BOOK REVIEWS

"Tricks Games and Puzzles with Matches" by Maxey Brooks

Published by Dover Publications. Price: $1.05

Here are 3 of the 101 Puzzles:

(i) Make 11 squares with 15 matches.

(ii) Put a coin beneath a glass. Support a match between this glass and another one. (Both glasses have their open end downwards in the picture.) Remove the coin without letting the match fall.

(iii) Lay 9 matches on the table and lift them all at the same time with one more match.

Entertaining — and sometimes annoying when you don't solve a puzzle — except that solutions are also included! An enjoyable book.

"Mathematical Puzzles of Sam Loyd" Volume 2, collected and edited by Martin Gardner

Published by Dover Publications. Price: $1.60

Sam Loyd was born in 1841 and died in 1911. During most of his working life he delighted fellow Americans with published puzzles of all kinds and thus became a national figure. Martin Gardner has chosen the best of the mathematical puzzles, amending the wording where necessary, and Dover have published them in 2 volumes which feature many of the black and white illustrations that accompanied the originals.

The puzzles themselves range widely from easy to difficult. The easy ones are easy because they merely involve setting up simple equations in x or in x and y; they are ones of the type: "If John is half as old as Mary was when . . ." etc. Presumably in 1874 few people would have encountered the sort of work we now do in 2nd or 3rd form. Of the less easy ones you might care to try the problem of finding out the maximum number of pieces into which a circular pie can be cut with 6 straight cuts of a knife. The book will give you the answer — and a diagram.

"Martin Gardner's Sixth Book of Mathematical Games" from Scientific American. (Copy supplied by ANZ Book Co.)

Published by W.H. Freeman. Price: $9.95

As one always expects from this author, this is a delightful and fascinating book. I discovered in it many appealing games and tricks which anybody could play or perform however small his or her mathematical knowledge might be, although our readers should have the advantage of understanding the basic mathematical principles involved which would give them the edge over other players.

The book contains more than just a collection of games; here is a quotation Martin Gardner uses as an introduction to one chapter which will give you an idea of what I mean:

Three jolly sailors from Blaydon-on-Tyne
They went to sea in a bottle by Klein.
Since the sea was entirely inside the hull
The scenery seen was exceedingly dull.
(By Frederick Winsor)

"Big Book of Mazes and Labyrinths" by W. Shepherd
Published by Dover Publications. Price: $2.10

At first sight, this looks like a book for very young children, but one soon changes one's mind when one tries one of the puzzles; these are often problems in topology which come under the mathematical heading of "graph theory". The size of each page is 11 inches by 8 inches and each of the 50 puzzles has a page to itself, so there is plenty of room for all the unsuccessful attempts one makes before hitting on the right one.
An entertaining Christmas companion!

"Cryptography" by L.D. Smith
Published by Dover Publications. Price: $1.60

Codes basically demand a "dictionary", a standard book or similar means which all code users must have; a simple example might be 23572 meaning page 235, line 7, word 2. Ciphers require that each user must know a standard method of translation: as a very simple example we might transpose adjacent letters. Probably most of us have used ciphers at some time or another when at school. Both codes and ciphers are discussed in this book and you would, through practice at the problems given be much better cryptographers when you finish the book! The problems, of course, involve the cracking of codes and ciphers and are well worth your efforts.

"Let's look at the figures" by D.J. Bartholomew and E.E. Bassett
A Pelican original published by Penguin Books. Price: $1.35

While being aimed particularly at students of social science, this book seems to me to be a good basic introduction to probability and statistical techniques. As the authors warn, it needs to be read through rather than dipped into both because it leads the reader from the simple to the complicated and because constant reference back to earlier examples is systematically used to develop new ideas. I found it workmanlike in its constant reference to practical applications of statistics and would recommend it to anybody anxious to find out what contingency tables are, what a standardised normal distribution is and, above all, to those anxious to learn how a good statistician decides between fluctuations which are significant and need further probing and those that are irrelevant.

M. Greening