INTO THE GREEN PRISM

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INTO *the* GREEN PRISM

By A. Hyatt Verrill

Auhtor of: "Through the Crater's Rim," "The King of the Monkey Men," etc.

This is no doubt one of the best works from the pen of Mr. A. Hyatt Verrill. Our well-known South American explorer has quite outdone himself in his present tale. His thoughts strictly along scientific lines are so daring and so revolutionary, that they fairly leave you gasping for breath, and while at first you may not accept the revolutionary ideas, you will find yourself saying after a while—why not? And why should the revelations brought forth by the author not become true in the not too distant future?

The idea of taking a projected image and fixing it so that the image becomes a reality is, at first blush, nothing less than astonishing. Imagine, for instance, a reflection in a mirror suddenly coming to life in its three dimensions. Yet, this is not so foolish as it would appear at first, because you can take an ordinary photographic plate and with nothing but light influencing it, you can get not only a one dimensional, but actually a three dimensional object on this plate, which is simply a transformation of the light impulses into chemical. As a matter of fact, it is possible to make photographic plates with an emulsion so thick, that after treatment, the resulting image fixed on the plate may be a quarter of an inch thick or more, showing all the different graduations in a relief that actually is standing out from the plate.

CHAPTER I

IT is rather a difficult matter for a scientist to write intelligently and interestingly of a science with which he is not thoroughly familiar, and it is still harder for one who is accustomed to dealing with hard facts and purely scientific truths to record matters which, to those who have never come into contact with them, must appear purely imaginary and highly improbable. Hence it is with the greatest hesitation, and only after long consideration and innumerable urgings from my fellow scientists, that I have decided to relate the truly remarkable story of the astonishing discoveries, and the incredible incidents that resulted therefrom, which were made by my friend, Professor Ramon Amador, while he was associated with me in South America.

As, I think the matter over, I feel convinced that Professor Amador without doubt made the most notable and revolutionary discovery in physics which has been made in the last two centuries. Not only did it completely upset many supposed laws and theories which had been held as scientific truths for years, but in addition, it divulged entirely new and undreamed of forces and laws, both in the realm of physics and in optics. I may even go further and state unequivocally that his discovery threw an entirely new light upon our accepted ideas of matter, ether waves, the atomic theory, gravitational force and even life itself. Had it been developed and brought to the attention of the world it might—and unquestionably would—have been of inconceivable benefit to mankind, although, on the other hand, it might have proved a curse.

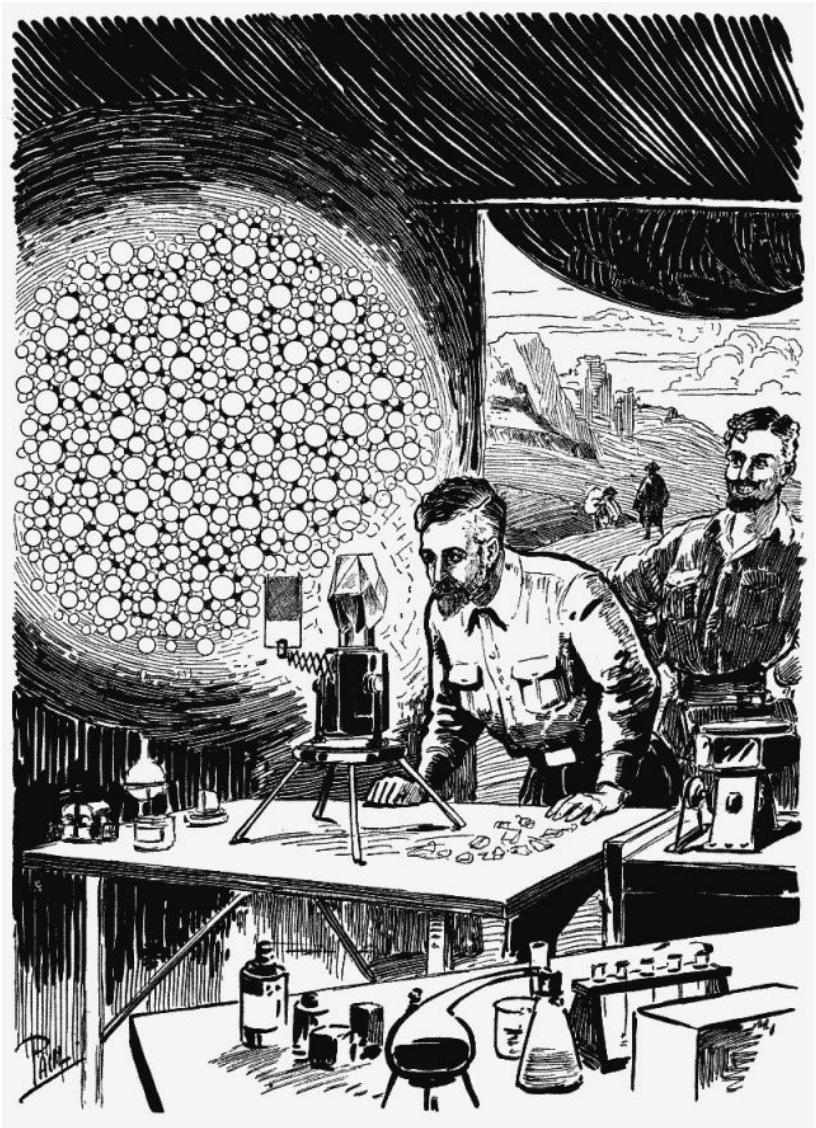
But, as has been the case with not a few epochal discoveries in the world of science, my friend's discovery was completely lost almost as soon as it was made, and with its loss the world—as we know it—lost one of its most brilliant scientists, and I lost—temporarily at least—a most steadfast, cherished and esteemed friend.

Professor Ramon Amador, as no doubt most of my readers are aware, was a Peruvian by birth, a citizen of the United States by choice, and an internationally recognized authority on physics and optics. He was a graduate of Santo Domingo and San Marcos Universities in Cuzco and Lima, a Ph.D. of Harvard, a post-graduate of Princeton and Columbia, and he had taken degrees

at several European colleges. Being the fortunate possessor of a comfortable income from profitable investments in his native land, he was able to devote all of his time to study and investigations in his chosen line of science, and while he held the chair of Applied Physics at Moulton University, and delivered courses of lectures on physics and optics at numerous seats of learning both in this country and abroad, he steadfastly refused to accept any permanent appointment where he would be tied down to routine work and would not be free to follow his own inclinations and researches.

I first met Ramon while I was in Peru conducting archeological studies in and about Cuzco, the ancient Incan capital. Like myself, he was making an intensive study of the cyclopean structures of the pre-Incas, but from an entirely different angle and for a totally distinct purpose. His interest in the ruins of a mysterious vanished race was wholly centered upon the physics and mechanics of the stupendous works, while mine was as equally centered upon the human or anthropological features. Hence our interests never clashed, and from time to time, each of us made discoveries or evolved theories which helped the other, so that we got on famously. But even under any circumstances we would have become steadfast friends.

Amador was a most charming and likable man, once you came to know him well, although to a casual acquaintance he appeared reserved, a bit stand-off-ish—if I may use the term—rather self-sufficient, unemotional, and, at times, even abrupt and discourteous. But these characteristics were due largely to a latent shyness and self-consciousness which he could never quite overcome, and to a subconscious feeling that other men were not in the least interested in him or his work. But, once his friendship and interest were won, he revealed himself as an entirely different character.



And yet, as I gazed transfixed, wondering what marvel I was seeing, I noticed that there was no confusion, no variation in the movements of the things; they never collided, never touched, never varied a millionth of an inch from their courses. Ramon was fairly dancing with delight . . .

His mobile face, usually rather grave and with that indescribable but typical expression of sadness or pathos almost universal among Peruvians, became animated; his lips parted in a delightful boyish smile, his fine eyes sparkled, he talked volubly and entertainingly on almost any subject, and he joked, laughed and related numberless interesting and amusing stories. Possibly his most outstanding characteristics, and those which made him most

loved by those who knew him intimately like myself, were his great gentleness, kindness and tenderness; his charity and ability to forgive; his optimism regarding his fellow men and women; his poetic and artistic temperament, and his deep respect—amounting almost to reverence—for women. Unquestionably his Spanish blood was responsible for many of these characteristics, but Incan blood also ran in his veins and accounted for some of his most admirable traits. Although by no means Indian in appearance—for he was no darker than myself, yet at times, he seemed almost wholly Indian in temperament and, despite his scientific training, his devotion to his chosen science and his marvelous powers of deduction and matter-of-fact reasoning, there was a great deal of the aboriginal mysticism, imagination and romance in his makeup.

All this rather lengthy dissertation upon the character of Professor Amador may seem dull, uninteresting and of no real consequence, but it is really highly important, for it throws a light upon subsequent events and, without a knowledge of my dear friend's personality, his actions, his psychology, his final end would seem incredible, unnatural and inexplicable.

DURING the time that we were thrown together at Cuzco—and later at Tiahuanaco in Bolivia—Ramon was a constant source of knowledge and inspiration in my archeological work. Being a native of the country and familiar with the Quichua and Aimará dialects, and with a dash of aboriginal blood besides, he met the native Indians on their own ground, won their confidence and enabled me to secure myths, fables, folk lore and priceless information which they had never before divulged to strangers. Also, these oppressed descendants of the Incans guided us to many hitherto unknown ruins of their ancestors, and while I studied the archeological features of the remains, my friend carried on his measurements and computations, or spent hours, staring at some monolithic structure, a vacant far-away expression in his eyes, as if gazing into the past and visualizing the means by which the forgotten races accomplished feats which were inexplicable to him, even with his knowledge of physical laws. Often, too, his trained eyes and brain noted certain features of the structures which escaped me, and, to my utter amazement, I soon discovered that Professor Amador held most revolutionary and unscientific views regarding the mysterious structures of the district. As he came to know me better, he confessed that he was convinced that the ancient Peruvians and Bolivians had possessed knowledge of forces and of natural laws which are unknown to us and that, if they could be rediscovered, they would revolutionize the industries, arts and even the life of our civilization.

Not that he regarded them as supernatural—for despite his Indian-Latin blood, Ramon was utterly lacking in superstition—but, as he put it quite logically, as the works could not be explained by any known physical laws, and as they could not be duplicated, even with our advanced mechanical knowledge, they must have been accomplished by some unknown method and a knowledge of unknown laws or forces.

It was in hopes of discovering some clue or key to these that he had visited the district, but at the end of several months, when I was compelled to leave for other fields, he confessed that he was no nearer a solution than he was before.

It was not until the following year that I again met Professor Amador. I had recently returned from Ecuador where, in the Manabi district, I had been engaged in making extensive archeological researches, and where I had made some truly epochal discoveries of remains of a hitherto unknown but highly cultured prehistoric race. I had scarcely been able to scratch the surface, so to say, when I had been forced to abandon work owing to the rainy season, and I planned to return to the new field as soon as the weather permitted. But even in the short time I had been on the ground I had obtained some most interesting specimens. Prominent among these were a number of most remarkable gold beads and ornaments unlike anything hitherto known. Viewed with the naked eye, they appeared to be merely grains or tiny nuggets of gold—for which, as a matter of fact, they were mistaken when they were first found—few of them larger than the head of a common pin. During examination under a powerful lens, they were revealed as hand-wrought, perfectly formed beads, chased, carved, decorated and perforated. Many, indeed, were composed of several almost microscopic portions, soldered or welded together.[1]

The moment I showed these truly amazing examples of prehistoric handiwork to Professor Amador, he became intensely interested and excited.

“Marvelous!” he exclaimed, as he examined the minute golden beads with his pocket-lens. “The most astonishing examples of human handicraft I have ever seen. The very antithesis of the stupendous works of the trans-Andean regions! My friend, I believe your discovery of these may lead to the ultimate solution of all the mysteries of physics which I have vainly tried to solve. Think of it! On the one hand structures composed of stones weighing upwards of one hundred tons, cut, fitted, raised to great heights, transported hundreds of miles[2] squared and bevelled with mathematical accuracy, sculptured elaborately, hewn into immense doorways and portals as though the refractory pyritic rock were as soft as cheese. On the other hand, these minute, almost invisible golden beads, carved, built up, perforated as perfectly, as beautifully

as though they were inches in diameter or—perhaps better—as though they had been made by the hands of midgets—elves or fairies—no larger than a mouse! There you have the two extremes; and both, I feel sure, are the result of a knowledge of the same lost physical laws. In one case we have normal handiwork exaggerated, enlarged thousands of times; in the other equally normal handicraft reduced in an equal degree. It is"—here he laughed merrily at the comparison—"it is like viewing objects through the opposite ends of a telescope; seemingly magnifying them one way, apparently reducing them the other!" Then, suddenly: "Caramba!" he cried, leaping to his feet and relapsing into his mother tongue as he always did when greatly excited. "That is an idea, an inspiration! My friend, these golden beads must have been fashioned by means of a lens! No human being of normal size could have accomplished the feat otherwise, and we know they are the work of normal sized men, for you tell me the other objects are of ordinary size and that the skeletal fragments you have unearthed are those of ordinary human beings. Ah! we must discover those lenses. Even if I cannot solve the puzzle of the laws and forces that enabled the pre-Incas to cut and erect their titanic structures, still I may make epochal discoveries in the line of optics.

"With your permission, Don Alfeo, I shall accompany you when you return to Esmeraldas. Somewhere in the district we must find the lenses—such things are imperishable—and I am not sure—no, I dare not mention such an insane thought—I am not sure, but that the key to the mysteries may be revealed, when we find those prehistoric magnifying glasses."

THAT my friend had some new theory in his fertile brain, I felt sure. His imagination had been fired, had leaped ahead and had seized upon some clue or detail or some feature that had escaped me, and had visualized some possible solution of the puzzles he had so long been trying to solve. Personally I could see no connection between the cyclopean stone work of the interior and these minute gold objects from the coast. They were as far apart as the antipodes, the work of two distinct races, objects of totally different materials, and, for all I or anyone else knew, of different periods—perhaps hundreds, even thousands of years apart. Archeologically and anthropologically the beads were most interesting as revealing new features of a cultural center, and while they had aroused my wonder and interest, yet how they were made was a problem that, strictly speaking, was scarcely an archeological matter. The thought had crossed my mind that the makers of the beads must have possessed most remarkable eyesight and extraordinarily deft and delicate fingers, and for a moment I, too, had wondered, if by any possibility, they had

possessed lenses of some sort. But, as far as known, no prehistoric American race had even a remote or rudimentary knowledge of optics, and I dismissed the idea as unreasonable, fanciful and outside the realm of scientific reasoning. I had seen living Indians—such as the Mapuches of Chile—weave horsehair into extremely small forms. I had seen purblind squaws of the Pima tribe weave nests of perfectly formed baskets, the largest barely an inch in diameter and the smallest scarcely a quarter of an inch square, and I deemed it not at all impossible that the ancient inhabitants of Manabi might have carved and soldered grains of gold with the unaided eye, even if a white man, with the degenerate eyesight resulting from centuries of civilization, artificial light and lack of training, would have found such a feat utterly impossible.

But Amador, as I have said, possessed a vivid imagination, a love of the mysterious and mystical, a vast amount of romance, and, as was quite natural, even necessary I might say, considering the science to which he was devoted, he was a trained, expert theorist. Here I might fittingly explain that there is a very wide gulf between the two sciences we represented. Archeology and anthropology are sciences built upon facts. The archeologist—and the anthropologist—make discoveries, reveal incontrovertible facts, and from the material and data obtained, formulate theories and hypotheses to dovetail with the facts. The physicist, on the contrary, works out abstract theories, formulates problematical laws and mathematical equations, and, from these, endeavors to prove facts and to demonstrate the accuracy of his calculations. Amador, to be sure, was not entirely a theoretical scientist, but realized that, in many cases, facts should come first and theories later. In fact I had often jokingly told him that the world had lost a most brilliant archeologist, when he had turned to physics as a life study, for his remarkable powers of observation, his interest in his prehistoric ancestors, and his powers of deduction would have enabled him to have reached the topmost pinnacle in that science.

But to return to more concrete matters. Ramon, of course, accompanied me a few months later, when I set sail for South America, and, in due course of time, we found ourselves in Ecuador.

I had thought that my own equipment was very complete and, much as I regretted it, far too bulky and voluminous for traveling in a crude and somewhat wild district. But in comparison with the impedimenta of my friend, my luggage was insignificant. Not only did he carry a most complete and up-to-date field equipment, consisting of the latest of tents, camp furniture, cooking outfit, etc., together with clothing, arms, food supplies and enough to supply a large party for months of tropical exploration, but in addition, he had brought along a most elaborate scientific laboratory, with a complete chemical and mechanical plant for conducting tests and experiments in optics and

physics.

I gazed with dismay upon the innumerable boxes, cases, bundles, baskets, trunks, bags and other packages bearing Amador's name, which were disgorged from the steamer's hold and were dropped upon the rickety dock at Guayaquil.

And I foresaw no little difficulty in transporting this mountain of dunnage up the coast to the jungle-covered shores of the river at Manabi.

But I had reckoned without my friend's resourcefulness and familiarity with local conditions. I had prided myself upon my experience and knowledge of Latin America and Latin Americans, upon my ability to accomplish great things when dealing with the natives; but, beside Ramon, I was a veritable amateur. Brow-beating, joking, cajoling, flattering, cursing, praising the tattered Mestizo peons, the uniformed officials, the slouching stevedores, the sailors and the innumerable hangers-on by turn, he soon had them laughing, working like demons, obeying him instantly, vying with one another to please him, and, in an incredibly short time, all our baggage was stowed in the dirty coasting schooner and we were ready for the long and weary voyage up the coast.

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[1] Such beads were actually found at Manabi, Ecuador, by Prof. Marshall Saville of the Museum of the American Indian, Heye Foundation, and are on exhibition at the museum in New York City.

[2] In Bolivia and Peru are monolithic stone idols of gigantic size (one measuring fifty feet in length by twelve feet in diameter) which are composed of a rock known only in Ecuador, in a district nearly fifteen hundred miles from where the idols were found.

CHAPTER II

We reached our destination in due time and, having arrived at the location where I had secured the specimens the preceding season, and had done my excavatory work, Professor Amador's laboratory and outfit were soon unpacked and set up, forming quite an imposing nucleus of civilization in the midst of the wilderness. Meanwhile, I had arranged my own much humbler and simpler headquarters, had set my men to work clearing the jungle that had sprung up like magic since my last visit, and busied myself searching for the most promising spot in which to recommence my field work.

Ramon, once he had established himself, donned old bush clothes, fell to work with the rest of us, and soon proved himself as adaptable to roughing it as any old hand. He showed the most intense interest in the locality, asked innumerable questions, watched everything I did, and in an astonishingly short time acquired a remarkable knowledge of archeological work. He possessed the keenest eyes of any man I ever met, and was most amazingly observant. Several times he discovered valuable and interesting specimens, which I had completely overlooked. As the excavations proceeded, he watched each shovelful of earth like a hawk, and would swoop upon every fragment of potsherd or chipped stone that was revealed. The spot where we were working was on a fairly level, alluvial plain between two streams—a sort of tongue or cape which obviously had frequently been flooded in times past. That it had also been occupied by a populous village or town was evident, for all along the steep river banks, potsherds, stone implements and remains of fires were to be seen. Evidently, too, the site had been occupied for a long time, for the traces of human occupancy extended from a few feet below the surface to a depth of more than twenty feet. And as the soil was literally filled with potsherds, digging was slow work. Each time a fragment of pottery was disclosed it was necessary to proceed very carefully; often we worked for hours with a small trowel and a whisk broom in order to secure some fragment without completely destroying it. And as we found no traces of gold ornaments and no traces of any material which might have served as a lens, after several days' work, Professor Amador grew tired of watching the apparently fruitless labors of the peons and wandered off up the narrow, pebbly beach beside the stream.

It was in the stream itself that I had discovered the minute gold beads, and knowing they must have been washed out from the banks, I had assumed that they had come from the village site. Armed with a *batea* or gold pan, Ramon busied himself washing out the gravel in the stream and grew quite excited and enthusiastic when he, too, secured several dozen of the beads. But he was interested only in finding the means by which the ancient Manabis had fashioned the bits of ornamented gold, and when, on the second day of his panning, he shouted lustily to me, I felt sure he had made a discovery. I was not mistaken. From the river gravel he had washed out a fragment of semi-transparent green material which, had I come upon it, I should have cast aside as a bit of a green glass bottle, the remains of one of my own discarded bottles of the previous season. But Ramon, who was busily examining the fragment with his pocket-lens, declared that it was not glass.

"Hmm, perhaps an emerald," I suggested, half-jokingly.

"No, it is not beryl,"[3] he replied, his eyes still squinting through his glass. "It is exceedingly light—much lighter than aluminum, I should judge. But," with a deep sigh of disappointment, "it is far too small to be of any use."

I laughed. "What use did you hope to put it to?" I asked.

He looked up, a surprised expression in his fine eyes. "Use?" he repeated. "Why to experiment with, to be sure! This might prove to be the material these prehistoric people used for making lenses. It would be almost perfectly transparent—if it were not roughened and worn by the action of water and sand."

I could not refrain from smiling incredulously. "Hardly," I declared. "I do not think that even primitive man would select material of that color when there is plenty of clear transparent quartz in the country hereabout. No, Ramon, if these people ever did use lenses, I'll wager they made them from transparent quartz."

"No use arguing," he said with finality in his tones. "But somehow, by some sort of premonition or hunch or something, I have felt all along that we are going to make an epochal discovery here. Perhaps that is why I am over elated and interested at everything unusual. And this bit of green mineral is unusual. I wonder whence it came."

Leaving him still pondering on this matter, I returned to my peons, who, the instant my back was turned, had promptly quit working.

BUSY at the excavatory work, I thought nothing more of my friend and his bit

of green mineral, until the men stopped work at noon and I went to my lunch and found the Professor had not returned. Even then I was not troubled for I assumed Ramon was still busy washing out gravel and searching for fragments of the green stone. I sent Louis, our camp-boy, to summon him, and went ahead with my midday meal. When Louis returned and stated that he could not find Ramon, I did become a bit anxious. In fact I was about to start off to search for him myself, when he appeared, arriving from the opposite direction from which he had been going when I had last seen him.

"You may be an expert archeologist," he announced with a grin, as he came into camp, "but you've made a great mistake in wasting time digging here. What do you think of this?"

As he spoke, he reached in his haversack and produced a beautifully sculptured figurine of lapis-lazuli.

I was speechless with surprise. It was the most perfect piece of prehistoric American stone-carving I had ever seen. It was far superior to any Maya, Aztec or Inca work; a human figure about ten inches in height and showing a squatting man, his hands resting on his knees, his head topped by an elaborate headdress of unique design.

"Where on earth did you find this?" I cried at last.

He chuckled as he helped himself to the food Louis set before him. "Up the stream a way," he replied as he gnawed at a wild turkey's leg. "I suggest," he continued, "that we move to the spot after lunch, and abandon this wasteful digging of broken cook-pots. The locality where I secured the little idol is the spot whence the gold beads came. There are quite extensive ruins there. I found a number of stone columns projecting above the earth and sticking out of the bank, and I picked up the little blue god from where he had tumbled down to the beach. I do not claim to know anything about your line of work, *amigo mio*, but if I am not mistaken, the place I found was a temple or something of the sort. It seems to me that there we will have a much greater chance of coming upon the key to the puzzle—perhaps the very lenses these people used. And," he added as if in afterthought—"if you will examine the little god with your pocket-lens, you will discover that the apparently uniformly smooth surface of the stone is completely covered with intricate carving, invisible to the unaided eye."

Ramon was right. To my utter amazement, I found that the most beautiful and delicate ornamental pattern had been deeply engraved over the surface of the lapis-lazuli, although, to my naked eye, the surface seemed scarcely roughened. It was even more astonishing than the almost microscopic gold

beads. I could not imagine any human being with eyes and touch, that would enable him to carve the refractory stone in this manner, even had he possessed a lens.

But the indisputable proof was before me, and, I plied Ramon with queries about the new site he had so fortunately discovered. He could add but little to the meagre information he had already given. But from that little I was convinced that the new site was most promising and, lunch over, orders were given to break camp and move upstream. This was slow work and the sun had set in a blaze of glory behind the palm trees in the west before our camps, Ramon's laboratory and equipment and all our paraphernalia had been moved to a delightfully situated spot on a low hill above the river some five miles from our first location.

My friend had not exaggerated. Rather, he had understated the importance of his discovery. Everywhere, over an extensive area, there were the extremities of great stone columns projecting above the earth; some were plain, others sculptured, and as we cleared the jungle away, we came upon numerous masses of cut and sculptured stone, and not a few monolithic stone images or idols.

As Professor Amador had thought, the place had obviously been used as a great temple or place for ceremonials, and here, if anywhere, we might expect to come upon archeological treasures and—I might add—the means by which the ancient occupants had manufactured their microscopic beads and engraved their invisible designs on stone.

I would like to describe in detail the progress of our work, the finds we made, the remarkable artifacts we secured. But that has no place in this record of Professor Amador's discovery and disappearance. Suffice to say that we had stumbled upon an archeological treasure-house, the very nucleus of the prehistoric civilization of the Manabis, and daily, as my work proceeded and my specimens accumulated, matters which hitherto had been puzzling and mysterious were explained. The strange carved stone seats typical of this culture were numerous and of all sizes; stone idols and the remarkable carved stone slabs described by Saville were innumerable; we came upon countless numbers of the peculiar elliptical, beautifully-wrought pottery vessels known only from this culture, and, in addition to these objects already well-known to science, we secured priceless specimens in the form of wrought and carved beads, ornaments and figures in precious and semi-precious stones. Agate, carnelian, jade, lapis-lazuli, malachite, quartz, garnet, amethyst, beryl, topaz—even a few emeralds and sapphires had been cut, perforated, polished and covered with microscopic engraving by the Manabis, and, judging from their

abundance, with almost as little effort as though the refractory minerals had been so much soft limestone. Also, and most interesting of all to me, were many objects of copper and silver plated with gold. How the ancient artizans coated the baser metals with gold was a mystery, and Ramon was almost as deeply interested in solving this riddle as in his quest for his theoretical lens. In his search for this he was tireless. From the very commencement we had found the microscopic gold beads, as well as others equally small, made from the hardest stones, and in several instances we had found hundreds and thousands of these cached in pottery vessels. I truly believe that Amador averaged less than an hour's sleep a night for weeks. At the close of the day's work he would go to his laboratory, and throughout the night, would devote himself to making intensive studies and working out long and involved calculations based upon the beautiful specimens of miniature handiwork we had obtained. His idea, as he explained it, was to determine how great a magnification the artizans must have secured in order to have engraved and perforated the objects by hand.

"If I can determine that point," he declared, "I will know whether they had any knowledge of advanced or rudimentary optics, and, possibly, I may be able to establish the type of lens they used and even the material from which it was made. Given the magnification it is not impossible to work out the size, curvature, and other details of a lens."

I MUST confess, it seemed a hopeless waste of time and energy, from my point of view. If the Manabis ever used lenses, then, I felt sure, we would find them eventually. And if they did not, then all of my friend's labors would have been for nothing. I am afraid I have little patience—or rather I should say, I *had* little at that time—with abstract theories based wholly upon assumptions. Had we found a lens I could have well understood Ramon wishing to work out its details and properties, but I could not understand his point in determining details of a lens which very possibly, in fact probably, had never existed. But that was Professor Amador's affair, not mine, and I suppose he saw just as little use in my accumulating thousands of specimens and in my endeavoring to reconstruct the lives, customs, religion and what-not of a long extinct race of fellow men and women.

Then, one morning, he appeared with an elated, triumphant expression on his face.

"I have made a great discovery," he announced. "I have completed my calculations and I am convinced that the lens—or apparatus—used by these people was totally different from anything known to modern optics or physics. No known material and no known form of lens would magnify an article

sufficiently to enable a human being to execute work as minute as we have found."

"Hmm," I muttered, "I cannot see, my friend, how that helps matters—even if you are right. Unless you can ascertain *what* they used—if they used anything—you haven't come any nearer solving your problem. And I admit I *am* a bit skeptical. How can you be sure that it is not possible to grind a glass or quartz lens to magnify to any desired extent? We have microscope objectives that will magnify hundreds—thousands of diameters."

Ramon smiled. "You forget, *amigo mio*, that such high-powered objectives have an exceedingly short focus. Your knowledge of optical laws are, I fear, very rudimentary. The greater the magnification, the shorter the focal length, or to reverse the equation and to point out the truth of my argument, the closer the lens must be to the object to be magnified. My calculations prove beyond the shadow of a doubt that, to enable human beings to incise the carved designs upon these precious-stone objects, the surface must have been magnified at least two hundred and fifty diameters. Now, my good friend, any known form of lens that is capable of a magnification of that amount would have a field of less than one-eighth of an inch diameter—approximately three millimeters. In order to focus such a lens sharply, it would have to be placed within one one-hundredth of an inch of the surface to be magnified—in fact it would have to be an oil-immersion lens—and hence it would be absolutely impossible for any human being to use a tool between the lens and the surface upon which it was focussed. And," he added with finality, "even assuming that a lens *could* be made to fulfill the requirements of the case, you must remember that the tip or edge of the tool used in cutting the stone or metal would be equally magnified and would appear gigantic and coarse. It would in fact be somewhat similar to using a pickaxe for engraving a copper plate for a visiting card."

There was nothing I could say in rebuttal. If his statements were correct, and I knew him far too well to question them, then it would seem that his deductions were logical. I was accustomed to using a microscope myself, and although in my work I had never been obliged to resort to very high powers, still, when I came to think of it, I remembered that even a comparatively low power objective *did* have a short focus and a small field and had to be most carefully adjusted to within a very short distance of the object being examined. And I also remembered that I had been warned by my biology professor at college to use great care not to crack the microscope slides by screwing the lens against them. Ramon, then, must be right, at least in some of his conclusions. But, to my mind, he was still working on false or at least

unsubstantiated premises.

"Even so," I objected at last, "it isn't necessary to assume that the Manabis possessed lenses of unknown material or design. Their eyes may have been different from ours, or"—I added half-banteringly—"they may have possessed some mechanical device, some machine that would produce the results that are so mystifying. We have machinery that can engrave steel and other materials in much finer designs than any of those we have found here."

"You are straining at a gnat and swallowing a camel," laughed Ramon. "You are perfectly aware that the prehistoric races had no knowledge of mechanics, no knowledge whatever of the wheel, without which mechanical devices are quite impossible. You simply do not wish to admit that pure out-and-out theories can be right, that mathematical problems can solve matters of which we have no true knowledge, or that anything can be assumed to have existed unless concrete evidences of its existence are found."

"But," he finished confidently, "I am convinced that before you have completed excavations here, you *will* find such concrete evidences and that when they are found, they will bear out my theories and my calculations."

A FEW days later he again mentioned the matter. This time, he admitted he was merely theorizing. "I have been thinking deeply on this matter," he announced as we breakfasted together. "And I have almost come to the conclusion that there is some connection between the minute beads and microscopic carving and the gold-plated objects. I might even go farther and state that in the back of my mind is a feeling that there is a direct connection between all these and the titanic stone work of the Andean regions. You may recollect that, when I first saw the gold beads, I remarked that they and the pre-Incan stone work were like looking at objects through the two ends of a telescope. Is it beyond the bounds of possibility that the same means these Manabis used for executing work that is invisible to the unaided eye, might not have been reversed to enable the pre-Incans to perform work which seemingly is that of giants?"

I laughed outright. "My dear Ramon," I cried, "how would visually reducing a fifty-ton stone affect its physical properties? It would still remain a huge rock and would still weigh fifty tons, even if, to the eye of the observer through 'the wrong end of the telescope,' as you put it, it appeared an insignificant pebble? You might as well suggest that the stones were really small and after being cut and placed were treated by some sort of magic which caused them to expand and remain enlarged, or that these gold beads were cut and made and chased when a foot or two in diameter, and were then—by some

occult means—reduced to their present size. No, no, Ramon, I admit the possibility, though not the probability, of a lens having been used—though it was probably a crude, accidentally-made flake of quartz crystal—but I cannot admit, even for the sake of argument, that the prehistoric Americans possessed the power of altering the proportions of non-organic matter."

Professor Amador merely smiled. "Ten, twenty, fifty years ago, that might have been conceded," he replied thoughtfully. "But today we know of a certainty that non-organic matter—and organic as well—is not the fixed, solid unalterable material our ancestors assumed it to be. All matter, as you are well aware; everything, ourselves included, is composed of protons and electrons; independent bodies, movable, transferable, changeable. Certain combinations or groupings of protons and electrons produce certain effects. Such groupings may remain unchanged indefinitely or they may change constantly. A rock may remain unaltered for countless centuries or under other conditions, it may completely vanish as a rock in a short time. Why? You say by erosion, by weathering, by some one cause or another. Very true. But it is the alteration of the electronic grouping that causes the rock to vanish even though the weather or the elements may produce or incite the electronic alterations. A seed sprouts and grows into a tree. Why? Because the atoms which its molecules contain, alter their arrangement and numbers; air, water and sun and their own vitality cause them to change. We can take a huge mass of wood, of leather, of metal, and reduce it to a fraction of its former size and it will remain reduced, merely because we have forced its component atoms to assume a different combination. If we wish, we can increase material in the same manner. It all depends upon the groupings of electrons and upon vibratory waves. What happens when the tobacco in the pipe you are smoking is burned? Do you, a scientist, mean to tell me that the tobacco has actually been destroyed, that by puffing at your pipe you have eliminated a portion of the matter of the universe? No, you have merely altered an electronic combination. Your tobacco still exists though in changed form. You have produced ash, gases, smoke, liquids, solids, by forcing, through the medium of fire and air, the protons and electrons of the original tobacco to assume new combinations and forms. Even the human body and the bodies of animals of all kinds are in the same sense indestructible. Upon death the electronic combinations and vibratory waves, which give us our living bodies, become altered. By degrees they take on new and unrecognizable forms. Some become gases, others solids, others liquids, and in time these change still more. They become loam, plants, vegetables. Again they alter and become component parts of new creatures, even of other men and women. For all we know, even our mentality, our spirits or souls, are merely forms of electronic or vibratory wave energy;

for all we know these same forms of energy may, either rarely or commonly, reassume their former combinations and produce reincarnated beings having the same thoughts, the same ideals, the same reactions, the same loves and hates as those who died hundreds or thousands of years ago. In the light of present-day science, nothing is impossible, *amigo mio*. What seems impossible or at least highly improbable today may be commonplace tomorrow. Is it any more remarkable to imagine a small pebble increased to a gigantic monolith, or to think of a life-sized statue reduced to miniature, than to conceive of the human voice—the living, speaking image of a human being—being transmitted through the empty air for hundreds, thousands of miles? Mind you, I do not say positively that these prehistoric people possessed some power, unknown to us, of permanently altering the proportions of objects. But we must admit, or else discredit the testimony of our five senses, that they possessed some knowledge of which we are woefully ignorant. And I should not be at all surprised if, when we hit upon the secret, we will find that it was along the lines I have suggested."

"Whew!" I exclaimed. "No wonder you hold the reputation of being the most forceful lecturer on physics in the world. Yes, I admit all that you say is incontrovertible truth as admitted by science. In fact, I might add quite a few facts and examples in proof of it. But it doesn't prove anything, and until you can either discover this lost wizardry or can work out a theory which can be proved by repeating the magic, you are no nearer a solution of the puzzle. And," I added, as I rose to start my peons at their digging, "I suppose you suggest that the copper objects were plated with gold by the Manabis' ability to transform a portion of the copper to gold by some unknown and lost power that would have made the ancient alchemists green with envy."

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[3] Beryl is the mineral, specially fine samples of which are called emeralds.

CHAPTER III

IT was only a few days later that we came upon a great find, the find that Professor Amador had hoped for and had foreseen, and which was the direct cause of all the truly amazing and incredible events that followed, and which culminated with the disappearance of my friend.

The "find" itself seemed insignificant. Merely a number of fragments of the same transparent greenish mineral, such as Professor Amador had found in the bed of the stream weeks before. But to him the bits of green material—scarcely one of which was half an inch in diameter—were far more precious than emeralds. The instant the first piece was revealed, he leaped into the pit, shooed away the amused peons, and on hands and knees, began searching for fragments. Not until every shovelful of earth had been carefully sifted and no more pieces of the mineral could be found, did he cease. The result of his labors was a handful of the green slivers, but he was as excited and enthusiastic as though he had discovered a living Manabi, and he hurried to his laboratory with his treasure-trove.

In the course of the day we came upon several more deposits of similar fragments, and wishing to further my friend's work as much as possible, I had all the fragments in each separate lot carefully preserved and kept together. I did not see Ramon until the following day, but a light was burning in his field laboratory all night, and he admitted that he had not slept. But he had a body and nerves of steel and seemed never to tire, never to be exhausted, never to be in need of sleep, so I had long before given up warning him of the danger of not sleeping enough.

This morning he was jubilant. "I was right!" he exclaimed. "These people *did* use lenses, and lenses of a material hitherto unknown—of that green mineral substance. Although," he qualified, "I am convinced it is an artificial material, not a natural mineral formation."

"Good!" I applauded. "I suppose you have reconstructed a lens and have discovered that it is not so very remarkable and that it will magnify enough to solve the mystery."

"Yes, and no," he declared. "After no little trouble and perseverance, I

matched up enough of the fragmentary remains to establish the fact that they were shattered splinters of what was once a lens. The rounded surfaces and the obvious indications of grinding and polishing amply prove that fact. But it would be impossible to reconstruct a lens from the splinters I have. And even if they *were* cemented together, the resultant lens would be worthless in as far as testing its optical peculiarities is concerned. But I shall endeavor to make an exhaustive test to establish the refractive index of the mineral or material, and shall sacrifice a small quantity of it—always of course with your permission—in an effort to melt it. If I succeed, I may try to recast the material and manufacture a new lens."

"You can use all of the stuff you want in any way you see fit," I assured him. "We found a lot more after you left yesterday—I should say we have eight or ten pounds of it now. So go ahead and I wish you every success. But I shall not be convinced until you have made a lens and have proved your case. You see, Ramon, in this case I am from Missouri, as the saying is. The fragments may have rounded surfaces, they may have been cut and polished, but I'll wager they are portions of some ornament, some vessel or some ceremonial object, and not parts of any lens. Why should they be broken? Why should a lens have been shattered—or rather, why should half a dozen lenses have been shattered?"

"Humph!" he snorted. "Why should a dish, an ornament, a ceremonial object—or several of them—have been shattered? Answer that, *amigo mio*, and I will answer *your* question."

"That's easy," I assured him. "Every archeologist—and most ethnologists—who have studied American aboriginal races, know that it was and is a widespread custom of the Indians to 'kill' their most prized possessions upon certain occasions. During funerals it is often done, at the dedication of temples the custom is followed, and it also forms a portion of the religious ceremonies of some tribes. There are abundant evidences that the Manabis practised the custom. Many of the broken stone artifacts—the *metates*[4] and chairs, the idols—as well as much of the pottery I have found, were obviously broken intentionally. I have secured several pots shattered by stones which still remain among the fragments; I have found others resting against the stone columns with smears of their color showing where they were dashed against the stone. The Indians' idea is that by 'killing,' or as we would say sacrificing, an article they prevent evil spirits or devils from taking possession of it. And, as a usual thing, the objects most commonly sacrificed are those of a ceremonial character. If you had observed, you would have noticed that, in every case, the plain pottery and ordinary stone artifacts in this site are entire, whereas the

objects of a ceremonial or symbolic type have been intentionally broken. Now if these people had very sacred ceremonial objects composed of your green glass or whatever it is, they would be the first to be sacrificed."

"I take off my hat to you as a lecturer," he laughed. "Thanks for the scientific and highly interesting information. But, let me point out, your explanation answers your own question. Admitting all you say is so, then if these Manabis possessed lenses, they unquestionably would have looked upon them as sacred or mysterious or ceremonial, and they too, would have been sacrificed."

I WAS floored. His argument was logical. Still I was not convinced and I told him so. But he pointed out that not one of the fragments was so shaped that it could have formed a portion of any dish, figure or ornament, and he insisted that the splinters represented some form of lenses.

"If we could only discover the site whence the material was obtained," he remarked, "we might be able to construct a lens and prove my theory."

"But I thought you said you believed the material an artificial product," I reminded him. "Surely, if that is so, you should be able to analyze it and reproduce it. You are an excellent inorganic chemist, I know, and you have a very complete chemical laboratory with you."

"My very dear, good friend," he ejaculated, "chemistry *is* a most remarkable and exact science to be sure. It will be comparatively easy to analyze the material; but it is an entirely different matter to imitate it. It may prove to be possible as you suggest, but it is just as liable to be utterly impossible. Many materials may be analyzed but not duplicated. And some cannot even be analyzed. Take Bakelite, for example. It is, as you know, a material made by combining formaldehyde and carbolic acid with some filler and coloring matter added. And yet, if some man, say a few thousand years from now, should discover a slab of Bakelite and should try to determine its way of manufacture by analysis, he would find it absolutely impossible. And I could name a hundred—yes fully one thousand—well-known and common substances which, though readily analyzed and their various component parts identified, cannot be duplicated unless the secret of their manufacture is known. We can analyze diamonds, granite, mica, innumerable minerals, but we cannot make identical substances artificially, and while I do not mean to state positively that I may not be able to produce material identical with this green mineral-like substance, I am not counting much upon being able to do so. As regards my suggestion that it is artificial, I assume that if that is the

case, the Manabis discovered the secret of its manufacture by accident—perhaps by building a fire where its various elements occurred, and fusing them together, just as the ancients discovered how to make glass by kindling a fire on a sandy shore where blocks of crude soda surrounded the fire. And if we could find the spot, we should probably find the crude material, for I should imagine that the aborigines, probably regarding the material as sacred or of divine origin, would invariably have sought the same spot when they desired the composition, never realizing that the various elements could be transported elsewhere and then combined."

"Perhaps you are right," I admitted. "But to find the spot would be like searching the proverbial haystack for the equally proverbial needle. It may be within a few yards of where we stand, and then again it may be anywhere within a radius of several thousand miles. You must remember, Ramon, that the Indians——"

"Yes, I know what you are about to say," he interrupted. "That the aborigines transported articles for immense distances, that they bartered and traded from ocean to ocean and from the Arctic to the Antarctic. I am quite aware of that, my friend. I have often examined those mysterious monolithic idols that are abandoned near Lake Titicaca, but are made from stone that, as far as is known, can be found only near Quito in Ecuador—nearly two thousand miles distant. That, *amigo mio*, is one of the puzzles in prehistoric physics, which I have tried and am still trying to solve. But in this case I doubt if the deposits of materials I seek are far from here. Your own and Saville's investigations have demonstrated that the Manabis were restricted to a comparatively small area, that savage, uncivilized tribes surrounded them, and hence they were, in a large measure, self-contained. Yes, unless they received the materials by water, the deposit is close at hand, and I intend to search diligently for it. Can I borrow one of your peons to accompany me on my search?"

Of course, I gladly gave the permission, and for the days following, Ramon made trips into the surrounding jungle, covering an allotted and predetermined area each day, and carefully searching every foot of the ground in his hopeless and, to me, endless quest.

BUT RAMON had the perseverance, the dogged determination or instinct of the Indians, whose blood ran in his veins, and he seemed never discouraged nor downcast by his constant failures. I must also add that he had tried in vain to analyze the green material. He learned that it contained certain well-known

elements—such as silica, aluminum and sodium, but it also contained several elements and the oxide of at least two metals, which baffled all his attempts at identification. I must also add that we had found several more fragments of the material, and these, being larger than those discovered hitherto, were a great puzzle to my friend. Like the others, they showed signs of having been cut and polished, but Ramon's careful and painstaking measurements convinced him that the cut surfaces had not and could not have formed a curved, lens-like surface.

Of course, I teased him when he admitted this, arguing that my theory, that the fragments were the remains of some ceremonial object, was correct, and asking him how he could longer argue that the green substance had been used as a lens, if his own calculations and tests proved it had not been made into a lens form. Ramon, however, could be as non-committal as a full-blooded aborigine. He merely grunted and refused to reply or to suggest any information, but I knew, from his preoccupied manner and his expression, that he had formulated some theory, and that his active and most brilliant brain was busy searching this theory for possible flaws.

It must not be thought by my readers that I belittled Professor Amador's theories, his knowledge of his special branches of science. On the contrary, I admired him intensely. I had the deepest respect for his knowledge, his attainments and his mastery of what are perhaps the most abstruse and difficult of the recognized sciences. But as I have said, we were most intimate friends; we could argue and discuss matters and could jolly and tease each other unmercifully, without losing our tempers, and very often, either one of us would deliberately assume an attitude and maintain a stand, that we did not feel, merely in order to bring about a discussion and to draw the other out. Although in the beginning I actually had no faith in his theory of the Manabis having used the green material for lenses, even though I could not account for the minute work they accomplished on any hypothesis other than the use of lenses of some sort, yet, as time went on and Ramon's indisputably correct calculations and formula were developed, I became more or less convinced that, in the main points of his theories at least, he was correct.

I had, in fact, quietly, and I confess secretly, done a little in the line of experimenting myself. With infinite labor I had fitted bits of the green material together, and I had convinced myself that they had never formed any portion of any utensil, vessel or image. In fact, from what I could determine, they were portions of most irregular and remarkably shaped objects, and, had it not been for the obvious evidences of having been artificially formed, I should have deemed them bits of some natural mineral mass or cluster of crystals.

Indeed, I was rapidly becoming almost as deeply interested in the solution of the mystery of the green substance as was Professor Amador, and I constantly found myself speculating on its purposes and its origin and neglecting my archeological interests. But of one thing I felt positive. Whatever the origin of the material, my friend had less than one chance in a million of finding it by wandering blindly over the adjacent territory. I well knew how extremely difficult—almost impossible—it is to find anything in a tropical jungle. I had myself searched for weeks for Maya ruins in Central America, for the remains of vast, massive temples and immense stone monuments, and had often passed and repassed within a few yards of them without suspecting their presence. And I had heard the same story from numerous mining engineers and prospectors, who had fruitlessly searched for months for the outcrops of mineral veins which—from float samples—they knew existed within a very restricted area.

Of course there was the remote possibility of Ramon stumbling upon the deposit by sheer luck, and, had there been any inhabitants in the district—either Indians or mestizos—enquiries among them might have given him a clue. But the district was uninhabited; none of my peons were familiar with the territory, and much as I wished my friend every success, yet I felt that his quest was merely a waste of time and energy.

According to my notebooks and field-diary, it was three weeks after Ramon had commenced his search that he returned at the end of the day, so highly elated, so evidently filled with excitement, that I knew his efforts must have been crowned with success.

"Congratulate me, *amigo*!" he cried. "I *have* found it at last! It is marvelous, astounding! No, I shall not tell you; I shall not describe it. You must see it for yourself; you must come with me tomorrow. And it is near—not three miles from where we sit! I stumbled upon it by accident. And I *was* right. The material *is* artificial. But it is not the handiwork of any human being!"

"How on earth can that be?" I demanded. "How can any substance be artificial yet not the result of man's handiwork? For heaven's sake, man, make yourself clear or I shall begin to doubt everything and shall think you have gone crazy on the subject."

But he merely laughed, maintained his air of secrecy, and refused to explain anything. Naturally my curiosity was aroused; the more so when, to prove he had found the deposit, he produced a good-sized lump of the green material, a peculiar, somewhat irregular mass perhaps four inches in diameter and with one side roughly convex.

“But this *has* been worked!” I exclaimed, as I examined it. “By Jove! I believe you *are* right and that this *is* a lens in the making.”

Ramon grinned. “Yes, in the rough,” he admitted, “but not worked by human hands.”

“Piffle!” I cried. “You mean to stand here and try to convince me this mass of mineral hasn’t been cut or chipped into form! Why try to make mysteries out of nothing? It’s remarkable enough to discover that the Manabis had lenses, without trying to add to the wonder of it.”

“Nevertheless it is the truth,” he insisted. “But I won’t say another word until you see what I have discovered. Then, my friend, the laugh will be on you.”

NEEDLESS to say I was as anxious to visit my friend’s find as was he, and on the following morning, as soon as we had finished our coffee, we started off. For a space we pushed through the jungle, a most unpleasant place in the early morning before the sun had dried the moisture from the leaves. Then we went along the bank of a small stream, across a ridge, until we came to one of those tongues of barren rocky desert, which, along this coast, extend down from the mountains almost to the sea. Here was a bowl-like depression in the ridge, a crater-like pit perhaps fifty feet in diameter and twenty feet in depth, and surrounded by a rim of fine sand which caused it to stand out prominently from the dark pyroxene rocks and reddish-brown tufa.

“Behold!” cried Ramon, dramatically indicating the depression with a gesture.

I stared into the pit. In the center of the bottom was a roughly-rounded blackish mass, and, gleaming in the sunlight amid the sand of the pit’s circumference, were numberless masses of the peculiar green material I have described.

I scrambled into the hollow and examined them. There was no doubt about it. They were the same, and varied in size from a few inches across to masses a yard or more in diameter.

My companion was grinning delightedly. “*Now* do you understand?” he cried. “Was I not right when I said it was artificial, but not the work of man?”

“Not as far as I can see,” I replied. “Quite obviously the mineral is not the result of human handiwork, but equally obviously it is *not* artificial.”

“For a scientist, you are not a keen observer,” commented Ramon, who had

joined me in the pit. "*I* do not claim to be a geologist and yet the whole affair was plain to me almost as soon as I discovered this spot. Have you examined that black mass beside you? You will find it a meteorite. This pit is the crater it formed in striking the earth, and this green substance is a compound formed by the terrific heat and pressure of the meteor's impact, which fused certain elements and produced the material that has been a mystery."

I realized that Ramon was right. There was no doubt about the immense mass of material being a meteorite, and a closer examination of the green stuff revealed indications of its having been fused. But there was one thing that puzzled me. When I picked up one of the lumps of substance I found one surface roughly convex, exactly as was the piece Ramon had brought in to camp the night previous.

"Ah!" I ejaculated. "I see the Manabis *have* been at work here. It is strange they should have attempted to manufacture their lenses in such a place."

Professor Amador smiled, "Mistaken again," he chuckled. "No human hands have touched that before yours. The Manabis had nature on their side. If you examine the meteorite carefully you will find that its surface is made up of slightly concave facets or depressions. And if you place the piece of material in your hand upon the surface of the aerolite you will discover that it fits perfectly into some one of those depressions. Undoubtedly, when the meteorite fell and fused the minerals where it struck, the molten matter formed a coating or shell about it. In time, owing perhaps to weathering, perhaps to the shrinkage as the material cooled, the fused matter broke off and fell from the meteor, each piece being molded convex on one side where it had been cast into form, as I might say. No doubt the Manabis, finding these rather attractive bits of semi-transparent material, polished the surfaces and by accident discovered that they possessed lenses."

While he was speaking I had been most painstakingly examining both the meteor and the mineral I had picked up.

"I admit your explanation sounds plausible," I replied. "But, as you just admitted, you are *not* a geologist. Neither am I for that matter, although I *did* take a special course in that science when at Yale. And I am afraid I must quote your own words of a short time ago and inform you, my very dear friend, that *you* are not a keen observer. You have, to make use of a time-honored saying, put the cart before the horse in a way. You are no doubt correct in regard to the meteorite generating heat and pressure when it struck; possibly it may have fused certain portions of the rock and sand here. But your green mineral substance is *not* the result of that. On the contrary, it is the crystalline form of the meteorite itself. The mass, of course, was incandescent

as it passed through our atmosphere. Probably, in fact unquestionably, when it fell, this area was under water, and the sudden cooling, perhaps combined with chemical reactions if it was salt water, as it probably was, caused the outer surface of the meteor to crystallize.

"If you question the accuracy of my deductions, you have only to examine both the meteor and the green substance. You will find that, under a lens, minute crystals of the same character are everywhere distributed in the mass of the meteorite."

"Hm, I admit you may be right," muttered Ramon, after he had followed my suggestion, "but," he added triumphantly, "that does not in any way affect my statement. Whether the material was formed from molten sand or rock, or whether it was produced from the aerolite itself, is merely a technical question. The main point is that it was produced by a meteorite falling upon our planet, and was not fabricated by man, and that the crude lenses were formed by nature in the way I have explained. But," he continued thoughtfully, "your discovery explains why I could not analyze the material. Meteorites, I understand, contain some remarkable and perhaps unknown elements. No wonder I could not identify them! And—*amigo mio*," he cried excitedly, "we may be on the verge of an astounding discovery! For all we know the material brought to us from the heavens, from another planet, may possess characters—optical or otherwise—which are wholly undreamed of, totally unknown! *Carramba!* I am impatient to experiment, to solve the secrets, the mysteries of this celestial substance. And I stand here idly talking, wasting precious moments!"

I laughed. "Considering that this meteor and the green material has been here for several thousand, probably several hundred thousand years, a few minutes' delay is of no great consequence," I reminded him. "But, all joking aside, I do not blame you for your impatience. I am almost as deeply interested in it as you are. I shall await the outcome of your experiments with the greatest interest, Ramon. And I most heartily congratulate you upon your great good fortune in discovering this most astonishing source of the material, brought, as you say, from another world, another planet."

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[4] A curved or hollowed stone used by the Indians in grinding corn. It was a sort of basin in shape.

CHAPTER IV

IT was indeed fortunate that Professor Amador had had the foresight to bring a completely equipped laboratory and workshop with him. Had he been forced to return to the United States in order to conduct his experiments I truly believe he would have gone mad with impatience, and he might never have made the most astonishing discovery of all. Moreover, had he carried out his experimental work in the States, very serious and regrettable results might have followed. And yet, on the other hand, had he not brought such a complete outfit along, he might still be with us, and the final results that I am about to narrate might not—in fact could not—have transpired.

Having taken a number of the best pieces of the new material (which Ramon named Manabinite) to his laboratory, he busied himself day and night experimenting with small specimens of the mineral, covering sheets of paper with abstract and involved mathematical calculations, conducting exhaustive physical and chemical tests and cutting, grinding and polishing the strange material.

"It's almost as hard as sapphire," he informed me, "but, it has a most remarkable property of cleaving on the plane of its rounded surface when it is struck in certain spots, or of cleaving at right angles to its axis if struck on another spot. I have not fully worked out its optical properties yet, but I should say off-hand that its refractive index is fully equal if not in excess of that of the diamond. A lens composed of it should, theoretically, magnify an object fully fifty times more than a glass lens of the same formula. Think of it, my friend! Think what that means to science, to optics, to humanity! Think what wonders of biology and nature may be revealed when we have microscope objectives capable of enlarging an object fifty times more than any lens yet produced! Think what it will mean in astronomy! Why, *amigo mio*, with a telescope lens of this material, no larger than any of the great objectives already in use, we should be able to view the trees, the houses upon Mars!"

"Provided," I reminded him, "that your theories are borne out, that the Manabinite is sufficiently transparent to be used as powerful lenses, and provided that you can obtain masses large enough for manufacturing such

lenses. You forget, Ramon, that, as far as we have reason to believe, the entire world's supply of Manabinite is in that miniature meteor crater. I cannot say how much is there, but I should hazard a guess that the quantity is exceedingly limited, and that the largest piece is far too small to be transformed into a telescope objective for studying the planets."

Ramon's face fell. "Yes, that is so," he grudgingly admitted. "I have searched the pit thoroughly—have dug deep into the surrounding sand and rocks, have even gone several feet below the meteor itself, and have gathered every fragment and flake I can find. The total amount is woefully small. In fact I might say it is inadequate for carrying on as many experiments as I would wish. Yes, unless we can discover another deposit—which is practically impossible under the conditions—or unless I can discover how to imitate Manabinite artificially, then I fear very much that my discovery—our discovery—will be of little real value to the world. But," he cried, once more enthusiastic, "it is going to solve the problem of Manabi art and, who knows, perhaps the mystery of Tiahuanaco and other cyclopean works as well."

"Just what *have* you accomplished so far?" I asked him. "Have you started making a lens yet? It seems to me that the first and most important step would be to make a small lens and test it out. You may find the darned thing won't work at all."

"It will work, all right," he assured me. "Yes, I have been busy a goodly portion of the time, grinding a lens from a small mass of Manabinite. I have worked along rather revolutionary lines and am grinding the lens to conform to the formula worked out by a determination of its refractive qualities. By tomorrow I hope to have it completed. Then, *amigo mio,* for the great test."

Of course we were both keyed up when, on the following day, Ramon announced that the lens was completed, and that he would like to have me present when he made his first test. It was very thoughtful of him to do this, and I fully appreciated how great a sacrifice it had been for him to refrain from satisfying his desire and curiosity until I could be with him.

I must admit that he had done a most beautiful piece of work. The lens was as beautiful as a polished emerald, and seemed actually to glow with internal fires.

"There is one thing certain," I laughed, as I admired it. "Even if this Manabinite is worthless for lenses you can make a fortune selling it for gems. It is harder than emeralds, you say, and to my mind much more beautiful. And, best of all, there is such a limited quantity that the market will never be flooded."

Ramon smiled. “No doubt,” he agreed. “But let us defer any such matters until after we have had a look through this lens. Here, my friend, if it had not been for you, I never should have come here nor made this discovery. It is your right and privilege to be the first to look through a lens of Manabinite.”

In vain I protested. Ramon insisted and, grasping the glorious green lens, I held it between my eyes and the little pile of golden grains that Ramon had placed upon the table. For a moment I could see only a marvelous, vastly deep, apparently fathomless, green light. It seemed like looking into the very depth of a tropical sea. And then suddenly, unexpectedly, an object seemed to rush towards me, to burst through the wondrous green, to hurl it aside, and I involuntarily uttered a sharp, surprised exclamation. But the next instant my cry changed to one of utter amazement and incredulity. The object had come to rest, a great dull-yellow mass like a submerged mountain, a mass, the surface of which was scored, cut, incised with deep rough furrows, ravines, valley and cañons. But I recognized them instantly. They were orderly arranged, they followed definite lines, and I knew that I was gazing upon the immensely enlarged surface of one of the minute gold beads upon the table-top.

“It is marvelous, amazing, absolutely incredible!” I cried, handing the lens reluctantly to Ramon. “No wonder the Manabis could manufacture such beads, could engrave a lapis-lazuli idol with microscopic designs. Why, man, that bead looks as big as a mountain! It must be magnified hundreds—thousands of diameters!”

But I doubt very much if Ramon even heard my voice. He, too, had seen, and entirely forgetting his surroundings, he was exclaiming, enthusing, almost shouting in his native Spanish.

At last he tore his eyes from the seemingly magic lens, and, with a deep sigh, dropped limply into a chair.

“It is true. It is as I thought, as I hoped!” he cried. “Success has come at last! Ah, *amigo mio*, if you only knew the fears, the doubts that I have had. If you only realized the blow it would have been had all my calculations, my theories and my labors come to nothing! I would have been crushed, discouraged and—do you know, my dear good friend—your ridicule would have been the hardest of all to bear? But now!” he jumped up, filled with energy and life. “Now, I have proved everything. *What* a lens! Do you not agree, *amigo*?”

“Ramon,” I said, seizing his hand and looking into his eyes. “I never dreamed that you took my bantering seriously. Come, old man, forgive me,

won't you? But I realized what work and life you have put into this thing. You have overdone. You must take a rest. You have triumphed, mightily, beyond my words to express. You have revolutionized optics, my friend. What more do you want?"

Ramon's lips parted in that happy, boyish smile I loved. "Now *you* are taking *me* too seriously!" he cried. "You forget I am a temperamental Latin with the Indian tendency to enjoy a bit of martyrdom and self-pity. No, I never actually took your raillery seriously. I believed all along that, in the bottom of your heart, you thought much as I did. But I cannot rest yet. I have only commenced. This is merely a beginning. Why, *amigo*, that tiny lens is simply a crude experiment. It is not perfectly ground, its curvature is largely guesswork, and it is made from an imperfect piece of Manabinite. Wait until I make a really good lens and see what you will see."

But when, after a number of days' incessant labor, my friend had made a second lens—or rather had remade the first—to exactly conform with his ideas, his formula and his theories, I could not see that it was very much superior to the first. I admitted that it was slightly clearer, that it magnified the objects beneath to a greater extent, but it was no more remarkable than the first lens which, to me, was still a veritable marvel.

And Ramon was bitterly disappointed. He had accomplished wonders, his deductions and theories had been borne out, but somewhere he had made some error and he completely lost sight of the fact that he had apparently solved the mystery of the Manabis' secret in his failure to accomplish what he had hoped for. The discovery of some new optical or physical law.

"There is nothing new or revolutionary about it," he declared, when we were discussing the matter one day. "To be sure, Manabinite possesses most remarkable qualities of magnification, but that is due to its refractive index, not to any new law. Very probably an immense diamond might prove to possess most unusual powers as a lens, although there is something else, some elusive hidden peculiarity of the composition, the crystallization or the color of Manabinite that adds to its power. But that does not mean anything really new.

"And there is another thing that perhaps you have not noticed. This lens, or rather these lenses, I have made, possess very little depth of focus—almost none at all, in fact. Outside of a very small portion of the object brought under them, in a necessarily restricted area all within the same plane, nothing is magnified, nothing is clear. In fact the rest of the object is practically invisible. That is why you were so surprised when the gold bead seemed to leap at you when you first looked through the lens. Until the bead was within the very shallow focal plane of the lens, you saw nothing, then, as you brought a

portion of its surface into focus, it sprang into view. With an ordinary lens, even where there is little depth of focus, there is a blurred, but visible image of the entire object under the glass, even of surrounding objects, for the glass is transparent. But with the Manabinite lens, everything, but the small portion actually sharply focussed, is shut off as if by a screen. That puzzles me, and I cannot solve the mystery. Just as soon as an object is within focus, the lens seems to become perfectly transparent—even the green tint vanishes—but as far as everything else is concerned, the lens might as well be opaque. And for that reason, *amigo*, I am sure I have not yet solved the problem of how the Manabis made their minute beads and carved their invisible designs."

"What?" I cried. "You mean you do not believe they used Manabinite lenses? You mean you have cast aside all your assumptions and theories? Good heavens, Ramon, you *are* queer! Just when you have convinced me you were right, you turn about and claim you were wrong. Why, man, you must be taking leave of your senses? Here you have absolutely proved your theories, have proved that the Manabis had lenses capable of magnifying objects hundreds of times, and then you tell me you haven't solved the problem!"

RAMON shook his head. "For a man who always boasts that nothing is proved until it is demonstrated, you take a most remarkable attitude," he replied. "You say I *have* proved the Manabis used lenses of Manabinite when performing their remarkable feats of sculpture and handicraft. But I have done nothing of the sort. I have proved that Manabinite possesses unique powers of magnification. I proved nothing more. And I have proved to my own satisfaction that, when it was used in the form of an ordinary lens, Manabinite would have been almost, if not quite useless, to the aborigines who occupied this site. Suppose, just to demonstrate your assumption, that you try to do a little work upon some object while it is viewed by your eyes through the lens. *I* have tried it and I have found it utterly impossible. It is hopeless, an impossibility, to keep the tool used and the surface upon which it is used in focus at the same time. And it is equally hopeless to try to follow out a design or a pattern upon any object when only a very limited portion of that object is visible. If you doubt me, try to make a drawing of some very simple form—one of your prehistoric pots or a human being or a pig—anything, in fact, by cutting a round hole in a sheet of paper, placing this over another sheet and drawing the object bit by bit upon the surface of the paper visible through the hole. I'll wager that when you have finished, the result of your labors will be utterly unrecognizable. No, my friend, if the Manabis fashioned their miniature objects by means of a lens, it was a lens through which they could see the

entire surface of the object upon which they worked. But," he added vehemently, "there *must* be an answer, there *is* a solution. I am positive they used Manabinite. I am equally positive they did *not* use it in the form of an ordinary lens, and, *gracias da Dios*, I am going to discover what they *did* use. And when I do, *amigo mio*, I will discover the *great* secret, the unknown law of optics or physics or both. I shall do it even if I spend the rest of my life at it!"

I was almost dumbfounded. What Ramon had told me—and now I realized it was all true—came as something of a shock. I was convinced that the Manabis could never have worked under a lens with the properties of the lenses which Ramon had made, and all the smug satisfaction I had felt because my friend had solved the riddle had been ruthlessly destroyed by his words. The lenses had been so astonishing in their magnifying powers, that I had overlooked their short-comings. Now I was fully aware of them.

"Possibly," I ventured after a time, "the Manabis may have treated the lenses in some way. Isn't it possible that Manabinite might be changed by heating or tempering or something? I have always understood that glass may be greatly altered by annealing."

Ramon shook his head. "I have tried," he declared, "but without any result. Moreover, I have compared the fragments of lenses found here with the crude materials. As far as I can determine, the two are identical in every way. No, I must look farther for the answer. And, do you know, I have a feeling, a hunch, as you would call it, that the answer is not so far off. Do you remember those fragments we found which so greatly puzzled me? Those pieces with angular surfaces where there should have been curves? I have been racking my brains, trying to figure out what they were, what they meant, and I believe that therein lies the key to the whole matter."

"I remember them well," I told him. "But to me they appeared more like natural crystalline forms than hand-made. But whatever you do must be done very soon, my friend. The rainy season is not far off, and when the rains set in, this locality is no place for civilized human beings."

"If I have not completed my work by then, I shall continue my experiments in the United States," he declared, as he disappeared in his laboratory.

Three days later, Ramon dashed from his workshop, wild-eyed, dishevelled, gasping for breath. Never before had I seen him in such a state. He seemed frightened, terrified, and for a brief moment I thought he had gone raving mad. But his first words were reassuring. "I have found it!" he fairly yelled. "It's marvelous, astounding, miraculous! And by accident, by chance, I

came upon it! It was last night," he continued, striving to control himself and speak intelligibly. "Last night I dropped the lens just before retiring. It broke—splintered; you remember I told you the Manabinite had a peculiar cleavage. Disgusted, discouraged, I gathered up the splinters—they would be bad things to tread upon with bare feet, and throwing the smaller fragments aside, I laid the largest piece upon my table and went to bed. I arose this morning, remembered the accident of last night, and glanced ruefully towards the spot where I had placed the remains of all my labors. *Santa Maria!* how I stared, speechless, startled, even terrified. The Manabinite had vanished, and in its place I saw a monster, a huge, a gigantic insect; an enormous bug! His great cold eyes seemed fixed upon me balefully, his hairy legs seemed poised, tensed, ready to spring. I could scarcely believe my eyes. Never had mortal eyes gazed upon such a creature. Cautiously, grasping a stout stick, my curiosity overcoming my first fright, I stepped towards the table the better to examine the giant insect. Then the incredible happened!

"The huge insect vanished before my eyes, disappeared completely, instantly, and in his place, just where I had left it, was the piece of Manabinite! I rubbed my eyes, speechless, unbelieving, fearing I had gone mad! Then as I gazed, I noticed a minute dark speck beside the shattered lens. I bent close to examine it. Then I understood. Then like a flash all was clear. The wonder of wonders. The tiny speck was an insect, a minute thrips, the liliputian counterpart of the giant bug I had seen. I stepped back, gazing fixedly at the lump of green mineral. One, two, three steps. As though dissolved in air, the Manabinite vanished and there, once more, was the ugly, horrible, giant insect! It was impossible, incredible, but true. Chance, accident, fate, perhaps the good God Himself, had produced the results I had labored in vain to achieve. The shattered bit of Manabinite had taken on the form that enabled it to project a stupendously magnified image of an object near it. And, most marvelous, most wonderful of all, in doing so, it became itself invisible! Come with me, *amigo*, come to my laboratory and see for yourself. Observe the miracle, the wonder of it! I have not dared to touch it."

AMAZED, hardly able to grasp the meaning of his words, I hurried with Ramon to his laboratory. All he had related had not prepared me for the amazing, unbelievable thing I saw. As I entered, my eyes turned to his writing table. Resting upon it was a roughly angular piece of Manabinite. Then, as my friend led me to one side, my eyes still fixed upon the green material, I gasped, stared, for as far as I could see the table top was bare; the Manabinite had vanished as if by magic. Ramon's voice brought me to my senses.

"*Que lastima?*" ("What a misfortune") he cried, "The thrips has gone, you cannot see the ogre that greeted me. But wait. Keep your eyes focussed as they are."

Hurrying forward, he reached toward the table, and, as though conjured from the air, a huge, gleaming golden ball lay upon the table before my amazed eyes!

Instantly I recognized it. It was one of the almost microscopic gold beads, but appearing the size of a football, its chased design, every detail of its surface, clearly defined. But of the fragment of Manabinite that produced this miracle, there was no visible trace. Still keeping my eyes upon the glorious golden ball, I stepped forward, extended my hand, and touched the hard, glass-like surface of the Manabinite! Still without removing my gaze, I moved slowly to one side. Like a flash the gold ball had vanished, and beneath my fingers was the green, semi-transparent piece of mineral! I gasped, and sank into Ramon's chair. It was too much, too startling, too utterly incredible for my brain to assimilate.

Ramon was wild with excitement, mad with delight. He fairly danced; he chattered in Spanish, he babbled in English.

"Do you not understand, *amigo mio*?" he cried. "Do you not grasp the reason for this miracle? Do you not realize what a discovery this is?"

I shook my head. "I realize it *is* so," I replied. "But why, how, by what uncanny means this miracle, as you call it, is brought about, is beyond me."

"There are many things, many phenomena which I myself do not as yet understand," he confessed. "But already—*pronto*, in a flash—I have grasped much, have understood much. It is the action of a prism, not of a lens. By the merest chance, by its natural cleavage, this bit of Manabinite assumed a prismatic form. By another chance—or guided by Fate or God—I placed this prism upon my table in such a position that a tiny thrips—an humble, despised plant-louse, came into its refractive field. Otherwise, my dear friend, I never would have known; I should have thrown the broken lens aside, and never would we have solved the mystery or witnessed this miracle. But how the miracle is accomplished, why the crystal itself vanishes when it magnifies an object, what becomes of its color, what the optical principles and laws that govern it may be—these are all unsolved mysteries, matters to be worked out. And they are all new, wonderful, revolutionary. But now the matter is simple. I shall make more prisms, shall improve them, shall polish the surfaces, and shall devote myself to determining all the secrets of the astounding material and its properties. But we now know how the Manabis performed their

wonderful feats of carving and of handiwork. And the puzzle of those bits of Manabinite with angular surfaces, is solved. They, too, were fragments of prisms. But—" his face fell and an expression so lugubrious swept across his features that I laughed. "But," he lamented, "my discovery—our discovery, will be of no value to the world; although it should be of the greatest. There is no more Manabinite besides the negligible quantity in our possession."

CHAPTER V

BUT if Professor Amador was pessimistic in regard to the benefit his discovery might prove to the world, his interest in the remarkable material and its even more remarkable properties was not abated. In fact it was vastly increased, and for days, and nights, he worked feverishly in his laboratory, appearing only for his meals, which he gulped down hurriedly.

"Now that I have the key to the optical peculiarities of Manabinite," he declared, a few days after his amazing demonstration, "I have definite lines upon which to work. You thought that fragment of the mineral gave astounding results, but that was merely a crude, an accidentally formed prism. I shall make a real one, a cut, ground and polished prism, mathematically constructed from the data obtainable from that fragment. Then, *amigo mio,* we shall see what we shall see."

And when, after the most intensive work, Ramon produced his beautifully finished Manabinite prism, it proved as much superior to the prismatic fragment as a high-powered microscope objective is superior to a twenty-five cent reading-glass.

Viewed through it, the tiny golden beads appeared as two-foot spheres of gleaming intricately-engraved metal. Innumerable beautifully-chased designs, which had been hitherto invisible, could be traced between the grooves of the coarser carving, and, as I studied these, I became convinced that they formed inscriptions in some unknown form of glyphs. The sculptured designs upon the lapis-lazuli idol proved to be of the same character, but words cannot express the marvelous beauty and incredibly fine work upon this. What the amount of the magnifying power of the prism was, I cannot say precisely, but I should judge it to have been roughly about five hundred diameters. But unlike a powerful lens of the conventional type, the prism possessed a tremendous depth of focus and a very wide field. Objects were sharp and clear when placed anywhere from a few inches to several yards from the prism, and their magnified images were as perfect when the observer was yards from the prism as when he was within a few inches of it.

Indeed, there was no effect of gazing into a lens. The magnified image

appeared like the real thing, actually and physically enlarged, an illusion that was due largely, no doubt, to the amazing property of the Manabinite losing its visible color and seeming to vanish completely when viewed from a certain angle. I mentioned these matters to Ramon, who smiled knowingly.

"Not being familiar with the laws of physics and optics," he replied, "you cannot differentiate between the two. From a technical and scientific viewpoint Manabinite possesses no peculiarities worth mentioning; its optical qualities, in fact, are no better than ordinary crystal——"

"Nonsense," I interrupted. "Could you make any crystal prism or lens to approach, not to mention equal, this of Manabinite?"

Ramon shook his head. "I could not; neither could anyone else. But that is not because of the optical peculiarities of the mineral. If you will allow me to explain, possibly I may make my meaning clear, my friend. As I said, Manabinite has no unusual optical qualities. But it *does* possess the most remarkable, amazing and hitherto unknown physical peculiarities. I have convinced myself that the apparent magnification that you witness is not what you and I at first thought it. Magnification, in the ordinary sense of the term and as brought about by lenses, is due to the refraction of light rays, so bent, or rather so altered, in their angles of incidence, by passing through the lens, that they project an image of larger size. Moreover, a lens, if the curvatures are reversed, will reduce the image of an object. But my most exhaustive tests with Manabinite prove that reversing the prism, or even the lens from the material, will not project a reduced image.

"In fact, you may test this for yourself. Viewed from the opposite direction, the prism appears as an almost opaque mass of green mineral and nothing is visible through it. No, *amigo mio*, the magnified image projected by Manabinite is not produced by the alteration of light rays, or more properly speaking, light waves, but by means of some other form of vibratory waves. For some unknown and undeterminable reason, Manabinite, when formed into a certain combination of angles or facets, absorbs the vibratory waves or the movements of electrons present in the matter within the sphere of its influence, and throws them off at an entirely different vibratory speed, or a distinct electronic motion. It——"

"That all sounds very learned, but also very complicated and somewhat contradictory and abstruse," I remarked. "Do you——"

"Pardon me for interrupting your question," he continued. "I shall try to make my meaning clear by some comparisons. You are, perhaps, slightly familiar with the practice or the theory of 'stepping-up' electrical voltage."

I assented.

"And you, as a radio enthusiast, must understand the principles of so-called amplification."

"Yes," I agreed.

"Very well," he proceeded. "I might compare the Manabinite prism—if it may be called such, to a transformer or an amplifier. Just as the amplifying units of a radio receiving set pick up the inaudible vibratory waves—which as you know are merely ether movements—and emit them as vastly increased sound waves in air, so the Manabinite prism I have made picks up visible light waves and throws them off tremendously increased."

I shook my head hopelessly. "Perhaps I *am* unusually dense," I confessed, "but I cannot understand how a light wave—which is very distinct from an electro-magnetic wave, can be increased by physical means."

PROFESSOR AMADOR snorted and muttered some Spanish expletive. "It is fortunate that I am a very patient man," he declared, his merry smile proving that he was by no means as out of patience with my stupidity as his words implied. "As you know perfectly well, or as any man of your intelligence, education and scientific training *should* know, the so-called electro-magnetic waves, the light, even the heat waves are all closely related, if not identical, the only differences between them lying in the speed of their vibrations or their so-called 'wave-lengths.' If you heat a piece of metal, you produce heat waves emanating from it which will burn your fingers, but which you cannot detect by sight. If you heat it more, until it becomes red-hot, you transform the invisible heat rays to light rays which *are* visible. And it is merely a matter of heating it still further until you produce, or rather transform the red rays, to light rays at the opposite end of the spectrum—the violet rays. Our poor eyesight does not permit us to 'tune in' on any light rays below red or above violet, yet we know that there is a long range of light waves at both ends of the spectrum, among them the infra-red, the ultra-violet, the Roentgen, etc. We really know very little about these, and we know still less about various other waves, the vibratory waves that produce scent, for example, the waves that guide various birds, mammals, reptiles and even insects from place to place, the sound waves beyond the range of the human ear, etc. But we *do* know that all of the waves first mentioned are merely the result of the ether moving or shifting about. By crowding more than the normal quota of electrons into any object, or by forcing some of the normal quota out, we produce various waves—heat, light, radio, X-rays and what-not. And my experiments and my

exhaustive calculations have proved, to my own satisfaction at least, that Manabinite, when in the form I have made, has the power of altering the normal movements of electrons in objects placed in a certain relation to it and of reforming these electrons to produce a greatly enlarged replica of the object. Also, I know that in so doing, the Manabinite itself is reduced to electronic movements and actually becomes a portion, an integral part of the increased object."

"But," I objected, "you infer that the object itself is enlarged, and that what we look upon as an image, a product of light and shade, is a *bona fide* object, the same object increased in size! Why, man alive, in that case, we could touch and handle the magnified edition of the object. Utter nonsense, Ramon, that is absolutely impossible!"

He laughed. "Nothing is impossible," he declared. "A few years ago many matters that are everyday affairs to us would have been deemed impossible.

"We can and do transmit pictures—visible moving reproductions of people and other things—for hundreds and thousands of miles through space—by means of television apparatus. You may see a miniature man or woman on the screen of your television receiver. But that does not mean that the actual person has been transported bodily and reduced in size. The original at the transmitting end is still intact, living and unaffected. And neither can you touch, handle or feel the image before you. Is the result brought about by Manabinite any more remarkable, any more impossible?"

I had to admit that it was not. And yet, somehow, I could not grasp it. I could not quite conceive of a bit of semi-transparent mineral capable of accomplishing such seeming miracles. I had to have another look, and I took an even greater interest in the prism than before. But I could see Ramon's point, when he demonstrated it to me. By very simple diagrams and equations he proved that it would contradict and upset all recognized and established optical laws for a lens to magnify to such an extent and yet have such a depth of focus and such a wide field. I learned that the relationship between magnification, focal plane, depth of focus, field, and the size and form of a lens, were all fixed, unalterable and could be most accurately worked out. And, when I raised the objection that the established laws had been fixed on the basis of materials with certain refractive powers—thus thinking I was showing a great deal of cleverness and knowledge—my friend quickly proved that the refractive index of Manabinite had been calculated and proven by himself, and that, working from it, it would still be impossible to account for the remarkable features of the case on a basis of optics. Moreover, by sketching a plan of the prism-like mass he had made, and then bringing optical laws to bear upon it,

he convinced me that it would be utterly impossible for such a form to serve the purpose of a lens.

"But," I again objected. "I remember, when studying biology, that I had to make many drawings through a microscope, using a camera-lucida for the purpose. The arrangement I used consisted of a small prism, and virtually reflected the image of the object on the slide upon a sheet of paper upon the table, so that I could see my pencil and the image at the same time, and merely had to draw the lines and fill in the details as though tracing a picture already there. Isn't it possible that this Manabinite prism acts as an exaggerated camera-lucida?"

Ramon smiled indulgently, half pityingly. "You forget," he replied, "that the camera-lucida of your microscope did *not* magnify the object you were studying. The objective or lens did that, and the camera merely shifted the image in the eyepiece to a paper below it. Now here is another most remarkable quality or property of this Manabinite prism. The ordinary lens, even the camera-lucida you mentioned, is a projector. If you place a sheet of paper back of a lens—at the same distance from it where your eye would secure a focal image, a refracted or projected image will appear upon the paper. But, in this case, no such projected image appears. See here!"

As he spoke, he held a sheet of writing paper back of the Manabinite, moving it backwards and forwards, but it remained white, with no trace of the image I could so plainly see with my eyes.

I ACTUALLY gasped. But more astonishing revelations were to come. "Now please stand back of the paper," said Ramon. "You are convinced that no image is projected upon the sheet; but what do you see now?"

"Good Heavens!" I ejaculated. "The paper has vanished! I can see the image; I can see your hand. But what's become of the paper?"

"That," chuckled Professor Amador, "is more than I can tell you. All I know is that certain tissues—mostly inorganic, but a few of organic origin, seem to vanish when placed within the range of the projected waves or lines of electronic movement produced by the prism. My hand or yours, our bodies, leather, almost any animal matter in fact, remains unchanged no matter where it is placed. But paper, wood, any metal or mineral I have tried, cloth, and numerous other substances, become as transparent—or as invisible—as glass or even air. The phenomenon, of course, has a direct connection with the interruption and alteration of waves of electronic force, but just why some materials should be affected and others not, is something of a problem.

However, it is not without precedent. Radium for example, or rather its radioactive emanations, pass through nearly all substances, but do not pass through lead. Metals, water, etc., are so-called conductors of electricity, but rubber, wood and other substances insulate it. Water will pass through cloth, paper, even through wood, but not through metals, rubber and other materials. Even——"

"Here, here!" I exclaimed. "That's an entirely different matter. The cloth, paper, etc., are porous—loosely put together, as I might say, and the water passes through the minute openings between the fibers."

"Exactly," chuckled Ramon. "Exactly for the same reason that electricity passes through some substances and not through others; exactly as light passes through some materials and is excluded by others; exactly as heat passes through some objects and not through others. And why? Merely because the materials which allow electrical, light, heat, or other waves to pass through them are, as you put it 'porous' or 'loosely put together,' in so far as their electronical arrangement is concerned, whereas others that bar the same waves are too dense in their electronical compositions to permit the waves passing between the electrons or atoms. Perhaps I may make myself more easily understood if I take the liberty of comparing, say a sheet of hard rubber, to a wall built up of loose but closely-fitted stones, while a similar wall, composed of large irregular stones with large spaces between them, may represent the sheet of copper. Now, if we compare an electrical current, or more properly an electrical discharge, to a charge of shot, and fire this at the wall of closely-fitted stones, none of the shot will pass through the barrier. But, if it is fired at the other wall, the shot will pass through between the stones. In each case, I might add, the stones and the shot are analogous with electrons. Now, *amigo mio,* my theory—mind you, it is a theory and nothing else—is that the emanations of electrons absorbed and thrown out in magnified form by this Manabinite prism, are so altered that the properties of ordinary electrons, as we understand them, are completely upset. In other words, the ratio of the electrons to other substances when issuing *from* the prism is not the same as the ratio of the electrons to similar substances under normal conditions. And—you will no doubt scoff at this—I firmly believe that, with a little more experimenting, I can devise a Manabinite prism which will so magnify the electronical waves, that an atom will be made visible!"

"Now, I am sure your overwork has affected your brain," I declared. "For Heaven's sake, Ramon, drop all this. Be satisfied with what you have accomplished and don't let the thing get you. How can any invisible thing be made visible? You're talking nonsense, man."

“A week or two ago,” said Ramon slowly and thoughtfully, “I should have considered any man mad who dared state that the results we see before us would be possible. And when you speak of things as ‘invisible’ you are talking from a circumscribed and narrow viewpoint, and in comparative terms only. Unquestionably many things invisible to human beings are plainly visible to other creatures—the infra-red and ultra-violet rays for example. Our eyes are very crude, very inadequate and generally degenerated organs, and yet we have the effrontery to declare that anything that our poor, purblind eyes cannot discern is invisible!

“Why, *amigo mio*,” he continued, “what is visible to one man may be totally invisible to another. We do not even know if you and I see the same thing when we look at the same object. You state an object is green, I agree with you; but no one can be sure that green as I call it looks the same to me as does the green you see. Nothing in human senses varies much more than eyesight and yet, so egotistical, so self-important, so cocksure of himself is man, that he cannot believe in what he does not see, and declares, like yourself, that anything—an atom for instance, is invisible. And I would like you to explain, if you can, why or how an atom—even an electron—can be invisible in the true sense of the word? Every substance, as you must admit in the light of latter-day science, is composed of electrons and protons. If protons and electrons are truly, scientifically, invisible, how can any number of invisible atoms form a visible mass? No, no, my archeological friend, we cannot see atoms or electrons merely for the very excellent reason that, individually, they are too minute for our eyes to detect. But magnify them ten thousand, fifty thousand, one hundred thousand diameters and who can say they will not be visible. And I see no reason why, with a little labor and experimenting, perhaps by a series of step-ups, so to say, perhaps by altering the angles, a Manabinite prism may not be made which *will* render atoms visible. To accomplish that marvel shall be my object in life henceforth. If the rainy season arrives, I shall continue my experiments in the United States. But we have at least a month more here. Before the expiration of that time, I hope to be able to prove to you that I am as sane as ever, and I hope to let you view the atomic structure of some well-known object.”

“Ramon,” I said, slapping him on the back. “You *are* a wonder. You are, without doubt, the greatest physicist in the world. You have made a most astounding discovery. But I am afraid that you have undertaken more than you bargained for this time. However, I wish you the best of luck. And,” I added with a laugh, “when you succeed, let me have a peep at a real live atom.”

CHAPTER VI

MANY a true word is spoken in jest, as I soon learned, and little did I dream how soon I should be permitted to look upon a living atom. But I am getting ahead of my story.

The time was rapidly approaching when we would be forced to leave. I had already ceased my excavatory work and was busy with my peons packing my accumulated specimens and preparing for our departure, when Ramon, his wide eyes and his excited mien speaking of some great event, rushed to me, seized me by the arm, and fairly dragged me to his laboratory.

"At last!" he cried, "*Gracias a Dios, amigo mio*, I am successful! At last, at the eleventh hour, at the very moment when I had abandoned hope, I accomplished the miracle! It terrifies me; it is too wonderful, too amazing! But you shall see for yourself!"

Unable to believe him, thinking he was grossly exaggerating his progress, I entered his workshop.

Resting upon a specially devised stand upon his table was a large mass of Manabinite, a much larger piece than I had thought existed. I learned later that this was formed by fitting together a number of smaller pieces. Its form was that of the prism (I call it prism for want of a better term, though it was a many-angled, complex form in reality) and, even in the brief glance I took, I noticed that it seemed to be surrounded with a peculiar nimbus or haze which, while it could not be called visible, was still discernible, (a rather paradoxical statement) and which was similar in its appearance to the undulating masses of heated air that one sees rising above hot roads or sands. It was, in fact, exactly as if the Manabinite was almost red hot. But I scarcely had time to note this and I had no time to give it any thought or attention, for Ramon had dragged me to a spot back of the apparatus.

"Look!" he cried excitedly. "Look, my friend, and gaze at what no other living man but myself has ever seen!"

At first I could see nothing, nothing but that same waving, undulating vapor, and then slowly, as though a thin veil or a film of smoke was being drawn aside, I saw a startling sight. Before my wondering unbelieving eyes

was a deep unfathomable blue, composed of thousands, millions, trillions perhaps, of pale-blue globular objects; translucent, with radiating internal lines; objects that reminded me of globular jelly-fishes, and each and every one whirling, rotating upon its axis and about each of its fellows. Never have I seen or dreamed of such motion, such a mad turmoil, such an inextricable, confused rush of bodies. And yet, as I gazed transfixed, wondering what marvel I was seeing, I noticed that there was no confusion, no variation in the movements of the things; they never collided, never touched, never varied a millionth of an inch from their courses. Ramon was fairly dancing with delight at my evident amazement.

"*Now* do you say 'impossible'?" he shouted. "Now do you say the atom is invisible?"

"Do you mean those creatures are atoms?" I demanded, without shifting my eyes from the fascinating scene before me. "To me they appear more like the highly magnified inhabitants of a drop of swamp water."

"Scoffer, unbeliever!" he cackled. "You are looking upon atoms—upon the atoms composing a bit of blue cloth. I chose cloth because the atomic arrangement is fairly open. In a denser material—in stone or metal—I feared the atoms might not be visible. But I know now it makes no difference how they are arranged. And watch!" he cried, "behold the wonder of atomic behavior!"

As he spoke, he picked up a large reading-glass and focussed the sun upon the table in front of the Manabinite. Instantly the strange moving blue globules redoubled their speed. Like a flock of birds striving to escape from a swooping hawk, they rushed madly hither and thither. Rapidly, before my staring eyes, they began to vanish, until their numbers had been reduced to at least half, and there were wide voids between those that remained.

"That is the result of heat," cried Ramon. "I heated the cloth slightly and its fibers 'expanded' as we so crudely put it. And now for the opposite extreme. Watch the result of cooling!"

As if by magic, the globules—or atoms, as I must call them, for I could no longer doubt my friend's assertions—materialized from nowhere, came rushing into view, until, in a few seconds, they were so closely packed, that I expected momentarily to witness a collision; I held my breath, for somewhere, in some forgotten corner of my brain, I remembered that scientists averred, the collision of two atoms might disrupt the world. Now the atoms were moving more slowly, slipping past one another, rotating around one another so closely packed that no visible spaces lay between them.

Was it possible, I thought, that my own flesh, my own body, the table beside me, my clothing—everything—was really made up of these tiny, globular jelly-fish like objects? It seemed incredible, impossible, despite my companion's rapid-fire explanations, exclamations and dissertations. My mind was detached. I scarcely heard, and certainly did not comprehend, what he was saying, and my every sense was centered on the amazing sight before me and I was striving to convince myself, to believe that I actually was looking at atoms.

But there are some things which the ordinary human mind cannot grasp all at once, and my mind—which I flatter myself is slightly above the average—could not assimilate this marvel. Despite Ramon's assurances, despite the evidence of my own senses, I could not help feeling that it was unreal, that I was looking at some fantastic, imaginary picture.

FOR hours we two watched with breathless interest as Professor Amador experimented with various substances before his astonishing apparatus. We observed the atomic structures of stones, wood, metal, paper; but, for some inexplicable reason, which Ramon confessed was utterly beyond his comprehension, the prisms failed to reveal the atoms in any substance of animal origin. Ramon's hand, when placed before the prism, showed merely as an enormously magnified hand. Leather remained leather, though the minute pits left by the hairs appeared like the craters of extinct volcanoes, and where there were woolen threads in a bit of cloth, there were great vacant opaque spaces between the gyrating atoms of the cotton threads. In fact, just as the first prism had failed to project the images of anything of an animal nature, although it would project the image of almost anything else, so this remarkable apparatus failed to develop its astonishing properties when animal matter was placed before it.

"It has something to do with the vibratory waves of animal tissue," declared Ramon, when at last, we wearied of our experiments. "But," he added, "I will solve that puzzle also. And I am going much farther, my friend. There are no limits, no bounds to the possibilities of my discovery. I said I would render atoms visible. I have done so. Before I finish, I shall render electrons visible, too."

In vain I argued with him. He had, figuratively speaking, gone mad on the subject and, like most scientific men, nothing would satisfy him until he had pursued his experiments to the very limit. By that I do not mean to scoff at or belittle scientists. I am, or consider myself, a scientist also, but archeology is a comparatively exact science, and experiments do not enter into it, whereas in

Ramon's case—and in the case of various other branches of science—experimental work is the predominant factor. Had Ramon been content to rest on his laurels, to be satisfied with the discoveries he had made—which Heaven knows were marvelous and astounding enough—the events which followed never would have occurred, and Professor Amador would still have been with us.

Although I knew that it was high time for us to be leaving, yet I could not desert my companion and, as the rains appeared to be holding off, I decided to be patient, to humor Ramon for a time in the hopes that he would soon weary of his fruitless attempts, or would come to his senses, and I occupied my time very profitably by writing up my notes, drafting a summary of my observations and conclusions, and preparing my monograph on the Manabi cultural development.

Meanwhile Ramon worked under his usual high pressure, but, from what I could gather from the rather meager information he volunteered, he made no progress towards his goal. He did, however, make another discovery which he considered of great importance, namely, that by slightly altering the planes or angles of his prism, he could greatly vary the magnifying power of the Manabinite. The same piece of mineral, or rather the combined pieces, could, in this way, be made to reveal atoms or could be used to magnify an object only a few diameters, at will. Every grade of magnification between the two extremes was possible, and Ramon had contrived a very delicate and ingenious device for altering the magnifying powers of his prism. In other words, the prism was, when equipped with this apparatus, capable of being focussed. At least that was what it amounted to, although he gave it some other technical term, which has slipped my mind. But, try as he would, he could not devise a method of increasing the magnifying powers beyond a certain point, the point, in fact, at which the atoms became visible.

"But it can be done," he insisted. "If the power of Manabinite can be increased from almost nil to hundreds of thousands of diameters, there is no scientific reason why that power should not be capable of being increased still farther—to an unlimited extent even."

I snorted. "There may be no scientific reason," I remarked, "but neither is there any scientific reason why the Manabinite should not reveal atoms in animal matter as well as in other materials. Yet it does not."

"The trouble with you is," I continued, "that you are trying to apply the ordinary laws of nature and of science to a substance which—from my own observations and from yours—is most obviously extraordinary and is quite outside the pale of ordinary science or physics. Now, for Heaven's sake, drop

your fruitless experiments, Ramon. Pack up your outfit and your amazing prism, gather up every bit of Manabinite there is, and come out of this. Then, if you wish, go on with your experiments in the States,—or in your own Peru if you wish, and spend the rest of your life at it, if it will make you any happier."

"I suppose you're right," he admitted regretfully. "But somehow, *amigo mio*, I have a strange, unaccountable and inexplicable feeling that if I leave here I shall never succeed. I suppose it's pure nonsense, but over and over again, I have been on the point of packing up; and each time was seized with a real fear, a dread, almost a terror—a premonition perhaps—that if I left this spot, a terrible disappointment—a catastrophe in fact, would result. You see," he smiled in that charming way he had, "the Indian blood in my veins is superstitious, or perhaps psychic, and at times it gains ascendency over my common sense. However, I have made up my mind. I shall begin packing at once."

CHAPTER VI

STRANGELY enough, it was his preparations for departure that led to the most astonishing, the most amazing and the most incredible discovery of all, and resulted in the mysterious, hitherto inexplicable, disappearance of my dear friend and companion.

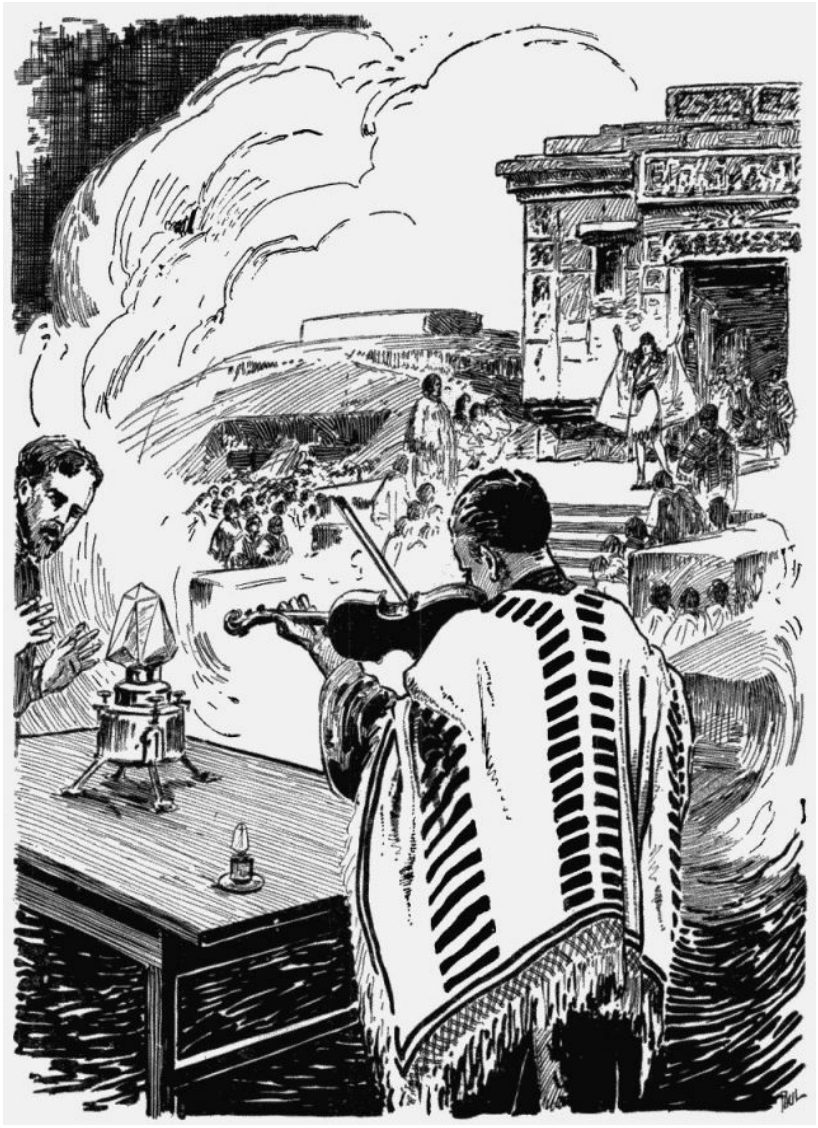
In order that it might be quite safe while he was packing, Ramon asked me to take charge of the prism. As I was carrying it towards my own quarters, a whim seized me to have a last look at something. Idly wondering how an ordinary landscape would appear when viewed through the apparatus, I carried it to a little knoll a short distance from camp, and pointing it toward a sandy area beyond, stepped behind it. Only a faint, hazy, indefinite outline appeared, and very carefully and slowly, I manipulated the adjustments which, as I have said, were designed to alter its magnifying powers or "focus" as I called it. Quickly the sand, pebbles and rocks took shape. They became enlarged, seemingly detached from everything else and appeared as if they were floating in the air in the peculiar manner to which I was now accustomed. The image was not tremendously magnified, but was sufficiently enlarged to make each grain of sand appear like a pebble, each pebble like a boulder, each boulder like a mountain. It was a fascinating sight, and, anxious to see the effect of greater magnification, I continued to move the adjustments. Slowly the grains of sand, the pebbles and the rocks grew before my eyes. A tiny blade of grass was transformed into a lofty, rough-stemmed, palm-like tree. An ant, scurrying across the field of vision, appeared like some gigantic, prehistoric monster. Larger became the minute grains of sand; the pebbles had become enormous, rough-sided, rock masses, seamed and scarred and pitted.

The pieces of rock were now too vast to be within the field, and rose like stupendous precipices—And then I stared, gasped, unable to believe my eyes. In a deep ravine, which I knew was merely the space between two tiny grains of sand, I had caught a glimpse of movement, of some living creature. What could it be, what form of animal life could be so small, so microscopic that it appeared as mere speck under such enormous magnification?

The next instant I gave vent to an involuntary yell of incredulous, almost terrified amazement. The creature had reappeared. It was standing, clearly

revealed beside a gleaming mass of pink quartz, and it was—a human being, a man!

I felt I must be going mad. I felt like one in a dream, in a nightmare. Chills ran up and down my back. Either I was suffering from dementia, from an optical illusion or else—no, that was utterly impossible—or else I was gazing upon a miniature human being, a fellow man, who was less than one thousandth of an inch in height, who was smaller than an *amoeba*, who was microscopic in size!



The people were dispersing from their morning sun-dance, the musicians were leaving. Then I saw the Indians gather, their eyes turned towards the palace. My heart beat hard and fast. . . . I hardly recognized my own voice as I turned towards Ramon.
"She is coming! . . ."

I was brought back to earth by Ramon, who, aroused by my shout, had come hurrying towards me.

"What's wrong?" he cried. "Have you smashed it?"

I was too dazed, too overcome to reply, even to speak. I could only point at the Manabinite prism. My expression and features must have told Ramon that something amazing had happened. But nothing had prepared him for the wonder of it. As he glanced into the prism, his jaw sagged, his eyes dilated, his face paled. "*Santisima Madre!*" he gasped, crossing himself. "My God!" he ejaculated in English, "it's a man! But it cannot be, it's impossible, supernatural!"

"But true!" I managed to exclaim in a hoarse voice. "Thank God, Ramon, you see him too! I was afraid I had gone mad; that my brain was affected."

"There's another!" almost screamed Ramon. "Oh, *Dios*, what does it mean? Are we both mad?"

Now I, too, was gazing at the image revealed by the prism. Beside the first figure there was a second. Both were men, both were perfectly formed, stalwart fellows, dark-skinned, with long floating hair, their bodies clad in elaborately-colored poncho-like cloaks, both with staffs or clubs in their hands.

"They are Indians!" I whispered, unconsciously lowering my voice as if fearing they might hear me. "What does it mean, Ramon? Do such beings exist? Are they really there? Or are we seeing something that is an illusion, a mirage, the reduced images of men somewhere else? What do you make of it?"

For a moment Ramon was silent. Then, very slowly, as if weighing every word he spoke, "*Amigo mio*," he said. "We are gazing upon the most incredible things that human eyes have ever seen. Those two beings are real, they are alive, they are as human as we are. Mirages, illusions, phantasms, ghosts, fairies cast no shadows. Those men do. Down there among those grains of sand, under our feet, is a race of humans infinitely minute. God alone knows who or what they are. God alone knows how many of our fellow men and women we may have crushed beneath our blundering feet. *Amigo mio*, we have, that is, you have made a discovery that will startle the world. All of my discoveries are nothing compared with it. Unsuspected, unknown, undreamed of, absolutely incredible as it is, you have discovered a new, a microscopic race of men!"

“But—but, my heavens, man!” I cried, my voice shaking with the excitement and wonder of it all. “It’s impossible! Why, we’ve been walking here, digging, working over this very spot. If such beings existed—and that’s a preposterous idea—we would have destroyed them, buried them, crushed them as you say! No, no, Ramon! There’s some explanation, some sane, sensible reason for what we see!”

“Hush!” admonished Ramon. “They’re moving. They’re going on. We must watch them, must follow them, must find out if there are more of them. Perhaps they have—yes, they must have—houses, villages. They——”

I burst into maniacal, nervous laughter. “Follow them!” I cried derisively. “How can you follow a man scarcely larger than an atom?”

“With this prism,” snapped Ramon. “You forget that its depth of focus, as you will persist in calling it, is fully fifty feet. To those infinitesimal men among the grains of sand, fifty feet would be the breadth of a continent. To them a few inches would be a day’s journey—perhaps a month’s tramp. You desired to see a ‘living atom’ as you expressed it. You have seen two. Ah, there they go! They are hurrying. *Santissima Virgen!* I see it! There is a house, a village! Scores, hundreds of people!”

CHAPTER VII

EVEN now, when the excitement, the wonder, the weird, dreamlike, incredulous amazement of it has passed; when I can think of it calmly and dispassionately; when, looking back, I can think of that day and revisualize every moment, every detail, every word as though I were reading it from a printed page; even now, I say, I cannot well describe our feelings, our sensations as, with staring, wondering, unbelieving eyes, we gazed into that bit of crystal and found ourselves looking into another world. We simply could not credit our senses. There before us, as plain, as clear, as natural as though we were gazing at any other community of Indians, were the throngs of people. There were their houses, their village. But that they were minute, microscopic, so small that the ordinary grains of sand were like good-sized hills beside them, seemed so utterly preposterous, so unnatural, so scientifically impossible, that we could not force ourselves to believe in their reality. No, to us, to our senses, we were looking upon some Indian settlement at a distance. To us, it seemed that by some freak of optics or physics, the images of normal-sized beings had been reflected, refracted (like the images in a mirage), to where we stood, and had been picked up by the prism.

In fact the illusion was so perfect and complete, that I found myself far more interested in studying the people themselves than I was in the marvel of the prism, and, temporarily at least, felt that I was watching perfectly normal-sized Indians. That they were Indians was obvious, but they were totally distinct from any Indians I had ever seen before.

Their color was a light ochre or olive, scarcely darker than tanned white men or than Professor Amador. Their hair, worn long by both men and women, was a tawny-brown, and their features were regular, well-formed, and denoted a high grade of intellect. The men were dressed in poncho-like garments of some material that glistened like metal, or I might better say, fish-scales. They wore sandals upon their feet, their hair was confined by fillets of bright colors, and they wore various ornaments in the form of necklaces, etc. I am now describing the first two individuals we had seen, but I noticed, among the throng at which we were now gazing, that there were obviously several classes or castes among the people. Among the men these were marked by the apparel, some wearing ponchos of dull-colored material, others merely loin-

cloths; the ones with the iridescent, metallic garments were in the minority. Among the women, the castes were marked not only by costume but by the color of the skin. Some were almost white, others were quite dark. The latter were nude to the waist and wore skirt-like garments of some fiber, while the others wore skirts of the same material as the ponchos of the first men and had cape-like garments fastened across the chest, covering the shoulders and back.

It was no doubt largely due to the fact that they were so typically Indian that we could not realize or believe that they were not normal in size. Had we suddenly discovered some minute beings of weird, monstrous or wholly new forms; if they had two heads or four legs; had they been green, blue or scarlet; had they been transcendingly beautiful and fairy-like or as repulsively ugly as Calibans, then, no doubt, we might have been able to convince ourselves that we were gazing at microscopic beings. But here we were, watching human beings, that were not only normal in every respect except size, but were, in addition, typical Indians.

Even the village and the houses were scarcely different from those of ordinary aborigines. The houses were low, domed or beehive-shaped, apparently constructed of adobe or clay, and among them were several larger buildings, the whole surrounded by a thick, high wall. I noticed, too, that the men, when carrying anything, bore bows and arrows, long slender spears and short stone-headed clubs. The two new arrivals, whom we had first detected, had apparently been on a hunting trip, for, as they entered the village, I noticed that one of them carried the body of a dead creature. At first I took it for a small deer, but, as the hunter threw it down before one of the houses, I saw to my surprise that it was not a vertebrate but some unknown creature, apparently an insect, for it had six legs.

I also saw that its skin, hair, fur or whatever its covering, was like metal and iridescent, and I assumed that the ponchos of the men were made from the skin or covering of the creature. But whether they were woven from the material, or whether the entire hide was used, I could not determine.

Here let me call attention to another peculiar sensation I had—and which I found later was shared by my companion. As we watched these people, we had an almost irresistible temptation to reach out and touch them. As I saw the strange animal, I forgot for the moment that I was merely watching the thing through the prism, and unconsciously, I extended my hand with the idea of picking up the creature and examining it.

INSTANTLY the scene was blotted out—people and village vanished, and in their

place was a wall, brown, seamed, scarred, pitted. An exclamation of mingled amazement and impatience came from Ramon. I stared, speechless with amazement. What had happened? What new miracle was this?

Then, as suddenly as they had vanished, the people were before us again, and the wall had disappeared. I broke into hysterical laughter. I had withdrawn my hand; the wall that had blotted out the view had been a portion of my own hand vastly magnified!

For the first time since we had first seen the men, full realization of their size came to us. For the first time we were fully able to believe that the Indians before us were Liliputians that would have made the denizens of Gulliver's Liliput appear like enormous giants; people so small that, by comparison, even the smallest ant would appear as gigantic a monster as a dinosaur would to an ordinary human being.

It seemed beyond the bounds of reason, and had not Ramon seen exactly what I saw, I should have felt sure I was mad or that my senses were playing me false. How *could* such beings exist? How *could* there be living men and women so minute that they were invisible to the unaided eye? How could they survive? How could they escape being trampled and crushed underfoot? How could they avoid being utterly destroyed by the first rain, by the first puff of wind, by the first handful of drifting sand or dislodged gravel?

Such were the thoughts that raced through my mind as I watched the people in the village before me.

Then a remarkable thing happened. The scene before us was darkened. Twilight fell upon the village. Above the heads of the people some dense cloud was drifting. Involuntarily, I glanced at the sky. It was almost cloudless. Without thinking, I turned my eyes towards the spot where the Indian village had been, momentarily forgetting that it would be invisible. There was the bare stretch of sand, and crawling across it, was a tiny green lizard. I gasped as a sudden thought, a sudden idea swept through my mind. I sprang to the prism. There was the village; light was beginning to shine upon it once more. Again I glanced upward to see the lizard moving away. It was a wild, an insane thought, but a fact. The lizard had crawled *directly over* the Indians, but so far above their heads that he appeared merely as a dark cloud! So minute were they that the ordinary grains of sand were like the loftiest mountains to us. What we, looking through the prism, had mistaken for the sand grains, were particles of impalpable dust! Any ordinary thing, any normal creature, would pass over them, far up in their sky, leaving them unharmed, protected by their surrounding sand-grain mountains! They were as safe, as protected between grains of sand as ordinary human beings would be in some narrow canyon

between the highest peaks of the Andes. Even Ramon and myself, walking across the sand, would not harm them. Our gigantic feet, treading the sand, would merely appear like dense black clouds. Something of this I managed to babble to my companion. “Of course,” he snapped back a bit impatiently. “You can’t crush a molecule or an atom, can you? Those beings are scarcely larger than atoms. Good heavens, man! Don’t you realize how small they are? Why, you could put a whole family of them on a microscope slide, place a cover-glass over them, press it down as tightly as you could, and they’d have plenty of room to walk about and be comfortable! Good Lord, *amigo mio*, what a train of thought this leads to! They probably imagine they are full-sized men and women. They feel themselves just as large as we feel ourselves. What if there are still others as much smaller than they, as they are smaller than us!”

But I scarcely heard him. I had caught sight of a large building, a temple or a palace, and was staring transfixed. It was unmistakable, the counterpart of ancient, pre-Incan temples, and they were being used. Before its door were two stone chairs, chairs of exactly the same form, style and workmanship of those I had found here at the Manabi site! I was dazed, my mind was in a turmoil. What could it mean? Then I began to realize, to note, a hundred details. There could be no doubt about it. These Indians, these infinitesimal beings, were the same race as the ancient Manabis. Their sculpture, their chairs, their pottery, their ornaments were identical. But how, what, why—? The Manabis, as I knew from skeletons and skulls, were normal-sized men and women. Yet here were Manabis of microscopic dimensions, carrying on precisely the same industries, following the same customs, living the same life as the ancient Manabis had lived. Was it possible they were spirits? Was it possible that the uncanny powers of the prism had made visible the wraiths of another world? Were we gazing at the ghosts, the souls of long-dead Manabis? I laughed madly, hysterically, at the thought. But what other explanation could there be?

A raindrop spattered upon my head; another and another fell. In a few seconds it was raining hard, yet we continued to stare, for to both our minds had come the same thought, the same desire to see what happened to those minute people, as the rain poured down upon them.

But we were doomed to disappointment, as we might have known we would be, if we had stopped to think or to reason. Seen through that magical prism, each descending drop of rain was as big as a Zeppelin. Each drop, as it dashed down, completely blotted out everything from view. Each, as it struck the earth, burst like a fifteen-inch shell and sent vast cataracts of water in every direction. In that chaos of flying spray, of gigantic globules, of the torrents released as they burst, the Indians and their village, the temple and the

surroundings were as effectually hidden as though behind a mountain range.

There was no sense in our getting drenched. There was nothing more to be seen, and we scurried to the shelter of our camp.

"There won't be anything left of them now," I observed, as we threw off our soaked garments. "This rain will be infinitely worse to them than a Johnstown flood."

RAMON snorted. "My good friend," he exclaimed, "for a scientific man you certainly say and do the most childish things at times. Do you, for one moment, suppose these incredible people have been developed, have lived, have grown to adult men and women, have built villages and temples, and have developed arts and industries all in a day or a month or a year? No, of course not. And yet it has rained here every year, rained harder than at present and steadily—for weeks at a time—and they still exist. This rain will not affect them in the least."

"Nonsense!" I cried heatedly. "You are arguing from the point of view of our own world, on our basis of time. Those minute wondrous people must have everything in proportion to themselves—their lives, their time must be as short in proportion to ours as they are small in proportion to us. For all we know, a second of our time may be a year—several years—to them. In a day of our time they probably go through many generations, perhaps centuries of their time. But even if they didn't, how could they survive a heavy rain? Why, man alive, the spot where they were must be under an inch of water by now!"

Professor Amador roared with laughter. "There you go again!" he cried, when he could control his merriment. "You have been so amazed, so upset and overcome by finding something that upsets all your preconceived ideas that you do not stop to reason. You assume, because one feature of the case is revolutionary and wholly beyond all preconceived scientific theories and hard facts, that everything connected with it must be as bizarre and miraculous. Your own senses would controvert what you have just said if you stopped to reason about it. Why, we were watching those midgets for nearly an hour. Did you notice any flying of time among them? Did they grow old and die? Were children born, grown up and developed into men and women during the seconds, minutes that we watched and which you claim would have been equivalent to centuries to them? Not a bit of it. The men brought in their game, it was being skinned and prepared, and the fellows were still talking about their hunt when the rain began. No, no, *amigo mio,* an hour to us is an hour to them. Moreover, they have the same sunshine, the same hours of darkness as we

have. They have no separate planetary system. Hence their time is our time, and you may be sure they have been in existence, living as they do now, for centuries, ages. As for being destroyed by this rain, by a few inches of water. Pooh! Water wouldn't affect them any more than that lizard that crawled above their village. We've walked right over them time and time again, but it hasn't destroyed them. Possibly, if there are other villages, we may have buried hundreds of them under dirt thrown out from our excavations. Probably they looked upon it as a convulsion of nature. But rain!"

"I admit your argument as to time is sound," I replied. "But I still fail to see why rain or water would not destroy them. To tread over them is one thing—they are protected by the sand and pebbles and our feet do not press or crush what is beneath and between them. But water permeates everywhere. I can even conceive of a Juggernaut, some gigantic machine or even an imaginary Titan, rolling or striding across New York, crushing the buildings, spanning the city, and yet with the people escaping death in the canyon-like streets. But there would be no hope for them if the city were flooded until the highest buildings were submerged."

"Again you forget the most rudimentary truths of science," chuckled Ramon. "Did you ever dig carefully into sand after a heavy rain? If so, you must have observed that while it appears wet—water-soaked in fact—there is much dry sand.

"And you have forgotten how difficult, how nearly impossible it is to secure perfect adhesion to a dry object. We pick up a stone, a pebble, and it appears wet, to be sure. But, if we examine it under a powerful lens, we will find that what appears a uniform coating of water is, in reality, composed of innumerable tiny drops; that there are appreciable dry spaces between them, and with infinitesimal particles of dust, next to the stone almost immeasurable layer of air, which is usually filled with infinitesimal particles of dust, next to the stone itself. Hence, my dear friend, these microscopic aborigines are quite safe. The rain that would soak us to the skin is composed of drops far too large to affect those little people. All they see of the descending torrent is the finest, the most microscopic spray that bounces off the sand grains and pebbles and falls like a gentle shower among the inconceivably minute crevices where they live. And the water that to us appears to cover them 'an inch deep' as you put it, appears to them like a vast dark cloud. Precisely, I might say, as that black cloud above us appears to our eyes. That cloud overhead is nothing more or less than water which, could it descend all at one time, would prove a flood many feet, in depth. But because we are under that poised mass of water, we do not necessarily suffer. Do you see what I mean, my friend? Do you not

understand that those remarkable beings are so inconceivably minute that the molecules of water, which to our eyes and senses appears a homogeneous liquid, are visibly separate, each aqueous molecule appearing to them like a great cloud. No, no, *amigo*, we must entirely reconstruct all our previous ideas and conceptions of humanity, of nature, of a thousand other things. It has been too great a revelation, too great a discovery, too revolutionary, too amazing for our poor brains to assimilate all at once. I confess that I, myself, cannot really believe that we have seen what we have seen. Yet, I have always held to the theory that we were purblind, unimaginative, egotistical, self-sufficient and unreasoning beings. That we humans were so bound down by our own ideas of our important place in nature, so limited in our viewpoint by our own exalted opinions of ourselves, and so dull in our perceptive senses, that we have built up, constructed the idea that all humans must be made more or less like ourselves, that the world, as we know it, must be the only world, and that there can be no other world. Even our ideas of inhabitants of other planets are always based on our own forms or the forms of creatures familiar to us. Always, as I said, I have held that this was the utmost nonsense, the most short-sighted policy, that, for all we know, there may be countless other strata —as I might call it—of life all about us. That we may be moving in a world of one particular range of vibratory waves; that above or below our perceptions there may be others, that even within the substance of which we and other bodies are composed, there may be universes teeming with intelligent forms of life, that, as far as we are aware, every atom may be a minute planetary body with its own satellites, its own inhabitants, its own individual forms of living organisms, each and all thinking and believing like ourselves that they alone are the only reasoning, intelligent beings in the entire universe. And now I find that, in a certain way and to a certain extent, my theory is borne out. We know that under our feet there is a race of men as small as microbes. That they possess much the same forms, features, habits, passions and arts as ordinary mortals. That to them there is no other world, that we are as invisible, as inconceivable to their eyes and their senses, as they are to ours. And this, my friend, is a most remarkable feature of the case and pleases me immensely. They are Indians—aboriginal Americans—people of my own race and blood."

"What is more," I observed, when he ceased speaking, "they are Manabis —the same race that inhabited this place in prehistoric times, the same tribe that made the stone seats, the slabs and those minute gold beads. I cannot understand it. The Manabis were full-sized people; these microscopic beings are precisely the same except for size. Do you know, I have been wondering if by some unknown, some preposterous, improbable means, they gradually diminished in size through the ages—if it is not within the bounds of

possibility that the tiny beads that puzzled us were not the work of the Manabis when they had dwindled to say—six inches in height."

"Hardly," replied Ramon. "Of course, I admit that a six-inch gold worker would find making such beads as simple as an ordinary artisan would find the making of beads several inches in diameter. But in the first place we have found no transitory remains—no artifacts showing or indicating a diminution in the size of the Manabis. And, moreover, there is the lapis-lazuli idol. The fine carving would have been simple for a six-inch man, but to cut the images of that size from lapis-lazuli would have been a far greater undertaking than for a normal-sized man to sculpture an idol several hundred feet in height from a mountainside."

"But if the theory was true, it would account for the cyclopean stone work of the pre-Incas," I reminded him. "How do you know but that, once upon a time, giants as much larger than ourselves as these people are smaller, inhabited this land; that during countless ages they gradually decreased in size. That the Titanic stone work was not the handicraft of the race when they were still giants?"

"For the same reason that you know the ancient Manabis were neither dwarfs nor giants," retorted Ramon. "The fragments of skeletons of the pre-Incas are those of normal-sized men and women. No, amigo mio, I cannot accept that idea. But I admit anything—even the wildest, most insane and preposterous things would not surprise me after what we have discovered."

CHAPTER VIII

ORDINARILY, PROFESSOR AMADOR showed no least indication that he was Indian. When discussing scientific matters, when conversing with his equals, when mingling with white men and women, he was wholly, absolutely the educated polished white man. In fact, he was far more Anglo Saxon than Latin. He had no trace of an accent and, aside from the use of an occasional Spanish expletive or a Spanish expression now and then—such as his favorite "*amigo mio*" when talking to an intimate friend—no one who did not know him would have suspected that he was of Spanish descent. But often, when he was in uncivilized places, when he was among aborigines, when he was busied with some problem or when he was excited, his Indian blood came to the fore and, temporarily, at least, he would be entirely Indian. He would sit for hours, as motionless and silent as a stone statue, staring fixedly at some object or into space, oblivious of everything.

He would assume the tone, voice, manner of the Indian; would speak in their poetic, oratorical, symbolic way, and would relapse into his ancestral Quichua.[5] He could be as perverse, stubborn and determined as any aborigine, and he was as untiring, as immune to personal discomfort as any of his pure-blooded relatives. Not that I liked him any the less for this. My long association with Indians had taught me to appreciate many of their admirable qualities, and in some ways, I rather liked Ramon better as an Indian than as a Spaniard. Now, however, he had become obviously predominantly Indian once more. He had been talking like any fellow scientist, discoursing learnedly; but with his final words, he seemed to become suddenly transformed. The thought, the idea that had been suggested, had gripped his imaginative fancy, had appealed to the Indian love of the mysterious, to the Indian's pride of race, and he had become obsessed with the idea. Here were these amazing, these most marvelous of human beings, a race never dreamed of by anyone, and they were Indians! No wonder he was proud that he was of their race. News of their existence, of our startling discovery would set the whole world agog, and word that the smallest of all known organisms were human beings, and that they were Indians, would lift the aboriginal race into prominence above all other races. Ramon, I knew, was thinking of this. His eyes were fixed, a far-away look in them, his lips were set and he had frozen into immobility. His words,

too, had set me to thinking. It was strange, a most remarkable fact that these minute people should be Indians, for—a wild thought had possessed me—was it not probable that they were the most ancient of races on the planet? Was it not possible that from these microscopic beings man had evolved to his present size? Or, was it the other way about? Had the Manabis diminished in size until they had become invisible to the naked eye? Or,—wilder and wilder thoughts were racing through my brain—were all the various human races represented in atomic-sized individuals? Was there another, a totally distinct sphere of existence going on, unseen and unsuspected all about us, a world of microscopic dimensions, a minute replica of our own? If so, was it not possible that there were larger spheres, spheres as much bigger than ours as we were bigger than these tiny mites whose world was a patch of sand? My mind was in a turmoil. Within the space of a little more than an hour, all my ideas, my conceptions, my knowledge, my beliefs and convictions of a lifetime had been utterly upset and destroyed. I could make neither head nor tail of it all. If I kept on thinking I should go mad, and, heedless of Ramon's detachment, I seized his shoulder, shook him into consciousness and insisted on talking to him.

Of course our conversation was all of the fantastic, miniature Indians we had seen and whom, even now, I could not force myself to believe we had seen.

IT was too unreal, and yet Ramon appeared to have accustomed his mind to their reality. In that way, I admit, he was superior to myself. Or it may be that it was his Indian blood, the superstitious tendency of the aborigine to believe in anything, no matter how impossible or incredible. My own mind was a chaos. I knew in my heart that we had seen the beings, I knew the impossible had happened, and yet my better reason told me there were no such things, that we had been subjected to an hallucination or an illusion of some sort. Oddly enough, too, I found myself constantly striving to convince myself that this was the case, mentally arguing that the people did not, could not exist, and I began arguing with Ramon on this line.

Wasn't it more sensible, I demanded, to think we had been deceived, to assume that, as I had suggested before, we had been looking at the reflected images of normal Indians at some distant point?

"You forget they are Manabis," Ramon reminded me. "Can you tell me where there are living Manabis?"

"No, but it would be more reasonable, more possible for Manabis to exist and to follow out their arts unknown to us—in some remote mountain or desert

retreat—than for microscopic people to exist."

"Granted! Then how do you account for that beast they had killed, that six-legged, shining creature?"

"I don't," I admitted, "but even that would be more within reason if it were of normal size. Possibly there *are* such creatures somewhere in the interior."

Ramon grinned. "And assuming that is so, how about that lizard that crawled over the village and looked like a dark cloud?"

"Illusion," I replied, knowing perfectly well I was arguing against my own convictions. "The lizard was normal, but it was transposed, the reflected image of the village merely *appeared* to be beneath it—something like a double-exposed photographic negative."

"You are perfectly aware it was nothing of the kind," cried Ramon, testily.

"Like all scientific men—and most white men, I might add, you are not willing to admit the existence of anything to which you are not accustomed, which science has not approved, which is outside your hidebound ideas and conceptions, which you cannot explain by what you term possible or probable rules, laws, and beliefs, which are all stuff and nonsense. There the savage, the primitive man is superior to the civilized white man. The aborigine takes things as he finds them. He does not try to reason that they cannot be because they are beyond his comprehension. He does not say this or that is impossible. He believes what he sees and a great deal that he does not see. You call it superstition. A few years ago, belief in radio, in hypnotism, in any one of a thousand things we know today, would have been termed superstition. What is superstition? Belief in something one cannot explain, that is not generally accepted by dense, pig-headed tradition-bound men! Yet you cannot explain a lot of things you believe in—electricity, light, the rotation of the earth, the planetary system, the spark of life, the working of the mind. Thank God, *amigo mio*, *I* have Quichua blood and can believe in anything! I can believe that anything is possible to God, that there are countless things in nature we cannot explain, that matters are transpiring all about us of which we know nothing, of which we do not even dream. But this matter is simpler. We *can* see these tiny beings. For Heaven's sake, why can't you believe in what you see? Why try to convince yourself it is impossible?"

"Good Lord, I *do* believe in them!" I exclaimed. "But do you think for one minute, you or I could make anyone else believe in them? That's the trouble, Ramon. I am thinking of it from the scientific viewpoint. Yet, I must admit, there is nothing scientifically impossible about those people. We know there are innumerable forms of life of microscopic size; undoubtedly there are as

many more too minute to be seen even through the most powerful microscope. If one form of life of minute proportions can exist, there is no scientific reason why there should not be others. But vertebrates! Human beings! I don't know. Somehow that makes it different. Somehow, I suppose, it is merely because we are accustomed to it—human beings *must* be of more or less normal size."

"So must ants and insects," said Ramon. "And yet you do not doubt that Dr. Henden lost his life in a district where ants and insects were as large and larger than human beings. You yourself secured his notes telling of his strange experiences. You, yourself published the story. You have told me about it scores of times. Is it any more remarkable, more incredible, that there should be human beings as small as ants—thousands of times smaller than ants—than it is to have ants hundreds, thousands of times larger than ordinary ants?"

"I don't suppose it is," I confessed.

"And do you, a scientist, assume for one moment that our world is the only sphere on which intelligent vertebrate life exists?" he continued.

"No, of course not," I assured him.

"VERY well," Ramon proceeded. "In that case, why should there not be forms of life on electrons? An electron is as much a portion of a planetary system as our globe. Why shouldn't life, intelligent life, exist upon atoms? And why should there be any hard and fast rule limiting the size—and mind you, *amigo mio*, size is a relative term as vague and meaningless as our time—why, I say, should there be any limit to size?"

"Scientifically speaking, there isn't," I agreed. "But the trouble is, these beings are so darned much like any one else. If they'd been wholly different, it would have simplified matters."

"That, I admit, is a puzzle," he said. "I've been thinking a lot about it, and about your suggestion that the pre-Incans might have been giants. I wonder—no, that's too wild even for the primitive side of my mind. Do you know, these people are exactly like—bear the same relation to giants as the Manabi gold beads bear to the titanic works of the pre-Incans. As I said once before, it is like looking at things through the opposite ends of a pair of field-glasses. One way normal things are enlarged; reverse it and they are reduced. But there's a lot that puzzles me. You see, *amigo mio*, I am *not* enough Indian to accept everything without question. My aboriginal and my Iberian blood produce a conflict in my brain. I have the white man's desire for reasoning cause and effect, for getting at the bottom of things; but I have the Indian's tendency to

accept things as they are. In some ways I wish I had never experimented with that confounded Manabinite. What I didn't know would not have troubled me. But now, now I cannot rest until I have solved a lot of puzzles."

"Neither can I, Ramon," I assured him. "But somewhere, somehow there's an explanation of this phenomenon. I cannot believe those minute beings, who are obviously identical with people who were of normal size, were created in their present form and size. Somewhere lies a mystery. Ethnology or anthropology does not repeat itself. No two distinct races of man are alike in every way. They may borrow one from another. There may be traces of cultural influence. There may be similarities in arts, in costumes, in religions, in anything. But *never* are two races—even though one or both may be the result of mixtures—never, I say, are two races identical. From what I have seen, these minute Indians are identical with the ancient Manabis. Perhaps future observation may lead to the detection of differences, but if they prove to be identical, then they *are* Manabis, and if they *are* Manabis then, my friend, there are but two possible solutions. Either the original Manabis were normal in size and, by some hitherto unknown process or cause, have dwindled to microscopic proportions, or else the original Manabis were microscopic and, for some undetermined reason and by some unknown process, developed into ordinary-sized mortals. We know the normal sized Manabis have vanished. We know those of microscopic size still exist. Now, Ramon, I propose to stay here until we learn the secret of these people or are convinced that we never can solve it."

Professor Amador rose and grasped my hand. "That," he declared, "was almost precisely what I was about to suggest. In view of our amazing discovery what does the rainy season amount to? It will be uncomfortable, and we may be stricken with fever or other sickness. But I for one would consider my life well spent and would gladly succumb, if, by so doing, I could solve this greatest mystery that has ever faced a scientist. I shall remain until we learn the truth, or have abandoned efforts in despair."

Fortunately, however, we were not doomed to endure as much discomfort and to take such risks as I had feared. The rainy season was late, it was not severe, and often there were sunny days with no rain. But I am anticipating again.

It poured all that afternoon and we chafed with impatience. We slept little or not at all that night. Our minds were too filled with the wonders of the day, and we spent the long hours discussing, arguing, suggesting, theorizing, propounding wild hypotheses, only to find ourselves as much at a loss as ever. We came no nearer an explanation, no nearer a logical theory to account for

the existence of the incredible, microscopic people we had seen. And when morning dawned at last, and the sun shone from a clear sky, the whole affair seemed so unreal and fantastic that we both felt as though it were all a dream.

WE could scarcely wait to rush off to the prism, which we had left where we had used it, our sensations—or mine at least—a strange mixture of emotions. One moment I felt sure we would see nothing, that it was all a figment of imagination; the next I was wild with curiosity and interest to see the strange people again; to learn how they had fared during the rain. Almost breathless, we peered into the prism. And our first glance was enough. There was the village, there were the Indians. The earth about their village was damp. Evidently they, too, had had rain; but there was no indication that they had suffered from too much water. I was more amazed than ever. Despite Ramon's exposition of why they would not be affected by the downpour, it seemed incredible, unbelievable, that they could have survived. Yet there they were, unharmed, though I knew that the spot where they were had been covered with water during the night. One thing struck me forcibly. I was not yet able to adjust my mental processes to the new facts. I could not conceive as yet how minute these beings really were. They were so perfect in size and proportions, so like ordinary mortals, so wonderfully revealed in the prism, that there was no effect of their being small. That was the greatest difficulty. Until I could adjust my mind to the new conditions—the lizard, the rocks, even the rain, would appear tremendously enlarged and exaggerated. It struck me most forcibly, too, that it is a peculiar fact that the human brain finds it easier to appreciate or conceive of gigantic objects than of minute objects, probably because the eye can see and take in objects of large size, whereas those of unusually small size are difficult or even impossible to discern, and must be viewed through a lens, when they immediately lose their minute proportions. All this flashed through my mind as I again watched the miniature Manabis. Now they were all busy at their various tasks. Some of the men were making weapons, others were twisting ropes, others were building houses or repairing their dwellings, and I saw one gray-haired old fellow chipping away at a partly-finished stone seat.

The women, too, were busy. Some were making dresses, others were weaving or spinning, others were grinding some sort of seeds on *metates*, others were preparing food. It was, in fact, precisely the same scene that one might expect to see in any ordinary Indian village. Presently the people put aside their various utensils and their work, and, rising, started across the open space near the houses. It was obviously a concerted movement for every individual joined the procession. Then I discovered that their objective was the

temple, and I turned my attention to it. Here was a wonderful, a unique opportunity for an archeologist. The Indians were going to a ceremonial, and I would be able to watch it, to study their religious observances. And, I had not the least doubt, they would follow out the same practices as had the ancient Manabis. What an addition to my knowledge of that vanished race! It would solve many an archeological puzzle, would add immeasurably to the world's knowledge of pre-Incan Indian religions and ceremonies.

Then, from a large building near the temple, a second file of people appeared. All were dressed in white, their single, poncho-like garments decorated with gold, and with ornate gold-adorned and bright colored headdresses. First came a group of men, venerable, dignified, each carrying some ceremonial object. One had a huge axe elaborately carved. Another had a mace-like sceptre with the head carved in a semi-human face that I instantly recognized as the same as that on the lapis idol. Another was bearing a staff, still another carried a beautifully painted, vase-like urn. Then, following them, came a group of women—young girls—clad also in white and gold. That the men were priests and the girls nuns or vestal virgins, I felt assured, and intently I watched them. Up the broad temple steps they passed, and formed two lines on either side of the main portal. Then, in the center of the door, the priest bearing the mace took his stand, while before and below him the crowd of villagers stood waiting. And I noticed that instead of facing the temple and the priest, the people faced in our direction, gazing towards us intently, curiously, expectantly. So vivid were their expressions, so near and so natural they appeared, that, for a moment, I thought they saw us, were watching us. The next instant I realized my mistake, understood what they were gazing at. A brilliant patch of light struck upon the earth before them; slowly it crept towards the temple steps. They were awaiting the sun, awaiting the daily vision of their sun-god! Up the steps crept the light. It struck upon the majestic figure of the high priest. Up, it crept, until with a sudden burst of reflected light, it struck full upon his upraised golden mace. Instantly the people prostrated themselves, raised their arms and, gazing directly into the rays of the sun, their lips moved, I listened intently, expecting—so plain and vivid was the scene—to hear their voices raised in a chant. But of course there was no sound. I turned for a brief instant to call attention to the illusion to Ramon. I could scarcely believe my eyes. He was prostrate, his arms raised, his face uplifted. Temporarily, unconsciously, he had reverted to the faith of his ancestors! The scene had awakened his old Incan blood. Carried away by the sudden flood of long-dormant beliefs he, too, was making obeisance to the sun-god. I was wise enough not to speak, not to let him see I had noticed him, and I again turned to the prism.

Now the priest had entered the temple followed by the virgins and the people and, so plain was everything, that, by the flood of light entering the place of worship, I could distinguish the priests gathered about a great stone altar upon which rested an immense golden disk engraved to represent a human face. But that which held my gaze, that aroused my greatest interest, was the fact that, ranged about the temple walls, were scores of sculptured stone chairs, the counterparts of those that had so puzzled all archeologists, myself included. They were ceremonial, and, a moment later, the priests seated themselves in the chairs while the Virgins of the Sun prostrated themselves about the altar, and raising their arms, placed offerings upon it. I had solved the riddle of the chairs! I was immensely pleased, and I had completely forgotten that I was gazing at an invisible temple, at invisible men and not at a full-sized temple and normal-sized men. Then a movement at my side attracted my attention. I turned. Ramon had risen. With fixed eyes, with transfigured features, like one in a dream, he was walking forward, hands outstretched. Before I realized what it meant, what had come over him, he dropped on his knees, lifted his hands, and, in vivid pantomime, placed an invisible object on an invisible altar. I understood. For the moment he had been transported back for hundreds, thousands of years. To all intents and purposes he was the reincarnated person of some aboriginal ancestor. In one brief moment, all the white blood, all the inheritance of civilized men had been swept from him. Only the Indian remained, the Indian worshipping his ancient gods.

But he had knelt exactly upon the spot where stood the miniature temple! Unwittingly he must have crushed it and its worshipping people beneath him. Involuntarily I shouted a warning. Dazed, as if awakening from a dream, he blinked, turned towards me. A peculiar expression swept over his face, and slowly, as if still in a daze, he rose.

Beset by fears, forgetting everything in my desire to see the devastation he had wrought, I turned to the prism.

I could not credit my senses! I gasped. I think I screamed. Nothing had changed. There was the temple. The people were streaming down the steps. Ramon might never have existed as far as they were concerned!

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[5] A South American Indian language.

CHAPTER IX

"GOOD LORD!" I ejaculated. "You were right over them and they didn't know you were there!"

For a time he remained silent, lost in thought. Then, ignoring my exclamation: "Really," he said, "I don't know exactly *what* happened to me. The last I remember clearly was looking into the prism and seeing the priest in the temple door. Then I heard you shout and found myself out there. I must have been temporarily hypnotised by gazing into the crystal. Did I do anything foolish or ridiculous?"

"No," I lied glibly, feeling he might be embarrassed if I described his strange behavior. "You merely acted as if you were walking in your sleep."

Then, not wishing to let him know my suspicions as to the real cause of his actions, I added: "Probably you are right. Gazing fixedly at any bright object often produces an hypnotic effect. But, man alive, don't you realize the wonder of what I said? You stood on top of the temple and produced no effect upon it!"

"Naturally not," he replied, although I could see that his mind was not on my words. "I was, relatively, as far above the temple as the summits of those snow-capped Andean peaks are above us. Much farther in fact—perhaps as far above it as—well I won't say the moon; but so far above the people and the temple that I was beyond the range of their vision. But, *amigo mio*, I have a strange sensation of having seen those people and their ceremonies before now. A vivid impression. I even know the words of their chant. I even feel as if I had been in that temple myself. Of course, I never have seen anything of the sort. I wonder if it is the result of my studying so many of the Incan and pre-Incan remains and reading so much about their ceremonies?"

"Very possibly." I agreed, without taking my eyes from the prism. "But, look, Ramon! Did you notice those stone chairs in the temple? They are exact duplicates of those we find about here. It solves the mystery of their use. And the ceremonial! It proves conclusively that the Incan religion was a direct outcome of the beliefs of these pre-Incan people. Why, man, it's like turning back time for several thousand years and seeing the people as they were forty

centuries ago!”

Ramon was beside me, staring into the prism again. I glanced at him. His lips were moving as if he were talking to himself. Then, completely lost to his surroundings, his words became audible. “*Kapak Inti Illariymin*” he muttered in Quicha, and to my amazement, using the ancient Hualla form of the dialect, while, through the prism, I saw the high priest bowing before the altar. Then “*Puncaho Pakariyrcumen*,” muttered Ramon, as though he was there among the worshipping Indians. Now the people were dispersing; streaming away from the temple, dancing and singing, until, reaching the open stage or plaza of the village, they gathered in groups and knots as if awaiting some other event.

Ramon was, to all intents and purposes, living in another age, in another sphere. “The *Taquicamayoc*” (musicians), he exclaimed, as from one of the buildings there appeared a group of nearly one hundred Indians playing upon various instruments. And, as the people commenced dancing and going through the complicated steps of the sun-dance my companion’s lips hummed an Incan or pre-Incan tune. So amazed was I at his actions, at his complete disembodiment, as I might say, that my interest in him exceeded my interest in the people and their actions. What had come over him? How had it been brought about? How was it that he knew and spoke the ancient Incan or Hualla dialect, recognized each phase of the ceremonies before it occurred, spoke the words of the Incan salutation to the sun-god? Was it possible that he, Professor Amador, the scientist, was the reincarnation of some long-dead Incan or pre-Incan? Had he or his spirit, his soul or whatever it is, lived in the dim past? Had he witnessed and taken part in such ceremonies as were being enacted before us? Did this part of him awaken at sight of the people and the temple and, for the time, dominate him? Or was it, as he had suggested, the result of some form of hypnosis? I could not say, but there was no doubt that he was, for the time, a pre-Incan taking, mentally at least, an active part in the pre-Incan ceremonies so strangely revealed to us. Personally, I was convinced that my friend was actuated by the spirit of some remote ancestor, for despite the ridicule of my fellow ethnologists, I had always stoutly maintained my belief in reincarnation. I was therefore immensely pleased at Ramon’s behavior. My theory, I felt sure, was being borne out. Here was proof that man is but the reincarnation of other beings, and I regretted that I did not have others to witness the actions of my friend. Also, I wondered whose spirit dwelt dormant within my own body, and I regretted somewhat that I, too, was not of Incan ancestry, for I could then perhaps have taken as intimate a part in the scene before us, as had my friend. At all events I could have obtained a much more vivid and intelligent understanding of everything that was taking place. But I realized that, in all probability, Ramon would remember nothing of what had

occurred when he again returned to his normal status, and hence any information I might have secured in that manner would have been of no value to science.

Meanwhile I had not failed to continue watching the amazing scene in the plaza, and I remember that my mental processes were somewhat confused and chaotic. I had long since lost all impressions of looking at minute beings through a magnifying medium; my subconscious mind told me I was not witnessing a scene brought by some mysterious means from a distant spot, and I found myself possessed with the feeling that I was actually in the village among the celebrants while, at the same time, there was the feeling that I was watching a most vivid and perfect motion-picture. This effect was greatly heightened by the absence of sound, although I could see the movements of the Indians' lips, could see the musicians playing upon their Pan's pipes, their flutes and their drums. But no cinematograph film ever portrayed a scene with such detail, such color, such depth and perspective. Intent, fascinated, I gazed; one portion of my brain was filled with Ramon's actions, the other was intent upon the scene before me, and all the time I was feeling that, at any moment, I would awaken to find it all a dream.

A SUDDEN exclamation from Ramon startled me. I glanced at him. Never had I seen such an expression upon his face before. He was transformed. His eyes were wide, fixed, staring, yet filled with such a longing, yearning expression as I have never seen in mortal eyes. His lips were parted, his breath came in short sharp gasps, his face was flushed, and the veins in his temples throbbed visibly.

"*Kora!*" he cried, stretching out his arms. "*Kora! Sumak Nusta!*"

What did he see? What had called forth that cry—"Kora! Beautiful Princess!"

Again I peered into the prism. The question was answered. The dancers had parted, had formed a double line across the plaza, and through the lane thus formed came a procession of girls led by the most beautiful woman I have ever seen or hope to see. No wonder Ramon had called her *Sumak Nusta* or Beautiful Princess. That she was a princess was evident, even to me. Her every movement was regal. Her robes, of some shimmering materials, gleamed and sparkled with iridescent hues as though sprinkled with diamond-dust. Her long hair, falling to her knees, was confined by a diadem of flashing gems. Over her tiny ears were oval coverings of gold. About her slender graceful neck was a collar of magnificent emeralds and golden-hued topazes. And in her right hand

she carried a golden *Champi*, the insignia of a monarch in pre-Incan days.

To describe her person or her face would be impossible. Her figure, partly revealed by the clinging robes, was that of a goddess. Her bare arms and her right shoulder, that was exposed, were of an indescribable golden hue. Her oval face and straight nose were flawless and might have been chiselled from old ivory, had it not been for the vivid warmth of her great lustrous eyes and her red luscious lips. Had I the descriptive ability of a great novelist, I could devote pages to describing her, to detailing her loveliness, but while I admire a beautiful woman, yet I am more accustomed to dealing with archeological subjects than with feminine attractions. I confess, though, that I was enthralled; overcome by the beauty of the microscopic princess, the more so as I had never before seen an Indian woman, who could be considered even pretty. Indeed, I must admit to an increase in my slow pulse beats, to a most unusual and novel throbbing, as I gazed at her, and I am not ashamed to admit it, for she was enough to excite the admiration, and to thrill the nerves of any man.

Ramon was babbling, speaking incoherently in Hualla as though by the very force of his utterances he could attract the attention of the princess whom he had called Kora.

Suddenly she halted, turned her head and glanced about, a troubled, puzzled expression in her magnificent eyes. Then she frowned slightly, passed her left hand across her brows, and turned her gaze directly towards me. I could have sworn that she was aware of our presence, that she saw us, yet I know it was impossible. Ramon uttered a sharp exclamation. A cry that was almost a moan. The princess' lips parted in a smile; slowly she turned her head and stepped forward. What followed I cannot say, for I leaped away to grasp Ramon who, staggering back, sank unconscious into my arms.

For a moment I was seized with gripping fear, fear that the strain had been too great, that something in his brain had snapped, that my friend was dead. But to my unbounded relief, I found he still breathed, that his heart still beat. He had merely fainted. For the last half hour he had been under tremendous strain, under tremendous emotional pressure, and the sight of that vision of glorious womanhood, of the *Sumak Nusta*, the Beautiful Princess, had overcome him. He had been in a state of semi-hypnosis, he had been living again through the ceremonies of his ancestors, and, I wondered, as I strove to restore him to consciousness, if it were possible that, in the princess, his spirit had recognized the woman it had loved and lost in remote bygone days. No doubt, when he came to himself, he would remember nothing of what he had gone through. He had said his actions were blank when he had gone through the pantomime of making an offering to the sun-god. It would be just as well if

he failed to remember anything. But I was to be greatly mistaken in my surmises. He was coming to. He opened his eyes, stood up, stared about with a puzzled expression, seemed searching his mind for memory of something.

"Queer!" he exclaimed at last. "What happened? Where am I? I thought—but of course, I see, I understand! It is you, *amigo mio*, I am here at our camp. But I thought—Oh, my God, my friend, where is she? Where is my Kora, my beloved? Have I lost her? Did you see her? Oh, *Madre de Dios*, was it a dream?"

He was staring about wildly, his face drawn, distressed. From the very bottom of my heart I pitied him. "No," I said trying to quiet and comfort him. "It was not a dream, my dear friend. I saw her—the woman you called Kora the Beautiful Princess. She is real, she exists, but she is one of those minute invisible people.

"You have not lost her, for you never had her, unless perhaps, Ramon, you two existed in some former life, some former sphere."

Ramon sprang to the prism, but the next moment turned away and sank dejectedly to the ground. "*Santissima Madre!*" he almost sobbed, bowing his head and covering his eyes with his hands. "Was ever a man in such a predicament? To see the woman one loves, the woman one has loved through the ages—. Ah, yes, my dear friend, I know it now. Once, long ago, I lived. Once in the bygone forgotten days my soul loved Kora. To have loved through the ages, I say, to see the woman your spirit has loved, and to know that she is as unattainable as the stars? Ah, *amigo mio*, that is bitter, bitter sorrow, indeed!"

Then, suddenly brightening. "But she saw me!" he cried, leaping to his feet. "My love called to her! She saw me! She heard my voice, my cry! Did you see her, *amigo*? Did you see the look of joy in her eyes when she knew I was near?"

"Yes, I saw her look towards us," I replied. "But, Ramon, my good friend, calm yourself; try and be reasonable. Greatly as I would like to help you, to reassure you, I cannot. I do not think the princess saw or heard you. That, you know, if you stop to reason, would be impossible. And do you not see that it would be far better for you both if she did not? Is it not bad enough for you to suffer without causing her suffering as well?

"And, stop to think, Ramon—think how greatly she too would suffer if she knew that you were near and that you were still as remote, and as unattainable to her as she is to you."

RAMON bowed his head and stretching out his hand, grasped mine. “I know,” he assented in scarcely audible tones. “You are right. I hope—yes with all my heart and soul, I hope she doesn’t know, for I would rather suffer any agonies than have sorrow touch Kora. But, *amigo mio*, I *know* she saw me or heard me.”

“Possibly,” I said, as I considered the matter, “possibly she *sensed* your presence. Although I am a scientist and profess no hard and fast religion, yet I have faith in the Creator and His power to perform miracles that we poor humans cannot explain. And I believe in the soul or spirit and in its immortality. Also, I believe, as you know, that the immortal spirit must possess a body and that, in every man and every woman, is a spirit that has occupied the bodies of other men and women for infinite time. I also believe that, under certain conditions, the consciousness of the spirit’s former incarnations is aroused. That, my friend, has been the case with you. Within your body is the spirit of some ancient being. It was the consciousness of that spirit aroused at sight of old familiar scenes that caused you to act as you have. That gave to your lips the ability to speak the ancient Hualla tongue, that made you recognize the ceremonies—each step, each event, in advance; that caused you to cry out when you saw the princess. And, as you confess, it was that spirit that loved her in the long ago. But, my friend, it is impossible that you or your spirit loved or knew this tiny princess herself. Even were she of normal size she could not have existed unchanged for centuries, any more than you yourself. No, no, Ramon, it is her spirit that your spirit recognized, and possibly, very probably, her soul responded to the cry of yours and caused her to turn and look towards you. But that she, with mortal eyes or ears, saw or heard you, is not possible. You must remember that, proportionately, we were as remote from her as the planets from us; that, compared to her, you are as big as our entire globe or even larger. She could no more have seen or heard you, than you or I could hear or see a person on the other side of the world.”

“All you say is true,” said Ramon. “Perhaps I should have told you more about myself before. But I feared you might scoff. Always, *amigo mio*, I have been somewhat this way. Always I have been aware of an inner self or something that at times reveals matters I could never have learned by any ordinary means. Always, when in the presence of the remains of my ancestors, I seem to feel as though I were amid familiar things, as if I had known them long ago. Often, by fixing my thoughts upon them I can see—as plainly as in a vision—the ruins reconstructed, and the people who once lived within them. Often I have tried thus to learn the secrets of those pre-Incan cyclopean structures. But in vain. Always I have seemed to see those titanic blocks of stone just as they are today. My strange vision cannot pierce their mysteries.

But when I came here, though somehow much seemed vaguely familiar, I had no such sensations. And yet, now, since I have looked upon those microscopic Indians and have seen their temple, matters have been plainer, more vivid to me than ever before. And then Kora appeared, and over me swept a most marvelous change. No longer were there hazy visions of the past. No, I seemed bodily transported, to be a part of the scene. And though I have never heard her name, though never in my life have I even dreamed that there was such a divine creature, yet, instantly, I knew that I had known her, loved her always. God, how I suffered! *Amigo mio* have you ever had a nightmare in which you strain, you strive, you exert every physical and mental effort to reach something, to touch something, to grasp some object to keep yourself from some fearful fate, only to find yourself powerless, bound by some invisible, unaccountable bonds, unable to move? Such were my sensations, *amigo*. My spirit fought to speak, to call to her, to tell her of my love, to hold her fast, to press burning kisses upon her beloved lips. But in vain. I was bound, helpless, as in a nightmare. Can you imagine what I suffered, what agonies I endured? And now, now the awakening is almost as bad, even worse, *amigo mio*. I know she lives. I know she is near me—within reach of my arm—and yet as remote as the stars."

"But you can see her, Ramon," I reminded him. "That should be some comfort; that should give you some happiness."

But I fear I only made matters worse. I was deeply, truly sorry for my dear friend. Had he been young, possibly I would not have been quite so sympathetic. A boyish passion, a youthful love affair would not have appeared so serious. Infatuations of that sort are soon forgotten. But Ramon was no longer young. He was about my own age. He was deeply emotional and, little as I know of affairs of the heart—being a confirmed bachelor myself and never having found either time or opportunity to devote myself to women—still I had seen enough of the world, and was a sufficiently informed student of human nature and human passions, to know that it is no light matter when a man of Ramon's age and type falls madly in love. Moreover, Ramon's passion was not of recent birth or sudden inspiration. Unquestionably, I thought, he and Kora—or better, his soul and Kora's—had loved in the past, hence his present love for the Beautiful Princess was a thing of countless ages.

So, as I have said, I fear I rather muddled matters in my desire to comfort and sympathize with him by suggesting that he could see her.

"Do you think that makes it easier?" he flared. "Do you think a famished man finds his gnawing hunger appeased by being shown food he cannot reach? Almost I had rather shatter that prism, remove forever the possibility of

looking upon her. But no, no, no!" he almost screamed. "I cannot! I *must* see her! And I *shall* find a way. I shall force nature to give way before my love! God, Inti, Kapak, cannot be so cruel as to keep us apart!"

He sprang to the prism. I followed. But Kora and her attendant maidens had disappeared. The temple was deserted. The people had resumed their interrupted labors.

Yet, at any moment the princess might reappear. For hours we remained, silent, gazing into that wondrous bit of crystal, until the failing light forced us to desist.

Reluctantly, Ramon withdrew from the prism. He seemed aged, depressed, utterly forlorn. With bowed head he plodded beside me towards the camp.

"She has gone!" he muttered. "But I shall see her again. I shall find a way to be with her. *Amigo mio*, this has been both the happiest and the saddest day of my life."

CHAPTER X

AFTER dinner I asked Ramon if he would not spend the evening with me, for I knew that he was depressed, rather miserable, and that companionship might cheer him up a bit.

He shook his head. "No," he said, with a rather wan smile. "Thank you just the same, *amigo*; but if it's the same to you, I'd rather not. I want to be alone to-night—alone with my memories and my thoughts. I know you think I need company, but not to-night, old friend. I want to be free to think, to concentrate by myself. I *must* find a way to be with Kora, to communicate with her. But, do you know, *amigo mio*, somehow I feel that she *is* near me in spirit, if not in person, as if, when I am by myself, she might appear to me. Perhaps it's ridiculous and, as you know, I am no spiritualist, but I have never felt this way before. So, *mi amigo*, I will leave you to yourself this evening."

"That's quite all right," I assured him. "I know how it is—how one wishes to be alone at times. But if you feel a bit lonely or decide to come over for a chat, don't hesitate to do so. I have a lot of notes to write up and shall be up late."

"Thanks," he said. "But I don't think I shall disturb you. I, too, have much to occupy my mind. Good night, old man—*Hasta luego!*"

While I busied myself jotting down my notes on the remarkable occurrences of the day and the amazing things we had seen—and which were of inestimable scientific value, it began to rain. As the big drops rattled like musketry upon the thatched roof of my hut, I found my thoughts wandering to the miniature people and their village. How were they faring in this downpour, and was Kora the Beautiful Princess also listening to the patter of rain? One thought led to another, and, presently, I found myself idle, my eyes half-closed, my mind revisualizing the scenes I had witnessed.

Again I could see the sun-drenched village, the temple, the figure of the dignified high priest, the colorful multitude prostrate before him as the rays of the morning sun flashed like fire from his upraised golden mace; once more I visioned the rhythmic figures of the sun-dance; and once again I saw Kora the *Sumak Nusta* in all her glorious beauty at the head of her train of attendant

girls. No wonder Ramon loved her! Even to picture her mentally set my blood a-tingle and my heart beat a trifle faster. It was all so vivid, so real and yet so dreamlike that I could scarcely believe it merely imagination, and, with an effort, I roused myself and resumed my work.

Gradually, almost unconsciously, I was aware of strains of music penetrating through the swishing roar of the rain, and I realized that Ramon was finding solace with his beloved violin.

I had forgotten to mention that Ramon, like most Peruvians, was passionately fond of music. Also he was an accomplished musician and played a number of instruments to perfection, especially the violin, and he was particularly fond of the haunting, plaintive melodies of the Incas. But when he really wanted to express himself, his favorite instrument was the Quicha flute or *Quena*, the old-time instrument of the Incas, and many a time I had listened to his rendering of *Ollantay, Cuando la India llora*[6] and other Incan songs that seemed to tear at one's very heart strings.

But to-night the music that came floating across through the slashing rain was different, and I stopped my work and listened intently. I am no musician. I do not know one note from another, and I could not hum or whistle a tune to save my life. But I possess good ears and a most retentive memory. If I hear an air once, I never forget it. And I was sure I had never before heard the tune that Ramon was now playing. In some ways it was reminiscent of Incan music. It held the same pathos, the same inexpressibly pathetic appeal, and yet there was a strain of joyousness, of gaiety running through it as if through sorrow of the moment there were glimpses of a brighter future.

I wonder what it was, why Ramon had never played it before and, had it not been raining in torrents. I should have been tempted to run across to my friend's hut to ask him about it, even at risk of disturbing him.

Presently, however, the music ceased, dying out in a final long-drawn despairing wail, and once more I fell to writing my notes, at which, I must confess, I was making little progress.

But I had written scarcely a page in my notebook when once more, the sounds of music mingled with the incessant noise of the descending rain.

It was the same air, but this time the notes were mellow, sonorous, silvery sweet, almost as though some song bird were carolling the air. Ramon had abandoned the violin and was playing upon the Incan Quena. Entranced, I listened. I closed my eyes, charmed, almost hypnotized by the music that was, if anything, enhanced by the accompaniment of the rain. Never before had I been so affected by any music. It conjured up visions, visions of the past, of

mighty temples and great palaces, of green fields and vast mountains, of brown-faced, gayly-clad people, of strange ceremonies, of golden images, of dancing Indians, of—I came back to full consciousness with a start. Suddenly, as if by some revelation, I had recognized the tune! It was the song the people had been singing as they had danced before the temple, while we had watched them through the prism! It was amazing, incredible! How *could* I recognize it? Not a sound had come to us from the lips of those microscopic beings, not a sound from the miniature musicians. And yet I knew, could have sworn, it was the same tune they had played! It was not so astounding that Ramon should have played it. I had abundant proof that, by some mysterious psychological phenomenon, he had been attuned to, if not actually (in spirit of course) a part of, the scenes I had witnessed. I had even seen him muttering the words of the chant and songs as if he knew them by heart, and it was no more remarkable that he should have known the tune, should have been able to render it upon his violin or his Quena.

But that I, who had merely seen, to whom everything was strange, new and utterly foreign, should have recognized the music, was little short of miraculous.

But there are many things which happen that are unaccountable and, pondering upon this, I fell again into a brown study, the while I remained dimly conscious of the distant strains of the music in my ears.

Then, abruptly, the music ceased. The next instant I leaped to my feet, startled, alert. Surely I had heard Ramon call! Or had it been the cry of some nightbird? The next moment my door was burst open and Ramon flung himself into the room, wet, dishevelled, wild-eyed, excited.

"*Santisima madre de Dios?*" he cried, relapsing into Spanish as he always did when greatly excited or under emotional stress. "*Gracias a Dios*, the miracle has happened, *amigo*! It is as good as done! It is accomplished! Tomorrow, if God wills, I shall clasp my Kora in my arms! But come, come instantly, *amigo mio*! Come that you may see the miracle yourself, that you may not think me raving, mad! For the love of God come! *Dios en cielo*, was ever such happiness vouchsafed to man before?"

Seizing me by the arm, babbling in English, Spanish and Quichua, he dragged me to the door, into the drenching rain, towards his hut. Too amazed to resist, too astonished even to think of seizing my rubber poncho or a hat, wondering if he really had gone mad, wondering still more what had occurred, what it was all about, I stumbled, dripping wet, into his shack.

Ramon sprang forward and pointed dramatically at the table. "Behold!" he

cried. “Behold the miracle that leads me to eternal happiness and makes Kora mine!”

I gasped, stared wide-eyed, incredulous, and sank speechless into a chair. I was still at a loss to know what Ramon was driving at, yet what I saw was enough to bowl me over. Upon the table, gleaming dully in the dim light of the camp lamp, was a great, spherical, golden object a foot or more in diameter. Covering its entire surface was an elaborate, deeply-incised design, and from side to side, it was pierced by a neatly drilled hole. In every way it was the exact duplicate of one of the minute golden beads, but hundreds of times larger.

Where, how, had Ramon secured it? What *did* it mean? What did he refer to when he spoke of the “miracle”? What had this mass of wrought gold to do with Kora?

I WAS not to be left long in doubt. Ramon, wildly excited, was trying to explain.

“It is the Manabinite—the prism!” he cried. “Here, upon this table, was the first small prism I made. It was here, left as it was when last we used it. Before it was a tiny bead of gold no larger than a pin’s head.

“To-night I sat there—where you now sit—playing upon my violin, playing a tune that had come to me, that was humming in my brain. It did not seem right played on the violin; the instrument seemed unsuited to it, so I tried the Quena. And as I played, my thoughts were all of Kora, of our great, eternal love; of my sadness, my hopelessness. There before me lay the prism; in it I could see the golden bead, magnified, enlarged. Slowly over me came hatred, detestation for the thing, for the prism that could bring the image of my *Sumak Nusta* before my eyes to haunt and torture my soul. Perhaps it was the hand of God. Perhaps the emotion in my heart—I know not what—made me forget the tune, which caused me to end the melody with a long-drawn, peculiar note. Dropping my Quena I sprang forward, intent on hurling the accursed crystal aside, maddened at thought of the suffering it had caused me. But as my hand shot forward, I yelled with pain. Where I had thought there was nothing, my hand had struck upon solid matter. *Valgame Dios!* What I had thought was but the image of the tiny bead, was real!”

“You mean?” I demanded. “You——”

Ramon interrupted me. “The miracle had happened!” he repeated. “The magnified image of that tiny bead had materialized! By some magic the bead itself, its very substance, had been transferred, enlarged, magnified bodily. It is

incredible, beyond belief, supernatural! But there lies the proof. The little bead has vanished. There is its transformation! And, *amigo mio*, believe it or not, the prism itself has vanished—dissipated into thin air!"

Had Ramon gone mad? Had I heard aright? His statement, uttered jerkily, excitedly, was utterly beyond belief. Yet there was that great sphere of sculptured gold. Unsteadily, not knowing just what to expect, I rose, approached the table and extended my hand towards the gleaming mass. I had half-expected to find nothing, to find it was merely the projected, magnified image of a tiny bead. When I felt solid metal under my fingers, when I was forced to realize the gold was real, I actually trembled with the amazement of the thing. Was it possible that by some weird, unaccountable means the bit of Manabinite had transformed the little bead of gold to the golden ball under my fingers? Speechless with wonder I examined the table, passed my hands over it. Aside from the big gold sphere it was bare. But no, I must qualify that statement. Upon my finger tips was a gritty white powder, perhaps something spilled there by Ramon. But there was no trace of the crystal prism or of the original small bead.

Ramon was watching me intently, breathlessly. "Are you convinced?" he asked, when at last I gave up my search. "Do you believe me now?"

"I must!" I cried. "And yet—yet it is—why a physical impossibility. It is impossible for an object to be transformed to larger size by means of a bit of transparent mineral. It would be impossible by mechanical means. It's a law of nature. There was only an immeasurable amount of gold in that minute bead. In this sphere there are—scores—probably a hundred pounds of metal. Why, man alive, you, a professor of physics, cannot believe that definite amount of matter can be increased a thousand times and more without adding anything to it."

"God knows how it is done," he exclaimed. "All I know is that it *has* been done. And to me it seems no more impossible than many of the other things we have seen. Is it any more impossible than those tiny people? Any more impossible than to see atoms? And I care not a jot how or why it was brought about as long as it gives me my Kora!"

"Even if it *did* happen, I fail to see how it helps you in your love affair," I said.

"What!" cried Ramon. "You don't see? *Por Dios*, but you *are* stupid! Don't you see, *mi amigo*, that I can do for Kora what I have done for that tiny bead; that I can transform her to a normal-sized woman? Tomorrow, as soon as day dawns, I shall do so. An instant later she will stand beside me, glorious,

beautiful—my own forever!"

"In that case you will make her very miserable," I remarked, feeling still that he might be mad, for his words were assuredly those of a madman.

"Do you imagine that she could be happy when all her people—her subjects, remain microscopic, invisible?"

"No, I shall do the same for them all," cried Ramon. "I shall focus the prism upon the village, and by its magic, its miraculous power, bring the people, the village, the temple—everything—to normal size."

"How do you know it will not utterly destroy them?" I asked. "It occurs to me that a human being, suddenly and by some unknown power increased—many hundreds of times—in size might not withstand the transformation. And how can you control their size? They might be enlarged to gigantic proportions."

"*Madre de Dios*; you are right!" he cried, throwing himself upon the couch, in despair. "I must wait, must experiment, must learn to control the thing. I must test it upon some living creature."

"And now, Ramon, for Heaven's sake, be calm and sensible and tell me just how this 'miracle,' as you call it, happened. We know it is *not* a miracle. It *must* be explicable. We have seen the beads—countless objects—magnified by the prism, but nothing has ever before been bodily enlarged, physically magnified. What brought about this incredible effect?"

"My music!" was his astounding reply. "That last note upon the Quena. And now I know the secret of those cyclopean structures that have always puzzled the world. They were once small—built by normal sized, or possibly miniature, stone blocks. And then, then by means of a prism and a musical note, they were transformed to titanic proportions."

I COULD not restrain my laughter. "Nonsense!" I cried. "This thing has taken possession of your senses. It is marvelous, miraculous enough, and I do not blame you. But to assume that the pre-Incan structures—piffle, man! And how on earth can a musical note bring about such a thing?"

"I cannot say," admitted my friend. "But I assume it was owing to a certain vibration. As I told you long ago, and as you should know, everything in this world—and perhaps in the next as well—is due to vibrations. The Manabinite magnified objects—increased the vibrations of light. Is it so astounding, so incredible that, if the molecules, the atoms of the prism—were set into violent

motion by the note of the Quena, that the altered, magnified light waves might be fixed, transformed to atomic waves? That would account for the disintegration of the prism. In performing the miracle, it exhausted, expended itself. And as for your statement regarding the physical impossibility of increasing matter without adding to it, that, *I* say is 'piffle.' What *is* matter? An aggregation of atoms, of protons and electrons, nothing more. And how do we know what electrons, protons, atoms, may not be so altered, so increased by such a medium as Manabinite that the so-called matter will be increased? But what difference does it make? I'm tired of trying to solve miracles by scientific reasoning. I know it's been done. What has been done once can be repeated. And I intend to repeat it, to win my Kora. Nothing else in the world matters to me."

I had been thinking deeply. If, as I knew, a certain note, a certain vibratory wave of sound, could utterly destroy and disintegrate an object—even a building or a bridge, then, after all, was it not equally possible that an object could be produced—conjure up so to say, by means of a certain wave? It was a poor rule that did not work both ways, and I for one could not see why such a thing was not within the bounds of scientific reason. Naturally, the object produced must be built up of matter from the object that was destroyed. And was it not possible, even probable, that the Manabinite acted as some sort of an intermediary to transform the molecules of the destroyed object into a new object? Granted that was so, then if, as we knew, the Manabinite magnified the object so immensely, was it not possible that the new form would be produced in the dimensions of the magnification? After all, as Ramon had so often pointed out, we know very little of the properties of vibratory waves. Light, heat and other waves are merely variations of the same waves producing varying phenomena under varying speeds of vibrations, so was it not possible that the molecular or other waves—whatever they might be called—that were actuated by the note of the Quena, and which destroyed one bead and created another, were the same as the light waves that rendered visible a vastly enlarged image of the bead? It was all an involved, a hypothetical matter, but the more I thought about it the less preposterous and inexplicable it appeared. And no matter what the solution, no matter what the cause or the effect, the unalterable fact remained that it *had* occurred. But if, as Ramon thought and as was undoubtedly the case, the phenomenon had been produced by a certain note upon his Quena, could he reproduce that note so as to repeat the phenomenon?

"Do you know what particular note resulted in your miracle?" I asked him. He smiled. "I do not know which particular note it was," he replied, "but I do know what combination of notes—what bar of music, contained that note.

Would you care to hear it?”

“No, no!” I cried hastily, as Ramon reached for his Quena. “Good Lord, man, you must be careful! If you should strike that note when we were in range of the prism, we might be killed or enlarged to giants. For heaven’s sake, don’t start any experiments without taking every precaution.”

Ramon grinned, the happiest expression I had seen on his face since morning. “You forget there’s no prism here,” he reminded me. “But I realize the truth of what you say. I *must* be very careful. However, as soon as it is daylight, I am going to start experimenting. I shall take that best prism—”

“No, you will not,” I interrupted. “If your experiment works, you will lose the prism—it will vanish as did the one here. Then you could never see Kora, and you’d have no chance to experiment further. If you’re bound to experiment, try your tests on the small pieces of Manabinite. If it works on one, it will work on another.”

“Thanks, *amigo mio*, for reminding me,” he said. “In my excitement, I forgot that the crystal is destroyed. But I must test it upon living creatures—upon ants and bugs. Then, if they survive, I will try it upon small animals—upon vertebrates.”

“And if they do *not* survive, even if it is a complete failure as far as living organisms are concerned, you have at least discovered a means of becoming a multi-millionaire in a day. Think Ramon—” I laughed at the thought, “think of placing a worthless diamond, a mere chip, before your prism, playing a note on a Quena, and instantly possessing a diamond weighing several pounds! Or of transforming a pennyweight of gold dust to a gunnysack full of nuggets! Talk about the ancient alchemists or Aladdin’s lamp! But of course you’d have to acquire your riches all at once. There is no more Manabinite after you have exhausted what we have here.”

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[6] When the Indian woman weeps.

CHAPTER XI

NEEDLESS to say there was no sleep for us that night. There was far too much to discuss, and we talked over the matter and discussed it from every angle and every viewpoint. For one thing, I was very glad to see that Ramon's scientific interests had been aroused, that he had, temporarily at least, sidetracked his love affair, and that he was no longer morose, miserable and disheartened. Once more he was his old self—keen, alert, vivacious, thinking and reasoning clearly; once more he was the thoroughly practical scientist.

In a general way his views agreed with my own regarding the explanation of the phenomenon. But he put it slightly differently. "I have felt all along," he declared, "that the magnifying powers of the prism of Manabinite were due to its optical peculiarities. You may remember that I told you so when I first discovered the prismatic form and its powers. If it had been purely optical, the refraction of light rays from an object, then the lens would have shown equally remarkable peculiarities. But the lens possessed little more magnifying power than ordinary glass or crystal. It was due, I felt, to some unknown, mysterious vibratory waves akin to light waves, but wholly distinct. There were several very remarkable features about it. First: the way in which the Manabinite itself became invisible when the enlarged image was viewed, although perfectly visible if seen from any other angle. In the second place, the remarkable way in which the enlarged image stood out. It never appeared as if it were in the prism; it seemed as if it actually existed as an independent image suspended in air several inches back of the crystal. You, yourself, spoke of this. You said—if I remember your words correctly—that it looked 'as if you could pass your hands completely around it.' In other words, I believe—and my belief is now confirmed—that the images we viewed were actual matter. That, by means of the prism and the mysterious waves which it collects and sends out acting for those waves, much as a galena or carborundum crystal serves to answer radio waves—that, through the medium of the Manabinite as I say, actual matter is transmitted. By that I do not mean that an object is moved from its place and enlarged when placed before a quiescent prism of the mineral, but that an attenuated portion of it, an aura or a phantom or some material portion of which we know nothing—is transmitted and magnified and that in so doing,

some certain portions of the Manabinite are incorporated with it. Very well. Assuming I am right, then it is but a step, so to speak, from transmitting that shadowy substance to transmitting the entire substance. Obviously that step is taken by exciting the mineral by a certain note or sound wave. And just as the substance of the Manabinite in line with the plane of transmission becomes invisible under ordinary conditions, so, under stress of extreme vibration, the entire mass disappears leaving the transmitted object permanently enlarged. If my reasoning is correct, there is doubtless somewhere, another sound vibration, which would cause the opposite effect and would restore everything to its normal status. But that, *amigo,* does not interest me. If I succeed in establishing that living organisms are not injured by the process, and if I discover the secret of producing transmitted bodies of any desired magnification, then will I be content and happy beyond words, for Kora, my beloved princess, will no longer be unattainable."

"No doubt you are right," I agreed. "But if you materialize all those Indians at once, we may find them far from desirable neighbors. I think, Ramon, that if you arrive at the point where you decide to experiment with the princess, that you had best save a prism for future use, and when she materializes, ask her advice about bringing the rest of her race to normal size."

Ramon laughed. "Perhaps that's a good idea," he agreed. "But personally I should have no fears of the Indians. They would scarcely molest their princess's lover. And do you know?" he chuckled again. "Have you thought of the interesting and peculiar status we would occupy if they were to appear here as full-sized men and women? Why, *we* would be regarded as the interlopers, as the outsiders, and as those tiny people have never seen a white man, we would be as great curiosities to them as they are to us. However, there is much to be done, *amigo mio*. The sun is rising. Very soon now I will know if my dream is to come true, or if I am doomed to lifelong bitter disappointment and sorrow."

I need hardly confess that I was as deeply interested in the result of Ramon's experiments as was he. But I still retained more of my customary composure and common sense than did my temperamental friend, and I insisted upon a hearty breakfast before attempting anything. By the time we had finished, the rain had ceased and the sun was breaking through the lowering clouds.

THE extent of our interest and curiosity may be gauged by the fact that we barely glanced into the prism to see how the little people had fared and, once

we were assured that they were quite all right, we did not even wait to witness their morning devotions and ceremonies, nor to watch for the reappearance of Kora the princess.

Fortunately, Ramon had quite a quantity of Manabinite remaining on hand. To be sure it was all in small fragments, for he had made use of all the largest and best pieces in building up the one large prism. But we felt sure that the small pieces would serve for experimental purposes, and Ramon declared that the fragment that had produced the big gold spheres was no larger than some of those remaining.

But it was slow work cutting and polishing the pieces of mineral to form a proper prism, and it was well along in the afternoon when the first prism was ready for its test.

As we had worked, several matters had occurred to us that we had overlooked during the preceding night. One of these was the fact that the gold bead alone had been enlarged; that no other object, not even the table upon which it had rested, had been affected.

"By Jove!" I cried, when I thought of this and called my friend's attention to it. "It may be that only gold can be enlarged bodily. Otherwise how can you account for nothing else being affected?"

"Possibly you are right in that surmise," he assented, "but," he added, "I doubt it. More probably only the object in direct line of focus, or in the absolute line of vibration, is affected. In fact, it may be the stress and strain of other objects—slightly out of focus, so to say—trying to crowd through, that disrupts the Manabinite. However, we shall soon see. The prism is ready. Now to get my Quena and put the thing to a test. Shall we try it first on an ant?"

"If it works we shall have a monster to contend with," I said. "Have you any idea how much this prism magnifies?"

"If the stuff follows hard and fast laws, as it unquestionably does, then it should magnify approximately five hundred diameters."

"Then for the love of Heaven, don't try it on an ant!" I cried. "An ant five hundred times enlarged—an ant even if only one quarter of an inch in length—would be transformed to a monstrous terrible thing over ten feet in length! No, Ramon, let us proceed carefully, one step at a time, even if you *are* filled with impatience to attain your goal and your happiness. Let us first test the prism on inanimate objects. We know it has worked on gold. Let us try it on a minute grain of sand, on a minute sliver of vegetable matter. Let us be sure you are right about the extent of magnification and then try it upon the most minute

and inoffensive creature we can secure—upon a thrips or a soft-bodied larva, for instance."

"I suppose that's sensible," admitted my companion, "but it seems a pity to waste this crystal and a day's work just to repeat a phenomenon."

"It won't be wasted," I assured him. "You must be sure of the note, and it will teach us a great deal."

"Very well," he assented. "But why not combine several objects? We'll try a minute grain of sand, an almost invisible vegetable fibre, and—yes, a speck of gold, just to make sure that your idea that gold alone responds is *not* correct."

I agreed to this, and very soon we had the three almost invisible objects sharply focussed in the prism. The grain of sand—a mere speck of impalpable dust, appeared like a large cobblestone; the tiny flake of gold, chipped from one of the gold beads, appeared like a golden shaving from a machine lathe, and the hair-like strand of plant fibre was revealed as a section of a rough, twisted rope.

Then, while I stood to one side and watched the table, the crystal and the practically invisible specks that marked the three objects, as I had never watched anything before, Ramon placed the Quena to his lips. The first few notes were those of the tune he had played the preceding evening. He was feeling about, searching for the final bar. And then, suddenly, so unexpectedly that I jumped, came the long-drawn wailing finale. I can swear I did not remove my eyes from the table for an instant. I can swear that as far as I could see, nothing happened to the objects there. Almost inaudible, through the notes of the Quena, I heard a peculiar twang, a rather musical sound, more like the sound of snapping a guitar string than anything else. For perhaps the tenth part of a second the table seemed to be blurred by a faint mist. That was all. I was still gazing at the enlarged, unaltered images of the grain of sand, the bit of fibre, the flake of gold.

"Evidently," I remarked with a laugh, "something is wrong, Ramon. Are you sure you had the right note?"

As I spoke I stepped forward to examine the prism more closely. A sharp cry rose from my lips. I staggered back! The prism had vanished! So had the original grain of sand, the fibre and the gold! In place of the magnified images were the actual, solid enormously enlarged objects themselves! It *had* worked!

The miracle *had* happened a second time!

Never have I been so utterly dumbfounded. I had been amazed, staggered

by what Ramon had shown me the evening before. But here it had happened again, had taken place under my eyes, under my closest scrutiny, and I had not even been aware of it! There had been no movement, no alteration in anything. It was exactly as though the intangible images of the things had been instantaneously solidified.

RAMON was as excited, as pleased, as I was, and more elated. He had every reason to be. Not only had he proved the truth of his assertions, he had demonstrated that he *could* produce the mysterious magical note. And the test had proved that the properties of the Manabinite prisms were not confined to gold alone.

I believe Ramon worked all that night without cessation. I labored with him until I could remain awake no longer, and I must admit that in the intense interest, the mad desire to experiment with this new discovery, I completely forgot my ethnological studies, my notes and everything else.

When Ramon roused me for breakfast, he announced that a second prism was ready, and declared in most decisive terms that this one was to be used in a test on some living creature.

I agreed to this, for I was really as keen on learning whether any living organism could survive the transformation, as was Ramon. So, as soon as we had eaten, and had taken another peep at our microscopic Indian village, we searched about for some tiny organism of a harmless character. It was not a very satisfactory collecting ground for a naturalist. Ants there were in abundance, ground-beetles, worms, spiny caterpillars and other good-sized insects; but nothing small enough and inoffensive enough to warrant risking transforming it to the size of a full-grown man. But at last I discovered a colony of tiny land-snails under a stone.

Here were creatures that would be harmless, regardless of size, and I called to Ramon. But he was not satisfied. Snails, he declared, were far too low in the scale of nature to prove anything. They might survive when a more highly constituted creature would not.

“So might an insect,” I reminded him. “And there is no vertebrate in existence small enough for our purposes. However, if we can find a thrips, he may answer. If he *is* transformed to a gigantic beast, I believe we could manage him. But it would be a shame to be forced to kill him. Think what a sensation a fifteen-foot thrips would cause in the Bronx Zoo!”

Presently we found the thrips we sought and, selecting the smallest of the

lot, proceeded to Ramon's camp and secured the new prism. To try the experiment in his hut would be foolish, for the creatures, if enlarged five hundred times, would more than cover the table, to say nothing of breaking it down with their weight, and it was not pleasant to think of a pulpy, six-legged, elephantine beast, twelve feet or more in length, occupying our restricted quarters.

Hence we decided to make the test out of doors. We placed one of the snails before the prism, and to kill two birds with one stone, as it were, we placed the captive thrips upon the snail. Once more I watched intently as Ramon placed the Quena to his lips. Once again that startling, wailing note issued from the Incan flute. And once more nothing happened.

Fully expecting to find the gigantic image of the snail and the ferocious looking image of the thrips actually alive before me, I stepped forward and hesitatingly touched the surface of the huge snail's shell. My jaw dropped, my eyes stared incredulously. There was nothing there! My hand felt only thin air, then the surface of the prism itself! And there, just where we had placed them, were the tiny snail and the minute thrips. No change had taken place. The test had proved an utter failure!

Ramon was as nonplussed, as chagrined as I was. What was wrong? Why had the experiment failed?

"Are you sure you produced the same note as before?" I asked.

"Absolutely," he assured me.

"Possibly the prism is not precisely the same as the others," I suggested.

"It's within one five-hundredth of an inch of it," he affirmed.

"Hmm, do you suppose it's because it's out of doors?" I asked.

"No," he replied a bit sharply. "That couldn't affect it."

"Well, let's try it again," I said. "Perhaps it takes a stronger vibration in the open than in the hut. Get close to it this time, Ramon."

But the second test was no more successful than the first. Even when—risking any untoward event—we took the prism with the snail and thrips into the hut and made the test again, still there was no result.

Ramon bit his lip. I knew it was a terrible blow to him. He was totally at a loss. Then, slowly, deliberately, he placed a few grains of fine sand beside the snail and again blew that strangely penetrating note upon his Quena. The result was startling. Once more I heard that sharp musical twang. Once more I saw

the crystal prism and its surroundings through a faint momentary haze. And, there before us, were three great uneven masses of quartz! Once more the magical prism had transformed the sand grains to boulders. But—that was the most amazing part of it—the tiny snail and its thrips companion remained unaltered, unchanged, still the same minute living organisms as before.

"That is the answer!" cried Ramon, throwing aside his Quena and sinking dejectedly upon his couch. "It works with stone, with metal, with vegetable substances, but it will not work with animate objects. I am lost—there is no chance of my winning Kora!"

Evidently he was right. The properties of the prism, linked with the sound vibration, did not extend to animals. Kora and her people could *not* be transformed to full-sized men and women. I was truly, deeply sorry for Ramon. He had counted so much upon it, had looked forward so confidently to the culmination of his experiments. But a sudden idea came to me. Almost an inspiration, I might say. It came so suddenly.

"Don't give up, old man!" I cried cheerily. "I think we can overcome the difficulty yet."

"How?" he demanded brightening perceptibly.

"This is the way I look upon it," I said. "A certain note or vibration creates a certain reaction or agitation in the prism. You happened to produce the note that aroused the energies that would react on metal.

"The atomic structure or vibrationary structure, or whatever you may call it, of stone, even of vegetable fibres, also responds to that certain note, or more probably to other notes that you included in that one bar from your Quena. But living tissues must of certainty consist of a totally different atomic or vibrationary structure. Somewhere in the range of musical vibrations there *must* be a note that will force the prism to act upon such tissues. All you have to do is to find that note."

RAMON laughed hoarsely, insanely. "That is *so* simple!" he cried sarcastically. "Have you considered the number—the range of vibratory musical notes? No, of course you have not! You are not aware that they run into countless, incalculable millions. Even could the human ear differentiate them, could any instrument devised produce them all, it would require a lifetime—several lifetimes—to run through the entire gamut of such notes. And to attempt to find one—*the* one—at random, would be worse than hopeless."

"Nothing is hopeless," I assured him with far more confidence than I felt.

“You found the one by accident. You may find the other the first time you try. Don’t give up, Ramon. Think of Kora, think of what it may mean to you both. Remember, there’s nothing like trying. And in all probability the desired note is very close to the one that works on stone and other material.”

“Oh, I’m willing to try,” he declared wearily. “I *know* it is hopeless. But it’s my one chance of happiness.”

“Fine!” I exclaimed, slapping him on the back. “No time like the present. Let’s start now. And,” I added, as another thought flashed through my mind. “I may be wrong. Possibly the prism may act on some forms of life and not on others. Perhaps, if we tested it on a warm-blooded creature, on a vertebrate, it might work. We might try it on a bird—on a dove for example. Even the most gigantic dove would be quite harmless.”

Ramon smiled. His old sense of humor and vivacity was returning. “I don’t know about that,” he said. “A dove, one hundred feet in length and with a wing spread of three hundred feet, might cause most unpleasant results by perching upon one’s house-top.”

I chuckled. “Yes,” I agreed, “but such birds might solve the question of aerial transportation. Tamed and trained, doves of that size could carry a number of passengers or several tons of freight from place to place.”

“And exhaust the grain supplies, of the world in six months,” Ramon added.

“However, I don’t think we need worry. I don’t believe a vertebrate will be affected any more than an invertebrate. But we’ll try. There are lots of subjects.”

To recount all of the tests and experiments we made would be monotonous and of no importance. It is enough to say that we met with utter failure. We tried every form of insects, of mollusks, of crustaceans, even of reptiles that we could find—all without result. Then we decided to try the experiment upon a warm-blooded vertebrate and, after a deal of trouble, we captured a gentle little ground-dove.

“I’m so certain it won’t work, that I’d be perfectly willing, to stand before the prism myself,” declared Ramon, as we tethered our captive and he picked up his Quena.

“You’d be perfectly safe,” I told him. “*I* cannot play the Quena!”

All was ready, and, once more, Ramon placed his lips to the flute and again that now familiar note shrilled through the air. But the little dove was still

tugging at its tether, no larger than before.

“Didn’t I say so?” cried Ramon. “It’s no use. Living creatures are immune.”

“See here!” I exclaimed. “I have an idea. I don’t know much about music, but I’ve learned something from you. Isn’t it possible there is not enough power—enough quality or, or what do you call it—penetration—to the notes from the Quena? If I am right, the same note—any note—can be produced upon any properly constructed instrument possessing the same range. Could you produce this same note upon your violin?”

“Of course I can,” he declared. “But it would have the same effect. The vibrationary factor would be identical.”

“Possibly,” I admitted. “But how do you or I know. It won’t do any harm to try. Get your fiddle, Ramon, and let’s test it out.”

Rather reluctantly, he agreed, and produced his violin. As he took up his position, I noticed that one of our burros was grazing near, and, in a half-subconscious way, I thought what a monstrous thing the jackass would be if he could be enlarged a thousand times or so. Near by, too, was one of our Cholo[7] laborers watching us at a safe distance, his dull brain probably wondering what deviltry we were up to, for our Cholos always regarded our scientific work as a form of witchcraft, and gave us a wide berth, for which we were duly grateful.

Then I turned to watch the result of this new test. Slowly Ramon drew his bow across the strings. Soft, beautiful notes came from the instrument, and then, with a sudden sweep of the bow, the wailing, piercing notes tore the air like a despairing scream.

Instantly there was the loud familiar twang, but far louder than before. Dove and crystal were hidden in a white cloud like a puff of steam. I fairly shouted with delight.

But my cry of triumph was drowned by a terrific yell from the watching Cholo.

“*Madre de Dios!*” he screeched, terror in his tone, “El *burro*! The donkey! The devil has taken him!”

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[7] Indian or half-breed servant.

CHAPTER XII

I WHEELED. THE CHOLO was racing off as fast as his feet could carry him, screaming as he went. But the donkey that had been there an instant before was nowhere to be seen. He had vanished completely! What *had* become of him. What *had* the Cholo meant when he said "the devil's gone off with the donkey"? Evidently something had frightened him half out of his few wits. But what? It might have been the twanging sound or the vaporous cloud, but neither of those could account for his yell regarding the burro. All these thoughts raced through my mind in the fraction of a second. They were interrupted by a shout from Ramon.

I turned to see him staring, pop-eyed, utter amazement written on his features, at the spot where the prism had been. The next instant I was doing likewise. And no wonder! The prism had completely disappeared, but there, just as we had tethered it, was the ground-dove, exactly the same size as ever!

We were both absolutely speechless with wonder. Had the dove been transformed into a human being, into a stone idol, into a dinosaur, we could not have been more amazed, more dumbfounded. Everything had happened exactly as I had hoped, as I had expected, as it had always happened when an object was transformed to magnified dimensions. There had been that unmistakable twang, there had been the cloud of vapor; the prism had vanished; but—there was the marvel of it—the dove had remained unaffected! It was beyond me, utterly beyond my reason or my comprehension. Something *must* have been transformed, my inner brain was telling me, something *must* have been altered in order to produce that typical twang and that cloud of vapor. And yet——

An excited yell from Ramon shattered my thoughts. "*Dios mio!*" he cried, "I have it! I know!"

"For Heaven's sake, *what* is it you have? *What* is it you know?" I demanded.

Ramon stooped and released the dove which fluttered off, mightily relieved at finding itself free once more. "It was the burro!" he exclaimed, his voice betraying his intense excitement despite his effort to speak calmly. "That's

what the Cholo yelled about."

"I was quite aware of that," I remarked tersely. "But what has either the Cholo or the burro to do with this confounded prism going to pieces with its customary accompaniments, but without producing any result?"

Ramon burst into a wild, maniacal roar of high-pitched laughter. "Result!" he reiterated. "Result! That was it, that was the result!"

"Look here," I cried impatiently, "can't you stop talking in riddles or utter nonsense and explain what you *are* driving at? What *was* the result?"

"That burro, *amigo mio*!" replied Ramon, suppressing his hysterical outburst. "When the note of the violin sounded the prism responded and acted on the donkey."

"Have you gone completely crazy?" I ejaculated, involuntarily glancing about as if expecting to see a burro of titanic proportions in the vicinity. "If that is the case, where's the enlarged donkey?"

"No, I'm not as crazy as yourself," Ramon shot back. "I don't know *where* the burro is, but he's not far away. Perhaps under your feet! Enlarged! No—just the opposite—he's been reduced. He—why it's as plain, as simple as the nose on your face, *amigo*. The donkey was in line with the prism, in focus, so to say, with the wrong end of it. And instead of the agitated prism enlarging the dove, it reversed the process and reduced the donkey! Don't you understand? Can't you see?"

"By Jove!" I exclaimed, as his meaning dawned upon me. "You mean—but no, that can't be. In the first place we've stood—I've stood—behind the prisms time and time again when you produced the note, and *I* haven't been affected. And why wasn't the dove magnified? If the confounded thing works on one animal, it must work on another. I can see, or at least I can conceive that it *might* be possible for the properties of the prism to reverse matters and reduce a normal-sized object to microscopic size, but if it did so, then, at the same time, it would also have enlarged the dove. No, no, Ramon, your reasoning is wrong."

"Is it?" he queried, a note of sarcasm in his tones. "Very well, I'll believe it when you show me that donkey."

Ramon had me there. There was no doubt that the burro had vanished. But I had a card up my sleeve, so to speak. "And," I informed him, "I'll believe you are right when you can show me the donkey in reduced form or can reduce some other creature."

“I might be able to do both,” he retorted, “but to find a microscopic and probably terrified burro in this waste of sand is a lot harder than to reduce another one. Just as soon as I can fix up another lens, I’ll prove I’m right. And —” he became very serious—“And, *amigo*, if it works, as it surely will, I shall have found a way to join Kora. I cannot transform her to normal size, but I can and I *shall* transform myself to her proportions!”

“No!” I almost yelled. “No, Ramon! You’ll do nothing of the sort. Why, do you realize what it means? Even if it works, even if by some magic it is possible to reduce a living creature without injury, and you do this thing, you will be dead to the world, to all your friends! You might just as well commit suicide and be done with it. And, even assuming you could do it, think of the risk you take. You cannot control, do not know the powers of the Manabinite. You might reduce yourself to the size of an atom—to a size that would be as invisible to the princess as she is to ordinary mortals.”

“All very true,” replied Ramon calmly. “Nevertheless, I *shall* take the chance. If I die, if I lose in any way, I shall be no worse off. Without Kora I shall not care to live. With her, my friends, my world, would be well lost.”

As he spoke, a sudden thought came to me and I laughed. “You *say* you will,” I remarked. “But,” I asked, “*how* can you do it? Who’s going to produce the proper note to reduce you? *I* can’t, that’s certain.”

“What is to prevent me from doing it myself?” he countered. “I shall stand back of the prism, in focus with it, and play the note myself.”

“Hmm, possibly,” I remarked. “But before we come to loggerheads over the ultimate sacrifice of yourself, wouldn’t it be a good idea to make some tests to prove your theory, and, what is of more importance, to prove whether or not a living creature still lives after its reduction? If you were to be reduced to a miniature corpse, it wouldn’t do much good either to yourself or to Kora.”

“Of course I shall experiment,” he declared. “And you will find I am right. Tomorrow we will make a test on another burro.”

“You will do nothing of that sort, Ramon,” I informed him. “We have no burros to waste. Even the loss of one will hamper us when we pack out of here. Moreover, even if you did reduce another donkey you could prove nothing. He, too, would be forever lost in this place. No, you will have to experiment on something else, on some creature that you can place in your hut. Then, provided you can figure out the spot at which the reduced creature will be delivered, we can determine not only if it is reduced, but whether or not it survives.”

“You win,” smiled Ramon. “I admit you have more common sense than I have. But we cannot test it on a dove. It would be reduced to such small size, we never could find it. How about a dog? There are two or three mangy curs over at the Cholos’ camp.”

“A dog should answer your purpose very well,” I replied. “But I doubt if you will ever see him after the test is made. In my opinion, the burro was not reduced in size but was absolutely destroyed, shattered into its atomic parts. Now, Ramon, promise me, swear to me, one thing. Promise on your oath that unless we can prove conclusively that a living creature can be reduced without the slightest injury or harm, and that the extent of the reduction can be controlled, you will not insist on carrying out your mad scheme.”

FOR a time he hesitated. Then: “Very well,” he said at last. “I will not make that promise. And now I’m off to make another prism.”

At the time it did not occur to me, but later, as I thought over the past and remembered our conversation and our behavior, I realized that the calm matter-of-fact manner in which we discussed the whole affair was really most remarkable. But it only goes to prove how we had come to regard the amazing events we had witnessed. One astonishing thing had followed so closely upon another, that we had grown blasé, accustomed to phenomena, that, at any other time, would have seemed incredible. Ever since Ramon first discovered the properties of Manabinite everything had moved along by an almost unbroken chain, so to speak, each link of the chain being some new and more astonishing event than those that had preceded it. First there was the lapis idol, then the discovery of the Manabinite about the meteorite; then the lens with its truly marvelous magnifying powers; then the chance discovery of the prism form with its stupendous magnification; then Ramon’s clever device for focussing, his building up of a super-prism, and the sight of atoms. Following close upon that came our discovery of the microscopic people. Then the discovery that when, actuated by a certain note, the image of an object became the actual object itself; the fact that animal life did not respond to this action, and finally the vanishing burro. Any one of these marvels would, by itself, have left us awed, rather incredulous, perhaps in doubt of our own senses. But scarcely had we been thunderstruck at one when something still more astounding followed. Thus by comparison—and nearly everything in life is comparative, as Einstein proved by his Relativity theory—thus by comparison, I repeat, each previous marvel seemed to us almost ordinary and commonplace. Two or three days’ earlier we had regarded the bodily enlargement of an object as a miracle, as almost magical, as being akin to the

supernatural. But now we had become so accustomed to that, so familiar with it, that it seemed nothing very extraordinary, and even the idea of the prism having the power to reduce an object to infinitesimal size did not, once the first surprise was over, seem either preposterous or miraculous. In fact we took it rather as a matter of course, and went about our preparations for the tests as calmly and deliberately as we would go about any other scientific experiments.

But our interest was indescribable. In fact our interests in the properties of the Manabinite and our desire to determine its limits had become an obsession with us both. I had completely neglected my own work, my notes lay uncompleted where I had dropped them on that evening when Ramon burst into my hut with his amazing discovery. So engrossed had we become, that we scarcely gave any time to watching Kora's people. Each day, to be sure, we took a peep at them. Once or twice, too, I looked out of my hut at dawn to see Ramon at the prism, and—perhaps unconsciously, prostrating himself and muttering the prayers and chants in unison with the people whom he was watching through the prism as they made their daily obeisance to their sun-god. Once or twice, also, we had caught glimpses of Kora, but evidently she seldom appeared in public, and I was glad of that, for each time we saw her ravishing face and figure Ramon was almost beside himself and, for hours afterwards, was miserable, depressed, morbid and blue beyond words.

Perhaps most significant of all, as proving our overwhelming interest in our experiments, was the fact that we were remaining at the spot despite the imminent danger of the heavy rains setting in. Before we had discovered the little people, I had been impatient to get away. I had insisted upon it, in fact. And yet, here was I, never giving a second thought to the rains, staying on day after day, and quite forgetting that, should the rains come on suddenly, we might be completely cut off, might find the rivers and ravines flooded and impassable, and might be forced to remain in this or some other equally bad spot for six months, or until the next dry season. That may not sound like such a very great catastrophe. But unless one has experienced a tropical rainy season on an exposed, unsheltered, restricted spot where there are no resources, no game, no inhabitants, one cannot fully realize just what it means. Of course, if we had planned to stop through the rainy months, and had prepared for such an extended stay, we could have been fairly safe and comfortable. We could have erected permanent, durable houses raised above the ground on posts; we could have provided ourselves with mosquito-netting or wire screens for doors and windows; we could have stocked up with provisions and supplies; and all would have been well enough. But I had planned to remain only until the end of the dry season. In rainy weather, excavatory work was impossible, and I had not foreseen anything else to keep

me there. Hence we had not brought any suitable equipment or supplies to last over. So, as I have said, if the rains burst upon us, we would find ourselves in rather desperate circumstances. Yet I do not think that our danger, or even our possible discomfort once entered my head after we discovered the village of the little princess. And, very fortunately for us, nature was most kind. It rained off and on to be sure—often heavily—but the rains were merely showers, and in every case, they came on in the late afternoon or evening and cleared up after sunrise the next morning. And they were not the precursors of the seasonal rains by any means. I had lived long enough in the tropics to recognize these when they appeared; to know the difference between the short, vicious downpours of great blood-warm drops and the steadily-descending deluge, like a solid wall of water, that falls without cessation or let up for day after day, night after night. But even had these torrential rains arrived—and they were long past due and might put in an appearance at any time—even had they arrived, I say, I doubt if I could have forced myself to leave as long as Ramon's experiments were uncompleted.

BUT our Cholos held other views. They were impatient, nervous, sulky and insistent. Over and over again they demanded that we clear out, and I had begun to fear open rebellion, or at least desertion, when, happily, the incident of the burro completely altered matters. I shall never know precisely what the Cholo who had witnessed the thing told his fellows. No doubt he exaggerated tremendously. Very probably he averred, and swore by all the saints, that he actually saw the devil in person as he seized the donkey and whisked him away. But even if he adhered strictly to the truth and to facts, his story would have been enough. As I have said, the Cholos regarded our scientific work as a form of witchcraft and they probably—in fact, undoubtedly, looked upon us as exponents of the black-art; but as long as nothing particularly terrifying occurred, and they were well paid, well fed and were not molested, they were quite content to work for men who might be in league with the devil, provided the devil did not approach their hut, which was some distance from ours. But they were not sufficiently superstitious or awed by our supposedly-occult powers to prevent them from becoming a bit threatening when they found themselves facing a danger that was real, and with which they were thoroughly familiar. But when the terrified Cholo reported what he had seen, they changed their minds. Here were white men who, by merely playing on a fiddle, could cause a donkey to vanish before their eyes—and there was ample evidence that the burro *had* vanished. And, so they reasoned, if playing a fiddle could whisk a burro from sight, was it unreasonable to think that, if the white men so desired, they could do the same with a Cholo? The result was that from that

day on, the Cholos were as subservient, as humble and as deferential as anyone could wish, and never so much as mentioned the question of leaving.

But I am forgetting myself. I am wandering from my account of what took place. I must confine myself to the account of those events that had a direct bearing upon the ultimate outcome and Professor Amador's fate.

However, I thought it wise to mention the matter of the rains and of the men in order that my readers might understand how it was that, having been so intent upon leaving before the rains commenced, I stayed on now quite willingly.

But to return to my story. The supply of Manabinite was now getting very low and it was becoming increasingly difficult to obtain a fragment large enough for a prism. In fact, by the time of the disappearance of the burro, Ramon declared that in order to produce a prism that would be practical, he would have to build one up, much as he had constructed the one through which we viewed the miniature Indians. This, by the way, remained where we had placed it when we had first seen the Indians, for we feared that if we moved it or altered it in any way, we might never again be able to locate the village. Also we had made one or two somewhat important discoveries. We had found that the twanging sound I have described was due to the abrupt disruption of the Manabinite, and Ramon advanced the theory that it was the responsive musical note aroused by the vibration produced by his notes. I do not know if I can make my meaning wholly clear, for I am not a musician and musical terms are as Greek—or worse, for I can read Greek—as far as I am concerned. But from what I could gather from Ramon's somewhat technical exposition of the matter, every musical note has its responsive note. For example, if a tuning-fork is struck and placed near a stringed instrument, a faint responsive note will emanate from the strings. It is, in fact, a sort of vibratory echo, but instead of the echo being an exact reproduction of the original sound, as in the case of ordinary echoes, the responsive note may be quite different in tone.

To continue: Ramon's theory was that the twang was the responsive note, and that it was this sudden, terrific vibration of the crystal, this abrupt exertion, this throe of the atomic structure, that disrupted the mineral itself and that, in its disruption, the atoms or molecules or electrons reformed themselves—together with those in the object exposed before the prism—in the precise form of the magnified image. In other words, the vibratory waves that—according to Ramon, for I am quoting him and make no claim to a profound knowledge of physics myself—the vibratory waves, that controlled the atomic structure of both the crystal and the object before it, were so altered in the speed of their vibrations that they vibrated in unison with the vibratory waves that produced

the magnified image, and thus solidified it. Perhaps I may, in a manner, compare it to filling some thin receptacle, even a transparent object, such as a toy balloon, with water and then freezing it. Of course that is not an exact simile, but the result was more or less the same.

PROFESSOR AMADOR, however, went much further, much deeper than this. He possessed a most profound, almost an uncanny knowledge of physics, and he evolved many theories as he labored at the new prism. But to me most of these were totally incomprehensible, being involved and dependent upon the most abstruse problems and equations in the highest mathematics, and which I never could master, being, I confess, a very poor hand at even the simplest mathematics.

But I could understand how, regardless of the physical phenomena involved, the process of the prism could be reversed, and an object reduced. But even Ramon could not offer any lucid or satisfactory theory as to *why* the prism should act backward—if I may use the term—on living tissues, and refused to act in the other direction.

We had also proved conclusively that the fine dust which I mentioned we had found on Ramon's table, was the visible remains of the prism, a residue that, for some reason, was not transferred to the magnified body produced. This, it also developed, was the cause of the peculiar haze or cloud that invariably appeared when the transformation of an object took place. We were both rather curious to learn what the material was, and Ramon wasted some time in attempting to analyze it. But his efforts were without definite results.

"Possibly," he suggested, with a grin, "If we could manage to enlarge a pile of this powder, we might create a piece of Manabinite."

But we had no intention of trying it, and devoted our energies to making the prism which meant so much to both Ramon and myself.

If it worked, if it actually reduced a living, warm-blooded creature—one of the stray curs at the Cholos' camp for instance—and if, after its reduction, the dog remained unharmed, then I knew I was fated to lose my dear friend forever. But if it failed, if the dog was not reduced or if, when reduced, it was killed or injured, or if it completely vanished, then would I hold Ramon to his promise. And despite my sympathy for him and my real desire to see him happy, even if in a microscopic way, yet I hoped and even prayed that the experiment might prove an utter failure.

Several times, as we worked, Professor Amador tried to induce me to join

him on his mad venture. He argued that I would never have such another opportunity; that I would be able to study the habits, the lives, the religion of the miniature Manabis; that I would be content and happy; that I would have the companionship of himself, of Kora and of the high priest, and that, after all, it makes little difference where or how one lives, provided one is content and has an interest in life. Naturally, I declined. I do not value my life more highly than others; I have many times risked it for the sake of my favorite sciences, but I had no desire to run such a risk as he suggested, even if the advantages he pictured were alluring. It was quite a different matter with him. In the first place, his disposition was very distinctly different from mine. He had the aborigines' utter contempt for life or for danger, and he was as thorough a fatalist as any pure-blooded Quicha. Also, he was absolutely convinced that he was fated to possess Kora, the princess, and his strange and truly remarkably vivid sensation of having met and loved her in some past existence, only made him the more convinced of this. And I could well understand that, with such a prize of loveliness and of love as a reward, he felt that the step he proposed to take, that life itself, was of little importance.

Indeed, I feel rather sure that, had I been younger and had such a vision of glorious womanhood lured *me* on, I should not have hesitated to have risked *my* life on the chance of winning her. And Ramon took no chance on the latter score. He loved her madly, devotedly, with every fibre of his being, and he knew, he was as certain as he was of his own existence, that she responded and loved him as deeply as he loved her. Just how he knew, he could not exactly explain. I talked with him a great deal about the matter, and about Kora for, somehow, as the time for the test drew near, we seemed to grow closer and even more intimate than before. Moreover, it seemed to relieve Ramon to talk to me of his passion and the princess.

"How," I once asked him, "can you be sure Kora loves you? How can you be positive that she even knows you—that she would recognize you if you were to stand before her? I know you say that you two loved ages ago, that your spirits have always loved. But is it not possible that you alone are aware of that? Is it not possible that her subconscious self, her soul or spirit, may be reincarnated in another body? Or even if that is not the case, that her spirit or subconsciousness might fail to retain the memory of the dim past as does yours?"

He shook his head and smiled enigmatically. "All those contingencies have occurred to me," he declared. "But I *know* they are not so. I *know*, I feel, that she saw or heard me on that first day. That even if she did not see me with her eyes nor hear me with her ears, still she knew I was near. And her eyes and her

wonderful face were aglow with joy and love. Ah, yes, *amigo mio*, she knows, she remembers, she loves me as of old. You will see, my dear good friend. When I have vanished, then you will look through the prism at the village and you shall see Kora and myself, and shall witness our happiness. Yes, *Valgame Dios*, I promise, I swear, that no sooner do I find myself among her people and beside her than I will signal to you. Although I may not be able to see you, yet will I know my great, good and tried friend—a friend larger than a mountain—is watching us, and I shall raise my hand and salute you, for you will see us. And I will tell my Kora, my *Sumak Nusta* of you, *amigo*, and will ask her also to salute you—yes, even, *amigo*, to throw you a kiss from her beloved lips. Then, will you know that all is well, and that I have found happiness beyond words with my Kora. That the love of ages—of ten thousand years—has endured and has met its reward at last. Will you promise to look, *amigo*? Will you swear that you will? And then, my friend, do me one more favor. Destroy the prism, shatter it to bits and destroy all fragments that may remain about the camp. Some day, at some time, some one might discover its secret, and some one more adventurous than yourself might follow in my steps and intrude himself—perhaps intrude a crowd upon my Kora's people. Promise me then unless"—he grinned his boyish, happy grin—"unless you decide to change your mind and join us."

"I promise that I will destroy it," I assured him. "And of course I shall look through the prism—I could not resist that. But there's no fear of my changing my mind. Moreover, even if I did, I could not join you. You forget I cannot play the violin!"

CHAPTER XIII

WHEN at last the prism was completed, and the time came to put it to the test, I was a-tingle with excitement. In fact, I had never before felt my nerves so keyed up, so tense. Upon this experiment depended so much. It was the next thing to Ramon testing it upon himself. We had, so he thought, provided for every possible contingency. We had repeatedly tested the focal distances of the prism, in order to determine just where the dog should be placed and just where we might expect to find his reduced body, alive or dead. But we had a great deal of difficulty, and many rather heated arguments, over these details.

Although it had never occurred to us before, yet, when we came to look into the matter, we discovered that the prism did not act as a reducing glass, or in other words that we could not use it reversed as can be done with lenses in a telescope or field-glass.

It worked perfectly as far as magnifying an object was concerned—although its power was only about two hundred diameters—but when an object was placed behind it, and we looked into the opposite end, we saw nothing but the dull, greenish, semi-translucent Manabinite.

At this impasse, Ramon declared that the only way to determine the locations for our canine experiments and the resultant miniature dog, would be to reverse their positions when magnified. In other words, if a small object placed in front of the mirror was clearly magnified, then the spot where that object rested would be the spot where the reduced subject of the test would be found after the experiment had been made.

"But," I argued, "how do we know that? The image, as you know, is not at any real distance behind the prism. To be sure, it appears to be in mid-air, an actual thing of impalpable wraith-like material. But we cannot touch it, and the nearer we come to the prism, the more it recedes before us, until it seems to be within the Manabinite itself. Where, in that indefinite range, are you going to place the dog?"

"It doesn't make any difference," declared Ramon. "As long as he's in the focal plane of the thing, he'll be reduced."

"You're merely assuming," I argued. "Think of the number of times I have stood back of a prism when you gave the note, and I have not been reduced, as I remarked once before. No, Ramon, I feel sure there is some exact and definite point at which the prism operates. That burro for example. He was at least twenty-five feet from the crystal. To my mind, the subject must be at a considerable distance. The reason I have not been affected is because I have always been close to it."

Ramon grunted. "Then how is it that a portion of the hut—my couch for example—hasn't been reduced?"

"Possibly the reduction process may not work on inanimate substances," I suggested. "If the magnifying process works upon inanimate things but *not* upon living organism, why shouldn't the reverse process work on living things and not on others?"

"Something in that," he admitted. "But it's all guesswork. Anyhow, we can try the dog at various distances."

"And if he vanishes, we may not find him afterwards," I reminded him. "It stands to reason that the point at which the reduced object appears must be in direct ratio to where the original object is located."

"We'll get around that difficulty," replied Ramon. "We'll build a sort of pen—an enclosure—in front of the prism, line it with white and then we'll be able to find the microscopic pup easily. But he won't be hard to find. If the prism magnifies two hundred times, it can't reduce to less than one two-hundredth of the original, and that wouldn't be an invisible dog. A little larger than a flea, that's all."

"I wonder if the fleas will be reduced also!" I laughed.

EVERYTHING was soon arranged. We placed a large sheet of white paper before the prism, turning up its edges to form a shallow tray within which we hoped —or at least Ramon hoped—to find the reduced dog after the test. The prism, I might explain, had been placed upon the floor of the hut in order that the dog might come within its focal plane. Then I brought out the victim. We had had him with us for several days, and never in his life had he been so well fed and cared for. Now he fawned and wagged his stump of a ragged tail in expectation of another feast. In this he was not to be disappointed. We had decided not to tie him up, for, if my theory was correct, the prism might not work upon inanimate objects, and complications might ensue if the dog were reduced and his leash remained normal. So, to insure his remaining in one spot, I placed a

tin plate of food upon the floor where, as nearly as we could judge, he should be in focus of the prism.

As he wolved greedily at the food, Ramon picked up his violin, while I stood well to one side, my eyes fixed upon the dog. For a moment or two Ramon tuned his instrument with care. He tried a few soft subdued notes, and, the next instant, the shivering magic note came from beneath his bow. As the weird note rang out, and my ears recorded the peculiar twang from the crystal, I uttered a startled cry and involuntarily leaped back. The dog had vanished before my eyes! One moment he had been there, gulping down his food; the next instant he had gone, had dissolved, had instantaneously and completely disappeared. And with him had gone the meat, the bones, the grease. Only the empty tin plate remained, unchanged, unmoved, but as clean as though it had been washed and scoured! It was the most astounding, the most incredible thing yet! I felt as if I were in a dream; it was so unreal, so utterly beyond reason.

All had happened in a breath. All was over in the fraction of a second. Now Ramon had thrown aside his violin, and was stooping above the white paper examining it, searching it, for the transformed reduced dog he confidently expected to find there. I joined him, shaken, still dazed. But the white surface was bare. Not a trace of anything could be found, aside from the white powder, the remains of the prism that had fallen upon it.

"I must have miscalculated the powers of the prism," muttered my friend, "he was probably reduced to invisible dimensions. I—"

"It is just as I said," I declared, at heart vastly, relieved that Ramon had not been successful in his search. "The poor dog was utterly destroyed—reduced to atoms—to impalpable dust. Now, Ramon, do you see what a terrible risk you would have taken had you not tested the prism on the pup?"

"Possibly you are right," he admitted, "but I do not agree with you. I believe the dog is here somewhere."

As he spoke, he rose, rummaged about, and produced the Manabinite lens he had made. "Now we shall see," he remarked, as he again proceeded to examine the prepared paper tray. But though we went over every inch of the surface, there was no trace of any object, alive or dead.

"Aren't you convinced yet?" I exclaimed. "Aren't you convinced that the dog has been utterly annihilated?"

"No, I am *not*," he asserted. "I may have made a mistake in my calculations regarding the prism. Even with this lens, the reduced dog might

remain invisible. The only way to be certain is to expose the paper to the magnifying powers of our big prism. Come on, *amigo*, we'll carry it over and examine it with the prism. Then, if we cannot discover the dog, I'll admit you must be right."

Willing to humor him, anxious to convince him, and feeling greatly elated at knowing that Ramon would now refrain from his mad design, I helped him pick up the paper tray, covering it with a second sheet of paper to prevent any draught from carrying away its contents, and with him proceeded to the prism that remained focussed upon the Indian village in the sand.

"We will have to place it directly above the village," I observed. "I'm afraid your friends will imagine there is a terrific storm brewing. I hope they are not terrified."

"They will never know the paper is here," declared Ramon, "the interstices between the fibres are large enough, in proportion to themselves, to permit plenty of sun to come through. It may appear like a thin high cloud to them, but nothing more. But I do not intend to place it directly above them. I could not do that without walking over them and somehow—although I *know* it will not affect them in the least—I cannot bring myself to tread over my beloved Kora."

"Then how are you going to see it without moving the prism?" I enquired.

"We will move the prism," he replied. "We will first look through it at the village, and then gradually swing it about, until the outlying huts are just visible. Then we can always swing it back again."

This seemed a good plan, and once more we viewed the village with its people. For an instant we watched them, then, very slowly, we swung the prism about until we could barely distinguish the most outlying houses just within the sphere of vision.

"Now," said Ramon, "we will soon see who is right and who is wrong. Look through the prism while I place the paper. In that way you can direct me so I can place it directly in focus with the prism. All ready?"

Intently I gazed at the apparently vast expanse of terrific mountains and ravines, the deep canyons, the monstrous rock-masses, the wild chaos of boulders, stones and sand, that the prism revealed, and which, I knew, was nothing more than the immeasurably magnified sand before me. What, I wondered, would the paper look like when it came into view? Would I see the microscopic dog? Would he be dead, mutilated, or would he be unhurt, perhaps still munching a bone?

THE next second I uttered a yell as if I had stepped upon a scorpion. “Ramon!” I screamed. “Ramon! Quick! Come here! Am I going mad?”

No wonder I was startled! No wonder I could not believe my own eyes!

As I gazed into the prism, an animal had appeared from behind a mass of rocks. He moved slowly, sniffing suspiciously and cocking his long ears as he proceeded. There was no mistaking him. He was a donkey, a burro! And, instantly, despite my amazement, I recognized him. He was the identical burro that had so mysteriously vanished several days before! There could be no slightest doubt about it. Even our own brand upon his hip was plainly visible!

Dropping the paper, Ramon sprang to my side. One glance was enough. “*Nombre de Dios!*” he cried. “It is—it *is el Burro*!”

“Then I am not mad!” I exclaimed, relieved to find that it was no figment of an overwrought brain. “You see him the same as I do?”

“*Caramba*, yes!” he ejaculated. “The burro, the donkey that vanished before the eyes of the Cholo! Do I not know him? Do I not see the brand? *Gracias a Dios, amigo mio*, now do you believe? *Now* do you scoff! *Now* do you doubt that I, too, can become the size of my Kora’s people? *Santissima Madre!* now I *am* happy! Now my life’s dream is about to be realized!”

I could no longer doubt, could no longer question. I could not even advance any valid reason why Ramon should not carry out his mad plans. If a donkey could be bodily transformed to microscopic proportions without the least injury, then there was no reason why a human being should be injured by the same process. And as realization of this came to me, I felt a sharp twinge in my heart, a pang at thought of losing Ramon forever.

Meanwhile the donkey was proceeding slowly across the rock-strewn plain. Now and then he stopped, lowered his head, and apparently grazed upon invisible tufts of grass or weeds. Now and then he raised his head and obviously brayed, though no sound issued from his mouth. Indeed, so thoroughly natural were his actions, so familiar his appearance, that I could scarcely force myself to believe he was not still a full-sized burro on a normal stretch of earth.

Evidently, too, he was none the worse for his remarkable experience, for he appeared fat and sleek, though a bit nervous and ill at ease in such strange surroundings. So engrossed had we become in watching the donkey, that momentarily we had forgotten all about the paper and our search for the dog.

I was just on the point of reminding Ramon of the matter, when the donkey

halted abruptly, pricked up its ears, wheeled about, sniffed the air, laid back its ridiculous ears, wrinkled its lips to bare its yellow teeth, and showed every unmistakable evidence of asinine anger.

"By Jove!" I exclaimed. "Look at the beast, Ramon! He's all ready to lash out with his hoofs! Being reduced hasn't changed his nature any. I wonder—"

The next second I gripped Ramon's arm until he yelled, I uttered a sharp exclamation of utter amazement, and stared incredulously. My half-formed question had been answered in a most astounding way!

Dashing towards the angry burro, leaping over the stones, was a dog? *The* dog! The unmistakable mongrel that, less than half an hour before, had been wagging its tail and munching its food in Ramon's hut!

Somehow I felt faint, weak, almost ill. It was too much, too weird, too much of the supernatural. I tore my eyes from the prism and stared about. No, I was not dreaming. Everything in the vicinity was as it should be. There were the huts, there was the sheet of paper where Ramon had left it. There was he, his eyes glued to the prism. There was no burro, no dog in sight. It must be true, I could no longer doubt it, and I again turned my gaze to the magical prism.

I was just in time to see the burro lash out viciously with his feet. But the Cholo's dog had not been brought up among burros without acquiring knowledge by experience. He dodged the flying hoofs, snapped at the donkey's flank, and, by his actions and attitudes, we knew he was yelping, barking, as he circled about, keeping well out of reach. Presently the inevitable happened. The burro gave up and sought to evade his tormentor by flight. Away he galloped, the dog at his heels. Again and again he halted, prepared to fight, but each time the dog urged him on. Then, for the first time we noticed that the cur was driving the donkey in a definite direction, and suddenly it dawned upon me. The dog was herding the burro towards the Indian village! He was following out his former instincts, was doing just as—when he had been a normal size dog—he had done hundreds of times before. He had come upon a stray burro, his duty was to drive the donkey to its proper place. He knew that Indians were near at hand and he was seeing to it that the wandering burro returned to where he belonged.

Ramon had realized it also. "*Mira!*" (look) he cried excitedly. "The dog is driving the beast to the village! *Dios!* What will happen? What will the people think? What will they do when they see the burro, when they see the dog? Never, *amigo mio,* have they dreamed that such creatures exist. Quick, quick, *amigo,* turn the prism or we shall miss the fun!"

As we turned the prism, the donkey, followed by the dog, raced past the outlying houses and dashed pell-mell into the village. If a full grown Megatherium in chase of a Dinosaur should suddenly appear in the center of New York, and should rush down Broadway, it could not create greater consternation and excitement than the unheralded apparitions of the burro and the dog in the Indian village. Never before had the villagers seen such beasts. To their eyes, no doubt, they appeared gigantic, ferocious monsters. With one accord every man, woman and child in sight dropped whatever they were doing, and screaming—although of course their terrified cries were inaudible to us—they dashed headlong for the temple. Pushing and crowding, tumbling over one another in their panic, heedless of everything but to reach the sacred precincts and the protection of their gods, they streamed from the village, and in an instant the burro and dog were left in sole and undisputed possession of the scene.

We both roared with laughter. It was like a comic movie, and yet I was at heart deeply sorry for the poor people who must have been frightened out of their wits.

Fortunately, however, the two beasts did not take it into their heads to follow the crowd or to approach the temple. Once more amid familiar scenes and in the presence of Indians to whom he was accustomed, the burro halted and, seeing a bundle of some vegetables dropped by the fleeing inhabitants, he at once helped himself and began feeding as unconcernedly as though he had been there all his life. And the dog, now that his mission was done and he had successfully brought the donkey to the village, abandoned the burro and, sniffing about, at last threw himself down in the shade of a house, perfectly at home.

Meanwhile, from their refuge in the temple, the Indians were watching with mingled fear and curiosity to see what the next move of the two creatures would be. And, realizing how the two beasts must have appeared to him, I could not but admire the courage of the high priest who, pushing his way through the crowd, descended the temple steps and, holding aloft his golden emblem, advanced slowly towards the two animals, as if to exorcise them.

At that moment Kora appeared. I heard Ramon’s short, indrawn breath as he caught sight of her, and again I felt the blood rush to my temples as I gazed upon her. For an instant she hesitated, glancing about as if wondering what had caused the excitement. Then she caught sight of the two strange beasts and I saw her start. But there was no terror, no fear in her eyes. Almost at the same instant the dog saw her. His stumpy tail wagged furiously, and springing to his

feet, he leaped forward, fawning and barking. To us, familiar with the ways of dogs, he was very obviously intent on making friends with the princess. But to her he must have seemed a very terrible monster about to attack her. But Kora did not shrink, did not retreat. Though her face paled, she stood her ground, and we knew by their attitudes and expressions that a wail of despair arose from the watching people who expected to see their beloved princess torn to bits and devoured before their horrified eyes.

Then a strange, though perfectly natural, thing happened. The dog cowered at her feet, wagging his tail, nuzzling her ankles, rolling on the ground like a playful puppy anxious for a patting, and Kora, as though she had all her life been accustomed to dogs, bent and patted the creature's head.

I would have given a great deal to have been able to hear the shout that must have arisen from the Indians' throats as they saw this seeming miracle. But even if we could not hear them, we could see them as, with one accord, they prostrated themselves in adoration of their princess and her seemingly supernatural powers.

But I doubt if Kora heard or saw them. She glanced once more at the complacently feeding burro and then, as if drawn by some irresistible force, she turned slowly until she faced us, and lifting her face, gazed steadily towards us. Slowly her lips parted in a happy smile, and into her wonderful eyes came a look of ineffable happiness and joy.

"*Dios en cielo!*" gasped Ramon, "She knows! She sees! Oh, Kora, *Sumak Nusta!* I come—*apecha narcu cuel tak huam ira oka Kora*."

With a wild longing cry he threw out his arms as though to clasp the princess to his breast. He had forgotten where he was, had forgotten the prism. His arms knocked the crystal to one side, and village, people, Kora and all vanished.

For a space he stood there, silent, intent, his eyes fixed upon the spot where the princess had stood. Then a deep breath that was almost a sob shook him. He ran his hand across his eyes, and slowly, as if coming out of a trance, he came back to earth.

"Now at last do you believe?" he asked in a hoarse half-whisper. "Now do you doubt, *amigo mio*? You have seen. The burro and the dog have survived, unharmed, unchanged except in size. So I, too, shall survive, unharmed, unaltered, except in size. Nothing can now restrain me. Soon I shall be with Kora. And did you see, *amigo*? Did you see her look at me? Can you longer doubt, can you longer question, that she knows I am here, that she is waiting for me, that she loves me?"

I bowed my head to the inevitable. “No,” I said slowly. “No, I cannot doubt now. *How* she knows of your presence, *how* she knows you are here, I cannot explain, I do not know. But little as I know of women, yet I know that no woman’s eyes, no woman’s lips can speak so eloquently of joy and of love save when she knows her beloved one is near and is gazing at her. And I can no longer raise an objection to your determination, Ramon. I have faith, I *believe* that you can accomplish your desire. But even if I felt you might fail, if I felt you might be destroyed, I would not try to dissuade you. No, Ramon, if I were in your place, if *I* knew that such a glorious being as Kora awaited me and loved me, I, weather-beaten old bachelor as I am, would take the step. May God be with you, Ramon, and may He bless you both.”

CHAPTER XIV

RAMON was a changed man. He seemed to have been given a new lease on life, to have thrown years from his shoulders. He whistled, he sang, he fairly capered. He had been through a terrible strain. He had worked almost beyond human endurance. He had, no doubt, been as worried, as troubled, over the outcome of our experiment as I had been. And now that it was over, now that it had proved successful, now that he felt assured that he could reduce himself to the minute dimensions of Kora's people, the reaction was terrific.

He gabbled and chattered incessantly. He talked English, Spanish and Hualla by turn, and, had I not known it was an impossibility, I should have thought he was slightly intoxicated. For that matter, he was no doubt intoxicated with excitement, with joy, with love, and not with alcohol.

"At once I must prepare the prism," he declared, as he calmed down a bit. "I must make it with extreme care. But did you see, did you notice, that the dog and the burro were of precisely the right proportions compared with the people?"

I had, and I had vaguely wondered at it, and now that Ramon brought the matter up, I wondered still more. It was certainly remarkable that he had so calculated an unknown factor that both the animals had been reduced to precisely the right size, both in relation to each other and to the minute Indians.

"Yes," I replied, "you did that most cleverly—or was it just luck?" Ramon laughed. "Neither, *amigo*," he declared. "Do you not remember that the prism we used for the dog was of only two hundred diameters' power, whereas that which operated upon the burro was over five hundred? No, there is a feature of the prism that you do not yet grasp, that I knew nothing of, but that I now know, and that makes all much easier, much simpler, much surer. The fact is, my friend, that the Manabinite can reduce objects only to one definite size, to one hard and fast fraction of the original size. There is the secret, the wonder of it!"

"You mean," I demanded, "that, no matter what the size of the prism may be, the result is the same as far as the dimensions of the reduced object are

concerned?”

“Not the same dimensions,” chuckled Ramon. “But the proportionate dimensions. No matter what sized or what powered prism we might have used, the dog in his reduced form would have been exactly the same size—a certain definite proportion to his original natural size. I feel sure of it. It could not be otherwise. And that is why my last doubts, my last fears are cast aside. Now there is no question of any miscalculation, no question of my being reduced too much or not enough. I will be exactly the same size in proportion to my present size as Kora and her people are in proportion to normal people. And, *amigo*, I feel sure of another thing. It will amaze you, astonish you; it may arouse your ridicule and your doubts. But I feel it is a fact. Those Indians—those microscopic people—were once normal; they were reduced by the same means which I shall use to reduce myself with!”

I halted in my tracks and stared at Professor Amador in utter astonishment. “Now you *are* mad!” I declared. “Why, you know as well as I do that they are still living—in the same way as did the Manabis hundreds—thousands of years ago; that they could never have existed as normal-sized Indians. What got that insane notion into your head?”

“You don’t understand,” he grinned. “I do not mean that those particular individuals—Kora included—were ever normal in size and were reduced. But their ancestors were. I can see it all now; I can understand everything. They knew the use of Manabinite. They used prisms of the mineral for making their gold beads, for doing their astounding sculptures. Perhaps they possessed vast quantities of it, perhaps they worshipped it and had a huge mass of it in their temple. Then, one day, probably by accident, the note that causes the Manabinite to exert its strange powers was made by some flute or some pipe, and instantly every person in the focal plane was reduced.

“Possibly many escaped. Very probably only comparatively few were transformed to microscopic midgets. But those that remained were terrified. Their friends had vanished before their eyes. Also, their mass of Manabinite had vanished. To them the place was bewitched, filled with devils. Nothing could induce them to remain. They left, wandered far and wide, died out or were absorbed by other tribes, while, all unknown to them, their fellows remained here, invisible but unharmed. No doubt they had a hard time of it at first. All their metal objects, their stone implements had been left behind, for you have seen, *amigo*, that only animal matter is affected. The dog’s pan was left behind, the rope with which we had thought of fastening him remained. So, as I say, they must have had a hard time of it. They had no tools, no weapons, no implements—probably no garments except their feathers, their

rawhide sandals and perhaps woolen ponchos. But they retained their knowledge of their arts, their religion, their civilization, and with Indian stoicism and dogged determination, they went at it. For some reason—I do not pretend to say what—the reduced size was inherited, and so, through the ages, they have gone on, decreasing or increasing perhaps, but living, dying, being born microscopic Manabis. That, *amigo mio*, is the explanation; at least that is my theory. Have you a better one?"

"No, I have not," I admitted. "Possibly you may be right. I cannot conceive of any human beings created so minute. And since I have witnessed the incredible happenings here, nothing seems too fantastic or remarkable. Personally I do not see any reason why it should not have been as you say. The only point is, whether a condition brought about by such artificial means is perpetuated by inheritance. Still it must have been if the people were originally normal and were reduced as you assume. It would be manifestly impossible for microscopic women to give birth to full-sized children, and preposterous to think of microscopic infants growing up to normal-sized adults. And, if your theory is correct, it might also account for the scarcity of the Manabinite and the absence of finished prisms."

THINKING it over now, in my present surroundings, here in my library among my books, my papers and my pictures, looking back upon it while the roar of New York's traffic comes to my ears, with the phantasmal forms of great skyscrapers and vast appartment houses like dream-castles in the summer haze, with the honk of motor-horns sounding from the street below, the whole affair seems dreamy, unreal, almost ridiculous. To imagine myself calmly, seriously discussing the probability of men and women being bodily transformed to minute, invisible beings; to think of arguing on the chances of a fellow scientist being able to reduce himself to the same size, savors of a deranged mind and utter nonsense. At times I can scarcely convince myself that anything of the sort ever occurred, or that I personally ever actually witnessed the things I have described. But there is Ramon's violin, there is his beloved quena, there is the ingenious device he made for focussing and adjusting the Manabinite prism through which we viewed the princess and her people. There also, locked in the safe-deposit vault of the museum, is that great golden bead, and finally, there is the fact that Professor Amador has disappeared from the sight of men. But I am getting ahead of my story, am anticipating, though, after all, it makes little difference, for everyone knows he *has* gone, and my narrative was undertaken with the avowed intention of explaining his disappearance.

But to resume. Though it all appears so dim, so unreal, so visionary now,

yet, at the time, it seemed quite natural and matter-of-fact to discuss Ramon's theory. As I have said, we had become accustomed to weird, incredible things, and nothing seemed either impossible or improbable.

At all events, whether or not he was right in his surmises, it really made little difference. The all important matter, the tremendous, the dramatic feature of it all was Ramon's intended sacrifice; if such I may call it.

And, for the next few days, all his efforts and attentions were centered on making his preparations for the climax of his lifetime. I aided him as much as possible—despite my inmost desire to hinder, to prevent him from carrying out his plans. But even when I was not devoting my services to his cause, I could not put my mind to anything else. I was restless, nervous, uneasy. I was about to lose a very dear and valued friend, no matter what happened. Regardless of what the ultimate result might be to him, there could be but one result as far as I was concerned. I had not the least doubt that he would vanish. To be sure, if, after he had gone, I looked through the prism and saw him happy and content with the princess, I need not grieve for him. But suppose I did not see him, never learned his fate? Even so, worrying would do no good, and though I could not control my uneasiness, my nerves, yet I *did* manage to put my worries and my pessimistic fears aside. After all, death is not the worst thing that can befall a man, and Ramon would not be the first to die for science or for love of a woman.

He, however, was absolutely confident and was not in the least nervous. The only thing that troubled him was the necessary delay in making the prism. Although he insisted—and offered what I admitted were undeniable proofs—that neither the size nor the power of the prisms affected the size of the reduced objects, yet, for some reason or other, he was determined to make a large prism, the largest, in fact, of any, with the exception of the one through which we viewed the Indians. Indeed, he cast covetous eyes upon this, and even hinted that he might use it. But here I was adamant. I was bound that I would follow out my promise to see if he attained his goal, and I felt that I was warranted in insisting that I should at least have the satisfaction of knowing whether or not he survived his experiment.

Besides, I could not see the sense in destroying the prism just to make a larger one, when, according to his own statements, a small prism would serve his purposes just as well.

But, as I have said, Ramon at times could be as obstinate and as set in his ways as any pure-blooded aborigine, and this was one of those times. He had made up his mind to have a large prism and have it he would, even though he raved and ranted and complained over the time that slipped by. So much of the

Manabinite had already been exhausted in our numerous tests that comparatively little remained. But there was the lens he had made, there were a number of small fragments, and very patiently and skilfully Ramon cut, ground and polished these, fitting the angular pieces together to form one prism, until at last he had produced a prism almost as large as the one we had preserved.

"If you are wrong in your theory," I declared, "you will have made a great mistake in constructing a device of that size. Of course, if the power of magnification bears no relation to the power of reduction, then you are quite all right. But, Ramon, if you have erred, if there is any ratio between the two, then you will be reduced far too much for Kora ever to see you."

"I am not worrying over that," he assured me. "In the first place I am convinced that the size and power has no bearing on the scale of reduction, as I pointed out days ago. And in the second place, although this prism is larger than the others, its magnifying power is certainly no greater—possibly less. The quality of the mineral is inferior—I have foolishly used the best in my experiments—and a compound prism does not possess the power of a prism made from a single mass of mineral."

"Well, it's your affair, not mine," I said resignedly, "but I *am* anxious to see you successful and to know that you and the princess are happy. When do you expect to take the final step?"

"Tomorrow," he announced. "I shall attempt it just after the birth of the sun ceremony, when Kora appears in the plaza."

"I'm afraid you'll terrify the people as much as did the burro and the dog," I said. "And are you sure about your clothing? It would be rather embarrassing, to say the least, if you suddenly appeared before the princess and her maidens in a state of nature."

RAMON laughed. "Don't think I haven't foreseen that," he assured me. "Animal matter of any kind responds to the prism, and I shall wear nothing but wool. In fact, I have decided to attire myself as nearly as possible like the Indians. I shall wear my Quichua poncho, my sandals, and a woven woolen *llauto* or head-band. My great regret is that I must leave my violin behind. That, I feel sure, will not be reduced."

Of course, during all this time, we had not failed to watch our friends of Kora's village. In fact, since the arrival of the donkey and the dog, we had been intensely interested in events that transpired there. As soon as the

princess had demonstrated that the dog was friendly, the people had evidently taken courage, for when we next looked into the prism, we found them once again in their village, working and playing as usual, with the donkey near at hand and the dog frolicking among them. But we had to laugh at the transformation of the two, particularly the burro. Whether the people regarded the donkey as a deity or a gift from the gods, I do not know. But he was obviously looked upon as sacred. From head to tail he had been glorified. Brilliant feathers or objects resembling feathers, which I strongly suspected were the scales from the wings of some minute *microlepidoptera* (butterflies), adorned his ears. His head was almost concealed under gold ornaments; golden bands were around his legs; his brushy little tail was wound with bright-colored strings, and his shaggy body was clothed in a shimmering iridescent blanket. The dog was not so elaborately attired; probably he had resented being hampered and had ripped off most of his decorations; but he, too, was gay with colored streamers and a collar of gold beads.

"They have found their Paradise," I remarked, as we watched them.

"And I shall find mine there as well," said Ramon almost reverently.

"Amen!" I said. "I only hope and pray that you may, Ramon." And now we are approaching the end.

I HAVE gone through a great many tense moments in my adventurous life; I have been under many nerve strains, and I have more than once had that strange sensation that is best described as having one's heart in one's throat. But never, in all my years of exploration and of discovery, of venturing among savage tribes, of hunting savage beasts, of running rapids,—even of being shipwrecked—have I felt so keyed up, so nervous, so tense, so shaky-kneed, as on that eventful morning when Ramon announced that he was ready for his spectacular experiment.

Everything was in readiness. The new prism had been carefully placed beside the other one, adjusted until we could see the village and the houses through it, although it was not sufficiently powerful to reveal the people plainly. We had sent the Cholos off in order that they might not by any chance see what took place, and, in their terror, desert me. Ramon had attired himself in his poncho, his sandals and his head-band, and all that remained to be done was for him to take his place behind the prism and draw the bow across the violin strings.

Somehow, I felt as if I was taking part in an execution. And, as is so often the case when one is under the stress of great emotions, I remember the

thought crossed my mind that Ramon was about to act as his own executioner, and that I considered it rather humorous. Ramon, however, seemed brighter, happier, more elated than at any time. He was confident, sure, convinced that in the twinkling of an eyelid, he would find himself beside the woman he loved.

Never was Christian martyr more exalted, more happy at taking the step into the unknown, for, like the martyrs, Ramon believed implicitly that his final step would lead directly to his eternal happiness.

And seeing him thus, knowing how he felt, realizing how much it meant to him, and remembering the reward that awaited him if he was successful, I could not be sorry for him and could not be selfish enough to grieve at the thought of losing him.

"I'd better say *adios, amigo*," he said, as he took his place, violin in hand. "If all goes well, as I know it will, you'll see me down there in the village within a few seconds. And—" he laughed boyishly, "don't forget what I promised you—a kiss blown to you from the loveliest, most adorable lips on earth. You don't know how you are being honored and rewarded, my friend. The kiss of a princess—of the *Sumak Nusta*, is a most precious thing, a priceless gift, even if it is thrown to you and not bestowed in person. But, seriously, *amigo mio*, my very dear good friend, the one and only regret I have is that I must bid farewell to you. It is not yet too late. Will you not alter your decision? Will you not go with me? It was for that I made this prism of such size—because I hoped that, at the last moment, you might join me. It is large enough to transform us both, my friend."

I shook my head and I fear my eyes were wet. I loved Ramon deeply, and now that I was about to lose him, I fully realized how much I valued his companionship and friendship. But even so, I could not accept his offer. I had no beautiful woman awaiting me in the village. Though I might, though I knew I would, find it intensely interesting and of the greatest scientific value, I also knew, however, that I would never be happy unless I could publish my discoveries to the world, that to live the rest of my days among Indians would be most unpleasant. And—I am almost afraid to admit it, for it was a rather childish and unworthy attitude—I knew I should be miserable in the presence of the consummated love and happiness of Ramon and Kora. To be near such complete happiness, to see them, watch them, hear them, would, I knew, make me very lonely, very miserable, very blue, for I would continually be mentally comparing their state with my own solitary, loveless condition.

So, with an unsteady but determined voice, I again refused to join Ramon, and grasped his outstretched hand. He gripped my hand firmly. Then, in a

sudden impetuous movement, drew me to him, threw his arms about me, patted me on the back and kissed my unshaven cheek in the fervent Spanish salute of farewell.

"Now, *amigo*, will you please do me the last favor?" smiled Ramon, though I noticed a suspicious moisture in his eyes. "Take a peep through the prism, and watch for the coming of Kora. When she appears, let me know. Are you ready?"

I nodded and glanced into the crystal. The people were dispersing from their morning sun-dance, the musicians were leaving. Then I saw the Indians gather, their eyes turned toward the palace. My heart beat hard and fast. I felt weak, cold, almost ready to scream. Then from the palace door Kora appeared. I hardly recognized my own voice as I turned toward Ramon. "She is coming!!" I said hoarsely. "She—"

"*Adios*, then, my beloved friend!" cried Ramon joyously. "Go thee with God always. I go—I go to my beloved!"

I saw the flash of his bow through mist-dimmed eyes. As if in a trance I heard the swiftly rising, wailing note of his violin. As from a vast distance I heard the sonorous twang from the prism. And then I seemed to be losing consciousness; I felt smothered, blinded, and as if sinking into a bottomless abyss.

Slowly I opened my eyes. My head reeled, my eyes burned, every muscle of my body ached. Then full consciousness swept over me. I remembered Ramon, the sound of his violin's note, the twang of the agonized prism. What had happened? What had rendered me insensible? With an effort I raised my head and glanced about. From head to foot I was covered with a fine white powder. Coughing, sneezing, tears streaming down my cheeks from my irritated eyes, I stared. Ramon had vanished! There, where he had been standing, lay his violin and its bow. He had gone! What had been his fate? I leaped to my feet, scarcely aware of the agonies the movement cost me. I must look through the prism, must see if he was with Kora.

The next instant I staggered back. The prism had vanished! There was its stand, there was the metallic adjusting device. But not a trace of the prism remained! Dazed, uncomprehending, realizing only that I could not see my friend, could not learn his fate, I cursed, raved, groaned. Then slowly, gradually, my brain began to function properly. With a great effort I controlled myself, calmed myself. What had happened? What had become of the prism?

Why had I lost consciousness?

Then it came to me, dawned upon me! Ramon's prism, the one he had used, had been too close to the other. What short-sighted, stupid fools we had been! The note from the violin had affected both prisms. By the narrowest of margins, by the sheerest piece of good luck, I had not been in line with the prism. Had I remained looking at the village, had I not stepped aside, I, too, would have been transformed, utterly destroyed or reduced to a microscopic being! I had come within a hair's breadth of joining Ramon, despite my own wishes. And no doubt it was my proximity to the line of activity that had resulted in my being bereft of my senses temporarily. Or again, it may have been the choking, irritating cloud of dust that had enveloped me. Probably I shall never know. But of one thing I was certain. I could never learn how Ramon had fared, I could never see him beside Kora, I could never see her blow that promised kiss to me. But they would never know it. They would be unaware that I could not fulfill my promise.

Then I laughed hoarsely, hysterically, as I thought of that other pledge I had given Ramon, of my promise to destroy all vestiges of the Manabinite. I had no need to do that now. The matter had been taken from my hands. As far as I knew, not a fragment of the mineral larger than a pea existed.

Almost reverently, I picked up Ramon's violin and bow. As I did so I saw that the strings had vanished from both. They, too, had been of animal matter; they, too, had been reduced.

Slowly, with bowed head, I stumbled to my hut. It was all over. Ramon had gone. Never would I see him, never would I hear his voice again.

And never would I know his fate. Never would I be certain whether he had been utterly destroyed or whether he still lived, supremely happy, with his beloved Kora, his *Sumak Nusta*.

THE END

TRANSCRIBER NOTES

Printer errors have been corrected. Where multiple spellings occur, majority use has been employed.

Punctuation has been maintained except where obvious printer errors occur.

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[The end of *Into the Green Prism* by A. Hyatt Verrill.]