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#### CONTENTS

Wisdom from the Past  
HIS COMPASSIONS FAIL NOT..... (John Keble)

Hues of the rich unfolding morn,  
That, ere the glorious sun be born,  
By some soft touch invisible  
Around his path are taught to swell; -

John Keble was Professor of Poetry at Oxford. The Christian Year, from which this excerpt is taken, was published in 1827.

Humour from the Web  
THE NEW MATHEMATICS

NEWS BRIEFS..... (From the Internet)



Their tribute to the genial heaven; -

Why waste your treasures of delight  
Upon our thankless, joyless sight;  
Who day by day to sin awake,  
Seldom of Heaven and you partake?

Oh, timely happy, timely wise,  
Hearts that with rising morn arise!  
Eyes that the beam celestial view,  
Which evermore makes all things new!

New every morning is the love  
Our wakening and uprising prove;  
Through sleep and darkness safely brought,  
Restored to life, and power, and thought.

New mercies, each returning day,  
Hover around us while we pray;  
New perils past, new sins forgiven,  
New thoughts of God, new hopes of Heaven.

If on our daily course our mind  
Be set to hallow all we find,  
New treasures still, of countless price,  
God will provide for sacrifice.

Old friends, old scenes will lovelier be,  
As more of Heaven in each we see:  
Some softening gleam of love and prayer  
Shall dawn on every cross and care.

As for some dear familiar strain  
Untired we ask, and ask again,  
Ever, in its melodious store,  
Finding a spell unheard before;

Such is the bliss of souls serene,  
When they have sworn, and stedfast mean,  
Counting the cost, in all t' espy  
Their God, in all themselves deny.

Oh, could we learn that sacrifice,  
What lights would all around us rise!  
How would our hearts with wisdom talk  
Along Life's dullest, dreariest walk!

We need not bid, for cloistered cell,  
Our neighbour and our work farewell,  
Nor strive to wind ourselves too high  
For sinful man beneath the sky:

The trivial round, the common task,  
Would furnish all we ought to ask;  
Room to deny ourselves; a road  
To bring us daily nearer God.

Seek we no more; content with these,  
Let present Rapture, Comfort, Ease,  
As Heaven shall bid them, come and go:-  
The secret this of Rest below.

Only, O Lord, in Thy dear love  
Fit us for perfect Rest above;  
And help us, this and every day,  
To live more nearly as we pray.

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Humour from the web  
THE NEW MATHEMATICS

Teaching Mathematics in 1950: A logger sells a truckload of lumber for R100. His cost of production is  $\frac{4}{5}$  of the price. What is his profit?

Teaching Mathematics in 1960: A logger sells a truckload of lumber for R100. His cost of production is  $\frac{4}{5}$  of the price, or R80. What is his profit?

Teaching Mathematics in 1970: A logger exchanges a set "L" of lumber for a set "M" of money. The cardinality of set "M" is 100. Each element is worth one dollar. Make 100 dots representing the elements of the set "M". The set "C", the cost of production, contains 20 fewer points than set "M." Represent the set "C" as a subset of set "M" and answer the following question: What is the cardinality of the set "P" for profits?

Teaching Mathematics in 1980: A logger sells a truckload of lumber for R100. Her cost of production is R80 and her profit is R20. Your assignment: Underline the number 20.

Teaching Mathematics in 1990: By cutting down beautiful forest trees, the logger makes R20. What do you think of this way of making a living? How did the forest birds and squirrels feel as the logger cut down the trees? There are no wrong answers.

Teaching Mathematics in 2000: A company out-sources all of its loggers. The firm saves on benefits, and when demand for its product is down, the logging work force can easily be cut back. The average logger employed by the company earned R50 000, had three weeks vacation, a nice retirement plan and medical insurance. The contracted logger charges R30 an hour. Was outsourcing a good move?

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NEWS BRIEFS ..... (From the Internet)

\* Cassini-Huygens spacecraft makes a fly-by of Titan and Tethys

These moons of Saturn were visited this week by the Cassini-Huygens spacecraft. Travelling at six kilometers per second and at only 1200 kilometers above the surface of Titan this is the closest ever approach. Scientists are feverishly checking their atmospheric models of the moon in preparation for release of a probe on Christmas day this year. They want to examine the surface of the moon, atmospheric properties and its interaction with the mother planet's magnetosphere. The spacecraft visit of Tethys was further (at 246 000 km) and faster (at 13.8 k/sec). Tethys is a ball of solid ice only 1000 km in diameter.

\* Investigators finger insects as culprits in the evolution of new human infectious diseases.

A bioluminescent bacterium is enlightening researchers over the evolution of newly emerging infectious diseases. *Photorhabdus\_ asymbiotica\_* has been identified as the cause of pustulant sores in human sufferers. It turns out that it is closely related to the renowned *Photorhabdus\_ luminescens\_* which kills insects and leaves their bodies glowing. Scientists suspect that that the latter

is a recent ancestor of the former. Genetic studies have also found close similarities between the plague-causing bacterium Yersinia\_pestis and its ancestor Yersinia\_pseudotuberculosis that causes disease in insects. Y. pestis could have originated a mere 1 500 years ago. Considering that insects and humans have deep similarities in their immune system, live in close proximity, and insects are so numerous and diverse, scientists believe that insects are a vast reservoir of disease. While this disease is currently harmless to humans, that can change with a little bit of evolution.

\* Has the arrow of time been solved?

According to the fundamental laws of physics nothing should happen at all. There should be no arrow of time because the laws do not distinguish between the past and the future. Now physicists Sean Carroll and Jennifer Chen from the University of Chicago think they may have an answer. Conventional wisdom is that entropy, a measure of the disorder in the universe, increases with time up to a limit. Carroll and Chen prompted by the 1998 discovery of the existence of the mysterious "dark energy" turn the theory on its head and suggest instead that entropy is infinite. As a result the universe never reaches equilibrium, something always happens and there is an arrow of time. Their theory also makes for a more probable trigger of the process of expansion at the beginning of the universe.

\* Carl Gauss may have been even more amazing

An oft-told anecdote about the mathematical prodigy has it that when he was just 10 his teacher gave the class the exercise of summing the integers from 1 to 100. Carl at solved the problem virtually immediately. How did he do it? He arranged the numbers in 50 pairs (1 + 100, 2+ 99, 3+ 98...) Each pair sums to 101. The solution is the product of 50 and 101 or 5050. While the rest of the class sweated unsuccessfully for an hour he exchanged glances with the teacher who presumed that Carl was just another dunce. Apparently Gauss loved to tell the story to the end of his days. There are many versions of the anecdote with varying amounts of detail. E. T. Bell in his Men of Mathematics suggests that the actual problem may have been more difficult such as "sum the following sequence up to 200 terms: 41153 + 41275 + 41397...". He says this would help explain why the rest of the class battled so long with it.

\* Lucy was not the first to go upright

A recent fossil find suggests that bipedalism could predate Lucy by as much as 3 million years. The fossil, a piece of the left femur was found in Kenya and is dated at 6 million years. The creature would have been the size of a chimpanzee. The giveaway feature according to researchers is that the neck connecting the ball joint to the shaft is thicker at the bottom than at the top at a ratio of 3 to 1. In gorillas and chimps it is 1 to 1. In humans it is 4 to 1. This makes the fossil much closer to humans and pretty much bipedal.

\* Millstones and ovens go way back

Archaeologists have discovered a millstone in a 23 000 year old hut on the shore of the Sea of Galilee. The millstone contained starch granules exclusively from wheat and barley. Nearby was an oven of blackened stones covered with ash and barley grains. The site has been excellently preserved because it is usually covered by several meters of water. The finding shows that cereal production predates agriculture by as much as 10 000 years and that it was hunter-gatherers who made the first steps towards advanced agricultural society .

\* Fossil sea reptile with enormous neck found in China

Paleontologist Chun Li discovered parts of the reptile on separate occasions in

southeast China. The fossils are dated at 230 million years. Lu has named the creature Dinocephalosaurus\_orientalis, which means "lizard with terrible head from the Orient." At two meters its neck and head together were about twice as long as the trunk and it has teeth of up to 3 cm. With short and broad limbs it would have been superbly adapted for marine life. With its small head and long slender neck scientists suspect that its feeding strategy could have been to sneak up and lunge for its fish prey before the bulk of its trunk became visible in the murky in coastal waters.

\* Meteorite from Mars reveals secrets about planet's past

Scientists from Yale University have developed a technique to precisely date the timing of a meteorite impact on Mars and the eventually transfer of Martian material to earth. They assayed the radioactive decay of uranium and thorium to helium from the meteorite to find that it has been in space for 3 million years. The technique promises to allow scientists to better understand planet evolution and timing of impacts and interplanetary transfer.

\* Bacteria decontaminate groundwater

Arsenic is a medically serious contaminant of groundwater causing a range of illnesses from cancer through to hypertension and cardiovascular disease. Researchers have found that bacteria can help under high sulfate conditions. Sulfate-reducing bacteria produce sulfide that reacts with arsenic to leave it in an insoluble and hence harmless form. Sulfate is easy to assay and sulfate salts are cheap and can easily permeate groundwater.

\* How to improve brain function: drink tea, avoid fat and have a long index finger

In separate studies scientists have associated these factors with better brain function. Both green and black tea inhibit the activity of the enzyme acetylcholinesterase the overactivity of which can lead to Alzheimer's disease and loss of memory. Coffee has no effect. Rats and mice raised on a high-fat diet struggle to find their way around mazes and to recall solutions to problems they have already encountered. Male scientists have been found to have long index fingers. This is a marker of high oestrogen levels leading to strong development of the right hemisphere of the brain that controls spatial and analytic skills. Next thing someone will try to perform an IQ test on some coffee-drinking, index-finger amputees that frequent McDonalds - just to clinch it!

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Spot the Fallacy  
TV THEOLOGY OR WHAT IS THE FLAVOUR OF THE MOMENT?  
Mike L Anderson

I watched the film 'The Conspiracy Theory' featuring Mel Gibson and Julia Roberts some time ago. Much of the film is about Jerry Fletcher trying to persuade Justice Department agent, Alice Sutton that people are after him. Sutton is intelligent, skeptical and easily startled. Fletcher is unstable and his conspiracy theory is as wild as the African Savanna. So, it is no wonder that Sutton struggles to believe him. The villain, a Dr. Jonas, is head of a shadowy Secret Service type of organisation and is a smooth-talking and compelling liar. As the story unfolds, however, Sutton becomes aware of several attempts on Fletcher's life, several murders of Fletcher's acquaintances and many inconsistencies between Fletcher and Jonas's account.

Problem. In the closing chapter, while in the company of Fletcher she sends a cell message to Jonas who has all the technical support to triangulate their position. How long does it take for this smart but nervous heroine to click? "Gibson is the goody. Jonas is the baddy. Baddy has a history of wiping out people. Baddy now knows where we are. We are in danger. Better get out of here." It seems like an eternity. They hug and kiss with the baddy hot on their trail. She tells Sutton that she believes him - replete with dramatic pauses, tear-filled eyes and impassioned voice. It takes the sound of choppers overhead to finally trigger evasive action.

Why does it take so long? Does she suddenly have a reduced sense of self-preservation? Is she mentally challenged after all? Perhaps. But perhaps there is a deeper reason that concerns profits. The producer has to sell the film. He has to bring in romance and suspense. So what if a character acts out of character? It is the climactic moment that is all-important. If he has to sacrifice congruity for suspense - well, so be it.

Let me suggest that this mania-for-the-moment mindset has affected popular theology. I attended a mission strategy meeting in which an individual suggested that it is important to develop mission plans that only God can accomplish. There were nods all round. I suspect that we privately castigated ourselves for our lack of faith and vision and vowed to stress the power of God in future.

A mere week later the same individual can say that mission strategies must be "do-able." Again there was apparent audience approval. I suspect that we all privately resolved to stress common sense in the future. The glaring contradiction seemingly went unnoticed. It was not important. The earlier statement met the need for that particular moment - to examine our lack of faith. The later statement met a different need - to examine our lack of common-sense. What we have here are theologies for the moment.

Contradiction is the most basic of all mistakes of reason. All of thinking is based on what is known as the Law of Non-contradiction. Stated technically, it says "A cannot be both A and non-A at the same time and in the same relationship" (1). One cannot make a statement and then deny that statement. It is either raining outside here at the moment or it is not. How do we prove the Law of Non-contradiction? We cannot. It is an axiom upon which the rest of logic hangs. Indeed one cannot speak without tacitly accepting the Law of Non-contradiction. When someone says it is raining outside we take him to mean that he is denying the opposite. If he does not deny the opposite, he is not actually saying anything. He is speaking nonsense.

The poet, Walt Whitman, once said "Do I contradict myself? Very well then, I contradict myself. (I am large, I contain multitudes)" (2). But, if he denies the Law of Non-contradiction he cannot even say this. To say "I contradict myself" implies that the statement "I do not contradict myself" is false. But if he rejects the Law of Non-contradiction then "I contradict myself" does not mean that "I do not contradict myself" is false. Nothing has actually been asserted and anything goes.

Anything goes. That is the trouble with contradiction and with mania-for-the-moment theology. It is pre-occupied with the moment rather than an overall consistency with God's Word. And it can leave Christians under the pile for quite opposite reasons and alternating between extremes. At one moment we get down on ourselves for not leaving things to God and trying to do mission ourselves. The next moment we get down on ourselves for leaving things to God and not getting on with mission.

What we need is a coherent and integrated response to mission where we are clear about God's role and about our role in it. J. I. Packer says it well, "God's sovereignty and man's responsibility are taught us side by side in the same

Bible; sometimes, indeed, in the same text. Both are thus guaranteed to us by the same divine authority; both therefore, are true. It follows that they must be held together, and not played off against each other (3)."

God is perfectly capable of fulfilling His role and we should not presume to help Him. Trying to take responsibility for His part is a recipe for frustration. He is the One that draws people to Himself. Mission plans that aim at particular conversion percentages are very presumptive. Our role is to proclaim the Gospel faithfully and accurately and wisely and to leave the rest to Him.

#### Notes

1. Hoover, A.J. (1982) \_Don't you believe it\_. Moody Press, Chicago, p. 15.
2. Quoted in *ibid*, p. 15.
3. Packer, J.I. (1976) \_Evangelism and the Sovereignty of God\_. Inter-Varsity Press, Leceister, England, pp. 22-23.

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\* Feature article \*

A SCIENTIST'S REPLY TO MR. BRYAN

By Edward Grant Conklin

The last few years have witnessed a curious recrudescence of the old theological fight of fifty years ago against evolution. This movement is partly due to the increased emotionalism let loose by the war and partly to the fact that uncertainty among scientists as to the causes of evolution has been interpreted by many non-scientific persons as throwing doubt upon its truth. Among those who have been leaders in this anti-evolution crusade are Billy Sunday and William Jennings Bryan. One who desires to know the truth about this or any other subject should inquire as to the competence of a witness, his impartiality, the truthfulness of his testimony, and whether he has any new evidence to offer. On each of these counts both Mr. Sunday and Mr. Bryan fail to qualify as trustworthy witnesses.

It is not on record that Mr. Bryan has ever made any discoveries with regard to evolution or that he has made any careful study of the subject; even at second hand. He frankly confesses that his motives are not to find the truth, but to maintain certain theological views which he thinks are taught by the Bible. He denies that there are any evidences for the truth of evolution and thereby shows that he is either unable to weigh and appreciate the great mass of evidence which has been presented or that he is purposely trying to mislead his hearers. And, finally, he offers no new evidences whatever for reopening a case which in the court of intelligent opinion throughout the world has been closed for nearly half a century.

The whole scientific world long since was convinced of the truth of evolution, and every year which has passed since the publication of "The Origin of Species" in 1859 has added to the mountain of evidence which has been piled up in its favor. It is fortunately not necessary here to review the evidences of evolution, for these may be found in many elementary textbooks on biology. These evidences are so numerous and come from so many sources that no intelligent man can study them at first hand and not be impressed with their importance. As a consequence there is probably not a single biological investigator in the world today who is not convinced of the truth of evolution. The fact that these



evidences accumulate year after year, often coming from fields which Darwin and his contemporaries never dreamed of, is still more convincing. I once hear Lord Kelvin, the great physicist, say that any hypothesis or theory if true should find new support continually as knowledge advances. This is just what has happened in the case of evolution.

Erroneous and misleading

Mr. Bryan makes much of the idea that evolution is only a hypothesis, or as he prefers to call it, a guess. But unless he uses the word "guess" in the Yankee sense of practical certainty, this is an erroneous and misleading statement. Evolution is a guess in the same sense as is the doctrine of universal gravitation, or any other great generalization of science. Can one honestly call that doctrine a guess which is supported by all the evidence available, which continually receives additional support from new discoveries and which is not contradicted by any scientific evidence?

It is true that we do not know as much as we should like about the causes of evolution (though we know a good deal more than Mr. Bryan assumes), but the same may be said with regard to the causes of gravitation, light, electricity, chemical affinity, life or any other natural phenomenon. The problem of cause is never finally solved by science, for no sooner is one cause discovered than it gives rise to questions concerning the cause of this cause. Strange as it may seem, it is only the causes of supernatural phenomena that are supposed to be fully known.

Mr. Bryan is apparently ready to concede the evolution of rocks and plants, and possibly of animals, but he draws the line at the evolution of man. When he says, as he does repeatedly in his article in The New York Times, that there are no evidences of the evolution of man; that "neither Darwin nor his supporters have been able to find a fact in the universe to support their hypothesis," it is hard to understand what he means. Darwin's works are filled with facts in support of evolution. They are composed of little except such facts, and multitudes of similar facts have been accumulated since Darwin's day.

Apparently Mr. Bryan demands to see a monkey or an ass transformed into a man, though he must be familiar enough with the reverse process. The Hotspurs who demand that evolution be re-enacted "while they wait" should emulate the example of Josh Billings, who said he had heard that a toad would live four hundred years: he was going to catch one and see for himself. The evidences for the major transformations in the evolution of man are not personal demonstrations, since they do not fall within the lifetime of a single individual, but they are the same sort of evidence as those for mountain building, stream erosion, glacial action or any other secular change.

The minor stages in evolution, known as mutations and elementary species, have been repeatedly observed in plants, animals and man. DeVries, Morgan and many others have demonstrated that sudden and very great changes or mutations sometimes occur, that these mutations may be combined to form races or elementary species, and there can be no reasonable doubt that these elementary species are combined to form Linnaean species. Among our domestic animals and cultivated plants such changes have been wrought as amount to specific differences. Darwin says that any naturalist, if he should find our races of domestic pigeons wild in nature, would classify them in not less than twenty species and three different genera. A similar statement could be made regarding fowls and dogs, as well many fruits, grains and vegetables. In short, evolution has occurred under domestication.

True of man also

Everything which speaks for the evolution of plants and animals speaks plainly

for the evolution of man. In the structure of the human body there is scarcely a bone, muscle, nerve or any other organ that does not have its counterpart in the higher primates and especially the anthropoid apes. Romanes, whom Mr. Bryan mentions as having lost and regained his religious faith though he never lost his faith in evolution says of these similarities between the body of man and that of the higher primates: "Here we have a fact, or rather a hundred thousand facts, that cannot be attributed to chance, and if we reject the natural explanation of hereditary descent from a common ancestor, we can only suppose that the Deity in creating man took the most scrupulous pains to make him in the image of the beast."

Not only the structure but the functions of the human body are fundamentally like those of other animals. We are born, nourished and develop, we reproduce, grow old and die, just as do other mammals. Specific functions of every organ are the same; drugs, diseases, injuries affect man as they do animals, and all the wonderful advances of experimental medicine are founded upon this fact.

Development from a fertilized egg to birth goes through the same stages in man and other mammals even to the repeating of fish-like gill slits, kidneys, heart and blood vessels. Indeed, development from the egg recapitulates some of the main stages of evolution- in it we see evolution repeated before our eyes. It is a curious fact that many persons who are seriously disturbed by scientific teaching as to the evolution or gradual development of the human race accept with equanimity the universal observation as to the development of the human individual - mind as well as body. The animal ancestry of the race is surely no more disturbing to philosophical and religious beliefs than the germinal origin of the individual, and yet the latter is a fact of universal observation which cannot be relegated to the domain of theory and which cannot be successfully denied. If we admit the fact of the development of the entire individual from an egg, surely it matters little to our religious beliefs to admit the development or evolution of the race.

The discovery of fossil remains of man have proved conclusively that other species of men, more brute-like than any existing at the present time, preceded the present species, and the older these species are the more ape-like they were. Likewise their handiwork, implements and flints, are coarser and cruder the earlier they occur.

All the evidences of evolution drawn from morphology, physiology, embryology, paleontology, homology, heredity, variation, etc., speak for the evolution of man as much as for that of any other organism. If evolution is true anywhere it is true also of man.

Against all this mountain of evidence which Mr. Bryan tries to blow away by a word, what does he bring in support of his view of special creation? Only this, that evolution denies the Biblical account of the creation of man. What is that account? Here it is in a sentence: "And the Lord God formed man of the dust of the ground and breathed into his nostrils the breath of life; and man became a living soul." Observe, ye literalists, that this does not say that God spoke man into existence, as when He said, "Let there be light; and there was light." But a process is described by which man was formed or moulded from the dust, as the Egyptian and Babylonian deities are said to have molded man from clay on a potter's wheel, and then to have breathed life into his nostrils- Since the Scriptures describe a process in the creation of man, the opponents of the theory of evolution ought to be able to conceive of a dignified and divine way in which the Creator fashioned man, but this they do not do. The idea that the Eternal God took mud or mortar and moulded it with bands or tools into the human form is not only irreverent, it is ridiculous. How much more like the usual workings of that power, by whom and through whom are all things, is the view of evolution that God made the first man as He has made the last, and that His creative power is manifest just as truly and greatly in the origin of the last

child of Adam, as in the origin of Adam himself.

Is it any more degrading to hold that man was made through a long line of animal ancestry than to believe that he was made directly from tile dust? Surely the horse and the dog and the monkey belong to higher orders of existence than do the clod and the stone. Whether we accept the teachings of evolution or the most literal interpretation of the Biblical account we are compelled to recognize the fact that our bodily origin: has been a humble one; as Sir Charles Lyell once said, "It is mud or monkey." But this lowly origin does not destroy the dignity of man; his real dignity consists not in his origin but in what he is and in what he may become.

If only the theological opponents of evolution could learn anything from past attempts to confute science by the Bible they would be more cautious. It was once believed universally that the earth was flat and that it was roofed over by a solid "firmament" and when scientific evidence was adduced to show that the earth was a sphere and that the "firmament" was not a solid roof, it was denounced as opposed to the Scriptures. Those who have visited the Columbian Library in the Cathedral of Seville will recall the Bible of Columbus with marginal notes in his own handwriting to prove that the sphericity of the earth was not opposed to the Scriptures, and a treatise written by him while in prison to pacify the Inquisition. Today only Voliva and his followers at Zion City maintain that the cart is flat, and the heavens a solid dome, because this is apparently taught by the Scriptures.

The central position of the earth in the universe with all heavenly bodies revolving around it was held to be as certain as holy writ. All the world knows the story of "Starry Galileo and His Woes" at the hands of the Inquisition, but the Copernican theory was opposed not only by the Roman Catholic Church, but also by the leaders of the Reformation. Martin Luther denounced it as "the work of a fool," Melancthon declared that it was neither honest nor decent to teach this pernicious doctrine, and that it should be repressed by severe measures, and John Wesley declared that it "tended toward infidelity." Even as late as 1724 the Newtonian theory of gravity was assailed by eminent authorities as "atheistic," since "it drove God out of His universe and put a law in His place."

Bryan's Auto de fe

The conflict between geology and Genesis as to the days of creation and the age of the earth lasted until the middle of the last century, and students of Dana's geology will recall the reconciliation between the two which that great man devoutly undertook. But, by the ultra-orthodox, he and other Christian geologists were denounced as infidels and as impugners of the sacred record. It took three hundred years to end this conflict if it may be said to be wholly ended now, but certainly no intelligent person now believes that the earth was made just 5,926 years ago and in six literal days.

And now comes Mr. Bryan in this twentieth century of enlightenment preaching a new auto de fe, attempting to establish an inquisition for the trial of science at the bar of theology! He proposes to prohibit the teaching of evolution by fine and imprisonment, to repeal a law of nature by a law of Kentucky. He proposes to gather into the fold of his narrow theology all existing public and private schools, colleges and universities and to allow evolutionists and agnostics to found their own schools. In view of the fact that, with the exception of a few sectarian institutions, all our colleges and universities are dedicated to "the increase and diffusion of knowledge among men." that for a generation at least they have turned away from the teaching of dogmatic theology to the cultivation of science, literature and art, that they have during this period received great benefactions for the expressed or implied purpose of carrying on this work in the spirit of freedom to seek, to find and to teach the

truth as God gives men to see the truth-in view of these considerations it may well be asked whether it would not be more fitting for Mr. Bryan to establish his own institution for teaching his own views of science and theology, as Dowie, for example, did at Zion City, rather than to attempt to convert existing institutions to that purpose.

Scientific investigators and productive scholars in almost every field have long since accepted evolution in the broadest sense as an established fact. Science now deals with the evolution of the elements, of the stars and solar system of the earth, of life upon the earth, of various types and species of plants and animals, of the body, mind and society of man, of science, art, government, education and religion. In the light of this great generalization all sciences, and especially those which have to do with living things, have made more progress in the last half century than in all the previous centuries of human history. Even progressive theology has come to regard evolution as an ally rather than as an enemy.

In the face of all these facts, Mr. Bryan and his kind hurl their medieval theology. It would be amusing if it were not so pathetic and disheartening to see these modern defenders of the faith beating their gongs and firing their giant crackers against the ramparts of science.

Professor Edwin Grant Conklin was Chair of the Department of Biology at Princeton University. He was ordained as a lay preacher. This piece was originally published in the New York Times, Sunday, March 5 1922 and republished in "Fundamentalism versus Modernism" (1925). Edited by Eldred C. Vanderlan, The H.W Wilson Company, New York, pp. 263-271.

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