

Man's Quest in Space

THIS BOOK OF EARTHS began years ago, with a single little figure of Earth taken from what old book I do not know. For a long time it lay by itself; then another, come upon by chance, was laid beside it; and still others as I happened on them, always by chance. Old odd maps joined the casual collection--maps of the Earth, the Moon, the heavens. It was never a collection in the usual sense of the word, because it was so casual; but, such as it was, it is the origin of this book. For it occurred to me, not long ago, that it would be "fun" to put them all together, and many others with them, chosen to fill in the gaps of the original group.

Luckily for the fun of it, the search about to begin would not be limited to what we know about the Earth, else it would have ended before it began; for we live in a universe of which we know little, and on a planet of which we know perhaps less. It would include not only what we know, or think to-day we know, but also any-thing that has been believed or felt or no more than "guessed" to be the picture of the Earth and its place in the universe. It would include not only science, modern and ancient, but tradition, the older the better; diagrams or pictures based on little more than folk-lore; cosmogonies of religions great and small; cosmogonies of philosophers, of poets, and of savages. It would gather together pictured theories, guesses, hypotheses, or merely flights of pure imagination, whether "true" or "false" to-day; since history teaches us nothing if it does not teach us that one century's false doctrine is another century's truth, and that the mistakes of any age or race are quite as illuminating as any "truth" by which it lived.

This collection of pictures, therefore, would not be "scientific," not "selected" to prove one thing or to disprove another, not prejudged by any standard but that of a record told in pictures and diagrams of what man has guessed this Earth to be ever since he first began to wonder what the figure of the body was on which he lived. It would be free play through sources, once those sources were discovered; play unhampered by any necessity for judgment or criticism, since what was sought was the record only.

And so the search began, and the story of the search is personally as interesting as what it uncovered. It would be endless--that was clear from the beginning, and so it must be made deliberately brief. It could not include everything, even if "everything" came promptly to the surface. But there were high lights in the record, and these began to show dimly from the first. The rest was a matter of blazing an unpathed trail that would lead to the goal--the record; but that must allow for twists and turns, by-paths, now and then blind alleys in which often, as it proved, lurked the "tip" that had been lacking when one turned into them.

More and more, as the search went on, and one figure of Earth was added to another, it seemed worthwhile to bring a large number of them together. Inevitably, in such a collection of man's attempts to draw the planet on which we live and its relations to the heavenly bodies by which it is surrounded, there would be surprising similitudes, identifications, recognitions, even a queer unity. There would be, too, in such a collection, enormous differences, opportunity for endless comparison and endless wondering over the figures imaged by those supremely courageous men, the questioners of Space.

They are the men--anywhere, at any time--who have looked up at the unanswering heavens, and asked, "What and

whence and why are those lights in the sky?" who have looked down at the unanswering Earth, and asked, "What is this land that forever gives everything--even to me my life, and forever takes everything--even from me my life? What are these waters around it that sustain its life and mine? this fire within it that pours through its mountain tops and heats its boiling springs, whose spark lies still within the rock and wood from which my father's fathers first struck out their own first fire? What is this air I breathe that is around the Earth and within it, in its secret caves? What is Earth? And what am I?"

They are the men who have questioned not idly but unceasingly; knowing all the while that to the tiny questioner below there is no great Answerer above; that any answer to the questions born of the speck in space that is man, must be born in its turn of just his questions; nothing more--but nothing less. There is no equipment for this lonely quest; there is only man the questioner and the universe--the Great Question; the answer lies within man himself. If ever we once realise this, we can never call them anything but supreme adventurers--those men curious enough to wonder enough to question enough to guess at last boldly enough to say, "Perhaps it is like this," and set down the image, even though it is no more than a small triangular peak of land rising from a watery waste, with the arch of the heavens above it, and between it and heaven the Sun and Moon and stars.

For guesswork is the beginning and the end of knowledge--man's own answers to his own questions. They may be right or wrong, but they are his. To-day we give scientific "guesses" a statelier title; we call them hypotheses; they are nothing more than guesses shot into still un-answering Space. The "hypothesis," for instance, that the Earth is an

island, plain, mountain, or whatever, was first advanced when the first man of the first race drew the first figure of Earth. The "guess"--only that--that the figure of Earth is an oblate spheroid is of our own era. Our hypotheses are continually changing; one supplants another, and is in its turn discarded for a new--or an old--one; and this has been the history of knowledge ever since that remote and notable day when the first brain, by sheer pressure of questioning, focused in a point that exploded into a "guess." It is the process of induced thinking that has carried man on; the heavens and the Earth have continued to revolve whether his answers are right or wrong.

Man could not equip himself for this quest in Space. But he had been equipped, after a fashion. He had a few resources, a few means. First of all, long before science told him that he had within his body vestiges of all the life-strata of the world, he had a vague knowledge that he is an integral part of the universe. And, because he is a part of the universe, he had a vague knowledge of truth, or of segments of truth. He had numbers, he had signs, he had characters, he had symbols, all of these drawn in the heavens before he drew them on Earth. He had words. He had the capacity to be curious, the capacity to wonder, the capacity to draw analogies between seemingly unrelated things. From this scant handful of means, his faculty for guesswork developed. This is the whole story of all his perceptions of the universe and of his planet. For he has continuously dared the great adventure, and has returned sometimes with pure gold.



The Figures of the Earth

THE BELIEF THAT THE UNIVERSE is composed of five Great Elements is untraceably old. Even the savage knows very well four of these elements, Water, Air, Fire, and Earth, and has a vague sense of the fifth, Ether, or Space. From varying combinations of these five elemental substances, the ancients believed, all of the phenomena of Nature were formed. Earth itself was composed, in the last analysis, of these five. Man also, they believed, was a unique compound of these elements, and was, at death, resolved back into them. Each of these great "Creatures," as they were called, was symbolised by a certain shape, and the total figure of the five different forms, superimposed on one another in a regular order, is the stupa of China and India, the sotoba or go-rin of Japan, the "Five-circle" or "Five-zone" or "Five-blossom" funeral stone to be found everywhere in the Orient. The cube represents the Earth or stable foundation on which all builds; the sphere represents water; the pyramid or triangular tongue, fire or the elements in motion; the crescent or inverted vault of the ky, air or wind; the acuminated sphere or body-pyri-form, ether tapering into Space.



FIGURE I. *The Stupa.* (From *Foe koue ki*, by Fa-heen.)

Of course the old philosophers assigned particular places or grades to these five elements. Plato gave the first place to fire, the second to ether, then followed air, water, and lastly Earth. But Aristotle placed ether first, "as that which is impassable, it being a kind of fifth body," and after it he placed those elements "that are passable," in the order of fire, air, water, and Earth.

Sit down with pencil and paper, or, as the first mathematicians did, sit down on the sea shore and draw with a shell on the sands the simple or the complex geometrical figures, whatever you will. It will be a rather remarkable accident if you happen to put down a single figure that his not at some time represented either the figure of Earth directly, or a direct relation of the Earth to the universe.

Take the five regular solids, for instance: the tetrahedron, the octahedron, the icosahedron, the cube, and the dodecahedron.



FIGURE 2. *The Tetrahedron.*



FIGURE 3. *The Octahedron.*



FIGURE 4. *The Icosahedron.*



FIGURE 5. *The Cube.*

The Earth has been a tetrahedron, and it has been, many, many times, a cube. It has been conceived of as an eight-sided figure--one of the Siberian tribes believes to-day that the octahedron is the true figure of Earth. It was by way of the "five regular solids," "the five mathematical bodies," that Kepler, as we shall see later on, sought to solve the mystery of "distances" in the heavens. Seeking for some fixed relation of distances between the six planets and the Sun, he found, or believed he found, that the five regular solids fitted between the six spheres in a very curious order, and he elaborated on the nature of these solids and their relation to our solar system all of his life. The "nature" of the tetrahedron was of fire. The nature of the octahedron was of "flying birds." The nature of the icosahedron was of water. The nature of the cube was of Earth, even though it fitted into place between Saturn and Jupiter, and the nature of the dodecahedron was that of the celestial vault, or ether.



FIGURE 6. *The Dodecahedron.*

Earth has been given, also, at one time or another and in one way or another, all of the pyramidal forms. It has been figured as a three-sided and as a four-sided pyramid, and likewise as a cone. It has been a cylinder, filled with compressed air and balanced in the centre of the universe.

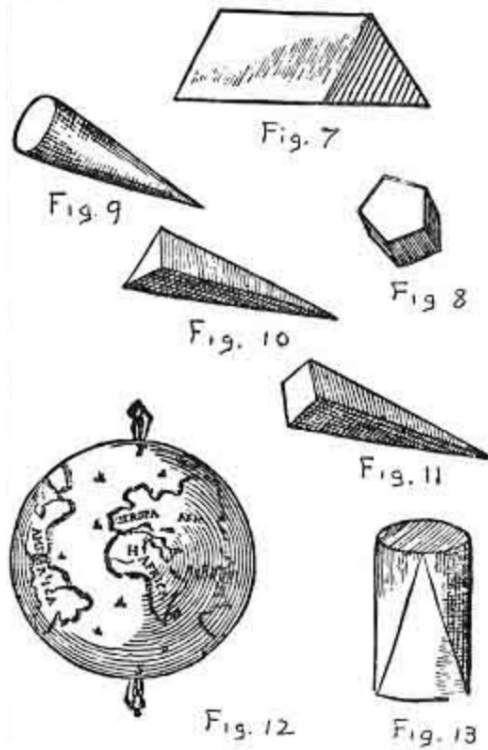


FIGURE 7. A "rygge forme" or three-sided tablet.

FIGURE 8. Five-sided tablet.

FIGURE 9. Cone.

FIGURE 10. Three-sided pyramid.

FIGURE 11. Four-sided pyramid.

FIGURE 12. Sphere.

FIGURE 13. Cylinder.

It has been, at one time, a "rygge forme,"--"a three-cornered forme," says Recorde's *The Castle of Knowledge* (1556), "like the rygge of an house where one syde lyeth flatte, and the other two leane a slope. And thys forme they judged better for twoo causes. Firste they thought that it was more stedy than a cube forme, because it hath a broader foote, and a lesser toppe; and secondly for that they thought it a more apte forme to walke on and more agreeable to the nature of the earthe, where sometimes there risyth high hill, and sometimes again men may see greate vales descendyng. . . . Againe they thinke this Rygge forme meetest for the standing of the sea and for the running of