

The BOWLING GREEN

Mandarin and Mathematics

I FOUND the Old Mandarin at ease in his high penthouse apartment, which he has furnished somewhat in the likeness of an Eastern pagoda. On the table beside him were sheets of paper scribbled with figures and diagrams; he was shaking two dice in an ivory cup. One of his troupe of serving maids, pretty as a humming bird in bright silk jacket and trousers, brought us wine and sunflower seeds. Glass wind-bells tinkled on the terrace as we sat looking over the summits of Manhattan.

The old man's pleasure in mathematical diversions is well known, so I was not surprised when he handed me the ivory vase. "Throw the dice," he said, "without letting me see them. Remember the two numbers."

I did so, carefully concealing the result. It was the kind of throw I usually get; I am notoriously unlucky in anything to do with reckoning.

"Choose either of the numbers," he said, "and multiply it by five."

"O. K.," I said. "That's easy."

"Add seven, and then double the result."

"Wait a minute. . . . Yes, all right."

"Now add the other number."

"You mean the one on the other die?"

"Yes."

"O. K."

"What is the result?"

"46," I said.

"Then the numbers you threw were 3 and 2."

"Correct, but how do you know?"

"The formula is $10x + 14 + y$," he said, x and y being the numbers you threw. I subtracted 14 from the 46 you mentioned. That gave me 32; therefore 3 and 2 were your digits."

I adore that sort of thing, but I never can remember those ingenuities. One good night's sleep always wipes out all the arithmetic I've ever known.

"I'm glad to find you in a mathematical mood," I said, "because I've got a problem of my own. We want to give a big dinner party; big for us, that is. There are to be ten couples at a circular table. Our table is rather inconvenient, every other person has to sit with a leg between his knees; a table-leg, I mean. So we've fixed the positions of the ladies, each of them has a seat unimpeded by legs, the question is how to arrange their husbands with proper attention to social precedence and yet so that no husband adjoins his wife."

"When is the dinner?" he asked.

"Next Monday."

"You had better postpone it a year or so," he said, "until you can get some good book on the Theory of Numbers and study it. The problem involves what are called Discordant Permutations; even W. W. Rouse Ball, in his fascinating work on *Mathematical Recreations* (Macmillan; tenth edition, 1922) says the solution is far from easy. Offhand I should say there are something like 439,000 possible arrangements."

"That is the sort of thing that must make life in the White House very difficult," I suggested.

"Do you remember," said the Old Mandarin, "the classical story of the Chinamen and the American missionaries? A junk in the Yellow Sea, overwhelmed by a typhoon, had to lighten its burden. There were 15 Chinese and 15 missionaries; it was agreed that half of these 30 passengers must go overboard to save the lives of the rest. All 30 stood in a circle and every ninth person, beginning the tally with an old Manchu accountant who was the senior aboard, was to be thrown into the sea."

"It must have been a very slow-mov-

ing typhoon to allow for all that counting," I remarked.

"The true scientist," admitted the Old Mandarin, "prefers his experiments under exact laboratory conditions. However, the disturbance and confusion of the gale made it possible for the Manchu (an ancestor of mine, by the way) to place all the Chinamen in a certain order. Imagine the distress of the missionaries when they discovered that every ninth man was one of themselves. However, they were brave men and did not discover the trick until too late."

"I don't believe it's possible," I said.

"Try it for yourself," said the Old Mandarin. "The arrangement was as follows. C stands for Chinaman and M for Missionary." He drew a slip of paper from the inside of his skull cap; on it was written:—

CCCCMMMMMCCMCCCMCCMCC
MMMMCMCCM

"I always keep this memorandum with me," he added, "in case a similar emergency should arise in the subway. But Mr. Rouse Ball (whose book should be in every prudent man's library) says it may be remembered by the sequence of the vowels in this jingle: *From numbers' aid and art, never will fame depart.* In that couplet the vowels *a, e, i, o, u*, represent 1, 2, 3, 4, 5. The arrangement therefore is *o* Chinamen, *u* Missionaries, *e* Chinamen, and so on."

"Wait for baby," I said. "Give me a minute to check on that."

"In times of political and economic disturbance," he continued, "it is pleasant to recline upon the bosom of mathematics, the nearest approach to Certainty obtainable in a life of illusion. The ancient problems of the Duplication of the Cube, the Trisection of an Angle, the Quadrature of a Circle, are innocent and heavenly employment. Is it not agreeable to know that your mind is going through precisely the same calculations which absorbed Euclid, Archimedes, Newton, Descartes? But I like my mathematics also tintured with fancy. That is my Oriental bias, I suppose. The very phrase, a Chinese Puzzle, has become proverbial. There is a modern toy, you can buy it on Sixth Avenue, which unwittingly reproduces an Eastern legend. In this amusement you are given a wooden stand with three pegs; on one peg are placed a number of flat rings or disks of graded sizes, the biggest at the bottom. You are asked to shift these rings, singly, from one peg to another, never allowing a ring to rest on one smaller than itself, until the whole pile, in its proper order of sizes, is transferred to a different peg."

"Yes, I know those things," I said. "Horrible."

"The formula is $2^n - 1$," he replied calmly, " n being the number of rings or disks. Viz., if there are 8 rings on the peg it will require $2^8 - 1$, or 255, individual transfers to complete the shift. But all this is merely a childish recollection of an old Hindoo theology."

He rose ponderously from his *chaise longue* and took down a roll of parchment manuscript from a shelf. This was getting rather deep, I thought, and while his back was turned I swallowed a large hooker of the wine. I never dare do more than sip at it while he is watching. But it washed down some of the sunflower seeds (I've never learned how to crack them properly between my teeth) and I coughed violently. He looked gravely reproachful. He disapproves my rough Western manners.

"In the great temple at Benares," he read from his Chinese scroll, "beneath the dome which marks the center of the world, rests a brass plate in which are fixed three diamond needles, each a cubit high and as thick as the body of a bee. On one of these needles, at the creation,

God placed sixty-four disks of pure gold, the largest disk resting on the brass plate, and the others getting smaller and smaller up to the top one. This is the Tower of Bramah. Day and night unceasingly the priests transfer the disks from one diamond needle to another according to the fixed and immutable laws of Bramah, which require that the priest on duty must not move more than one disk at a time and that he must place this disk on a needle so that there is no smaller disk below it. When the sixty-four disks shall have been thus transferred from the needle on which at the creation God placed them, to one of the other needles, Tower, temple and Brahmins alike will crumble into dust, and with a thunderclap the world will vanish."

There's always something about the Old Mandarin's solemnities that carries conviction, you feel that he very likely



FROM A PRINT BY SHARAKU

knows about things. And lulled by the odd tune of his voice, and the pungent wine, perhaps I had not closely attended the details of his reading. But I distinctly understood about the thunderclap and the end of the world.

"Gosh, O. M., that's serious."

He smiled. "I myself have not tarried over the computation," he said, since Rouse Ball has figured it for us. He points out that the number of single transfers the Brahmin priests must make (that is, 2 to the 64th power minus 1) will take them quite a while yet." Again he drew a slip of paper from the scarlet silk lining of his cap. "The exact figure is 18,446,744,073,709,551,615.—I like to keep a few data of that sort with me as consolation in moments of anxiety."

"So in the meantime," he said benignly, "we may still have leisure for amusement."

"Not with arithmetic," I pleaded; "all those digits give me fidgets."

"An approximate rhyme," he said. "I think I can use that. To reward you for being patient I'll show you figures of another sort. I've been doing some choreography. You'll be pleased to learn that by the theory of Numbers, 1934 ought to be a good year. I'll show you."

He rang a gong, and out onto the terrace ran a company of the little Chinese serving maids. There were sixteen of them and each carried a placard with a number. The Old Mandarin must have rehearsed this on purpose to surprise me, for they fell into position without command, gaily marking time to an insinuating music from a Chinese zither. They took their places in serial order, so that the numbers appeared thus:—

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

The Old Mandarin winked at me; when he condescends to so Western a gesture I know he must be feeling cheerful.

"Come on, digits, do your fidgets," he said. "Inner and outer squares, reverse diagonals!"

There was a gay shifting and twirling

as the dancers, in tune to the music, performed a graceful evolution. On the stroke of a gong they came to rest in this order:—

16	2	3	13
5	11	10	8
9	7	6	12
4	14	15	1

"Now," said the Old Mandarin, "remark the gaieties of numerology. Take each row horizontally."

Little man, what now? I wondered.

"I mean, add up the numbers," he explained.

"This is certainly the way to teach arithmetic," I agreed. "They all add up to 34."

"Try them vertically."

The result was the same.

"Try the diagonals."

Still the same.

"The groups of four at each corner of the square."

Each of these quartets broke away in turn from the square, turning to music and grinning at me while I totalled their numbers. Still it was 34 each time.

"The four corners of the whole square."

Same result.

"The four in the middle of the square."

Same.

"The middle ones on opposite sides of the square."

Ditto.

While I was still marvelling at these figures the music struck up again and I found that the girls had taken a new order:

1	15	10	8
12	6	3	13
7	9	16	2
14	4	5	11

Moving prettily in time they broke the figure into various quartets each of which always gave the same total. Horizontals, verticals, diagonals, the four corners, the four in the center, the groups in each corner of the big square,—in fact each component four in the whole arrangement, and even the middle pairs on opposite sides, always added to 34.

"Does President Roosevelt know about this?" I asked. "What do you call it, choreography? It looks to me like sorcery. 'There must be an omen it.'"

"Surely there is," said the Old Mandarin. "Every hundred years."

Of course it isn't everybody who has his own troupe of dancing girls to help him work out mathematical fantasies. With a wave of his hand the old sage dismissed them and they skipped away giggling and chattering. I left him leaning over the parapet studying the pattern of New York and sighing, I suppose, for more calculus to conquer.

For my own part, I was late getting back to the office; absent-mindedly I told the taxi-man 34th Street.

CHRISTOPHER MORLEY.

Progress of Chicago

THE TALE OF CHICAGO. By Edgar Lee Masters. New York: G. P. Putnam's Sons. 1933. \$3.75.

MR. MASTERS traces the growth of Chicago from the time when it was just so much flat acreage to the present year. We see Chicago (in 1779) when one lonely man, Baptiste Point du Saible, lived solitary there; we follow to 1795 when the site was bought from the Indians; we watch the struggles of the early settlers with the expropriated natives, the battle of Tippecanoe and the Dearborn Massacre; we see Chicago erecting its buildings and digging its canals, and, only twenty years or so after its destruction in the fire of 1872, arrived at its great World's Fair.

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Adorning the Moral

ENTERTAINING THE ISLANDERS. By Struthers Burt. New York: Charles Scribner's Sons. 1933. \$2.50.

Reviewed by H. W. BOYNTON

THIS writer is not satisfied to be merely an entertainer. He honestly means to get under the surface of human experience and believes that something of value is to be found there. He is for winning clear of the shams and preoccupations of a coded civilization and enjoying the realities of physical and mental freedom. But he wonders whether the present generation is going the right way about it. So he undertakes to find out what the current mood and code come to in relation to a number of contemporaries. We must let our minds play freely about these persons, their natures, their mental and spiritual condition possibilities, their actual plight aboard a craft which rejoices in having thrown all charts overboard but would feel easier if it could find some substitute for the discarded rudder. We shall choose for special observation two passengers, David and Anita, not of the youngest generation but old enough to have added the disillusionment of their twenties to the skepticism of their teens. David's roots are in a southern rice plantation, which he still owns but has turned his back on to become a writer of advertising copy in New York. He lives gaily, has (not keeps) a mistress, prospers, and is secretly aware of futility and failure.

In this mood, a little drunk, he meets Anita. She has been married for some years to a handsome waster, has a child but by no means makes a devoted mother; is now ripe for amorous adventure. Anything might happen that first evening, but David refrains. Something has begun between these two that neither understands. The reader understands it well enough; perhaps he has read more novels than they have. This, he perceives, is to be a story of the gradual conversion of two skeptics to the old faith. They are not going to be happy till they have achieved a public and permanent union. And this is about all the story amounts to, as a story. It is enough—if the persons concerned seem to the reader worth his trouble. They do not seem so to me. The male is a blundering boulder and the female an affected egotist. Whenever David does a particularly good bit of bounding Anita breathes, "You're sweet!" Their habit is to dabble feebly in ideas and impulses which come to nothing. Their prattle about sex freedom, their experiments with alcohol, their infantile speculations on life, belong to the period that invented necking and bathtub gin and the philosophy of "Oh, yeah?" They are recognizable as types, but as persons they don't matter.

Struthers Burt has a working theory that all good writing is fiction and that the best sort of fiction is a good novel. He also believes that the way to write is to sit down at a desk and let nature take its course. "If you sit long enough before a desk something is bound to happen." A good method beyond question for those who live by the pen and for the type of genius which knows the use of a wastebasket. But it leads to that species of miscellaneous outpouring which has been most effectively embodied in the Wellsian novel. Wells (with Upton Sinclair and many others after him) has owned himself by choice a purveyor of ideas rather than an artist. The novel is his vehicle or transmitter of theory and commentary, for that larger reading public of our day which has no ear for either treatise or familiar essay. For such a novel the tale is incidental, at best adorns a moral expressed ventriloquially through the lips of the personae or still more magically through the processes of their minds. By this method dialogue becomes a responsive exercise, consciousness a contrived soliloquy, and action a puppetry more or less pertinent to the text.

Luckily for this kind of novel, a great audience is content with puppetry because it has the knack of ignoring the strings and the voice of the puppeteer. This audience will like "Entertaining the Islanders." The rest of us may find the book worth one reading for its expression of the au-

thor's ideas and personality. He has many interesting things to say about the personal and social and political and economic problems of this troubled hour. And if his romantic pair (modernly speaking) are inadequate and most of the minor figures but rudely sketched, he has created one person who alone would richly justify the book. Mr. Julius Wack, retired and wealthy proprietor of Wack's Wax, is a novelty in American millionaires, a benevolent hedonist and amateur of ideas. He has a winter place in St. Birgitta, a mythical West Indian isle once alternately owned by England and Sweden but now under the American flag. The American governor of St. Birgitta is a broad caricature of the hypocritical Yankee of tradition; but Wack has a worthy crony in the humane priest Monsignor Dorsey, whose creed is so unlike his own, but whose attitude toward human affairs is so congenial.

Out of Oklahoma

NO MORE TRUMPETS. By George Milburn. New York: Harcourt, Brace & Company. 1933. \$2.50.

Reviewed by WILLIAM ROSBY

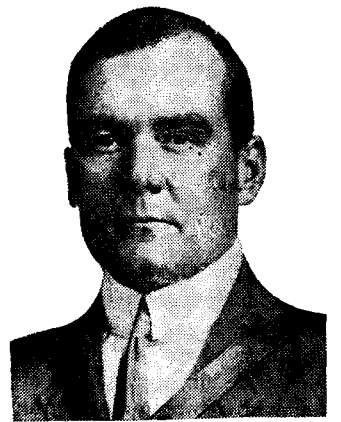
OKLAHOMA is going to matter in American literature! We know an extremely promising poet, Welborn Hope, who there resides. And here is George Milburn, with "No More Trumpets" following his "Oklahoma Town." This is a book of short stories worth reading; indeed it is as much a discovery as was Ernest Hemingway's first collection—and owes nothing whatever to Hemingway, by the bye, at a time when a lot of young men are still falling over each other to imitate Hem the Great. No, these stories are all Milburn's. They aren't all of the same excellence. But anyone capable of writing so sardonic a tale as "Sugar Be Sweet!" is a short-story writer to place your money on.

Some of the other stories, like the opening story, "The Visit to Uncle Jake's," rather miss making any particular point, yet are rich in their observation of the ways of Oklahoma natives. Observation of this kind reaches glorious heights in "The Fight at Hendryx's," such as Old Man Peck's incidental remark that "Hendryx's place was so crowded that you couldn't cuss the cat without getting hairs in your teeth!" The dialect in the telling of this saga is handled superbly, and the story itself is worthy to become a folk-tale. Out of the not unfamiliar phenomenon of a middle-western student's trying to work his way through college, in another kind of tale, Mr. Milburn has wrung a story that fills one with smoldering anger against stupid authority. Yet Charlie Wingate was only "dead for sleep," that was all, between his day classes and his all-night work to pay his way! The Dean of Men is made out the usual blatting chump. His attempt at getting educated is going to mold a grand Bolshevik out of Charlie—or else he will prove to have no spirit at all.

Mr. Milburn, however, is not a propagandist, nor does he, on the other hand, work according to magazine formula. He deals in the ironies of ordinary lives, of the southern woman who ran a summer hotel and hated negroes, till, when her daughters run away from her, it turned out that the husband from whom she had been parted for years had been discovered by her, at length, to be part negro; of the man who had become a well-known trumpet soloist in the reformatory band (this is the title-story) and finds himself totally at a loss upon his release from the reformatory; of the dentist who became a prophet for a brief while, and why; of various Rotarians and "A Pretty Cute Little Stunt" worked by one of the cloth (A first-rate story, this); of the ploughboy who decided to be a poet, became a thumb tourist, and how he came to interview a popular author.

Mr. Milburn will doubtless write better stories than some of these, but the book contains about half a dozen out of eighteen that are quite superior to the general run. That is a good batting average. A new fiction writer has distinctly "arrived."

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