Part II lists the stronger lines and intensities of 93 elements. Excitation energies in electron volts are given for about 75 per cent of the lines. In Part III are presented several short auxiliary tables, mainly of physical properties and sensitive spectral lines, which are designed especially to aid in spectrochemical analysis. These include ionization potentials, atomic and molecular weights of the elements and their oxides, with their melting and boiling points, a table of the elements in sequence of their appearance in the spectrum of the carbon arc, a short list of sensitive lines of the elements in order of wavelengths and by elements, a table of strong lines between 2000 and 1800A, a table of iron lines suitable for intensity standards, and spectra of the hydrogen molecule and of deuterium.

A major feature of this book lies in the selection and arrangement that was made of the more important data on wavelengths and intensities. Many weaker lines, especially in the spectra of the less common elements, were omitted. The inclusion of excitation energies in Part II provides the first extensive compilation of such data in convenient form. These features and the useful auxiliary tables should be helpful particularly to the spectrochemical analyst. However, some caution should be observed in using the tables, since errors that were present in the M. I. T. tables may be found in this book; for example, 2592.627 Cu I, intensity 1000, is in error and should appear as 2392.627. The translations between languages may result in misspelling; for example, on page xx, Muir should be Moore (C. E.). However, these minor errors do not detract seriously from the general usefulness of the book.

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48 [S, V].—L. S. BARK, P. P. GANSON & N. A. MEĬSTER, *Tablit͡sy skorosti zouka v morskoĭ vode* (*Tables of the Speed of Sound in Sea Water*), Moscow, 1961, xiii + 182 p. + inserts, 26 cm. Price 1.73 rubles.

These tables of the speed of sound in sea water were computed in 1960 on a Strela-3 computer and a T-5 tabulator in the Computation Center at the request of the Institute of Oceanology supported by the Institute of Acoustics (all of the Academy of Sciences USSR).

Since the authors believe that previous tables, published by the British Admiralty [1], were based on formulas less accurate than Del Grosso's formula [2], they have based their tables on the Del Grosso formula

$$v = 1448.6 + 4.618t - 0.0523t^2 + 0.00023t^3 + 1.25(S - 35) - 0.011(S - 35)t + 0.0027 \times 10^{-5}(S - 35)t^4 - 2 \times 10^{-7}(S - 35)^4(1 + 0.577t - 0.0072t^2),$$ where t is the temperature in degrees Centigrade and S is the salinity in parts per 1000.

The tables consist of two parts, supplemented by appendices consisting of eight nomograms of the speed of sound and by tables of corrections for depth. These appendices are inserted in a cover pocket. The tables are divided into two parts because the Del Grosso formula yields a guaranteed accuracy of 0.2 m./sec. only when the salinity is more than 19 parts per 1000. The first part of the tables (pages 1–36) gives values of the speed of sound for a range of temperatures from

$-2°$ to 33°C and salinity from 0 to 20 parts per 1000. This ensures precision in the determination of the speed of sound in water, within this range of salinity, of 0.6 m/sec without interpolation.

The second part of the tables (pages 37–180) covers the same temperature range and salinity ranging from 20 to 40 parts per 1000. The steps are, respectively, 0.05°C and 0.2 part per 1000; thus, the precision of determination of the speed of sound without interpolation is here 0.3 m/sec.

The nomograms are divided into two groups according to salinity, the first group containing Nomograms 1 to 3 for salinity ranging from 0 to 20 parts per 1000, and the second group containing Nomograms 4 to 8 for salinity from 20 to 40 parts per 1000. The range of temperature represented in these nomograms is $-2°$ to 30° Centigrade.

Since the values given in the tables and nomograms are values for zero depth in sea water, it is necessary to introduce the correction, Δv_p, for depth. These values are given for depths ranging from 0 to 10,990 meters. They are always positive, and are considered constant at 0.0161 m./sec. for depths up to 100 meters. The tables of corrections (pages x to xii, also one insert page) are based on the contents of W. D. Wilson's paper entitled "Speed of sound in sea water as a function of temperature, pressure and salinity," in the *Journal of the Acoustical Society of America*, v. 32, 1960, p. 641–644. Another basic assumption used in compiling the correction table is that a depth of 10 meters corresponds to a hydrostatic pressure of 1 kg/cm^2.

The references include three British, four Soviet, and five American authors.

The format of the tables is clear and convenient. Since only a few table and column headings are involved and the format of the tables is clear, these tables could be of value to persons who make use of similar publications in the English and German languages.

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1. *Tables of the velocity of sound in pure and sea water for use in echo sounding and sounding ranging*, Hydrographic Department of the Admiralty, London, 1927; also D. J. MATHEWS, *Tables of the velocity of sound in pure water and sea water*, 2nd ed., 1939; 3rd ed., 1944, Hydrographic Department of the Admiralty, London.
2. V. A. DEL GROSSO, *The Velocity of Sound in Sea Water of Zero Depth*, Report N 4002, Naval Research Laboratory, Washington, 1952.

49 [S, X].—RUDOLPH E. LANGER, Editor, *Partial Differential Equations and Continuum Mechanics*, The University of Wisconsin Press, Madison, 1961, xv + 397 p., 24 cm. Price $5.00.

This volume prints in full the invited papers and in abstract the contributed papers at a symposium in 1960. As to be expected in such a case, the quality of the papers is uneven. As a whole, the papers on pure analysis represent the state of the art in their field much better than those on continuum mechanics, which are also far fewer in number. The typing is as attractive as typing can be, and there are fewer misprints than usual, but the reviewer fails to see why the Department of the Army of the vaunted richest country in the world cannot afford ordinary printing as used by our poorer neighbors, or what purpose is served by publication of