

NEW LITERATURE CITATIONS FOR 1948 TO 1950

1948

2886a. FOLDVÁRI-VOGL, M.

Spectral Analytic Determinations of the Zirconium Content in the Fuller's Earths (Bentonites) of Nagytétény.

Magyar Allami Földtani Intézet Evi Jelentése, Sec. B. Beszámoló, 10, 65-76 (in English, 72-3) (1948).

C. A., 48, 3215g (1954).

Chem. and spectrographic analyses of heavy mineral concentrates that contained all the zircon correspond to 0.014 to 0.015% ZrO_2 in the dried fuller's earth.

2937a. LEVINTOV, I. I.

Spectral Analysis of Difficultly Excitable Elements in Solids and Solutions.

Problemy Kinetiki i Kataliza, Akad. Nauk S.S.S.R., Inst. Fiz. Khim. No. 5, Metody Izucheniya Katalizator 180-97 (1948).

C. A., 49, 3719d (1955).

Cf. Pfeilsticker, *C. A.*, 37, 4651³; Sventitskii, Zhur., *Eksptl. i Teoret. Fiz.*, No. 14, 235 (1945); Mandel'shtam, Thesis, Diss. (*Fiz. Inst., Akad. Nauk. S.S.S.R.* (1940)).

A review.

1949

3122a. CANALS, E., MARIGNAN, R., AND OSTROWSKY, R.

Spectrographic Investigation of Traces of Heavy Metal Ions in Mineral Waters.

Trav. soc. pharm. Montpellier, 9, No. 3, 40-2 (1949).

C. A., 48, 4733g (1954).

The heavy metals in the liquid sample are adsorbed on C, and the a.-c. spark spectrum of the dried C is obtained. The sensitivity with this technique is 1 part per million. To conc. more dil. solns., the sample is adsorbed on $CaCO_3$, the $CaCO_3$ dissolved in dil. HCl, the soln. evapd. to dryness, and the residue examd. as above.

3199a. KOMAROVSKIĬ, A. G.

Determination of Concentrations of Calcium in Steels by the Spectral Method.

Zavodskaya Lab., 15, 1435-7 (1949).

C. A., 49, 11495i (1955).

A method is described for the spectral detn. of small quantities of Ca (0.01-0.03%) in steel.

3295a. VOINAR, A. O.

The Contents of Trace Elements in the Liver as Determined by Spectrochemical Emission Analysis.

Ukrain Biokhim. Zhur., 21, 87-99 (in Russian, 99-102) (1949).

C. A., 48, 4034b (1954).

Dog livers and the glycerol exts. thereof were ashed at no more than 450° in a Pt

crucible with a trace of HNO_3 . Twenty-five elements were detd. in the ash which was placed in the lower anode of an elec. arc. The arc was burnt for 6 min., and exposures were made at the beginning of the first and the end of the sixth min., to be sure to get both the highly and difficultly volatile elements. A Hilger spectrograph was used in the region of 2400-3500 Å. B could not be detd. as the C arc contained B; no attention was given to Na, K, Ca, Mg, Fe, and P. As a rule the glycerol ext. contains less of the element than the whole liver, with the exception of Cu and Ag, where both contain the same amt., and Sn, where the glycerol ext. contains more. The presence of Be, Zr, Rh, Pd, and In was shown for the first time. Per 100 g of dried liver, the following values were found: Al 1; Si up to 30; Ti 0.01 mg.; V trace; Mn 1 mg.; Co present in variable amts., Ni 0.1 mg. (These last two detns. are of special importance, as various workers claim that Co and Ni did not occur in the liver of warm blooded animals); Cu up to 5 mg.; Zn and Cd are present, here the dithizone method must be used for quant. detn.; Mo 0.05; Ag 0.025; Sn 0.2; Pb up to 0.5 mg.; and Be, Zr, Rh, Pd, In, Ca, Li, Nb, Ba, Tl, and Bi in extreme traces. There is no direct relation between the enzymic power of the glycerol ext. and its content of Al, Si, Ti, V, and Pb.

1950

3330a. BOROVİK, S. A.

The Use of Certain Molecular Spectra for the Analysis of Minerals.

Doklady Akad. Nauk, S.S.S.R., 75, 739-40 (1950).

C. A., 49, 2247g (1955).

The nature of the band spectra of SiO_2 , Al_2O_3 , CaO , and CaF_2 has been studied because their characteristic bands appear clearly in the spectra of a number of minerals. The presence and intensity of these bands in various minerals is shown in tables.

3366b. CROPPER, F. R.

Physical and Physicochemical Methods.
Ann. Repts. Progr. Chem. (Chem. Soc. London) **47**, 399-407 (1950).
C. A., **48**, 9857e (1954).

Progress in the development of physical methods of chemical analysis since 1949 is reviewed for emission spectroscopy, absorptiometry, fluorimetry, ultraviolet absorption spectrophotometry, infrared absorption spectrophotometry, Raman spectroscopy, and X-ray absorption and diffraction methods, as revealed in 123 listed papers published during 1949-1950.

3375a. EDNERAL, T. B., KORITSKIĬ, V. G., AND SHAROVA, T. N.

Possibility of Carrying Out the Spectral Analysis of High-Alloy Steels by the Method of Parallel Calibration Curves.
Izvest. Akad. Nauk S.S.S.R., Ser. Fiz., **14**, 584-5 (1950).

Chem. Zentr. **1951**, II, 2503.

C. A., **49**, 10800d (1955).

The tertiary alloys, Fe-Cr-X, Fe-Mn-X, and Fe-Ni-X, were prepd., in which the 3rd component, X, was W, Mo, Mn, Ti, Si, C, Al, or Ni. Part of these elements caused a parallel displacement of the curve; others changed its slope. When the latter effect was used to det. the concn. of the 3rd alloying element the error was large for low contents (<1%) but small for higher contents (>1%).

3392a. GAYDON, A. G.

The Emission Spectra of Flames.
Quart. Revs. (London) **4**, 1-19 (1950).
C. A., **48**, 4966f (1954).

A review with 56 references.

3398a. GOPSHTEIN, N. M. AND PEDOS, F. Z.

Photoelectric Integration Circuit for Spectral Analysis.

Zavodskaya Lab., **16**, 1264-5 (1950).

C. A., **49**, 11330c (1955).

3537a. RUSANOV, A. K., GUSYATSKAYA, E. V., AND IL'YASOVA, N. V.

The Photometric Flame Method for the Determination of Sodium and Potassium in Solutions.

Zavodskaya Lab., **16**, 447-53 (1950).

C. A., **49**, 12189h (1955).

A rapid method is described for detg. the simultaneous presence of Na and K in solns. by the photometric analysis of the intensity of spectral lines excited in an acetylene flame. The intensity of the red lines of K (7664.9 and 7699.0 Å.) and of the yellow lines of Na (5895.9 and 5890.0 Å.) were detd. This method can be used to det. K in the concn. range 0.002-1% with an error of $\pm 5\%$ and Na in the concn. range 0.004-1% with an error of 6%.

3572a. SUMIN, N. G.

Accessory Elements in Spinels.

Trudy Mineralog. Muzeya, Akad. Nauk S.S.S.R., No. 2, 113-25 (1950).

C. A., **49**, 12204i (1955).

The spectral-analytical examn. of 22 selected spinel samples, 13 of which are from Russian occurrences, especially from the Urals and western Siberia, is used for a classification in paragenetic groups, e.g. of spinels from Fe ore deposits or from contact-metamorphic rocks. The mineral species investigated were chiefly pure Mg spinel, Fe-Mg spinel (pleonaste), and gahnite. (See *C. A.*, for complete abstract.)