

Down the Dimensions

At some "punctus" in himself was his corporeal self—starting on the journey into himself—as he now was— And thus it would be—endlessly—

by Nelson S. Bond

BRADNER CHUCKLED. Even a scientist known to his fellows as "Old Cautious" was not without a sense of humor—and humor there was, as well as glory, in the journey he was about to undertake.

Only a few weeks before, Bradner had seen a pseudo-scientific feature in a neighborhood motion-picture house. Thinking now of the marvelous—well-nigh unbelievable—laboratory that figured so prominently in that film, he could not help but smile at the raw crudeness of his own tiny workshop.

No maze of cryptic coils and bars here. No ponderous machinery bedecked with bewildering keys and switches, no spluttering arcs or leaping flares, or glistening tables strewn with fuming beakers of chemicals and mysteriously bubbling test tubes. It was merely a quiet, simple room, with workbench, a desk and—a Chair.

Yet the Chair, Old Cautious knew, was a greater scientific achievement than all the harebrained marvels the movie genius had concocted from his maze of fantastic equipment. Here, at long last, was the seat of knowledge—the student's bench to the unplumbed secrets of mankind. With its help, Bradner meant to embark on the greatest quest man could conceive—the search of the secret of being.

Bradner chuckled once again and settled himself in the Chair. Under the fingers of his left hand were a series of buttons controlling the complicated

mechanism beneath the seat. The fingers of his right hand touched a vernier which could advance, retard, or even halt his rush into the unknown. In the pockets of his loose jacket were notebook and pencils, about his waist an unaccustomed gun belt. It was unlikely that he should find use for these things where he was going, but Bradner had earned the name of Old Cautious. It was best to leave nothing to chance.

On the desk across the room lay his diary; in it was a complete summary of his investigations, as well as a detailed description of the Chair. A card attached to the book instructed his landlady to forward it, should he not return within a reasonable length of time, to Professor Hallard Grayson of the university. Grayson, of all his colleagues, was most likely to understand the abstract reason that underlay the computations in that book. Grayson, too, was blessed with those priceless gifts: imagination and a sense of humor.

"WE LIVE," Bradner had written in the diary, "in a world of three dimensions. Length, breadth and height are the terms commonly used to describe these three. Theorists have promulgated a fourth—a *time*—dimension, but of this we have no assured knowledge save that time is.

"It is a general premise that each dimension is an extension of former dimensions. This is, in a sense, true. A line is an extension of a point—a



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square the angular extension of a line—a cube the right-angled extension of a square. A tesseract, thus, is the logical fourth-dimensional extension of a cube.

"I hold, however, that succeeding dimensions not only extend, but *bound*, former dimensions. This fact, evident upon thought, is too generally overlooked.

"From a *punctus*, a point, lines might radiate in infinite variety. A point projected into its first, or linear dimension, however, becomes a line extending infinitely into only *one* direction. Thus the point has been, at the same time, extended and bounded!

"Similarly, a line may conceivably be extended into an infinite number of planes—but when actually extended into one, it becomes bounded by its dimensional extensor. It becomes a plane, or unidimensional, figure!

"A plane figure—a square, let us say—when extended is also *bounded* into a three-dimensional cube. Theoretically, this law obtains through all higher dimensions as well—a fourth-dimensional figure being both extended and bounded by its fourth-dimensional source, and so on.

"This explanation is, I know, superfluous. I include it merely to introduce my invention, and to explain its powers.

"It is my belief that somewhere within that which we know as the unidimensional state—that state wherein exists neither breadth nor height, only extension—lies the secret of the beginnings of life.

"Let us liken man's life to a tridimensional graph of coördinates. At any given space within this graph is the dot—*man*. He is the junction point, the meeting place, of his elemental compositories, portions of which have been bounded, stripped from him, by the coördination of higher dimensions. Man, then, is *not* the complete sum of those things from which he sprung. *He is*

merely the intersecting sections of those three infinities which coördinated to create him! It is my purpose to project, or perhaps *unproject*, myself down through these dimensions, to solve, if possible, the riddle of man's beginnings. This I can do with the aid of my Chair.

"In this diary you will find a complete mechanical analysis of the Chair, with schematics of those parts which require special construction. If, as I expect to, I return from my journey, I shall attempt to bring back with me some sort of factual proof from the infra-dimension. If I do not, or cannot, return, I go knowing that this work will be carried on by capable hands.

"And now, my friends and colleagues, *au revoir*. I go, I hope and believe, into the unidimensional source of all knowledge."

BRADNER, sitting in the Chair, shuddered momentarily with a chill of apprehension. Suppose he was wrong? Suppose his calculations were in error, and by some strange chance the Chair twisted him into some queer, distorted oddment of the universe? Suppose—He shook his head slightly, and chuckled again. Such nonsense! Of course he was right! And as for danger—

Impulsively, he dug one hooked finger into a button on the Chair's left arm. A vibration rose from the seat—quivered through his nerves like a jangling, discordant note in music. With his right hand he twisted the vernier.

The vibration increased. The Chair seemed to twist and spin beneath him. A shimmering nebulosity grew before his eyes, and he was whirling, sinking, twisting into a spiral sea of nothingness! The faint humming in his ears rose to a high and piercing scream—long, high, sustained torture! There was a dreadful compression on his body. Darkness gathered before his eyes, writhing darkness curling into impossible forms. Then—silence—

HE WAS a *oneness*, but not a body. All about him was a sliding kaleidoscope of color and movement—real, tangible, but somehow *bounded*. There was a peculiar flatness to his surroundings.

His own body was gone, and with it his organs of sensation. He had no eyes with which to see, no lips to taste, no ears or fingers with which to explore the strange dimension into which he had been reduced. And suddenly Old Cautious realized, with a thrill of triumph, that he *had* been reduced! His intelligence—the entity that was Bradner—had sloughed off the third dimension, and was now in the plane-table land of the second!

A peculiar sentiency substituted for the normal bodily senses. Dimly, Bradner became aware that his oneness stretched, infinitely tenuous and bulkless, into a vast, never-ending plane that cross-sectioned eternity from the farthest star to the edges of time itself. Ridded of his third-dimensional boundary, he had become a single infinite plane in existence!

The swirling, chaotic maze of colors and forms about him were, of course, scenes viewed at too-great speed. Bradner discovered that by an effort of will he could control his speed—or, better, the speed of those constants which were in him, of him, and a part of his bi-dimensional, omnipresent self. He concentrated on the task of slowing down the motions that surrounded him, that he might better study a section of them.

The flashing scenes paused, slowed, and became rational. Amazedly, Bradner watched, as, before him, or through him, the flux of time moved. Pictures built up in a cinematic sequence, as his plane moved through time—flat pictures——

Great steaming jungles, riotous with huge, tropical fronds, merged slowly into great cities with towering buildings that mocked the skies. Here a volcanic mountain spewed grisly ash and fiery

death on a blood-red world; near by a cold-green glacier ground slowly and inexorably across the wincing face of a grim and desolate world. A stiff-winged monster of steel flapped carelessly over a plain of jet marble; burrowing worms, ichorous and blind, gnawed fretfully at the bowels of a star in some far-forgotten universe.

Bradner's mind reeled with the immensity of his vision, and, manlike, his thoughts fled to the tiny planet that had mothered him and his kind—earth. And the thought was a contractile occupation of that infinitesimal portion of the infinity that was himself. Swift as thought, the scene shifted to that tiny globe.

BUT what a world! Not one, but a thousand limitless vistas stretched before him in that one small spot. A world peopled sometimes by man, sometimes by a form of mutable plant life, sometimes dominated by a gigantic form of lizard, a highly intelligent elephant creature with minute tusks and a huge, shining brainpan—once, even, by a silicate form of life that grew in crackling subdivision into a mass of angular tetrahedra and spires.

Most often, however, by man. Yet even when Nature's most successful experiment had become the ruler, there was endless variety. Bradner looked with astounded eyes on a thousand worlds that were, yet were not. Here a mighty Roman civilization ruled proudly over the whole of the terrestrial globe, while on a divergent line of the plane a mighty Spanish empire sent its golden galleons into the far-spread ports of its domain. Carthage, in all its grandeur, formed an enduring pact of peace with a mighty empire of black men from the south; yet near by there was no Carthage and no race of black men—only one vast, wide city alive in a dead world, a city called Bogar, peopled by the blue-eyed, strong-thewed children of the Vikings.

And suddenly Bradner understood!

It was as he had thought. In loosing the bonds of the extending third dimension, he had infinitely widened his scope. *He was seeing the probabilities of life!* The many, many things that *could* have happened to the world, had not single events—seemingly unimportant at the time—determined that one point life was to have reached on the tridimensional graph at the time of Bradner's being!

These plant men, these lizard creatures, this Carthaginian civilization—all *might* have been! They were permutations of that equation which, slowly but inexorably evolving, had turned to life as it is known to-day. On the instant, Bradner realized that every little thing that transpired in the past, was happening now, was to happen in the future, welded another inescapable figure to the equation of existence.

Had not the Spanish Armada been defeated, the world would have reached the civilization Bradner had seen. Had one wee pebble dropped in the flaming crater of a now extinct volcano at some dim, forgotten moment in history, all life save that of the Bogarian Norsemen would have been swept out of being. Chance, and chance alone, had determined that life should choose one of this infinity of possibilities!

Nor were these figures fantasies! They were real—as real as that other life, in the third dimension, that Bradner had formerly known. They existed on the plane surface of the bidimensional state in much the same manner, Old Cautious reasoned, as a man's image exists in the reflecting glass of a mirror. That was it! They *mirrored* life as it was to have been, had the series of coördinates differed!

A curious seething shook Bradner's extended self. On, then! On to yet another dimension—the single dimension bounded by this plane of possibilities! On to the unidimensional state

wherein lay only extension—and the knowledge of all!

Bradner's body was not—but the sentience that dictated him still experienced the *feel* of the Chair, with its control buttons and its vernier. These, too, had become one with the plane of infinite breadth, and the motivation of the Chair's powers were a thought process rather than a tactile one. Ardently, eagerly, Bradner willed himself to experience the change—the sloughing of the dimension of breadth.

THERE WAS a moment of shearing. It was as though Bradner were being slashed, cut with a razor edge of pain, into an emaciatingly thin line that strained and struggled to maintain its identity. Again that high, shrill screaming sounded in his ears, that grinding sense of compression— Then a sudden, singing sound like the laughter of flame, and a vicious, fast—oh, blindingly fast!—release.

There was nothing! About him there was a vast, aching silence that stirred in indefinable depths. Color was gone, and motion; light, heat and impulse were almost forgotten things. The space wherein he was— Bradner's mind quivered with a dazed qualm—there was no space! No space and no matter! Just—nothingness!

For an instant Bradner throbbed with anxiety. It was not what he had expected, this! To slough off still another dimension, to become a single, infinitely extending straight line—yes! To become an uncoördinated line in the graph of existence, stretching endlessly on and on to the farthest barriers of eternity—perhaps even to turn there at infinity with such turning as only the infinite line can know when it meets itself in the beyond—that he had expected! But *this*—

Frantically, he wrestled with the grim secret. It had an answer somewhere! It had to be logical! Yet logic did not

explain this vast, empty, inconceivably silent void of which he had become a part.

There was a seething within him, and sudden color began to coalesce within his own being. Color invisible, but felt because it was of him and a part of him. The color had motion, too, he suddenly perceived—restless, growing, constantly encroaching motion: swift, flaming spirals; nebulae of motion and incomparable speed—expansion of a sort, reaching toward his limitless boundaries. Bradner felt within himself the birth and the end of all being. He was the unit, one and inseparable, of all things and—of nothing!

And a swift knowledge broke upon him as a bolt of lightning flashes suddenly upon the tiny world that Bradner had once known. Old Cautious had been wrong! Old Cautious had made an error! He had reached the first dimension—yes! But the first dimension was *time*!

Man, who sought the fourth dimension with eager determination, already

lived in it! And he, Bradner, had cast himself down, down, down through the dimensions, until he was one and a part of time itself! In him all things were—the beginning and the ending. In him fiery nebulae were being born, would ultimately burst and form his own universe, and would see life begin. He *was*—yet he was still to be, and had already been! He was the one who had escaped the limits of his boundaries on the tridimensional graph of life. He was a part of time infinite!

Somewhere within his being was a tiny workshop and a little black diary. At some *punctus* in himself was his corporeal self starting on the journey into himself as he now was. And thus it would be for all eternity—an endless Bradner seeking the secret of himself in the vast, indefinite reaches of time! Unless——

The great gray void seemed to rock lightly with dancing song as Bradner chuckled. Even a scientist known to his fellows as Old Cautious was not without a sense of humor.

