



Scientists, Agreeing Martians Are Super-Race, Believe That Planet May Be Signaling to Us

Life on Our Distant Neighbor Is "Grand, Intense, Formidable," Says M. Perrier

By Arnold D. Prince

IT should prove to be the case after all that those mysterious Mars "messages" came from Mars or even Venus, the next problem of importance will be the kind of people who sent them. For, of course, if the earth is to have new neighbors with whom to exchange gossip across the back yard of the sidereal firmament, it will want to know something about them. It will want to know something of their habits, appearance, how they dress, and possibly their views on interplanetary relations. All sorts of situations may arise wherein a mutual understanding of personal traits, characteristics and general disposition will aid in establishing and preserving amicable relations.

Signor Marconi, unfortunately, was not able to throw much light on the subject. Virtually all that came within the scope of his observation was that when prosecuting wireless experiments certain "signals occurred" with persistent regularity which could not be explained on the theory of casual interference. As these signals had been received "simultaneously at New York and London with identical intensity," he admitted the possibility of their being attempts by the inhabitants of "other planets to communicate" with us.

Venus or Mars?

Subsequent discussion, in which scientists in Great Britain, France and the United States participated, disclosed an almost hopeless confusion of views on the reasonableness of this conclusion, but resulted in an agreement on one point at least, and that was that if any attempts had been made to communicate at all, they must have originated from Mars or Venus, the only worlds within our own upon which there is a possibility of human habitation.

What kind of people, then, inhabit these two planets? In seeking an answer to this question the inquirer is thrown back almost exclusively, of course, on the conclusions of the scientists who have made a study of the subject. No one, so far as known, is in a position to give first hand information. Nor is there anything specially helpful in such suggestions as emanated recently from one authority, who, when asked his opinion as to the population on Venus, replied with hopeful animation that they were "chorus girls." Such jocularity is merely belouping the issue and adding difficulties to a problem that is difficult enough as it is.

Among scientists who have won the right to speak with authority the foremost was the late Professor Percival Lowell, director of the observatory at Flagstaff, Ariz.

Professor Lowell was the brother of Abbott Lawrence Lowell, president of Harvard University. Before taking charge at Flagstaff he had been attached to the observatory at Harvard and had conducted astronomical investigations in many parts of the world, including Japan, Tripoli, the Andes and other countries. He had delivered lectures on his findings before important scientific societies in Great Britain and the United States.

Not only was Professor Lowell convinced that Mars was inhabited, but he believed the people had a much higher degree of intelligence than those on earth. He dwelt particularly on their inventive genius.

Great Inventors

"Quite possibly," wrote Professor Lowell in his book, "the Martian folk are possessed of inventions of which we have not dreamed, and with them telephones and kinetoscopes are things of a bygone past, preserved with veneration in museums as relics of the clumsy contrivances of the simple childhood of the race.

"Certainly, what we see hints at the existence of beings who are in advance of, not behind, us in the journey of life.

"Startling as the outcome of these observations may appear at first, in truth there is nothing startling about it whatever. Such possibility has been quite on the cards ever since the existence of Mars had been recognized by the

Chaldean shepherds, or whoever the still more primitive astronomers may have been. Its strangeness is a purely subjective phenomenon, arising from the instinctive reluctance of mind to admit the possibility of peers. Such would be comic were it not the inevitable consequence of the constitution of the universe. To be shy of anything resembling himself is part and parcel of man's own individuality.

"Like the savage, who fears nothing so much as a strange man; like Crusoe, who grows pale at the sight of footprints not his own, the civilized thinker turns from the thought of mind other than he himself knows."

The peculiar relevancy of this view to the discussion resulting from Signor Marconi's announcement will strike any one who reads Professor Lowell's statement. His brother scientists were indeed "shy," as he had predicted, of the deductions reached by him, but they at least contained the views of the Flagstaff astronomer as to the kind of people, who, if we accept the pleasing possibility suggested by Signor Marconi, are trying to "strike up a speaking acquaintance" with us. Not only are they masters in the knowledge of electricity, but they have already relegated to the museum of antiquities many of the discoveries in that field which we, here on earth, look upon as last minute achievements in scientific effort.

Professor Lowell, while commenting strongly on the intellectual attainments of the Martians, made

little or no reference to the actual appearance of the folk living on that distant planet. True, he did say in another part of his book that they probably were not interested in party politics, and that, judging from their canals, they were favored by a "comprehensiveness" of mind much more embracing than that "which presided over the various departments of our own public works" in the United States, but as politicians look much like other persons very little could be gained from that.

First Martian Pictures

It was M. Edmond Perrier, director of the museum of the Jardin des Plantes, in Paris, who constructed the first picture of the Martians, as he conceived them.

At the time M. Perrier undertook this task the division among the authorities on Professor Lowell's theory had assumed wide proportions. Some were decidedly "cold" to the notion that Mars—the question as to Venus was temporarily in eclipse—was inhabited at all, and they considered it futile and profitless, therefore, to attempt to depict a non-existent people. Others, as has happened even recently, considered the matter in a light vein, thinking to get some humor out of it, and one newspaper carried a cartoon, captioned "Hello Central," showing Professor Lowell "calling up" Mars.

Still another group seemed to take it as a personal affront that the astronomer had sought to enlarge their list of acquaintances by introducing a race about which they had absolutely no knowledge.

M. Perrier approached the problem from a highly speculative viewpoint, but made clear the fact, nevertheless, that he saw no reason for condemning the position of Professor Lowell.

"Dreams are not a crime," contended the French scholar, "and in this case contradiction is difficult." The director of the museum of the Jardin des Plantes led up to his description of the inhabitants of Mars by establishing the premise

that conditions on Mars are not inimical to human life. Rain, snow, thunder and hail are known there, as on earth. There are seaweeds in the ocean, grass and trees on the land, fields available for cultivation and a friendly soil to provide food for the people.

"The life which animates the earth also animates other planets," said the French savant. "From what goes on around us we may divine what is happening elsewhere by examining the exact conditions under which each planet finds itself in rapport with every other. On the planets which are furthest away, it is impossible that human beings should exist, for no organism could, for example, be formed in the alkaline seas of Jupiter, while Mercury, which is too near the sun, could not engender life. Only Venus, the Earth and Mars are habitable."

On Mars, M. Perrier went on, life is "grand, intense, formidable." The mean temperature is 40 degrees Fahrenheit, as against 75 degrees on earth, the winters are more severe, the summers warmer, the year longer and the seasons more marked than ours.

The sea animals are much like ours, the fishes have a sense of hearing, there are insects in the animal kingdom and flowers and butterflies, but the humans are very, very different.

Before going on and giving M. Perrier's picture of the kind of people the Martians are, and in order to re-

museum of the Jardin des Plantes said:

"The low atmospheric pressure has produced a considerable development of the pulmonary apparatus, and consequently the general character of the Martians has been influenced by this development, which is unknown on earth.

Why Martians Are Tall

"The men on Mars are tall because the force of gravity is slight. They are blond, because the daylight is less intense. They have less powerful limbs. They have some of the characteristics of our Scandinavian type, although they probably have larger skulls.

"Their large blue eyes, their strong noses, their large ears, constitute a type of beauty which we doubtless would not appreciate except as suggesting superhuman intelligence."

Going further into details, M. Perrier concluded that the jaw of the Martian is narrower than ours because time and evolution have removed him further from his animal

picture painted by Wells as we see from the Siquian types referred to by Darwin.

Returning to the question of flora and fauna, M. Perrier concluded that because of the reduced force of gravity, animals are much larger on Mars than here, and hop, run and fly about much more easily. Grass is higher, fruit is bigger, and the flowers possess undreamed of beauty. The light is something like our dusk, and the general landscape much more attractive than on earth.

"The year on Mars is twice as long as our earthly one," he explained, "and hence plants and insects have twice the time in which to evolve. Mars is the land of huge plants and ideal flowers, of birds abnormally powerful in song and wondrous in appearance, and of

of beings supposed to exist on the only two eligible planets, two other questions arise—Why are the Martians or the Venusians trying to communicate with us, that is, if they are? and, What atmospheric conditions will we on earth have to overcome in order to reply to them?

As to the first question, a possible explanation may be found in the so-called cataclysm on Mars that was reported by the British Astronomical Association in 1909. In that year

Professor Lowell Held That Martians Were Far Advanced in Inventions and Science

catastrophe had occurred, the effects of which were only too apparent. Can it be, some of the observers of conditions now are asking, that

consideration, but in view of recent developments many thinkers are asking if, after all, he was not mistaken in at least one particular, and if the "signals" picked up in New York and London were not efforts on their part to notify the earth folk of their desperate plight. No unusual manifestations to support this view have been witnessed recently on the distant planet, but it is at least a new guess on the subject, which is all that its originators claim for it.

Tesla Believes It

To Nikola Tesla there is nothing remarkable or impossible in the suggestion that the mysterious signals are from the Martians. Discussing the question, he said:

"To most people the mere idea of flashing a signal over the immense gulf of 50,000,000 or 100,000,000 miles will naturally appear preposterous, but as I have stated in an article I wrote for 'The Harvard Illustrated Magazine' of March, 1907, it is simply a feat of electrical engineering, apparently hazardous, but made perfectly feasible through inventions with which the experts are familiar.

"That the planets are inhabited is a foregone conclusion. It would be stupid to deny the existence of conditions suitable for the development of organic life on other planets."

The next question is how the earth is to reply to these signals, supposing they are signals at all, and what are the atmospheric obstacles that will have to be overcome.

Mars at times is only 50,000,000 miles away from the earth and at other times 250,000,000. It is frequently surrounded by vapors, as is the case, too, with Venus, which would be extremely difficult of penetration by light radiation, but the chief problem to be met would be the creation of a wireless apparatus of sufficient strength to send a message over the required distance.

Dr. Charles P. Steinmetz, chief consulting engineer of the General Electric Company, believes such an instrument possible, provided the world devoted itself to the invention with the same thoroughness it employed in the great war, but estimates it would cost at least \$1,000,000,000 to do it.

Wireless messages have been transmitted over a distance of from 3,000 to 4,000 miles when conditions were favorable, although an official of the Radio Corporation of America, of which the Marconi system is a part, said that signals had been sent as far as 10,000 miles under unusual circumstances.

"But there is one thing that should be remembered," said David Sarnoff, commercial manager of the Radio Corporation of America, "that there are a great many conditions in the atmosphere of which we do not know, even when sending a message, say, across the Atlantic or even a shorter distance.

"We know something about wave lengths, and we know what happens when we send a message and when we receive it, but what happens en route is still pretty much of a mystery.

Niagara Falls Would Help

"In connection with the actual practicalities in sending a wireless message over such a distance as that between the earth and Mars, that, I may say, is something about which the newspaper men know almost as much as we do. But the chief problem, it would seem to me, would be to find an instrument powerful enough, rather than anything else, and this would be no small achievement. We would have to harness Niagara Falls and every other power producing agency that I know of to do it."

Electricity travels at a speed of a little more than 186,000 miles a second, and a message going at that rate would take a little more than twenty-two minutes to reach Mars when it is at its furthest point from the earth, and about four minutes and twenty-one seconds when it is nearest. According to the same calculation it would take two minutes and eighteen seconds to send a radiogram to Venus, two minutes and fifty-nine seconds to the sun, two seconds to the moon, thirty-five minutes to Jupiter, one hour and six minutes to Saturn, two hours and thirty-two seconds to Uranus and four hours and two minutes to Neptune.

SCIENTISTS agree that the people of Mars differ from us in many ways. The Martians are believed to have very large noses and ears and immense lung development, because of the rarefied atmosphere. Their legs are poorly developed, because matter on Mars weighs less than here and sturdy legs are not needed to bear their weight. Birds and butterflies are very large and beautiful.

some such similar catastrophe has overtaken the Martians, who, in their desperation, are attempting to communicate the fact to us?

In August, 1909, astronomers working at their telescopes had reported what they surmised to be a new fracture of the southern polar cap and the appearance of a dark streak along the line of the break. About the same time a brilliant spot, which may have been a segment of the shattered terrain, had separated itself from the polar cap and had moved over to one of the dusky areas of the planet, partly hiding it from view.

Great Convulsion Possible

All this seemed to strengthen the theory of a huge convulsion advanced by the British scientists, although, as seems to be the fate of all questions concerning this much discussed and little understood celestial body, eminent authorities at once took opposing ground on the subject.

Professor Harold Jacoby, Rutherford Professor of Astronomy at Columbia University, contended that "the Martians are not likely to have their world destroyed any more than are we," adding that if any such catastrophe as hinted had actually occurred the news would have become known through some quicker channel than the British Astronomical Association. By this, it should be explained hastily, Professor Jacoby did not mean that the scientists across the Atlantic were slower in observation than others, but only that the disaster would have been revealed by telescopes everywhere long before a formal report could have been prepared.

Professor F. R. Moulton, of the University of Chicago, also doubted the accuracy of the report, and Professor Lowell himself, author of the notion that Mars is inhabited, was not particularly impressed with it.

Professor Lowell, it will be remembered, held to the belief that the Martians were anything but a starving, needy people, and he constantly sought to fortify his position by offering new proofs of their prosperity, advancement and skill. In 1914 he found a new opportunity for strengthening his pet belief by announcing that instead of losing any of their canals the Martians had built two new ones, which could be seen plainly through the telescope.

"We have actually seen them formed under our eyes," Professor Lowell said at the time, "and the importance of it can hardly be overestimated. The phenomenon transcends any natural law, and is only explicable so far as can be seen by the presence out yonder of animate will." By animate will he meant, of course, human beings.

Professor Lowell was admittedly the leading spokesman for the Martians, and anything he said was worthy of the most respectful

the "planet of mystery" was nearer to earth than at any time since 1892, and so in a favorable position for observation.

The phenomenon which was heralded as without parallel in the records of the past was the appearance of a gloomy, yellow veil which enshrouded immense tracts of the Martian surface, obliterating important markings.

On account of the theory, then recently advanced by Professor Lowell, that Mars was inhabited, the changes aroused extraordinary interest. It previously had been suggested that the canals on the planet had been constructed by a dying race, a race menaced by starvation on a desert planet, which had sought by means of these enormous viaducts to carry water from the melting ice caps at the poles, and the appearance of the yellow mist combined with the simultaneous erasure of some of the canal markings gave rise to the fear that a gigantic

four-footed animals with extraordinarily developed fur and skin."

Neither M. Perrier nor the other scientists who believe in the habitability of other worlds paid so much attention to Venus. They agreed, however, with the head of the Jardin des Plantes that as this planet is much younger than the earth, life there is much less advanced.

Because of the greater nearness to the sun, the climate is something like that in our tropics, and the air is always misty. Animals and plants are much like ours, especially at the poles, where the temperature is not so high, but humans are not much beyond the development that existed on earth during the secondary geological period.

Not From Venus

In other words, there is much less likelihood that those strange Marconi signals came from Venus than they came from Mars. Having thus disposed of the kind

assure such sensitive souls as may fear to establish speaking relations with a people too alien in appearance to make acceptable neighbors, it should be stated that M. Perrier does not agree with the conception of the Martians set forth by H. G. Wells in his book "War of the Worlds." Mr. Wells, in that work, caused the Martians to resemble cuttlefish, with round, gray bodies, with "sort of faces" and long, groping tentacles.

This conception, M. Perrier asserted, did the Martians a great injustice and created a prejudice against them, which is not only unscientific and unsound, but entirely undeserved.

The Martians, the French scholar held, bear a certain resemblance to man, although many of their features are more prominent. For this, the difference in the forces of gravity and in environment are chiefly responsible, he said. Their ears, for example, are very large.

forebears than they have us. His lung capacity is enormous because of the thin atmosphere, although his legs are extremely thin, due to the little effort needed in walking. He has little or no neck.

Touching on the question of intelligence, the French savant deduced that the Martians have solved the problem of existence, and know no such thing as industrial strife. Being older, they are also wiser than we. They have long since conquered disease, and know the hour of their demise, awaiting the event calmly.

They have overcome poverty, are too sophisticated to engage in war, and need no law or government to keep them orderly. Philosophers and brothers, they live in amity and understanding, devoting all their thought to the promotion of large undertakings in which selfishness, avarice and earthly trifles have no part.

