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OTHER AIDS TO COMPUTATION

Bibliography Z–VI

1. Kingsland Camp, "A duodecimal slide rule," *The Duodecimal Bull.*, v. 4, no. 2, Oct. 1948, p. 7–12. 14 × 21.6 cm.

   A discussion of problems involved in producing such a computing instrument.

2. N. A. Carle, "Graphic presentation for solving cubic equations," *Civil Engineering*, New York, v. 18, June 1948, p. 53. 20.9 × 28.6 cm.

The equation $x^3 - 11.52x + 9.61 = 0$ is solved by means of three calculated tables, in connection with the simultaneous equations $y = x^3$, $y = 11.52x - 9.61$.

3. L. J. COMRIE, "Regnekunst—i Fortid, Nutid og Fremtid," *Naturens Verden*, Copenhagen, v. 32, 1948, p. 140–156. 15.7 × 23.2 cm.

This is a Danish translation of the English article to which we have referred *MTAC*, v. 3, p. 53–54.

4. RAY E. GILBERT, "New assay slide rule computes complex ore values," *Engineering and Mining Jn.*, v. 149, no. 6, June 1948, p. 95–97. 21 × 28.6 cm.

Description of an assay slide rule now in use at the Mayflower mine of the New Park Mining Co., Park City, Utah, for determination of ore value, where factors taken into account include price of metal and grade of ore, and changes in smelter penalties and bonuses related to grade of ore.

5. DONALD F. OTHMER, SAMUEL JOSEFOWITZ, & A. E. SCHMUTZLER, "Correlating densities of liquids. A new nomograph," *Industrial and Engineering Chemistry*, v. 40, May 1948, p. 883–885. 20.3 × 28.2 cm.

Summary: "Densities of liquids may be plotted directly to give straight lines on logarithmic paper against a temperature scale developed from the critical temperature and densities of a reference liquid. The method of correlation follows the technique used for vapor pressures, viscosities, surface tensions, and other physical properties of liquids and gases and is then expanded into a nomograph which allows direct determination of the density of organic liquids at any temperature when the density for that liquid at two different temperatures is known. Mathematical derivations indicate the theoretical basis of this plot and the resulting nomograph."

6. R. HUME PURDIE, "The use of the Burroughs type 70 stock accounting machine for preparation of tables of values of polynomial functions," Soc. Chemical Industry, London, *Chemistry & Industry*, no. 17, Apr. 24, 1948, p. 265–266. 21.6 × 28 cm.

7. RAYMOND REDHEFFER, "A machine for playing the game of nim," *Amer. Math. Mo.*, v. 55, June–July 1948, p. 343–349.

The game of nim was named and first described in print by Professor C. L. BOUTON in "Nim, a game with a complete mathematical theory," *Annals Math.*, s. 2, v. 3, p. 35–39, 1901. Then followed E. H. MOORE, "A generalization of the game called nim," *Annals Math.*, s. 2, v. 11, p. 93–94, 1910.

"In 1940, E. U. CONDON, director of the Nat. Bureau of Standards, obtained a patent on a machine for playing the normal case of the game forming the subject of this article.[1] The circuit appears to be quite different, however, from that considered here, and makes extensive use of relays. A model of this machine for four piles with a maximum of seven objects in each was actually built as an exhibit for the New York World's Fair. Since that machine contained over a ton of equipment, while the present one weighs only about five pounds, it is felt that this article will be of interest."

[1] E. U. CONDON, G. L. TAWNEY, W. A. DERR, "A machine to play the game of nim," U. S. Patent no. 2,215544, Sept. 24, 1940.

8. H. RICHARDSON, "Slide rule solves gas flow and dust sampling problems," *Chemical Engineering*, v. 55, no. 7, July 1948, p. 124–125. 20.5 × 28.6 cm.

Quotation: "During 14 years of test work in gases I have developed the special slide rule scales shown here for the solution of the more commonly used calculations in making velocity measurements with the pitot tube, in determining the vapor pressure and moisture

content of air from the dewpoint temperature, and in finding the proper rate of sampling in dust determinations."

9. PETER L. TEA, "A mechanical integraph for the numerical solution of integral equations," Franklin Institute, *Jn.*, v. 245, May 1948, p. 403–419.

Excellent mathematical discussion and integraph description, together with a table of results obtained by BUCKLEY and HEDEMAN, already referred to by us in reviewing an earlier paper by TEA (*MTAC*, v. 2, p. 41–42).

10. B. C. WILKAS, "Nomograph solves equations for laboratory soil permeability coefficient," *Civil Engineering*, New York, v. 18, June 1948, p. 51–52. 20.9 × 28.6 cm.

The equations in question are $K_T = .0738RFL_S'/t'H_{WC}$, and $K_{20} = K_T\nu_T/\nu_{20}$.

11. HEINZ WITTKE, *Die Rechenmaschine und ihre Rechentechnik. Eine Einführung und ein Übungsbuch mit ausgewählten Anwendungsbeispielen aus der Geodäsie, Geometrie und angewandten Mathematik* (*Sammlung Wichmann*, v. 12). Berlin-Grunewald, Herbert Wichmann, 1943, viii, 161 p. 17.1 × 24.9 cm.

NOTES

96. BARTHOLOMÄUS PITISCUS (1561–1613).—It is the purpose of this Note to summarize some information about Pitiscus and his mathematical work, and to give references to the sources where further details may be gleaned.[1–18] We shall particularly try to give comprehensive indications of his activity in connection with the publication of mathematical tables, and their editions. Here certain facts not mentioned in any of the sources below, and others rarely noted, shall be presented.

Very little is known concerning the life of Pitiscus who was born near Grünberg in Silesia. He pursued theological studies in Heidelberg and for more than a score of the last years of his life he was court chaplain and court preacher for Elector FREDERICK IV of the Palatinate. During these latter years he published various editions of a Trigonometry, and Mathematical Tables, and edited and published, just before his death in 1613, the fine sine tables of RHETICUS (1514–1576).

The word Trigonometry is due to Pitiscus[13] and was first printed in his

1. *Trigonometria: sive De Solvtione Triangvlorvm Tractatus breuis & perspicuus*, 57 p. which was published as the final part (p. 157–213) of the following work by ABRAHAM SCULTETUS[7] (1566–1625) Professor of theology at the University of Heidelberg: *Sphaericorvm Libri Tres Methodicé conscripti & utilibus scholiis expositi.* Heidelberg, 1595, 213 p. This Pitiscus *Tractatus* was developed into the [viii] 371-page volume (2 uncounted white p. between p. [214] and 215),

2. *Trigonometriæ siue De dimensione Triangulor Libri Qvinqve. Item Problematvm variorv. nempe Geodaeticorum, Altimetricorum, Geographicorum, Gnomonicorum, et Astronomicorum: Libri Decem Trigonometriae Svbivncti, Ad Vsvm Eivs Demon-Strandvm.* Augsburg, 1600. The Trigonometry ends