

COPY OF HAND-WRITTEN ARTICLE SIGNED by DR. MAHLON LOOMIS, JANUARY 7, 1872

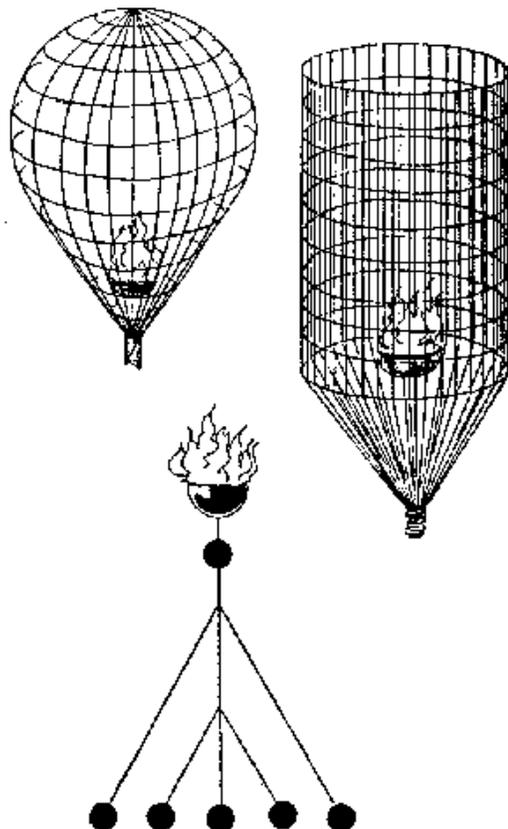
Thomas Appleby, in his 1967 biography "Mahlon Loomis", includes an 1868 letter Loomis sent to his brother, in which he declared -- "Telegraph! That's the least important result I expect to attain..." International wireless communication was merely the first of many spectacular advances Loomis thought could be accomplished by harnessing atmospheric electricity. The text of this 1872 lecture by Mahlon Loomis, reviewing his predictions of an amazing future including, among other things, an inexhaustible source of free electricity and the eventual ability to modify the Earth's climate, comes from S. R. Winters' article, "The Story of Mahlon Loomis".

Radio News, November, 1922, pages 974-978 Loomis lecture extract:

What I contemplate in this undertaking, which is based upon acknowledged scientific facts and mathematical truth, is to send messages from Continent to Continent across the oceans without the use of a cable or artificial battery; or between two stations on the earth, however distant from each other, without intervening wires.

This is the primary undertaking, but with it comes also the ability to draw light, heat and motive power for all purposes, and that without expense beyond the original outlay for cost of apparatus. This is to be accomplished by using the Electrical Element from the inexhaustible supply of nature; not by using artificial batteries and chemical compounds which are but an imitation of nature's, as I shall presently attend to, but by drawing from the great aerial reservoir ready-made and never-failing. Where do we look for the greatest display of might and power but to the atmosphere with its restless and appalling thunderbolt, coming unforeseen and shooting at fatal random. In all nature nothing is so powerful, nor so terrible because powerful. And yet this great element goes to utterly idle waste, often causing death and devastation; strange to say, no attempt is ever made to utilize this immense wealth to the purposes of man. But when we consider the expense and imperfection of oceanic telegraphy in its present condition; when we consider the expense of fuel, and heat, of motive power, whether from animals, the waterfall or steam, when we consider these things, I say, and contrast them with the proposition to furnish for all of these, *one subtle Element*, tractable and obedient, inexhaustible and utterly without cost, or tax or tariff, then that proposition becomes fraught with an importance of the greatest magnitude.

In the first place, *is* there such an element? It is a well established fact of science that free electricity abounds in our atmosphere; that scarcely any traces of it are found less than four feet from the ground or surface of the earth; but on attaining greater height, it



Methods Suggested by Loomis for the Harnessing of Electricity from the Atmosphere

becomes more apparent, and the greater the altitude the more this element abounds; so that in reaching an elevation above the clouds it becomes so prevalent as to form a continuous and distinct element, in which our globe with its surrounding atmosphere lies and floats. That is a demonstrated scientific fact.

It is a well established fact in all electrical phenomena that certain *electrical conditions*, called "positive" and "negative," must exist in order to form a "circuit" or current with the electrical fluid. And these conditions we find most admirably arranged in the great electrical battery of nature. The earth, like the outside of a Leyden jar, or the copper plate of a galvanic battery, is always highly charged with negative electricity. The atmosphere, like the inside of a Leyden jar, or the zinc plate of a galvanic battery, is always highly charged with positive electricity, and the intervening air, like the glass of the Leyden jar, in the separated poles of the galvanic battery, is a perfect non-conductor, thus forming and constituting the most complete and colossal electric battery that ever gave an electric spark, but standing all unused. It is *just as much* superior to all artificial batteries combined as the sun is superior to our tallow candles.

It is, indeed, a mooted question with philosophers *how* this electricity comes there--whether the earth was primarily formed magnetic, and this atmospheric electricity is an "inductive" element, or whether it is eliminated from space and source unknown; but whether it is the one, or the other, the *great fact of its existence* remains, and pending the disagreement of the doctors as to its origin I simply make use of the elements as I find them.

Although it be a well-established fact that this element pervades space around our planet as abundantly and in the same manner as our atmosphere does, still can we reach and control it, and will it answer our purposes if we can do so?

Whatever methods may be devised in the future I am not competent to say, but there is *one way already demonstrated by experiments* by which we can reach, and avail sources of its benefit and value, and that is to *seek the highest mountain tops*, and thus penetrate this immense and unexplored field, whose virgin soil awaits the plowshare for a fruitful seedtime and harvest. Common hilltops, or inconsiderable mountain ranges, are inadequate to a successful demonstration, as ascending currents of heated air, or dampness and mists particularly peculiar to the elevation of the generality of clouds, would necessarily prevent the successful working of a long line of range, when attempted for permanent telegraphic purposes. But at an elevation of twelve or sixteen thousand feet, which is easily reached on the Rocky Mountains and the Alps, we may tap the storehouse of the mighty thunder and make it whisper glad tidings over the seas.

And this fluid, abounding as it does without limit, is the very kind or nature most desirable for our uses, from its uniform tension and persistent quality, being superior in kind and better in practical action than that generated by artificial means, and all that remains to be done to make it available in telegraphing and the varied purposes of life is to properly reach forth and pluck it from thus its slumbering bed. That it will fulfill our requirements is recognized by scientific axioms and abundantly demonstrated by common and familiar occurrences in casual meteorology.

It is within the knowledge of almost everyone that during severe and heavy thunderstorms, or in the time of brilliant displays of the Northern lights, long lines of telegraph have been worked by the inductive force of these meteoric displays, which, although casual occurrences firing themselves into notice, nevertheless has cumulative evidence in behalf of my proposition (system). For absolute date of time and place, I will refer to one distinct instance out of many as illustrating the inductive effect of the electricity of the atmosphere working a telegraph line. On the 2nd of September, 1859, communications were sent over the wire between South Braintree and Fall River stations in Massachusetts, a distance of 40 miles, with the aid of the celestial battery alone. This was during the appearance of the Northern lights, which are computed to be, on the average, from two to five miles in height and frequently to possess a strength of current equal to that produced by a battery of 200 Grose cups. Many cases are recorded also of communications having been made during thunderstorms. And let me here observe that these local and limited displays are similar in their effect to the great overlying stratum which will forever yield its power without diminution; and furthermore, that the first telegraph with its double wire to form the circuit bears the same relation to the one now in use (since one wire has been abandoned, making use of the earth in its stead), as the present system bears to the one which I now actuate. The earth now forms one-half of the circuit in all the telegraph lines, and I simply propose to discard the remaining wire or cable and penetrate the insulating medium of the dense atmosphere reaching the electrical stratum above and around the earth, to form the other half as well, or to make this atmospheric element practically and usefully reciprocate its fellow element of the earth. The advantages gained in this, simply in the art of telegraphy, are immense and greater than might at first appear aside from the saving of a cable (which is \$12,500 per annum for the W. U. Co.) is that also of the battery power, and yet a persistent current of volume and intensity is supplied, like the air we breathe freely, abundantly and without cost.

Independent of its use in the art of telegraphy, it will otherwise result beneficially, almost beyond computation. Disarming the tornado and the thunderstorm of their terror and subduing their power to useful purposes, even as in times passed have been the waterfall and steam power, this element will come forth from its heavenly home the willing messenger of glad tidings and great power.

Professor Since, of London, in the last edition of his work on electricity, says: "The value of the steam engine over electrical contrivances depends upon the cheapness of coals as compared with zinc, for if ever the philosopher should discover an effective carbon battery where there is no decomposition of zinc, then will the steam engine cease, then will gas companies be compelled to stop their works and a total revolution will be produced in all the physical forces employed by man."

I say, the great battery of nature is most essentially and emphatically this "carbon battery," for consumes no metal, its volume is unlimited and its working power inexhaustible and without diminution.

And now it remains for us to simply avail ourselves of this immense treasure yielding us the three great essentials of human life, viz., light, heat and physical power as well as land or oceanic telegraphy, without artificial battery, wire or cable and all without expense beyond the original outlay for construction, as it will last forever when once established.

De La Rire says: "The Aurora, or Northern lights, is due to electric discharges taking place in the polar regions between the positive electricity of the atmosphere and the negative electricity of the earth."

This is doubtless true and correct, but I will go further and say also that it is only the *accidental* reunion of the two electricities, and that it can be brought about regularly and constantly by artificial and suitably established means as well.

Lightning is the *accidental* reunion of the two separate electricities through an incidental or casual conductor, and my proposition is to harmonize its working, or systematically regulate this intermittent and unequal action, by suitable channels of communication.

We have levied upon the forests to warm our hearthstones; we have mined into the earth and made her yield up her coal, and her still more refined products of oil and gas; but the expense of them all outweighing in value the wealth of the land and the seas lies untouched and undisturbed.

The waterfall goes to waste, unless we cut and build artificial channels to avail ourselves of its power. The bed of the river is often choked with obstructions, extending in consequence its seething marshlands, which yield malarious death and devastation, until the channel is so constructed as to give it free current to the sea.

So this great electrical ocean, slumbering with giant power, untold wealth and willing aid, waits but the proper sluiceways or conducting channels to illuminate and to drive the wheelwork of the world. But in its unclaimed usefulness, its wild and random freaks only cause death and universal terror.

The mill and factory will then run with a more subtle power, although the waterwheel stands dry and idle. Our dwellings will glow with wholesome heat on wintry days and be illuminated with clear, unwavering light in the night time from the steady and exhaustless flow of this vital element, and the miner of coal shall leave his toil in the shaft for a nobler handicraft among his fellows up in the sunlight and the world. The crude gold of Ophir may lie in the ground, but the pure smelted metal of Omnipotence lies in the stratum over it.

We of the present century have taken great and unwarrantable self-glorification unto ourselves for the so-called "taming of the lightnings of the heaven" or of "harnessing the thunderbolts of Jove to do our bidding." It sounds grand and intellectually powerful, but this is in fact all bombast and utterly incorrect--for the lightnings of heaven are *just as much untamed as ever*. That great natural electrical ocean from which the thunder draws its kindling spark has not yet been explored nor even invaded by the "taming" hand of man. All that man has done so far is to set up little, puny "lightning rods" all over the land to be protected in some slight degree from its untamed power and appalling demonstrations, yet shrinking with terror from their inefficiency whenever the dark cloud gathers in the sky. *Franklin* demonstrated the practicability of drawing electricity from the clouds to the earth, but not one step has since been taken to pursue that fact to a profitable practice. Thousands of human lives and millions of dollars are sacrificed because we have not "tamed" this power, and still we will not understand or heed this loud voice

proclaiming from the skies what might and majesty of concentrated power the Almighty has put in store for the benefit, and not the destruction, of man. Air, fire and water are formed and transformed by this element or power-made and unmade it. They are all convertible elements. And this electrical essence will yet melt the icebergs in the seas of Thor, and vessels may ride in safety on their "Northern passage," the entire globe made more productive, all malaria cleared from the atmosphere and the entire climates of this our planet toned and tempered by it.

When the Black Hills of the West are reported to contain in many places particles of gold dust forthwith thousands of eager toilers dare dangers, deprivations and death in hope for the uncertain pursuit. But in this limitless field--richest of all domains--how comparatively few there are to labor! Yet the certainty of its unfathomed wealth is patent to every reflecting mind. It is the new Garden of Eden of whose ripened fruits we may reach forth and partake in the way that God prescribed only, avoiding the wrath of His flaming sword by avoiding the evil of tampering with its apples through the sin of ignorance, for on the day we do that *we shall surely die*.

It is the grand element of life, as well as usefulness and power. It dallies gently with a straw and yet chains a universe of worlds in absolute obedience to its laws. Notwithstanding we know its many ways and workings, still the scalpel of chemical surgery, though honed and whetted with 60 centuries of human brain oil, cannot dissect the anatomy of its closely woven fibres nor reach the heart of its mighty pulsebeat. We view with curious eye the several little phenomena which it produces, but we sink appalled at the terrible demonstrations of its live energy and might! The bud and leaf unfold and grow beneath its vital force and the subtle springs of human life pulsate with its glow. 'Tis the germ-essence throughout all animated nature and the power that compels all inanimate nature into obedience to perfect law and order. It "Warms in the sun, refreshes in the breeze, Glows in the stars and blossoms in the trees; Lives through all life, extends through all extent, Spreads undivided, operates unspent." And all serenely above the tornadoes conflict this promethean torch smoulders with lambent flame, to awaken whose majesty and might we need but touch its celestial brazier, and Neptune's strident rising from the sea will "tame" and utilize the thunder. No greater field for discovery and usefulness could possibly be opened to men and the immense advantages that would immediately reward the opening of the ports into this Celestial Empire would transcend all the great physical works of the earth. In her youth continents spread out with broad domain teeming with the fruitage of a new inheritance, and if we charter forth but one small vessel on an expedition to its genial shores, we may rest assured that it will return laden with more than the golden sands of the memorable Castilian fleet of three.

Sanded discoveries necessarily have limits set and their outlines are well-nigh traced. But in this dominion is the home of that mystic needle which points the way to all other lands and space and the limits of this domain are only measured by the red-winged spark from the eternal God into the dim haze of the uttermost Thule.

No great Alexander need ever weep again because he has no kingdoms to conquer, for here is ample field for noble ambition. Battalions armed with the hand of thought may march forth to profitable victory here. Here is field to construct interminable highways whose fleet chariots shall be laden with human thoughts coming and going for the good of man; and in this field new empires shall be conquered and new habitations built.

Expeditions to the ice field of the North Pole offer but a meager reward even in the event of successful return. The immense work of the Pharaoh pyramids is great in the world's history. Bridging or tunneling the Straits of Dover and opening the Suez and Darien Canals are mighty projects, which, completed with the expenditure of untold treasure, will, no doubt, add many comforts to many nations; although their immediate benefit is of a local nature, but verify this proposition and the very *world* will shake and tremble at the august consummation and the souls of all her people will rejoice and be made glad.

What is there in this proposition savoring of impossibility, when all the elements of success involved are based on acknowledged facts and laws, as it is in science. The only argument that can be brought against it is the time-honored one, ever urged with so much pertinacity--*that it never has been done*--hence it is a vision and a folly. But the history of all important projects is that they have, from the remotest antiquity, been opposed simply on the ground of their being new. New and original enterprises never lack specious arguments to show their fallacy; and that which does cause and forever has caused strongest opposition to new realities in the public mind is the mere fact that they are *new* and previously unaccomplished. Yet everyone knows the futility and folly of this. The greater the magnitude of the enterprise, the greater might is this fallacy allowed to have.

When the theory of the rotation of the earth was first asserted it was denounced as the vagary of an aberrated mind, because it was new and startling.

The theory, although well established by logic and reasoning, that there was another opposite side of the world from Europe was not kindly entertained there late in the fifteenth century. Thirty years ago Morse was looked upon as a crazy man. Just previous to laying the first Atlantic cable men eminent in learning gave an abundance of sage reasoning *why* it could never be made to transmit a message.

But all these combatted truths, which come up from time to time, appearing strange and erroneous simply because they are startlingly new, and because the scientific world has never previously recognized them in a collective and distinct manner, are the very leaven of our civilization--the sword and artillery that fight the hosts of the prince of darkness and elevate the standard of humanity. Nothing was ever lost by granting breath to the new-born child of science; but the world has forever lost and suffered by attempts at strangulation or the coldness of sympathy and neglect. It is one thing to strike physical fetters from oppressed races of man and aid them in their toil for prosperity and pursuit of happiness, but it is another and still greater to unbar the imprisoned thoughts of man--these angelic slaves--struggling under the lasts of derision and starving from cold neglect, especially when the purple and fine linen of our generation's pride of cultured elevation are spun and woven by the loom and anvil brain-stroke of these same enslaved and patient silent workers. But the world has from all time united in keeping them down and aided in maintaining this slavery.

The morning comes slowly, but the hour is about passed and gone when men may slight with impunity or turn indifferently away from the new born revelations that toiling, pioneering minds garner from rugged fields planted by the living God for our higher harvest and refinement. And it

is not well for any man to oppose the growth or progress of these new plants that bud and promise, for the surely avenging Nemesis will follow on the trail of him or them who dare oppress the struggling truths of God, for shame and disgrace shall come sooner or later as their well-merited inheritance.

It is touching a class of sacred matters, which to the disgrace of individuals and the world has been ignored too frequently. And it is high noon of the day when the tide must turn and these slighted truths vital to our well being and our first pride of humanity must be allowed the sunlight and the helping hand.

And if this my plan which promises so much for the benefit of man is erroneous or unimportant then prick it as a bubble and expose its empty nothingness. But meantime I am firm in the faith that this immense belt, like the rings around our sister planet Saturn, will yet form the halo of greatness and intelligence about our heads.

Common sense and intuitive perception declare it to be right; scientific facts and all the elements of earth and air array themselves in its defense; for it is founded on the solid was laid of the universe and its corner-stone was laid by the Great Builder.

MAHLON LOOMIS
January 7, 1872