D. H. FOWLER

FURTHER ARITHMETICAL TABLES

Further Arithmetical Tables

The following arithmetical tables have now been published, further to those listed in my catalogue in *ZPE* 75 (1988) 273-80. They are arranged and numbered here by date of publication; otherwise their presentation is as in the earlier catalogue.

70. P. Mich. [inv.] 6944, in **G. Schwendner, *Literary and Non-Literary Papyri from the University of Michigan Collection***, dissertation, Ann Arbor 1988, on pp. 29-30; II BC. Multiplication table: 2x3, 3x2, …, 2x6, 6x2.

71. (WT.) **P. Florentina XVIII 4 & 5** (= P. Vat. gr. [inv.] 53), VII AD. Two sides of a tablet, with tables of 4' and 2', with verifications; photograph.

72. (WT.) **P. Florentina XVIII 7** (= P. Vat. gr. [inv.] 55A), VII AD. One side of a tablet, with tables of 17' and 19', with verifications; photograph.

73. (WWT.) **P. Florentina XVIII 16 & 17** (= P. Vat. gr. [inv.] 60 & 61), VI AD. Three sides of a school book of six tablets, containing tables of 15', 16', 17', 18' and 19', with verifications; photograph.

74. (WT.) **P. Florentina XVIII 22** (= Ashmolean Museum [inv.] 1982.1119), AD 544-545. One side of a tablet, with a multiplication table of 4x1 to 10, and 5x1 to 10; photograph.

75. (WWT.) **P. Florantina XVIII 26** (= Louvre [inv.] MNE 911). One side of a schoolbook of five tablets, containing the end of a table of 8'; photograph.

76. (WWT.) **P. Florentina XVIII 34 & 35** (= Louvre [inv.] MNE 912). Two sides of a schoolbook of five tablets, containing an exercise of division by 2, from 20 to 40; photograph.

77. (WWT.) **P. Florentina XVIII 37 & 38** (= Louvre [inv.] MNE 912). Two more sides of the same schoolbook as the previous entry, containing additions of 5 to 6, 7, 8, & 9, and of 200 to the hundreds from 200 to 900; photograph.

78. (WWT.) **P. Florentina XVIII 46** (= Louvre [inv.] MNE 913). One side of an incomplete schoolbook of four tablets, containing traces of the beginning of a table of 17'. (Other parts of this tablet contain calculations of great interest and perplexity.) Photograph.

79. (WWT.) **P. Florentina XVIII 50** (= Louvre [inv.] MNE 913). Another side of the same book as the precious entry, containing a short multiplication table: 2x1, 10, 100, 1000; photograph.

80. (WWT.) **P. Florentina XVIII 52-54, 57, 59, 60, 68, & 69** (= Louvre [inv.] MNE 914). Eight sides of a schoolbook of ten tablets containing partially legible tables, including 2', 3', and 4'; photograph.

81. (WWT.) **P. Florentina XVIII 78** (= Pierpont Morgan Library [inv.] 1032), V AD(?). One side of a schoolbook of five tablets containing a table of 17', from 1 to 10 (at which point no room is left on the tablet) with partial verifications of each entry; photograph.

82. (WWT.) University of Trier, in **J. Shelton, "A Division Table at Trier",** *ZPE* 77 (1989), 209-10; VI or VII AD. One half of a tablet of a schoolbook containing a table of 2'.

83. **MPER XVIII 306a**, VI AD, Coptic, school exercise. Part of an addition table: 6+5, 5+6, 6+6, 6+6 (*sic*), 6+7, 7+6, 6+8; 7+3, 3+7, to 7+6; 10+9, 9+10, 10+10, 10+10; photograph.

84. **MPER XVIII 307**, VIII AD, Coptic, school exercise. Part of a multiplication table: 3x1, 1x3 to 3x10, 10x3; photograph.

85. **MPER XVIII 308**, X-XI AD, Coptic, on paper, school exercise. Part of a multiplication table: 7x2, 2x8, 8x2, 2x9, 9x2, 2x10, 10x2; photograph.

86. **MPER XVIII 308a**, XI-XII AD, Coptic, on paper, school exercise. The numerals 1 to 10 and a multiplication table: 2x1 to 2x10; photograph.

87. **MPER XVCIII 309**, XI AD, Coptic, on paper, a complete school book of 8 pages. Multiplication tables: 2x1, 2x2, 2x3, 3x2, 2x4, 4x2, etc. to 10x2; then 3x, 4x to 10x, (no 20x), 30x to 100x; then 2x1, 2x10, 2x100, 2x1000, 2x2, 2x20, etc. to 2x10000; 3x, and 4x to 4x5000; only one error in the whole table, 60x8=280! Photograph.

88. **MPER XVIII 310**, XI AD, Coptic, on paper, school exercise. Part of a multiplication table: 2x1 to 2x9, 3x6 to 3x10, 4x1 to 4x3, 4x10, and 5x1; photograph.

89. **MPER XVIII 310a**, XI-XII AD, Coptic, on paper, school exercise. Fragments of 2x and 3x mukltiplication tables; photograph.

90. **MPER XVIII 311**, XI AD, Coptic, on paper, school exercise. Multiplication tables in format x1 to x9, x10 to x90, x100 to x 1000, with some gaps: 2x, 3x, 4x, 5x, and 6x; photograph.

91. **MPER XVIII 312**, X AD, Coptic, on paper. Part of a multiplication table: 3x5 to 3x10, 4x1 to 4x10, 6x5 to 6x10, 7x1 to 7x10. 9x6 to 9x10, 10x1 to 10x10; photograph.

92. **MPER XVIII 315**, X AD, Coptic, on paper. Part of a multiplication table: 5x7, 5x70, 5x700, 5x7000, and similarly 5x8, 5x9, 5x10, 6x1, 6x2, and part of 6x4; photograph.

93. **MPER XVIII 317a**, X-XI AD, Coptic, on paper, school exercise. Fragment of a multiplication table: 30x6 to 30x9; photograph.

94. **MPER XVIII 318**, XI AD, Coptic, on paper, school exercise. Part of a multiplication table: 8x5, 8x50, 8x500, 8x5000, and similarly but incomplete 8x7, 9x1, 9x2, 9x4, 9x5, 9x5, 9x7, 9x8, 10x1, 10x2; photograph.

95. **MPER XVIII 319**, XI AD, Coptic, on paper, school exercise. Part of a multiplication table: 7x600, 7x6000, 7x7, 7x70, 7x700, 7x7000, and similarly 7x8, 7x9, 7x10, 8x1 to 8x10, 9x1 to 9x4; photograph.

96. **MPER XVIII 320**, XI AD, Coptic, on paper, school exercise. Fragment of a multiplication table: 50x7 to 50x10, 60x7 to 60x10, 70x6 to 70x10, 80x7 to 80x10, 90x7 to 90x10, 100x7 to 100x10; photograph.

97. **MPER XVIII 321**, XI AD, Coptic, on paper, school exercise. Part of a multiplication table: 70x1 to 70x8; photograph.

98. **MPER XVIII 322**, XI AD, Coptic, on paper, school exercise. End of a table of 2' and table of 3'; photograph.

99. **MPER XVIII 326**, XI-XII AD, Coptic, on paper, school exercise. End of a table of 9' (in which 18' is written 2'9'), a small fragment of a table of 10', and, in Arabic, tables of 12' and 24'; photograph.

100. **MPER XVIII 329**, VIII AD, Coptic, school exercise. Table of 30' and table of (monetary?) equivalences which the editor suggests should be read 10 (Keration) = 100 Follis = 60' (of 6000), 20 = 200 Follis = 30', up by 10s to 560 = 5600 Follis = 2'3'10' (of 6000), at which point the table breaks off; photograph.

MPER XVIII 294-306 are exercises in writing numerals, introduced by a discussion of palaeographic matters.

MPER XVIII 305, 313, & 314 = no. 49 of the earlier catalogue; 316 & 317 = no. 50; 323-325, 327, & 328 = no. 11; 330 = no. 9; and 332 = nos. 7 & 47.

101. (WWT.) British Library Add. 34186, in **W. Brashear, "A Trifle"**, *ZPE* 86 (1991), 231-2. This tells the convoluted story of various reproductions of a wooden schooltablet containing, on one side, a multiplication table: 1x1, 2x1, 2x2, …, 2x10, 3x1, …, 3x10.

102. (WT.) University of Michigan Collection [inv.] 29974, in **P. van Minnen, "A Schooltablet in the University of Michigan Collection"**, *ZPE* 93 (1992), 209-11; V or VI AD. One tablet of a schoolbook containing a table of 2', and a multiplication table: 1x1, 2x1, 2x2, 2x3, 2x4, 4x2, 2x5, …, 2x10, 10x2.

103. P. Tebt. II 683 verso; corrected and complete publication in **R. Cribiore, "A table of Squares"**, *Bulletin of the American Society of Papyrologists* 39 (1993), 23-5; late I AD. Table of squares of 1, 2, …, 10, 20, 30, 40; photograph.

104. P. Berol. [inv.] 11702, in **W. Brashear, "Vier neue Texte zum antiken Bil-dungswesen"**, *Archiv für Papyrusforschung* 40 (1994) 30-33; V AD. Fragment of a multiplication table, 2x1, 2x2, 2x20, 2x200, 2x2000, and similarly 2x3 up to 2x10; then 3x1 (at which the fragment breaks off); and, on the verso, similarly 4x9, 4x10, 5x1 to 5x9; photograph. (Note: The other item of great mathematical interest in this article is P. Berol. [inv.] 17469 on pp. 29-30, a fragment of Euclid's *Elements*, the enunciations and figures for I 8-10.)

105. P. Berol. [inv.] 21303, in **W. Brashear, "Literary and sub-literary papyri from Berlin",** *Proceedings of the XXth International Conngress of Papyrologists, Copenhagen 1992* (1994), on p. 291; VII-VIII AD. Fragment of a table of 10' and (on the verso) an unusual multiplication table, 3'x5' = 15', 3'x6' = 18', … 3'x10' = 30'; photograph.

106. P. Berol. [inv.] 21310, same publication as previous, on p. 292, VIII AD. Brief multiplication table or exercise: 5x1, 1x5, 5x1, 4x1, 1x4, 4x1, 3x1, 1x3, and at least fifteen, doodles, or trials at writing cursive forms of 3"; photograph.

107. P. Berol. [inv.] 21308, same publication as previous, on pp. 292-3, VII AD. Brief fragment of tables of 2', 3', and 7'; photograph.

Item 52 has now been fully published as **P. Lud. Bat. XXV 15**, with photograph.

There is a recent catalogue of published schooltablets in W. Brashear & F.A.J. Hoogendijk, "Corpus tabularum lignearum ceratarumque Aegyptiarum", *Enchoria* 17 (1990) 21-54.[1]

University of Warwick, Coventry   D.H. Fowler

---

[1] I would like to thank scholars for keeping me up-to-date with the publication of this kind of material, in particular W. Brashear, R. Cribiore, T. Gagos, L. Koenen, R. Pintaudi, and P.J. Sijpesteijn.