Humanity faces a profound dilemma, which is perhaps most compelling for those of us in the United States. The productivity of our nation’s growth economy during the 20th century has transformed our way of life. Yet according to many indicators, the world’s human economies have become larger than the earth’s commonwealth of life can continue to support, and ours is the largest. Even so, as a nation we continue to view economic growth as essential to our wellbeing. We fail to consider how our circumstances have changed because of past growth, and how more growth in these new circumstances contributes to many socioeconomic problems that can no longer be ignored. For example:

- Wealth is steadily becoming more concentrated in the hands of fewer people.
- Those with more than enough are urged to buy even more.
- Those in debt are urged to borrow more.
- There are not enough secure jobs with decent wages and benefits for those who need them.
- Many of the working poor are unable to improve their condition.
- Financial speculation has become a dominant feature of our economy.
- Government is unable to prevent pollution, over-harvesting, and destruction of wildlife habitat.

Most people do not understand that economic growth intensifies rather than solves these problems. Fifty years ago the market economy seemed highly successful at improving many peoples’ lives. The growth economy continues to sell itself, and it is hard to imagine any alternative. This makes it easy to attribute these problems to greedy corporate executives, misguided and corrupt politicians, and excessive consumption and materialism.

Yet not long ago, Thomas Berry warned against blaming our problems on evil people. There will always be evil people, he said, but our problems are because so many good and capable people are doing an excellent job of what they are expected to do.

Blaming others’ moral failings is a barrier to understanding that in our new circumstances, the growth economy itself is a fundamental problem because it cannot function as a stable system. In its current form, if our economy doesn’t expand it will contract, and contraction will lead to collapse unless expansion is restored. The threat of collapse has now become evident in our financial markets. Yet it is hard for many people to realize that the design of our current monetary system has a central role in this instability.

Stable systems possess stabilizing mechanisms, of which the thermostat of a heating system is the clearest example. If the system gets cold it warms itself up. If the system gets hot it cools itself off. But our growth economy is dominated by destabilizing mechanisms. Changes in the system are self-perpetuating and self-reinforcing. What goes up keeps going up with increasing speed until it crashes, like a fire which spreads until it runs out of fuel.

The expansion of market economies, especially our own, has been fueled for five centuries by the inclusion of new territories, resources, and people; and, quite literally, by new fuels for the past century and a half. Over this time our monetary, banking, and financial systems evolved to promote this expansion.

By the mid-1960s a few brave souls began to raise questions about the limits to economic expansion. Kenneth Boulding was one of the first. In “Earth as a Spaceship” (1965), and “The Coming Economy of Spaceship Earth” (1966), he explained that we could no longer act as though the earth was illimitable. We need to change from an exploitive and reckless “cowboy economy” to a “spaceman economy” that is part of a cyclical ecological system. But the commitment to economic growth prevented most people from taking these questions seriously.

The physical resource base of our real economy is approaching, and in numerous ways, is past its peak. Our economy’s social foundations are significantly stressed. Yet our leaders are committed to restoring expansion because without expansion, the current economic system will contract to its collapse. Our economy’s instabilities are now most evident in our burgeoning financial economy, to which the real economy has become increasingly subservient.

If we want our real economy to endure, we need to secure its foundations by replacing the growth system’s destabilizing mechanisms with stabilizing mechanisms. Otherwise our economy’s instabilities will continue to do great harm to our human communities and to the larger commonwealth of life on Earth to which we all belong.
Quaker Eco-Bulletin (QEB) is published bi-monthly by Quaker Earthcare Witness (formerly FCUN) as an insert in BeFriending Creation.

The vision of Quaker Earthcare Witness (QEW) includes integrating into the beliefs and practices of the Society of Friends the Truths that God's Creation is to be held in reverence in its own right, and that human aspirations for peace and justice depend upon restoring the Earth's ecological integrity. As a member organization of Friends Committee on National Legislation, QEW seeks to strengthen Friends' support for FCNL's witness in Washington DC for peace, justice, and an Earth restored.

QEB's purpose is to advance Friends' witness on public and institutional policies that affect the Earth's capacity to support life. QEB articles aim to inform Friends about public and corporate policies that have an impact on society's relationship to Earth, and to provide analysis and critique of societal trends and institutions that threaten the health of the planet.

Friends are invited to contact us about writing an article for QEB. Submissions are subject to editing and should:

- Explain why the issue is a Friends' concern.
- Provide accurate, documented background information that reflects the complexity of the issue and is respectful toward other points of view.
- Relate the issue to legislation or corporate policy.
- List what Friends can do.
- Provide references and sources for additional information.

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What are the growth system's destabilizing mechanisms?
The first is the design of the current banking system. Banks create new money by loaning more than they receive as deposits. This has the effect of substantially increasing the money supply. When the money created by bank loans gets spent and returned to the banking system as new deposits, it can be used for more loans to create more money. This process is called "the multiplier effect" of fractional reserve banking (see side-bar below).

In addition, the banking system has a multiplier effect on money the Federal Reserve System creates by issuing Federal Reserve Notes to support the private banking system and to buy government bonds from the U.S. Treasury. But there is also a reverse multiplier effect because the money created by loans disappears when the loans are repaid; unless, that is, an equivalent amount of new money is created by new loans.

Preventing a reverse multiplier effect is most easily accomplished if borrowers only pay the interest when it is due and never pay back the loan itself. This applies to retailers who use a permanent line of credit to finance their inventory and to households that do not pay all their credit card debt. It also applies to government debt on which interest is paid but which is not expected to be retired. Indeed, the national debt helps create the money supply that enables the economy to function.

The destabilizing aspect of fractional reserve banking is that when the economy is expanding, banks want to increase their loans, thus fueling the expansion. Con-
versely, when the economy is contracting, banks are apt to further the contraction by making fewer loans.

*The second destabilizing mechanism is the institution of money based on interest-bearing debt.* More than 95% of all modern money is created as debt on which interest must be paid. There are costs involved in managing loaned funds that are covered by interest payments. But most interest payments exceed those costs.

This means that for almost every dollar in circulation someone is paying interest to someone else, and there is a continuous, systemic effect of transferring financial wealth from debtors to lenders. The concentration of wealth we are now experiencing is arguably due in part to this effect, which is already destabilizing and will only become more so.

The interest charged on a loan, even if it only covers the costs of administering the loan, makes the amount of the debt the loan creates greater than the amount of money the loan creates. As long as more money is created by new debt before the old debt plus interest comes due, there will be enough money in the system to go around. Yet this means that to support the system the loan creates greater than the amount of money the loan creates. Either some debtors will fail and lose their collateral; or some loans will have to be refinanced, which is one way of creating more debt. Either way, when debtors are unable to repay loans, banks are the immediate losers and less apt to make new loans. This creates a self-reinforcing cycle of a contracting money supply and declining economic activity.

*The third destabilizing mechanism is the exponential aspect of compound interest.* The compounding of interest is the predominant practice in our current monetary system. This increases the level of aggregate debt exponentially, either because when interest is paid it is often not spent but used to create more debt, or because when interest is not paid it accumulates as more debt.

Compounding interest also increases the value of savings exponentially. This practice for accumulating financial capital is standard practice for pension funds, insurance companies, foundations and households. Likewise, becoming trapped in a cycle of debt due to compound interest is a common occurrence for businesses, households, and governments.

This design feature of the monetary system compounds the transfer of financial wealth from borrowers to lenders. In today’s context it transfers wealth from small businesses, households, and offshore banks have pretty much been able to create as much money and debt as they thought they were able to risk.

It is a huge mental challenge to imagine how this process underlies the entire national and global monetary system. As John Kenneth Galbraith once wrote, “the process is so simple...that the mind is repulsed.” The system works because the banks make loans they expect borrowers to pay back; and because the banks are trusted to make it work. This is why it is so difficult when the system fails, because trust is lost.

There are three complicating factors that cannot be ignored.

1) The borrowers must go out in the world to use their labor and resources they acquire to produce something that can be sold to earn money in the marketplace to pay back their loan. There must be opportunity for borrowers to do this for the system to work.

2) As borrowers pay back their loans, the money created when the loan was made ceases to exist. It is taken off the banks’ books and the money supply shrinks. To prevent this, banks must continually find new borrowers to create more money by incurring more debt.

3) When banks make loans, the money they create is only the amount of the loan, not the amount of the debt created by the loan plus interest. This means there is not enough money created by loans for borrowers to pay their debts. Either some borrowers won’t be able to pay, or banks must keep making more money with more loans so there is enough money in the present to pay past debts. Each of these factors create the need for more—more resources, more labor, more production, more debt, and more money—to keep the system working. And, of course, if too many people try to withdraw their funds, or if borrowers cannot pay off their loans, the system will fail.

When the system fails because borrowers cannot pay, bankruptcies and foreclosures function as a “relief valve.” They also function to transfer real assets from borrowers to lenders, which often means from households and small businesses to financial institutions.

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**How Our Money Is Created by the Banking System (cont’d)**

Money is more often created by loans for which there is no tangible asset to secure them. As we know, banks charge interest for making loans, some of which they use to pay for the costs of their operations. The rest they get to keep as profit. The more loans they make, the more money they create, the more interest they are paid, and the more profit they make.

The globalized monetary, banking, and financial systems have become so complex they are incomprehensible to most of us. Treating the whole banking system like a single small bank makes it a lot easier to see how fractional reserve banking creates so much of our money.

In the illustration below (Table 1), the process by which bank money is created begins with a cash deposit of $1,000. A fraction (10%) of the deposit is used as a reserve to cover cash withdrawals, and the balance is loaned by entering it as a credit to a borrower’s account, so the borrower can write checks. If the borrower then makes purchases with checks that are deposited in the bank, these new deposits can be used to make more loans, leading to more purchases and more deposits. After only three rounds in this example the multiplier effect is more than 3.4 times.

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<th>Interest</th>
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<td>$344</td>
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Table 1. Multiplier Effect of Banking System

*10% of the principal is held as Reserve.

*5% interest is due.

In practice the cash deposit stays in the bank as a reserve to cover withdrawals from all new deposits. As long as everyone uses the bank rather than exchanging cash, and the bank is able to find borrowers for all the loans it can make, with a reserve ratio of 1:10 (10%) there will be a multiplier effect that approaches 10 times the initial deposit.

As the reserve ratio is reduced, the multiplier effect is enlarged. If the reserve ratio is 1:20 (5%) the multiplier effect can approach 20. In modern practice the reserve ratio can be even less. In recent years, deregulated and offshore banks have pretty much been able to create as much money and debt as they thought they were able to risk.
the public sector into the financial economy. Because virtually all modern money is based on interest-bearing debt, the accumulation of financial wealth through the compounding of interest is a systemic constant, which spawns expansion and contributes to instability.

The fourth destabilizing mechanism is the role of savings in the growth system. This is obscured by the circular flow diagram of economic activity in market economies that appears in many textbooks. The diagram suggests that market economies function with stability and continuity, but it ignores a significant detail.

When households save some of their income, money is withdrawn from circulation unless it is returned to circulation by the banking system as loans to other households or businesses, or by investing in real property or securities directly (Fig. 1). Either way, households expect savings to yield a return, and what is borrowed must be paid back. Thus households that borrow will try to increase their future income; and businesses that borrow will certainly try to increase sales and profits.

Increasing income, sales, and profits is the name of the game in the growth economy. Yet continued expansion is destabilizing. Likewise, to withhold savings from circulation is apt to be destabilizing. Economist John Maynard Keynes’ insight about causes of the Great Depression was that unless borrowing equals savings, there may be a self-reinforcing decline in economic activity that only intervention by government can reverse.

To summarize these explanations, the economy in its current form cannot function as a stable system because of its destabilizing mechanisms. It must either expand or contract because:

- unless all savings are borrowed and spent, whether for consumption, investment, or speculation, there won’t be enough spending to buy what businesses produce;
- unless spending for consumption, investment and speculation keeps increasing, it is unlikely that all savings will be borrowed and spent;
- when loans are repaid, unless repaid loan money is loaned out again, it will disappear and there won’t be enough money in circulation to prevent the economy from contracting;
- unless new debts create more money, there won’t be enough money in this year’s economy to repay last year’s debt plus interest; and
- these conditions will be endemic as long as most money is created as interest-bearing debt by a fractional reserve banking system with a multiplier (and reverse multiplier) effect on the money supply.

The destabilizing design features of our growth economy, especially of debt-based money and fractional reserve banking, reinforce one another. These institutions served useful functions for many years when the economy was expanding into new territory with additional people and resources. These same institutions create major difficulties for our changed circumstance, in which the economy needs to prosper without expanding. They are among the reasons we so often find ourselves making bad decisions for good reasons.

For a long time, economic expansion was considered a very good thing. Now, many people are beginning to have an intuitive understanding of limits to growth. Yet there is also an intuitive understanding of the need for growth to restore prosperity. At present, we have no mechanisms in the system—no reliable thermostatic control—to achieve and maintain a prosperous, dynamically stable economy.

While traditional economic theory views periodic contractions as a stabilizing necessity, a democratic populous increasingly regards the distress caused people and communities to be unfair and unacceptable. As Kenneth Boulding might say, relying on periodic contractions of the economy, with all their negative social consequences, is no way to run a spaceship.

How do these design problems relate to the previously identified socioeconomic problems?

Money is commonly said to serve three purposes: a means of exchange, a unit of account, and a store of value. However, when money is created by interest-bearing debt, it also serves a fourth purpose: as a tool for accumulating wealth. For an individual, if returns on savings are reinvested, sooner or later the savings will double. How long this takes depends on the rate of interest. Similarly for society, if there is sustained growth in the monetary value of the economy, its monetary value will double over a period time determined by its rate of growth. (Fig. 2, p. 5).

Figure 1. Circular Flow of Money
Generally speaking, as household income rises, the proportion devoted to savings increases. So, too, must the amount of total debt, or the economy will begin to contract.

Then recall that for every dollar created by borrowing, someone will be paying interest, and someone will be receiving interest. This tends to shift financial wealth from borrowers to lenders. As the concentration of wealth increases, so will reinvested savings, other things being equal, which must be loaned into circulation to keep the economy from contracting.

Thus the transfer of financial wealth from borrowers to lenders accelerates. It is a bit of a vicious cycle, especially when coupled with reduced restrictions on the ability of the banking system to make loans. This helps to explain the massive increase in the global money supply in the past 30 years, and the massive increase in the size of the financial economy in which most of this money is created and resides (Fig. 3, p. 6).

This design feature of the growth system particularly affects entrepreneurs, those who create the jobs that produce goods and services for the real economy. If as an entrepreneur, I borrow $100 from you at 5% interest and with that $100 get an 8% return in a year’s time, my efforts will have gained me $3 and gained you $5. Unless I am able to get at least a 10% return on a loan at 5% interest, your gain from my efforts will be greater than mine.

Thus entrepreneurs must realize a gain of at least double their rate of interest in order to improve their financial standing relative to lenders. This may be a highly realistic expectation when the economy is expanding into new territory, developing new technologies, or in the midst of a speculative bubble. But at other times, it creates relentless pressure to earn profits by increasing sales, reducing costs, leveraging assets, and engaging in speculation.

In the realm of small businesses, a company’s profit can be viewed as the owner’s earnings for his entrepreneurial skills. In today’s mega-corporate culture, the entrepreneurs are the corporate executives who reward themselves with huge earnings. The investors, i.e., those who buy and sell equity shares, are really wagering on the ability of the corporate executives to increase the value of the shares.

With these considerations in mind, it is fairly easy to explain how the destabilizing mechanisms in our monetary system contribute to the socioeconomic problems identified earlier. Here are a few examples of the ironies we live with every day in the growth economy:

- While traveling this past summer, I was shocked by the number of recreational vehicle (RV) dealers, and the huge inventories of luxurious RVs we saw in their lots. They are true gasoline guzzlers. How can we reduce carbon emissions if we put these things on the road? Yet how can we provide jobs if we don’t?
- The construction industry is vital to our economy. Starter mansions, suburban developments, shopping malls, office complexes, warehouses—all are long-term investments in a highly intensive material and energy future. If we don’t keep building more of them, our friends and neighbors will be out of work. Yet contractors and manufacturers must keep finding new ways with fewer workers to build and equip them faster in order to win bids.
- Electronic devices are replacing people in both private and public sectors—automated tellers, toll and transit fare collectors, supermarket clerks, and phone answering services to name a few. In addition to eliminating jobs, and sometimes (but by no means always) increasing convenience, paying for these devices shifts income from households to the financial sector where it can be leveraged to create more money and more debt.
Since 1970, productivity in the real economy has been dwarfed by speculation in the financial economy. Pension plans, through which individuals participate directly in the financial economy, increase the vulnerability of the real economy to the instability of the financial economy. Is this why politicians seem so willing to serve the interests of the financial economy at the expense of the real economy? Has the financial economy become so dominant that they have no choice?

Do those who rail against government debt and spending understand its role in the growth economy? What, for example, would be the effect of significant reductions of health care costs on gross domestic product (GDP)? Is this why defense spending remains a sacred cow? How important were sub-prime mortgages and mortgage-backed securities for enabling the growth system to stay aloft as long as it did? What will its next source of buoyancy be?

**What changes would seem essential?**

The re-orientation in thinking about economics that Kenneth Boulding tried to initiate in 1965 seems even more relevant now but has not yet gained acceptance in the worlds of economics, finance, or politics. Orthodox economic models treat Earth either as a factor of production (land) or an externality (depletion and pollution) rather than as the economy’s host ecosystem.

In order to promote future human wellbeing within Earth’s biophysical limits, at a minimum there will need to be widespread understanding that:

- human economies are subsystems of the earth’s biophysical system,
- economies depend upon the flow of resources from their stocks of natural, human, and manufactured capital,
- real fiduciary responsibility involves allocating the economy’s income from its stocks of capital between (a) satisfying current needs and wishes, and (b) optimizing the productivity of its natural, human and manufactured capital stocks to meet future needs.

From this perspective these specific changes in our institutions of money and banking seem essential:

- Establish a 100% reserve requirement for banks to limit their functions to facilitating exchange and loaning savings deposited with them for productive purposes in the real economy.
- Restore to national government the sole authority to create interest-free national currency to eliminate the need for growth in the money supply that interest creates.
- Devise ways to return household savings to circulation without the element of compound interest to eliminate the exponential growth factor from the economic system.

There is nothing original about any of these suggestions. And, of course, there are many other huge changes that would have to accompany them. The growth economy has evolved a host of values and practices to support it. A dynamically stable economy would have to structure markets, governance, and social institutions to allocate resources in very different ways.
Yet few people understand the role of money and banking in the financial excesses we are now experiencing. These institutions must be redesigned, or they will continue to have a destabilizing effect, and prevent other efforts from succeeding.

Removing the effects of compound interest from the whole system has been least advocated and is most challenging to the imagination. Yet ways of doing this have been proposed, and it seems fundamentally necessary in order to establish an economy that neither expands nor steadily transfers wealth to lenders. This would restore to money a function which is claimed for it—that of storing real value, rather than breeding abstract financial value.

In the context of our growth economy and the ways we think about it, doing away with compound interest seems to make no sense. It is seen as essential to attract the financial capital for the huge investments that will be needed to “green” the economy. Yet this perspective provides another example of the ironies we face, and illustrates how dramatically our thinking and creatively our economic institutions need to change.

How much more damage will be caused if greening is pursued through growth? Ecological footprint analysis and many other measures tell us we are already using physical resources and exporting pollutants to the biosphere on a scale that is reducing the earth’s bio-productivity on which all life depends.

Furthermore, truly “greening” the economy must include limiting investment to that which maintains, replaces, and improves our stocks of natural, human, and manufactured capital while using no more physical resources than these stocks yield. We will have to be prepared to go “cold turkey” on our growth addiction, which at this point we haven’t a clue how to do.

Somehow we need an ideological and systemic transformation from a “cowboy economy” to a “spaceman economy” and from an ethic of exploitation to an ethic of participation. How can we get our wisest and most skilled economists to shift their attention and energy from propping up our growth economy as long as possible, to design the stabilizing mechanisms that will be needed for an economy that can prosper without growth?

It seems highly unlikely that any of these changes will occur within the context of our current political culture. Yet the growth economy has clearly become unstable and unsustainable. What cannot be foreseen with any certainty is when circumstances will create opportunity to redesign our monetary and banking systems. When such a transformation becomes possible, it will only happen if our collective leadership knows what changes are needed, and has the wisdom and skill to nurture and mobilize public understanding to support them.

We might consider the nurture of public understanding and the cultivation of hope to be our tasks in the meantime. In these circumstances there is a curious dynamic. Many people don’t want to hear about a problem unless there is a solution. Yet the problem is one for which there is no solution within our current framework. So, until there is an appreciation of how extensively the framework must change, any specific proposal can rather easily be shot down as unworkable.

**How can Friends nurture public understanding?**

In the spirit of beginning a journey with a first step, here are three related suggestions, all directed toward making the growth dilemma something that people become willing and able to think about and talk about.

1) Initiate discussions with Friends in our monthly meetings and churches. Work toward seeking approval of a yearly meeting minute that calls on our nation’s leadership to address the growth dilemma.

2) Reach out to the yearly meeting’s appointees to the General Committee of Friends Committee on National Legislation. This is not a matter that FCNL can become directly involved with any time soon. But an essential first step for FCNL is to have the Statement of Legislative Policy reflect an understanding of the issue.

3) Assemble a team to visit and have conversations with the younger staff of our elected officials, coupled with supportive follow-up communication by letter or e-mail from several other constituents. Develop ways to capture their attention, to plant some seeds and water them.

There is a Growth Dilemma Project under way in Philadelphia Yearly Meeting that is working on resources to support Friends in taking these steps.

Congressman Dennis Kucinich introduced a bill in the last Congress, HR 6550, to reform the banking system along the lines suggested here. This bill is not apt to advance in the current Congress and further separates Kucinich from his colleagues. Yet it provides a vehicle for communicating with staff in House and Senate offices, thus initiating a conversation which would not otherwise take place. HR 6550 also provides a vehicle for conversations with members of FCNL’s General Committee. You may want to thank Dennis Kucinich for his courage in introducing this bill.

**How can Friends cultivate hope?**

Cultivating hope is a continuing spiritual task for each of us, in our own souls and with our soul-mates. It should also, perhaps, be part of our conversations with other Friends and friends. These quotations may be helpful.

“Hope is not the conviction that something will turn out well, but the certainty that something makes sense, regardless of how it turns out.”

—Vaclav Havel

“Hope, I believe, is not a noun. Hope is not something that you have and hold. It is not something you can lose. I think hope is a verb; it is something you do, a practice. I can’t give you hope. Hope cannot be handed over by one person and kept by another. It is not a thing to be possessed. Hope is real, but only when individuals exercise it, practice it.”

—Joe Volk

“Faith is not believing without proof, but trust without reservation.”

—William Sloane Coffin
When I am asked whether I am optimistic, I answer No. To be optimistic is to see trends and developments in history that are likely to lead to a positive result. I do not. But I am hopeful. To believe in God involves "faith, hope, and love." These are the theological virtues. Hope is grounded in the belief that God is at work, and that means that if human beings open themselves to God, "miracles" can happen. By a miracle I do not mean an event that violates the laws of nature. I mean something unforeseeable and astonishing. Vatican II was a miracle and so was the peaceful ending of apartheid and transfer of power from the white minority to the black majority in South Africa, and, of course, thousands of small-scale and unheralded events. There is no guarantee that miracles will save humanity from terrible catastrophes. But we can hope that through them and beyond them God will work in and through those who are open to God's call to bring about something quite positive. In that sense, "another world is possible."

—John B. Cobb

Endnote

Orthodox economics includes a model which allows that if money circulates more quickly, it will prevent the shortfall that leads to defaulting on debt and economic recession. This big "if" may be possible theoretically, but it is quite unlikely, especially when the increasing rate of circulation occurs in the financial economy which does little to ease the shortfall in the real economy.

Ed Dreyb is a member of Mount Holly (NJ) Monthly Meeting. A former Friends school administrator and social studies teacher, he has been active through Philadelphia Yearly Meeting, the National and Pennsylvania Councils of Churches, Friends Committee on National Legislation, and Quaker Earthcare Witness on issues of climate change, energy, and ecological economics. He currently participates in the Growth Dilemma Project of Philadelphia Yearly Meeting.

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*All QEB articles are available at <quakerearthcare.org/Publications/QuakerEcoBulletin/Pub-Eco-Bulletin.html>