

**AN APPEAL TO EVERY NATION; TREATISE
ON THE ORIGIN OF DESTRUCTIVE INSECT
PLAGUES AND IMPROVEMENTS IN THE
ART OF THEIR ERADICATION AND
PREVENTION, FROM A METEROLOGICAL
AND HYGIENCI BASIS**

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An appeal to every nation; treatise on the origin of destructive insect plagues and improvements in the art of their eradication and prevention, from a meteorological and hygienic basis by James McLean

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JAMES MCLEAN

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"The leaves of the tree were for the healing of the nations."
REVELATION XX. 2.

An Appeal to



Every Nation.

Gloria in excelsis Deo et in terra pax hominibus bonae voluntatis.

TREATISE

On the Origin of Destructive Insect Plagues and
Improvements in the Art of their Eradication
and Prevention. From a Meteorological
and Hygienic Basis. Revised and re-
written in San Francisco, California,
U. S. A., in April, 1883,
under the auspices of

THE HON. W. H. H. HART,

Attorney-General of the State of California, and author of the famous "Contagious Fruit Trees Act," etc.

— BY —

Jas. McLean, M. D.
MEDICAL ORCHARDIST

(For twenty years Senior Inspector of Forests and Agricultural Settlement in Victoria, Australia.)

Respectfully Dedicated to the Founder of "Arbor Day,"
THE HON. J. STERLING MORTON,
United States Minister of Agriculture.

WORDS OF WISDOM:

"The strong man who, in the confidence of sturdy health, courts the sternest activities of life and rejoices in the hardihood of constant labor, may still have lurking near his vitals unheeded disease that dooms him to sudden collapse."—PRESIDENT CLEVELAND, (March 4th, 1893.)

{ Letters Patent
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PREFACE.

As "there is no new thing under the sun," and being conscious of my inability to do otherwise than feebly verify that fact, I have ventured to adopt the following philosophic lines penned by LESSING as a preface to this somewhat necessarily fragmentary treatise: "Every man has his own style, as he has his own nose, and it is neither polite nor Christian to rally an honest man about his nose however singular it may be. How can I help it that my style is not different? That there is no affectation in it I am certain."

Jas. McLean, M. D.

San Francisco, June, 1893.

THE
ORIGIN OF DESTRUCTIVE INSECT PLAGUES
—AND—
GENERAL ATMOSPHERIC TROUBLES.
HOW DISCOVERED.
REMEDY.
ETC.

THE EVOLUTION OF OBSCURE TRUTHS.

The African savage when he takes off his fur kaross is familiar with the electric sparks which come from it; but he views them with the eye of an ox, and thinks nothing more about them. The American Indian, in the dry climate of the United States, must constantly have seen these sparks, but never dreamed of making Franklin's experiment by bringing them down from a thunder-storm and showing that they were identical with lightning. The science of electricity and all scientific conceptions arise only when culture develops the human mind and compels it to give a rational account of the world in which man "lives and moves and has his being." One hundred and twenty years before the Christian era, Hero, a renowned mechanician of Alexandria, Egypt, discovered the power of steam when confined in a closed vessel, and he invented the "æolopile," a machine whose arms were propelled by the reaction of issuing jets of steam. It was only an ingenious toy, but it contained "the promise and potency" of the remarkable motor which twenty centuries later re-invented by Papin and Savery, finally received its finishing touches from the fertile brain and cunning hand of my illustrious countryman and townsman, James Watt, who left the steam engine the practically perfected machine of to-day, for whenever improvements have been made they have been on lines laid down by Watt. In like manner the illimitable store house of nature—the fountain of all beneficent ideas—has been from time to time explored by the agency of simple "ingenious toys," etc. Sir Isaac Newton, for example, when playing as a little boy on the bank of a favorite stream was led to perceive the hitherto unnoticed, though immutable, law of attraction and repulsion by the agency of sundry little globules of water gambolling in detached particles as they were propelled from the adjacent bubbling brook; how that globules of equal proportions were repellant to each other, whilst the smaller or more negative were attracted to and absorbed by the larger or more positive. It should be needless in these enlightened times by any special reasonings to affirm that this now universally recognized law intimately applies to the whole of organic nature. Man, for instance, who is but a migratory tree or shrub becomes, from various preventable causes, mentally and physically enfeebled, and is in consequence, as are all manner of plants susceptible to attacks from

MINUTE FUNGACIOUS ORGANISMS.

Professor Carl von Naegeli, in his work on "The Minutest Fungacious Organisms in relation to Infectious Diseases and Sustenance of Health," declares that "the decompositions effected by the mould fungi may be decay or consumption. Under their influence, for instance, fruits putrify, or wood is converted into mould by a kind of slow combustion of organic substances. The decompositions to which the sprouting fungi or *saccharomyces* gives rise, are these of fermentation. By their agency sugar is converted into alcohol and carbonic acid. The infectious principles of septic diseases (that which promotes the putrifaction of organic bodies) manifest themselves through putridity, originated again by peculiar fungi, which may be the bearers of a separate putrid matter also. The atmosphere is the medium through the agency of which infectious germs are most generally disseminated after they have been reduced to a state of minute dust by desiccation." Other eminent scientists and numerous observing laymen are hourly verifying the above affirmation as they become more familiar with

THE CHEMISTRY OF CREATION.

Professor Ellis, F.L.S., in his standard work on the "Chemistry of Creation," (folio 162) states: "Insects, fish, lichens, infusorial animalcules, volcanic ashes, sand, earth, and many other substances are occasionally borne into the air by the action of rapidly revolving currents, and are dropped often at a great distance from the places whence they were snatched." And concerning our long pitiable ignorance regarding the composition and functions of the air we breathe, Professor Ellis declares (folio 180) "until the middle of the eighteenth century the opinion was very prevalent that the atmosphere formed one of the four elementary bodies; that it was in fact a simple, undecomposable gas. It was reserved for the talented Dr. Priestly to dispel this error. He discovered the existence of a new gas which formed one of the constituents of air. In this gas it was found that combustion took place with extraordinary intensity; even iron wire heated red-hot and plunged into it caught fire and burnt away. Other combustibles gave out showers of the most brilliant sparks and produced the most intense heat when placed in the jar containing it. A lighted taper having been blown out immediately re-kindled when put into it and blazed with much greater brilliancy than in the air. Another gas was also found to form a component of the air—namely, nitrogen. The former being oxygen. The writer proceeds to state that "animals were exhilarated when plunged into oxygen, and they were suffocated in nitrogen. "A never failing spring of oxygen exists," continues Prof. Ellis, "and its copious streams, by a nice adjustment, replace by far the greater part of the loss. In the green grass, in the leaves of unpretending herbs and in those of the clustering woods, we shall find are hid those springs of this precious ingredient, without which desolation and death might at no distant time gradually overwhelm the globe." Prof. Ellis further states (folio 238) that the carbonic acid poisons which destroy animal life and provide sustenance for disease germs, are furnished to the air by various processes of combustion, respiration, putrifaction, and from volcanic craters, etc., which constitute the true source of vegetable nutrition. The composition—when in a normal condition—being, Carbon . . . 27.27. Oxygen . . . 72.73; "Each

hundred parts of carbonic acid contains by weight $27\frac{1}{2}$ parts of carbon; if, therefore, we could remove the oxygen (which we have not a little done and still continue to do by our suicidal destruction of "clustering woods" all over the earth) "carbon is left." Yes, carbon, like the poor, "ye have always with you."

FOREST INFLUENCE IN GALLILEE.

"There was a time," declared an able writer in the *New York Herald* of July 12th, 1891, "when every acre of Gallilee not under pasturage was verdant with the foliage of trees. When the trees re-appear, as they might in a few years, Gallilee alone would be capable of maintaining an immense population in rich abundance." The above paragraph from an article on the probable return of the still scattered Jews to Palestine speaks volumes. Palestine, like all other parts of this earth, has been transformed into a barren destructive-insect and storm-breeding Sahara since the forest lungs were destroyed, and—deny it who may—the only possible remedy to restore the earth's atmospheric equilibrium there and elsewhere is to forthwith replant and properly protect our forests. On this momentous question I must now solicit the readers special attention.

THE ORDER OF CREATION.

The order of creation or evolution upon the globe shows clearly how very closely related every atom in and upon it is to each other. In each phase of being the manifestation of that period that then was was apparently independent of that which was to follow, but when that which was to follow made its appearance it found itself dependent upon everything which had preceded it or by which it was surrounded. Our dependence upon creatures in a lower stage of development admonished us to protect and nourish them in return—to "replenish the earth and subdue it." Surely, if words have any meaning at all, we cannot be blind to the obvious signification of the replenishing condition. What is replenish but to fill up again? If, according to the commonly received opinion among the churches, Adam and Eve were the first human beings placed upon the earth, it would be the height of absurdity to talk of them replenishing the globe by means of their offspring. You cannot fill again that which has never been full, but has always been empty before. If you set a savory dish and a clean plate before a guest you do not say to him, before he has touched the former, "Replenish your plate," but you may do so after he has filled it and eaten its contents. In that case we should be greatly surprised and vexed if, after satisfying his hunger, he should dash the plate to atoms on the floor and fling away the rest of the food out of the dish. Nevertheless, this is what we have all been doing for many centuries past, with respect to the earth, which was confided to our care to keep it and to dress it for each others unstinted happiness. Instead of replenishing it, instead of cultivating it in such a manner as that its fertility and productiveness should not only undergo no diminution at our hands, but should go on increasing from age to age, we have defaced, deformed and devastated it. We have not been faithful stewards and honest husbandmen, but wasters and spoilers. We have desolated what we should have rendered still more fruitful and beautiful. In the impressive words of the Roman historian, "We have made a solitude and have called it peace." We have created a desert and charged the consequences of our own malignity upon God. Instead of causing the wilder-

ness to blossom as the rose we have saturated the vineyards and orchards and harvest fields of some of the fairest portions of the globe with the red reign of ferocious warfare. We have felled the venerable forests, in whose green aisles myriads of winged choristers made blithest music from morn till noon, from noon till dewy eve; we have disrobed the mountains of their glorious atmospheric enriching foliage, and have transformed perennial springs into intermittent and terribly destructive torrents; we have exterminated whole species of quadrupeds of birds and fishes; we have introduced the utmost discord, derangement and disorder into the otherwise faultless harmony of nature; and we have torn from the bowels of the earth the precious metals which minister to our cupidity, and the minerals with which we decorate our persons in the spirit of the savage still surviving in us, leaving yawning carbon supplying shafts and caverns as pitfalls for all other comers. We have "smitten the earth with a curse," and that gentle, patient mother mourns and suffers by reason of the atrocious cruelty of her offspring, sprung from her womb and nourished every instant of our lives from her bosom, our crimes towards her are those of matricides. We never think for a single instant that if her bounty were suspended—if she were to cease to elaborate within her fruitful breasts the sustenance essential to the continuance of our vital functions, the whole of the human race would disappear and our globe would be as sterile as Sahara or the Polar ice, and "unless these days were shortened," some such a calamity would certainly occur, because never before in the history of the human race has the work of devastation proceeded with such frightful velocity and the consequent yearly increase of atmospheric troubles; never before has man been armed with such potent instruments of destruction; never before were these employed simultaneously in the five great divisions of the globe; never before had the restless spirit of "civilized" man and the various appliances by land and sea enabled him to penetrate into the heart of the African, the two American and the Australian continents, and to leave no island unpolluted by his defiling foot, no race of "savages" untainted by his deadly disorders. All the diseases with which the life upon and through the earth's surface teems, blight and murrain, plague, fire, flood, blizzard, earthquake and famine, all the unnatural disorders, confusion and turbulence of the elements, all the ravages attributable to draught and hurricane; all the contaminations of the atmosphere and the pollution of the streams and water-courses, are the work of the civilized races. We are reaping what we have sown, we are suffering the righteous penalties of our own misdeeds in earlier times. When we survey the melancholy ruins of cities that were once vast and populous, rising in dreary masses of shattered and unsightly masonry out of billowy hillocks of sand, in the midst of arid and sterile plains, and remember that these places were once surrounded by golden corn-fields and leafy groves, and gardens that were bright and fragrant with a tapestry of flowers and choicest of fruits encircled with umbrageous forests in which the deer browsed, and choirs of feathered songsters made music by day and night; and that noble rivers, which have entirely disappeared, wound their way in coils of glittering silver through grassy valleys, which afforded pasturage to countless herds of sheep and cattle, we might well shudder at the thought that the crime of having wrought this cruel transformation is chargeable, not upon a race which has passed away from or out of the globe, but upon *ourselves*. The generation is unchanged! The same evil and destructive minds, grown more evil and destructive by reason of

their maturity, are all here now, and they are repeating to-day in a much more vicious form the very acts of devastation which they performed in other parts one, two, three, four and five thousand years ago, when Jacob gathered his sons together in order that—instructed by God—he might tell them what should befall them "in the latter days." To what does any sane man imagine the Most High to refer to but the last incarnations of the twelve who were all gathered around Jesus 1800 years afterwards, and who are all in the flesh at this moment? For they had been with Him "from the beginning" of time, and will be so at the end.

"THAT WHICH HATH BEEN IS NOW."

Indeed the very identity of human actions in all ages, and in all countries should suffice to convince those who have any understanding that the same spirit of disobedience have been operating throughout. Once we ravaged and desolated a portion only of the surface of the globe; now we are making haste to ruin the whole. Look at what we have done by the wholesale denudation of forests all over the earth. Some of the great lakes of Europe and Asia are gradually drying up, because the loss by natural evaporation is no longer compensated for by the influx of tributary rivers; the volume of these being sensibly diminished by the destruction of woods in those regions in which they have their source. Thus, the level of the Caspian Sea, we learn, is 83 feet lower than that of the Sea of Azoff, and the surface of the Lake Aral is fast sinking. Twenty years ago it was shown that very large portions of the Ligurian province of Italy, *i. e.*, the Genoese territory, had been washed away or rendered incapable of cultivation in consequence of the felling of the woods. In Lombardy the demolition of the forests on the Appenines has led to the most disastrous results. The *sirocco* now prevails on the right bank of the Po, injuring the harvest, crops and vineyards; while the blasts of wind, which sweep across the country from the south and south-west, now assume the violence of hurricanes, and whole valleys are periodically visited with terrible inundations. In the district of Mugello all the mulberry trees have been destroyed with the exception of those which were indebted to neighboring buildings for a protection like that formerly afforded by the forests. North of the Alps we find the cultivation of the orange and many other fruits has had to be abandoned in certain situations on account of the late spring frosts, which were unknown until the mountain ranges had been stripped of their timber. Thirty years have sufficed to bring about these climatic disturbances in the French Department of Ardeche, as also in the plains of Alsace, where a much more genial temperature prevailed, as in the United States of America and Australia, before the neighboring forests were cut down. In Sweden it has been observed that the spring commences a fortnight later in these districts in which the woods had been demolished than it did in the last century.

France has suffered to an immense extent by the de-foresting process. In one department alone, that of La Brienne, 200,000 acres which were once covered with woods interspersed with pastures are now bare of timber, and have been converted into a dreary and malarious expanse of pools and marshes. The same thing has happened on a larger scale in La Sologne, where as much as 1,000,000 acres of land that were well wooded, well drained, and productive, are now barren and desolate. This deplorable state of things is explained by a fact familiar to every forester, namely, that, trees are instruments of drainage. Their roots often pierce