

as Cl in ICl_3 . There is the same confusion between dibasic and tetrabasic radicles, as in CO. Hence we infer that the distinction between even and odd-basic is altogether superior to that between monobasic and tribasic, dibasic and tetrabasic.

Now if a body can enter into double decomposition with hydrogen (that is, combine without condensation) it is obvious that it must be odd-basic; for in that case it will form a compound which being of two volumes cannot combine with another volume of H unless it combines with two volumes. If it does thus combine it will be tribasic, otherwise monobasic.

On the other hand, if a body cannot enter into double decomposition with the monobasic radicles, it must be even-basic; for in this case, since its volume after combination will be the same as before, there is no reason why it should not either combine with condensation with a new volume of the monobasic radicle (in which case it will be four or more basic) or else enter into double decomposition with it, in which case it will be dibasic. This explains why the dibasic radicles always lose their own volume in combining with the monobasic; why the tribasic lose twice their own volume, &c.

8. A radicle being a constituent in combination, it follows that its internal forces do not come to equilibrium of themselves, and this accounts for the fact that monobasic radicles cannot exist free. This fact is determined by reactions and not by vapor-density, for according to the present theory the volume fixes neither the atom nor the molecule but the *equivalent*, that is to say, the amount of matter containing a unit of chemical intensity. The dibasic radicles may exist in the free state because, since in combining they are condensed, it follows that there is some disturbance of their internal forces.

9. An odd-basic radicle being in itself out of equilibrium in this way, it follows that the addition of it to another radicle will change the basicity of that radicle from odd to even or from even to odd; while the addition of an even-basic radicle will have no such effect.

Cambridge, Mass., Dec. 1862.

ART. XIII.—*Exposition of the true nature of Pleurodyctium problematicum*; by CARL ROMINGER, M. D.

UNDER the above name I have long kept in my cabinet a specimen, collected at Kirchweiler in the Eifel mountains. After having identified it with the fossil described by Goldfuss, I laid it aside, and only recently, twenty years afterwards, when I happened to look over it again, the first glance convinced me that the *Pleurodyctium problematicum* is merely the cap of a *Tavo*.

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"The Place of Our Age in the History of Civilization."
1863

Oration delivered at the reunion of the
Cambridge High School Association, Thursday
evening, 12 November.

Extracts printed in Cambridge Chronicle,
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Burks, Bibliography.

EXTRACTS FROM AN ORATION.

BY CHARES S. PEIRCE.

Delivered at the Reunion of the
CAMBRIDGE HIGH SCHOOL ASSOCIATION,
THURSDAY EVENING, NOV. 12, 1863.

LADIES AND GENTLEMEN OF THE HIGH SCHOOL ASSOCIATION:--In attempting to address you, I feel keenly the disadvantage of never having made any matter of general interest a special study. I am, therefore, forced to select a topic on which I have scarcely a right to an original opinion--certainly not to urge my opinion as entitled to much credit. I beg you, then, to regard whatever I say on THE PLACE OF OUR AGE IN THE HISTORY OF CIVILIZATION, as such a suggestion as might be put forth in conversation, and nothing more.

By our age I mean the 17th, 18th, and 19th centuries. There are those who, dazzled by the steam-engine and the telegraph, regard the nineteenth century as something sui generis. But this I think is doing injustice to ourselves.

Bring Bacon or Newton here, and display to him the wonders our century has to show, and he will tell you, "All this is remarkable and deeply interesting, but it is not surprising. I knew," he will say, "that all this or something very like it must come at this time, for it is nothing more than the certain consequence of the principles laid down by me and my contemporaries for your guidance." Either of them will say this. But now let us turn from the Century to the Age, (reckoning from the settlement of Jamestown.) Let us bring the sublimest intellect that ever shone before, and what would Dante say? Let him trace the rise of constitutional government, see a down-trodden people steadily bend a haughty dynasty to obedience, give it laws and bring it to trial and execution, and finally reduce it to a convenient cipher; let him see the most enthralled people under the sun blow their rulers into a thousand pieces and establish such a terror that "all the kings of the earth, and the great men and the rich

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men and the chief captains and the mighty men and every bondman and every freeman hide themselves in the dens and in the rocks of the mountains;" let him see the human mind try its religion in a blazing fire, expose the falsity of its history, the impossibility of its miracles, the humanity of its revelations, until the very "heavens depart as a scroll when it is rolled together;" and then let him see the restless boundary of man's power extending over the outward world, see him dashing through time, conversing through immense distances, doing violence to the lightning, and living in such a fire of activity as less salamandrine generations could not have endured; and he who viewed Hell without dismay would fall to the earth quailing before the terrific might of intellect which God has scattered broadcast over this whole age. This century's doings taken apart are mere jugglery--clever feats--but this age is that in which "the sun becomes black as sackcloth of hair, and the moon becomes as blood, and the stars of heaven fall unto the earth even as a fig-tree casteth her untimely figs, when she is shaken of a mighty wind. I equally disagree with those who think we are living in the age of the reformation. I do so on the ground that there was nothing rationalistic in the tendency of that age. In our time, if we wish to found a new government, religion, or art, we begin at first principles, consider the philosophy of our object and follow it out. But the reformation, as its name implies, was an attempt to suppress abuses in existing institutions without doing away with the institutions themselves. In religion, they reformed the church, but still they had a church. In our times, new denominations cast aside the church, at least. In politics, they resisted the growing power of royalty, but only in favor of the ancient system. Even their great inventions, gun-powder, printing, and the compass were not the results of original research but were heard of in old books. The discovery of America, itself, was suggested by a study of the ancient geographers. The passion for antiquity was intense,--inconceivable to us, except by remembering that the age which had preceded them, that of the crusades, was far more magnificent than theirs, and that the Greeks were both in mind and manners most evidently their superiors.

Then there was another great difference between them and us: their attempts at emancipating the human mind either from mistake or insufficiency were always failures; their republics were swept away, the power of royalty was more firmly established than ever, their noblest arts perished, and the churches which they had set up gave no more room for freedom of thought than mother Rome herself. There was a stifled cry for liberty,--a blind groping for the light, backward instead of onward.

The Reformation was a struggle of humanity to regain its rightful master; in our day the aim is absolute liberty. We have Tracts for the Times in England, a strict Lutheran party in Germany, the Empire in France; but who will say that these are primary tendencies of the age? They are rather reactions against the extravagancies of the times. From the moment when the ball of human progress received its first impetus from the mighty hands of Descartes, of Bacon, and of Galileo,--we hear, as the very sound of the stroke, the decisive protest against any authority, however

venerable--against any arbiter of truth except our own reason. Descartes, is the father of modern metaphysics, and you know it was he who introduced the term "philosophic doubt;" he, first, declaring that a man should begin every investigation entirely without doubt; and he followed a completely independent train of thought, as though, before him, nobody had ever thought anything correctly. Bacon, also, respects no philosophers except certain Greeks whose works are lost; Aristotle he scouts at, and maintains that there has been no science before his time and that nothing has ever been discovered except by accident.

The human mind having been emancipated by these great sceptics, works of great originality were speedily produced, so that the same century saw the productions of Hobbes, Cudworth, Malebranche, Spinoza, Locke, Leibnitz, and Newton. The effect of these works was stupendous. Every question that the human mind had to ask seemed at once answered, and that too by works of such greatness of thought and power of logic, that the attention of every reasoning mind was engrossed by them. Their vastness, indeed, was overwhelming; so complete were they, so true, so profound, that, at first, they seemed to check originality. In the first half of the eighteenth century scarcely anything new seems to have been produced.

At last, however, the ball of progress was struck again. And by whom? By another, more powerful doubter, the immortal Hume. In his day, the philosophical world was divided between the doctrines of Leibnitz and Locke, the former of whom maintained the existence of innate ideas while the latter rejected them. Hume, accepting the latter doctrine, which was prevalent in England, asked "How do we know that every change has a cause?" He demonstrated by invincible logic, that upon Locke's system, it was impossible to prove this, and that it ought not to be admitted as a principle at all. Of course, the doctrine of a first cause and the very idea of miracles, vanish with the notion of causality.

Immanuel Kant was reposing in a firm belief in the metaphysics of Leibnitz as theologized by Wolff when he first read the book of Hume. How many scholastics, nay how many theologians of our own day would have done otherwise than say "Behold the fruit of our opponent's system of philosophy!" This mean, degraded spirit, which is eager to answer an opponent and still remain the slave of error, was far from being Kant's. He set about asking his own philosophy the question that Hume had asked of Locke's. "We say that this and the other are innate ideas," he said; "but how do we know that our innate ideas are true?"

The book in which he embodied the discussion of this question is, perhaps, the greatest work of the human intellect. All later philosophies are to be classified according to the ideas contained in it, for it is all the direct result of this production. And in these later philosophies, whether we consider their profundity or their number, our age ranges far above all others put together. This wonderful fecundity of thought, I say, is the direct result of Kant's Kritik; and it is to be explained by the fact that Kant presented a more insoluble doubt than all the rest, and one which has not been answered to this day, for while he showed that our

innate ideas of space, time, quantity, reality, cause, possibility, and so on are true, he found himself utterly unable to do this respecting the ideas of Immortality, Freedom, and God. Accordingly, all metaphysicians since his time have been endeavoring to remove this difficulty, but not altogether with success. Hegel's system seemed, at first, satisfactory, but its further development resulted in Strauss' Life of Jesus, against which the human soul, the datum upon which he proceeded, itself cried out; the sense of mankind, which he had elevated into a God, itself repudiated the claim. We thus see, however, that all the progress we have made in philosophy, that is all that has been made since the Greeks, is the result of that methodical scepticism which is the first element of human freedom.

I need not repeat the political history of the last 250 years, to prove the predominance of the spirit of liberty in that sphere. You will find an ever-increasing irreverence toward rulers, from the days of Hampden to ours, when some of the more advanced spirits look forward to the time when there shall be no government. If, then, all the glory of our age has sprung from a spirit of Scepticism and Irreverence, it is easy to say where its faults are to be found.

Modern progress having been detached from its ancient mother by the dark ages, that fearful parturition, has since now lived a self-sustaining life. Its growth, its outline, its strength are all its own; influenced to some degree, by its parent, but only through an exterior medium. The only cord which ever bound them, and which belonged to either, is Christianity. Since the beginning of Christianity the growth of civilization has had six stages. The 1st is the Age of the Rise of Christianity, the 2d is the age of the Migrations of the Barbarian, the 3d is the Age of the Establishment of Modern Nations, the 4th is the age of the crusades, the 5th is the age of the Reformation, and the 6th is our own age, or as we are fond of calling it, the Age of Reason. Now, briefly to indicate these periods, we may take them of equal length. Make them, 320 or 325 years apiece, and it will suffice for my purpose. Let us see what each of these ages has done for civilization.

The age of the Rise of Christianity presents no other event which has had any influence upon the destinies of mankind. The whole era must be interpreted according to that central fact. For what do we see? A complete centralization of power in the Emperor, so that subjects had no rights whatever. Here is a very remarkable thing, that Rome, so distinguished for her ethical ideas, should have lost sight of the reciprocity of right and duty, altogether. Who could fail to see that this corruption of theory was to be accounted for by the corruption of practice? Vice had gone to greater lengths and spread more widely than ever before or since. I cannot with decency describe a state of affairs in which virtue in any station was certain ruin. The extraordinary virtue displayed by the early Christians in the persecutions throughout this period was in wonderful contrast to the vices of the heathen; it gained them positions of trust and honor; even in that age, and indicated some divine influence working within them. A philosophical, candid and humane observer, therefore, even in that age, must I think have been convinced that Christianity was the hope of the

world. The church was defined in this age. The conception of the messianic kingdom had been already indicated; this age saw its relations established to those outward institutions, doctrines, and works in which it embodies itself. It is that "beginning" of the church which has generally been made its standard in later ages.

The age of the migrations of the barbarians witnessed the entire sweeping away of the vestiges of ancient civilization. The new people were without history, without Pagan prejudice and were full of the spirit of freedom. The Roman Empire and its modes of thought melted at their breath. To the church which appeared in those troublous times as the sole preserver of the arts of peace as well as of spiritual health, they bowed and quickly knelt. This institution, while the civil confusion was becoming greater, consolidated its internal government more and more, spread its external influence wider and wider through all the affairs of life, and in the night of ignorance which ensued, the only intellectual movement of Europe was that of the church.

The next age is one of establishment. The new languages grew up. The feudal system arose from small beginnings until it formed the one law of Europe. The Empire of Charlemagne was established and soon separated into the three nations of France, Germany, and Italy; while all the other nations of Modern Europe received their separate governments. Even learning began to glimmer through the Pyrenees, the universities of Paris and Oxford were founded, and philosophy began to take root. The condition of the church was humiliating, her spiritual power was vastly increased, the temporal power began to arise, and at first the promise was that the head of the church should be the head of Christendom. And had the clergy kept the high spiritual post that naturally belonged to them, it might have been so. Unfortunately, they began to love their power, and as a consequence they became ambitious. Their ambition generated corruption; corruption, sneaking vice, intrigue, rebellion, and ruin. John the XII, the Pope, was deposed by Otho, the Emperor, for murder, incest, and plots against the State; and a few years later we witness the now familiar spectacle of a Pope kept in his place by the arms of an Emperor. What a lesson is this of obedience to the conditions which God has imposed upon the church!

The next age is that of the Crusades. For four hundred years, God had been preparing another civilization, with which that of Christianity might be compared; namely, that of the Mahomedans. Christianity now presented its most imposing aspect. The magnificence of Rome finds its parallel in that of Solomon; Scolasticism, the only thoroughly Christian form of philosophy, was at its height; a grand Christian architecture was flourishing; and the whole civilization of Europe seemed to have reference to the church, while that of Islam was thoroughly Mahomedan. And now--wonder of wonders!--the whole of Christendom, men, women, and children, swarmed forth to Palestine, passing through Rome on their way, in order to compare the two civilizations. Upon the result of this comparison on the mind of Europe, I need not dwell. Modern times, modern breadth of thought, and modern freedom from ecclesiastical superstition followed the crusades, in place of the

mediaeval narrowness and fondness for ignorance which had preceded them. The great idea which emerged was that the church is a great and good thing, but that it should not be allowed to override all the other means and appliances of civilization.

We have now come down to the age of the Reformation, the character of which I need not sketch. It seems to me apparent that all this civilization is the work of Christianity. If it is not so clear respecting the progress of our own age, it is because we have not seen the termination of it, and do not understand the philosophy of it.

* * * * *

Christianity is not a doctrine, or possible law; it is an actual law--a kingdom. And a kingdom over what? "All things shall be put under his feet." What then does it not include? Do you assert that liberty is of any value? "His service is perfect freedom." We are accustomed to say that these phrases are hyperbolical. But that is an unwarrantable assumption--a mere subterfuge to reconcile the statement with the fact. The Jews were given to understand by every token that language or the miraculous course of their history could convey, that they were to be taken care of and saved as a nation. I say that no human being however spiritually minded could have read those Jewish prophecies and have got any other idea from them than that the Messiah there promised them was a Prince, seated upon the throne of his fathers, conducting the affairs of the nation, and leading them on to national glory as much as to individual immortality. When the promise was extended to the Gentiles, it meant the same thing for them. If therefore we are Christians it seems to me we must believe that Christ is now directing the course of history and presiding over the destinies of kings, and that there is no branch of the public weal which does not come within the bounds of his realm. And civilization is nothing but Christianity on the grand scale.

In a mimic history--a well-constructed play--the development of the plot has a regular course.

It begins with a prologue, or semi-lyrical speech of one of the characters, displaying the general idea of the play, putting the audience in the right state of mind. This accomplished, the drama proper begins. First, the materials and elements of the plot are displayed, the situation, characters, etcetera in which the idea is to be embodied. Next, the idea is presented, at work among these elements. The plot is actualized. Next, it is necessary that we should see the causes, the means, the conditions by virtue of which the plot is actualized. Otherwise, we could see no development in the play. Fourth, comes the display of the passion in full operation, neither over nor under-drawn, but well marked, definite, and human. This is the middle of the play. Next, fifthly, if the play is an instructive one relatively to the working of the idea it embodies, there must be a counterplot, or plurality of plots, all having reference to the same conception. Thus, in Othello, after the treachery of Iago

has been displayed fully towards Othello and his jealousy depicted, we have some scenes in which the action of the same double-dealing is shown towards Cassio, Roderigo and Bianca. Sixthly, comes the grand climax showing the idea, no longer working in the heart and mind merely, but in material effects; and then comes the conclusion, in which the whole plot is wound up, and the whole ends with an address to the audience, as it had begun, with a soliloquy.

Now let us see if Christianity, the plot of History, does not follow determinate laws in its development, so that from a consideration of them we can gather where we are and whither we are tending.

Religion ought not to be regarded either as a subjective or an objective phenomenon. That is to say, it is neither something within us nor yet altogether without us--but bears rather a third relation to us, namely, that of existing in our communion with another being. Nevertheless, religion may be revealed in either of the three ways--by an inward self-development, or by seeing it about us, or by a personal communication from the Most High. An example of revealed religion in the first way is natural religion. A man looks upon nature, sees its sublimity and beauty and his spirit gradually rises to the idea of a God. He does not see the Divinity, nor does nature prove to him the existence of that Being, but it does excite his mind and his imagination until the idea becomes rooted in his heart. In the same way, the continual change and movement in nature, suggest the idea of omnipresence. And finally, by the events of his own life, he becomes persuaded of the relation of that Being with his own soul. Such a religion, where all is hinted at, nought revealed, is natural religion. Of much the same character is the religion of the Jews. Though they had miracles, so it appeared did the Egyptians and Canaanites; so that these miracles did not prove their religion. Nowhere did they actually see, for that is not possible except to an already developed spiritual insight, the intimate union of man with God. Their wonderful history led them to believe it, and their prophets told them of it; but all this only amounted to suggestion. And by these suggestions it was impressed.

This inward or subjective revelation of religion, in our dispensation, cannot be said to exist in its pure form. For, in consequence of our being in a christian community, we no sooner get to recognize religion, than we learn from people of higher attainment, as out of a book.

Religion through immediate revelation is what we hope for in the millennium. It certainly cannot be said to exist now, for though there have been revelations the cases have been very few, and the mass of christians receive only sufficient grace to understand a portion of prophecy--Christianity is objectively impressed, being wholly inculcated by our great example. We learn it by contemplating it in its full manifestation in Him, and in the lesser lights of the church. In order therefore to understand the history of christianity or civilization, we must seek to know the successive conditions of the development of religion in man by seeing it in an example.

Every object is obliged to appear under a certain set of forms. The most familiar exemplification of these is found in a proposition.

Every statement may be regarded as an object, that is it is something outside of us which we can know, and the grammatical analysis of a statement exemplifies I say more familiarly than anything else the laws of objective presentations. Hence, in order to trace the laws of the objective presentation of religion, I shall try to embody it in a proposition. The first condition of a statement is that it shall state something,--that it shall have a predicate. But this again implies a whole series of conditions previously to the statement of the proposition, which shall enable you to comprehend the notion which I wish to convey as well as the language in which I convey it. Before a man can read a book, he must understand the meaning of terms, that is, he must already have the elements of the thought which the book propounds. In the same way, before a man can hear the voice of God or even comprehend an example of religion he must have a notion of what religion is, and that implies that he must previously have had an inward revelation of religion. In compliance with this condition, both heathen and Jews, before the birth of Christ, had attained to the idea of an intimate union of humanity with Deity, such that they should be brought (?) into (?) ordained harmony, in which the creature should be so completely in unison with the creator that all his motions should be brought under law, as much as inanimate natures are, and yet that man should in this very subjection and passivity find his highest freedom, activity, and rounded completion. This, then, is the predicate of the formula by which I propose to express Christianity--and I will call it the Kingdom of heaven. The Jews had besides this, a complicated ritual delivered to them, a system of purification which as the epistle to the Hebrews argues never could effect anything, and a temple and feasts which were perpetually calling their attention to vacant forms. All this was symbolic. It was the grammar of christianity without its substance. It was the fulfillment of that other condition, that a man to understand what I tell him must have not only the comprehension of ideas but an acquaintance with the language in which they are to be put.

After the inward revelation, comes the objective revelation, and the latter must itself be the culmination of the former, for bearing as it must a higher message it must itself act suggestively in order that its meaning may be perceived. This culminating point will be the phenomenon of perfection in such a form that man can see and know it; that is, it must be perfection in human form. The first condition, therefore, the enunciation of the predicate, was fulfilled at the birth of Christ.

(The orator here proceeded to analyze the formula "The Church is the Kingdom of Heaven;" and endeavored to show what part each age had played in its enunciation.)

This division of history into ages suggests another reflection. That there is an analogy between the course of ancient Grecian and of modern history. If we had our migration of peoples, so had they theirs, 2000 years before. Corresponding to our age

of chivalry, they had the Argonautic expeditions and Trojan war. Our Reformation is very imperfectly represented by a reform of another kind, that of the governments of the Grecian States. But these ages have another curious coincidence, it is that one dawns in Homer, the other in Dante. But doubtful as the analogy of these last ages is, that between the Greece of two thousand years ago and our own times, is truly remarkable. The resemblance, indeed, is so complete as to tempt one to follow it into detail.

The most striking tendency of our age is our materialistic tendency. We see it in the development of the material arts and the material sciences; in the desire to see all our theories, philosophical or moral, exemplified in the material world, and the tendency to value the system only for the practice. This tendency often seems to be opposed to another great movement of our age, the idealistic movement. The idealist regards abstractions as having a real existence.--Hence, he places as much value on them as on things. Moreover, by his wide and deep study of the human mind he has proved that the knowledge of things can only be attained by the knowledge of ideas. This truth is very distasteful to the materialist. His object being the ideas contained in things, there is nothing that he would more carefully eradicate than any admixture of ideas from our own minds; so that it seems to him like overturning natural science altogether to tell him that all truth is attained by such an admixture. He thinks at least that nothing more than common sense should be admitted from the mind. This amounts to admitting the loose ideas of the untrained intellect into his science, but to refuse admission to such as have been exercised, strengthened and developed. He retorts that the conjunction of speculation with science has constantly led to error. Be it so; but then it is only by means of idealism that truth is possible in science. Human learning must fail somewhere. Materialism fails on the side of incompleteness. Idealism always presents a systematic totality, but it must always have some vagueness and thus lead to error.--Materialism is destitute of a philosophy. Thus it is necessarily one-sided. It misunderstands its relations to idealism; it misunderstands the nature of its own logic. But if materialism without idealism is blind, idealism without materialism is void. Look through the wonderful philosophies of this age and you will find in every one of them evidences that their novel conceptions have been to a very large extent suggested by physical sciences. In one point of view indeed, pure a priori reasoning is a misnomer; it is as much as to say analysis with nothing to analyze? Analysis of what? I ask. Of those ideas which no man is without. Of common sense. But why common sense? Metaphysics stands in need of all the phases of thought of that uncommon sense which results from the physical sciences in order to comprehend perfectly the conceptions of the mind. So much so that I think that a due recognition of the obligations of the idealists to natural science will show that even their claims will receive a just award if we interpret the whole greatness of our age according to this materialistic tendency.

See too, what truth, and what peculiarly christian truth there is in this tendency. There are two fields of human learning, the

science of outward things and the science of the mind itself. Now materialism opposes itself to this latter; not as an ornamental study, a regulative study, or an educative study, but as having any value or truth in itself. It is the assertion that man was not made to turn his eye inward, was not made for himself alone, but for the sake of what he should do in the outward world. And I will now ask how christianity will appear if we look upon it from a materialistic point of view? There is one aspect which it certainly will not present; there will be no German refining away of Christ into a class or into self. It will be inclined to slight the subtleties of dogmas and look upon dogmas in a common sense way. True religion, it will think, consists in more than a mere dogma, in visiting the fatherless and the widows and in keeping ourselves unspotted from the world. It will say that christianity reaches beyond even that, reaches beyond the good conscience, beyond the individual life; must transfuse itself through all human law--through the social organization, the nation, the relationships of the peoples and the races. It will demand that not only where man's determinate action goes on, but even where he is the mere tool of providence and in the realm of inanimate nature Christ's kingdom shall be seen.

Our age is brilliant; and apparently confident of its own eternity. But is it never to end, as the Greek age merged in the Roman? The human mind cannot go on eon after eon with always the same characteristics, for such monotony is too poor for it. Is our age never to end? Are we then to go on forever toying with electricity and steam, whether in the laboratory or in business, and never use these means in the broad field of humanity and social destiny? I seem, perhaps, to sneer at what you respect. And I confess we have utilized a little surplus energy in the business of philanthropy on our triumphant road to wooing things. But I agree with the man who says of this age that

The horseman serves the horse;
The neatherd serves the neat,
The merchant serves the purse;
The eater serves the meat.
'Tis the day of the chattel; web to weave and corn
to grind.
Things are in the saddle, and ride mankind.

The fulcrum has yet to be found that shall enable the lever of love to move the world. Is our age never to end? As man cannot do two things at once, so mankind cannot do two things at once. Now Lord Bacon, our great master, has said, that the end of science is the glory of God, and the use of man. If then, this is so, action is higher than reason, for it is its purpose; and to say that it is not, is the essence of selfishness and atheism. So then our age shall end; and, indeed, the question is not so much why should it not, as why should it continue. What sufficient motive is there for man, a being in whom the natural impulse is--first to sensation, then reasoning, then imagination,

doing for the last 250 years? It is unnatural, and cannot last. Man must go on to use these powers and energies that have been given him, in order that he may impress nature with his own intellect, converse and not merely listen.

First there was the egotistical stage when man arbitrarily imagined perfection, now is the idistical stage when he observes it. Hereafter must be the more glorious tuisical stage when he shall be in communion with her. And this is exactly what, step by step, we are coming to. For if you will recur a moment to my dry analysis of the formula of Christianity, you will perceive that the conclusions of the preceeding ages have answered three kinds of questions concerning that proposition. Two were metaphysical, what is its predicate and what is its subject? two were dynamical; is it hypothetical or actual, and is it categorical or conditional? two were mathematical; what is its quality, and what is its quantity?

And now there are questions of but one kind more that remain to be asked, and they are physical. And they are two. The first is, is christianity a fact of consciousness merely, or one of the external world? And this shall be answered by the conclusion of our own age. The second is, is this predicate true to the understanding merely, or also to the sense? And this, if we may look forward so far, will be answered by Christ's coming to rule his kingdom in person. And when that occurs, religion will no longer be presented objectively, but we shall receive it by direct communication with him.

When the conclusion of our age comes, and scepticism and materialism have done their perfect work, we shall have a far greater faith than ever before. For then man will see God's wisdom and mercy, not only in every event of his own life, but in that of the gorilla, the lion, the fish, the polyp, the tree, the crystal, the grain of dust, the atom. He will see that each one of these has an inward existence of its own, for which God loves it, and that He has given to it a nature of endless perfectibility. He will see the folly of saying that nature was created for his use.--He will see that God has no other creation than his children. So the poet in our days,--and the true poet is the true prophet--personifies everything, not rhetorically but in his own feeling.--He tells us that he feels an affinity for nature, and loves the stone or the drop of water. But the time is coming when there shall be no more poetry, for that which was poetically divined shall be scientifically known. It is true that the progress of science may die away, but then its essence will have been extracted. This cessation itself will give us time to see that cosmos, that æsthetic view of science which Humboldt prematurely conceived. Physics will have made us familiar with the body of all things, and the unity of the body of all; natural history will have shown us the soul of all things in their infinite and amiable idiosyncrasies. Philosophy will have taught us that it is this all which constitutes the church. Ah! what a heavenly harmony will that be when all the sciences, one as viol, another as flute, another as trump, shall peal forth in that majestic symphony of which the noble organ of astronomy forever sounds the theme.

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