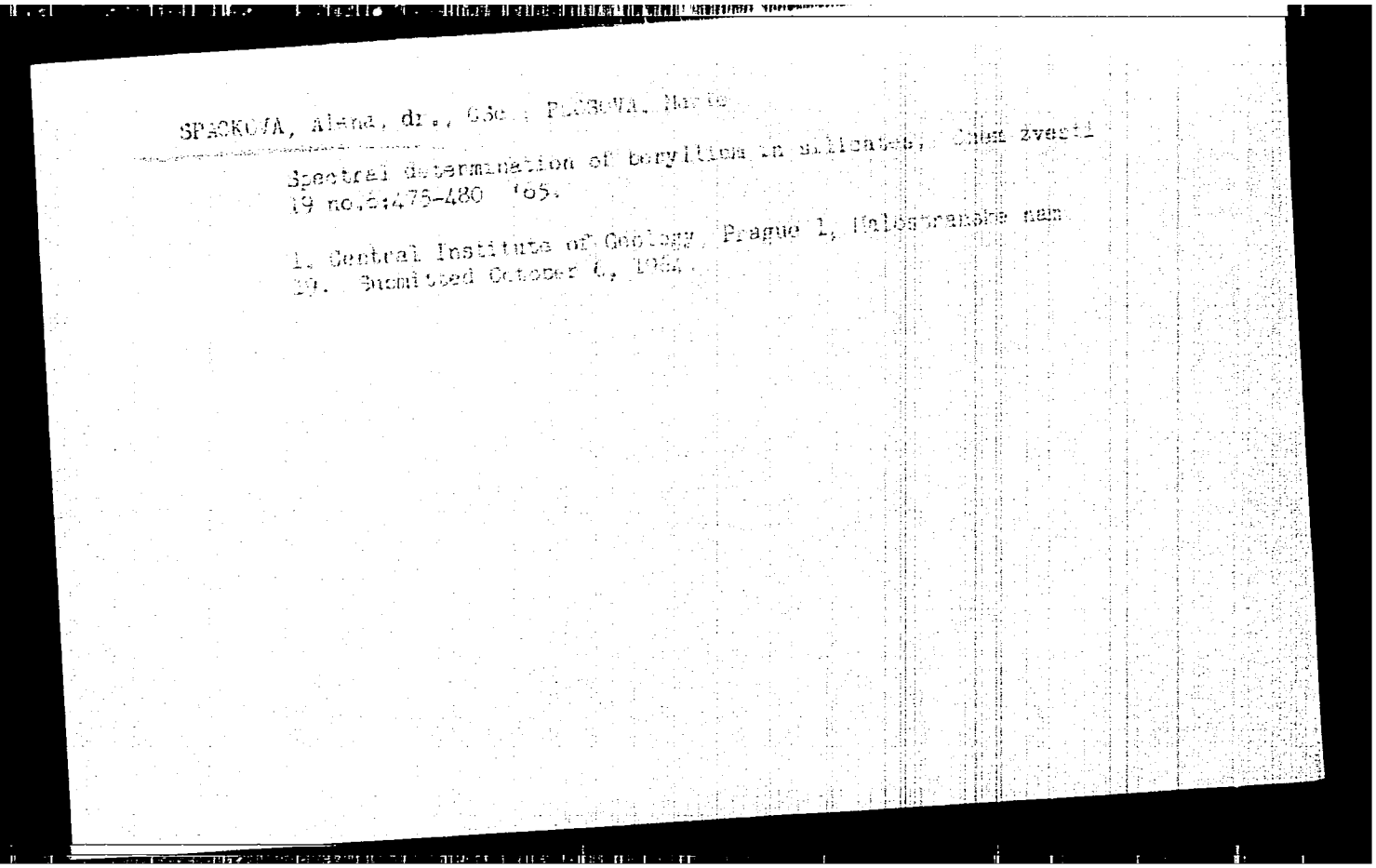
Spectral analysis of mineral waters. Geol Pruzkum 5 no.11: 341-343 N '63.

1. Ustredni ustav geologicky, Praha.

SPACKOVA, Alena, RNDr., kandidatka chemickych ved; PLOSOVA, Marie

Spectral determination of low silver content in minerals. Geol prúzkum 6 no.2:55-56 F'64

1. Ustredni ustav geologicky, Praha.



SPACKOVA, Alena, dr., CSc.; PLESOVA, Marie

Spectral determination of beryllium in silicates. Sbor. ved. pr. 19 no.3:475-480 '65.

1. Central Institute of Geology, Prague 1, Malostranske nam.
2. Submitted October 6, 1964.

SPACKOVA, J.

SCIENCE

Periodicals: BIOLOGIA Vol. 10, no. 6, 1955

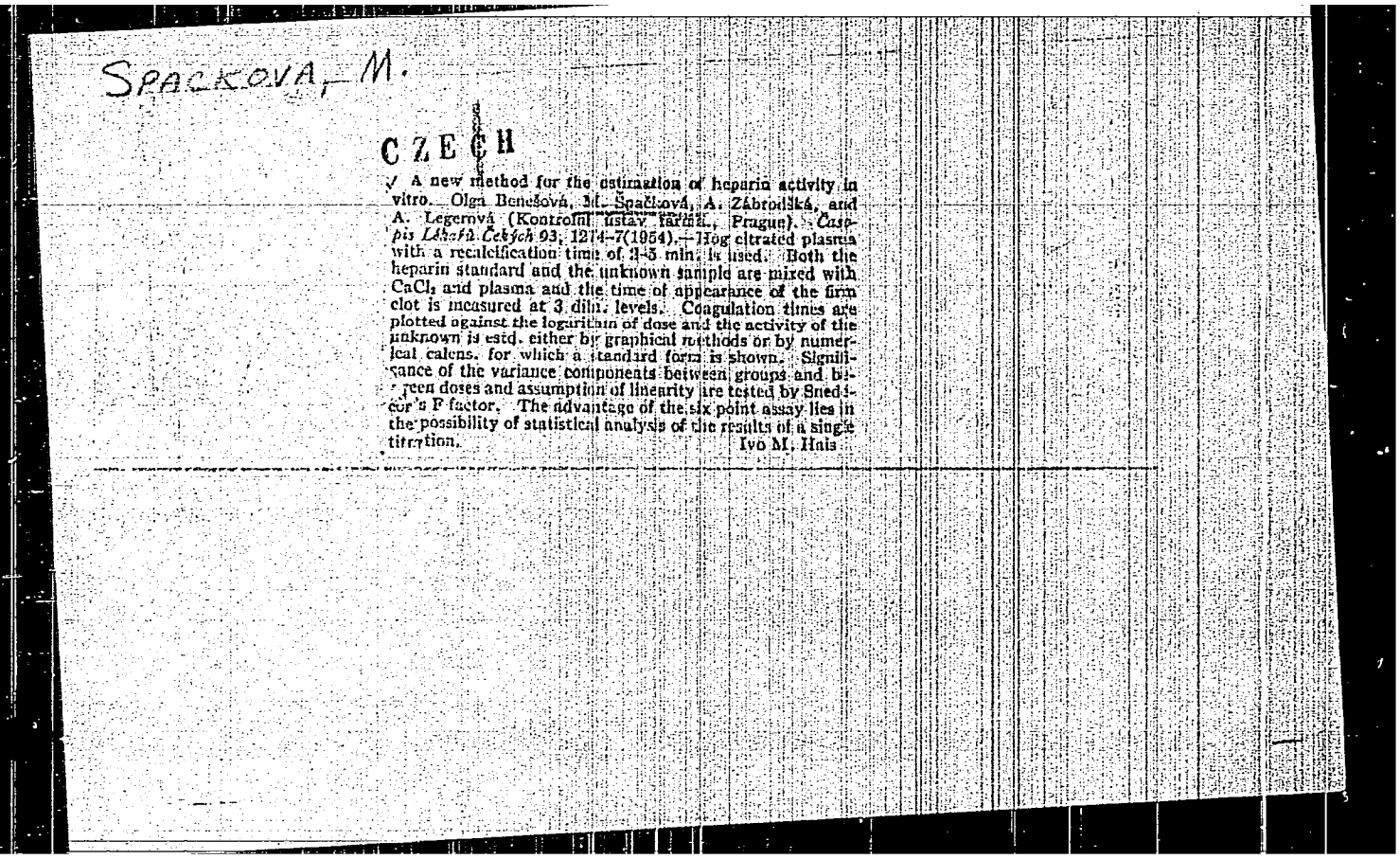
SPACKOVA, J.: SIMKOVIC, D.: KLIMEK, M. Use of extract from a human placenta in cultivation in vitro. I Cultivation of chicken fibroblasts in a medium containing an extract form of placenta. p. 754.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5 May 1959, Unclass.

BENESOVA, O.; SPACKOVA, M.; ZABRODSKA, A.; LEGEROVA, A.

Comparative studies on methods of determination of the effectiveness of heparin with special reference to the selection of the suitable method for the 2nd edition of the Czechoslovak Pharmacopeia. Cesk. farm. 3 no.6:219-221 Je '54.

1. Z Kontrolniho ustavu farmaceutickeho v Praze.
(HEPARIN,
*standard., comparison of technics)

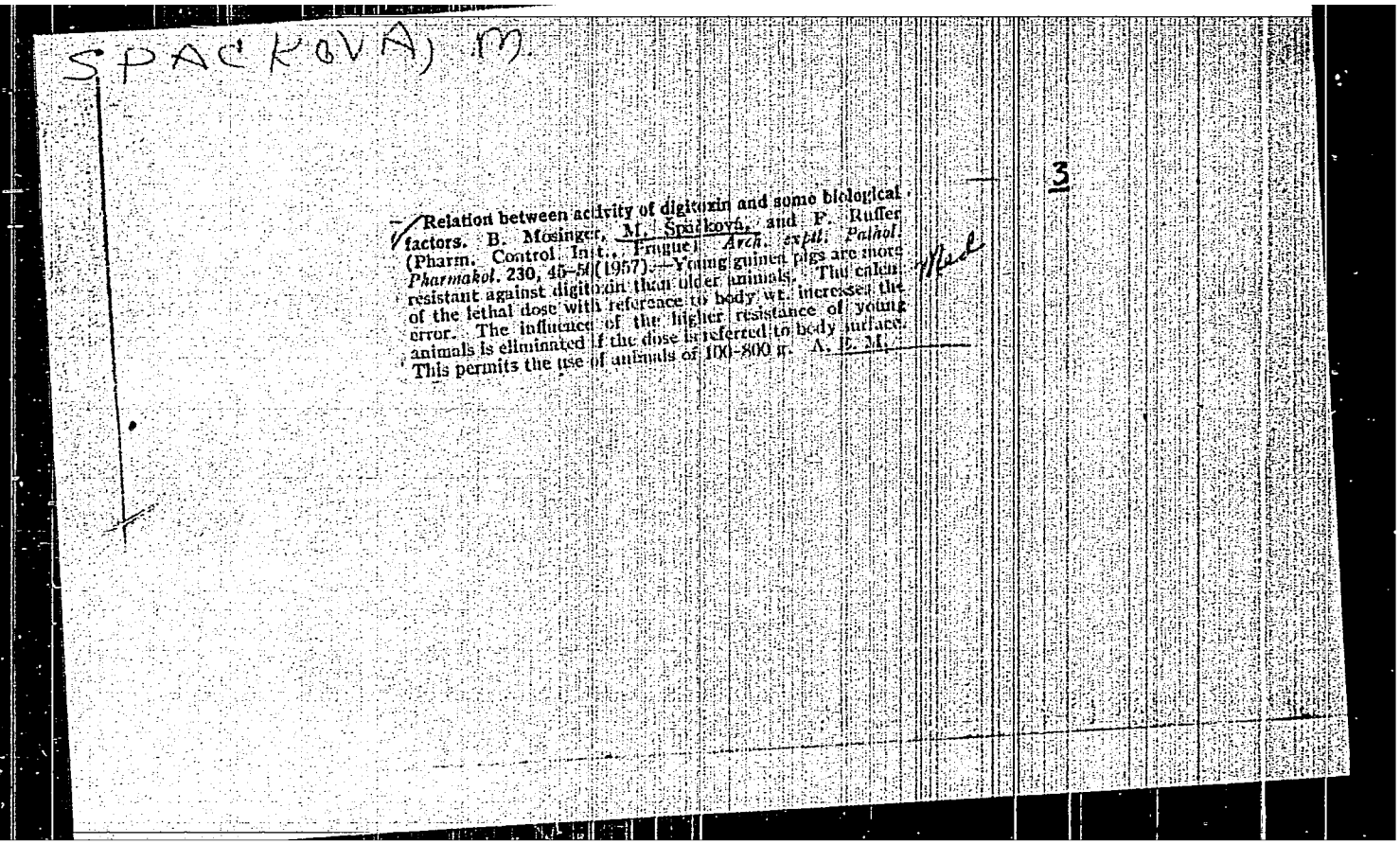


SPACKOVA, M.

CZECH

A new method for the estimation of heparin activity in vitro. Olga Benešová, M. Špačková, A. Zábrodská, and A. Legerová (Kontrolní ústav tařiv, Prague). *Časopis Lékařů Českých* 93, 1274–7(1954).—Hog citrated plasma with a recalcification time of 2–3 min. is used. Both the heparin standard and the unknown sample are mixed with $CaCl_2$ and plasma and the time of appearance of the firm clot is measured at 3 dilu. levels. Coagulation times are plotted against the logarithm of dose and the activity of the unknown is estd. either by graphical methods or by numerical calcns. for which a standard form is shown. Significance of the variance components between groups and between doses and assumption of linearity are tested by Snedecor's F factor. The advantage of the six point assay lies in the possibility of statistical analysis of the results of a single titration.

Ivo M. Hais



SPACKOVA, M.

13

Relation between activity of digitoxin and some biological factors. B. Mosinger, M. Špačková, and F. Ruffer (Pharm. Control Init., Prague). *Arch. exptl. Pathol. Pharmakol.* 230, 45–50 (1957).—Young guinea pigs are more resistant against digitoxin than older animals. The calculation of the lethal dose with reference to body wt. increases the error. The influence of the higher resistance of young animals is eliminated if the dose is referred to body surface. This permits the use of animals of 100–800 g. A. P. M.

SPACKOVA, Sona

Tradition is still alive (Jan Evangelista Purkyne). Cas. lek. cesk. 98 no.35:1113-1115 28 Aug 59

1. Ustav pro doskolovani lekaru v Praze, prednosta prof. dr. J. Knobloch. (BIOGRAPHIES)

Rumania/Inorganic Chemistry. Complex Compound. C

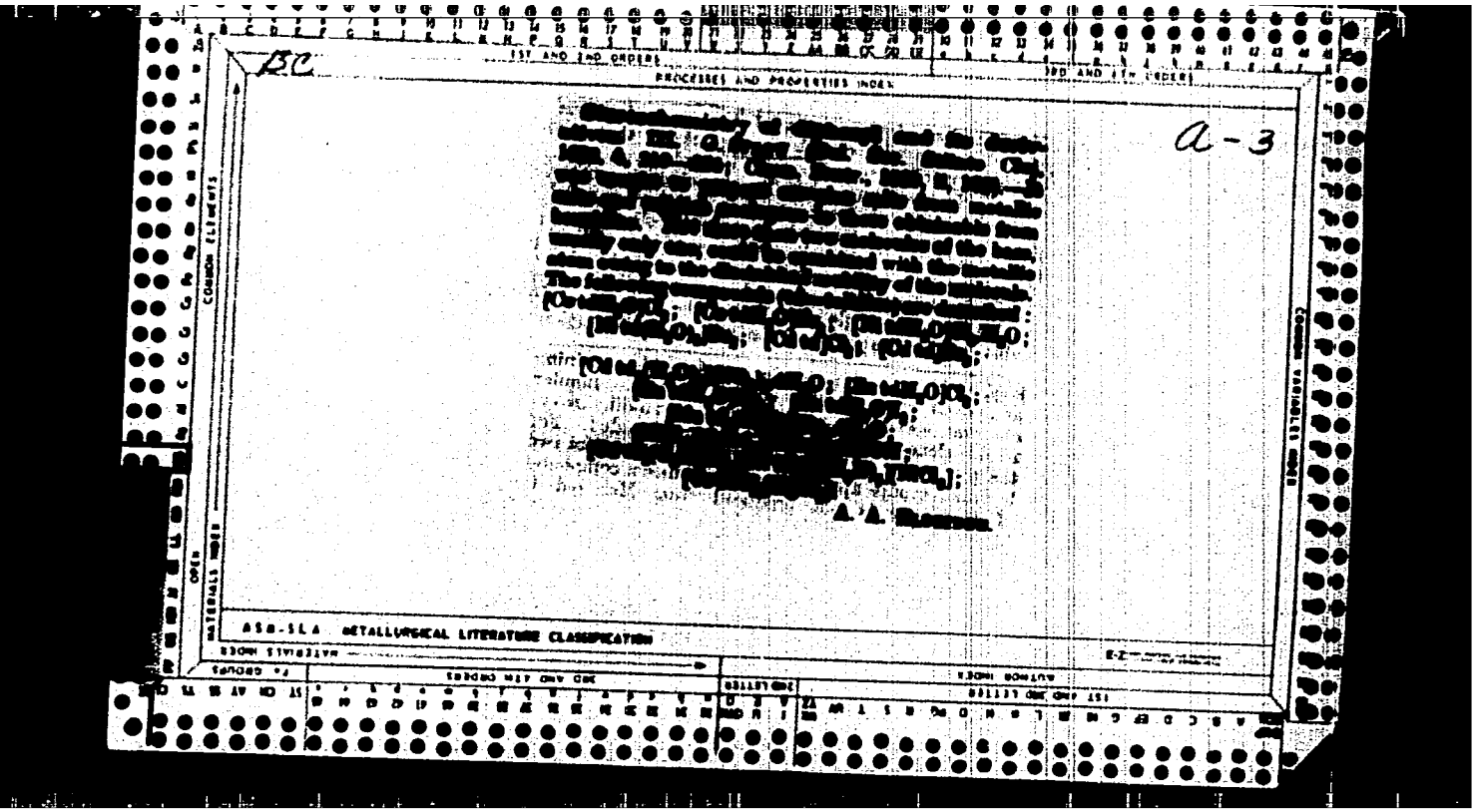
Abs Jour : Ref Zhur-Khimiya, No 5, 1958, 13997.

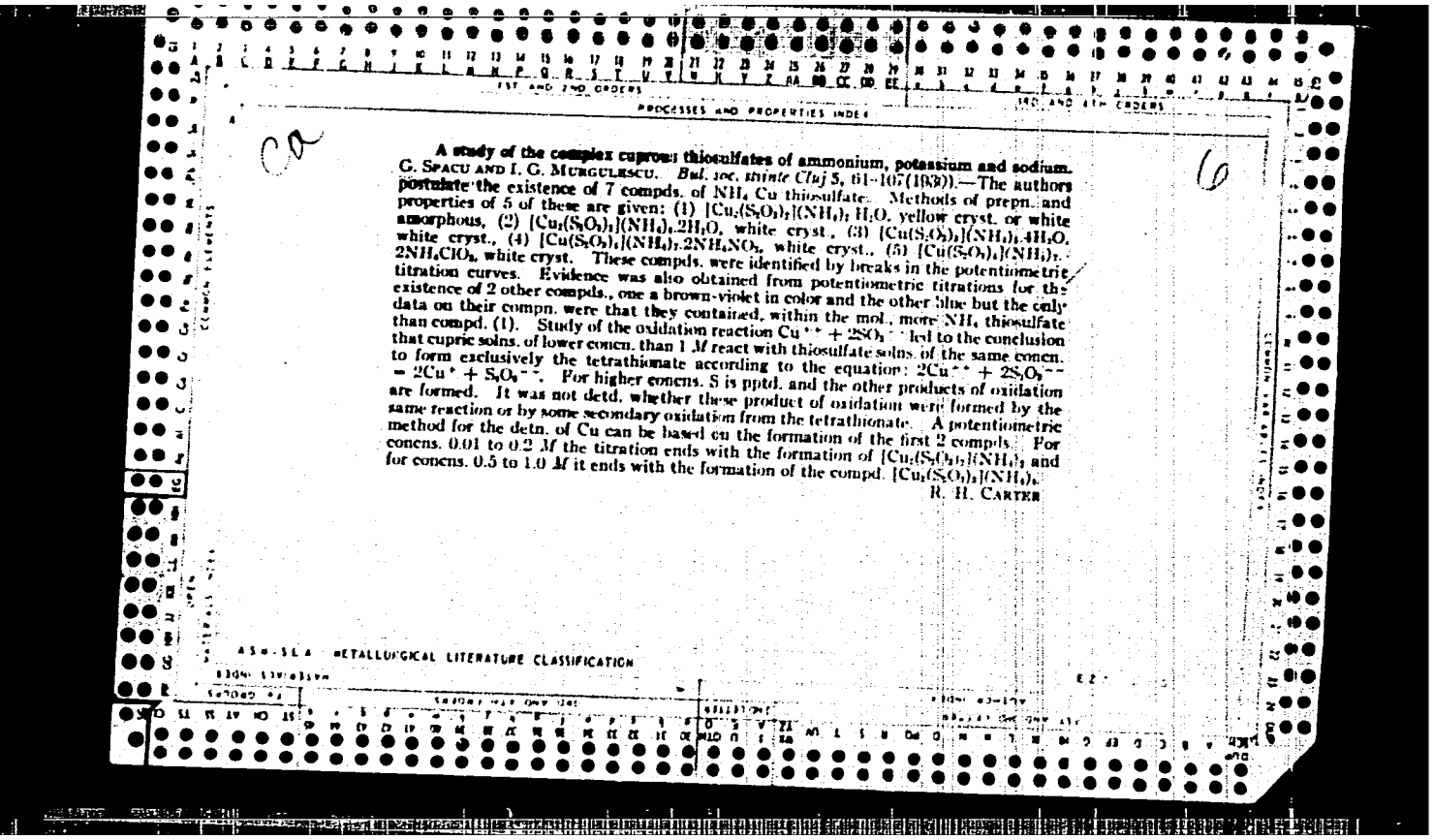
Author : A. Spacu, Popeya Florika.
Inst : Not given
Title : Contribution to the Study of Chloroiodides. Two New Classes of Compounds: Dichloriodimetalammins and Tetrachlorometalammines.

Orig Pub : Khim. Zhur. Akad. RNR., 1956, 1, No 1, 131-137

Abstract : By the introduction of crystalline $NH_4(ICl_4) \cdot 4H_2O$(l) into an aqueous solutions of Co amminocomplexes and also by reactions in alcohol solutions or in aquaous solutions containing Cl_2 and HCl (or NH_4Cl) the salts of $A(ICl_2)$, where A-Trans-$(CoCl_2(NH_3)_4)$, trans-and cis-$(CoCl_2(En)_2)$, trans-$Co(NH_3)_2(DH)_2)$, trans-$(Co(C_2H_5NH_2)_2(DH)_2)$

Card 1/3



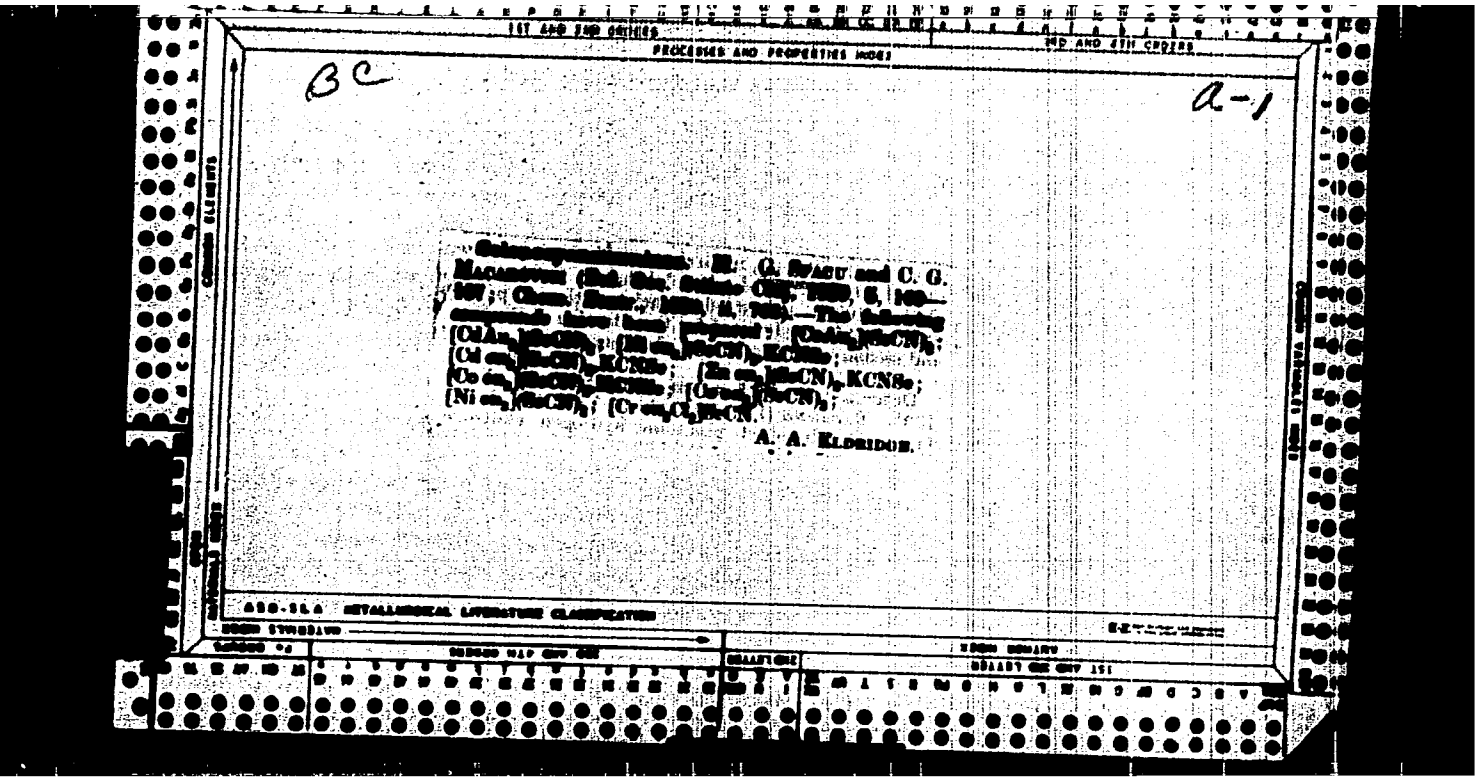


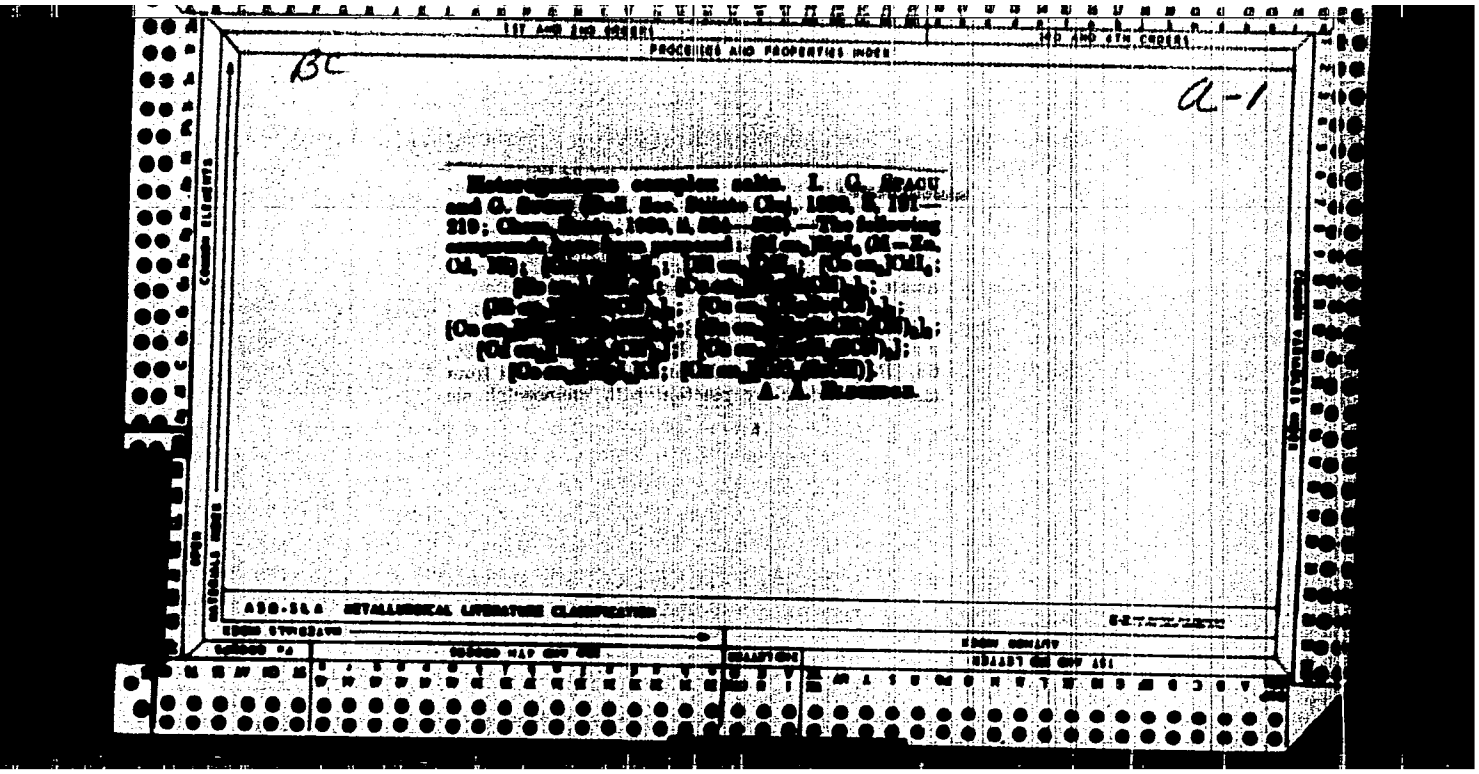
PROCESSES AND PROPERTIES INDEX

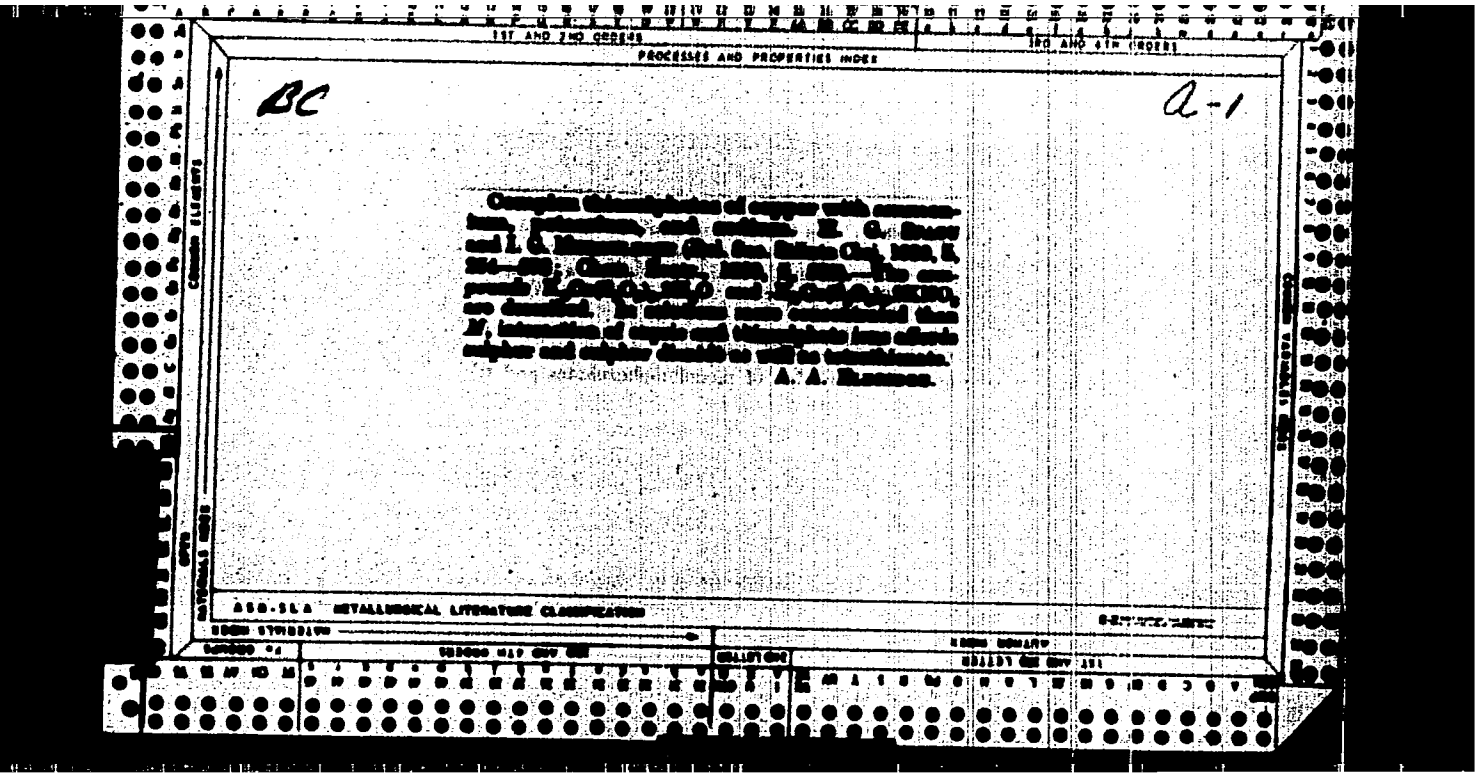
A study of the complex cuprous thiosulfates of ammonium, potassium and sodium. G. SPACU AND I. G. MURGULESCU. *Bul. soc. stiinte Cluj* 5, 61-107(1933).—The authors postulate the existence of 7 compds. of NH_4 Cu thiosulfate. Methods of prepn. and properties of 5 of these are given: (1) $[Cu_2(S_2O_3)_2](NH_4)_2 H_2O$, yellow cryst. or white amorphous, (2) $[Cu_2(S_2O_3)_2](NH_4)_2.2H_2O$, white cryst., (3) $[Cu(S_2O_3)_2](NH_4)_2.4H_2O$, white cryst., (4) $[Cu(S_2O_3)_2](NH_4)_2.2NH_4NO_3$, white cryst., (5) $[Cu(S_2O_3)_2](NH_4)_2.2NH_4ClO_4$, white cryst. These compds. were identified by breaks in the potentiometric titration curves. Evidence was also obtained from potentiometric titrations for the existence of 2 other compds., one a brown-violet in color and the other blue but the only data on their compn. were that they contained, within the mol., more NH_4 thiosulfate than compd. (1). Study of the oxidation reaction $Cu^{++} + 2S_2O_3^{--}$ led to the conclusion that cupric solns. of lower concn. than 1 *M* react with thiosulfate solns. of the same concn. to form exclusively the tetrathionate according to the equation: $2Cu^{++} + 2S_2O_3^{--} = 2Cu^{+} + S_4O_6^{--}$. For higher concns. S is pptd. and the other products of oxidation are formed. It was not detd. whether these product of oxidation were formed by the same reaction or by some secondary oxidation from the tetrathionate. A potentiometric method for the detn. of Cu can be based on the formation of the first 2 compds. For concns. 0.01 to 0.2 *M* the titration ends with the formation of $[Cu_2(S_2O_3)_2](NH_4)_2$ and for concns. 0.5 to 1.0 *M* it ends with the formation of the compd. $[Cu_2(S_2O_3)_2](NH_4)_6$.

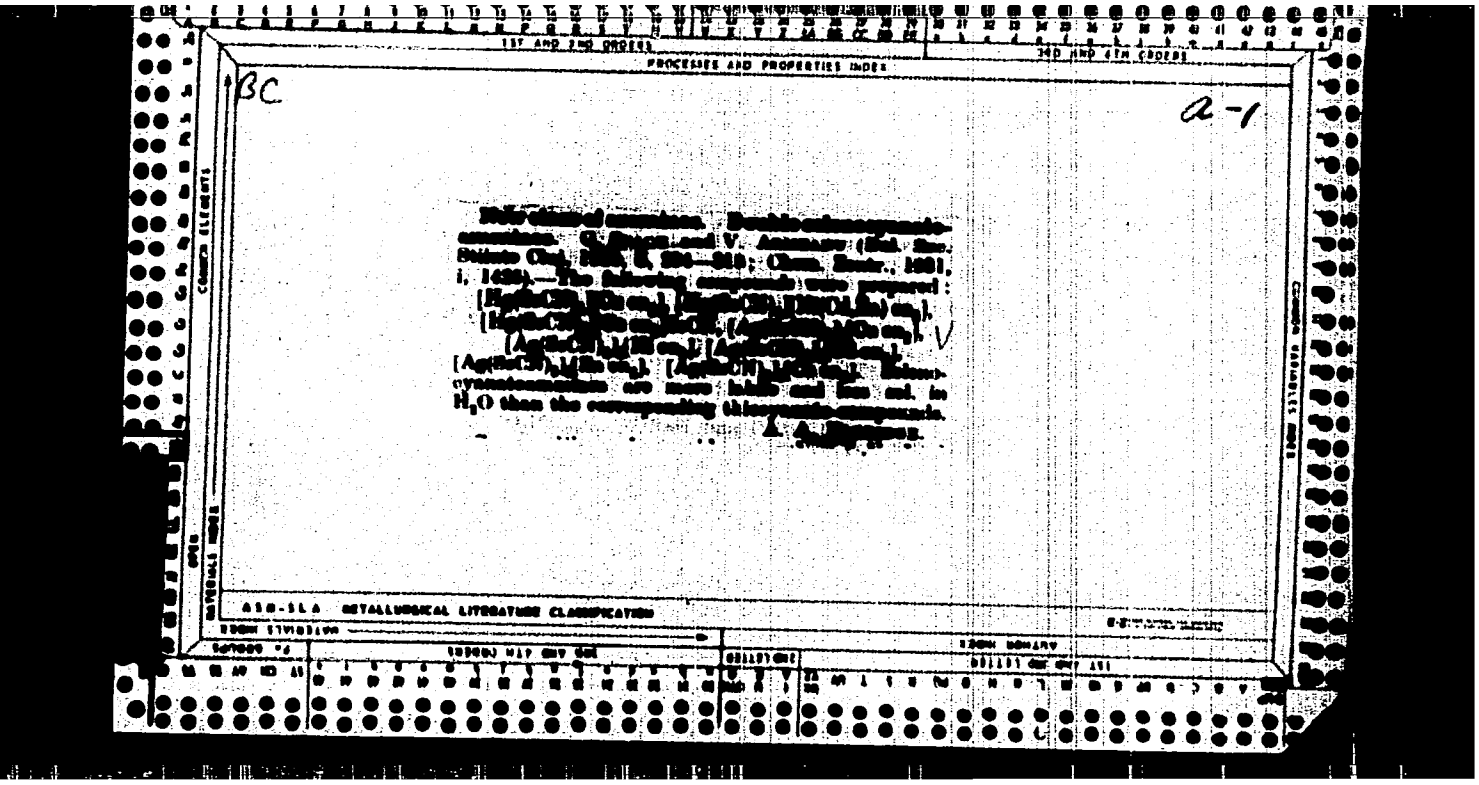
R. H. CARTER

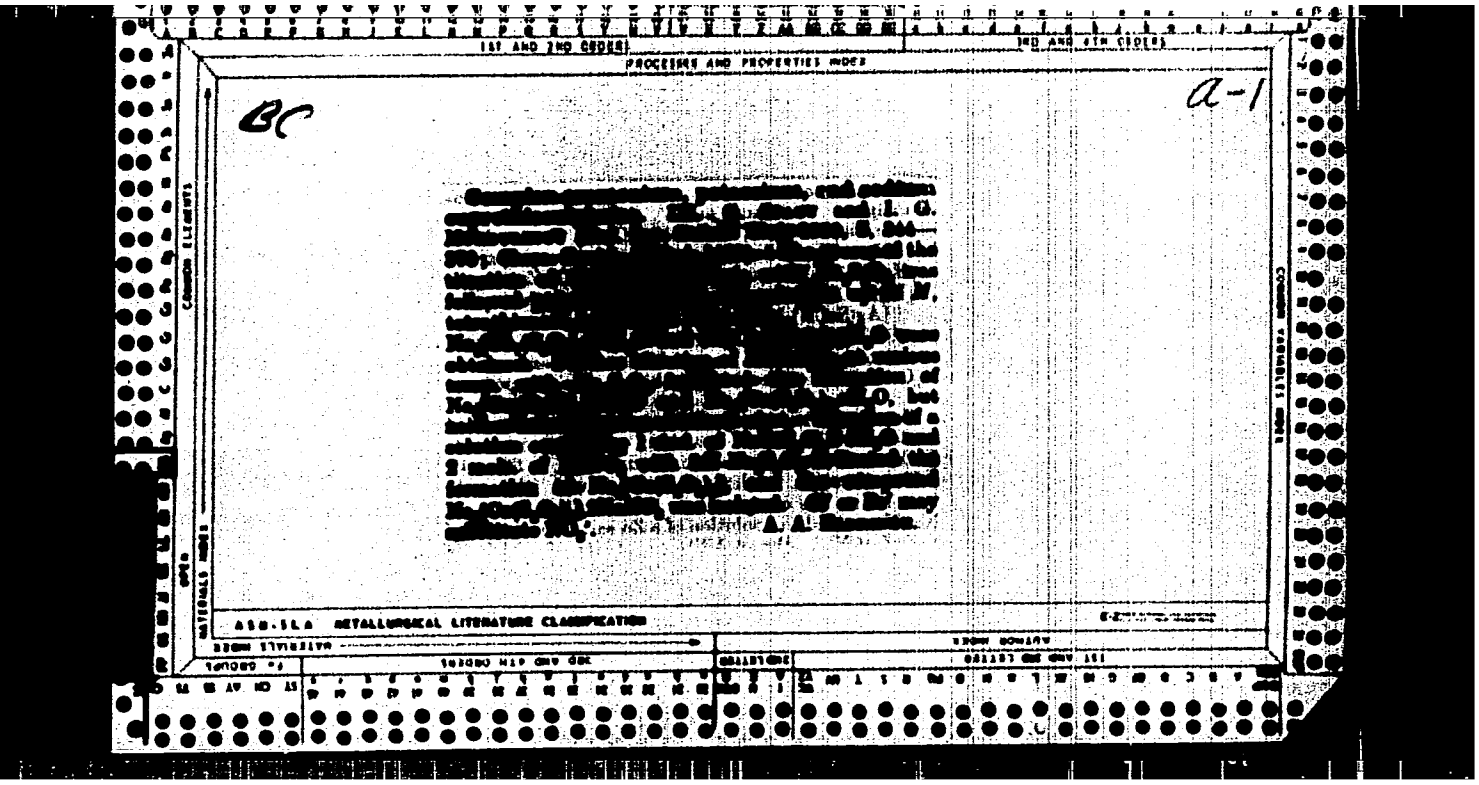
A5-SLA METALLURGICAL LITERATURE CLASSIFICATION

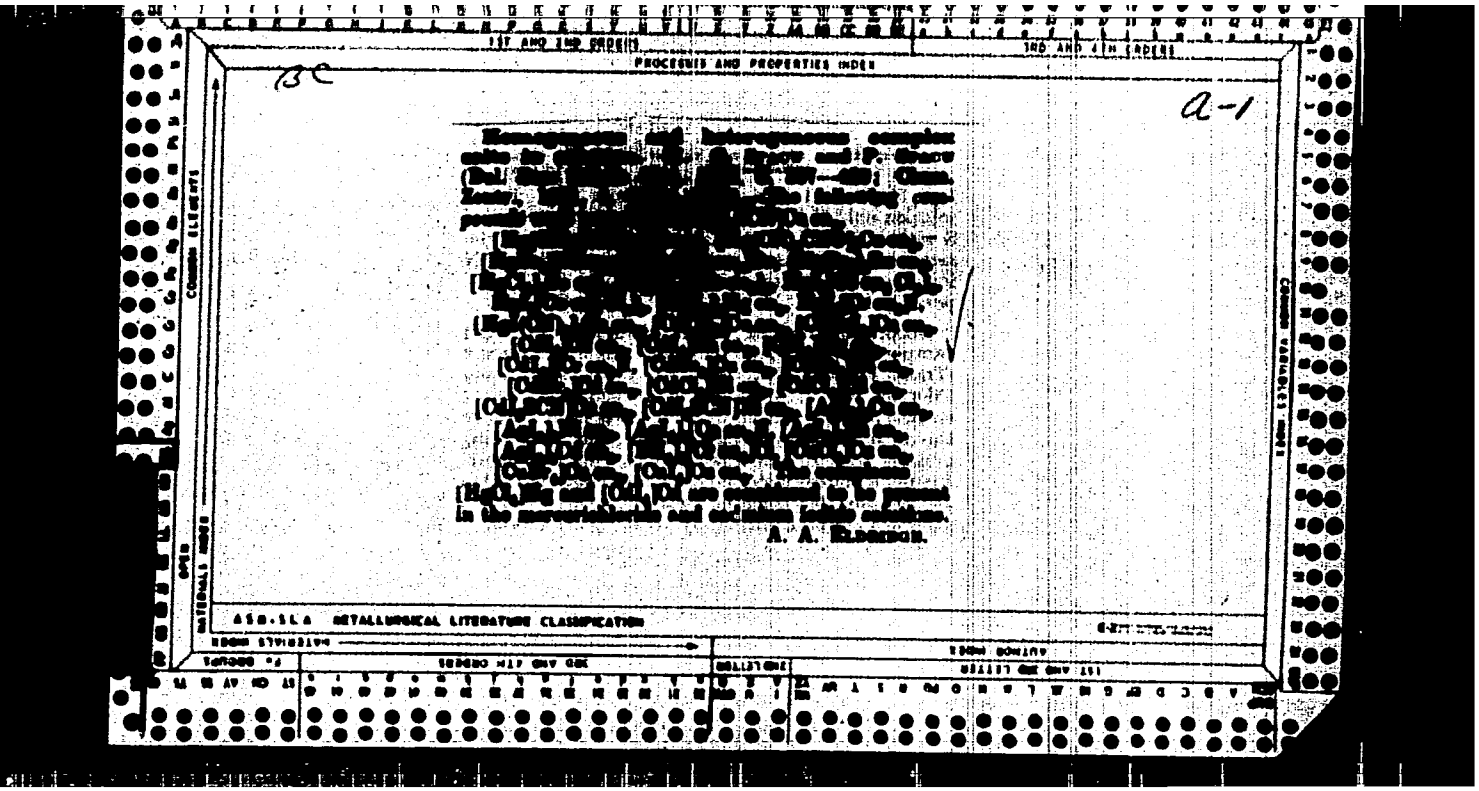


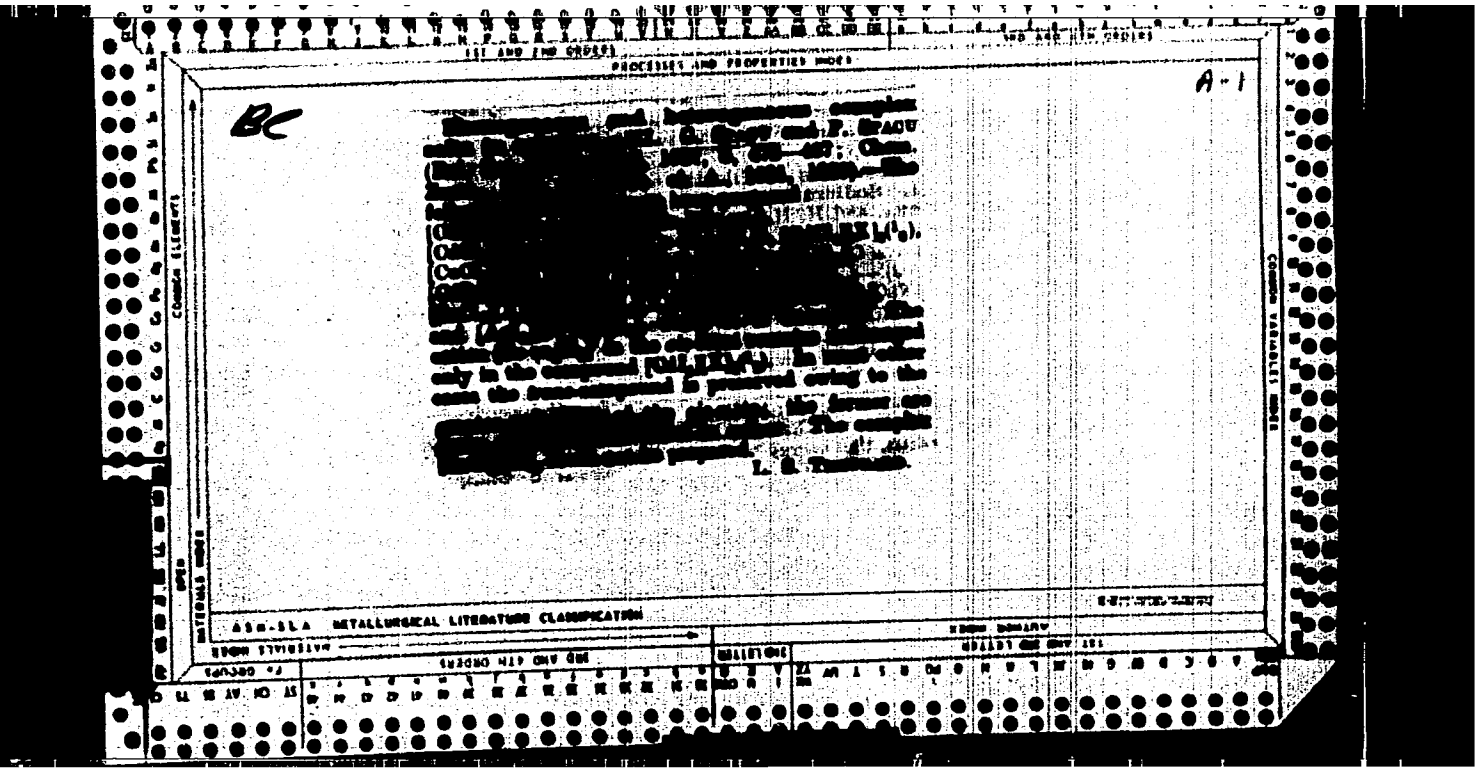


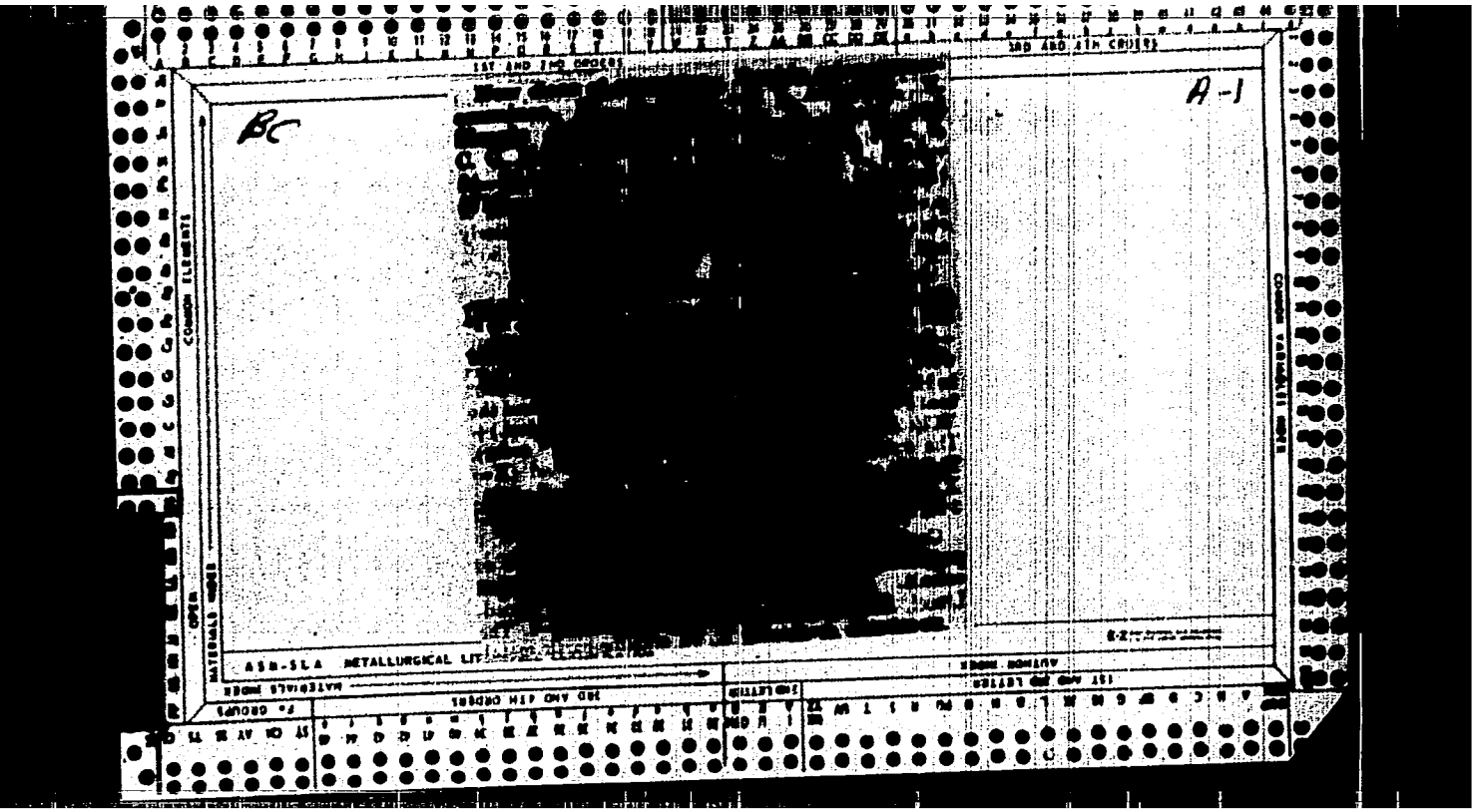


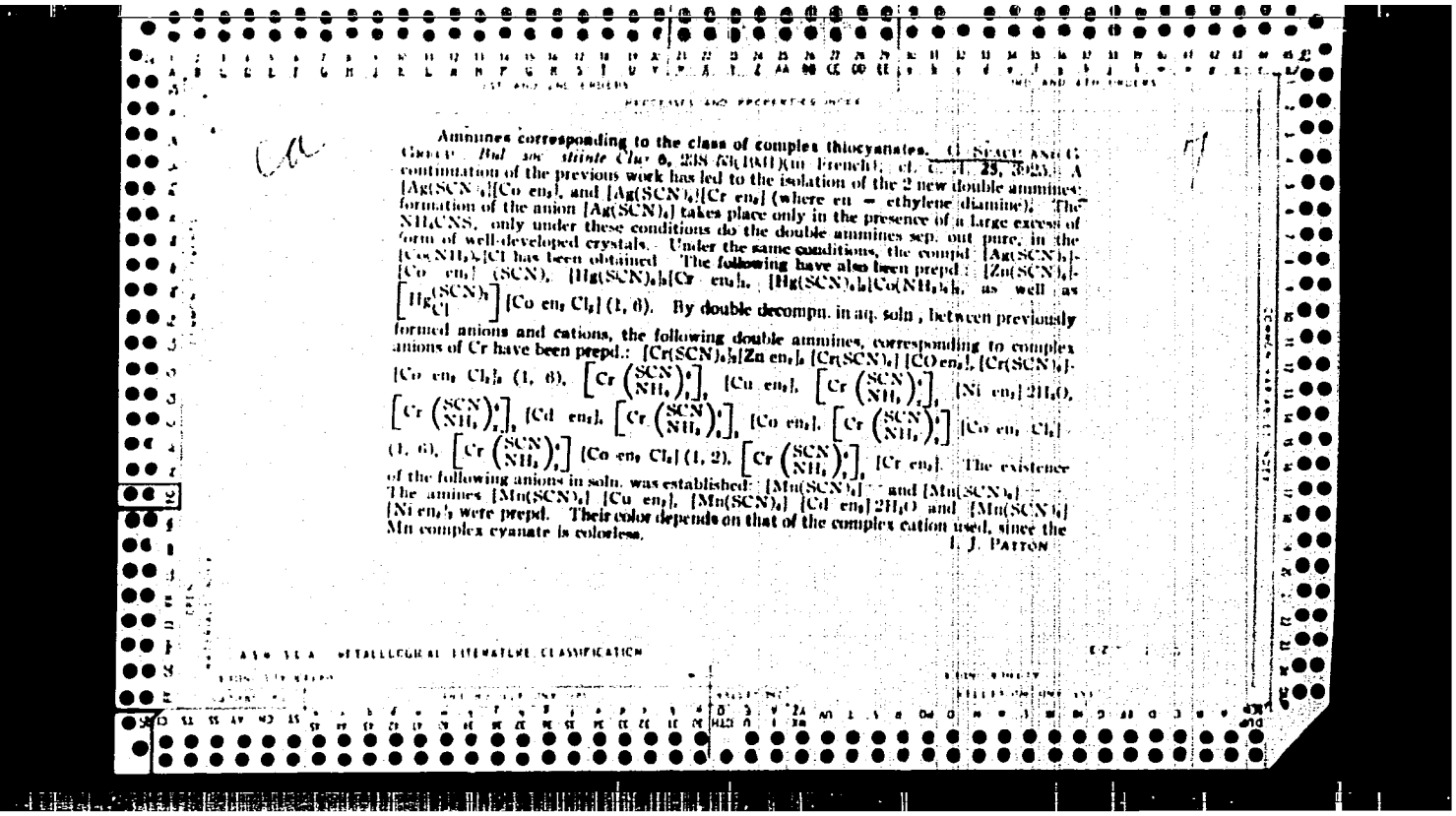












Ammines corresponding to the class of complex thiocyanates. G. Spacu and G. Ciocan. *Bul. soc. ştiinţe Cluj* **6**, 238-58(1931)(in French); cf. C. A. **25**, 3025. A continuation of the previous work has led to the isolation of the 2 new double ammines: $[Ag(SCN)_4][Co\ en_3]$, and $[Ag(SCN)_4][Cr\ en_3]$ (where en = ethylene diamine). The formation of the anion $[Ag(SCN)_4]$ takes place only in the presence of a large excess of NH_4CNS, only under these conditions do the double ammines sep. out pure, in the form of well-developed crystals. Under the same conditions, the compd. $[Ag(SCN)_4][Co(NH_3)_6]Cl$ has been obtained. The following have also been prepd.: $[Zn(SCN)_4][Co\ en_3]_2(SCN)_2$, $[Hg(SCN)_4]_3[Cr\ en_3]_4$, $[Hg(SCN)_4]_3[Co(NH_3)_6]_4$, as well as $\left[Hg\begin{matrix}(SCN)_2\\Cl_2\end{matrix}\right][Co\ en_3Cl_2]$ (1, 6). By double decompn. in aq. soln., between previously formed anions and cations, the following double ammines, corresponding to complex anions of Cr have been prepd.: $[Cr(SCN)_6]_2[Zn\ en_3]_3$, $[Cr(SCN)_6][CO\ en_3]$, $[Cr(SCN)_6][Co\ en_3\ Cl_2]_3$ (1, 6), $\left[Cr\left(\begin{matrix}SCN\\NH_3\end{matrix}\right)_4^{\cdot}\right]$, $[Cu\ en_3]$, $\left[Cr\left(\begin{matrix}SCN\\NH_3\end{matrix}\right)_4^{\cdot}\right]$, $[Ni\ en_3]2H_2O$, $\left[Cr\left(\begin{matrix}SCN\\NH_3\end{matrix}\right)_4^{\cdot}\right]$, $[Cd\ en_3]$, $\left[Cr\left(\begin{matrix}SCN\\NH_3\end{matrix}\right)_4^{\cdot}\right]$, $[Co\ en_3]$, $\left[Cr\left(\begin{matrix}SCN\\NH_3\end{matrix}\right)_4^{\cdot}\right][Co\ en_3\ Cl_2]$ (1, 6), $\left[Cr\left(\begin{matrix}SCN\\NH_3\end{matrix}\right)_4^{\cdot}\right][Co\ en_3\ Cl_2]$ (1, 2), $\left[Cr\left(\begin{matrix}SCN\\NH_3\end{matrix}\right)_4^{\cdot}\right]$, $[Cr\ en_3]$. The existence of the following anions in soln. was established: $[Mn(SCN)_4]^{--}$ and $[Mn(SCN)_6]^{---}$. The amines $[Mn(SCN)_4][Cu\ en_3]$, $[Mn(SCN)_6][Cd\ en_3]2H_2O$ and $[Mn(SCN)_6][Ni\ en_3]_3$ were prepd. Their color depends on that of the complex cation used, since the Mn complex cyanate is colorless.

I. J. Patton

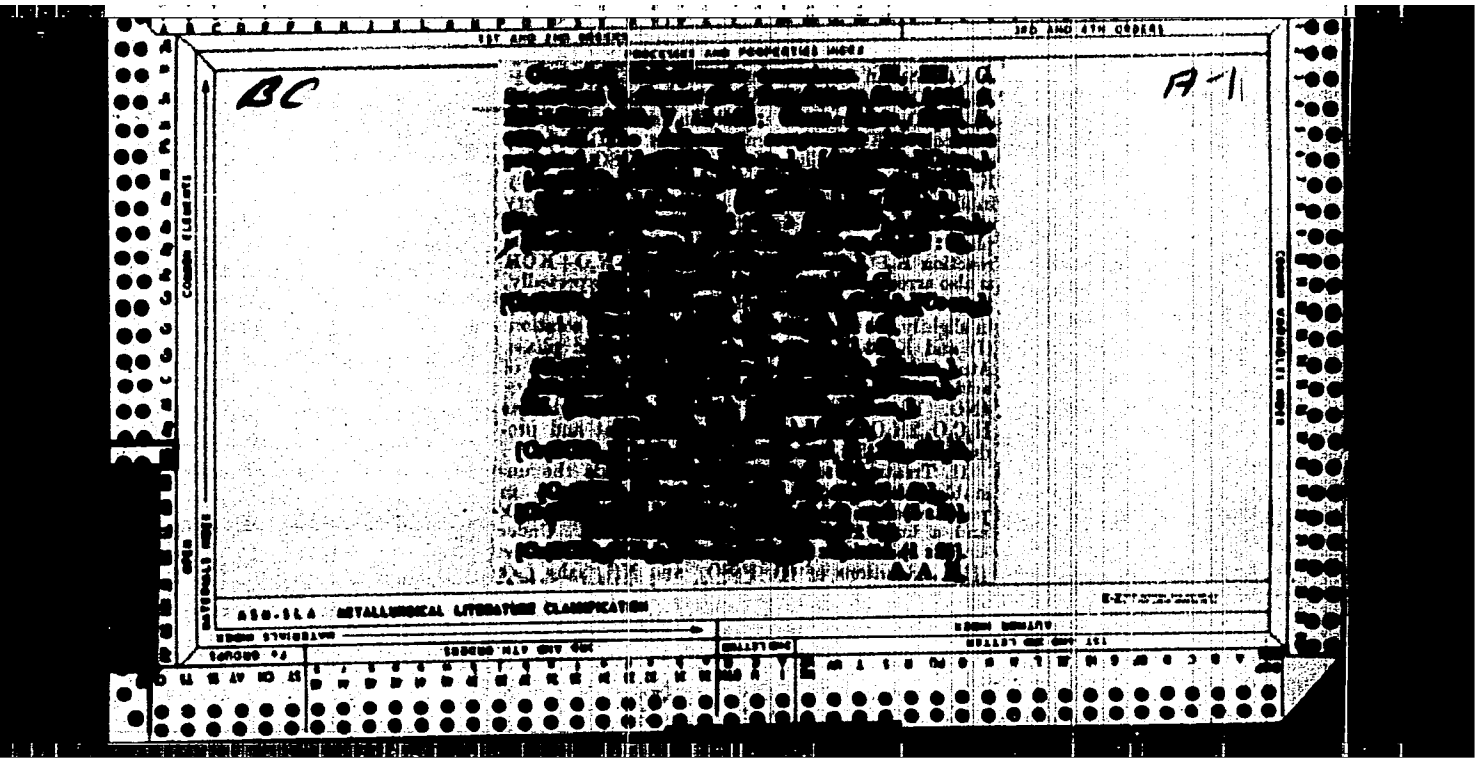
1ST AND 2ND ORDERS — 3RD AND 4TH ORDERS

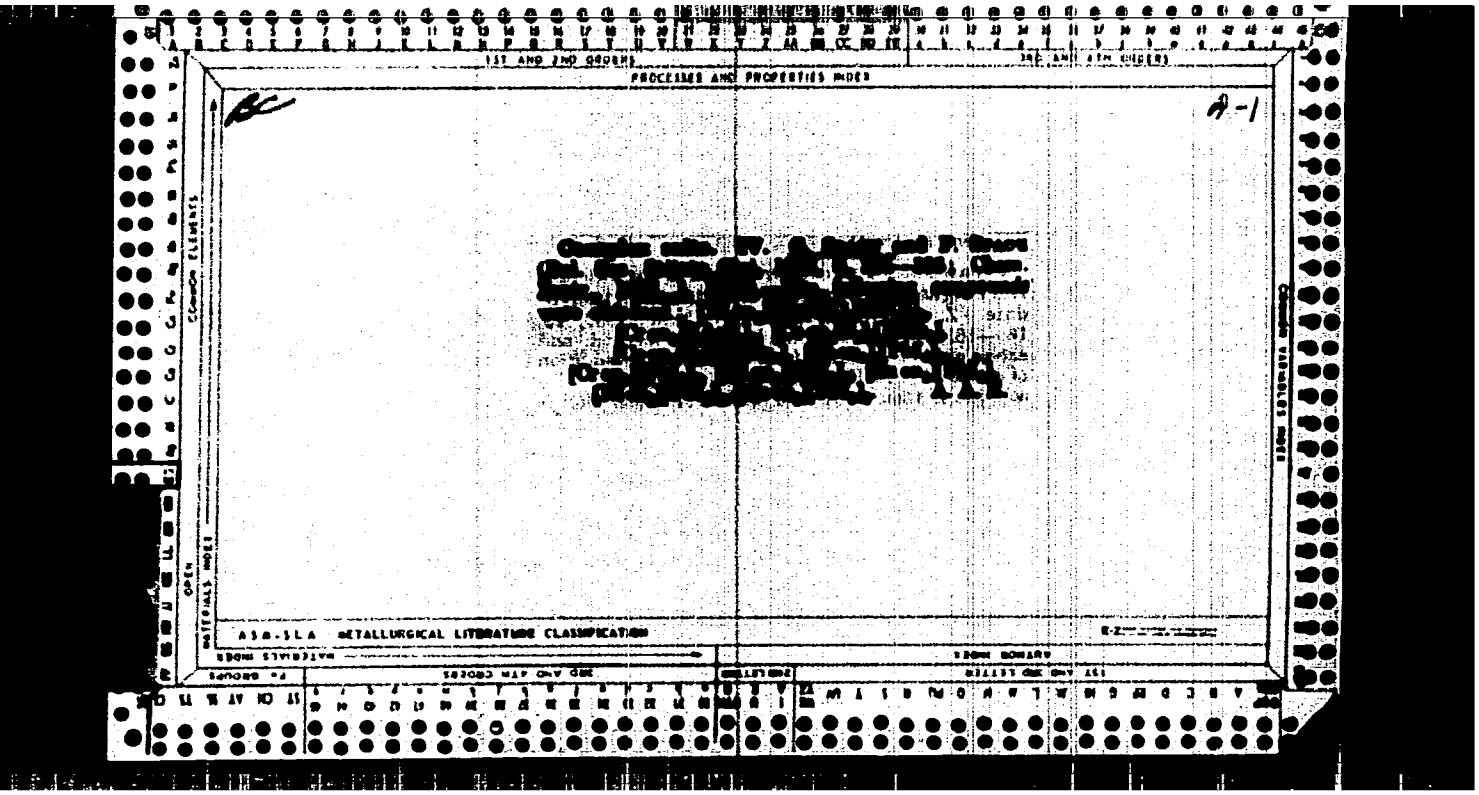
PROCESSES AND PROPERTIES INDEX

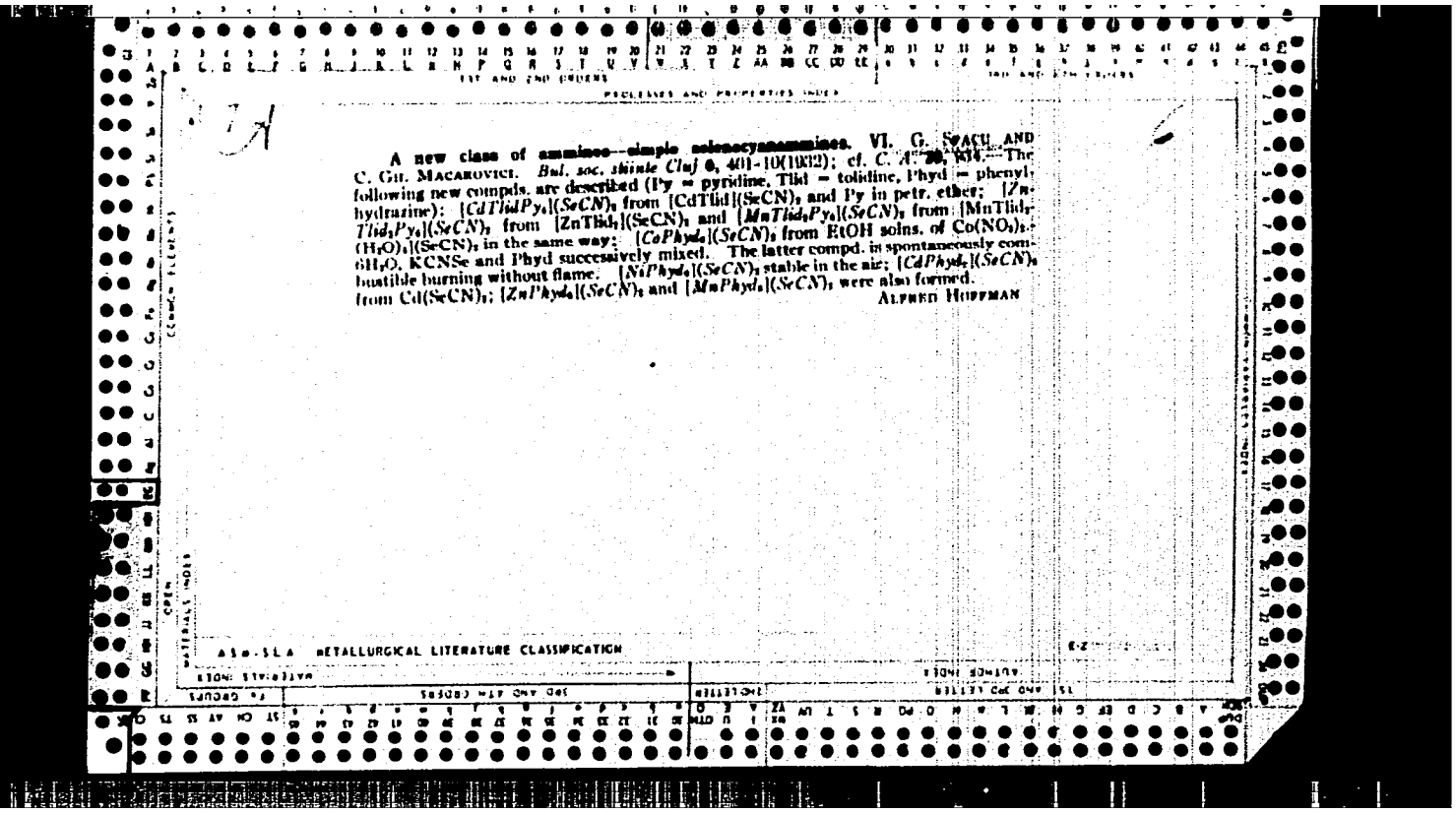
The ammines corresponding to the class of the complex thiocyanates.—L. Gheorghiu
Spacu and O. Gheorghiu. *Bul. soc. stiinte Cluj* **6**, 423–40(1931)(French). This is a study
of the pptn. in aq. soln. of complex thiocyanate cations by anions of complex ammines.
Its object was the development of reagents which might be used in investigating the
types of complex thiocyanate ions which exist in aq. soln., and the detg. of the types
of double ammines which can be derived from them. The ammines used were [Ni en_3]
$Cl_2.2H_2O$, [Ni en_3]$(NO_3)_2$, [Zn en_3]$Cl_2.2H_2O$, [Cu en_2]SO_4, [Co en_3]$Cl_3.3H_2O$ and [Cd en_3]
Cl_2; en = ethylenediamine. Their reactions by double decompn. with alkali metal salts
of the complex thiocyanates of Ag, Zn, Cd, Hg, Cr and Ni were detd. Not all of the
several complex thiocyanate ions of each of these elements were pptd. in aq. soln. as
double ammines, the following new compds. being those that were obtained: [*Cu* en_2]
[*Ag*$(CNS)_3$], dark violet, acicular crystals; [*Ni* en_3][*Ag*$(CNS)_3$], rose colored, acicular
crystals; [*Cu* en_2][*Zn*$(CNS)_4$], mauve, cryst. powder; [*Zn* en_3][*Zn*$(CNS)_4$], white,
cryst. ppt.; [*Cd* en_3][*Cd*$(CNS)_4$], white ppt.; [*Cu* en_2][*Hg*$(CNS)_4$], mauve, cryst. ppt.;
[*Ni* en_3][*Hg*$(CNS)_4$], rose-violet, cryst. ppt.; [*Zn* en_3][*Hg*$(CNS)_4$], white cryst. ppt.;
[*Cd* en_3][*Hg*$(CNS)_4$], white ppt.; [*Hg* en_2][*Hg*$(CNS)_4$], white, acicular crystals; [*Co* en_3]$_2$
[*Hg*$(CNS)_4$]$_3$, forms slowly as large orange crystals; [*Ni* en_3]$_2$[*Ni*$(CNS)_6$], forms slowly
as large mauve crystals; [*Cu* en_2]$_3$[*Cr*$(CNS)_6$]$_2$, mauve, cryst. powder; [*Cd* en_3]$_3$[*Cr*
$(CNS)_6$]$_2$, rose-gray, cryst. ppt.; [*Zn* en_3]$\left[Cr\begin{matrix}(CNS)_4\\(NH_3)_2\end{matrix}\right]_2$, rose colored ppt. These compds.
are usually sol. in acetone and pyridine, but infrequently so in the usual org. solvents,
$CHCl_3$, ether, alc. and benzene.

R. S. Lombard

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

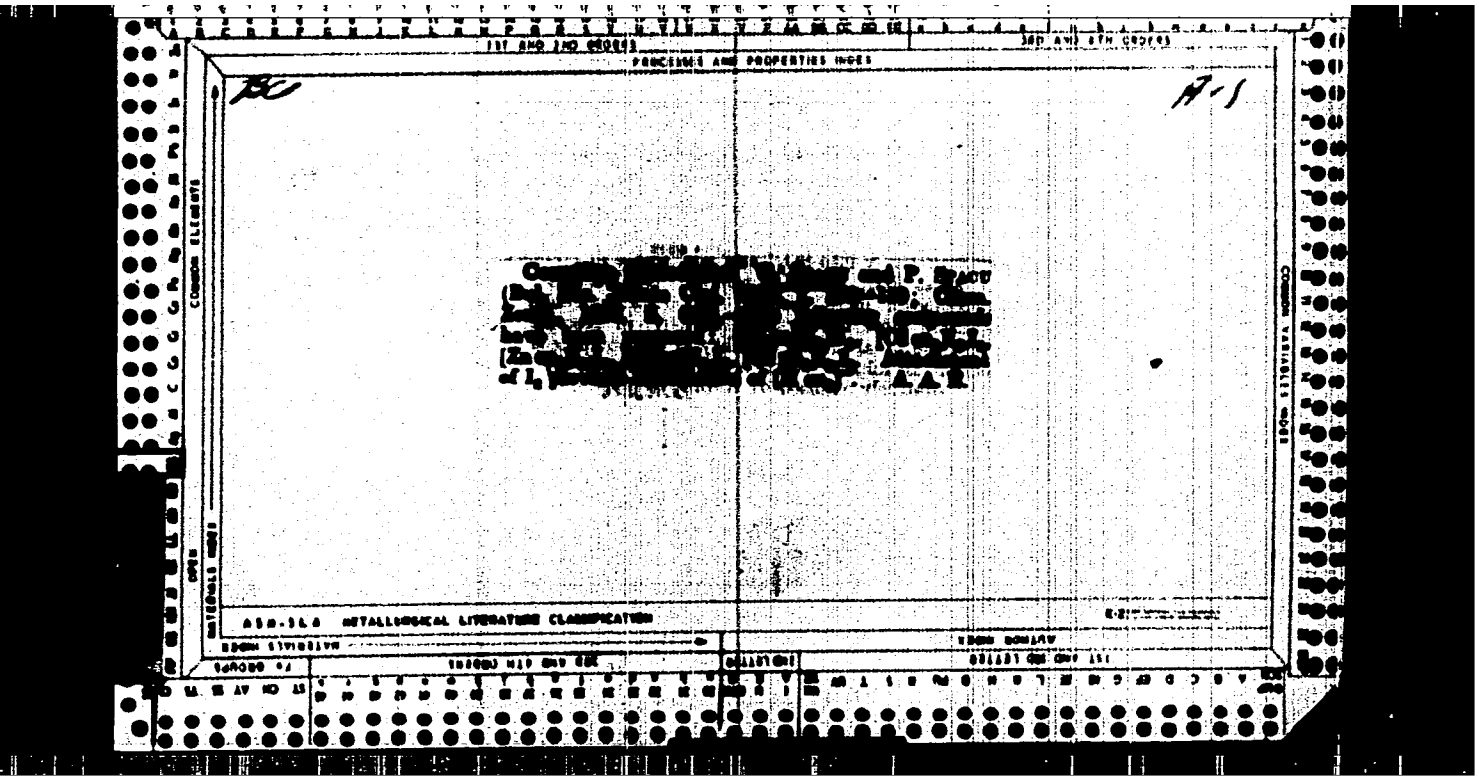


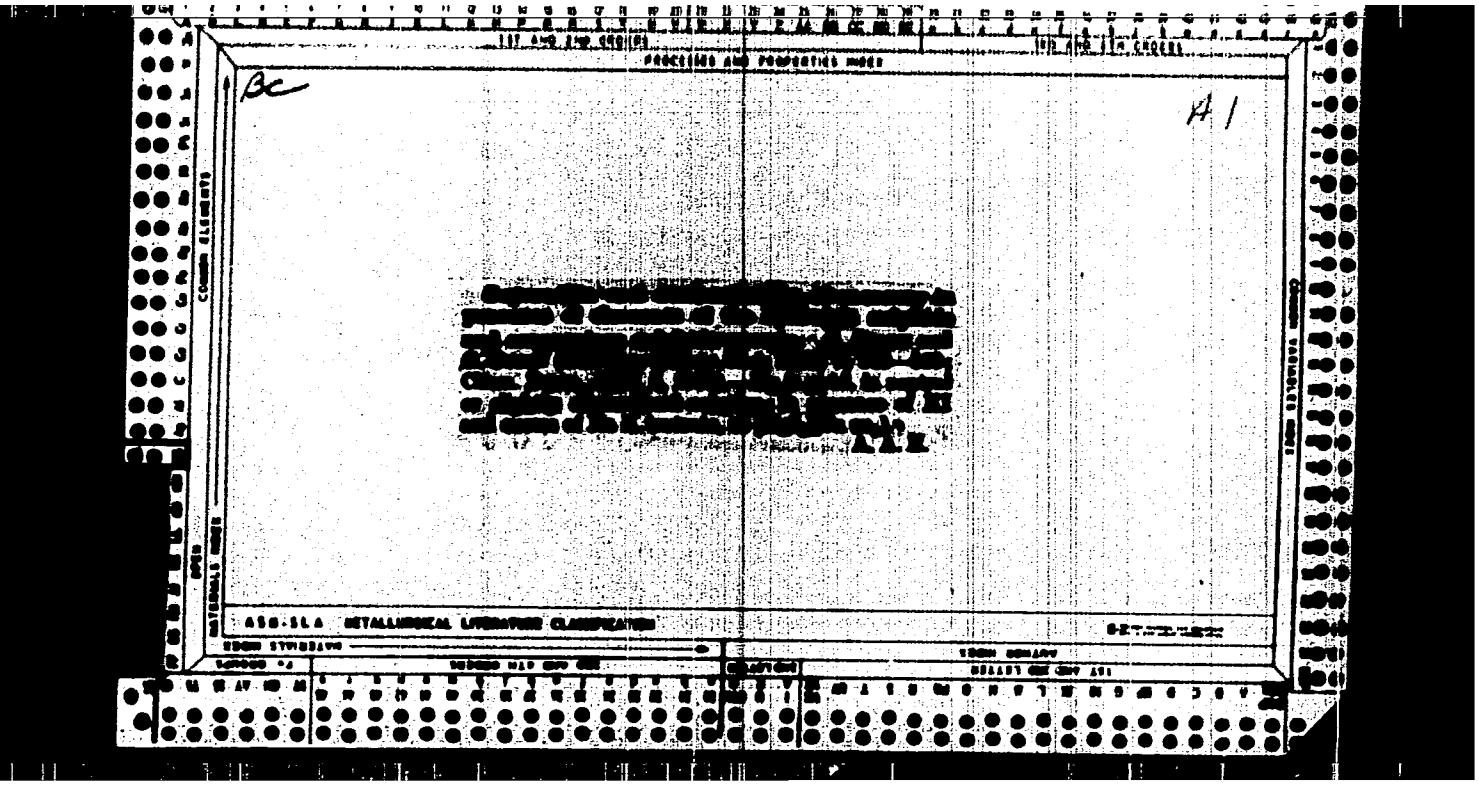


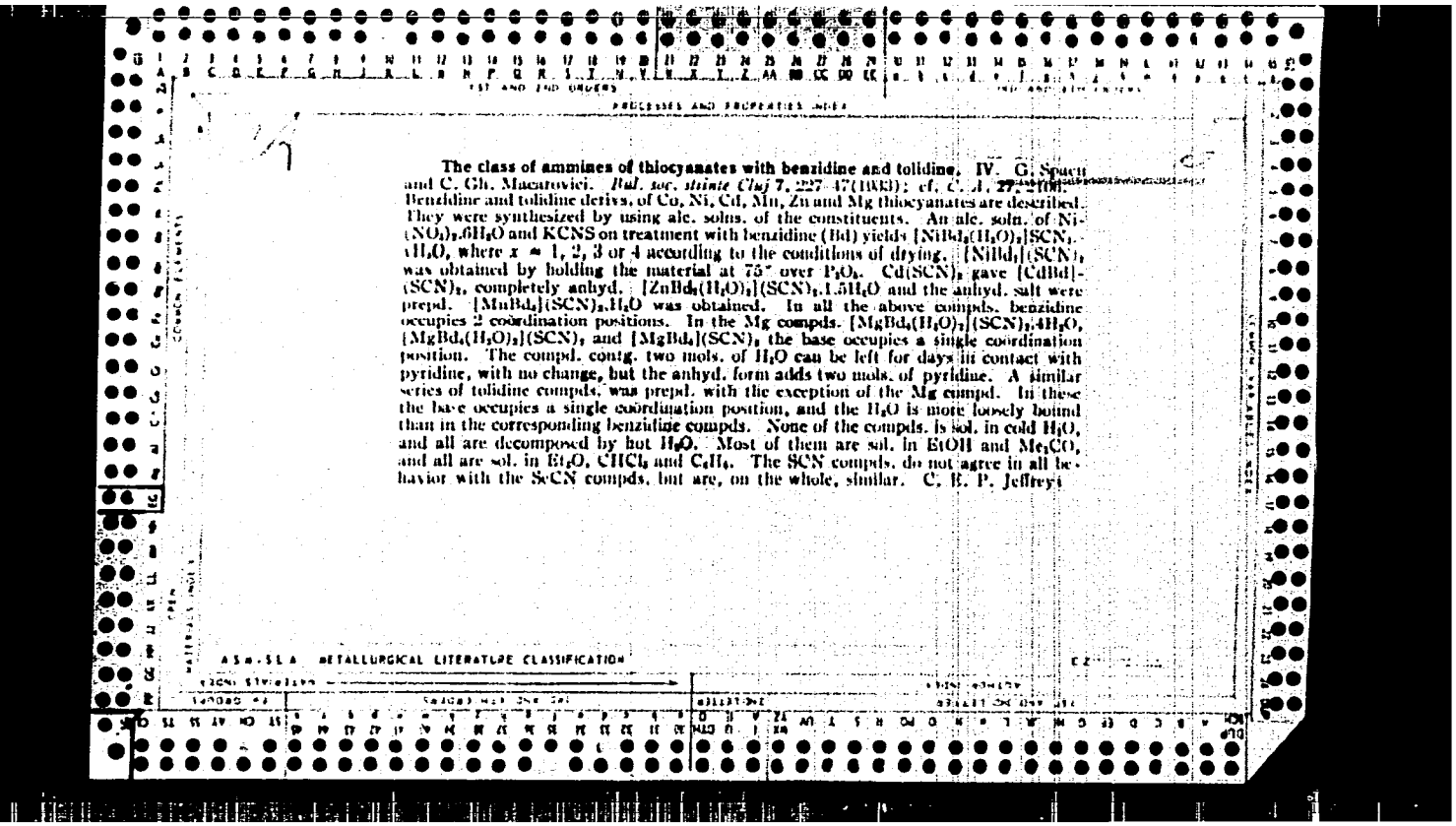


A new class of ammines—simple selenocyanammines. VI. G. SPACU AND C. GH. MACAROVICI. *Bul. soc. ştiinţe Cluj* **6**, 401-10(1932); cf. *C. A.* **26**, 934.—The following new compds. are described (Py = pyridine, Tlid = tolidine, Phyd = phenylhydrazine): $[CdTlid_2Py_2](SeCN)_2$ from $[CdTlid](SeCN)_2$ and Py in petr. ether; $[Zn Tlid_2Py_2](SeCN)_2$ from $[ZnTlid_2](SeCN)_2$ and $[MnTlid_2Py_2](SeCN)_2$ from $[MnTlid_2 (H_2O)_2](SeCN)_2$ in the same way; $[CoPhyd_6](SeCN)_2$ from EtOH solns. of $Co(NO_3)_2 \cdot 6H_2O$, KCNSe and Phyd successively mixed. The latter compd. is spontaneously combustible burning without flame. $[NiPhyd_6](SeCN)_2$ stable in the air; $[CdPhyd_6](SeCN)_2$ from $Cd(SeCN)_2$; $[ZnPhyd_6](SeCN)_2$ and $[MnPhyd_6](SeCN)_2$ were also formed.

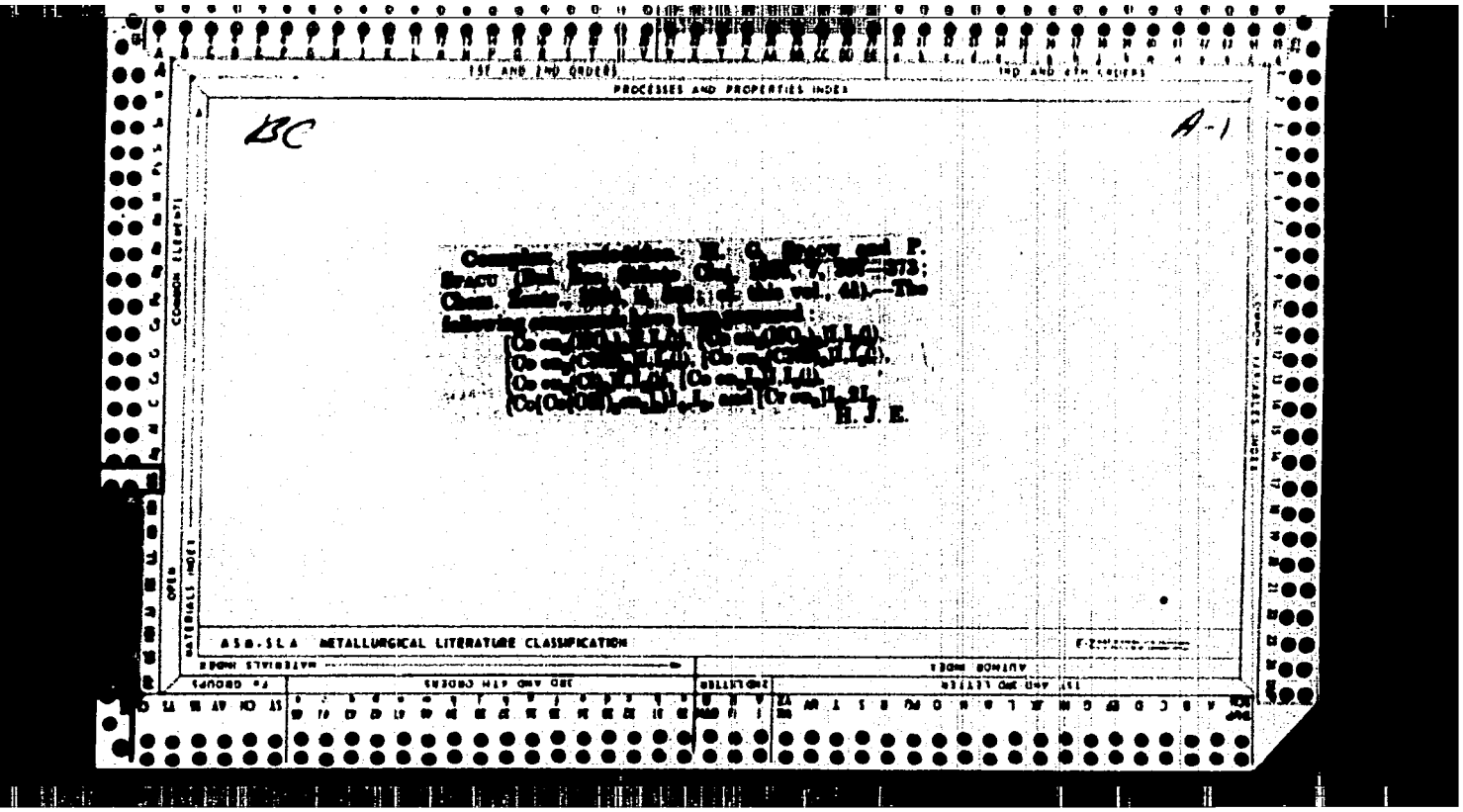
ALFRED HUFFMAN

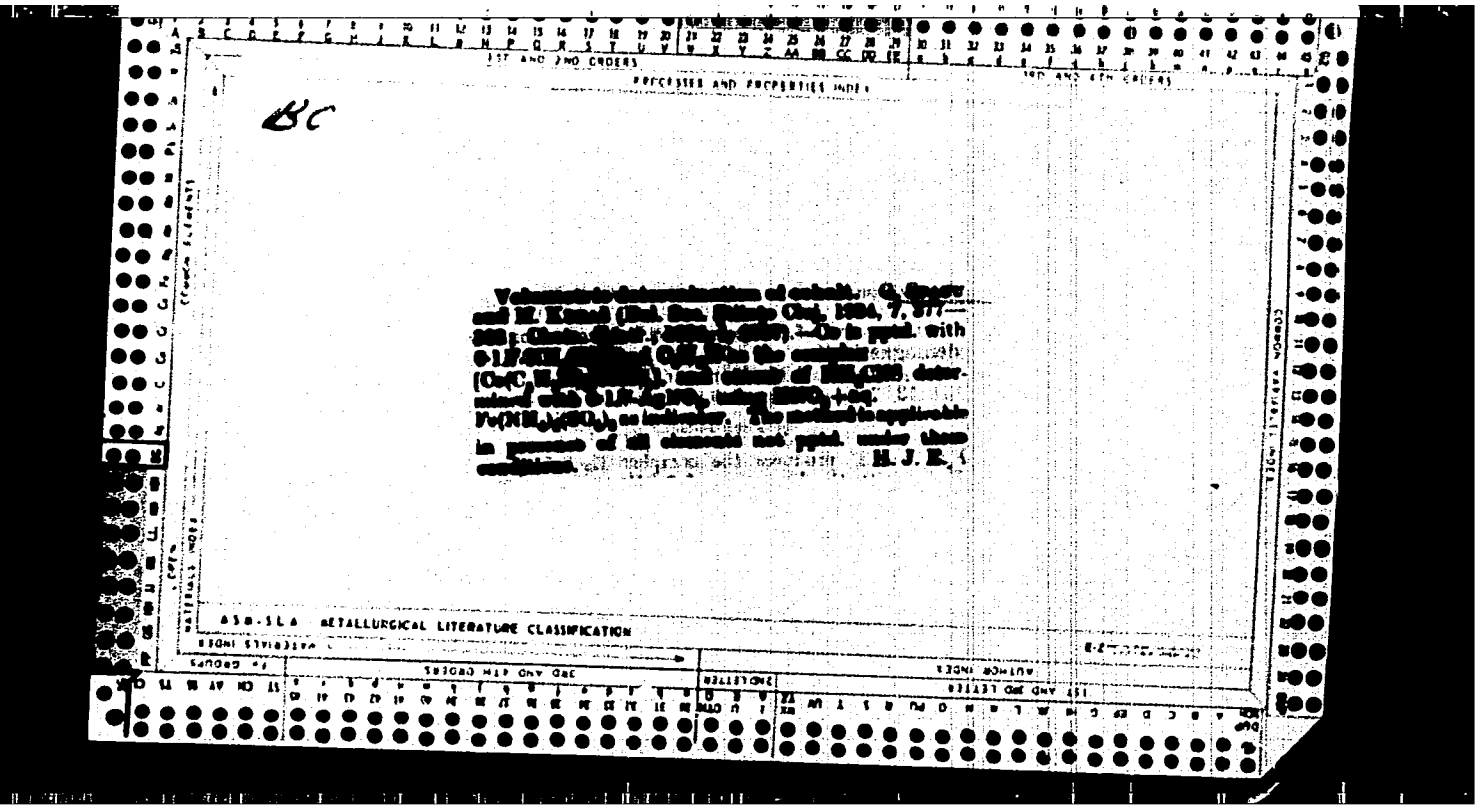


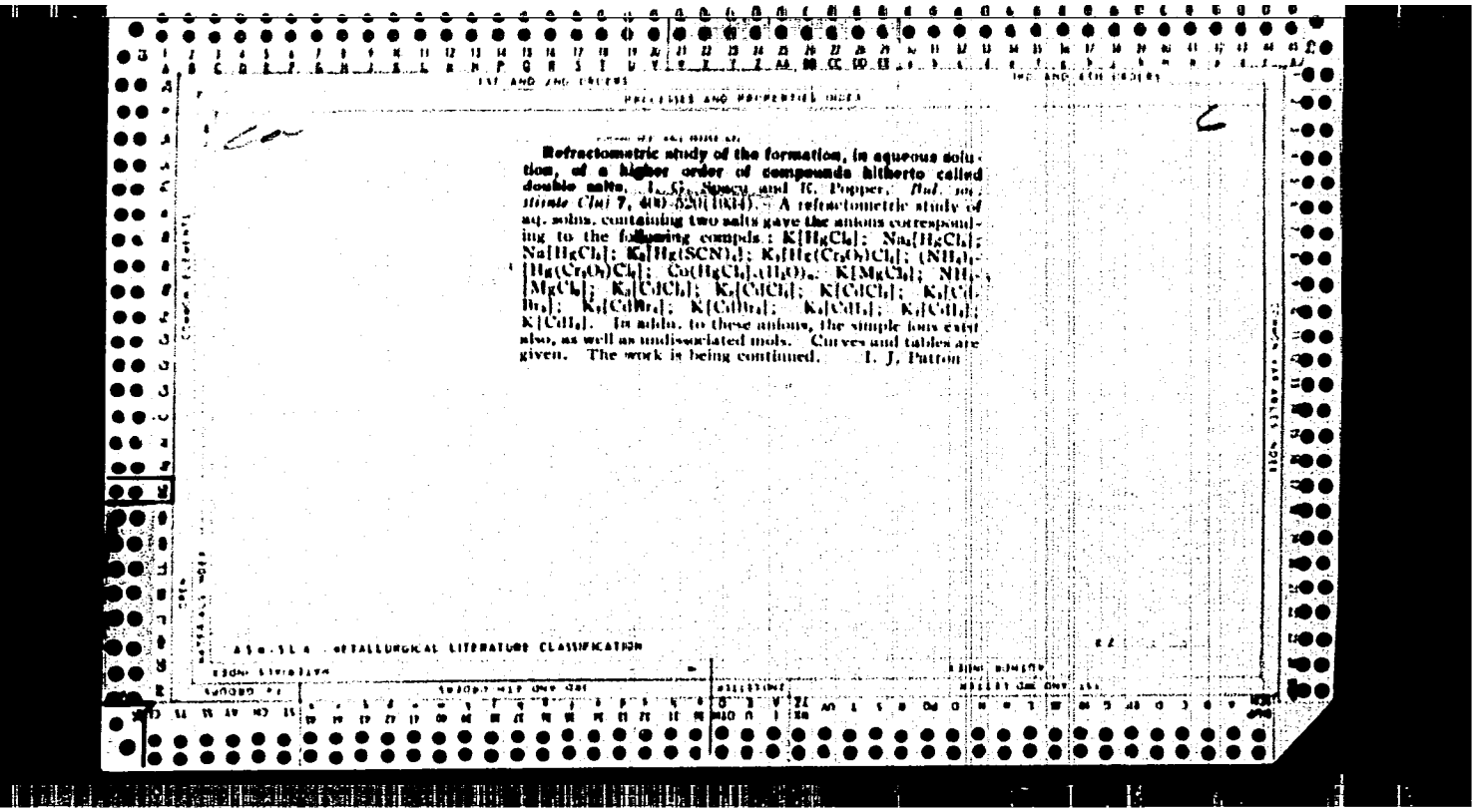




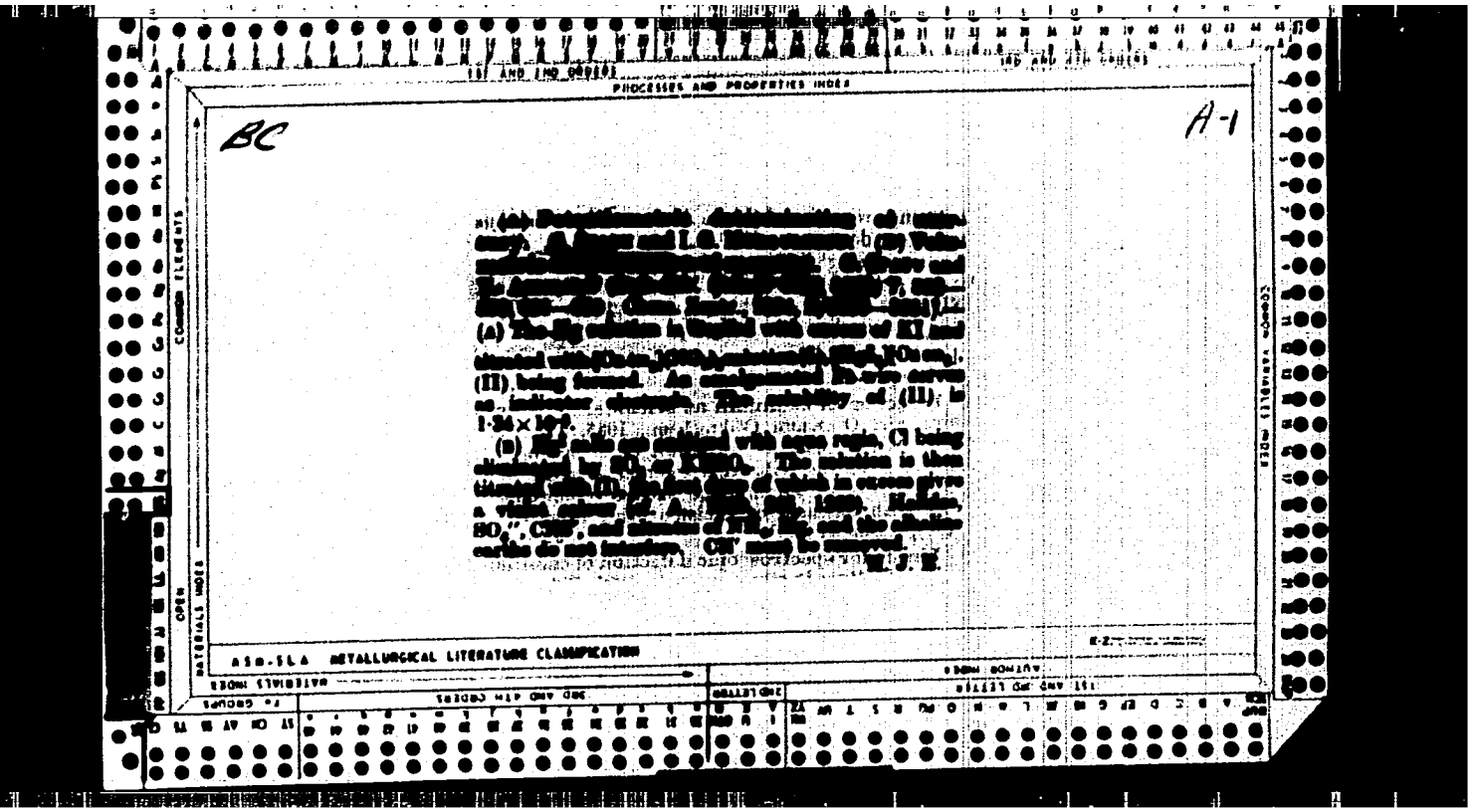
The class of ammines of thiocyanates with benzidine and tolidine. IV. G. Spacu and C. Gh. Macarovici. *Bul. soc. stiinte Cluj* 7, 227–47(1933); *cf. C. A.*, 27, 2108. Benzidine and tolidine derivs. of Co, Ni, Cd, Mn, Zn and Mg thiocyanates are described. They were synthesized by using alc. solns. of the constituents. An alc. soln. of $Ni(NO_3)_2.6H_2O$ and KCNS on treatment with benzidine (Bd) yields $[NiBd_x(H_2O)_{6-x}](SCN)_2.xH_2O$, where $x = 1, 2, 3$ or 4 according to the conditions of drying. $[NiBd_4](SCN)_2$ was obtained by holding the material at 75° over P_2O_5. $Cd(SCN)_2$ gave $[CdBd](SCN)_2$, completely anhyd. $[ZnBd_3(H_2O)_3](SCN)_2.1.5H_2O$ and the anhyd. salt were prepd. $[MnBd_4](SCN)_2.H_2O$ was obtained. In all the above compds. benzidine occupies 2 coördination positions. In the Mg compds. $[MgBd_4(H_2O)_2](SCN)_2.4H_2O$, $[MgBd_4(H_2O)_2](SCN)_2$ and $[MgBd_4](SCN)_2$ the base occupies a single coördination position. The compd. contg. two mols. of H_2O can be left for days in contact with pyridine, with no change, but the anhyd. form adds two mols. of pyridine. A similar series of tolidine compds. was prepd. with the exception of the Mg compd. In these the base occupies a single coördination position, and the H_2O is more loosely bound than in the corresponding benzidine compds. None of the compds. is sol. in cold H_2O, and all are decomposed by hot H_2O. Most of them are sol. in EtOH and Me_2CO, and all are sol. in Et_2O, $CHCl_3$ and C_6H_6. The SCN compds. do not agree in all behavior with the ScCN compds. but are, on the whole, similar. C. B. P. Jeffreys

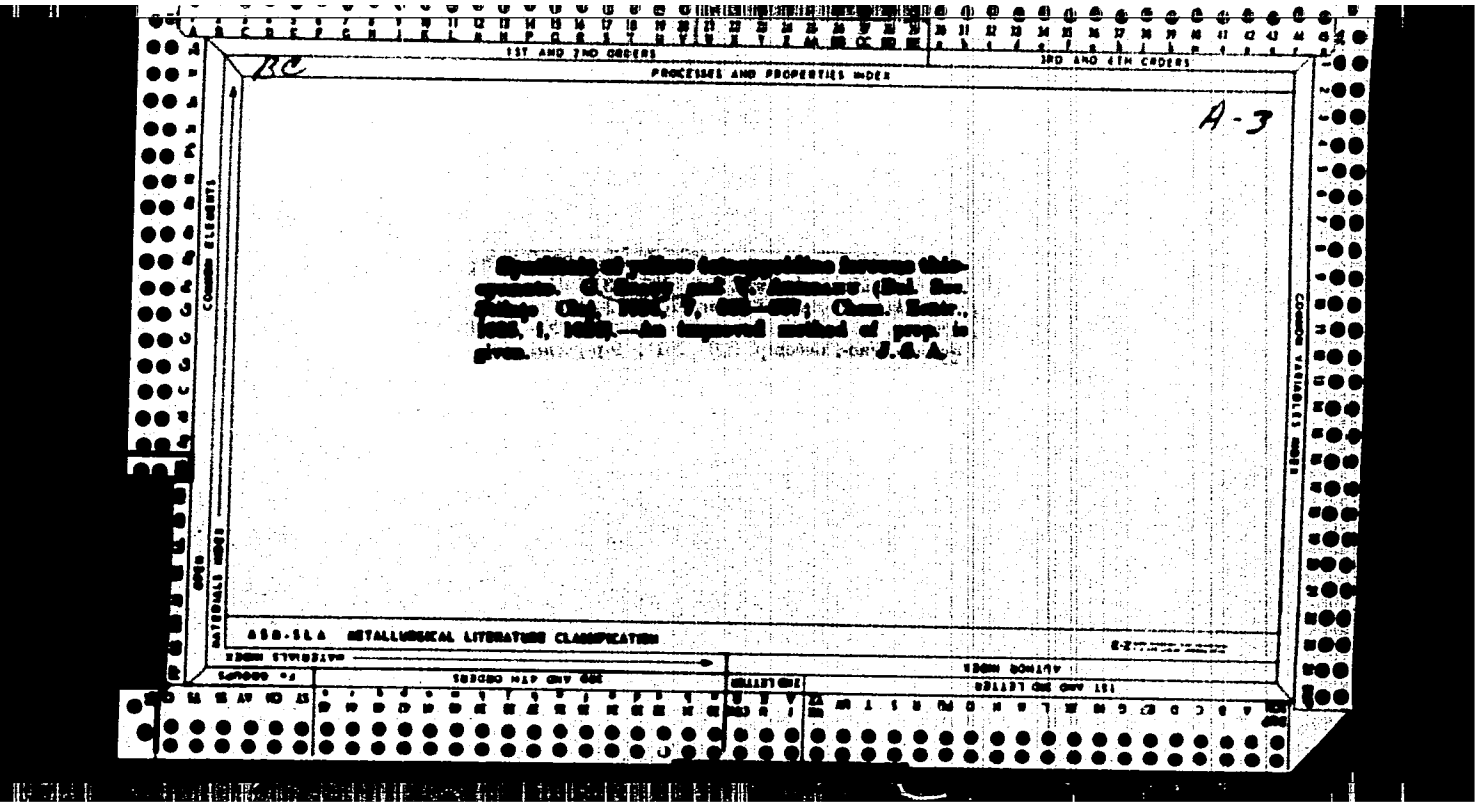






Refractometric study of the formation, in aqueous solution, of a higher order of compounds hitherto called double salts. I. G. Spacu and K. Popper. *Bul. soc. stiinte Cluj* 7, 480-520(1934). — A refractometric study of aq. solns. containing two salts gave the anions corresponding to the following compds.: $K[HgCl_3]$; $Na_2[HgCl_4]$; $Na[HgCl_3]$; $K_2[Hg(SCN)_4]$; $K_2[Hg(Cr_2O)Cl_4]$; $(NH_4)_2[Hg(Cr_2O_7)Cl_4]$; $Co(HgCl_4)_2(H_2O)_6$; $K[MgCl_3]$; $NH_4[MgCl_3]$; $K_2[CdCl_4]$; $K_2[CdCl_4]$; $K[CdCl_3]$; $K_2[CdBr_4]$; $K_2[CdBr_4]$; $K[CdBr_3]$; $K_2[CdI_4]$; $K_2[CdI_4]$; $K[CdI_3]$. In addn. to these anions, the simple ions exist also, as well as undissociated mols. Curves and tables are given. The work is being continued. I. J. Patton

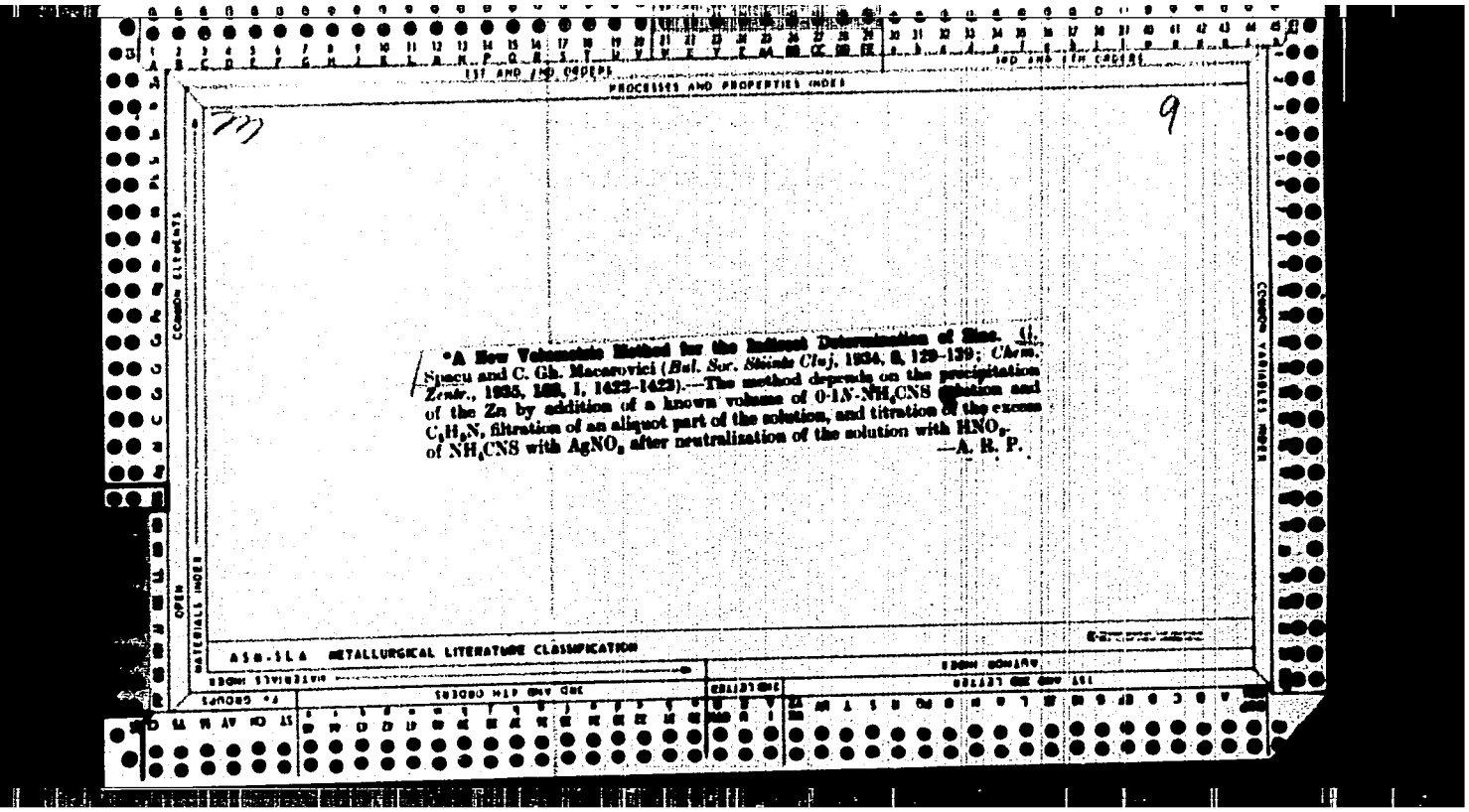




Refractometric study of the formation, in aqueous solution, of a higher order of compounds hitherto called double salts. II. G. Spacu and P. Popper. *Bul. Soc. Stiinte Cluj* 8, 5-128 (1934); cf. *C. A.* 28, 5000[8].—A continuation of the refractometric study of aq. solns. contg. 2 salts (cf. *C. A.* 28, 6314[6], 5000[8]) gave the following compds., neglecting the H_2O of hydration: $[CuCl_4]Cd$ or $[CdCl_4]Cu$; $[NiCl_4]Cd$ or $[CdCl_4]Ni$; $[CoCl_4]Cd$ or $[CdCl_4]Co$; $[MnCl_4]Cd$ or $[CdCl_4]Mn$; $[BaCl_4]Cd$ or $[CdCl_4]Ba$; $[CaCl_4]Ba$ or $[BaCl_4]Ca$; $[CdCl_4]Ba_2$; $[Cu(SO_4)_2]K_2$; $[Cu(SO_4)_2]Mg$; $[Al(SO_4)_2]K$; $[CuCl_3]K$; $[FeCl_4]K$; $[BaCl_4]K_2$; $\left[Cd{Cl_2 \atop SCN}\right]K$; and $\left[Ba{Cl_2 \atop (H_2O)}\right]{Ba \atop K}$. The following systems give no higher-order compds. in aq. soln.: $MgCl_2 + BaCl_2$; $K_2SO_4 + NH_4Cl$; $KI + KCl$; $KCl + CaCl_2$; and $RbCl + KCl$. The mol. refractivities of each constituent agree with diverse previous detns. The results are given in 57 extensive tables and 19 figures.

Victor Hicks

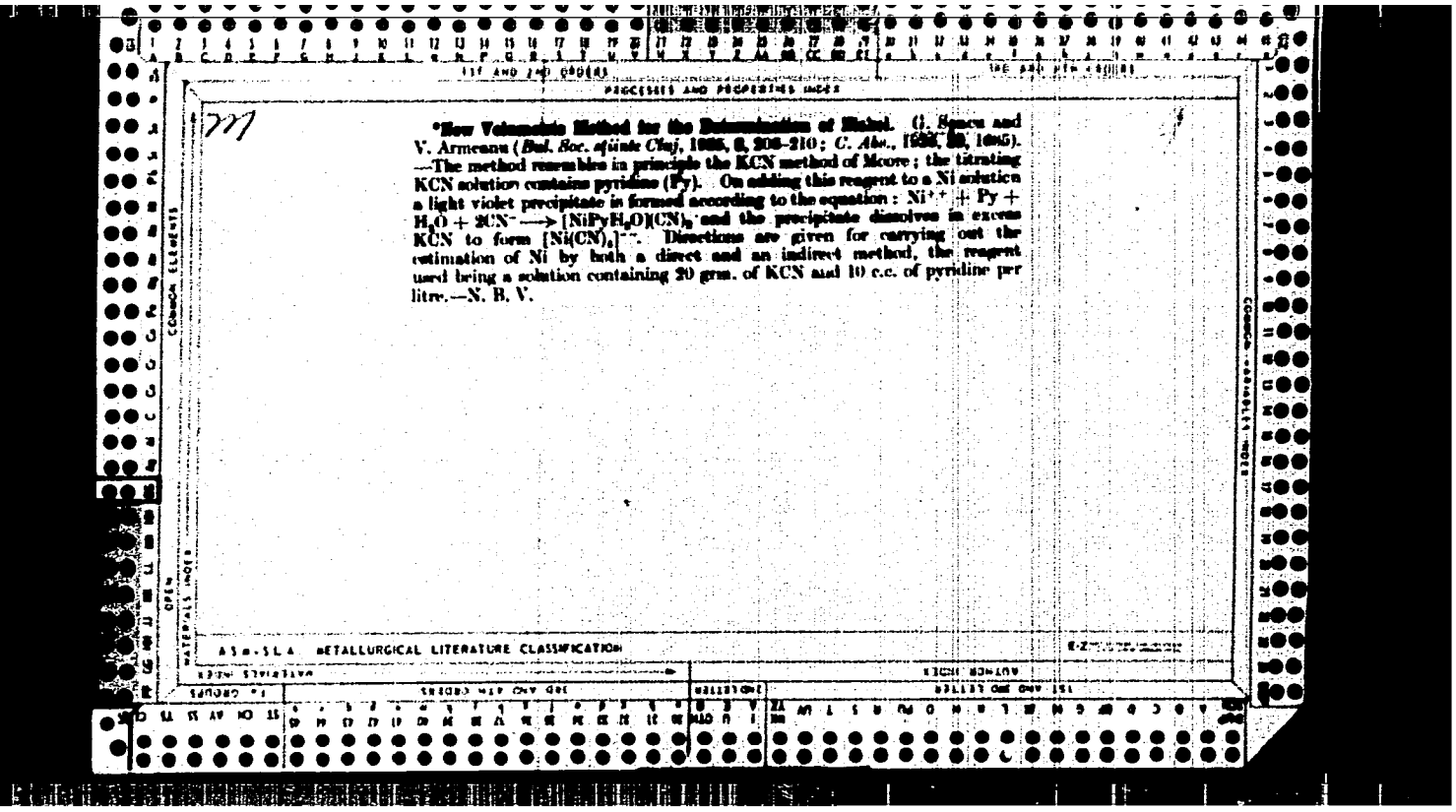
A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION



77

9

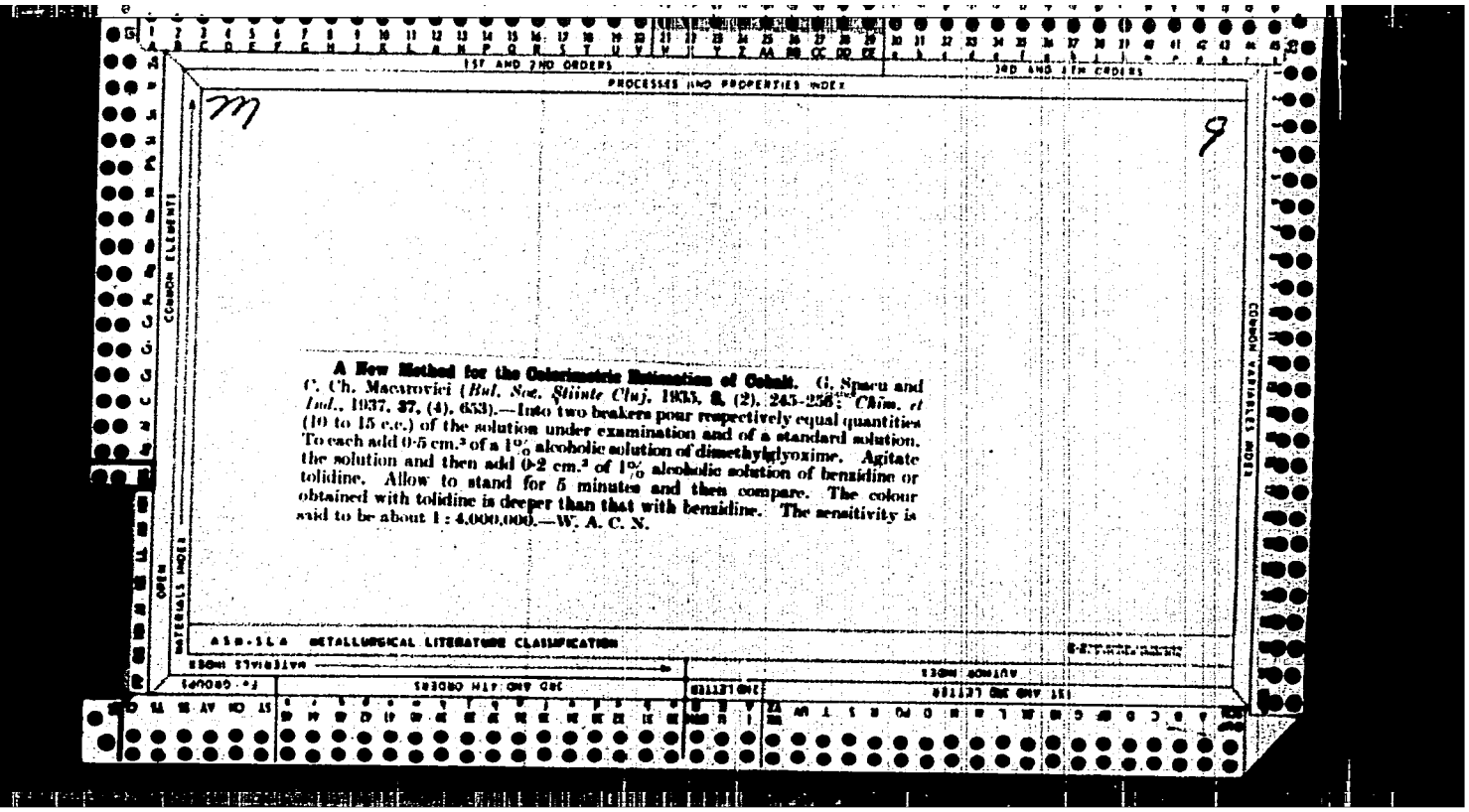
"A New Volumetric Method for the Indirect Determination of Zinc. II. Spacu and C. Gh. Macarovici (*Bul. Soc. Stiinte Cluj*, 1934, 8, 129–139; *Chem. Zentr.*, 1935, 106, I, 1422–1423).—The method depends on the precipitation of the Zn by addition of a known volume of 0·1*N*-NH_4CNS solution and C_5H_5N, filtration of an aliquot part of the solution, and titration of the excess of NH_4CNS with $AgNO_3$ after neutralization of the solution with HNO_3.
—A. R. P.



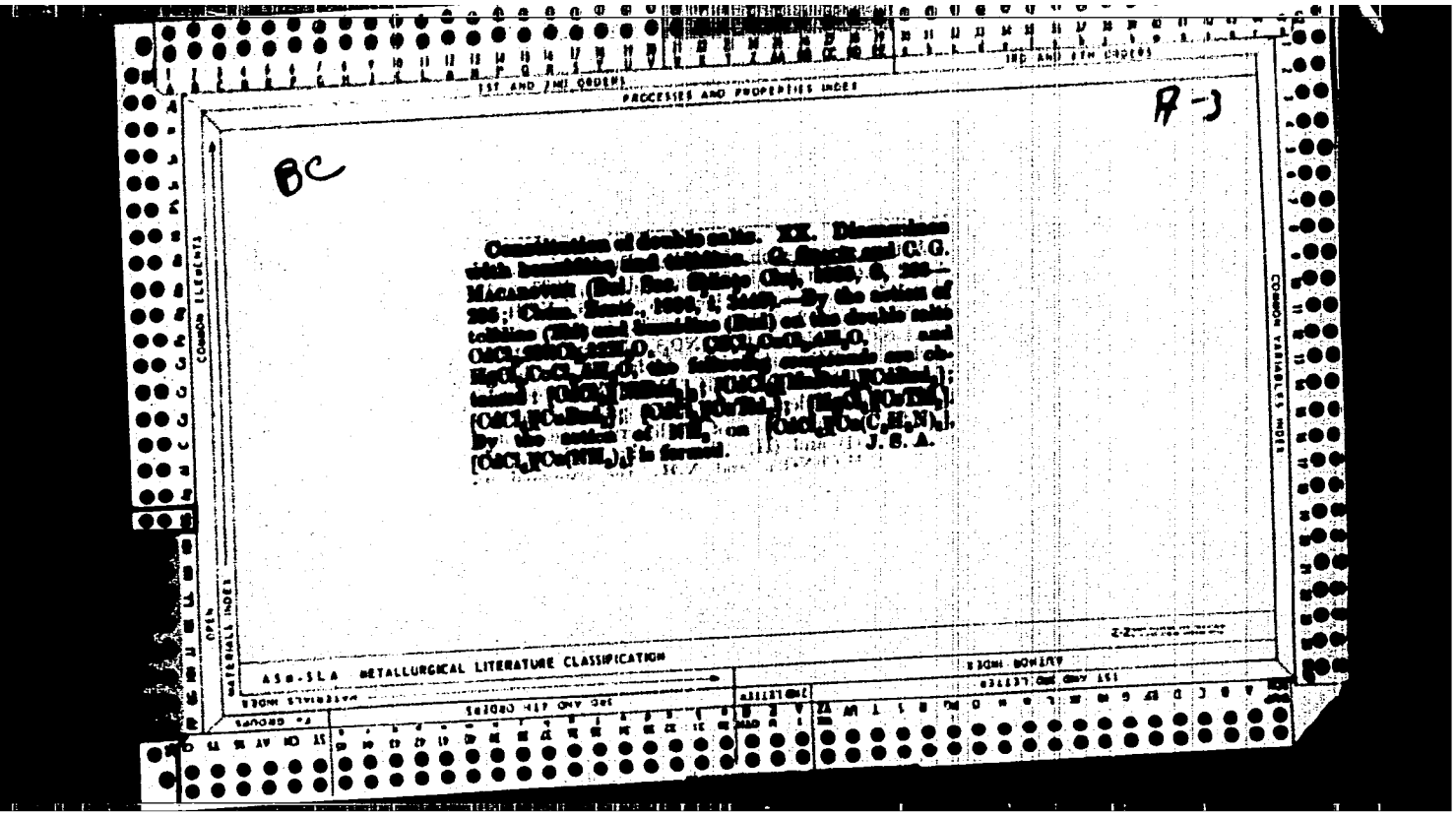
777

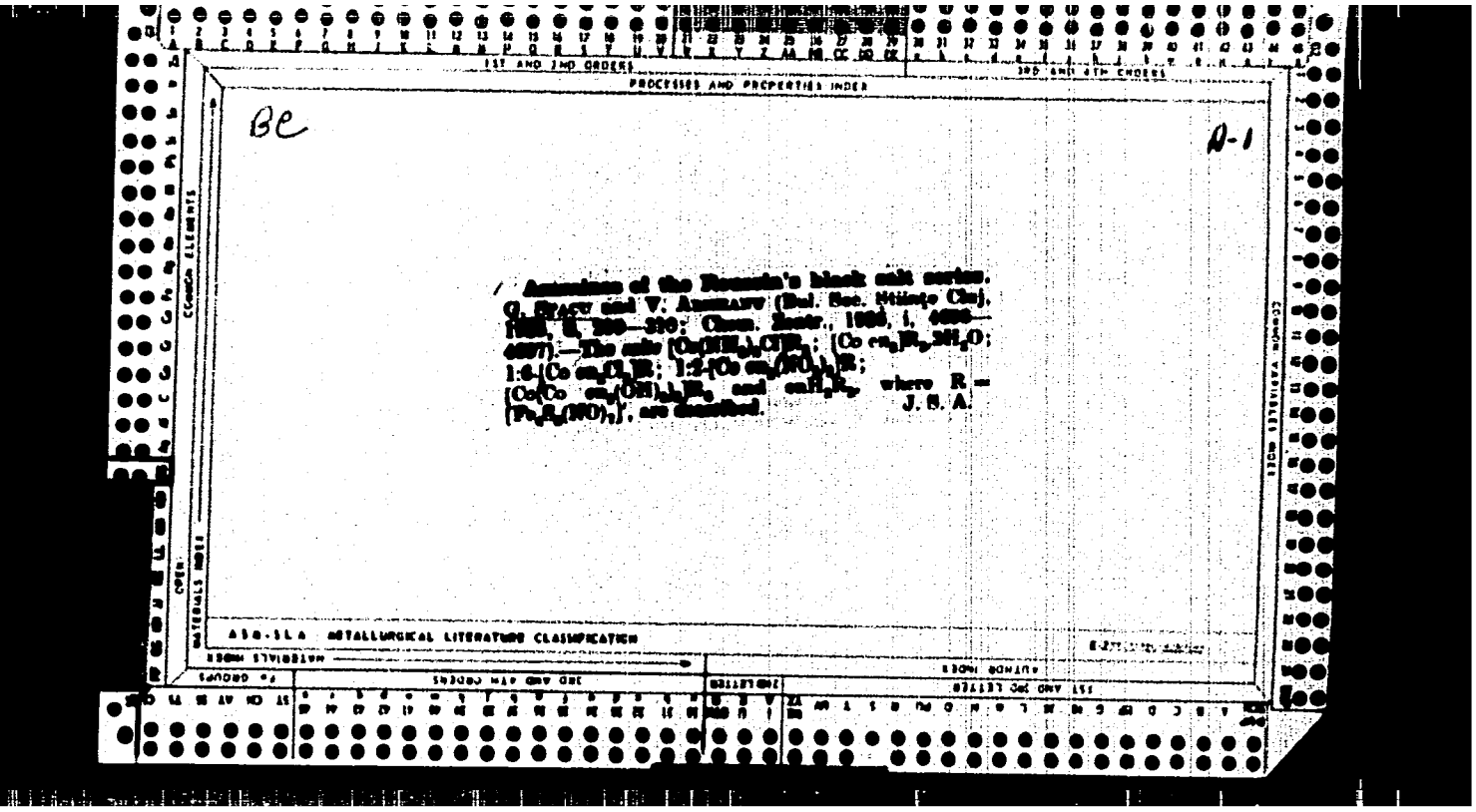
New Volumetric Method for the Determination of Nickel. (J. Spacu and V. Armeanu (*Bul. Soc. științe Cluj*, 1935, **8**, 208–210; *C. Abs.*, 1935, **29**, 1085). —The method resembles in principle the KCN method of Moore; the titrating KCN solution contains pyridine (Py). On adding this reagent to a Ni solution a light violet precipitate is formed according to the equation: $Ni^{++} + Py + H_2O + 2CN^- \longrightarrow [NiPyH_2O](CN)_2$ and the precipitate dissolves in excess KCN to form $[Ni(CN)_4]^{--}$. Directions are given for carrying out the estimation of Ni by both a direct and an indirect method, the reagent used being a solution containing 20 grm. of KCN and 10 c.c. of pyridine per litre.—N. B. V.

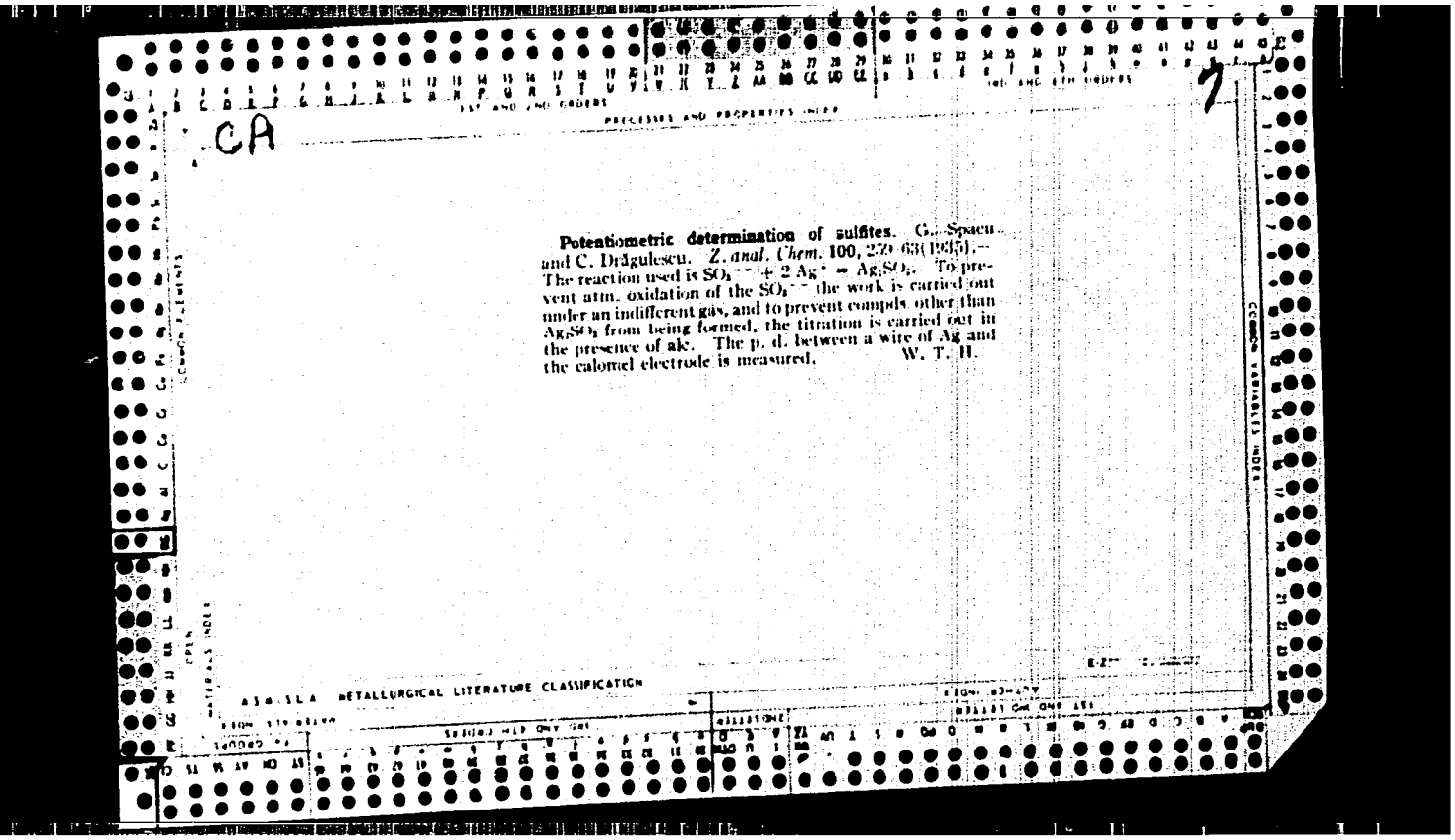
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



A New Method for the Colorimetric Estimation of Cobalt. G. Spacu and C. Ch. Macarovici (*Bul. Soc. Stiinte Cluj*, 1933, **8**, (2), 245-256; *Chim. et Ind.*, 1937, **37**, (4), 653).—Into two beakers pour respectively equal quantities (10 to 15 c.c.) of the solution under examination and of a standard solution. To each add 0·5 cm.³ of a 1% alcoholic solution of dimethylglyoxime. Agitate the solution and then add 0·2 cm.³ of 1% alcoholic solution of benzidine or tolidine. Allow to stand for 5 minutes and then compare. The colour obtained with tolidine is deeper than that with benzidine. The sensitivity is said to be about 1 : 4,000,000.—W. A. C. N.







CA

Potentiometric determination of sulfites. G. Spacu and C. Drăgulescu. *Z. anal. Chem.* 100, 270-63(1935).—The reaction used is $SO_3^{--} + 2Ag^+ = Ag_2SO_3$. To prevent atm. oxidation of the SO_3^{--} the work is carried out under an indifferent gas, and to prevent compds. other than Ag_2SO_3 from being formed, the titration is carried out in the presence of ale. The p. d. between a wire of Ag and the calomel electrode is measured. W. T. H.

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

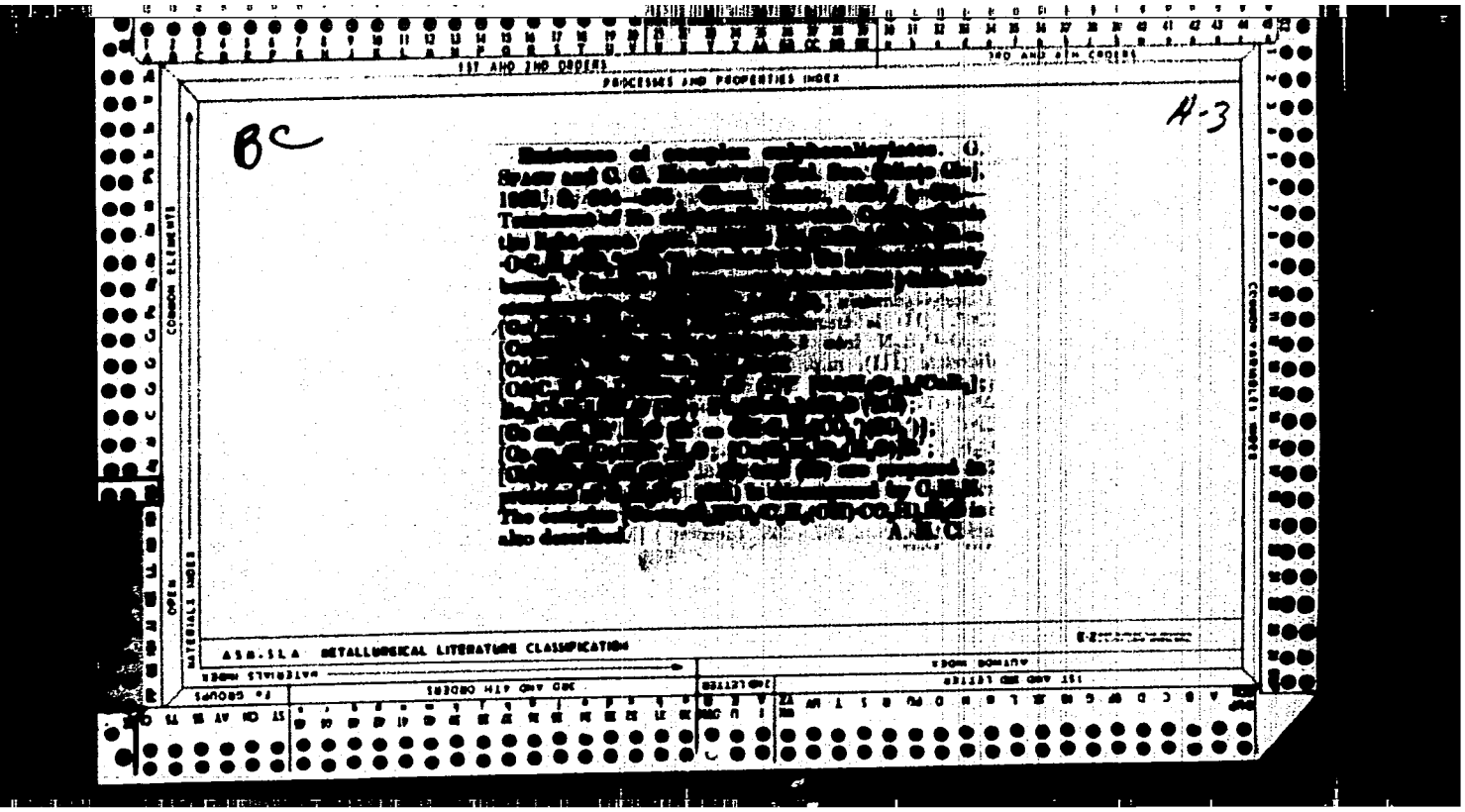
BC

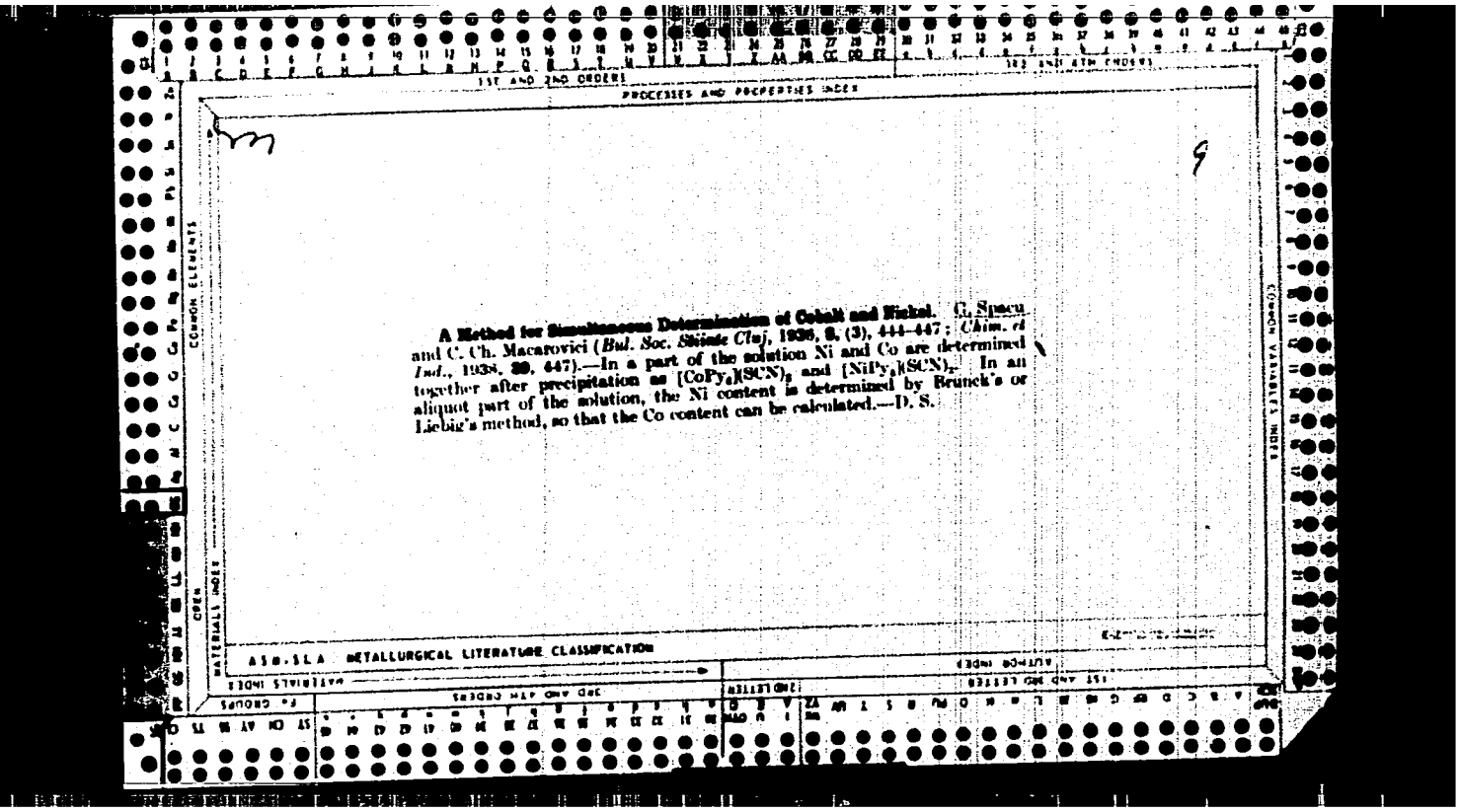
A-1

Polynuclear complex chromioxalates. G. SPACU and M. VANCEA (Bul. Soc. Ştiinţe Cluj, 1936, 8, 333—347; Chem. Zentr., 1937, i, 1905—1906; cf. A., 1936, 948).—The following salts, obtained by double decomp. from $(NH_4)_4A$ $\{A = [(C_2O_4)_2Cr<^{OH}_{OH}>Cr(C_2O_4)_2]''''\}$, are described: $[Co\ en_2Cl_2]_4A,9H_2O$, $[Co(NH_3)_5Cl]_2A,6H_2O$, $[Co(NH_3)_5NO_3]_2A,7H_2O$, $[Co(NH_3)_6]_4A_3,22H_2O$, $[Co\ en_3]_4A_3,4H_2O$, $[Co(NH_3)_4CO_3]_4A,H_2O$, $[Co(NH_3)_5SCN]_2A,7H_2O$, $[Co(NH_3)_5Br]_2A,8H_2O$, $[Co(Co\ en_2(OH)_2)_3]_2A_3,36H_2O$, $[Co(NH_3)_5NO_2]_2A,6H_2O$.

A. J. E. W.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION





PROCESSES AND PROPERTIES INDEX

9

A Method for Simultaneous Determination of Cobalt and Nickel. G. Spacu and C. Ch. Macarovici (*Bul. Soc. Stiinte Cluj*, 1936, **8**, (3), 444–447; *Chim. et Ind.*, 1938, **39**, 447).—In a part of the solution Ni and Co are determined together after precipitation as $[CoPy_4](SCN)_2$ and $[NiPy_4](SCN)_2$. In an aliquot part of the solution, the Ni content is determined by Brunck's or Liebig's method, so that the Co content can be calculated.—D. S.

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

BC

A-1

New class of ammines. Complex thioarsenates. O. Spacu and A. Pop (Bull. Acad. Sci. Roumaine, 1937—8, 20, 117—131; cf. A., 1939, I, 322, 330).—The following compounds have been prepared from $Na_3(AsS_4),8H_2O$: $[Cr\ en_3]AsS_4,2H_2O$; [illegible]; [illegible]; [illegible]; [illegible]; [illegible]; $[Co\ en_3]AsS_4,2H_2O$; $[Ni\ en_3]_2AsS_4Cl,5H_2O$; [illegible]; $[Co(NH_3)_6]AsS_4,6-1H_2O$; $[Ni\ en_3]_2AsS_4Cl$; $[Ni\ en_3]_2AsS_4NO_3$. The prep. of the last four compounds suggests the existence of the $[AsS_4]'''$ ion rather than $[AsS_4(H_2O)_2]'''$ proposed by Brintzinger and Osswald.

D. F. R.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

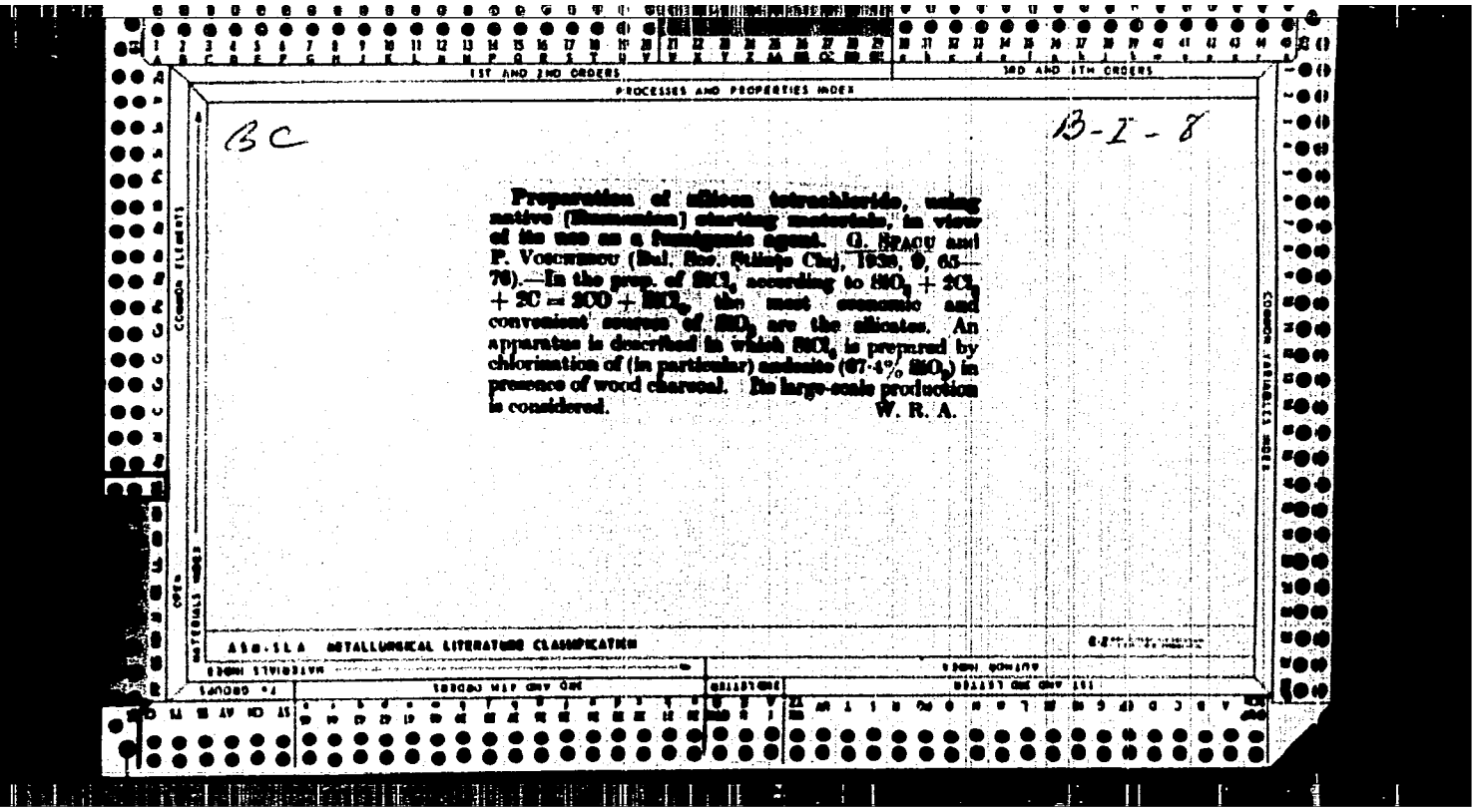
BC

A-1

Constitution of heteropoly-acids. I. Complex phosphododecamolybdates. G. Spacu and V. Nicolaescu (Bul. Soc. Ştiinţe Cluj, 1935, 8, 45—50).—Using phosphododecamolybdic acid, $[P(Mo_2O_7)_6]H_7,28H_2O$, 8 new complexes have been obtained:—

cis-$[P(Mo_2O_7)_6]$[illegible];
$[P(Mo_2O_7)_6]$[illegible]$,17H_2O$;
$[P(Mo_2O_7)_6]$[illegible]H_2O;
$[P(Mo_2O_7)_6]$[illegible]$,14H_2O$;
$[P(Mo_2O_7)_6][Co(NH_3)_5Cl]$[illegible]$OAc,14H_2O$;
$[P(Mo_2O_7)_6][Cr(NH_3)_5Cl]$[illegible]$NO_3,12H_2O$;
$[P(Mo_2O_7)_6][Cr(NH_3)_5Cl]$[illegible]$Cl,1$[illegible]$H_2O$; and
$[P(Mo_2O_7)_6]$[illegible]$(Co\ en)Cl_2,17H_2O$. W. R. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

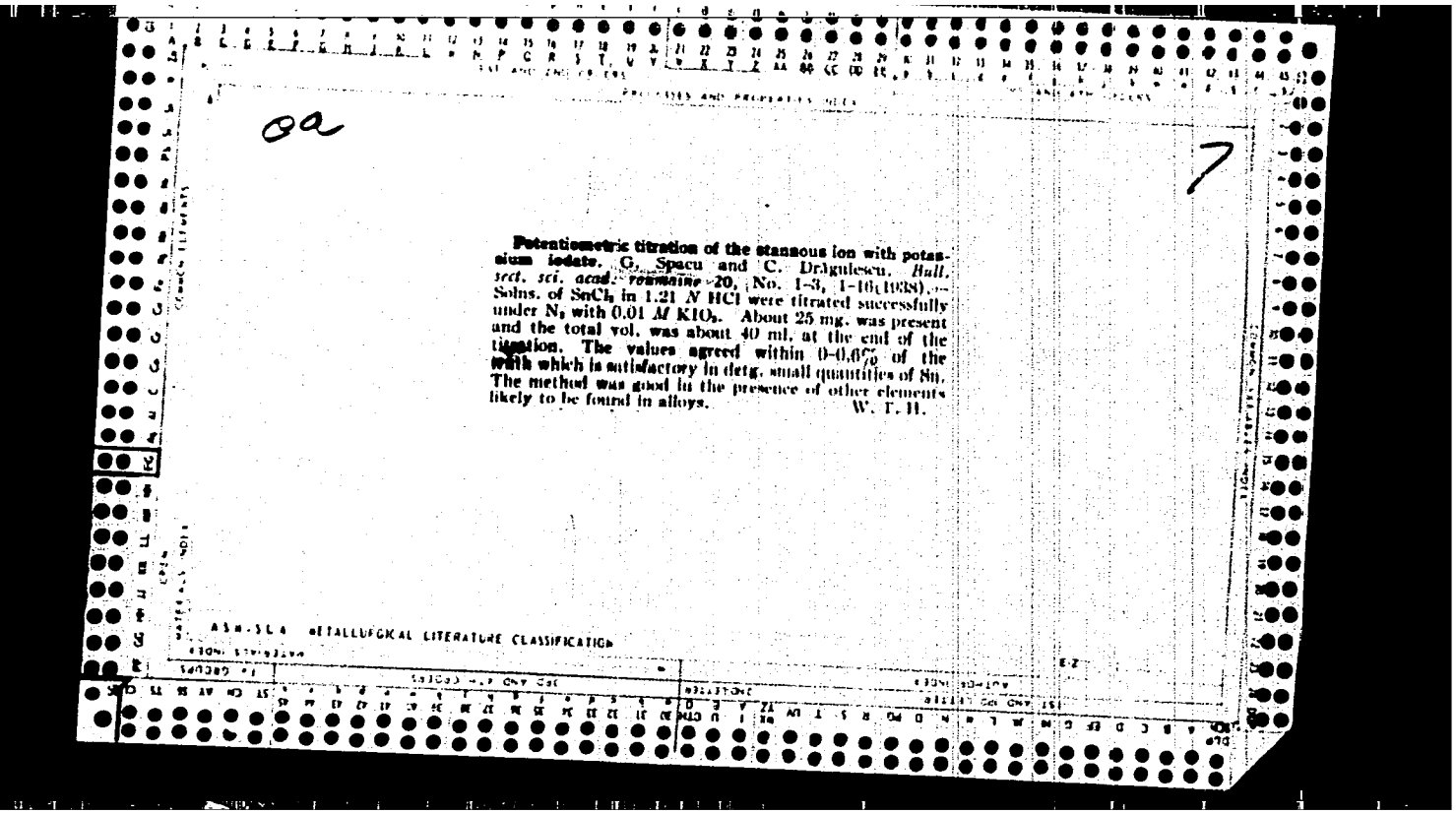


BC

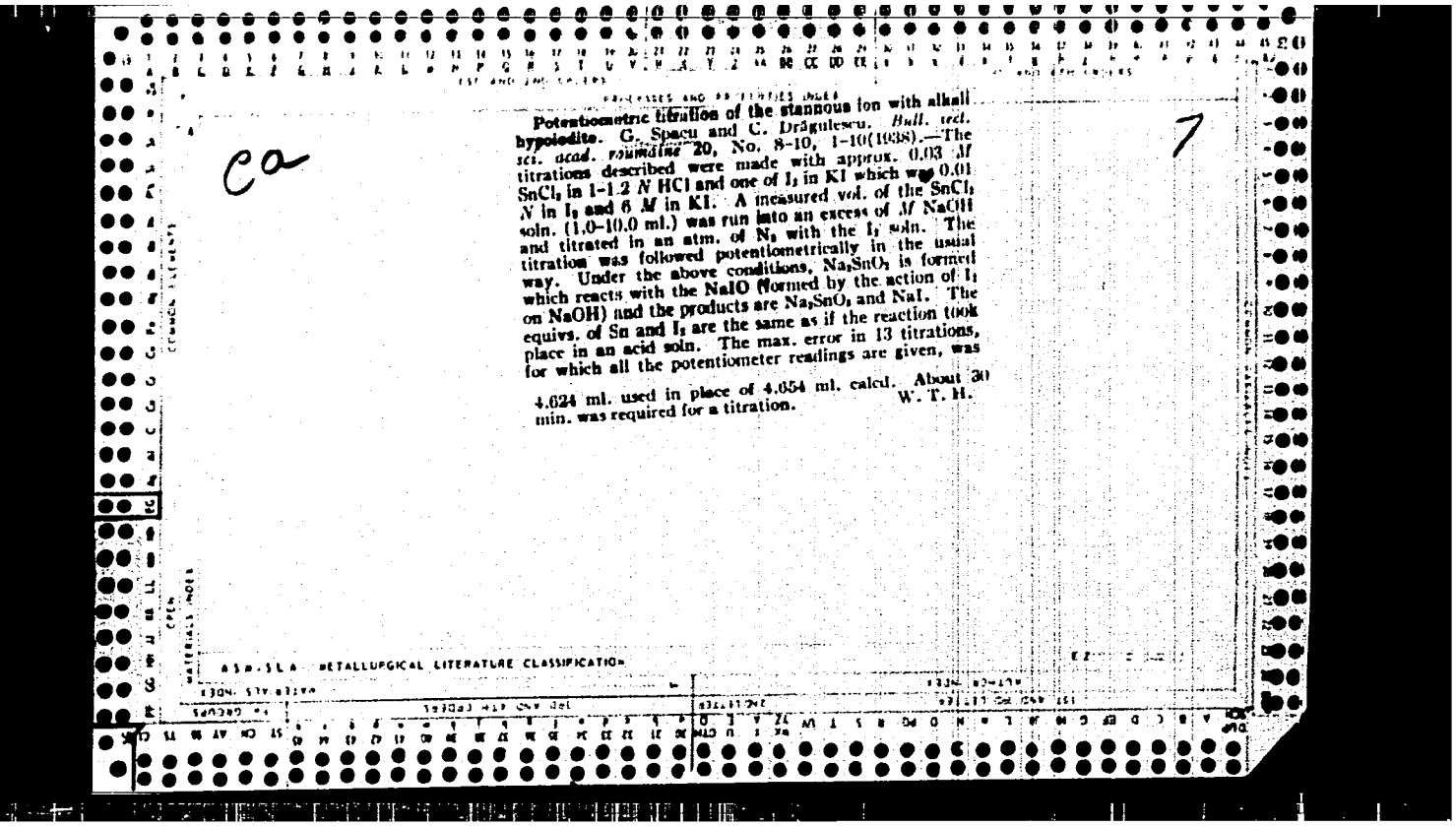
13-I-8

Preparation of silicon tetrachloride, using native [Russian] starting materials, in view of its use as a fumigants agent. G. Bracu and P. Voscresnov (Bul. Soc. Stiinte Cluj, 1938, 9, 65—76).—In the prep. of $SiCl_4$ according to $SiO_2 + 2Cl_2 + 2C = 2CO + SiCl_4$, the most economic and convenient sources of SiO_2 are the silicates. An apparatus is described in which $SiCl_4$ is prepared by chlorination of (in particular) andesite (67·4% SiO_2) in presence of wood charcoal. Its large-scale production is considered.

W. R. A.



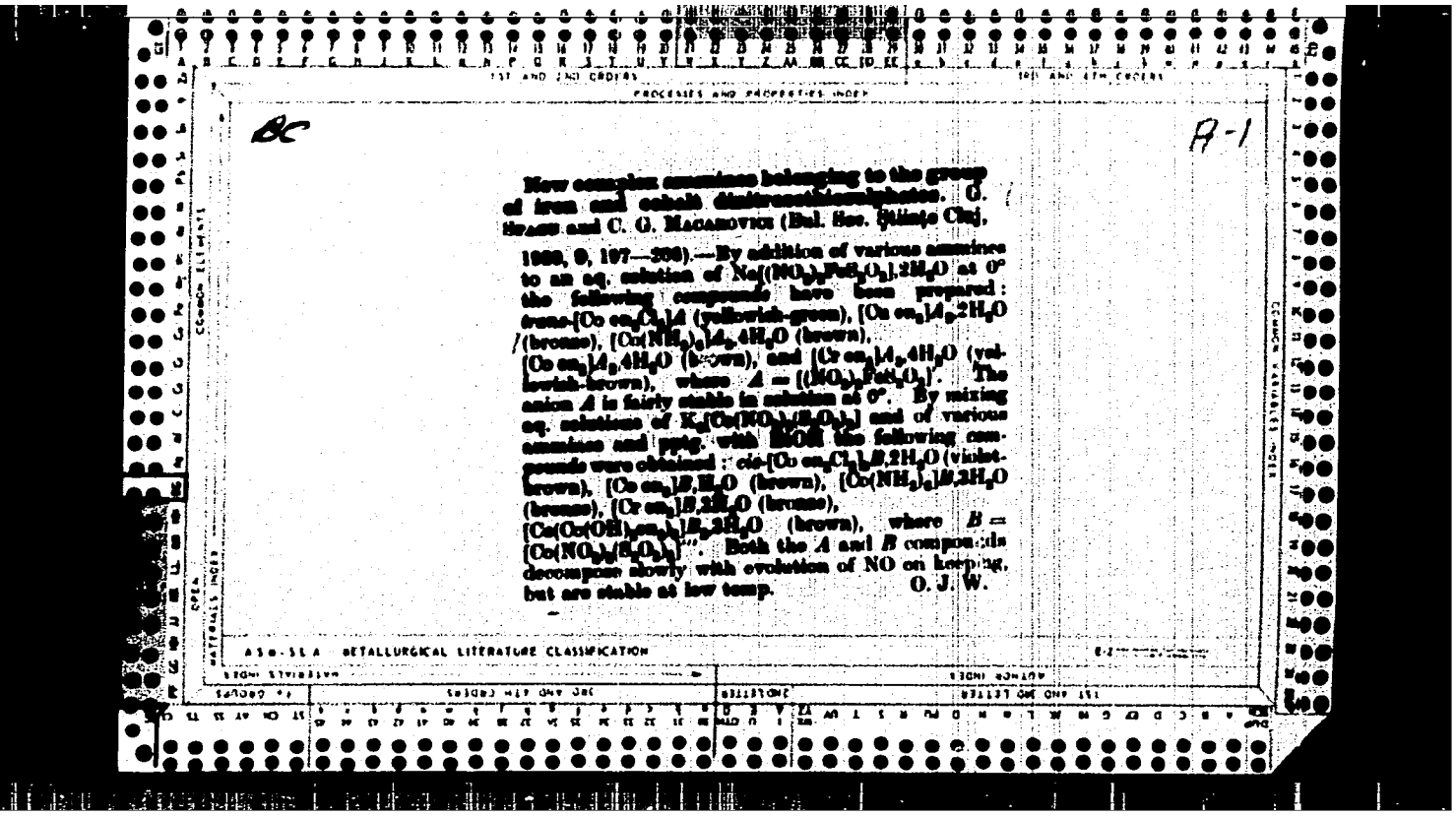
Potentiometric titration of the stannous ion with potassium iodate. G. Spacu and C. Drăgulescu. *Bull. sect. sci. acad. romaine* 20, No. 1–3, 1–10(1938).—Solns. of $SnCl_2$ in 1.21 *N* HCl were titrated successfully under N_2 with 0.01 *M* KIO_3. About 25 mg. was present and the total vol. was about 40 ml. at the end of the titration. The values agreed within 0–0.6% of the with which is satisfactory in detg. small quantities of Sn. The method was good in the presence of other elements likely to be found in alloys. W. T. H.



Ca

7

Potentiometric titration of the stannous ion with alkali hypoiodite. G. Spacu and C. Drăgulescu. *Bull. sci. acad. roumaine* 20, No. 8-10, 1-10(1938).—The titrations described were made with approx. 0.03 *M* $SnCl_2$ in 1-1.2 *N* HCl and one of I_2 in KI which was 0.01 *N* in I_2 and 6 *M* in KI. A measured vol. of the $SnCl_2$ soln. (1.0–10.0 ml.) was run into an excess of *M* NaOH and titrated in an atm. of N_2 with the I_2 soln. The titration was followed potentiometrically in the usual way. Under the above conditions, Na_2SnO_3 is formed which reacts with the NaIO formed by the action of I_2 on NaOH) and the products are Na_2SnO_3 and NaI. The equivs. of Sn and I_2 are the same as if the reaction took place in an acid soln. The max. error in 13 titrations, for which all the potentiometer readings are given, was 4.624 ml. used in place of 4.054 ml. calcd. About 30 min. was required for a titration. W. T. H.

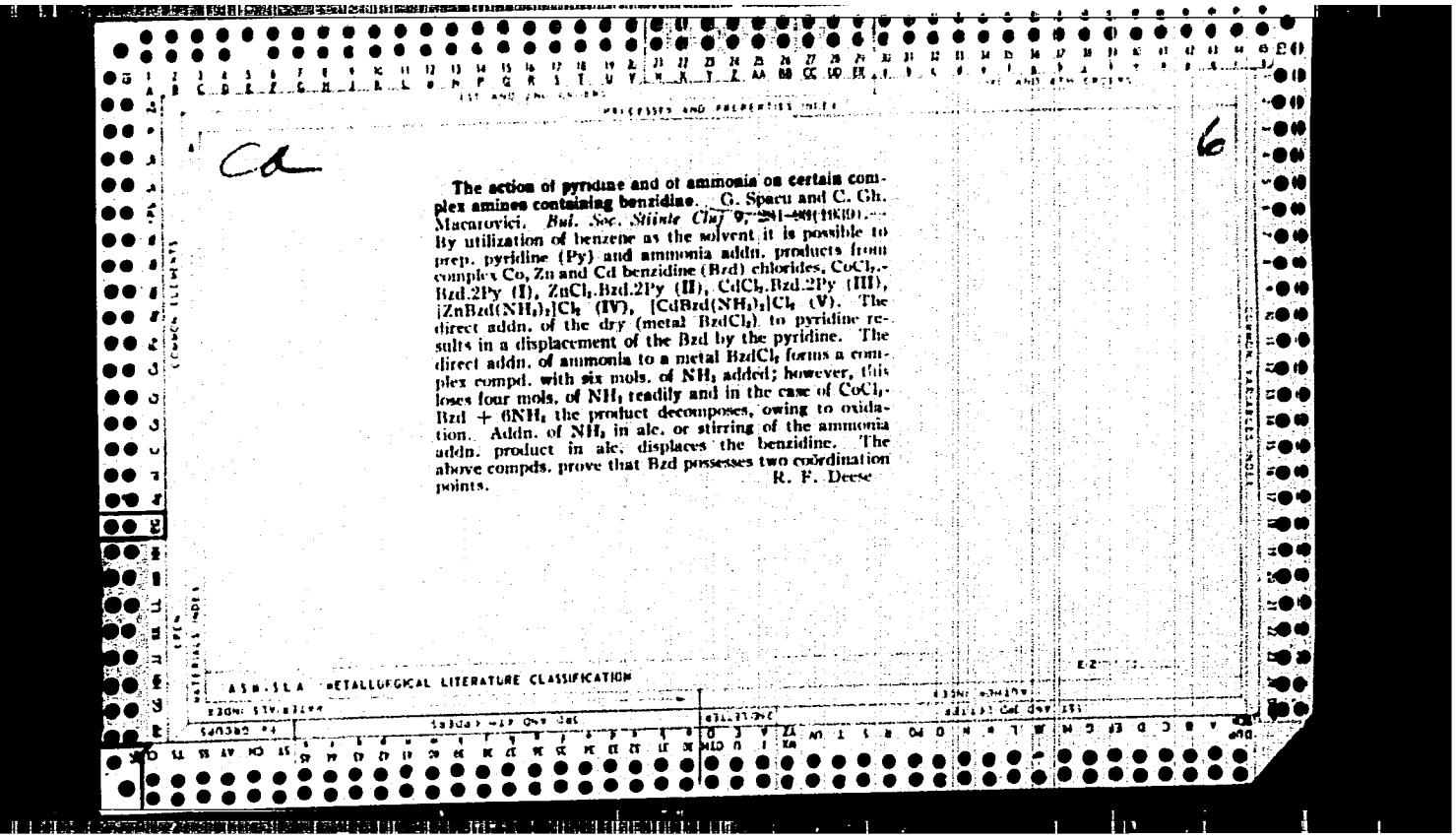


BC

A-1

New complex ammines belonging to the group of iron and cobalt dinitrotetrammines. G. Brauer and C. G. Macarovici (Bul. Soc. Științe Cluj, 1958, 9, 197—206).—By addition of various ammines to an aq. solution of $Na[(NO_2)_2Fe(C_2O_4)_2].2H_2O$ at 0° the following compounds have been prepared: *trans*-$[Co\,en_2Cl_2]A$ (yellowish-green), $[Co\,en_3]A_3.2H_2O$ (bronze), $[Co(NH_3)_6]A_3.4H_2O$ (brown), $[Co\,en_3]A_3.4H_2O$ (brown), and $[Cr\,en_3]A_3.4H_2O$ (yellowish-brown), where $A = [(NO_2)_2Fe(C_2O_4)_2]'$. The anion A is fairly stable in solution at 0°. By mixing aq. solutions of $K_3[Co(NO_2)_3(S_2O_3)_3]$ and of various ammines and ppte. with EtOH the following compounds were obtained: *cis*-$[Co\,en_2Cl_2]B.2H_2O$ (violet-brown), $[Co\,en_3]B_2.H_2O$ (brown), $[Co(NH_3)_6]B_2.2H_2O$ (bronze), $[Cr\,en_3]B_2.2H_2O$ (bronze), $[Co(Co(OH)_2en_2)_3]B_6.2H_2O$ (brown), where $B = [Co(NO_2)_3(S_2O_3)_3]'''$. Both the A and B compounds decompose slowly with evolution of NO on keeping, but are stable at low temp. O. J. W.

A 58-5 L A METALLURGICAL LITERATURE CLASSIFICATION



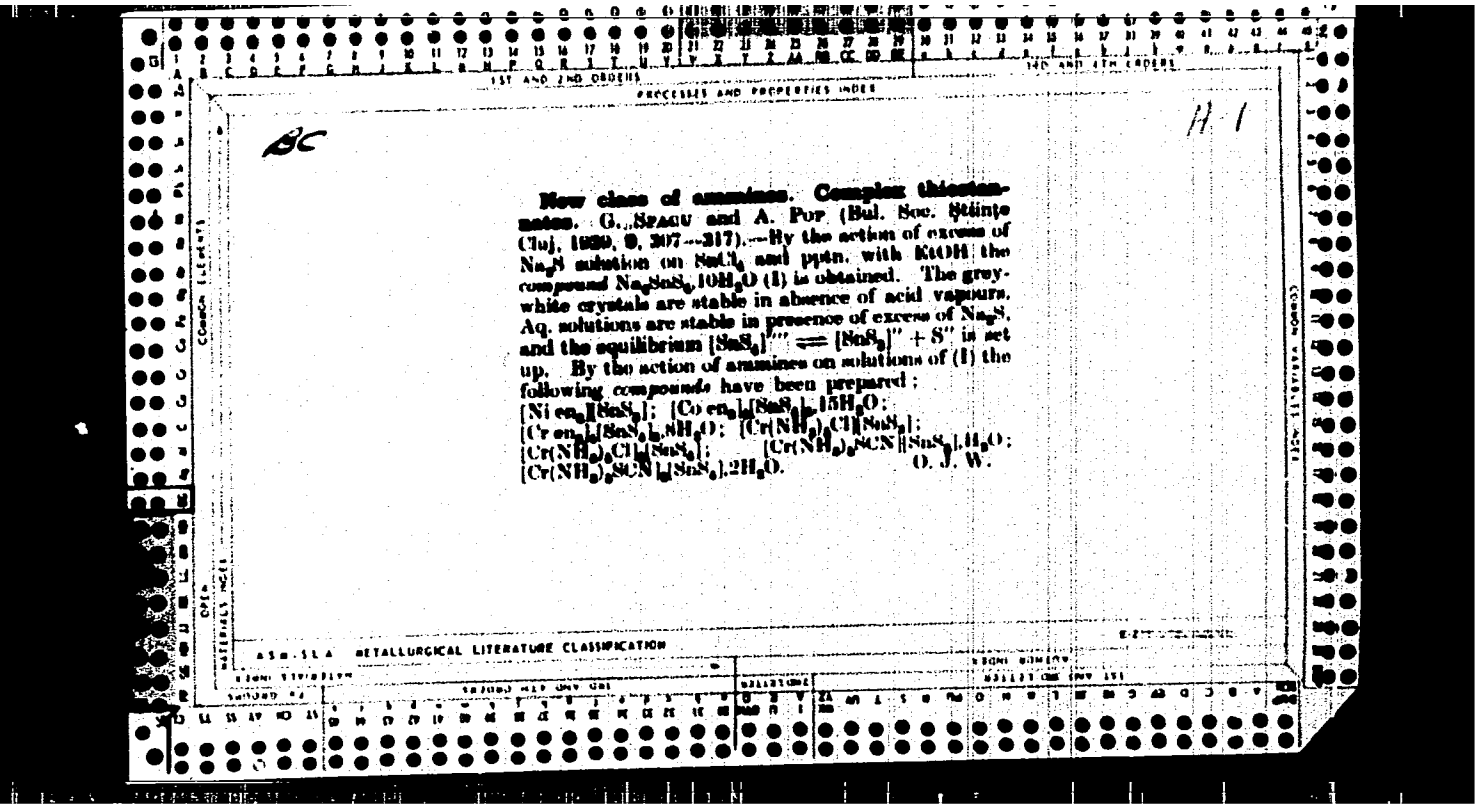
Cd

6

The action of pyridine and of ammonia on certain complex amines containing benzidine. G. Spacu and C. Gh. Macarovici. *Bul. Soc. Stiinte Cluj* 9, 281–288(1938).—By utilization of benzene as the solvent it is possible to prep. pyridine (Py) and ammonia addn. products from complex Co, Zn and Cd benzidine (Bzd) chlorides, $CoCl_2$.Bzd.2Py (I), $ZnCl_2$.Bzd.2Py (II), $CdCl_2$.Bzd.2Py (III), $[ZnBzd(NH_3)_2]Cl_2$ (IV), $[CdBzd(NH_3)_2]Cl_2$ (V). The direct addn. of the dry (metal $BzdCl_2$) to pyridine results in a displacement of the Bzd by the pyridine. The direct addn. of ammonia to a metal $BzdCl_2$ forms a complex compd. with six mols. of NH_3 added; however, this loses four mols. of NH_3 readily and in the case of $CoCl_2$-Bzd + $6NH_3$ the product decomposes, owing to oxidation. Addn. of NH_3 in alc. or stirring of the ammonia addn. product in alc. displaces the benzidine. The above compds. prove that Bzd possesses two coördination points.

R. F. Deese

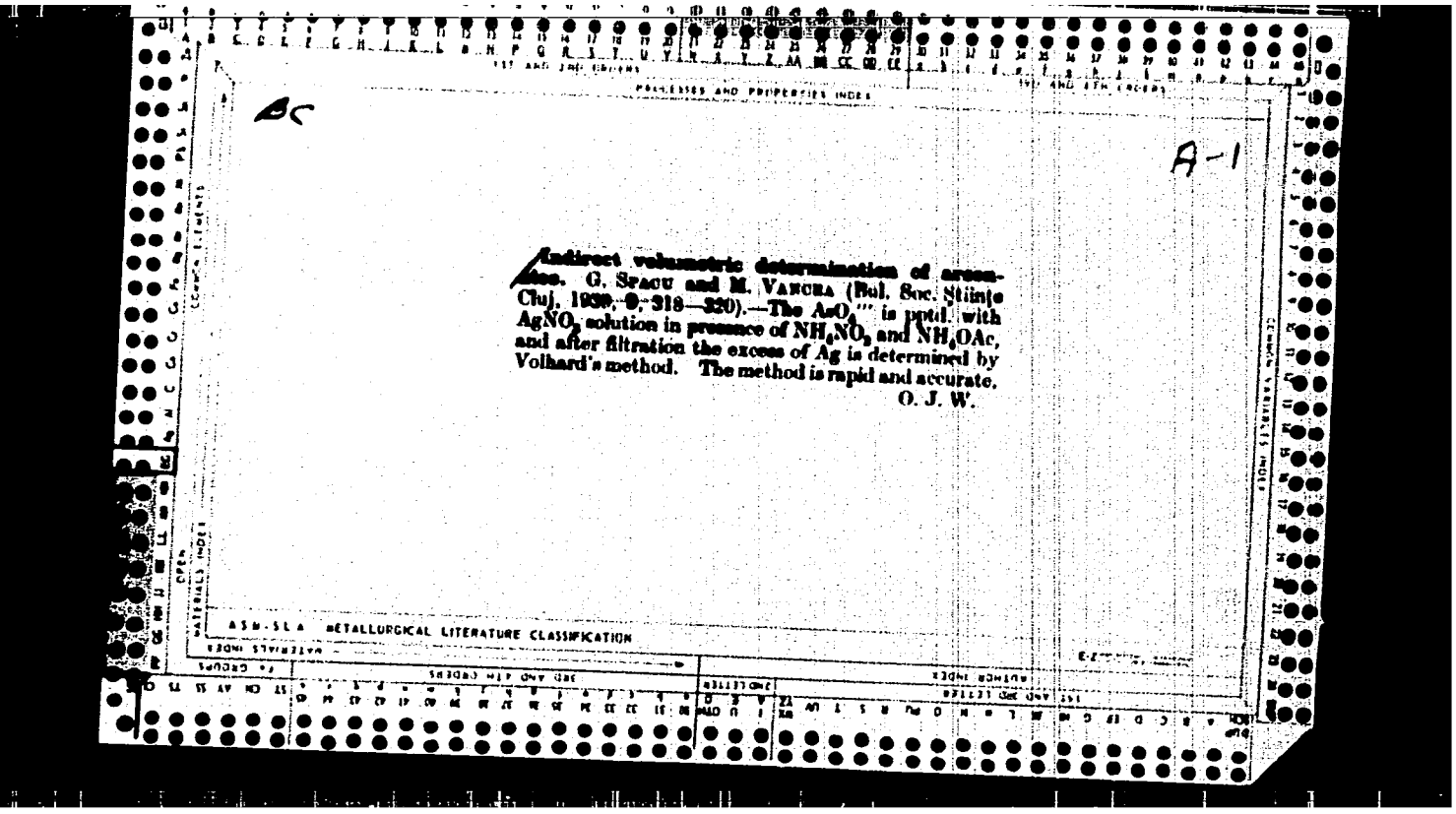
A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION



BC

H-1

New class of ammines. Complex thiostannates. G. Spacu and A. Pop (Bul. Soc. Ştiinţe Cluj, 1939, 9, 307—317).—By the action of excess of Na_2S solution on $SnCl_4$ and pptn. with KtOH the compound $Na_2SnS_3.10H_2O$ (I) is obtained. The grey-white crystals are stable in absence of acid vapours. Aq. solutions are stable in presence of excess of Na_2S, and the equilibrium $[SnS_3]'''' \rightleftharpoons [SnS_3]'' + S''$ is set up. By the action of ammines on solutions of (I) the following compounds have been prepared: $[Ni\ en_3][SnS_3]$; $[Co\ en_3]_2[SnS_3]_3.15H_2O$; $[Cr\ en_3]_2[SnS_3]_3.8H_2O$; $[Cr(NH_3)_5Cl][SnS_3]$; $[Cr(NH_3)_5Cl]_2[SnS_3]$; $[Cr(NH_3)_5SCN][SnS_3].H_2O$; $[Cr(NH_3)_5SCN]_2[SnS_3].2H_2O$. O. J. W.



Ac

A-1

Indirect volumetric determination of arsenic. G. Spacu and M. Vancea (Bul. Soc. Stiinte Cluj, 1930, 6, 318—320).—The AsO_4''' is pptd. with $AgNO_3$ solution in presence of NH_4NO_3 and NH_4OAc, and after filtration the excess of Ag is determined by Volhard's method. The method is rapid and accurate.

O. J. W.

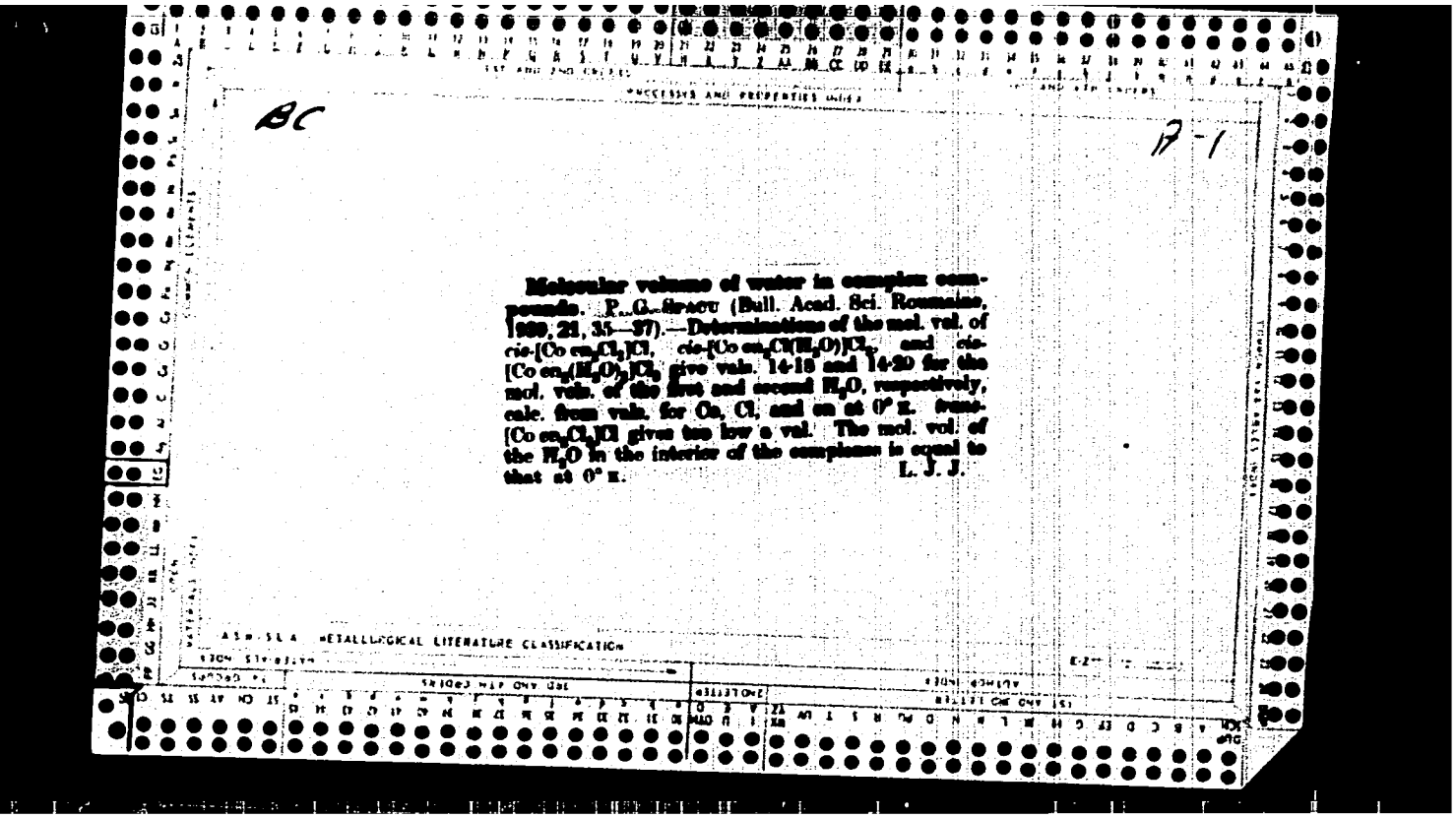
1ST AND 2ND ORDERS PROCESSES AND PROPERTIES INDEX 3RD AND 4TH ORDERS

A-1

Bc

Action of pyridine and ammonia on complex ammines of benzidine. G. Spacu and C. G. Macarovici (Bull. Acad. Sci. Roumaine, 1939, 20, 11—23).—Treatment of $CdBzdCl_2$ [Bzd = p-$(C_6H_4\cdot NH_2)_2$] with C_5H_5N in light petroleum yields the complex $[CdBzd(C_5H_5N)_2]Cl_2$. Similarly are formed the complexes $[ZnBzd(C_5H_5N)_2]$ and $[CdBzd(C_5H_5N)_2]Cl_2$. $ZnBzdCl_2$ and $CdBzdCl_2$ with NH_3 in light petroleum yield respectively the complexes $[ZnBzd(NH_3)_2]Cl_2$ and $[CdBzd(NH_3)_2]Cl_2$. J. D. R.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

B-1

Molecular volume of water in complex compounds. P. G. Stracu (Bull. Acad. Sci. Romaine, 1939, 21, 35—37).—Determinations of the mol. vol. of *cis*-[Co en$_2$Cl$_2$]Cl, *cis*-[Co en$_2$Cl(H$_2$O)]Cl$_2$, and *cis*-[Co en$_2$(H$_2$O)$_2$]Cl$_3$ give vals. 14·18 and 14·20 for the mol. vols. of the first and second H$_2$O, respectively, calc. from vals. for Co, Cl, and en at 0° K. *trans*-[Co en$_2$Cl$_2$]Cl gives too low a val. The mol. vol. of the H$_2$O in the interior of the complexes is equal to that at 0° K.

L. J. J.

New class of ammines. Complex thiostannates. G. Spacu and A. Pop (Bull. Acad. Sci. Roumaine, 1939, 21, 52—61).—The prep. of the following compounds is described: $Na_4SnS_4,10H_2O$; $[Ni\ en_3][SnS_3]$; $[Co\ en_3]_2(SnS_3)_3,18H_2O$; $[Cr\ en_3]_2(SnS_3)_3,8H_2O$; $[Cr(NH_3)_5Cl]SnS_3$; $[Cr(NH_3)_5Cl]SnS_3$; $[Cr(NH_3)_5SCN]SnS_3,H_2O$; $[Cr(NH_3)_5SCN]SnS_3,2H_2O$. Aq. solutions of thiostannates contain both SnS_4'''' and SnS_3'' ions, their relative concn. being governed by the [S'']. D. F. R.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

BC

a-1

New class of ammines. Complex selenoantimoniates. Constitution of selenosalts. G. Spacu, M. Vancea, and J. Duval (Bull. Acad. Sci. Roumaine, 1939, 21, 66—72).—Five complex selenoantimoniates have been prepared from [illegible]'s salt, $Na_3SbSe_4,9H_2O$; [illegible] $6H_2O$; [Cr en[illegible]] $2H_2O$; [Co en[illegible]] $2H_2O$; Cr[(CO[illegible])[illegible]] [illegible] H_2O; $[Cr_2(OH)$ en[illegible]] $7H_2O$. The existence of the [illegible] ion is confirmed; the structure $[SbSe_4(H_2O)_2]'''$ is suggested. D. F. R.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

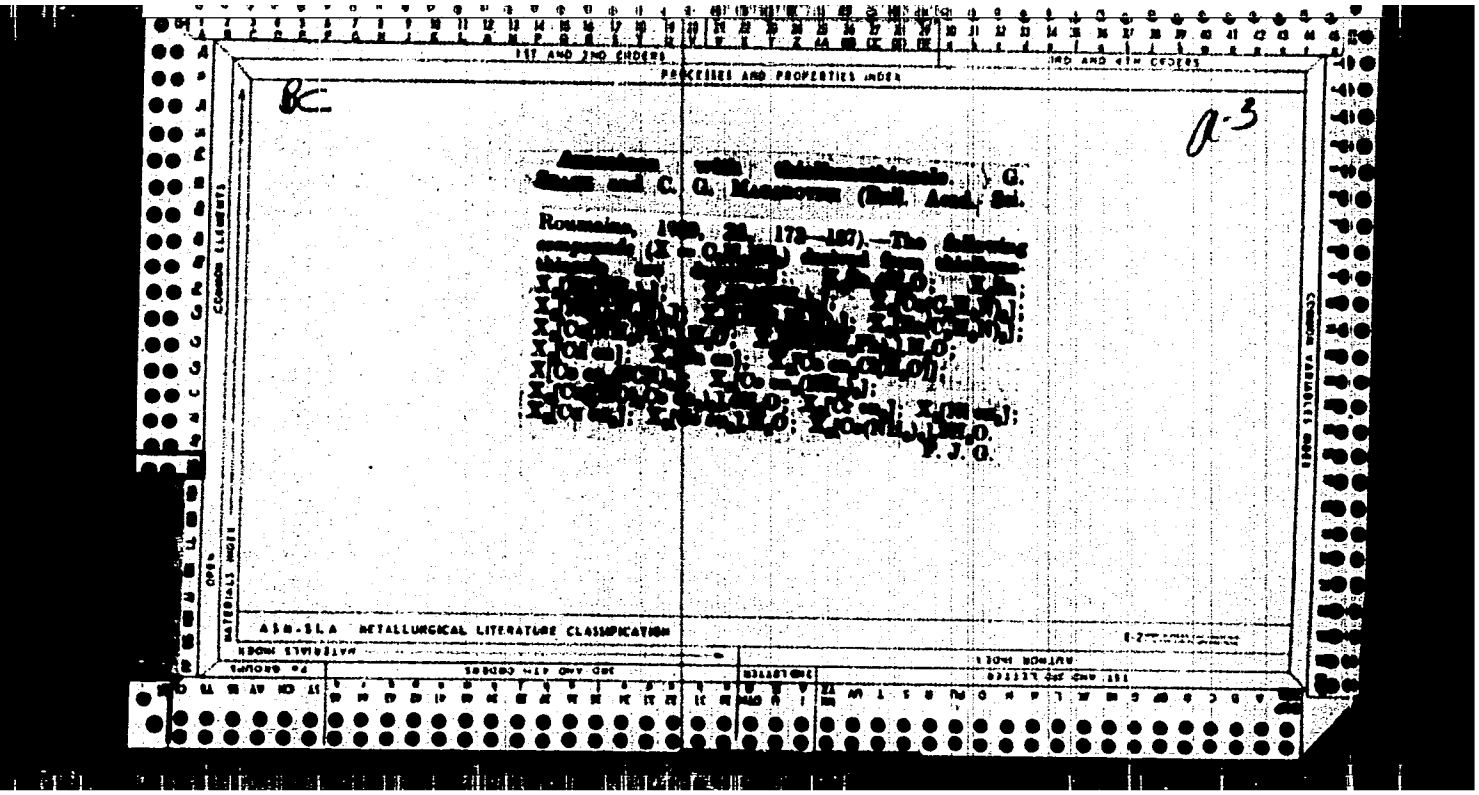
BC

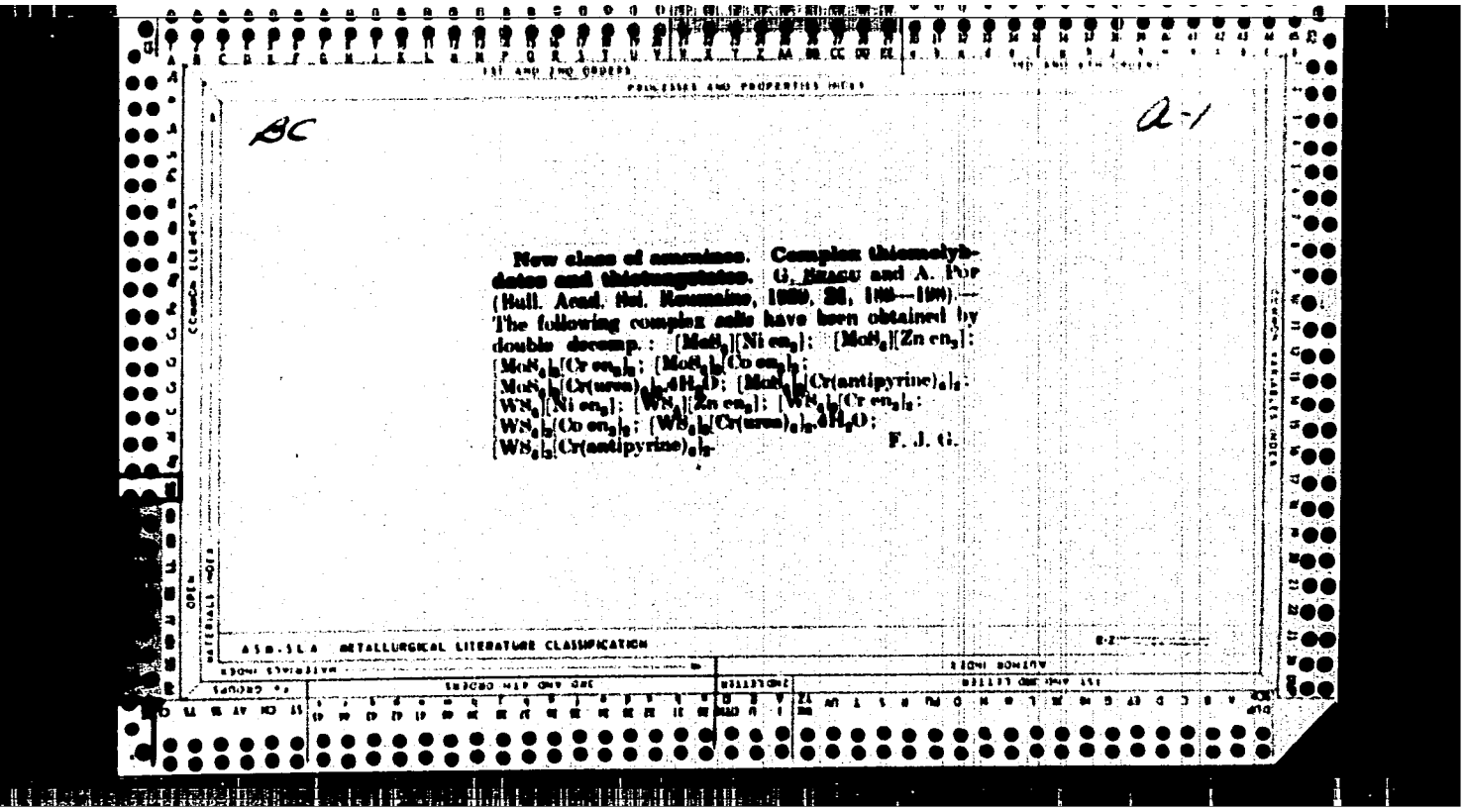
A-1

Potentiometric titration of the antimonate ion by means of potassium iodide and sodium thiosulphate. G. Spacu and C. Drăgulescu (Bull. Acad. Sci. Roumaine, 1939, 21, 85—105).—The I liberated by the reaction $Sb^{\cdot\cdot\cdot\cdot\cdot} + 2I' \rightarrow I_2 + Sb^{\cdot\cdot\cdot}$ is titrated with 0·1n-$Na_2S_2O_3$ at room temp., and the end-point determined potentiometrically (cf. Z. Instrumk., 1939, 59, 309). The data recorded for the effects of varying the [HCl] and the [KI] show that with solutions containing ~0·07 g. of Sb in a final vol. of 100 c.c. the [HCl] must be <1·2n. and only the stoicheiometric quantity of KI should be present; for solutions containing 0·1 g. Sb in 20—30 c.c. initial vol., the initial [HCl] must be 4n. and a large quantity of KI, 2—6 times the stoicheiometric amount, must be present to prevent loss of I.

L. S. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION





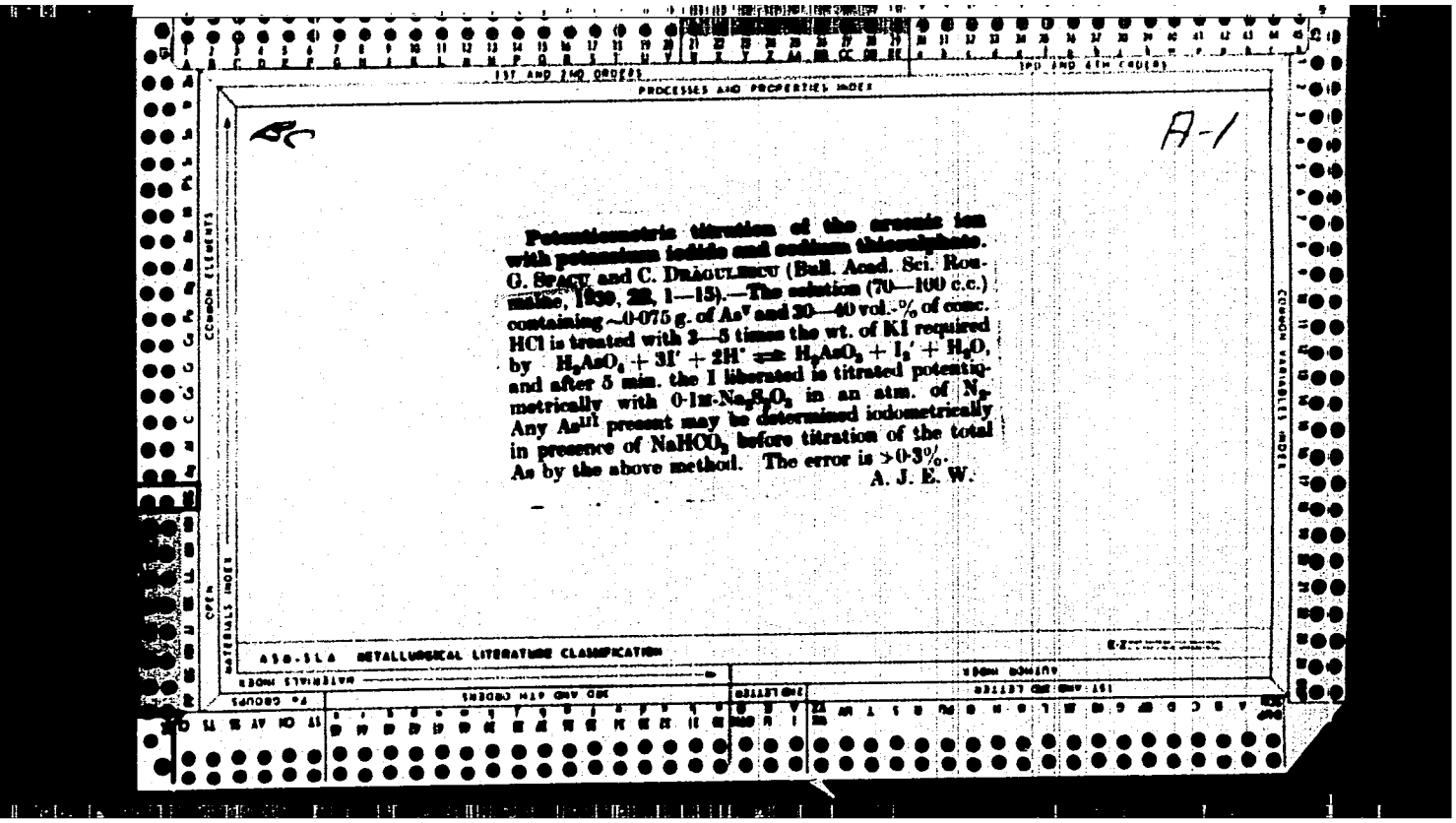
BC

A-1

New class of ammines. Complex thiomolybdates and thiotungstates. G. Brăcu and A. Pop (Bull. Acad. Sci. Romaine, 1939, 24, 183—189).—The following complex salts have been obtained by double decomp.: $[MoS_4][Ni\,en_3]$; $[MoS_4][Zn\,en_3]$; $[MoS_4]_2[Cr\,en_3]_2$; $[MoS_4]_2[Co\,en_3]_2$; $[MoS_4]_2[Cr(urea)_6]_2.4H_2O$; $[MoS_4]_2[Cr(antipyrine)_6]_2$; $[WS_4][Ni\,en_3]$; $[WS_4][Zn\,en_3]$; $[WS_4]_2[Cr\,en_3]_2$; $[WS_4]_2[Co\,en_3]_2$; $[WS_4]_2[Cr(urea)_6]_2.6H_2O$; $[WS_4]_2[Cr(antipyrine)_6]_2$.

F. J. G.

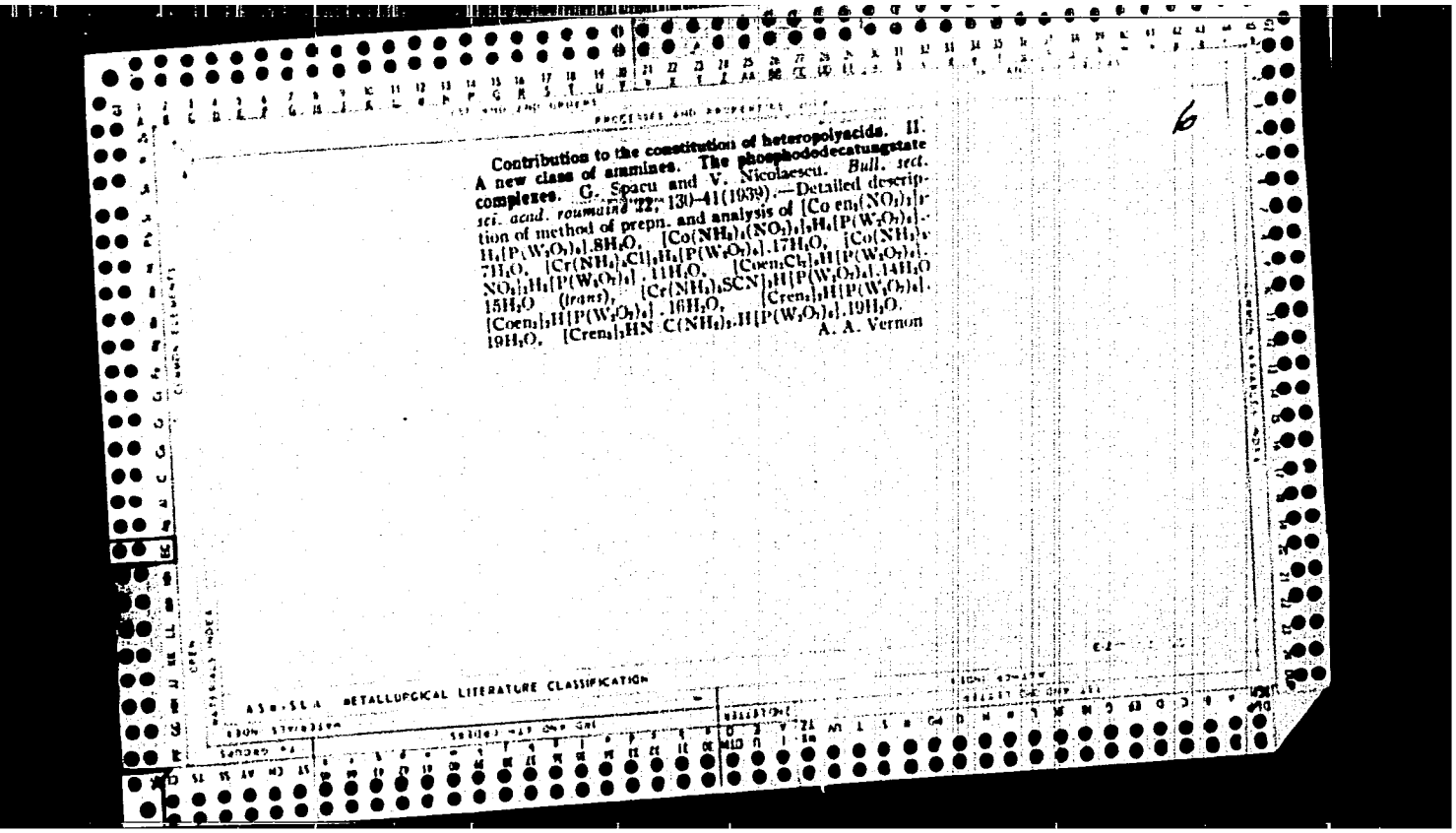
A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION



A-1

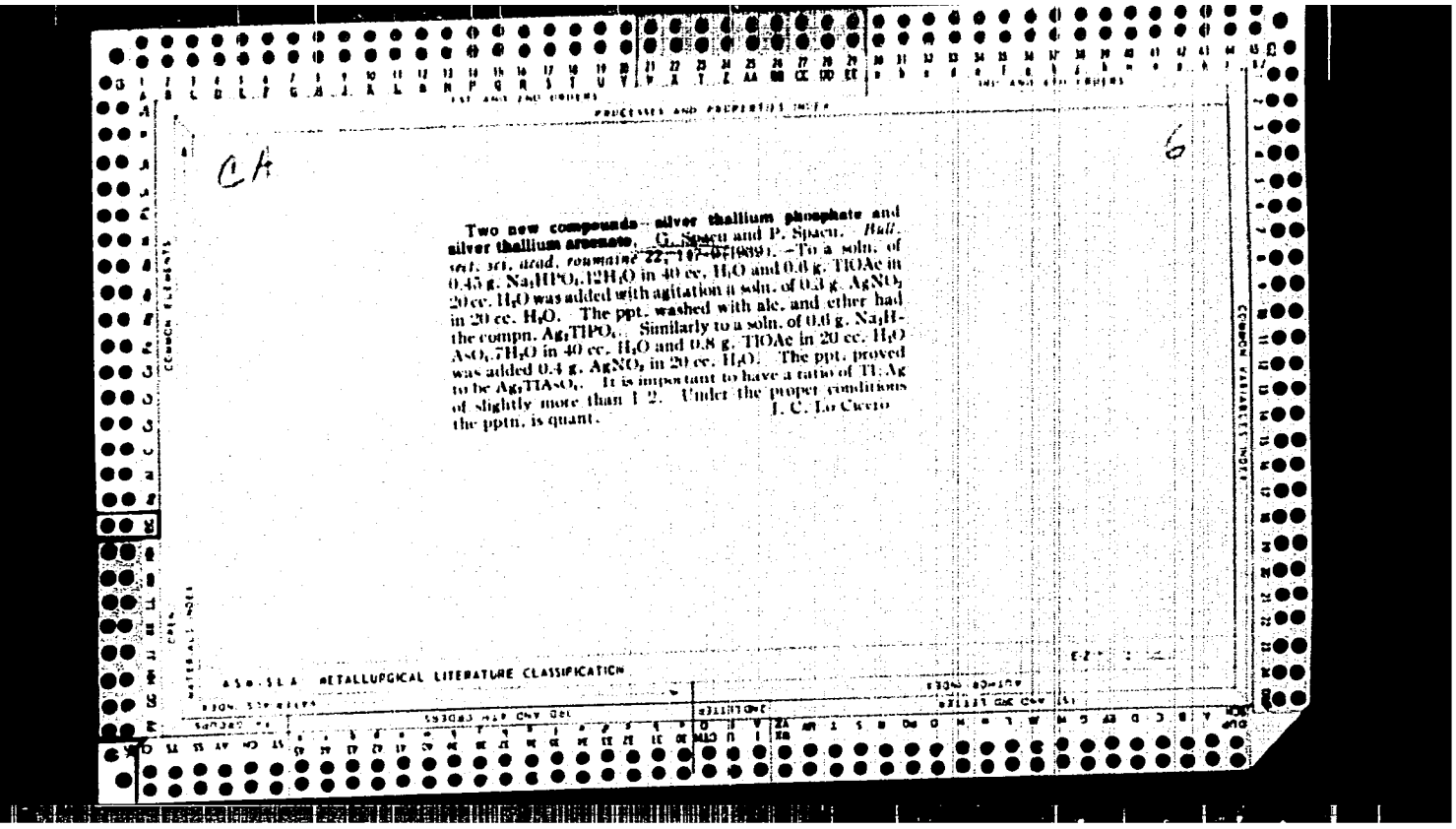
Potentiometric titration of the arsenic ion with potassium iodide and sodium thiosulphate. G. SPACU and C. DRAGULESCU (Bull. Acad. Sci. Roumaine, 1930, **22**, 1—15).—The solution (70—100 c.c.) containing ~0·075 g. of As^V and 30—40 vol.-% of conc. HCl is treated with 3—5 times the wt. of KI required by $H_3AsO_4 + 3I' + 2H^{\cdot} \rightleftharpoons H_3AsO_3 + I_2' + H_2O$, and after 5 min. the I liberated is titrated potentiometrically with 0·1M-$Na_2S_2O_3$ in an atm. of N_2. Any As^{III} present may be determined iodometrically in presence of $NaHCO_3$ before titration of the total As by the above method. The error is >0·3%.

A. J. E. W.



Contribution to the constitution of heteropolyacids. II. A new class of ammines. The phosphododecatungstate complexes. G. Spacu and V. Nicolaescu. *Bull. sect. sci. acad. roumaine* 22, 130–41 (1939).—Detailed description of method of prepn. and analysis of $[Co\ en_3(NO_3)_3]_2H_4[P(W_2O_7)_6]\cdot 8H_2O$, $[Co(NH_3)_4(NO_2)_2]_2H_4[P(W_2O_7)_6]\cdot 17H_2O$, $[Co(NH_3)_6]_2H_4[P(W_2O_7)_6]\cdot 7H_2O$, $[Cr(NH_3)_4Cl]_2H_4[P(W_2O_7)_6]\cdot 11H_2O$, $[Coen_2Cl_2]_2H[P(W_2O_7)_6]\cdot NO_3]_2H_4[P(W_2O_7)_6]\cdot 11H_2O$, $[Cr(NH_3)_5SCN]_2H[P(W_2O_7)_6]\cdot 14H_2O$ 15H_2O (*trans*), $[Cren_2]_2H[P(W_2O_7)_6]\cdot 16H_2O$, $[Coen_3]_2H[P(W_2O_7)_6]\cdot 19H_2O$, $[Cren_2]_2HN\ C(NH_3)_3\cdot H[P(W_2O_7)_6]\cdot 19H_2O$.

A. A. Vernon

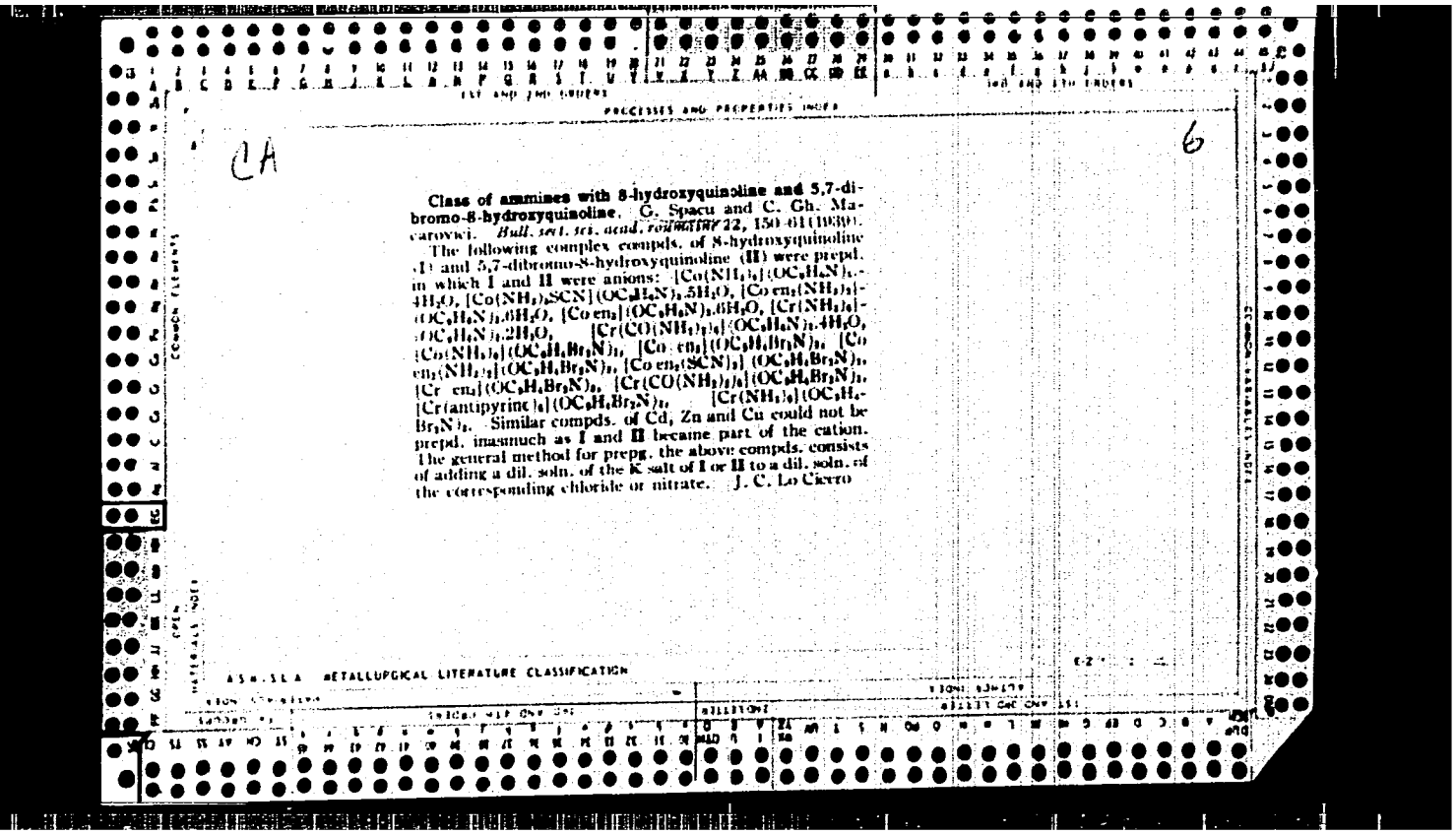


CH

6

Two new compounds—silver thallium phosphate and silver thallium arsenate. G. Spacu and P. Spacu. *Bull. soc. sci. stud. roumaine* 22, 197–9(1939). —To a soln. of 0.45 g. $Na_2HPO_4.12H_2O$ in 40 cc. H_2O and 0.6 g. TlOAc in 20 cc. H_2O was added with agitation a soln. of 0.3 g. $AgNO_3$ in 20 cc. H_2O. The ppt. washed with alc. and ether had the compn. Ag_2TlPO_4. Similarly to a soln. of 0.6 g. $Na_2HAsO_4.7H_2O$ in 40 cc. H_2O and 0.8 g. TlOAc in 20 cc. H_2O was added 0.4 g. $AgNO_3$ in 20 cc. H_2O. The ppt. proved to be Ag_2TlAsO_4. It is important to have a ratio of Tl:Ag of slightly more than 1:2. Under the proper conditions the pptn. is quant. J. C. La Cicero

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

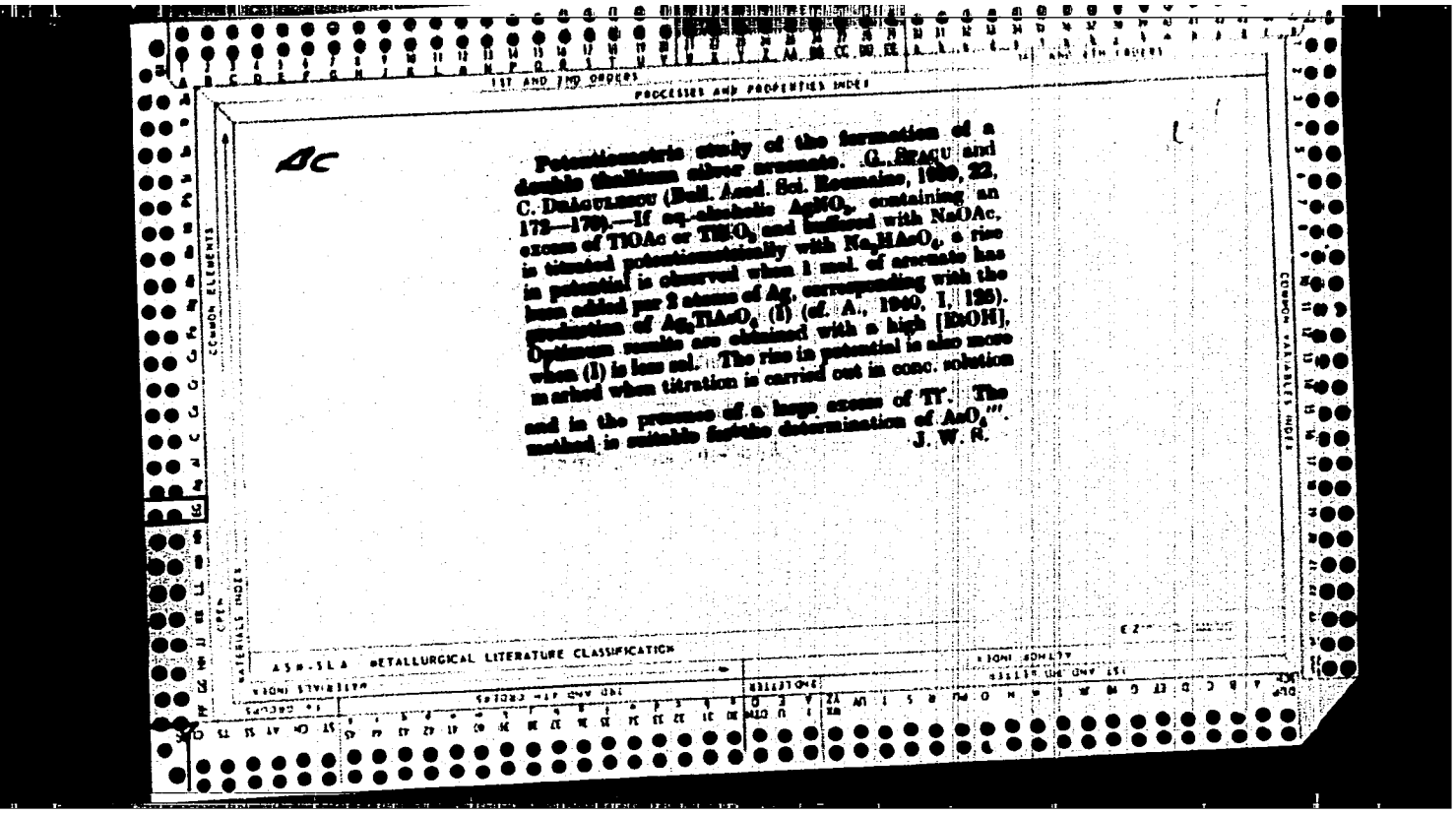


CA

6

Class of ammines with 8-hydroxyquinoline and 5,7-dibromo-8-hydroxyquinoline. G. Spacu and C. Gh. Macarovici. *Bull. soc. sti. acad. roumaine* 22, 150-61(1939).

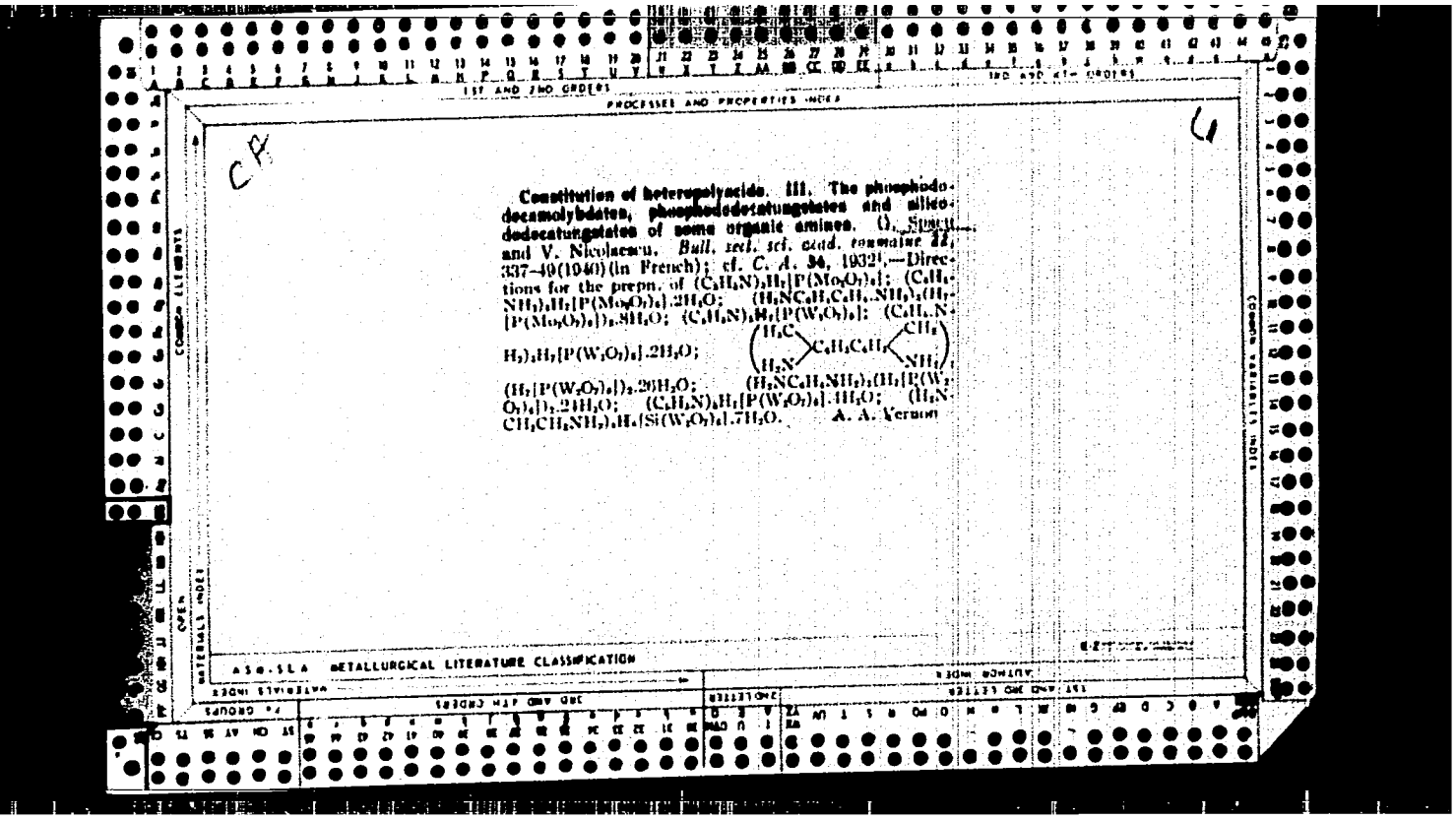
The following complex compds. of 8-hydroxyquinoline (I) and 5,7-dibromo-8-hydroxyquinoline (II) were prepd. in which I and II were anions: $[Co(NH_3)_4](OC_9H_6N)_2 \cdot 4H_2O$, $[Co(NH_3)_5SCN](OC_9H_6N)_2 \cdot 5H_2O$, $[Co\ en_2(NH_3)_2](OC_9H_6N)_3 \cdot 6H_2O$, $[Co\ en_3](OC_9H_6N)_3 \cdot 6H_2O$, $[Cr(NH_3)_6](OC_9H_6N)_3 \cdot 2H_2O$, $[Cr(CO(NH_3)_5)_2](OC_9H_6N)_3 \cdot 4H_2O$, $[Co(NH_3)_6](OC_9H_4Br_2N)_3$, $[Co\ en_3](OC_9H_4Br_2N)_3$, $[Co\ en_2(NH_3)_2](OC_9H_4Br_2N)_3$, $[Co\ en_2(SCN)_2](OC_9H_4Br_2N)_3$, $[Cr\ en_3](OC_9H_4Br_2N)_3$, $[Cr(CO(NH_3)_5)_2](OC_9H_4Br_2N)_3$, $[Cr(antipyrine)_6](OC_9H_4Br_2N)_3$, $[Cr(NH_3)_6](OC_9H_4Br_2N)_3$. Similar compds. of Cd, Zn and Cu could not be prepd. inasmuch as I and II became part of the cation. The general method for prepg. the above compds. consists of adding a dil. soln. of the K salt of I or II to a dil. soln. of the corresponding chloride or nitrate. J. C. Lo Cicero



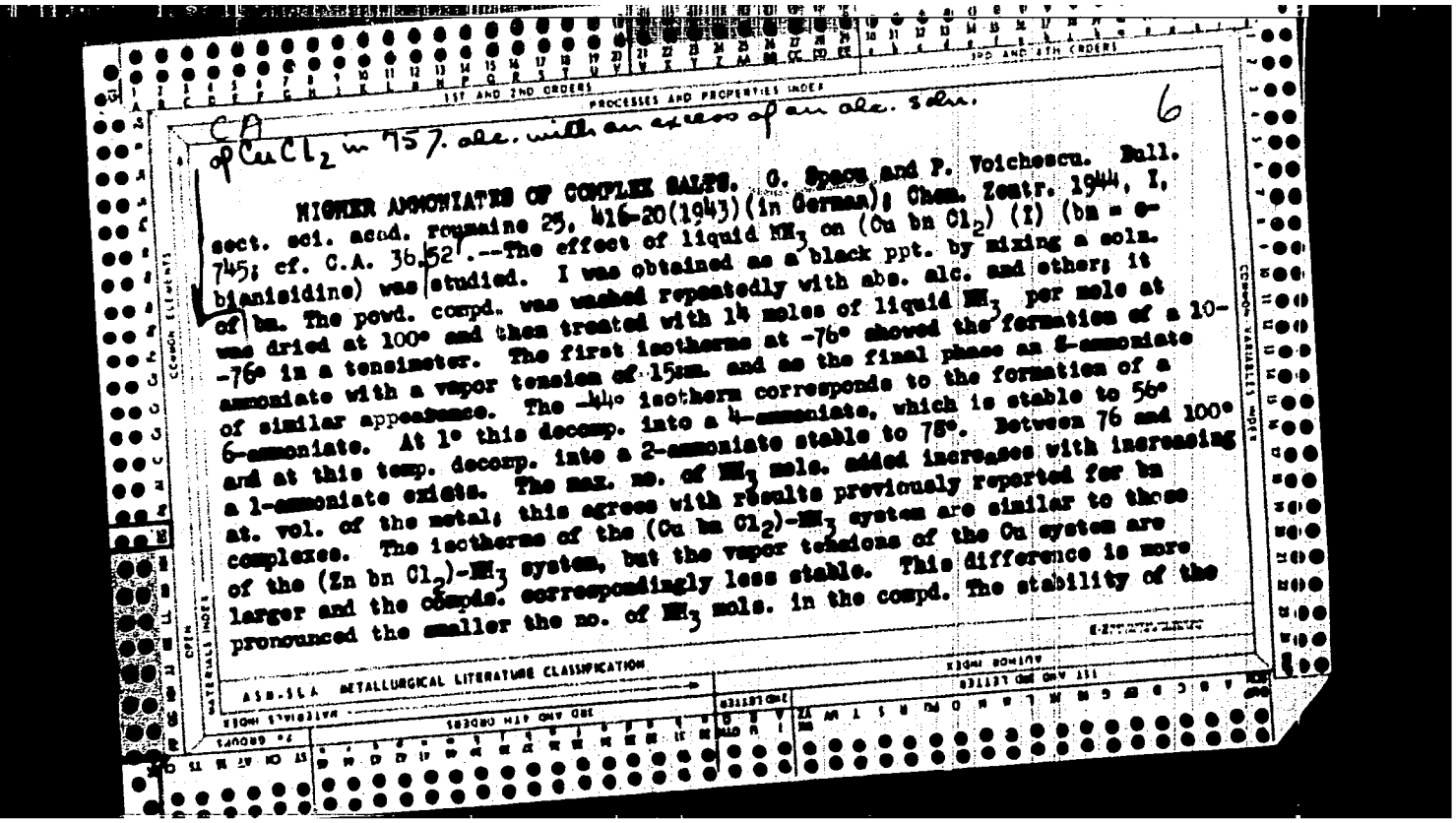
Ac

Potentiometric study of the formation of a double thallium silver arsenate. G. Spacu and C. Duiculescu (Bull. Acad. Sci. Roumaine, 1939, 22, 172—179).—If aq.-alcoholic $AgNO_3$, containing an excess of TlOAc or $TlNO_3$ and buffered with NaOAc, is titrated potentiometrically with Na_2HAsO_4, a rise in potential is observed when 1 mol. of arsenate has been added per 2 atoms of Ag, corresponding with the production of Ag_2TlAsO_4 (I) (cf. A., 1940, I, 125). Optimum results are obtained with a high [EtOH], when (I) is less sol. The rise in potential is also more marked when titration is carried out in conc. solution and in the presence of a large excess of Tl'. The method is suitable for the determination of AsO_4'''.

J. W. R.



Constitution of heteropolyacids. III. The phosphododecamolybdates, phosphododecatungstates and silicododecatungstates of some organic amines. O. Speru and V. Nicolaescu. *Bull. ecol. sci. acad. roumaine* 22, 337–40(1940)(in French); cf. *C. A.* 34, 1932⁴.—Directions for the prepn. of $(C_2H_5N)_3H_7[P(Mo_2O_7)_6]$; $(C_4H_{11}NH_2)_3H_7[P(Mo_2O_7)_6].2H_2O$; $(H_2NC_6H_4C_6H_4NH_2)_3(H_7[P(Mo_2O_7)_6])_2.8H_2O$; $(C_5H_5N)_3H_7[P(W_2O_7)_6]$; $(C_4H_{11}N)_3H_7[P(W_2O_7)_6].2H_2O$; $(H_2NC_6H_4NH_2)_3(H_7[P(W_2O_7)_6])_2.2H_2O$; $(C_5H_5N)_3H_7[P(W_2O_7)_6].1H_2O$; $(H_2NCH_2CH_2NH_2)_4H_4[Si(W_2O_7)_6].7H_2O$. A. A. Vernon



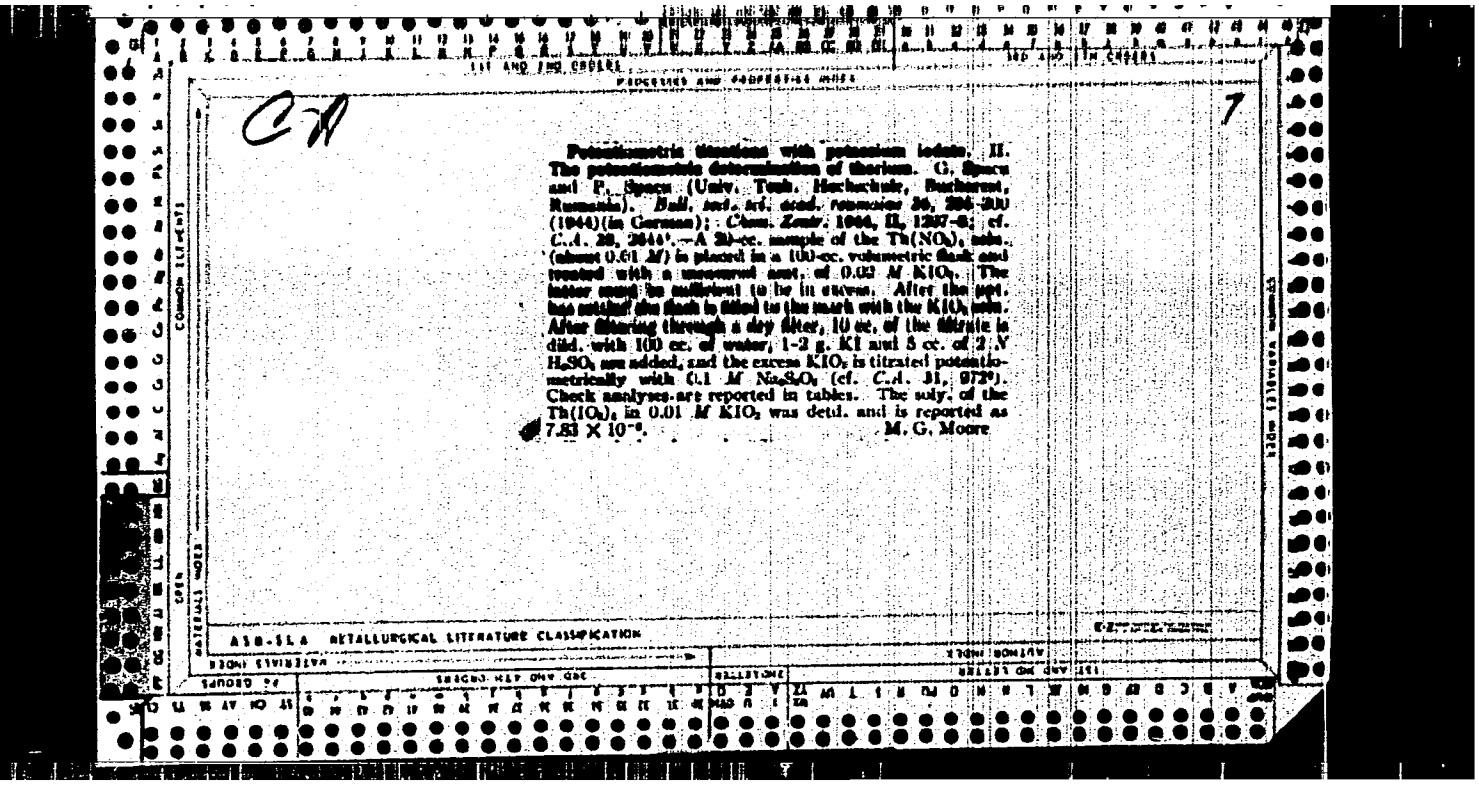
CA 6

of $CuCl_2$ in 75% alc. with an excess of an alc. soln.

HIGHER AMMONIATES OF COMPLEX SALTS. O. Speca and P. Voichescu. Bull. sect. sci. acad. roumaine 25, 416-20(1943)(in German); Chem. Zentr. 1944, I, 745; cf. C.A. 36, 52[illegible].--The effect of liquid NH_3 on (Cu bn Cl_2) (I) (bn = o-bianisidine) was studied. I was obtained as a black ppt. by mixing a soln. of bn. The powd. compd. was washed repeatedly with abs. alc. and ether; it was dried at 100° and then treated with 14 moles of liquid NH_3 per mole at -76° in a tensimeter. The first isotherm at -76° showed the formation of a 10-ammoniate with a vapor tension of 15mm. and as the final phase an 8-ammoniate of similar appearance. The -44° isotherm corresponds to the formation of a 6-ammoniate. At 1° this decomp. into a 4-ammoniate, which is stable to 56° and at this temp. decomp. into a 2-ammoniate stable to 75°. Between 76 and 100° a 1-ammoniate exists. The max. no. of NH_3 mols. added increases with increasing at. vol. of the metal; this agrees with results previously reported for bn complexes. The isotherms of the (Cu bn Cl_2)-NH_3 system are similar to those of the (Zn bn Cl_2)-NH_3 system, but the vapor tensions of the Cu system are larger and the compds. correspondingly less stable. This difference is more pronounced the smaller the no. of NH_3 mols. in the compd. The stability of the

compds. increases with increasing at. vol. of the central metal atom. The heats of formation of the ammoniates of I in kg.-cal. are: deka 8.14, octa 8.57-8.81, hexa 10.73, tetra 12.44-12.75, di 14.62, and mono 16.19. Up to a coordination no. of 6 the NH_3 mols. can be bound directly to the central atom.

T. H. Dunkelberger

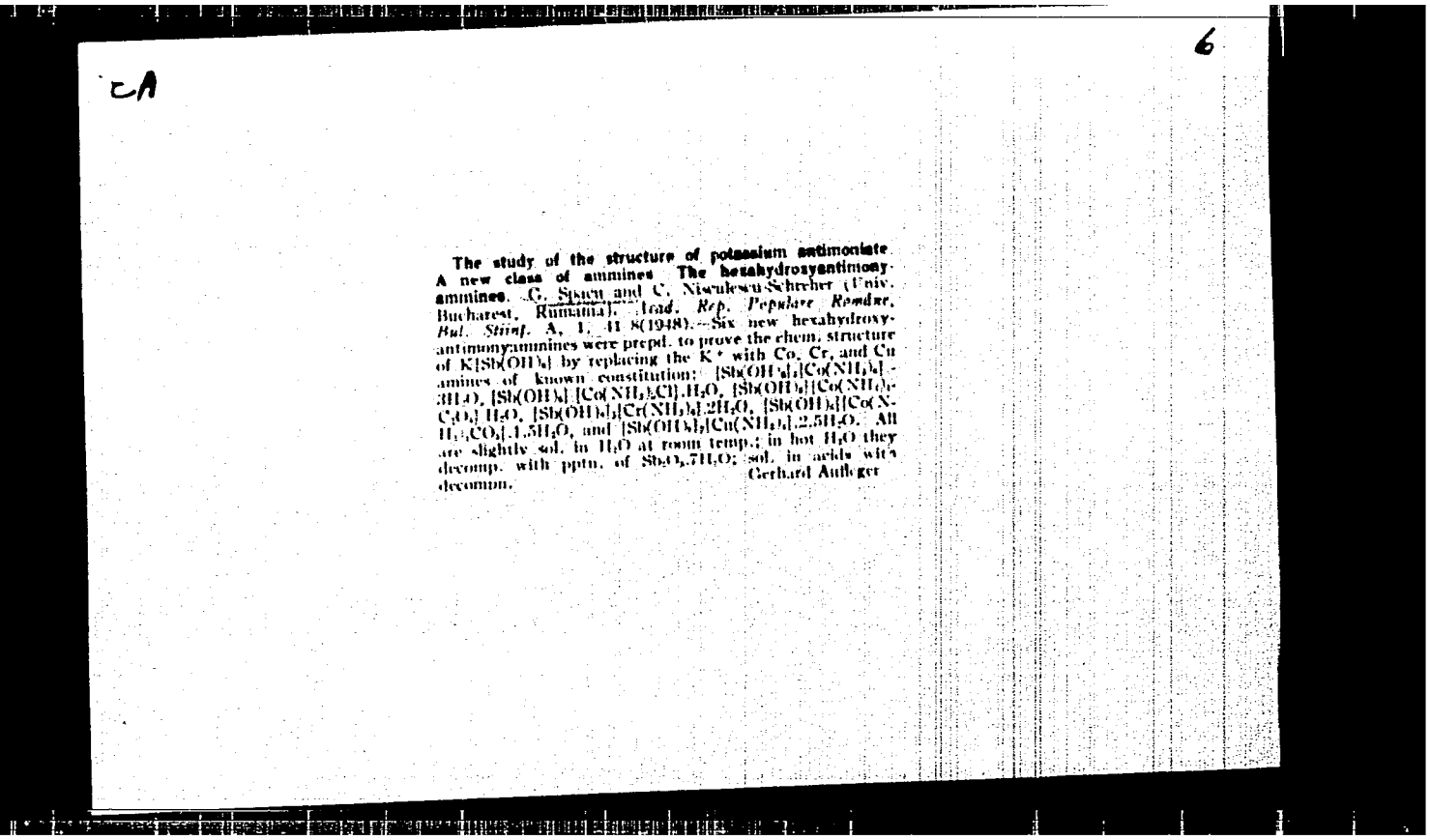


CM

7

Potentiometric titrations with potassium iodate. II. The potentiometric determination of thorium. G. Spacu and P. Spacu (Univ. Tech. Hochschule, Bucharest, Rumania). *Bull. soc. sci. acad. roumaine* 26, 206-20 (1944)(in German); *Chem. Zentr.* 1944, II, 1207-8; cf. *C.A.* 38, 3044⁹.—A 20-cc. sample of the $Th(NO_3)_4$ soln. (about 0.01 *M*) is placed in a 100-cc. volumetric flask and treated with a measured amt. of 0.02 *M* KIO_3. The latter soln. is sufficient to be in excess. After the ppt. has settled the flask is filled to the mark with the KIO_3 soln. After filtering through a dry filter, 10 cc. of the filtrate is dild. with 100 cc. of water, 1-2 g. KI and 5 cc. of 2 *N* H_2SO_4 are added, and the excess KIO_3 is titrated potentiometrically with 0.1 *M* $Na_2S_2O_3$ (cf. *C.A.* 31, 972⁹). Check analyses are reported in tables. The solv. of the $Th(IO_3)_4$ in 0.01 *M* KIO_3 was detd. and is reported as 7.83×10^{-6}. M. G. Moore

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

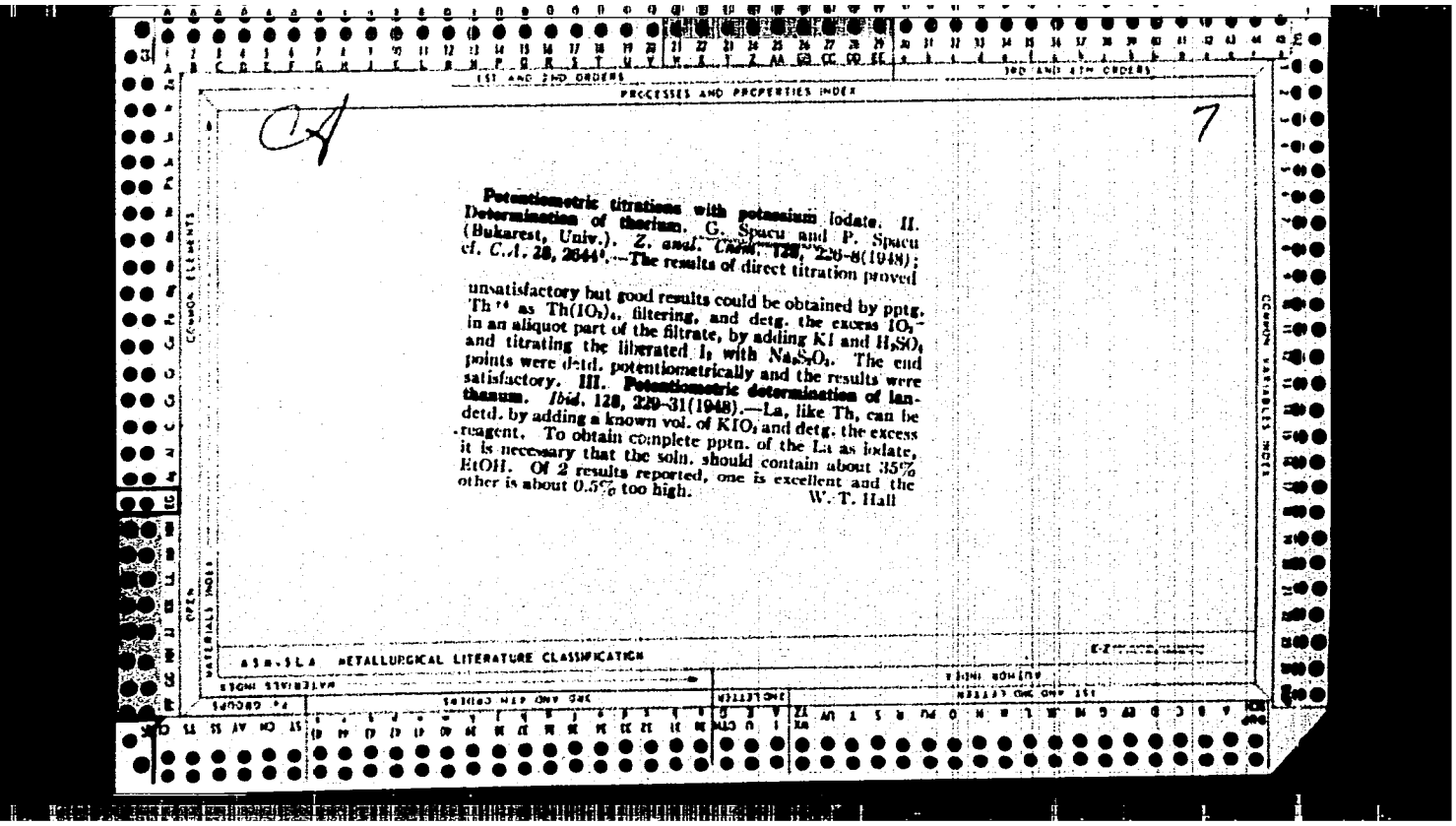


CA

6

The study of the structure of potassium antimoniate. A new class of ammines. The hexahydroxyantimonyammines. G. Spacu and C. Niculescu-Schreiber (Univ. Bucharest, Rumania). *Acad. Rep. Populare Romîne, Bul. Stiinț.* A, 1, 11 8(1948).—Six new hexahydroxyantimonyammines were prepd. to prove the chem. structure of $K[Sb(OH)_6]$ by replacing the K^+ with Co, Cr, and Cu ammines of known constitution: $[Sb(OH)_6]_2[Co(NH_3)_6]\cdot 3H_2O$, $[Sb(OH)_6][Co(NH_3)_5Cl].H_2O$, $[Sb(OH)_6][Co(NH_3)_5C_2O_4].H_2O$, $[Sb(OH)_6]_3[Cr(NH_3)_6].2H_2O$, $[Sb(OH)_6][Co(NH_3)_4CO_3].1.5H_2O$, and $[Sb(OH)_6]_2[Cu(NH_3)_4].2.5H_2O$. All are slightly sol. in H_2O at room temp.; in hot H_2O they decomp. with pptn. of $Sb_2O_5.7H_2O$; sol. in acids with decompn.

Gerhard Aulleger



PROCESSES AND PROPERTIES INDEX

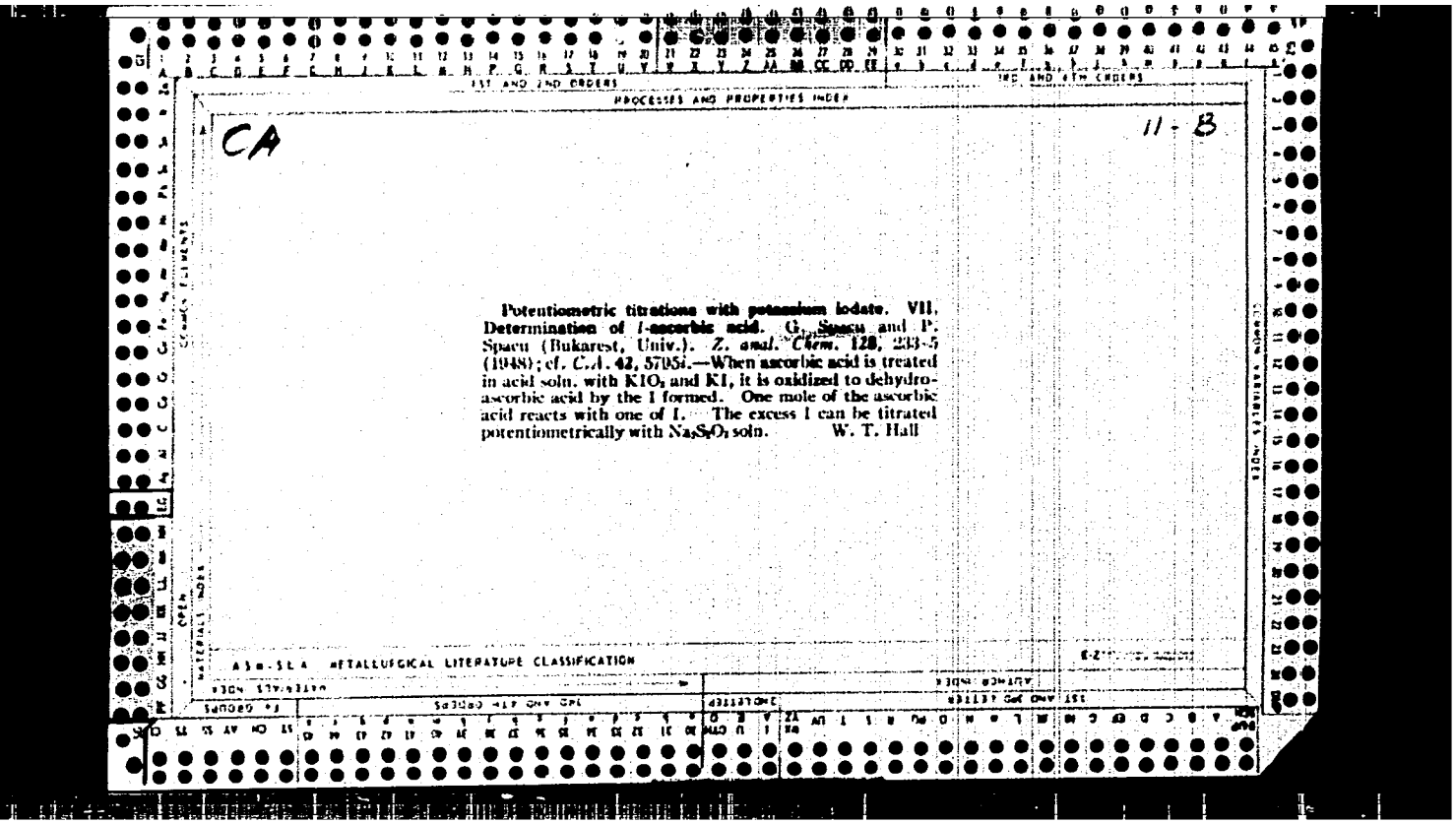
CA

7

Potentiometric titrations with potassium iodate. II. Determination of thorium. G. Spacu and P. Spacu (Bukarest, Univ.). *Z. anal. Chem.* **128**, 226-8(1948); cf. *C.A.* **28**, 2644⁶.—The results of direct titration proved unsatisfactory but good results could be obtained by pptg. Th^{++} as $Th(IO_3)_4$, filtering, and detg. the excess IO_3^- in an aliquot part of the filtrate, by adding KI and H_2SO_4 and titrating the liberated I_2 with $Na_2S_2O_3$. The end points were detd. potentiometrically and the results were satisfactory. **III. Potentiometric determination of lanthanum.** *Ibid.* **128**, 229-31(1948).—La, like Th, can be detd. by adding a known vol. of KIO_3 and detg. the excess reagent. To obtain complete pptn. of the La as iodate, it is necessary that the soln. should contain about 35% EtOH. Of 2 results reported, one is excellent and the other is about 0.5% too high.

W. T. Hall

METALLURGICAL LITERATURE CLASSIFICATION



CA

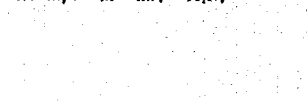
11-B

Potentiometric titrations with potassium iodate. VII. Determination of *l*-ascorbic acid. G. Spacu and P. Spacu (Bukarest, Univ.). *Z. anal. Chem.* **128**, 233-5 (1948); cf. *C.A.* **42**, 5705*i*.—When ascorbic acid is treated in acid soln. with KIO_3 and KI, it is oxidized to dehydroascorbic acid by the I formed. One mole of the ascorbic acid reacts with one of I. The excess I can be titrated potentiometrically with $Na_2S_2O_3$ soln. W. T. Hall

C/7

6

Complex antimony tartrates. III.—G. Spacu and Despina Pirtea (Univ. Bucharest, Rumania). *Acad. Rep. Populare Române, Bul. Stiinț.* A, 1, 143–51(1949); cf. *Bull. sect. sci. acad. roumaine* 27, 138(1944). A series of new complex Sb tartrates was prepd. in order to prove the structure of $(C_4O_4H_3Sb)K \cdot 1.5H_2O$ (a). (1) $(C_4O_4H_3Sb)_2[Co(NH_3)_4]NO_3 \cdot H_2O$-sol., orange crystals, rather stable. (2) $(C_4O_4H_3Sb)_2[Co(NH_3)_4](ClO_4) \cdot 3H_2O$, similar to (1). (3) $(C_4O_4H_3Sb)_2[Co(NH_3)_4](BrO_3) \cdot 3H_2O$, similar to (1). (4) $(C_4O_4H_3Sb)_2[Co(NH_3)_4](IO_3) \cdot 4H_2O$, decomp. in air. H_2O, orange crystals. (5) $(C_4O_4H_3Sb)_2[Co(NH_3)_4]Cl \cdot 5H_2O$, sol. in H_2O, yellow crystals. (6) $(C_4O_4H_3Sb)_2[Co(NH_3)_4]Br \cdot 1H_2O$, bright-yellow crystals. (7) $(C_4O_4H_3Sb)_2[Co(NH_3)_4]I \cdot 1H_2O$. (8) $(C_4O_4H_3Sb)_2[Cr(NH_3)_6]NO_3$. Examples of prepn.: (1) 0.5 g. KNO_3 in 10 ml. H_2O + 1 g. $(C_4O_4H_3Sb)_2[Co(NH_3)_4]Cl \cdot 5H_2O$ at 10° was stirred for 30 min., filtered, and the product washed with cold H_2O, and dried on a porous plate in a desiccator. (5) 0.3 g. $[Cr(NH_3)_6]Cl_3$ in 6 ml. H_2O and 0.8 g. a in 6 ml. H_2O was stirred well, and the product washed three with cold H_2O, and dried for 24 hrs. on a porous plate. IV. **New contributions to the study of the structure of tartar emetic.** *Analele Acad. Rep. Populare Române, Sect. Stiinț. Mat., Fiz. Chim.*, Ser. A, 2, *Mem.* No. 7, 26 pp. (1949) (French summary). Instead of the formula given by Rebiere and Heza [*C. A.* 25, 1852] for tartar emetic, in which a H_2O mol. is supposed to be attached to the Sb by a secondary valence, S. and P. suggest



As evidence that the H_2O is not bound to Sb by partial valence, a benzidinium salt, $[C_4O_4H_3Sb]_2 \cdot H_2bzd \cdot 7H_2O$ was prepd.; it loses $7H_2O$ under vacuum at room temp. in the presence of P_2O_5. When treated with $BaCl_2$ it yields $[C_4O_4H_3Sb]_2Ba \cdot 4H_2O$, with $[Co(NH_3)_6]Cl_3$ (ratio 1:1) $[C_4O_4H_3Sb]_2[Co(NH_3)_4]Cl \cdot 5H_2O$ is formed; with $[Co(NH_3)_6](NO_3)_3$ $[C_4O_4H_3Sb]_2[Co(NH_3)_4]NO_3$ is formed. Formation of the anhyd. nitrate proves the absence of water in the antimoniotartrate residue. Gerhard Anliker

CA

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A new class of ammines. The metallic phthalazine thiocyanates. G. Spacu and P. Spacu (Univ. Bucharest, Rumania). *Analele Acad. Rep. Populare Romîne, Sect. Stiinţe Mat., Fiz Chim.*, Sect. A, **2**, *Mem.* 12, 20 pp.(1949) (French summary).—By treating aq. solns. of their salts with phthalazine (Phtlz) and then with NH_4SCN, Fe, Cu, Cd, Zn, and Ni form $MPhtlz_2(SCN)_2$, Pb forms $PbPhtlz(SCN)_2$, Mn forms $MnPhtlz(OH)SCN$, $MnPhtlz_2(SCN)_2$, and Co forms $CoPhtlz_2(OH)SCN$, $CoPhtlz_2(SCN)_2$. The Mn and Ni salts have 3 mols. of H_2O; the others are anhydrous. The Fe complex is sol. in some org. solvents, especially in chloroform (blood-red coloration used to identify ferrous ions); all the others are either insol. or decomp. in org. solvents. All decomp. in mineral acids and bases. An example of the method of prepn. is: treat 0.7 g. $ZnSO_4.7H_2O$ in 10 ml. H_2O with 0.7 g. phthalazine in 5 ml. H_2O and 0.4 g. NH_4SCN in 10 ml. H_2O, wash the white ppt. with a small amt. H_2O, and dry on a porous plate *in vacuo* at room temp. Gerhard Aufleger

CA

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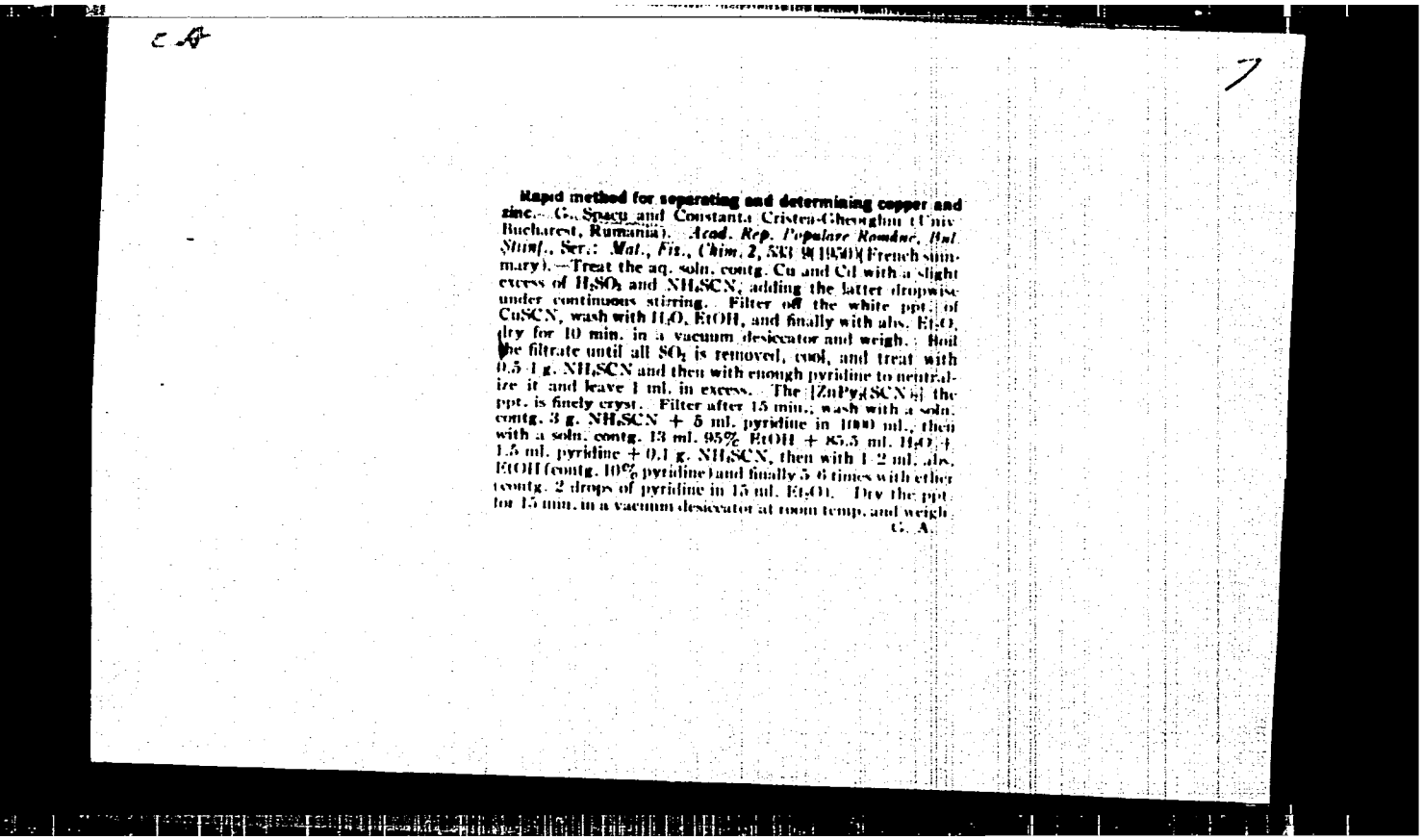
Hexahydroxy antimony salts. O. Spacu and Sanda Lupan (Univ. Bucharest, Rumania). *Academia Rep. Populare Romîne, Sect. Științe Mat., Fiz. Chim., Ser. A*, 2, *Mem.* 22, 20 pp.(1949)(French summary).—To prove the structure of the pyroantimonates, $M^1Sb(OH)_6$, $[Sb(OH)_6]H.Bad.(HCl)$ (I), $[Sb(OH)_6]H.Bad(HCl)_2.Bzl(HCl)_2.2H_2O$ (II), $[Sb(OH)_6]_2H_2.Bzl.3H_2O$ (III), $[Sb(OH)_6]H.Tobl.(HCl)$ (IV), $[Sb(OH)_6]_2H_2.Tobl.$ (V), $[Sb(OH)_6][Cr(NH_3)_6].3H_2O$ (VI), $[Sb(OH)_6]_2[Co(NH_3)_6](SO_4).(OH).2.5H_2O$ (VII), and $[Sb(OH)_6]_2[Cr(NH_3)_6](SO_4).(OH).2.5H_2O$ (VIII) were prepd. by treating the K pyroantimonate with the chlorides and sulfates of benzidine and tolidine (I–V) and by exposing an aq. soln. of the K salt to the action of some metalammines (VI–VIII). They all dissolve in dil. HCl with decompn. except III and V, which are dissolved only in the presence of tartaric acid. I hydrolyzes in H_2O at room temp. liberating the hexahydroxyantimonic acid, which loses a half H_2O when dried. When exposed to the dehydrating action of $CaCl_2$ or H_2SO_4 all compds. lose 1.5–3 mols. H_2O. G. Auflager

Hexahydroxy stannates. G. Spacu and Sanda Lupan (Univ. Bucharest, Roumania). *Academia Rep. Popu-lare Romîne, Sect. Ştiinţe Mat., Fiz. Chim., Ser. A*, 2, Mem 24, 16 pp.(1949)(French summary).—Chlorides and sulfates of benzidine and tolidine and complex metalammines are added to K stannate to prep. 8 new complex salts: (1) $H_2[Sn(OH)_6]$.(bzd.HCl)$_2$, (2) $H_2[Sn(OH)_6]$.bzd., (3) $H_2[Sn(OH)_6]$.(told. HCl)$_2$.2 H_2O, (4) $H_2[Sn(OH)_6]$ told H_2O, (5) $[Sn(OH)_6]$.$[Cu(NH_3)_4(H_2O)_2]$, (6) $[Sn(OH)_6]Cu$, (7) $[Sn(OH)_6][Co(NH_3)_4(SO_4)]_2.4H_2O$, (8) $[Sn(OH)_6][Cr(NH_3)_6]_2(SO_4)_3.6H_2O$. They are all cryst. compds., sol. in warm dil. HCl, unstable in hot H_2O. Examples of prepn: (1) 0.75 g. $K_2Sn(OH)_6$ and 1.28 benzidine.HCl are mixed well in a mortar while 25 cc. H_2O is added stepwise, filtered after 10 min. without washing, dried on porous plate at room temp., analyzed after 24 hrs. (Sn by the Löwenthal method, benzidine-N by Kjeldahl). (5) to 1 g. K stannate dissolved in 6 cc. water + 4 cc. concd. NH_4OH 1.5 g. $Cu(NH_3)_4SO_4$ is added, mixed, and cooled on ice. After 20 min. the blue crystals are filtered, and washed twice with EtOH satd. with NH_3, kept over solid NaOH in a desiccator in NH_3 atm. for 2 hrs., then analyzed. The formula for K stannate is shown to be $K_2[Sn(OH)_6]$, as suggested by Beluccí and Parravano (1905).

Gerhard Aufleger

CA

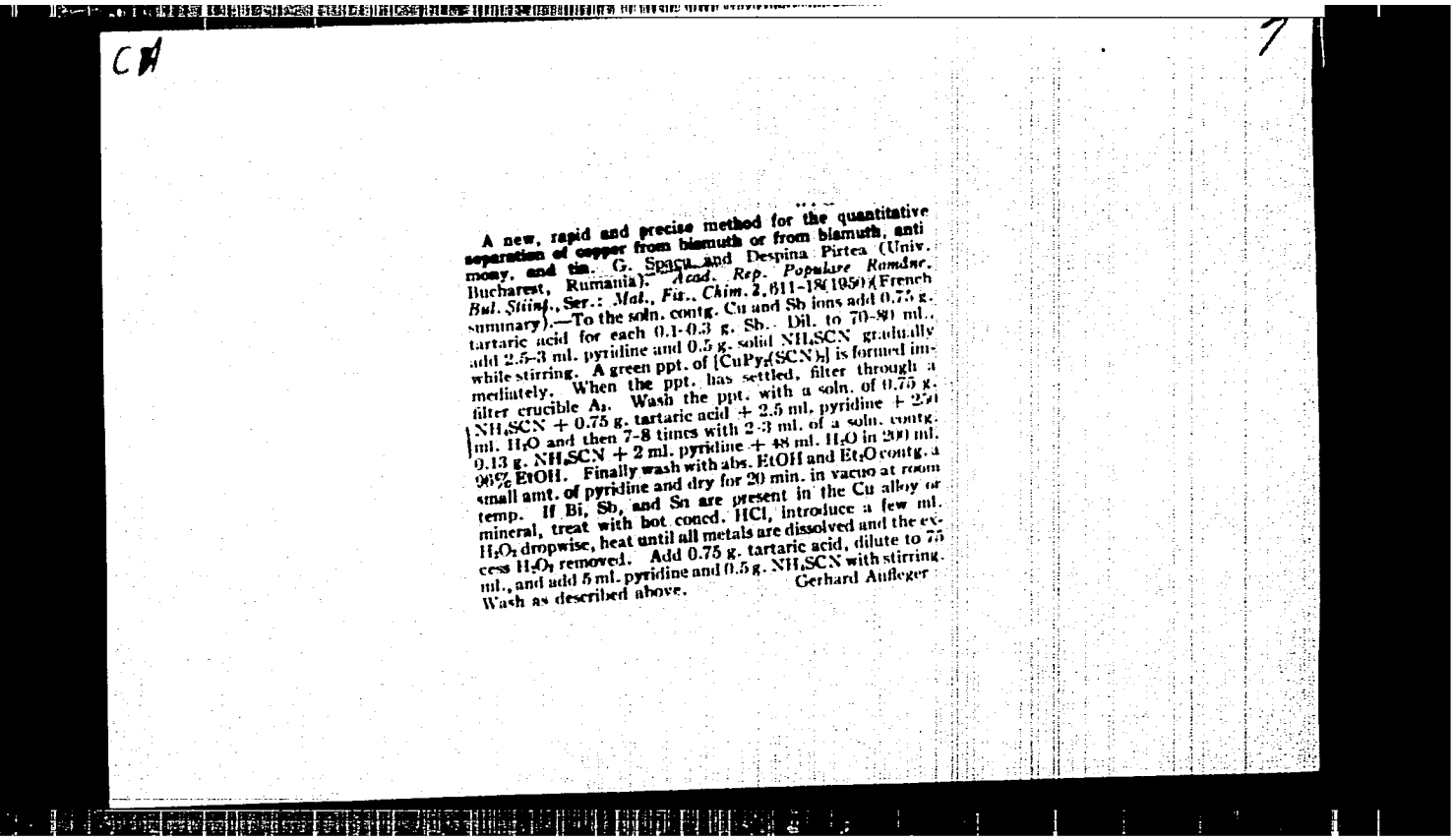
Rapid method for the separation of copper from cadmium and their gravimetric determination. G. Stacu and Constanţa Cristea-Gheorghiu (Univ. Bucharest, Rumania). *Acad. Rep. Populare Romîne, Bul. Ştiinţ., Ser.: Mat., Fiz. Chim.* 2, 487-93(1950)(French summary).—Treat the aq. soln. contg. Cu and Cd with a slight excess of H_2SO_4 and NH_4SCN. The first greenish ppt. of CuSCN turns white. Filter through a filter crucible A_2. Wash the ppt. with H_2O, EtOH, and finally with abs. Et_2O, dry for 10 min. in vacuo and weigh. Boil the filtrate until all SO_2 is removed and the soln. is only slightly acidic. Cool the 50–100 ml. of soln. contg. only Cd and treat with 0.5–1 g. NH_4SCN and add pyridine dropwise until a ppt. forms. Heat until the ppt. dissolves and add one more ml. of pyridine. Stir, cool, and filter through a filter crucible A_2 and wash the ppt. with a soln. contg. 3 g. NH_4SCN + 5 ml. pyridine in 1000 ml. H_2O, then 4–5 times with 1 ml. of a sol. (contg. 25 ml. 95% EtOH, 73 ml. H_2O, 2 ml. pyridine, 0.1 g. NH_4SCN), and then twice with 1 ml. of a 10% soln. of pyridine in abs. EtOH; (the ppt., $CdPy_2(SCN)_2$ is slightly sol. in abs. EtOH) and finally with a soln. contg. 2 drops of pyridine in 10 ml. abs. ether. Dry and weigh. Gerhard Aufleger



C A

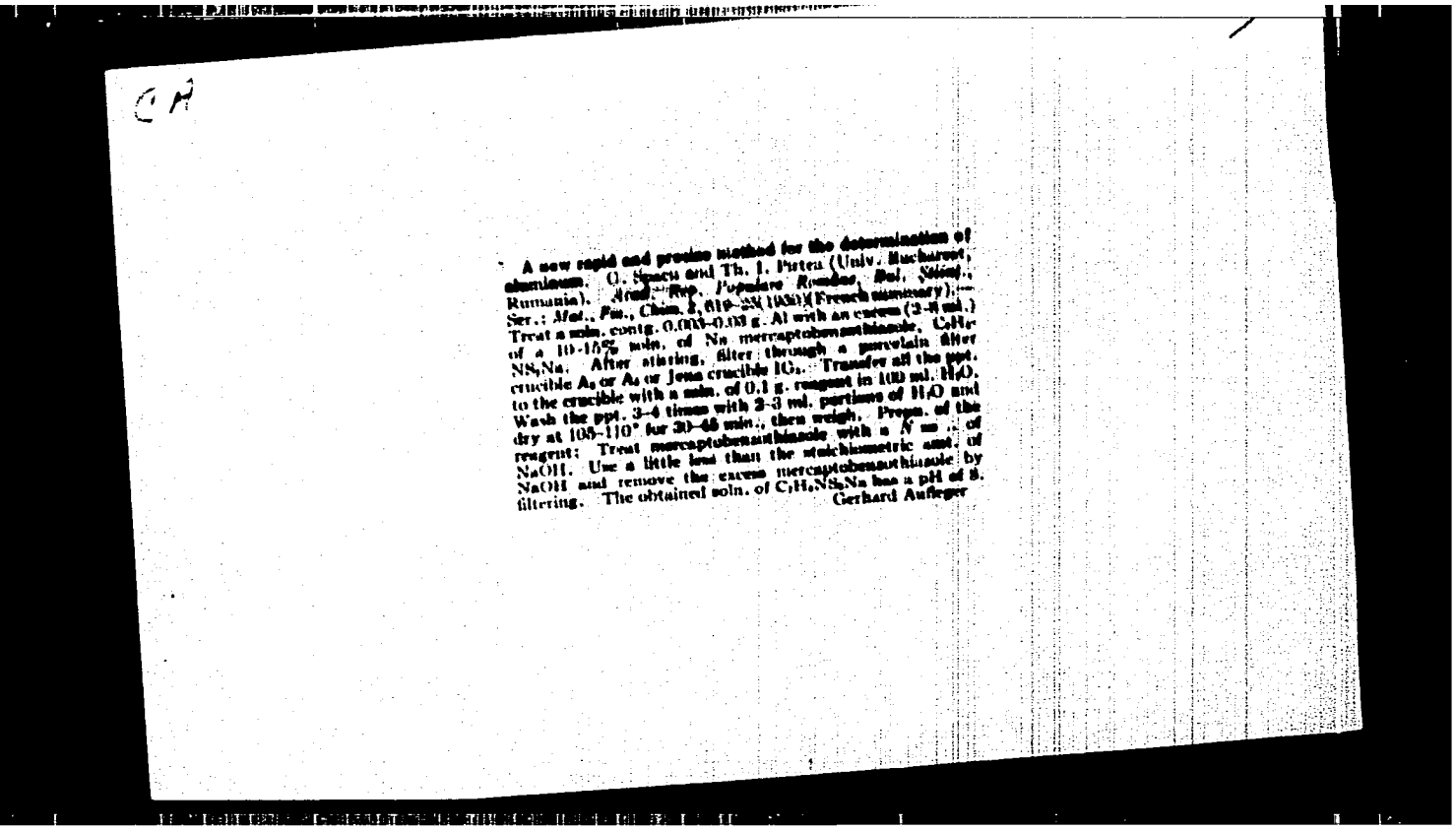
7

Rapid method for separating and determining copper and zinc. G. Spacu and Constanta Cristea-Gheorghiu (Univ. Bucharest, Rumania). *Acad. Rep. Populare Romîne, Bul. Stiinț., Ser.: Mat., Fiz., Chim.* 2, 533-9 (1950) (French summary).—Treat the aq. soln. contg. Cu and Cl with a slight excess of H_2SO_3 and NH_4SCN, adding the latter dropwise under continuous stirring. Filter off the white ppt. of CuSCN, wash with H_2O, EtOH, and finally with abs. Et_2O, dry for 10 min. in a vacuum desiccator and weigh. Boil the filtrate until all SO_2 is removed, cool, and treat with 0.5-1 g. NH_4SCN and then with enough pyridine to neutralize it and leave 1 ml. in excess. The $[ZnPy_2(SCN)_2]$ the ppt. is finely cryst. Filter after 15 min.; wash with a soln. contg. 3 g. NH_4SCN + 5 ml. pyridine in 100 ml., then with a soln. contg. 13 ml. 95% EtOH + 85.5 ml. H_2O + 1.5 ml. pyridine + 0.1 g. NH_4SCN, then with 1-2 ml. abs. EtOH (contg. 10% pyridine) and finally 5-6 times with ether (contg. 2 drops of pyridine in 15 ml. Et_2O). Dry the ppt. for 15 min. in a vacuum desiccator at room temp. and weigh.
C. A.



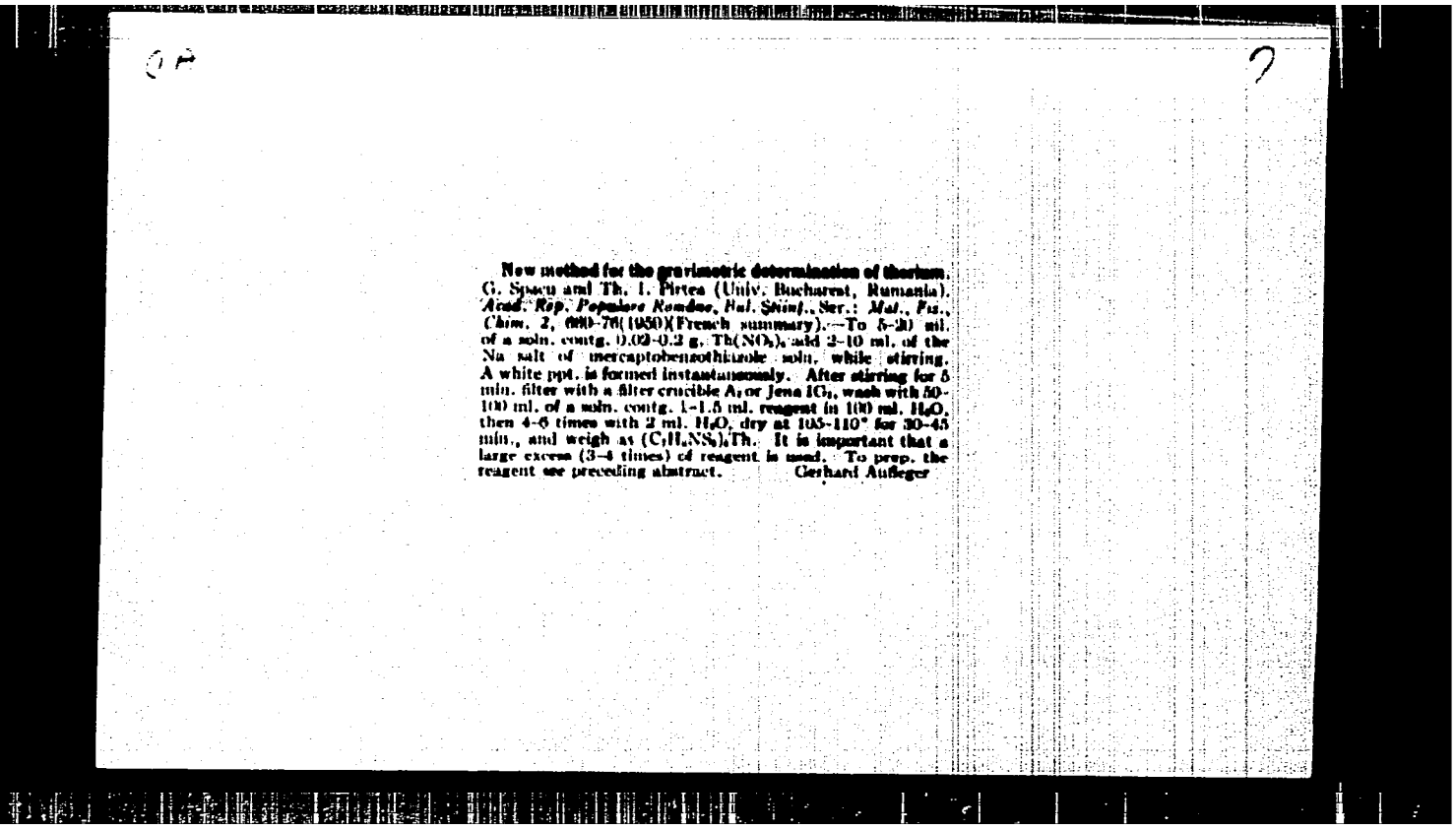
CA 7

A new, rapid and precise method for the quantitative separation of copper from bismuth or from bismuth, antimony, and tin. G. Spacu and Despina Pirtea (Univ. Bucharest, Rumania). *Acad. Rep. Populare Romîne, Bul. Stiinţ., Ser.: Mat., Fiz., Chim.* 2, 611-18(1950)(French summary).—To the soln. contg. Cu and Sb ions add 0.75 g. tartaric acid for each 0.1-0.3 g. Sb. Dil. to 70-80 ml., add 2.5-3 ml. pyridine and 0.5 g. solid NH_4SCN gradually while stirring. A green ppt. of $[CuPy_2(SCN)_2]$ is formed immediately. When the ppt. has settled, filter through a filter crucible A_3. Wash the ppt. with a soln. of 0.75 g. NH_4SCN + 0.75 g. tartaric acid + 2.5 ml. pyridine + 250 ml. H_2O and then 7–8 times with 2–3 ml. of a soln. contg. 0.13 g. NH_4SCN + 2 ml. pyridine + 48 ml. H_2O in 200 ml. 96% EtOH. Finally wash with abs. EtOH and Et_2O contg. a small amt. of pyridine and dry for 20 min. in vacuo at room temp. If Bi, Sb, and Sn are present in the Cu alloy or mineral, treat with hot concd. HCl, introduce a few ml. H_2O_2 dropwise, heat until all metals are dissolved and the excess H_2O_2 removed. Add 0.75 g. tartaric acid, dilute to 75 ml., and add 5 ml. pyridine and 0.5 g. NH_4SCN with stirring. Wash as described above. Gerhard Auffleger



A new rapid and precise method for the determination of
aluminum. O. Spacu and Th. I. Patea (Univ. Bucharest,
Rumania). *Acad. Rep. Populare Romîne, Bul. Ştiinţ.,
Ser.: Mat., Fiz., Chim.* 5, 619–28 (1953) (French summary).—
Treat a soln. contg. 0.005–0.03 g. Al with an excess (2–6 ml.)
of a 10–15% soln. of Na mercaptobenzothiazole, C_6H_4-
NS_2Na. After stirring, filter through a porcelain filter
crucible A_6 or A_5 or Jena crucible 1G. Transfer all the ppt.
to the crucible with a soln. of 0.1 g. reagent in 100 ml. H_2O.
Wash the ppt. 3–4 times with 2–3 ml. portions of H_2O and
dry at 105–110° for 30–45 min., then weigh. Prepn. of the
reagent: Treat mercaptobenzothiazole with a N soln. of
NaOH. Use a little less than the stoichiometric amt. of
NaOH and remove the excess mercaptobenzothiazole by
filtering. The obtained soln. of $C_7H_4NS_2Na$ has a pH of 8.

Gerhard Aufleger

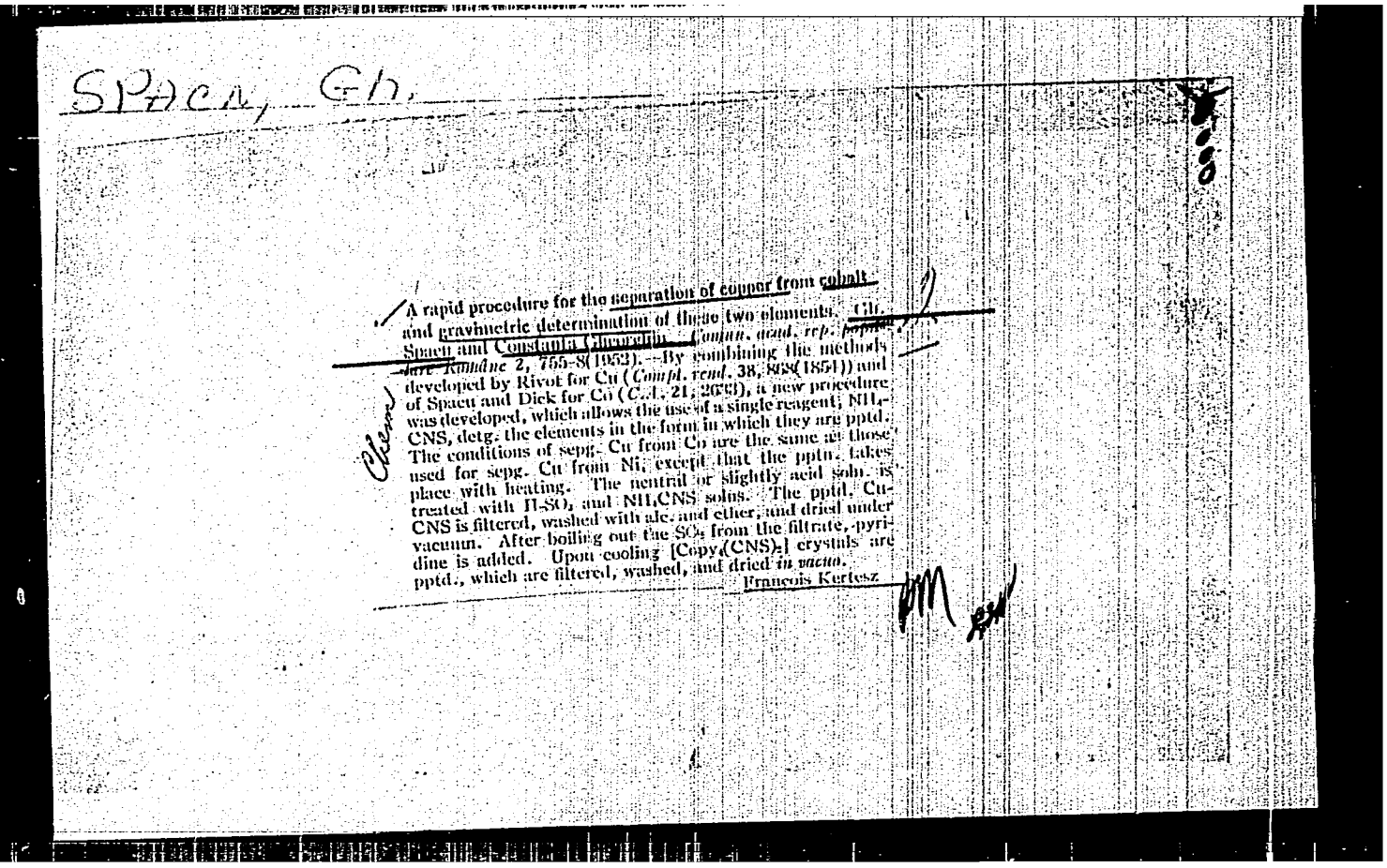


New method for the gravimetric determination of thorium. G. Spacu and Th. I. Pirtea (Univ. Bucharest, Rumania). *Acad. Rep. Populare Romîne, Bul. Ştiinţ., Ser.: Mat., Fiz., Chim.* 2, 699-76(1950)(French summary).—To 5–20 ml. of a soln. contg. 0.02–0.2 g. $Th(NO_3)_4$ add 2–10 ml. of the Na salt of mercaptobenzothiazole soln. while stirring. A white ppt. is formed instantaneously. After stirring for 5 min. filter with a filter crucible A_1 or Jena $1G_4$, wash with 50–100 ml. of a soln. contg. 1–1.5 ml. reagent in 100 ml. H_2O, then 4–6 times with 2 ml. H_2O, dry at 105–110° for 30–45 min., and weigh as $(C_7H_4NS_2)_4Th$. It is important that a large excess (3–4 times) of reagent is used. To prep. the reagent see preceding abstract. Gerhard Anfleger

CA

7

A new gravimetric method for the separation of manganese from iron and aluminum. G. Spacu and Sanda Lupan (Univ. Bucharest, Rumania). *Bul. Soc. Stiinte Acad. Repub. Populare Romîne, Sec.: Mat., Fiz., Chim.* 3, *Mem.* 26, 18 pp. (1950) (French summary).—Mn^{++} can be sepd. from Fe and Al as $[MnPy_4(SCN)_2]$. Treat about 20–40 ml. of the slightly acidic soln. contg. Mn, Fe, and Al ions with 2 g. tartaric acid and enough pyridine to neutralize the acid and leave a slight excess. Shake the mixt. and cool to 5–7°. To the cold soln. add 2.5 g. of solid NH_4SCN. Shake and let stand. After 10 min. filter through a dried and weighed porous crucible. Wash the ppt. with a little dild. reagent until it is free from Fe and Al. Then wash with 1 ml. of 15% pyridine in abs. EtOH and finally with 2 drops pyridine in 5 ml. ether. Dry and weigh. Gerhard Aufdenger



Spacu, Gh.

A rapid procedure for the separation of copper from cobalt and gravimetric determination of these two elements. Gh. Spacu and Constantin Gheorghiu. *Comun. acad. rep. populare Române* 2, 755-8(1952).—By combining the methods developed by Rivot for Cu (*Compt. rend.* 38, 858(1854)) and of Spacu and Dick for Co (*C.A.*, 21, 2658), a new procedure was developed, which allows the use of a single reagent, NH_4-CNS, detg. the elements in the form in which they are pptd. The conditions of sepn. Cu from Co are the same as those used for sepn. Cu from Ni, except that the pptn. takes place with heating. The neutral or slightly acid soln. is treated with H_2SO_3 and NH_4CNS solns. The pptd. Cu-CNS is filtered, washed with alc. and ether, and dried under vacuum. After boiling out the SO_2 from the filtrate, pyridine is added. Upon cooling $[Copy_4(CNS)_2]$ crystals are pptd., which are filtered, washed, and dried *in vacuo*.

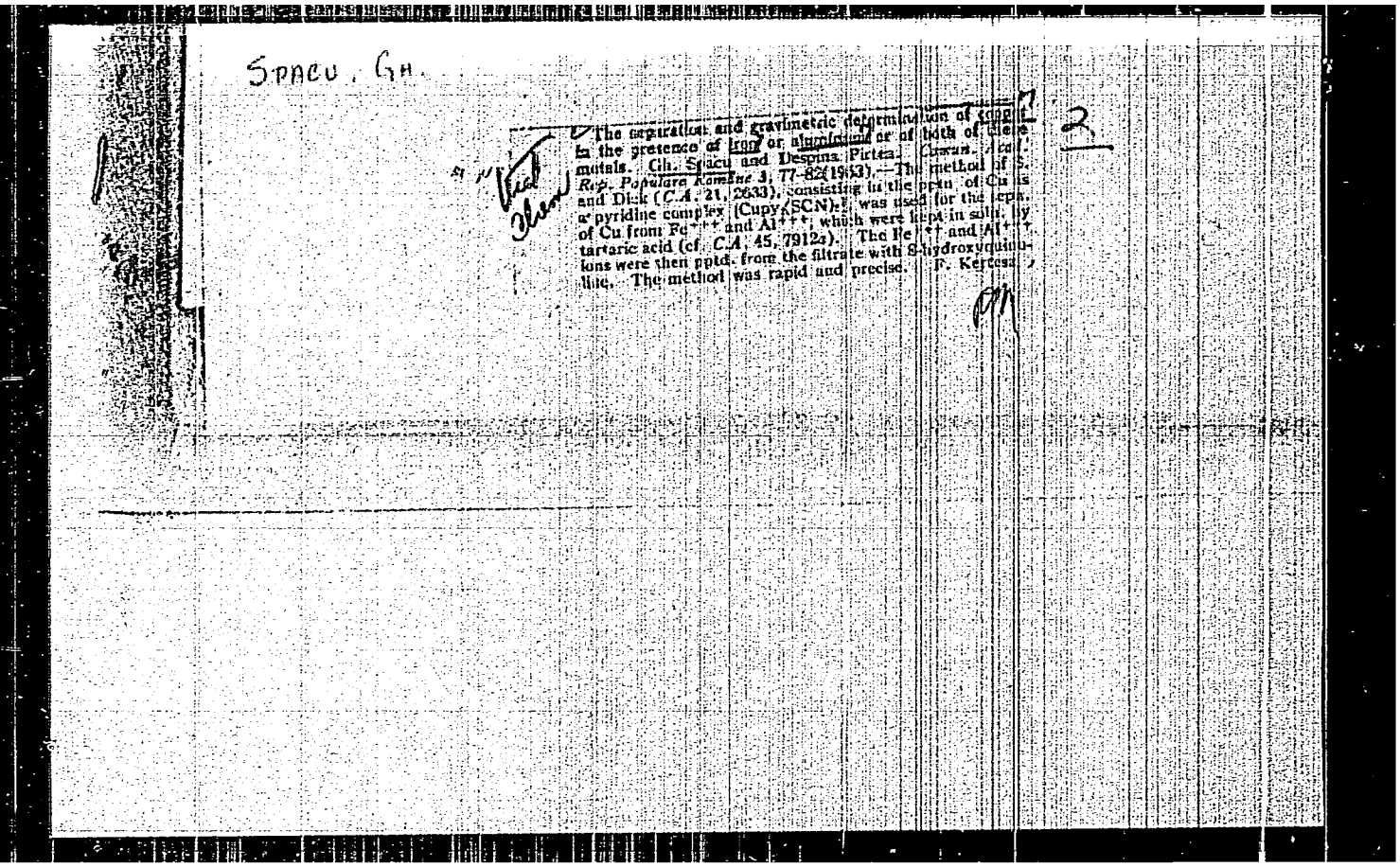
François Kertesz

Spacu, G.

A rapid and convenient procedure for the separation of copper and nickel, and a precise gravimetric determination of these two elements. G. Spacu and Constanta Gheorghiu. *Acad. rep. populare Romîne, Stud. stiinț., Secț. științ. Chim. chim.* 4, 419–23(1952).—Treat a neutral soln. Ni and Cu in the cold with NH_4CNS and H_2SO_3; filter off the ppt., wash with water, alc., and abs. ether, dry *in vacuo*, and weigh as CuCNS. Evap. excess H_2SO_3 from the Ni-contg. filtrate, neutralize with pyridine, and cool to sep. sky-blue crystals of $Nipy_4(SCN)_2$. Filter through a crucible, treat the ppt. in the crucible with a l. of water contg. 4 g. NH_4CNS and 6 g. pyridine; wash with 100 ml. water and a 35% alc., 1.5 ml. pyridine, and 0.1 g. NH_4CNS, then with 100 ml. abs. ether contg. 10 drops of pyridine; dry at room temp. and weigh as $Nipy_4(SCN)_2$. T. Z. Dénessy

Spacu, G.

A new macro- and microchemical gravimetric method for bismuth determination. G. Spacu and Sanda Lupan. *Acad. rep. populare, Romîne, Bul. ştiinţ., Sect. ştiinţ. fiz. şi chim.* 4, 425–31(1952).—The method is based on the formation of a new complex, $[Cr_4(OH)_8en_4]I_4(BiI_4)_n$, of higher mol. wt. than the Bi salts previously used; the sensitivity is 1:300,000. The Bi salt is first dissolved in a soln. of KI to form $KBiI_4$; treatment of this with $[Cr_4(OH)_8en_4]I_4$ in excess gives a yellow ppt. The ppt. is rinsed with water and 50% alc., then 96% alc. and ether, and dried *in vacuo* over P_2O_5. The method is accurate, and requires 1–3 hrs., according to the quantity of Bi present. T. Z. Denesy



SPACU, Gh.

The separation and gravimetric determination of copper in the presence of iron or aluminium or of both of these metals. Gh. Spacu and Despina Pirtea. *Comun. Acad. Rep. Populare Romîne* 3, 77–82(1953).—The method of S. and Dick (*C.A.* 21, 2633), consisting in the ppn of Cu as a pyridine complex $(CuPy_2(SCN)_2)$, was used for the sepn. of Cu from Fe^{+++} and Al^{+++}, which were kept in soln. by tartaric acid (cf. *C.A.* 45, 7912a). The Fe^{++} and Al^{+++} ions were then ppted. from the filtrate with 8-hydroxyquinoline. The method was rapid and precise. F. Kertesz

Spacu, G.

RUM.

New methods for the separation of copper from molybdenum and their determination. G. Spacu and Constanta Gheorghiu (Univ. Bucharest, Romania). *Acad. Rep. Populare Romîne, Studii Cercetări Chim.* 2, 7–13(1954) (French summary).—Two methods are described: (1) treat the neutral or slightly acid soln. at 60° dropwise with an excess of H_2SO_3 and NH_4SCN (I). Filter the CuSCN through a filter crucible, wash with H_2O, EtOH, and finally with abs. Et_2O; dry for 10 min. *in vacuo* and weigh. Boil the filtrate SO_2-free, add hot concd. HNO_3 until the soln. is colorless, and boil off the excess acid. The Mo can now be detd. volumetrically by reduction with electrolytic Cd in the presence of Fe^{3+} and subsequent $KMnO_4$ titration or, gravimetrically, as $MoO_3(C_9H_6NO)_3$ (II). (2) To 100 ml. of soln. add 0.5 g. tartaric acid and 2–5 ml. pyridine (III) until soln. is dark blue. Add I (0.5 g.), stir, filter the green $[Cupy_2(SCN)_2]$ through a filter crucible. Wash with a soln. contg. I (0.75 g.), III (2.5 ml.) and 0.5 g. tartaric acid in 250 ml. H_2O, then 3 times with 2 ml. of a soln. contg. EtOH (200 ml.), H_2O (48 ml.), I (0.13 g.), and III (2 ml.); finally wash once each with 5 ml. abs. EtOH and 10 ml. Et_2O, each contg. one drop of III. Dry *in vacuo* and weigh. Det. Mo in filtrate as above.

Gerard Aufleger

Spacu, G.

Chem

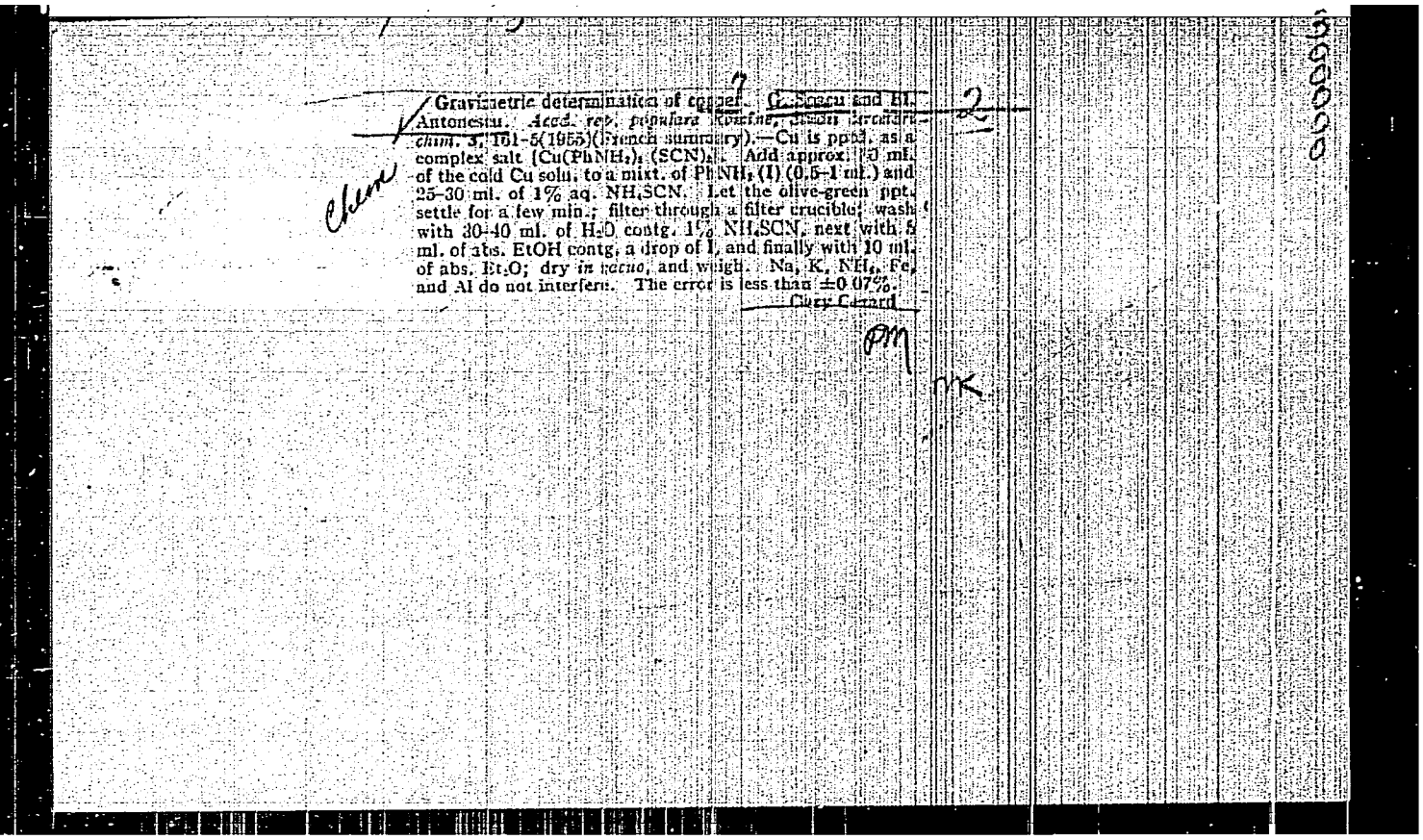
A new method for the separation and gravimetric determination of zinc. G. Spacu and Th. I. Pitiu (Univ. Parhon, Bucharest). *Acad. Rep. Populare Romîne, Studii Cercetări Chim.* 1, 103–9(1953) (French summary).—Zn can be ppd. as $Zn(C_7H_4NS_2)_2$ (I) by adding an excess of a 10% soln. of the Na salt of mercaptobenzothiazole to the slightly acidic soln. (pH 5–6), filtering, washing, and drying at 115–120°. Adding a little NaCl improves the filtration. Na, K, Ca, Ba, Mg, and Sr do not interfere. Calcining I at 800–900° gives ZnO.

Gary Gerard

Spacu, Gh.

Contributions to the study of hexachloroplumbates. II A new class of complex compounds. Gh. Spacu and H. Rădăcină-Brezeanu (C.I. Parhon Univ., Bucharest, Romania). *Acad. rep. populare Romîne, Bul. ştiinţ., Sect. ştiinţe tehn. şi chim.* 6, 173-8(1954)(French summary); cf. *C.A.* 50, 14428d.—To confirm that all the double chlorides of $PbCl_4$ are actually complex salts with an anion $[PbCl_6]^{--}$, $(NH_4)_2PbCl_6$ was treated with various metalammines. Thus, 1 g. of $[CO(NH_3)_6]Cl_3$ in 20 ml. H_2O with 0.68 g. of finely divided $(NH_4)_2PbCl_6$ in a Cl atm. gave the brick-red $[Co(NH_3)_6CO_3]_2PbCl_6$. With acidified solns. of $[Cr(en)_3]Cl_3$, piperazine, urotropine, and quinine it gave the new yellow $[Cren_3]ClPbCl_6.2H_2O$ $H_2C_4H_{10}N_2\ PbCl_6.{}^1/_2H_2O$, $H_2.2C_6H_{12}N_4.PbCl_6.2H_2O$, and $H_2.(C_{20}H_{24}O_2N_2.HCl)_2.PbCl_6$.

Gary Gerard



Gravimetric determination of copper. C. Stoicu and Fl. Antonescu. *Acad. rep. populare Romîne, Studii cercetări chim.* 3, 161–5(1955)(French summary).—Cu is ppd. as a complex salt $[Cu(PhNH_2)_2(SCN)_2]$. Add approx. 10 ml. of the cold Cu soln. to a mixt. of $PhNH_2$ (I) (0.5–1 ml.) and 25–30 ml. of 1% aq. NH_4SCN. Let the olive-green ppt. settle for a few min.; filter through a filter crucible; wash with 30–40 ml. of H_2O contg. 1% NH_4SCN, next with 5 ml. of abs. EtOH contg. a drop of I, and finally with 10 ml. of abs. Et_2O; dry *in vacuo*, and weigh. Na, K, NH_4, Fe, and Al do not interfere. The error is less than ±0.07%.

Clive Cerard

Spec 4, 6

Chem

Determination of cobalt and of cobalt and nickel in the presence of iron and aluminum. G. Spacu and M. Sahiag. *Acad. rep. populare Romîne, Studii cercetări chim.* 3, 167–73 (1955)(French summary).—Co is ppd. as $[Cop_4(SCN)_2]$ while Al and Fe remain in soln. as sol. complexes with $HSC_6H_4CO_2Na$ (I). To a 70–80 ml. soln. of 0.1–0.2 g. Co contg. Fe and Al add an excess of I and, after a few min., 0.5–1 g. NH_4SCN (II). Heat to boiling, add 1–2 ml. pyridine (III), let cool and settle, and filter through a porous filter crucible (A_3 or A_4). Wash with a soln. contg. III (7 ml.), II (5 ml.), and I (1 g.) per l. of H_2O, then 5 to 6 times with a soln. contg. 95% EtOH (120 ml.), H_2O (855 ml.), III (15 ml.), II (1 g.), then with 1–2 ml. of a soln. contg. III (1 ml.) in 25 ml. abs. EtOH, and, finally, 8–10 times with small amts. of abs. Et_2O contg. III (4 drops in 30 ml.). Dry *in vacuo* to const. wt. and weigh. Co and Ni are sepd. and detd. similarly. The error of the method is less than 0.5%. — Gary Gerard

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Spacu, G.

Gravimetric determination of bismuth. G. Spacu and Florica Popea (C. I. Parhon Univ., Bucharest). *Acad. rep. popular Romîne, Studii cercetări chim.* 3 175–81(1955) (French summary).—Bi is pptd. as *trans*-[$Co\,en_2Cl_2$]$_3$[$BiCl_6$], a stable cryst. complex. To the ice-cold, slightly acidic (HCl) soln. contg. 4–50 mg. Bi, add 0.3 g. NH_4Cl and 1 ml. of an EtOH soln. of 0.4–0.5 g. *trans*-[$Co\,en_2Cl_2$]Cl (I) in dil. HCl (1:4). The vol. of the mixt. should not exceed 75 ml. Agitate vigorously for 5 min.; let settle for 30–45 min.; filter out the green ppt. with a porous filter crucible; wash with small portions of a soln. contg. I (0.1 g.), H_2O (50 ml.), EtOH (40 ml.) and HCl (d. 1.19, 1 ml.); wash with 96% EtOH, abs. EtOH, and abs. Et_2O; and dry *in vacuo* to const. wt. Na, K, Ca, NH_4, sulfate, and acetate ions do not interfere although the presence of metals from the 2nd group does. The error of the method is less than ±0.5% and decreases at the higher Bi concns.

Cary Grant

Spacu, G.

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A new method for the separation and determination of molybdenum and cobalt. G. Spacu and Constantin Gheorghiu. *Commun. Acad. Rep. Populare Romine* 5, 385-8 (1955).—The method is based on the sepn. and detn. of Co as $[CoPy_4(SCN)_2]$ (cf. *C.A.* 21, 2448), the Mo being detd. in the filtrate as quinolinol (cf. *Z. anal. Chem.* 83, 470 (1931)). To 75 to 80 ml. of neutral or weak acid soln., contg. the Co^{++} and MoO_4^{--} ions, 0.5 g. of tartaric acid and 0.5 g. NH_4CNS are added. Several drops of pyridine is added at room temp. until a light white cloud appears. The soln. is heated to boiling and 1-3 ml. of pyridine is added. After cooling, the ppt. is filtered through a sintered-glass crucible and washed with a soln. contg. 7 ml. pyridine, 5 g. NH_4CNS, and 1 g. tartaric acid in a l. of water. The ppt. is further washed on the crucible with an alc. soln. contg. 130 ml. 96% EtOH, 855 ml. distd. water, 15 ml. pyridine, and 1 g. NH_4CNS, then with 1 ml. abs. alc. contg. pyridine (2.5 ml. alc. plus 5 drops of pyridine). Finally the ppt. is washed 8-10 times with abs. ether to which pyridine is added (30 ml. ether plus 4 drops of pyridine). The ppt. is dried in a vacuum for 3-10 min. and weighed as $[CoPy_4(SCN)_2]$. For the detn. of Mo, the filtrate is evapd. to 80 ml., neutralized with NH_4OH in the presence of Na alizarinsulfonate and 10 ml. of *N* NH_4OAc is added. The soln. is heated to boiling and Mo is pptd. as $MoO_2(C_9H_6NO)_2$ with a 3% soln. of *o*-quinolinol in 4*N* AcOH. The ppt. is filtered through a sintered-glass crucible, washed with hot water, and dried for 2 hrs. at 130°. R. Mavrodineanu

SPACU, G. ; LUPAN, S.

Research on causes preventing under certain conditions precipitation of small quantities of lead by hydrogen sulfide; new complex combinations of lead. p. 555. (COMUNICARILE. Rumania. Vol. 5, no. 3, Mar. 1955)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

SPACU, G.

Rapid precise process for separation and gravimetric quantitative anayysis of zinc in the presence of iron and aluminum. p. 859.
ACADEMIA REPUBLICH POPULARE ROMANE. Rumania Vol. 5, no. 5, May 1955.

SOURCES: EEAL LC Vol. 5, No. 11, August 1956