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Can naturalism account for the origin of the 20 amino acids in living systems?

KNIGHT, YOU COULDN'T EVEN GET THROUGH THE TITLE WITHOUT SCREWING UP. THERE ARE MORE THAN 20 AMINO ACIDS FOUND IN LIVING ORGANISMS. JUST 60 SECONDS OF RESEARCH COULD HAVE SAVED YOU THAT EMBARRASSMENT.

AS FOR YOUR QUESTION, UNTIL YOU CAN GIVE US SOMETHING BETTER THAN, "MY MAGIC GHOST DID IT" NEARLY ALL OF THE WORLD'S SCIENTISTS (INCLUDING CHRISTIAN SCIENTISTS) WILL STICK WITH NATURALISM.

There are two problems related to the origin of the first living cell, on atheism:

KNIGHT. ATHEISM HAS ABSOLUTELY NOTHING TO DO WITH THIS ESSAY. GET OUT THAT DICTIONARY FOR THE THOUSANDTH TIME AND REREAD THE DEFINITION.

WHAT YOU ARE HIDING FROM YOUR READERS IS THAT MILLIONS OF CHRISTIANS ACCEPT THE SCIENCE BEHIND EVOLUTION AND THE ORIGIN OF LIFE. THAT PROVES THIS IS NOT AN "ATHEIST" ISSUE.

THIS IS NOTHING MORE THAN A CASE OF A CREATIONIST (THAT WOULD BE YOU) DENYING REALITY (THAT WOULD BE SCIENCE) TO PROTECT YOUR BELIEF IN THE LITERAL INTERPRETATION OF ANCIENT, HOLY SCRIPTURES.

1. The problem of getting the building blocks needed to create life – i.e. the amino acids.

KNIGHT, WHY IS THAT A PROBLEM? STANLEY MILLER PRODUCED OVER 20 AMINO ACIDS NECESSARY FOR LIFE, AND HE STARTED ... WITH NONE. THEY JUST MAGICALLY APPEARED IN HIS EXPERIMENT - SOMETHING YOU HAVE BEEN WAITING FOR YOUR GOD TO DO FOR 2,000 YEARS. MILLER ONLY HAD TO WAIT ... 1 WEEK.

2. The problem of creating the functional sequences of amino acids and proteins that can support the minimal operations of a simple living cell.

KNIGHT, WHAT HAS A LIVING CELL GOT TO DO WITH ABIOGENESIS? NO SCIENTIST CLAIMS THAT CELLS EVOLVED UNTIL MILLIONS OF YEARS LATER.

Normally, I concede the first problem and grant the atheist all the building blocks he needs.

KNIGHT, SMART MOVE. BUT AGAIN, WHAT DO ATHEISTS HAVE TO DO WITH THIS? CATHOLIC BIOLOGIST KEN MILLER CONDUCTS THESE SAME EXPERIMENTS, AS DO THOUSANDS OF OTHER CHRISTIAN BIOLOGISTS.

AH, BUT YOU KNOW THAT DON'T YOU KNIGHT? YOU ARE PURPOSELY MISLEADING YOUR READERS, HOPING THAT THEY WILL NOT REALIZE THAT NEARLY ALL CHRISTIAN BIOLOGISTS ACCEPT EVOLUTION AND ABIOGENESIS.

YOU ARE ONE VERY DECEITFUL LITTLE GHOST WORSHIPPER KNIGHT.

This is because step 2 is impossible.

WELL THANKS FOR THE ASSERTION KNIGHT. I'M SURE ALL OF BIOLOGY WILL NOW COME TO A GRINDING HALT. SEE, THAT'S ALL THOSE BIOLOGISTS NEEDED: SOMEONE WHO ISN'T A TRAINED BIOLOGIST TO STRAIGHTEN THEM OUT.

There is no way, on atheism, to form the sequences of amino acids

OKAY KNIGHT, THEN LET'S NOT FORM THE SEQUENCES ON ATHEISM. LET'S ALLOW THE CHRISTIAN BIOLOGISTS TO FORM THEM. I NOMINATE KEN MILLER. OF COURSE, MILLER DOESN'T HAVE YOUR EXPERTISE, BUT THEN, WHO DOES?

that will fold up into proteins, and then to form the sequences of proteins that can be used to form everything else in the cell, including the DNA itself. But that’s tomorrow’s topic.

KNIGHT, I CAN'T WAIT. DO YOU TEASE YOUR DATES THIS WAY? OH THAT'S RIGHT, I ALMOST FORGOT ABOUT YOUR LAST ESSAY - YOU'VE NEVER BEEN ON A DATE.

Today, let’s take a look at the problems with step 1: The problem of getting the building blocks of life.

KNIGHT, BEFORE YOU GO INTO YOUR IMITATION OF A TRAINED BIOLOGIST, YOU KNOW WHAT I FIND REALLY INTERESTING? WHAT YOU BELIEVE: AN INVISIBLE GHOST WITH SEVERE ANGER MANAGEMENT ISSUES CREATED THE BUILDING BLOCKS OF LIFE OUT OF THIN AIR BY MAGIC.

I THINK THE READERS SHOULD KEEP THAT IN MIND AS THEY LISTEN TO YOU, TRYING TO SOUND VERY SCIENTIFIC AND LOGICAL.

Now you may have heard that some scientists managed to spark some gasses to generate most of the 20 amino acids found in living systems.

KNIGHT, SCIENTISTS ALL OVER THE WORLD HAVE DUPLICATED THE EXPERIMENT YOU REFER TO. IT IS SO SIMPLE EVEN A HIGH SCHOOL STUDENT CAN DO IT. HERE'S A LINK:

http://en.wikipedia.org/wiki/Miller-Urey

These experiments are called the “Miller-Urey” experiments. The IDEA center has a nice summary of origin-of-life research that explains a few of the main problems with step 1.

OKAY KNIGHT, LET'S SEE WHAT THEY CAME UP WITH, THAT TOLD YOU WHAT YOU WANTED TO HEAR.

Miler and Urey used the wrong gasses: Miller’s experiment requires a reducing methane and ammonia atmosphere, however geochemical evidence says the atmosphere was hydrogen, water, and carbon dioxide (non-reducing).

KNIGHT, LET ME GIVE YOU THE SAME ANSWER YOU PEOPLE ALWAYS USE IN THIS SITUATION: WERE YOU THERE?

KNIGHT, SEE HOW LAME THAT WAS? YOU CAN SEE THE LAMENESS WHEN SOMEONE USES IT AGAINST YOU, BUT YOU FAIL TO SEE ANY PROBLEM WITH IT WHEN YOU USE IT. SINCE YOU LIKE ASSERTIONS SO MUCH, HERE'S ONE FOR YOU: IT'S LAME.

THE ANSWER IS THAT NO ONE KNOWS WHAT THE ATMOSPHERE WAS LIKE WHEN LIFE BEGAN. HOWEVER, THE MILLER-UREY EXPERIMENT HAS BEEN REPLICATED ALL OVER THE WORLD USING MANY DIFFERENT TYPES OF ATMOSPHERES, PROVING THAT LIFE COULD HAVE BEGUN IN ANY NUMBER OF DIFFERENT ATMOSPHERIC CONFIGURATIONS.

The only amino acid produced in a such an atmosphere is glycine (and only when the hydrogen content is unreasonably high), and could not form the necessary building blocks of life.

KNIGHT, THEN IT LOOKS LIKE THEIR ATMOSPHERE WASN'T THE RIGHT ONE DOESN'T IT? SO WE CAN ELIMINATE THEIR PROPOSAL.

Miller and Urey didn’t account for UV of molecular instability: Not only would UV radiation destroy any molecules that were made, but their own short lifespans would also greatly limit their numbers. For example, at 100ºC (boiling point of water), the half lives of the nucleic acids Adenine and Guanine are 1 year, uracil is 12 years, and cytozine is 19 days (nucleic acids and other important proteins such as chlorophyll and hemoglobin have never been synthesized in origin-of-life type experiments).

UNFORTUNATELY FOR YOU KNIGHT, WHILE YOU'VE BEEN BUSY TALKING TO YOUR INVISIBLE GHOST, SCIENCE HAS BEEN VERY BUSY. WITHIN THE LAST MONTH THEY DISCOVERED A PLACE THAT WOULD ALLOW FOR MOLECULAR STABILITY. HERE'S THE LINK: http://www.livescience.com/16580-mud-volcanoes-life-ingredients-greenland.html

AND KNIGHT, USE YOUR SPELLCHECKER ON "CYTOZINE."

Miller and Urey didn’t account for molecular oxygen: We all have know ozone in the upper atmosphere protects life from harmful UV radiation. However, ozone is composed of oxygen which is the very gas that Stanley Miller-type experiments avoided, for it prevents the synthesis of organic molecules like the ones obtained from the experiments!

KNIGHT, WHAT MAKES YOU THINK THE EARTH HAD AN OZONE LAYER THAT LONG AGO? SCIENTISTS KNOW THAT THERE WAS LITTLE OR NO OXYGEN IN THE ATMOSPHERE IN THE EARLY EARTH.

KNIGHT, HERE IS A LINK TO THE GREAT OXYGENATION EVENT 2.4 BILLION YEARS AGO (LONG AFTER LIFE BEGAN). NOTICE WHERE THE GRAPH IS BEFORE THAT TIME: http://en.wikipedia.org/wiki/Great\_oxygenation\_event

Pre-biotic synthesis is in a “damned if you do, damned if you don’t” scenario. The chemistry does not work if there is oxygen because the atmosphere would be non-reducing,

KNIGHT, AS ALREADY POINTED OUT, THERE WAS NO SIGNIFICANT OXYGEN IN THE ATMOSPHERE.

but if there is no UV-light-blocking oxygen (i.e. ozone – O3) in the atmosphere, the amino acids would be quickly destroyed by extremely high amounts of UV light (which would have been 100 times stronger than today on the early earth). This radiation could destroy methane within a few tens of years, and atmospheric ammonia within 30,000 years.

KNIGHT, UV LIGHT ISN'T ESPECIALLY LETHAL ... DEEP IN THE OCEAN. HERE IS ANOTHER LINK TO BIOLOGICAL COMMUNITIES IN BLACK SMOKERS:

http://en.wikipedia.org/wiki/Black\_smokers#Biological\_communities

And there were three other problems too:

KNIGHT, WHAT DO YOU MEAN "OTHER PROBLEMS?" SO FAR, THE ONLY PROBLEMS YOU HAVE SHOWN US IS THAT YOU KNOW ALMOST NOTHING ABOUT BIOLOGY AND CHEMISTRY.

At best the processes would likely create a dilute “thin soup,” destroyed by meteorite impacts every 10 million years. This severely limits the time available to create pre-biotic chemicals and allow for the OOL.

KNIGHT, IF YOUR ARGUMENT IS TO FLY, YOU MUST ELIMINATE *ALL* TIME AVAILABLE.

Chemically speaking, life uses only “left-handed” (“L”) amino acids and “right-handed” (“R)” genetic molecules.

KNIGHT, THIS IS WHAT HAPPENS WHEN YOU COPY/PASTE THINGS THAT TELL YOU WHAT YOU WANT, SO DESPERATELY TO BELIEVE, THAT YOU DON'T BOTHER TO RESEARCH THEIR VALIDITY. THE CLAIM, "LIFE USES ONLY LEFT-HANDED AMINO ACIDS" ... IS FALSE.

This is called “chirality,”

YES KNIGHT, I KNOW WHAT IT IS CALLED.

and any account of the origin of life must somehow explain the origin of chirality.

WELL KNIGHT, NOT THAT YOU WANT TO HEAR THIS BUT, THE CHIRALITY OF AMINO ACIDS ARRIVING ON EARTH FROM METEORITES IS ABOUT 50-50. OVER TIME, LEFT-HANDED AMINO ACIDS HAVE COME TO DOMINATE, BUT CONTRARY TO YOUR FALSE CLAIM ABOVE, IT IS NOT 100%.

Nearly all chemical reactions produce “racemic” mixtures–mixtures with products that are 50% L and 50% R.

KNIGHT, "NEARLY ALL?" THAT MEANS SOME DON'T.

Two more problems are not mentioned in the article.

KNIGHT, THAT'S PROBABLY BECAUSE THEY HAD ALREADY EMBARRASSED THEMSELVES ENOUGH.

A non-peptide bond anywhere in the chain will ruin the chain.

KNIGHT, MANY THINGS CAN RUIN THE CHAIN. WHAT DO YOU THINK RADIATION DOES?

You need around 200 amino acids to make a protein.

KNIGHT, YOU'RE NOT EVEN CLOSE.

http://rmcbiosciences.blogspot.com/2005/04/smallest-protein.html

KNIGHT, DO YOU EVER LOOK UP ANYTHING? I MEAN, THIS STUFF ISN'T THAT HARD TO FIND.

If any of the bonds is not a peptide bond, the chain will not work in a living system.

KNIGHT, I KNOW YOU GHOST WORSHIPPERS HAVE SEVERE GRAMMATICAL LIMITATIONS, AS EVIDENCED CONSTANTLY ON THE INTERNET, BUT YOU SHOULD HAVE WRITTEN "IF ANY OF THE BONDS ARE ..." NOT "IS."

KNIGHT, HINT: MORE TIME IN WEBSTER'S, AND LESS TIME IN EXODUS.

Additionally, the article does not mention the need for the experimenter to intervene in order to prevent interfering cross-reactions that would prevent the amino acids from forming.

KNIGHT, SINCE THE AMINO ACIDS HAVE FORMED IN EXPERIMENTS ALL OVER THE WORLD, I WOULD SAY THAT HASN'T BEEN MUCH OF A PROBLEM.

Usually when you hear the origin of life debated, they sort of skirt about the problem of where the amino acids come from,

KNIGHT, WHY DON'T YOU TELL THE AUDIENCE WHERE YOU THINK THEY CAME FROM? TELL THEM ABOUT YOUR MAGIC GHOST WHO WISHED THEM INTO EXISTENCE.

but there is no reason not to make that an issue. The naturalist has to explain how the first living cell could come about naturalistically.

KNIGHT, THE FIRST LIVING CELL IS NOT AN ISSUE IN THE ORIGIN OF LIFE. AS YOU PEOPLE ARE SO FOND OF POINTING OUT, CELLS ARE EXTREMELY COMPLEX, AND WOULD HAVE REQUIRED MILLIONS OF YEARS TO EVOLVE. SO YOU ARE CONFUSING ABIOGENESIS WITH EVOLUTION.

BUT YOU AREN'T CONFUSING THEM ARE YOU KNIGHT? YOU KNOW THE DIFFERENCE - BUT YOU ALSO KNOW THAT YOUR READERS DON'T.

Further study

One of my favorite resources on the origin of life is this interview from the University of California with former atheist and origin of life researcher Dean Kenyon. Kenyon, a professor of Biology at San Francisco State University,

ONCE AGAIN KNIGHT, YOUR RESEARCH LEAVES MUCH TO BE DESIRED. HERE'S A LINK TO THE CURRENT BIOLOGY FACULTY AT SFSU:

http://biology.sfsu.edu/people/category/faculty

FUNNY THING KNIGHT, I COULDN'T FIND HIM LISTED ANYWHERE AT SFSU. THEN I WENT TO THE DISCOVERY INSTITUTE SITE AND GUESS WHAT I FOUND? YEP, HE'S THERE. HERE'S THE LINK:

http://www.discovery.org/csc/fellows.php

I WONDER WHY YOU TOLD YOUR READERS HE WORKED AT SFSU INSTEAD OF THE DISCOVERY INSTITUTE? WELL, I GUESS THEY'LL JUST HAVE TO FIGURE THAT ONE OUT FOR THEMSELVES, WON'T THEY?

wrote the textbook on “chemical evolution”, which is the view that chemicals can arrange themselves in order to create the first living cell, without intervention.

KNIGHT, YOU'RE TRYING TO GIVE THE AUDIENCE ANOTHER FALSE IMPRESSION: HE DIDN'T WRITE "THE" TEXTBOOK - HE WROTE A BOOK. THE ONLY REASON IT'S A TEXTBOOK IS BECAUSE HE PROBABLY MAKES HIS STUDENTS BUY IT.

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THE SCIENCE SEGMENT

LIGHT CREATED FROM A VACUUM:

CASIMIR EFFECT OBSERVED IN SUPERCONDUCTING CIRCUIT

SCIENTISTS AT CHALMERS HAVE SUCCEEDED IN CREATING LIGHT FROM VACUUM -- OBSERVING AN EFFECT FIRST PREDICTED OVER 40 YEARS AGO. IN AN INNOVATIVE EXPERIMENT, THE SCIENTISTS HAVE MANAGED TO CAPTURE SOME OF THE PHOTONS THAT ARE CONSTANTLY APPEARING AND DISAPPEARING IN THE VACUUM.

THE EXPERIMENT IS BASED ON ONE OF THE MOST COUNTERINTUITIVE, YET, ONE OF THE MOST IMPORTANT PRINCIPLES IN QUANTUM MECHANICS: THAT A VACUUM IS BY NO MEANS EMPTY NOTHINGNESS. IN FACT, THE VACUUM IS FULL OF VARIOUS PARTICLES THAT ARE CONTINUOUSLY FLUCTUATING IN AND OUT OF EXISTENCE. THEY APPEAR, EXIST FOR A BRIEF MOMENT AND THEN DISAPPEAR AGAIN. SINCE THEIR EXISTENCE IS SO FLEETING, THEY ARE USUALLY REFERRED TO AS VIRTUAL PARTICLES.

RESEARCHERS HAVE SUCCEEDED IN GETTING PHOTONS TO LEAVE THEIR VIRTUAL STATE AND BECOME REAL PHOTONS, I.E. MEASURABLE LIGHT. IT WAS PREDICTED WAY BACK IN 1970 THAT THIS SHOULD HAPPEN IF THE VIRTUAL PHOTONS ARE ALLOWED TO BOUNCE OFF A MIRROR THAT IS MOVING AT A SPEED THAT IS ALMOST AS HIGH AS THE SPEED OF LIGHT. THE PHENOMENON, KNOWN AS THE DYNAMICAL CASIMIR EFFECT, HAS NOW BEEN OBSERVED FOR THE FIRST TIME IN A BRILLIANT EXPERIMENT CONDUCTED BY SCIENTISTS.

SINCE IT'S NOT POSSIBLE TO GET A MIRROR TO MOVE FAST ENOUGH, RESEARCHERS DEVELOPED ANOTHER METHOD FOR ACHIEVING THE SAME EFFECT. INSTEAD OF VARYING THE PHYSICAL DISTANCE TO A MIRROR, THEY VARIED THE ELECTRICAL DISTANCE TO AN ELECTRICAL SHORT CIRCUIT THAT ACTS AS A MIRROR FOR MICROWAVES.

THE "MIRROR" CONSISTS OF A QUANTUM ELECTRONIC COMPONENT REFERRED TO AS A SUPERCONDUCTING QUANTUM INTERFERENCE DEVICE, WHICH IS EXTREMELY SENSITIVE TO MAGNETIC FIELDS. BY CHANGING THE DIRECTION OF THE MAGNETIC FIELD SEVERAL BILLIONS OF TIMES A SECOND THE SCIENTISTS WERE ABLE TO MAKE THE "MIRROR" VIBRATE AT A SPEED OF UP TO 25 PERCENT OF THE SPEED OF LIGHT.

THE RESULT WAS THAT PHOTONS APPEARED IN PAIRS FROM THE VACUUM, WHICH SCIENTISTS WERE ABLE TO MEASURE IN THE FORM OF MICROWAVE RADIATION. THEY WERE ALSO ABLE TO ESTABLISH THAT THE RADIATION HAD PRECISELY THE SAME PROPERTIES THAT QUANTUM THEORY SAYS IT SHOULD HAVE WHEN PHOTONS APPEAR IN PAIRS IN THIS WAY.

WHAT HAPPENS DURING THE EXPERIMENT IS THAT THE "MIRROR" TRANSFERS SOME OF ITS KINETIC ENERGY TO VIRTUAL PHOTONS, WHICH HELPS THEM TO MATERIALISE. ACCORDING TO QUANTUM MECHANICS, THERE ARE MANY DIFFERENT TYPES OF VIRTUAL PARTICLES IN A VACUUM, AS MENTIONED EARLIER. THE REASON WHY PHOTONS APPEAR IN THE EXPERIMENT IS THAT THEY LACK MASS.

RELATIVELY LITTLE ENERGY IS THEREFORE REQUIRED IN ORDER TO EXCITE THEM OUT OF THEIR VIRTUAL STATE. IN PRINCIPLE, ONE COULD ALSO CREATE OTHER PARTICLES FROM VACUUM, SUCH AS ELECTRONS OR PROTONS, BUT THAT WOULD REQUIRE A LOT MORE ENERGY.

THE SCIENTISTS FIND THE PHOTONS THAT APPEAR IN PAIRS IN THE EXPERIMENT INTERESTING TO STUDY IN CLOSER DETAIL. THEY CAN PERHAPS BE OF USE IN THE RESEARCH FIELD OF QUANTUM INFORMATION, WHICH INCLUDES THE DEVELOPMENT OF QUANTUM COMPUTERS.

HOWEVER, THE MAIN VALUE OF THE EXPERIMENT IS THAT IT INCREASES OUR UNDERSTANDING OF BASIC PHYSICAL CONCEPTS, SUCH AS VACUUM FLUCTUATIONS -- THE CONSTANT APPEARANCE AND DISAPPEARANCE OF VIRTUAL PARTICLES IN VACUUM. IT IS BELIEVED THAT VACUUM FLUCTUATIONS MAY HAVE A CONNECTION WITH "DARK ENERGY" WHICH DRIVES THE ACCELERATED EXPANSION OF THE UNIVERSE.

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FAMOUS QUOTES

DAN BARKER (NO BIO)

"IMAGINE YOU ARE STROLLING DOWN THE SIDEWALK

AND A MAN EXCITEDLY CALLS YOU OVER TO HIS FRONT PORCH TO SHARE SOME 'GREAT NEWS,'

THE MAN’S GOT A GRUESOME TORTURE CHAMBER IN HIS BASEMENT,

BUT YOU DON’T HAVE TO GO DOWN THERE.

INSTEAD, YOU CAN COME OVER, HUG THE MAN’S SON,

SAY YOU LOVE HIM AND YOU CAN ALL MOVE IN TOGETHER IN THE ATTIC AND TELL THEM HOW GREAT THEY ARE FOREVER.

'ISN’T THAT GREAT NEWS?' ”

“I DIDN’T REALIZE IT AT THE TIME,

BUT SALVATION IS AN ATTEMPT TO SOLVE A PROBLEM OF ITS OWN MAKING — SIN IS JUST A CONCEPT FROM THE TEACHING,

LIKE A DOCTOR RUNNING AROUND CUTTING PEOPLE WITH A KNIFE IN ORDER TO SELL THEM A BAND AID.”