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**SHEPHERDS SPEAK** is a free publication to help keep friends informed of the National Advocacy Center's work. Donations to help cover costs are greatly appreciated. Contributions can be mailed to the above address. If you would like to receive the newsletter via e-mail, please contact Marilyn Riffkin at [mriffkin@gsadvocacy.org](mailto:mriffkin@gsadvocacy.org). Send your full name and e-mail address.

## GOOD SHEPHERD SISTER CLARE NOLAN TO VISIT IRAQI REFUGEES IN THE MIDDLE EAST

Sr. Clare Nolan will be representing Good Shepherd USA in a delegation of eight women to the Middle East, January 11-20, 2008. This delegation is a collaborative project of religious women being sponsored by Catholic Relief Services. The organizers specifically requested a Good Shepherd Sister on the delegation because our work in Syria with Iraqi refugees is well known. The itinerary will include visits to at least two of the countries of Lebanon, Jordan and Syria. The goals of the delegation include:

- Experiencing the reality of life for Iraqi refugees
- Growing in understanding of the issues that are impacting their lives

- Learning, considering, and responding to what we can do with the networks we have in the United States and internationally, to grow awareness of the Iraqi refugee situation, and
- Partnering with Catholic Relief Services to support programming and legislative advocacy around the situation of the Iraqi Refugees.

Sr. Clare was in Syria briefly this past summer, under the auspices of the NGO office of the United Nations., and she notes that the Good Shepherd response in Syria is quite moving. She writes, "For now, I would ask you to keep the preparation for this journey in your prayers. You can also be alert to news items of the Mid East and the

plight of Iraqi refugees. One advocacy item always needed now is to ask, through your Congresspersons and the State Department, for a great opening of resettlement slots in the USA for Iraqi refugees, not only for those who have aided the US military but also for the women and children at such risk of trafficking and prostitution due to the vulnerability of their refugee status. "

H.R. 3674, The Iraqi Refuge and Internally Displaced Persons Humanitarian Assistance, Resettlement and Security Act of 2007 was introduced on September 26, 2007, and is being considered in the Foreign Affairs and Judiciary Committees. NAC continues to monitor its progress.



*"For those who have died in war, may their graves be a solemn reminder of the need for peace, let us pray to the Lord."*



# SHEPHERDS SPEAK VOICES THAT CHALLENGE

Volume 5, Issue 7 The National Advocacy Center of the Sisters of the Good Shepherd

## Taking Good Shepherd Values to the Ballot Box

By **Alison Prevost**

In August, I begin a new job as Project Manager for the Center for Democracy and Election Management at American University. After 5 years of direct lobbying with the National Advocacy Center, I saw this job as an opportunity to approach social justice from another angle—trying to fix the way our elections are run in the hope that by improving the election process better people will be elected. Specifically, my work is based on the recommendations of the 2005 Carter-Baker Commission on Federal Election Reform (<http://www.american.edu/ia/cfer/>), which encompass a wide range of issues from poll-worker training to voter registration to voting technology.

Two current projects springing from the recommendations are a research study on the potential impact of stricter photo identification laws and an effort to promote nonpartisan election administration through model legislation that would prohibit partisan activity by Secretaries of State or other chief elections

officials in the states. At the beginning of the year, we are hoping to launch a monitoring effort of the 2008 elections to determine how much (or little) progress has been made in election reform since 2000.

The past three months have involved a lot of learning for me and I miss the spirituality of working in a faith-infused environment like the NAC, but I recognize the importance of this work, particularly when I encounter those who would place even greater restrictions on voting and the attitude that voting is a privilege and not a right. Part of what I take from the Good Shepherd affirmation that "one person is of more value than a world," is that the whole of our democracy suffers when so many people are unable or choose not to participate in our elections, especially when there are institutional barriers that contribute to that lack of participation. So, I will use this space that I have been given to encourage you all to register to vote if you haven't already done so, to



Former President Jimmy Carter with Alison Prevost

conduct voter registration drives at your churches and agencies, to volunteer as a poll worker (contact your county board of elections), or to connect with a local voter mobilization project to encourage as many people as possible to participate in the 2008 election. Your voices matter so much and are so very needed—I hope that my new work will help ensure that they are fully counted.

*Alison is greatly missed at the National Advocacy Center for many reasons, especially when it's time to format and print this newsletter!*

## Update from the National Coordinator, Sr. Gayle Crumbley

I accepted the position of National Coordinator of the National Advocacy Center just as I was finishing the course work for a Doctorate in Educational Leadership at the University of St. Thomas in Minneapolis, Minnesota. It was very naive of me to think that I could do a political ministry at the NAC and do the research it takes to complete a thesis. I have been in

Minnesota since September and have completed the introduction to my dissertation, and I am now working on the Literature Review. My topic is the DREAM Act, the proposed legislation to allow immigrant youth to pursue their dreams for education and better life. I have all sorts of analogies and metaphors for what I am doing. Right now it's like going through a

maze. Sometimes I turn into brick walls. Other times I have a day like today, and have discovered all kinds of resources and see all manner of possibilities. Please continue to keep me in your prayers. Pray in particular for the gifts of creativity and speed. Know that you are all likewise in my prayers.

*Hurry back, Sr. Gayle!*

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**November 2007**

## SCHIP: A Work in Progress

By Allie Holsen (continued on page 3)

In many other developed countries around the globe healthcare is a right. Somehow in the United States, we have fallen short of the measure; healthcare has become a privilege for those who are able to afford it. The State Children's Health Insurance Program (affectionately known as SCHIP) was established in 1997 under bi-partisan support. The bill provided affordable healthcare insurance to children whose families could neither afford private insurance nor qualify for assistance under Medicaid. In the aftermath of a presidential veto, the failure to override the veto through the

Children's Health Insurance Program Reauthorization Act (CHIPRA), it is important to examine the facts surrounding the children who are uninsured, and the benefits of the bill itself.

Today, there are at least 9 million uninsured children within the United States. Of these 9 million, nearly "three-quarters ... come from families with household incomes below 200% of the federal poverty level (\$39,942 for a family of four in 2005)"<sup>1</sup> Many children involuntarily lose their coverage as a result of a divorce, death of a parent, or unemployment. As a matter of fact, many companies

are declining to provide employer based insurance which has resulted in 37 million families without health care.<sup>2</sup> Obviously, SCHIP would mitigate the loss of healthcare coverage for many of these families.

Despite the rhetoric that has echoed throughout the halls of the capitol, CHIP has been a program that continues to enjoy bi-partisan support. The bill does not change its eligibility requirements, nor does it limit states' flexibility.<sup>3</sup> The bill does not provide states with the authority to raise its eligibility to 400% of the federal poverty level (\$83,000) as the President has

*"Many children involuntarily lose coverage as a result of divorce, death of a parent, or unemployment."*

*"By Firestone Natural Rubber CEO Dan Adomitis' own admission on CNN, it would take a tapper over 21 hours every day to meet their quota, which is why workers are forced to bring their children and wives to work or their already low salaries will be halved."*

## Child Labor Behind Firestone Tires (continued on page 3)

Source: Common Dreams

By Tim Newman

As people around the world commemorated World Day Against Child Labor in June, the Firestone Tire and Rubber Company recognized the day by continuing its 81-year tradition of exploiting workers in Liberia.

Firestone has been operating a rubber plantation in Harbel, Liberia since 1926 where workers wake up early every morning to tap rubber trees in order to meet an unreasonably high pro-

duction quota. By Firestone Natural Rubber CEO Dan Adomitis' own admission on CNN, it would take a tapper over 21 hours every day to meet their quota, which is why workers are forced to bring their children and wives to work or their already low salaries will be halved. As part of the outdated production system, children carry heavy loads, come into close contact with toxic pesticides and often work for 12

hours a day.

Workers live in shacks, most of which have not been renovated since the 1920s, without any running water, indoor latrines or electricity while managers live on huge land plots with all the modern amenities – including golf courses! As recently confirmed by the Liberian EPA, the company dumps toxic chemicals directly into the Farmington River which is used by the local

## Bridging the Past and the Future:

### The Good Shepherd International Justice and Peace Office

By Katherine Ward

(Continued on page 4)

The Good Shepherd International Justice and Peace Office (GSIJPO) is a new model holding firmly to the justice and peace mission previously held by two separate offices. The Good Shepherd Non-Governmental Organization (NGO) office in New York and the Good Shepherd International Office for Justice, Peace and Solidarity in Mission (JPSM) in Rome operated in separate ways with much

overlap and ongoing collaboration. Over the past year, the Congregational Team thoughtfully reconsidered the current division of responsibilities and decided on the consolidation of the NGO Office and the JPSM Office as a new approach in expanding the mission of eradicating unjust structures and bringing attention to the marginalized the Good Shepherd community and elsewhere through

regional justice and peace advisory teams. The new Good Shepherd International Justice and Peace Office will be located in New York.

The Congregational Team recently hired two new staff members to carry out the GSIJPO priorities at the United Nations. The new staff members are Sr. Winifred Doherty, RGS, and me, Katherine Ward, former Good Shepherd Volunteer.



## Commonwealth of the Northern Mariana Islands Update By Sr. Carol McClenon, RGS

Since our last newsletter, there have been some developments in services to trafficking victims in Saipan. One more woman has immigrated to the United States to begin a new, safe life. Even with her special Trafficking Visa in hand, valid tickets, an American escort, and case managers and housing ready for her at her destination, this woman was not allowed to board the plane to leave Saipan because the border agents were not familiar with the T-Visa and did not know how to process her. This story has a happy ending since she was allowed to travel the following week, but it clearly illustrates the need for additional training for federal and local officials. An additional 13 women have received T-visas and are prepared to leave Saipan shortly. Please pray that they do not encounter troubles at the border.

Legislation which would affect immigration in the CNMI has been introduced in both houses of Congress. "The Northern Marianas Covenant Implementation Act" (S. 1634 and H.R. 3079) would shift the local jurisdiction over immigration to federal control. Based on the experience of Good Shepherd Sisters and staff in Saipan, we support these bills as a way to reduce human trafficking into the Commonwealth.



NAC Staff on a lobby visit in support of H.R. 3079. From Left to Right: Sr. Carol McClenon, RGS, Delegate Madelleine Bordallo of Guam, and Allie Holsen

## Update: Trafficking Victims Protection & Reauthorization Act of 2007 By Allie Holsen and Sr. Carol McClenon

While the global economy continues to change, the rift between the rich and the poor continues to widen. As a result, thousands of people who find themselves in abject poverty fall prey to human traffickers. In 2000 Congress responded to the victims of human trafficking by establishing the Trafficking Victims Protection Act (TVPA). However, Human Trafficking Advocates say that the law fails to protect the most vulnerable: refugee and immigrant children.

This year, the TVPA is up for reauthorization in Congress. The current bill, H.R. 3887, maintains most of the substance of the version which was passed in 2005. The 2007 re-authorization bill has provisions which strengthen services and assistance for child victims of human trafficking. These include:

- ✦ Increased support to UNHCR and other organizations to prevent refugees and internally displaced persons from being exploited;
- ✦ Expedited family reunification for child trafficking victims in the United States;
- ✦ Additional training for federal, state and local law enforcement authorities in identifying and assisting child trafficking victims;
- ✦ Improved procedures for placing vulnerable unaccompanied immigrant children in appropriate settings and identifying children who have been trafficked or at risk of being trafficked;
- ✦ Emergency interim assistance for foreign-born children who have suffered trafficking.

The Trafficking Victims Protection Reauthorization Act is expected to pass easily, since previous versions had overwhelming bi-partisan support. Lobbying is focused on trying to keep the strong provisions for children in the bill. One of the issues at stake is a "turf battle" between the Office of Refugees and the Department of Homeland Security. Following the lead of the United States Conference of Catholic Bishops Migration and Refugee Service, we believe that trafficked children's interests will be better served by specialists in children and youth and that everything possible should be done to keep them out of detention.

We urge you to call or write to your Members of Congress to express your support for H.R. 3887.

## Global Warming: A Scientific and Historical Perspective (continued from page 5)

We really do need to worry about whether the temperature of this planet will get back to from "cool Pleistocene" to "warm Pliocene", either due to the end of the ice age cycle or to our actions. The ice age cycle as such has not ended, and the Earth is still cooler than it was in the Pliocene. It is possible for sea level to rise further than where it is. If the Greenland ice were all to melt, it would raise sea level by about eighteen feet. That would cause many coastal communities to be submerged, and most port and harbor facilities, a large investment in equipment and infrastructure, would be lost to the water and would have to be replaced. A partial melting of the Antarctic to Pliocene would submerge many large industrial port cities.

By the way, what would happen to sea level if the Arctic North Pole ice were to melt? Nothing. It makes a difference to the ecology of the North Pole whether and when it is ice or salt water. It makes no difference to sea level, because either the polar ice or the polar water is still at sea level. What we should worry about is the Antarctic ice. If we are interested in either shipping or beach resorts, we should also worry about the Greenland ice, because eighteen feet would put an expensive infrastructure of ports and a lot of beach communities under water, and we would have to build new docks and harbors, and see whether there were any sandy beaches anywhere any more. (If not, the sand will build up in a century or so, but there might be a serious lack of beaches for a while.)

We don't know to what extent we are causing global warming, or to what extent it is happening for other reasons. We do know that we should avoid causing global warming, because we humans have been living in a "cool" world and not a "warm" world for a long time, and that we have a lot of port cities where they won't be if sea level rises a hundred feet.

Increased use of fossil fuels will increase the human contribution to carbon dioxide and so to global warming. Fossil fuels are a non-renewable resource. Conservation of a non-renewable resource is prudent regardless of the extent to which their use is causing global warming.

Limited global warming since the beginning of agriculture has probably been good for humans, because it has kept the world "cool" rather than "cold". More global warming would be bad, because it would cause the world to go from "cool" to "warm". We have built human institutions around a "cool" world. Either a "cold" world or a "warm" world would be disastrous for human institutions.

The case that we are causing global warming has not been conclusively proved. It is a strong case, just not a conclusive case. The case that we should avoid causing global warming is much stronger.

Robert C. McClenon holds a bachelor's degree in Chemistry from The George Washington University and a master's degree in the History of Science from Yale University, in addition to a master's in Computer Science from GWU. He also has the dubious distinction of being the elder brother of Sr. Carol McClenon.



## In the Movies: Hecho en Los Angeles/ Made in LA

By Allie Holsen

"The more I learn, the lonelier I feel. But then I say, I've come this far and nothing can take that away from me" – Lupe (from the documentary, *Made in LA*)

*Made in LA* is a documentary about immigrants who work in a modern-day sweatshop in Los Angeles. The documentary tells the all-too common story of three Latina women in the garment industry. The women were hired by contractors to make clothes for the clothing line Forever 21. On average the women earned roughly .10 - .20 cents per hour and worked for more than 12 hours a day. Eventually these women went to LA's Garment Worker Center in hopes of changing their work conditions. At one point, nearly all of the workers who had sought change were at the point of despair. They returned to their families with a sense of hopelessness. However, when faced with the reality of their conditions, they came to understand that if they didn't continue the fight, then no one would. It was their struggle and their voices that needed to be heard....

The movie's debut comes at a critical time within the immigration debate. Instead of hearing the voices of politicians and pundits talking about immigrants and their impact on the country, viewers are able to listen to the immigrants themselves. Furthermore, viewers are able to experience the vicissitudes of their daily struggle for existence, while re-visiting the human side of the debate.

Would you like more information about the movie? Would you like to obtain a copy so that you can have a great thanksgiving discussion with your red-neck uncle Bill? Go to: [www.madeinla.com](http://www.madeinla.com)

## SCHIP: A Work in Progress (continued from page 2)

incorrectly claimed.<sup>4</sup>

This program is a "win-win" for children (3.8 million would receive healthcare coverage), for families and for employers. However, it is imperative to continue to voice support for children's healthcare because the battle over children's healthcare is far from over. Currently, as it stands, the SCHIP program is under a continuing resolution. This means that the program is set at its current funding for a period of time and then subsequently expires unless the program has been renewed. The continuing resolution will expire on December 14<sup>th</sup> of this year. According to *Congressional*

*Quarterly*, "congress has passed two other versions ... without a veto-proof margin in the house". The President has vetoed one bill and has threatened to veto the other. Please contact the staffer of your senator or representative who works on SCHIP. Tell him or her that you would like your representative or senator to vote in favor of the CHIP program. Together, we can make a difference for our children and our society.

<sup>1</sup> Kaiser Commission on Key Facts: Medicaid and the Uninsured, January 2007

<sup>2</sup> Catholic Charities USA

<sup>3</sup> "Second in the Series, 'CHIP-ing Away at the Myths,' Focuses on Myths about Eligibility" Families USA

<sup>4</sup> "Second in the Series, 'CHIP-ing Away at the Myths,' Focuses on Myths about Eligibility" Families USA



## Child Labor Behind Firestone Tires (continued from page 2)

community for fishing and bathing. As a result of the modern day slavery conditions facing workers, the company has been sued in US courts and was also bestowed with the Public Eye Award for Worst Global Corporation this past January.

In order to stand up for their internationally recognized rights, workers have been organizing to support a new, independent and democratic union leadership which was chosen during the first free and fair union elections on the Firestone plantation in early July. The union elections were an historic moment for workers because they overwhelmingly voted out the old leadership, which was heavily influenced by Firestone management and did not truly represent the workers. However, the old leadership has been challenging the elections through the Liberian legal system and a decision from the Supreme Court on the legitimacy of the elections is expected soon. Firestone management is not only currently refusing to recognize the new leadership, but it also actively

promoting efforts to divide workers and bust the new union. The union is calling for international solidarity to support their efforts to gain a voice for workers.

On June 26, 2007, the judge in a lawsuit against Firestone taking place in Indianapolis, ruled against Firestone's motion to dismiss the suit and allowed the case to proceed on child labor claims. The lawyers in the case are currently collecting more documents to support the legal aspect of the campaign.

Negotiations are also currently taking place between Firestone and the government over the terms of the concession area which Firestone controls. The previous concession agreement was signed under a transitional government and heavily favored Firestone. Now that Liberia has a democratic government – and the first woman leader in Africa – there is hope that the new concession agreement will produce greater benefits for the population that produces such immense wealth for Firestone. Unfortunately, reports from the

negotiations raise serious concerns about whether or not Firestone is negotiating with the government in good faith.

US consumers should be shocked that the ubiquitous Firestone tires are produced under these exploitative labor conditions. Imagine children as young as 10 years old forced to carry 70 pounds barrels of latex, coming into direct contact with toxic pesticides. The situation on Firestone's rubber plantation is completely unacceptable under all international legal and moral standards. It is up to consumers to demand that Firestone advance workers' rights instead of rolling them back.

With the concession agreement negotiations taking place and the new union leaders fighting for recognition from the company, the next few weeks present an historic opportunity for the people of Liberia to hold Firestone accountable. More broadly, Firestone in Liberia presents an important case study of how multinationals operate in the Global South. The situation is a microcosm for what is going

on around the world – wealthy corporations make huge profits off the extraction of resources from countries like Liberia and exert their power over post-conflict countries during any negotiations. Here in the US, we need to send a strong message that companies like Firestone cannot violate human rights with impunity. That is why the Stop Firestone Coalition is currently planning actions across the country to support the communities affected by Firestone in Liberia and we invite readers to join us! Visit the Stop Firestone website and tell Firestone: 80 years of exploitation are enough!

Tim Newman is a Campaigns Assistant at the International Labor Rights Forum, a member of the Stop Firestone Coalition. For more information on the Stop Firestone campaign, please visit the website at <http://www.stopfirestone.org>. For more information on child labor in other industries, please visit <http://www.laborrights.org>. He can be reached at [tim.newman@ilrf.org](mailto:tim.newman@ilrf.org).

This article reprinted with permission from Tim Newman.

## Bridging the Past and the Future: The Good Shepherd International Office of Justice and Peace (continued from page 2)

I served as the Education Coordinator at the newly created National Advocacy Center outside Washington, DC while also volunteering at Good Shepherd Center which is a residential treatment center for adolescent girls suffering with severe mental illness and related psychosis. I had the opportunity to talk to Members of Congress on related Good Shepherd priorities as well as to further my direct service experience in working with youth. The advocacy and service experience were complimentary and grounding. I learned through my relationships with the youth and the Good Shepherd community of the policies and priorities which are paramount to the congregation as a whole. In integrating myself into

the work of the Good Shepherd congregation, I effectively translated these experiences to lawmakers who may not have the background in understanding the extent of the work being done by the larger Good Shepherd community.

Since my time as a GSV (2002-2003), I continued to be a part of the Good Shepherd family through my employment at Good Shepherd Center as an Activity Leader for two years. I provided therapeutic recreational opportunities to youth residing at the center. One of the main projects I had the esteemed pleasure of carrying out was the Handcrafting Justice boutique where I facilitated social justice educational opportunities with the youth in light of the fair trade goods produced by women and children in the global Good Shepherd cooperatives. I also coordinated the education on operating a small business. Throughout my years

since my GSV year, I remained in contact with the National Advocacy Center by participating on the Advisory Board. I also received my Masters in Social Work from the Catholic University of America and I currently hold the position of Children's Services Specialist at the United States Conference of Catholic Bishops (USCCB). I facilitate the placement of migrant children into the national federally funded unaccompanied minor foster care program.

In my growing experience, I developed a deep understanding of the plight of vulnerable and marginalized populations, not only in the United States, but on a global scale. I have a strong belief in the linkage between political advocacy and direct service work as a strong mechanism to effectively represent the faces of the poor and discriminated. It is crucial

to continue to learn and gain insight and knowledge of the work of the Good Shepherd communities so we at the GSPJM office can be a voice with the poor of the world. I look forward to reconnecting with the Good Shepherd community in my new capacity within the GSJIP office!

*Sr. Clare Nolan, who inaugurated the Good Shepherd NGO office at the United Nations, will be transitioning out after ten years of outstanding service. Katherine Ward and Sr. Winifred will begin their orientation in New York in January 2008.*

### From the Interim Coordinator, Sr. Carol McClenon

During this time of National Advocacy Center staff transition and turnover, orientation and re-grouping, we have a new motto:

#### **"Diminished but Undaunted!"**

Thank you so much, Good Shepherd People, for your great affirmation of this ministry. Please bear with us as we learn.

We're just one click away, so stop by and visit us at :

[www.gsadvocacy.org](http://www.gsadvocacy.org)

### Welcome Allie Holsen: 2007-2008 Good Shepherd Volunteer



Allie Holsen is the new Good Shepherd Volunteer at the National Advocacy Center. Well, she may be new to NAC but she's not new to GSV. She was a GSV last year in Los Angeles where she taught the women in the Learning Center. While in college, Allie worked for Lutheran Family Services' Immigration Legal Service. Through both of these experiences in serving immigrants, she has learned about the all-too-common struggles these people face ranging from the language barrier, the legalization process to the struggle to obtain social services. These experiences have helped her at NAC to be able to see the importance of policy and the impact that it has on the lives of millions throughout the nation.

## Global Warming: A Scientific and Historical Perspective By Robert C. McClenon

"Long but worth reading." - The Editors

There is a lot of nonsense being written about global warming, including the claim that it is "only a theory" because no controlled experiment has been done, and that scientific truth is only determined by controlled experiments. Not all scientific proof or scientific methods involve repeatable experiments. Some branches of science are known as historical sciences rather than experimental sciences. Sometimes a long enough record of observable events is considered scientific proof. Astronomy is one of the most exact of the exact sciences. There are no reproducible experiments in astronomy. However, no scientist would say that it is "only a hypothesis" that astronomers can predict eclipses. It is true that any particular prediction of an eclipse is a historical experiment in that it tests the theory by validating that the prediction is correct, and every prediction of an eclipse since the publication of Newton's Laws has confirmed that they are correct. Scientific facts can sometimes be proved without exactly repeatable experiments, because sometimes the past is a repeating experiment.

There have been well-documented cycles of temperature in the past. Polar ice cores are one of the ways that those cycles can be documented, but not the only one. There are in fact several types of temperature cycles with different periods and causes. There are long-term non-cyclical changes in temperature of the Earth. These happen over a very long period, millions or tens of millions of years. They can be caused by changes in the level of greenhouse gases, or by continental drift. The current level of carbon dioxide in the atmosphere is extremely low, a fraction of a percent. That has not been the usual case in the past. The combination of oxygen and carbon dioxide is typically about 21% of the atmosphere, mostly oxygen, but sometimes there is more carbon dioxide than there is now. Sometimes there has been about 19% oxygen and about 2% carbon dioxide, and sometimes, as now, it is about 21% oxygen and less than a percent of carbon dioxide.

There are also apparently "shorter" cyclical changes over a long period of tens of thousands of years or hundreds of thousands of years.

In the long past, in various geological eras, the Earth has been both warmer and cooler than it is now. We should only focus on the past ten or twenty million years, when mammals were the main form of large animals. During most of that time, known as the Pliocene era, the Earth was warmer than it is now. It also had more carbon dioxide than it does now, and those are probably causally related. At some point, the level of carbon dioxide went down. The reason would seem to be that various kinds of plants became very successful, and began using up all of the carbon dioxide to grow and transform it into oxygen. The plants were doing almost the opposite of what we humans are now doing. They were using up a resource that they needed, carbon dioxide. We are now using up a resource that we need, fossil fuel.

Then the Pliocene transitioned into the Pleistocene for either of two reasons or both, and the Earth became much colder. The first problem is that the plants used up nearly all of the greenhouse carbon dioxide. The second problem was continental drift. South America, after a long period of drift across the Atlantic after it broke off from Africa (and one can see by looking at a map that South America and Africa can fit together like a jigsaw puzzle), collided with North America. This closed the former Strait of Panama (now the Isthmus of Panama), which turned off an ocean current through the strait. That current had been one of the factors that kept the earth warm.

The combination of the plants using up all of the carbon dioxide and the blockage of the Strait of Panama with its current caused the Earth to go into the Pleistocene, which is an ice age. Within the ice age, there have been cool periods and cold periods. In the cold periods, the Earth was nearly frozen, except in the tropics. There was a cycle of about a hundred thousand years between cold and cool.

That cycle is caused by astronomical factors. The orbit of the Earth shifts very slowly and regularly due to the Moon and the Sun. In the cold periods, most of the Earth, except for the tropics, is very cold, and much of it has arctic ice. In the cool periods, the Earth is temperate. The ice melts, and most of the Earth is not frozen. We are still in a cool period. We are still in the Pleistocene Ice Age. It is just in an interglacial (cool) period. The Earth is cooler than it was five to ten million years ago.

If this cycle had repeated itself, the Earth was, based on orbital changes, scheduled to go back into deep cold about four or six thousand years ago. However, about eight thousand years ago, something happened, which is that *Homo sapiens* changed the balance between animals and plants. Humans do some interesting things, including that they replace plants with other plants, and that they burn plants to make heat. There probably would have been another ice age if humans had not, in the mean time, invented agriculture. Agriculture is good for humans primarily because it gives us food. However, it was, for a while, also good because it created the carbon dioxide by burning first wood and then fossil fuel that was necessary to stave off the next ice age.

We have had a long cycle between warm, cool, and cold, but recently between cool and cold. Until now, humans have kept the world cool when it otherwise would have gone cold.

At this point, the real concern is whether we humans are about to cause the world to go "warm" again, to go back to Pliocene temperatures rather than Pleistocene. If that is about to happen, that would be sort of a return to where the Earth was before we arrived, but it would not be good for us. We humans have, for the past ten thousand years, counted on sea level to be where it is. Before then, when the Earth was "cold", it dropped very far, to at least three hundred feet below what we now call sea level. It has shifted between cold and cool, and is now at cool, where we want it. If we, or anything else, cause real global warming, then sea level could rise back to "warm" levels, and much of the coastal plains would then be underwater. It has been underwater in the past, but not while humans have been here. When the Earth has been cold, as in recent deep ice ages, sea level has three hundred or so feet below present sea level. When the Earth was warm, as in the Pliocene, sea level was at least a hundred feet higher than it is now.

Humans are intelligent and adaptive. We base our behavior on what we think will work. In any given area, we base our economy on what we know the climate is. This means that, in the medium run, climate change is bad, because it disrupts human plans. We should try to minimize climate change. If the climate does change, there will be winners and losers, but the losers will lose more than the winners win, in the short and medium run, because the change is disruptive. For instance, global warming will result in increased rainfall in some areas, and decreased rainfall in others. Decreased rainfall is an unmixed disaster for agriculture. Farmers will have to shift to growing crops that require less rain and provide less nutrition. Increased rainfall is a mixed blessing for agriculture. In order to take advantage of increased rainfall, farmers may have to change what crops they grow.

There has been a pattern of global warming for about the last century, especially the last few decades. We don't know if it has been caused primarily by humans and carbon dioxide, or if it has other causes, or both, although there is strong evidence that human carbon dioxide is a factor in the global warming. In the short and medium run, we don't want global warming. It disrupts the behavior of humans. We should, in the short and medium run, try to avoid anything that might disrupt the lives of humans due to our own actions. We don't know if the climate change is long-term and natural, or short-term and a natural cycle, or human-caused. That does not matter. It would still be a good idea not to do things that are likely to warm the Earth back to Pliocene temperatures, when the water was higher than it is now.

(Continued on page 6)