



RUTH FREMSON/THE NEW YORK TIMES

Migrants from the mainland are putting pressure on the original residents of the Galápagos, like these blue-footed boobies.

## Iran's Skill At Foiling Sanctions

By CHARLIE SAVAGE and MARK LANDLER

WASHINGTON

President Obama has vowed to keep the pressure on Iran over its nuclear program after this month's meeting in Geneva, and his advisers said the United States was intensively recruiting other nations to join in a harsher economic embargo against Tehran should diplomacy fail.

But as the focus on sanctions intensifies, a review of the United States' experiences in enforcing its own longstanding restrictions on trade with Iran suggests it would be difficult to quarantine the Iranian economy.

Black market networks have sprouted up all over the globe to circumvent the sanctions. A typical embargo-busting scheme was detailed in a plea agreement filed in federal court here on September 24, the day before Mr. Obama and European allies announced the existence of a previously undisclosed Iranian nuclear enrichment facility near Qum.

In the court filings, a Dutch aviation services company and its owner admitted that they had illegally funneled American aircraft and electronics components to Iran from 2005 to 2007. Under the scheme, Iranian customers secretly placed orders with the company, which served as a front, buying the parts and having them shipped to the Netherlands, Cyprus and the United Arab Emirates. The materials were then quietly repackaged and shipped on to the real buyers in Iran.

The Dutch company was eventually caught. But the ease with which it had operated until then illustrates a key hurdle facing the United States: even if diplomatic challenges can be overcome to persuade countries with significant economic ties to Iran, like China, to approve sanctions, it is virtually impossible to make an embargo airtight.

"The Iranians have a lot of experience at this point in evading sanctions," said Michael Jacobson, an intelligence and sanctions specialist at the Washington Institute for Near East Policy. "They are adaptable, learn from mistakes, see

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## Invasive Humans

By SIMON ROMERO

PUERTO AYORA, Galápagos Islands  
THE MOUNDS OF reeking garbage on the edge of this settlement 960 kilometers off Ecuador's Pacific coast are proof that one species is thriving on the fragile archipelago whose unique wildlife inspired Darwin's theory of evolution: man.

Tiny gray finches, descendants of birds that were crucial to his thesis, flutter around

the dump, which serves a growing town of Ecuadoreans who have moved here to work in the islands' thriving tourism industry.

The burgeoning human population of the Galápagos, which doubled to about 30,000 in the last decade, has unnerved environmentalists. They point to evidence that the growth is already harming the ecosystem that allowed the islands' more famous inhabitants — among them giant tortoises

and boobies with brightly colored webbed feet — to evolve in isolation before mainlanders started colonizing the islands more than a century ago.

The growth has become enough of a threat to the environment that even the government, which still welcomes growth in the tourism industry, has ex-

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### WORLD TRENDS

In Afghanistan, a tough call for Obama.



### SCIENCE & TECHNOLOGY

After a long journey, a new view of Saturn.



### ARTS & STYLES

Comedy troupe gets laughs 40 years later.



## A Desire for What Is Real

If you're feeling overwhelmed and seeking a bit of recession escapism, you might find it in a chicken, a jar of pickles or this season's harvest. The bubble and bust has kindled a longing for a low-tech, less volatile and simpler era, a search for a time that feels less commercial and more real.

"It's the draw of authenticity, whether it's an aesthetic, a recipe or a technique," Sean Crowley, a neckwear designer for Ralph Lauren, told The Times. His interest in "old things from different periods" has led him to collect and restore English and French umbrellas from the 1930s and 40s.

Mr. Crowley, 28, is representative of an antiquarian movement underfoot to exhume the accoutrements of the turn-of-the-19th-century leisure class, Penelope Green wrote in The Times. New stores in New York like Against Nature are selling Victorian mementos, taxidermy collections, fencing masks and ancestral portraits to collectors and decorators.

A new product, a liquor called Root, is actually old, and it caters to these "new vintage style" folks. It stems from Root Tea, a recipe that Native Americans taught to colonial settlers in the 1700s. Steven Grasse, owner of the store Art in the Age of Mechanical Reproduction, told Ms. Greene, "Root fits very well with the Art in the Age brand because that brand is all about restoring the 'aura' that has been lost with the mass commodification of our lives. Our job is to restore the aura that has been lost by strip malls and cheap junk from China."

While some may find that aura of authenticity in retro items, others are finding it in fluffy ones: backyard chickens.

For comments, write to [nytweekly@nytimes.com](mailto:nytweekly@nytimes.com).

Hatcheries that supply baby chicks can barely keep up with demand, William Neuman wrote in The Times.

Marie Reed, a sales representative for a hatchery in Texas, told Mr. Neuman that managers of rural feed stores that sell her company's birds told her they had seen a spike this year in demand for baby chicks, garden seeds and ammunition. "That tells me people are wanting to depend on themselves more," she said.

How much more low-tech can you get than with a root cellar? Bruce Butterfield, research director for the National Gardening Association, a trade group, told The Times that home food preservation increases in a poor economy. Many families have made the seemingly anachronistic choice to turn their basements into root cellars, which have been the province of 19th-century households, survivalists and now, backyard gardeners, wrote The Times's Michael Tortorello.

If creating a sod-floor basement and loading it with potatoes seems a little too rustic, canning, preserving and pickling might be easier. Lately, many seem to think so. Sales of equipment are up almost 50 percent over the last year, according to the Jarden company, which makes canning supplies, Julia Moskin wrote in The Times. Preserving offers primal satisfactions and practical results, she wrote.

"People want to take back their food and their skills from the industrial giants," June Taylor, a pioneer of using local, seasonal produce, told Ms. Moskin.

It's authenticity, found in a jar of preserves, in a chicken coop or in an antiquated lifestyle. As Mr. Grasse put it: "The approach is particularly appropriate right now because everything has collapsed. The old notions of luxury have crumbled. People are looking for what is real."

### LENS



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EDITORIALS OF THE TIMES

# Negotiating With Tehran

Buyer beware has to be the rule when dealing with Iran and its nuclear ambitions. For years, Iran has cheated and lied and made just-in-time concessions to sidestep any real punishment.

So we are skeptical about Tehran's offer to send most of its stock of low-enriched uranium to Russia and France to be turned into reactor fuel. It could be good news — delaying the day when Iran would be able to build a nuclear weapon and, we hope, quieting calls in Israel for military action.

But that would only be true if Iran isn't hiding more stocks of enriched uranium somewhere else. And one must not forget that Tehran is continuing to churn out enriched uranium at its plant in Natanz — in direct defiance of a United Nations Security Council order.

The United States and the other great powers that resumed negotiations with Iran recently are going to have to push Iran's leaders hard to fulfill this promise and to finally open up their entire nuclear complex to rigorous international inspection.

At the talks, Iran also said it would open the uranium-enrichment plant it is building near Qum to interna-

tional inspection. Of course, Iran didn't even acknowledge that it was building a plant near Qum until after the plant was discovered.

Iran has long insisted that it must be able to do all of the steps in nuclear fuel production in order to have an uninterrupted fuel supply for its nuclear power plants. Most of the rest of the world suspected that what it really wanted was to be able to make the fuel for a nuclear weapon.

That said, there are good reasons to continue negotiating — and to continue testing Iran's intentions.

Odds are Tehran is just playing for more time. But given all of the political ferment in the wake of June's stolen presidential elections — and the disclosure of the Qum site — there is a chance that Iran's leaders are getting nervous.

We are encouraged that more talks are set for later this month. But this is no time for complacency or wishful thinking. The United States and its partners must push Iran to open all of its declared nuclear facilities and allow inspectors to interview any Iranian scientist they choose to. The leading powers must also be ready to impose tough sanctions if Iran resists or if negotiations go nowhere.

Editorial Notebook/EDUARDO PORTER

# A Billion Here, a Billion There

Past the initial schadenfreude, it's hard to figure out what to think about the shrinking of America's 400 most gilded fortunes. It is reassuring that the super-rich can lose money too — \$300 billion in the last year, according to Forbes, bringing their total down to \$1.27 trillion. It's about the same percentage that was lost by Americans' private pensions, whose assets dropped by about \$1.1 trillion, nearly 19 percent.

It can hardly hurt as much. Warren Buffett lost \$10 billion but still has \$40 billion. Kirk Kerkorian has \$3 billion left, after losing \$8.2 billion. Citigroup founder Sanford Weill dropped off the billionaires list, but still has many millions.

Every year as I get worked up over Forbes's latest billionaire review, I try to convince myself that accumulation of wealth at the top can serve a social function. I tell myself that inequality of income is a standard feature of capitalism, pushing the best and brightest into the most profitable jobs.

But \$1.27 trillion? That's a decade

of health care reform in one of the more expensive versions. This isn't typical inequality — this is a winner-take-all deal that can destroy incentives for everyone except those in the upper crust.

Maybe the jolt of billion-plus losses can spur plutocrats to change. Ralph Nader just wrote a novel called "Only the Super-Rich Can Save Us!" in which Mr. Buffett (already a major philanthropist), Ross Perot and a few other billionaires go to Maui to "redirect" society onto the right path. The actor Warren Beatty gets to run California. Wal-Mart workers unionize. Corporate greed is brought to heel.

There is no sign of such enlightenment on Wall Street.

Amid all this it's hard to see how our oligarchs could be persuaded to restrain their appetites.



RUBY WASHINGTON/THE NEW YORK TIMES

Unemployment will cost the U.S. economy trillions of dollars in lost output in the next few years. An employment office in Brooklyn, New York.

PAUL KRUGMAN

# Mission Not Accomplished

Stocks are up. Federal Reserve chairman Ben Bernanke says that the recession is over. And I sense a growing willingness in America to declare "Mission Accomplished" when it comes to fighting the slump. It's time, I keep hearing, to shift our focus from economic stimulus to the budget deficit.

No, it isn't. And the complacency now setting in over the state of the economy is both foolish and dangerous.

Yes, the Federal Reserve and the Obama administration have pulled us "back from the brink" — the title of a new paper by Christina Romer, who leads the Council of Economic Advisors. She argues convincingly that expansionary policy saved us from a possible replay of the Great Depression.

But while not having another depression is a good thing, all indications are that unless the government does much more than is currently planned to help the economy recover, the job market — a market in which there are currently six times as many people seeking work as there are jobs on offer — will remain terrible for years to come.

Indeed, the administration's own economic projection — a projection that takes into account the extra jobs the administration says its policies will create — is that the unemployment rate, which was below 5 percent just two years ago, will average 9.8 percent in 2010, 8.6 percent in 2011, and 7.7 percent in 2012.

This should not be considered an acceptable outlook. For one thing, it implies an enormous amount of suffering

over the next few years. Moreover, unemployment that remains that high, that long, will cast long shadows over America's future.

Anyone who thinks that we're doing enough to create jobs should read a new report from John Irons of the Economic Policy Institute, which describes the "scarring" that's likely to result from sustained high unemployment. Among other things, Mr. Irons points out that sustained unemployment on the scale now being predicted would lead to a huge rise in child poverty — and that there's overwhelming evidence that children who grow up in poverty are alarmingly likely to lead blighted lives.

These human costs should be our main concern, but the financial implications are also dire. Projections by the Congressional Budget Office, for example, imply that over the period from 2010 to 2013, — that is, not counting the losses we've already suffered — the "output gap," the difference between the amount the economy could have produced and the amount it actually produces, will be more than \$2 trillion. That's trillions of dollars of productive potential going to waste.

Wait. It gets worse. A new report from the International Monetary Fund shows that the kind of recession we've had, a recession caused by a financial crisis, often leads to long-term damage to a country's growth prospects.

The same report, however, suggests that this isn't inevitable: "We find that a stronger short-term fiscal policy response" — by which they mean a temporary increase in government spending — "is significantly associated with

smaller medium-term output losses."

So we should be doing much more than we are to promote economic recovery, not just because it would reduce our current pain, but also because it would improve our long-run prospects.

But can we afford to do more — to provide more aid to beleaguered state governments and the unemployed, to spend more on infrastructure, to provide tax credits to employers who create jobs? Yes, we can.

The conventional wisdom is that trying to help the economy now produces short-term gain at the expense of long-term pain. But as I've just pointed out, from the point of view of the nation as a whole that's not at all how it works.

What is true is that spending more on recovery and reconstruction would worsen the government's own fiscal position. But even there, conventional wisdom greatly overstates the case. The true fiscal costs of supporting the economy are surprisingly small.

You see, spending money now means a stronger economy, both in the short run and in the long run. And a stronger economy means more revenues, which offset a large fraction of the upfront cost. Quick calculations suggest that the offset falls short of 100 percent, so that fiscal stimulus isn't completely free. But it costs far less than you'd think from listening to what passes for informed discussion.

Look, I know more stimulus is a hard sell politically. But it's urgently needed. The question shouldn't be whether we can afford to do more to promote recovery. It should be whether we can afford not to. And the answer is no.

LETTERS TO THE INTERNATIONAL WEEKLY

## The New Powerhouses

To the Editor:

In what way are markets more efficient than regulators? Markets by themselves don't exist, there is always massive regulation towards differing goals. The idea of a "free market" is an illusion created to serve a purpose, being touted at every corner of the media.

In fact, "free" in this context means capital flow that is free from responsibility for the needs of people.

The countries Roger Cohen has labeled "the new powerhouses" would not have such successful economies without regulating them, especially without regulating their financial markets.

RICHARD BEPPLE  
Vienna

To the Editor:

Just thought you might be interested: the current banking dramas are just a replay of all the others, at rough 18- to 20-year intervals, 1819, 1837,

Send comments to [nytweekly@nytimes.com](mailto:nytweekly@nytimes.com).

1857, 1873, 1893, 1914, then after the 1926 property peak, the rest; 1974 and 1991 you are probably familiar with. Same cause, same result...

There is plenty of evidence that past banking crises, like the current one, were brought on by the collapse of real estate prices that preceded them.

PHILIP J. ANDERSON  
London, England

## Leaving Hate Behind

To the Editor:

I had the opportunity to read the Spanish version of Pamela Bloom's column (Saturday, September 29, 2009), published in Reforma. In the face of the widespread violence devastating several parts of the world, particularly Mexico, the teachings of Buddhism show us a way to go, regardless of our creed. A true ecumenism is our only and last chance to move out of this crisis engendered by a lack of respect for one another and to rescue the planet.

GUILLERMO DE LA VEGA G.  
Mexico

## Echoes Under the Plum Tree

To the Editor:

I write this from an ancient farmhouse in the southwest of France, surrounded by sprawling sunflower fields. I had to make a great effort to get out of bed, where I was blissfully reading The New York Times International Weekly section published inside of Le Monde, to write this note.

I did this to agree with Roger Cohen's statements regarding the so-called technological advances. One can certainly not ignore them, but one can observe that they are slowly dehumanizing us. The financial crisis revealed that boundaries should have been there to offset man's greed; and so boundaries should also be in place to slow down the grip new technologies are having on the naive belief human kind has on the benefits of progress.

In the meantime, let's put the hand brake on a life glorifying speed and take the time and pleasure to look around us and appreciate life in the slow lane.

ALEXANDER ELKAYEM  
Villeneuve-sur-Lot, France

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## WORLD TRENDS

## Decision Time in Afghanistan Arrives for Obama

Over the next few weeks, Barack Obama must make the most difficult decision of his presidency to date: whether or not to send up to 40,000 more troops to Afghanistan, as his commanding general there, Stanley McChrystal, has reportedly proposed.

## ESSAY

JAMES TRAUB

This summer, Mr. Obama described the effort in Afghanistan as “a war of necessity.” In such a war, you do whatever you need to do to win. But now, as criticism mounts from those who argue that the war in Afghanistan cannot, in fact, be won with more troops and a better strategy, the president is having second thoughts.

A war of necessity is presumably one that is “fundamental to the defense of our people,” as Mr. Obama has said about Afghanistan. But if such a war is unwinnable, then perhaps you must reconsider your sense of its necessity and choose a more modest policy instead.

The conservative pundit George Will suggested as much in a recent column in which he argued for a reduced American presence in Afghanistan. Mr. Will cited the testimony of George Kennan, the diplomat and scholar, to a Senate Foreign Relations Committee hearing on Vietnam in 1966: “Our country should not be asked, and should not ask of itself, to shoulder the main burden of determining the political realities in any other country. ... This is not only not our business, but I don’t think we can do it successfully.”

Mr. Kennan’s counsel has become relevant today, as Americans discover, time and again, their inability to shape the world as they would wish.

The idea that American foreign policy must be founded upon a recognition of the country’s capacities and limits, rather than its hopes and wishes, gained currency after World War II, possibly the last unequivocally necessary war in American history. At the war’s end, of course, the global pre-eminence of the United States was beyond question. But Mr. Kennan and others tried to imbue their sometimes-grandiose fellow citizens with an awareness of the intransigence of things.

“The problems of this world are deeper, more involved, and more stubborn than many of us realize,” Mr.



TYLER HICKS/THE NEW YORK TIMES

General Stanley McChrystal wants to send 40,000 more American troops to Afghanistan.

Kennan said in a 1949 speech to the Academy of Political Science. “It is imperative, therefore, that we economize with our limited resources and that we apply them where we feel that we will do the most good.”

The realists won that debate. Mr. Kennan argued that a policy of confrontation with Stalin’s Russia, advocated by the more fervent anti-Communists, would be neither effective nor necessary; the Soviets, rather, could be checked by “intelligent long-range policies” designed to counter — to contain — their ambitions. Of course he lost in Vietnam, where the nation-building dreams of a generation of cold war liberals came to grief. The neoconservatives who came to power with George W. Bush were just as dismissive of the cautionary spirit of realism as the liberals of an earlier generation had been, and thought of themselves as conservative heirs of the idealistic tradition of Woodrow

Wilson, the president who brought the United States into World War I.

Now, as Americans debate whether their presence in Afghanistan, it’s striking how opinion is divided not according to left and right, or hawk and dove, but rather by the difference between the Wilsonian “what we must do” and the Kennanite “what we can do.”

Stephen Holmes, a left-leaning law professor at New York University, wrote a critique of General McChrystal’s plan that almost echoed Will/Kennan: “Turning an illegitimate government into a legitimate one is simply beyond the capacities of foreigners, however wealthy or militarily unmatched.”

In the real world, the distinction between these two different dispositions is a fluid one. After all, in a true war of necessity, like World War II, a state and a people summon the capacity to do what must be done, no matter

how difficult. So the question at the heart of the current debate is whether the battle for Afghanistan represents such a war, or whether — like those for Vietnam or Iraq — the problem that it presents can be solved by less bloody and costly means.

Americans broadly agree that their government must prevent major attacks on American soil by Al Qaeda. But there the consensus ends, and their questions begin: Do we need to sustain the unstable Afghan government of President Hamid Karzai to achieve that objective? If so, will a combination of overwhelming military force and an accompanying civilian surge not only repel the Taliban but make Afghanistan self-sustaining over the long term?

The leaked McChrystal plan argues both that we must and that we can, and that a more modest effort “will likely result in failure.” Critics like the military analyst Andrew Bacevich in-

## Debating whether the Afghanistan war is one of necessity.

sist, that we cannot and that we need not — that Americans can contain the threat of jihad through such measures as enhanced homeland defense. Others have argued for a middle course involving a smaller troop increase and less nation-building.

George Kennan was right about the cold war. But the question now is whether “containment” is the right metaphor for Afghanistan, and for the threat of Islamic extremism. Al Qaeda is a global force that seeks control of territory chiefly as a means to carry out its global strategy. It has no borders at which to be checked; its success or failure is measured in ideological rather than territorial terms — like Communism without Russia.

The question boils down to this: How grave a price would Americans pay if Afghanistan were lost to the Taliban? Would this be a disaster, or merely, as with Vietnam, a terrible misfortune for which the United States could compensate through a contemporary version of Mr. Kennan’s “intelligent long-range policies”? If that is the case, then how can Americans justify the immense cost in money and manpower, and the inevitable loss of life, attendant upon General McChrystal’s plan? How can they gamble so much on the corrupt and barely legitimate government of President Karzai?

But what if the fall of Kabul would constitute not only an American abandonment of the Afghan people, but a major strategic and psychological triumph for Al Qaeda, and a recruiting tool of unparalleled value? Then the Kennanite calculus would no longer apply, and the fact that nobody can be confident that General McChrystal’s counterinsurgency strategy will work would not be reason enough to forsake it.

In that case — and perhaps only in that case — Afghanistan really would be a war of necessity.

## NEWS ANALYSIS

## Europe Ponders the Path Ahead

By STEPHEN CASTLE and STEVEN ERLANGER

LONDON — Ireland’s vote to ratify the European Union’s Lisbon Treaty has finally cleared the way for the creation of a powerful new president, intended to elevate the 27-nation bloc’s standing on the global stage.

But do European leaders actually want one?

Ahead lies a difficult discussion about how much power and influence a new European Union president should have and whether the post should fall to a political star — like former Prime Minister Tony Blair of Britain — or one of his grayer, more technocratic rivals.

The leaders of member countries will decide, probably this month, and their decision could determine if the union seeks the bigger role it says it needs to try to match the influence of the United States and that of rising powers like China, Russia, India and Brazil.

The Lisbon Treaty, which aims to streamline decision-making and reform the bloc’s outdated structures, lays down a two-and-a-half-year term for a full-time president of the European Council, the body that represents member nations. The

Stephen Castle reported from London, and Steven Erlanger from Paris.

treaty, if finally ratified by the Poles and Czechs, also mandates a single new foreign affairs chief, in charge of both policy and aid money, and a new European diplomatic corps.

Both new jobs would be subordinate to the leaders of member countries, and the position of commission president, held by José Manuel Barroso of Portugal, continues. But those who fill the two new posts will have a

## A powerful president would put the union on the international stage.

considerable chance to carve out significant roles for themselves, since they will be the most prominent faces of a collective Europe.

There would also be greater powers for the European Parliament — the only popularly elected European Union institution — an effort to improve democratic accountability.

The treaty, assuming it passes, is “a splendid virtual success,” said Justin Vaïsse, a French scholar at the Brookings Institution, a public policy

organization in Washington, D.C. “It is virtual not only because much will depend on the men and women who occupy the main functions, and how they choose to define them and assert their authority, but also because there will be no real improvement without greater convergence and cooperation between the big three European countries,” he said, referring to France, Germany and Britain.

So when they gather at a summit meeting this month, the 27 European leaders face a clear choice between appointing a prominent president to represent them, or someone who will be more submissive.

The identity of the new president will determine the type of job that is created, said Katinka Barysch, deputy director of the Center for European Reform, a research institute in London. “If you have someone like Tony Blair, he will not want to be talking about the minutiae of service-market liberalization,” she said. “He would want to be talking about Iran to Barack Obama.”

While the European Union says it desires a bigger international role, national politicians know that a charismatic figure would overshadow many of them and could shift the bloc’s center of gravity.

There are no declared candidates. But the politician thought to have the



PETER MORRISON/ASSOCIATED PRESS

Ireland voted to ratify the Lisbon Treaty. A crowd celebrated on October 3.

best prospect is also the most controversial: Mr. Blair. Other contenders include: Jan Peter Balkenende, François Fillon, Herman Van Rompuy, and Jean-Claude Juncker, respectively the Dutch, French, Belgian and Luxembourgian prime ministers; Paavo Lipponen and Felipe González, the former Finnish and Spanish prime ministers; and former President Martti Ahtisaari of Finland.

With the possible exception of Mr. Fillon, Mr. Blair’s is the only credible big name to emerge so far from informal discussions.

There will be other political considerations, too, like balancing politicians from the left and the right and from large and small nations. If the president comes from the center-right, for example, the foreign policy chief is likely to come from the left.

“We don’t want to have a big-personality president, like Tony Blair, and then a big-personality foreign high representative, because then they will compete with each other,” said Ms. Barysch, of the Center for European Reform. “We already look ludicrous on the international stage having so many different voices.”

WORLD TRENDS

# In the Exotic Galápagos, Invasive Humans

From Page 1

pelled more than 1,000 poor Ecuadorians in the past year from a province that they feel is rightfully theirs, and it is in the process of expelling many more.

By limiting the population, officials hope to preserve the natural wonders that bolster one of Ecuador's most profitable sectors: tourism. But the measures are feeding a backlash among unskilled migrants who say they are being punished while the country continues to enjoy the many millions of dollars tourists bring to Ecuador, one of South America's poorest nations.

"We are being told that a tortoise for a rich foreigner to photograph is worth more than an Ecuadorean citizen," said María Mariana de Reina Bustos, 54, a migrant from Ambato in Ecuador's central Andean valley, whose 22-year-old daughter, Olga, was recently rounded up by the police near the slum of La Cascada and put on a plane to the mainland.

The first settlers came to the islands to live off the land, working as fishermen, ranchers and farmers. Now, most of those who fly from Quito, the capital, or sneak on the islands in boats are lured by different sorts of riches: the relatively high wages they can earn as taxi drivers and hotel maids or workers in the islands' growing bureaucracy.

For decades, the country's leaders did little to prevent people from coming here, partly to build the tourism industry and then to ensure the government had a presence among the pioneers. There was something of a natural limit on growth: the country had put aside 97 percent of the archipelago as a park.

But as tourism and migration grew over the last decade, pressure began building within the scientific and environmental community to act on curbing the islands' population. The United Nations put the Galápagos on its list of endangered heritage sites in 2007.

Scientists here said people had al-



RUTH FREMSON/THE NEW YORK TIMES

Galápagos officials have been expelling illegal residents. A migrant picked through trash in Puerto Ayora.

ready done significant damage, pointing to fuel spills, the poaching of giant tortoises and sharks and the introduction of invasive species that threaten animals endemic to the Galápagos.

"With people come cats, and with cats come threats to other animals found nowhere else in the world," said Fernando Ortiz, coordinator of the Galápagos program for Conservation International.

Technically, residency is granted to a limited number of people, including those born here and their spouses, people who arrived before 1998 and those with temporary work permits. The police, known in local slang as the "migra" for their role in tracking down illegal migrants, set up impromptu checkpoints throughout the islands. But the same government that oversees the expulsions also offers subsidies to people living on the islands.

One subsidy allows gasoline to cost about the same here as on the mainland. Another allows residents to fly between the islands or to Quito for a fraction of what foreigners pay. A black market in residency thrives in which migrants marry established residents to obtain coveted identity cards.

The result: Puerto Ayora's streets beckon with discos, food stands and

souvenir shops. On the outskirts, a billboard with the image of Leopoldo Bucheli, the pro-development mayor, celebrates a project called El Mirador that is clearing an area on the edge of town to build 1,000 new homes.

"All we want, like people anywhere on this planet, is a dignified existence," said Yonny Mantuano, 36, who bought a lot to build a home at El Mirador. He heads the teachers union here, whose 600 members have chafed at one of the government's new attempts to limit subsidies: a measure this year cutting their cost-of-living bonus.

The government's somewhat haphazard view of life here is echoed by the people. Margarita Masaquiza, 45, an Indian from Ecuador's highlands who arrived here at the age of 14, abhors the government's expulsions.

"We built this province with our own hands, so, yes, it pains us to see our countrymen deported like animals," Ms. Masaquiza said. "After all, we are indigenous Ecuadoreans, how can we be illegal in our own country?"

But when asked how she felt about the impact of new migrants on her four children and four grandchildren, Ms. Masaquiza adopted a different tone.

"We must preserve opportunities for our families," she said.

# Rise of China Exposes Flaws in Japanese Model

By HIROKO TABUCHI

TOKYO — For years, Japan has been readying itself for the day that it is eclipsed economically by China. But as a result of the global slowdown, Japan's difficulty in managing its economy and China's rise — on vivid display recently as Beijing celebrated the 60th anniversary of the founding of the People's Republic — that day may come sooner than anyone predicted.

Though recent wild currency swings could delay the reckoning, many economists expect Japan to cede its rank as the world's second-largest economy sometime next year, as much as five years earlier than previously forecast. At stake are more than regional bragging rights: the reversal of fortune will bring an end to a global economic order that has prevailed for 40 years.

China's rise could accelerate Japan's economic decline as it captures Japanese export markets, and as Japan's crushing national debt increases and its aging population grows less and less productive — producing a downward spiral.

"It's beyond my imagination how far Japan will fall in the world economy in 10, 20 years," said Hideo Kumano, economist at the Dai-ichi Life Research Institute in Tokyo.

Not long ago, Japan was "the economic miracle," a juggernaut on its way to rivaling the United States, which has the biggest economy.

Now, many here ask whether Japan is destined to be the next Switzerland: rich and comfortable, but of little global import.

Yet even this widely held hope among the country's 127 million people may be slipping from Japan's grasp. The per-capita gross domestic product of Japan, which surged past that of the United States in the late 1980s, stalled at \$34,300 in 2007; it is now a quarter below American levels and 19th in the world.

Unemployment stands at a record high of 5.7 percent, while prices and wages are falling fast. Japan's economy shrank at an annualized rate of 11.7 percent in the first three months of the year before recovering to a modest 2.3 percent annual rate of growth in the second quarter.

The Chinese economy is likely to

expand 8 percent in 2009, while economists expect the Japanese economy to shrink 3 percent for the year before returning to anemic growth of about 1 percent next year.

The Chinese economy grew about 10 percent a year for most of the last two decades. Japan stagnated as public works projects aimed at reviving the economy went toward protecting moribund industries instead of fostering new ones.

The troubles in Japan have been confounded by its worst recession in postwar history, brought on by the financial crisis that swept across the globe. As demand evaporated in important overseas markets, production and exports slumped as much as 40 percent this year.

Some economists say Japan does not need to fear its neighbor. China became Japan's largest trading partner in 2006, and China-bound

## China's recent success is a 'psychological shock' to Japan.

exports were among the first to show signs of recovery in the recent slump.

"Japan is neighbors with a rapidly growing market," said Nobuo Iizuka, chief economist at the Japan Center for Economic Research. "That is a great advantage, not a threat. The question is, can Japan build on that advantage?"

Still, said C. H. Kwan, a senior fellow at the Nomura Institute of Capital Market Research, based in Tokyo, "this is a big psychological shock to Japan."

Mr. Kwan forecasts that the Chinese economy could surpass that of the United States in 2039. And that date could move up to 2026 if China lets its currency appreciate by a mere 2 percent a year.

"We're no longer talking about China making lots of shoes," he said. "China is about to leave everyone behind in a big way."

# Iran Has Polished Its Skills At Foiling Trade Sanctions

From Page 1

where the United States cracks down and move elsewhere. And on the part of businesses, there is a lot of willful blindness."

On October 1, Iranian officials met in Geneva with representatives from the United States and other world powers. At that session, the Iranians pledged to give nuclear inspectors access to its clandestine enrichment facility and to ship most of its openly declared uranium outside the country to be further enriched by France or Russia.

While viewed as progress, the meeting drew further attention among diplomats to the role of possible new sanctions. To hold Iran to its pledges, and to prevent it from dragging its feet on the larger objections to its nuclear program, officials said Iran would need to feel a credible threat of punitive measures.

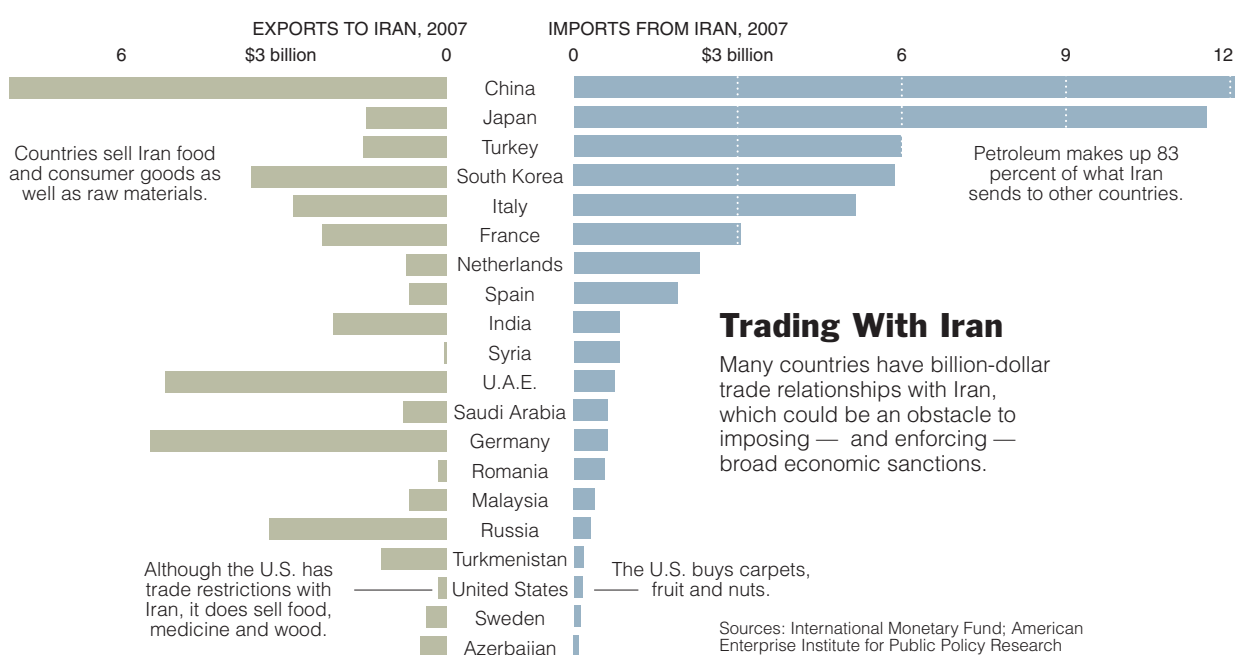
"If you don't put yourself in a position where you can act on the pressure track, you'll be less likely to have the engagement track work," said a high-ranking administration official, who spoke on the condition of anonymity because of the delicacy of the matter. "The key is for the Iranians to see both sides of this."

The United States is refusing to take any measures off the table, even an embargo of gasoline and other fuel. European countries fear such measures would inflict misery on the Iranian people, and drive them into the arms of an unpopular government.

Existing sanctions have had some practical consequences. In Tehran, the power goes out regularly, a result of a shortage of electricity generators, which are on the list of prohibited goods because of their potential for military use. That did not happen a decade ago.

Still, the experience of the United States in policing its own unilateral economic sanctions — which were imposed after the 1979 hostage crisis and expanded several times since then — shows that restrictions are more likely to drive up prices of banned foreign goods than to stop them from flowing into Iran. The world is full of rogue nations and smugglers, and other nations may not be as willing as the United States to police sanctions rigorously.

The guilty plea by the Dutch avionics company late last month was just the latest in a string of indictments against several hundred such defendants since 2007, when the Bush administration



significantly increased efforts to enforce the United States' own trade restrictions with nations like Iran.

In cases over the past few months alone, prosecutors have accused defendants of illegally routing fighter jet parts to Iran through Colombia, electronic components through Malaysia and helicopter parts through Singapore. Accused intermediaries have been in places including Ireland and

Hong Kong.

Financial sanctions have also been violated. In January, the London bank Lloyds TSB agreed to pay \$350 million in fines for hiding the involvement of entities in countries including Iran on wire transfers with United States banks over a 12-year period. In 2006, regulators fined the Dutch bank ABN Amro for similar sanctions-busting dealings from 1997 to 2004.

Mr. Jacobson said that even strict sanctions, enforced with broad international support, would be unlikely to seal off a country as large and complex as Iran.

"While it's unrealistic to expect that you can isolate Iran from the international economy," he said, "the narrower and more realistic goal of raising their cost of doing business may change their leaders' calculations."

## MONEY &amp; BUSINESS



NAMAS BHOJANI FOR THE NEW YORK TIMES

Lacking proof-of-income documents, many Indians offer their family jewelry to secure high-interest loans.

## For Indian Lenders, Collateral by the Gram

By VIKAS BAJAJ

KOCHI, India — Indians own more gold than the citizens of any other country. They use the glittering metal as ornaments to flaunt family wealth, as a source of retirement savings and as insurance against calamities.

But lately, gold has become something else: collateral, and the basis of one of the country's fastest-growing businesses, gold loans.

While pawning the family jewels would be a sign of distress in the West, trading gold for cash increasingly is viewed in India as the equivalent of taking out a home equity loan to expand a business or simply to buy things.

"This is the rural credit card," said V. P. Nandakumar, chairman of the Manappuram Group, one of the country's biggest gold loan companies. "This is the only way really that someone gets an instant loan within three minutes."

Most Indians, especially those working in the informal economy, which accounts for 92 percent of the country's 400 million workers, have few choices when they need to borrow money: they lack other collateral or have no documents to prove their incomes.

Gold loan firms have also benefited from the financial crisis. In the last year and a half, many lenders have stopped making unsecured personal loans here because of rising defaults in India.

It is now "a lot more palatable for

Ron Nixon contributed research from Washington.

banks to give loans against gold jewelry," said Viren H. Mehta, a national director at Ernst & Young India. As a result, for borrowers like Vishwanathan C. R. Pai, a rickshaw repairman, gold loans are an essential financial tool.

He frequently hands over his family's jewelry at Muthoot Finance to pay operating expenses for his business. He often borrows 10,000 to 25,000 rupees (\$200 to \$500) to buy spare parts,

### Cash-for-gold loans can finance parts to repair rickshaws.

repaying the loans when customers pay him. He pays 15 to 18 percent interest.

Mr. Pai said he couldn't get a business loan from banks because they wanted documentation of his income. But his customers, who earn as little as \$100 a month, don't do checks and invoices.

"It is very easy here, there are no formalities," Mr. Pai, 29, said about borrowing at Muthoot.

Pawnbrokers and money lenders have long operated in India's back alleys, making loans against jewelry to families in distress, at interest rates of 30 percent or more. But gold loans made by banks and finance companies

are different. Rates are lower — 14 to 30 percent — and their businesses are regulated.

There are no publicly available aggregate data about gold loans, but finance companies that specialize in them are growing fast. Manappuram, a pioneer in the business, made \$730 million in gold loans last year — up from \$397 million a year earlier.

Muthoot Finance, a privately held firm, says its lending is growing at 60 percent a year.

Historically, many Indians bought gold because they lived too far from bank branches and because high inflation devalued their rupees.

At Manappuram's first village branch, an appraiser sat in an enclosed wooden cubicle with a tiny window. When a woman showed up with a broken gold bangle it took him just two minutes to determine that he could lend her 3,430 rupees, about \$71, for three months at an annual rate of 29 percent.

The woman, Bindu Sunil Kumar, took the loan, though she later grumbled to a reporter that the interest rate seemed high. She said she could get a lower rate elsewhere, but she wouldn't be able to borrow as much.

Even though interest rates are still high, analysts say the gold loans do represent progress of a sort, allowing families to leverage some of their most valuable assets for productive uses.

"It brings a lot of people into the financial system," said Rajesh Chakrabarti, a finance professor at the Indian School of Business in Hyderabad.

## Exploration Yields Boom In New Oil Discoveries

By JAD MOUAWAD

The oil industry has been on a hot streak this year, thanks to a series of major discoveries that have rekindled a sense of excitement across the petroleum sector, despite falling prices and a tough economy.

These discoveries, spanning five continents, are the result of hefty investments that began earlier in the decade when oil prices rose, and of new technologies that allow explorers to drill at greater depths and break tougher rocks.

"That's the wonderful thing about price signals in a free market — it puts people in a better position to take more exploration risk," said James T. Hackett, chairman and chief executive of Anadarko Petroleum.

More than 200 discoveries have been reported so far this year in dozens of countries, including Australia, Israel, Iran, Ghana and Russia. They have been made by international giants, like Exxon Mobil, but also by smaller companies, like Tullow Oil.

Just last month, BP said that it found a giant deep-water field that might turn out to be the biggest oil discovery ever in the Gulf of Mexico, while Anadarko announced a large find in an "exciting and highly prospective" region off Sierra Leone.

It is normal for companies to discover billions of barrels of oil every year, but this year's pace is unusually brisk. New oil discoveries have totaled about 10 billion barrels in the first half of the year, according to IHS Cambridge Energy Research Associates. If discoveries continue at that pace through year-end, they are likely to reach the highest level since 2000.

While recent years have brought speculation about a coming peak and subsequent decline in oil production, people in the industry say there is still plenty of oil in the ground, especially beneath the ocean floor, even if finding and extracting it is becoming harder. They say that prices and the pace of technological improvement remain the principal factors governing oil production capacity.

While the industry is celebrating the recent discoveries, many executives are anxious about the immediate future, fearing that lower prices might jeopardize their exploration

drive. Oil prices have tumbled from last year's records, corporate profits have shrunk, and global demand for oil remains low. After falling to \$34 in December, oil prices have doubled, stabilizing near \$70 a barrel. But if the world economy does not pick up, some analysts believe the price could fall again.

Many executives have warned that they need prices above \$60 a barrel to develop the world's more challenging reserves.

It is not just oil that is benefiting from the exploration boom. Repsol, Spain's biggest oil company, said this month that it had discovered what could turn out to be Venezuela's biggest natural gas field. In recent years, companies have found sub-



KEN CHILDRESS/TRANSOCEAN

Ultra-deepwater drilling rigs have opened new seabeds to petroleum production.

stantial natural gas reserves in the United States, from shale rocks once believed to be impossible to drill.

"The number one question that exploration teams have right now is, Where do we go next?" said Robert Fryklund, who ran the operations of ConocoPhillips in Libya and Brazil, and is a vice president in Houston at Cambridge Energy Research Associates.

Exploration remains a risky, and costly, business, where some deep-water wells can cost up to \$100 million. From 30 to 50 percent of exploration wells find oil.

Meanwhile, in the Gulf of Mexico, BP's discovery proves that the area remains one of the most promising oil regions in the United States.

"In 30 years I've been in the business, the Gulf of Mexico has been called the Dead Sea countless times," said Bobby Ryan, the vice president of global exploration at Chevron. "And yet it continues to revitalize itself."



KIRILL KUDRYAVTSEV/AGENCE FRANCE-PRESSE-GETTY IMAGES

A worker cleans a high-speed train made by the German conglomerate Siemens, part of Russia's new railroad stock.

## All Aboard for Moscow. Next Stop, Washington?

By ANDREW E. KRAMER

ST. PETERSBURG, Russia — In the last years of the cold war, the ultra-secret research institute that had designed the Soviet Union's nuclear submarines received an unusual request: could it build a high-speed train?

The Soviet Union, despite its dependence on railroads, had fallen far behind Japan and Western Europe on high-speed transport. That the order came to the Rubin design bureau suggests that Moscow viewed catching up as a matter of national security.

The result of the little-known program was a slate-gray, round-nosed locomotive called the Sokol, Russian for falcon, that faded away soon after the Soviet Union did. The prototype achieved a top speed of only 230 kilometers an hour — hardly impressive by high-speed standards.

But the fall of the Falcon created an opening for Siemens.

This December, high-speed trains designed by the German conglomerate will ply the rails between St. Pe-

### Siemens sees new opportunities in high-speed rail.

tersburg and Moscow. But Siemens hopes their final destination will be the last laggard of the high-speed age: the United States.

The economic stimulus passed by the United States Congress in April includes a five-year, \$13 billion high-speed rail program. Siemens is one of four makers of high-speed trains, none based in the United States, that hopes to take advantage of it.

The United States "is a developing country in terms of rail," Ansgar Brockmeyer, head of public transit business for Siemens, said in an interview aboard the Russian test train. "We are seeing it as a huge opportunity."

Siemens's new train — the Sapsan, Russian for peregrine falcon — is a candidate for the high-speed link planned between San Francisco and Los Angeles that may open in 2020. Alstom, the maker of the French TGV trains, and Bombardier are also contenders. Japanese bullet train designs by Hitachi are another option.

It took a decade of on-again, off-again talks before Siemens signed a deal with the state railways in 2006 amid a thaw in relations between Germany and Russia.

High-speed trains will compete with airlines. The 645-kilometer trip from downtown Moscow to downtown St. Petersburg will be 3 hours and 45 minutes.

On a test run, over a stretch of the St. Petersburg-Moscow track, a birch forest blurred outside the window as the train revved. In one village, an old woman in a kerchief stopped in her tracks and pointed in surprise as the silver, rocket-shaped train sailed past at 241 kilometers an hour.

## FINDINGS

**Sleep Tied to Immunity**

Studies have demonstrated that poor sleep and susceptibility to colds go hand in hand, and scientists think it could be a reflection of the role sleep plays in maintaining the body's defenses.

In a recent study for *The Archives of Internal Medicine*, scientists followed 153 men and women for two weeks, keeping track of their quality and duration of sleep. Then, during a five-day period, they quarantined the subjects and exposed them to cold viruses. Those who slept an average of fewer than seven hours a night were three times as likely to get sick as those who averaged at least eight hours.



LEIF PARSONS

Studies have found that mammals that require the most sleep also produce greater levels of disease-fighting white blood cells. And researchers at the Max Planck Institute for Evolutionary Anthropology have shown that species that sleep more have greater resistance against pathogens.

ANAHAD O'CONNOR

**Champagne Aromas**

A tiny bubble can do a lot of work. In the ocean, rising air bubbles in the surf drag certain compounds to the surface. These compounds, called surfactants, have a water-loving end (which stays in the water) and a water-avoiding end (which stays inside the bubble); when the bubbles reach the surface and pop, the surfactants are released.

A glass of Champagne is like a mini-ocean. When the cork is popped, bubbles of carbon dioxide rise to the surface. A study by European researchers shows that these bubbles concentrate surfactants in the air above the beverage.

The researchers note in their paper, in *The Proceedings of the National Academy of Sciences*, that Champagne potentially produces on the order of 100 million bubbles per bottle. The researchers first used an arbitrary approach that revealed potentially hundreds of compounds that were, essentially, being dragged out of the Champagne and becoming concentrated in the air above it. More discriminating analysis showed that several dozen of these compounds probably played a role in producing the beverage's aroma or flavor.

HENRY FOUNTAIN



BERNT RENE GRIMM

Scientists have been tracking eels to the Sargasso Sea.

**Tracking Eel Migration**

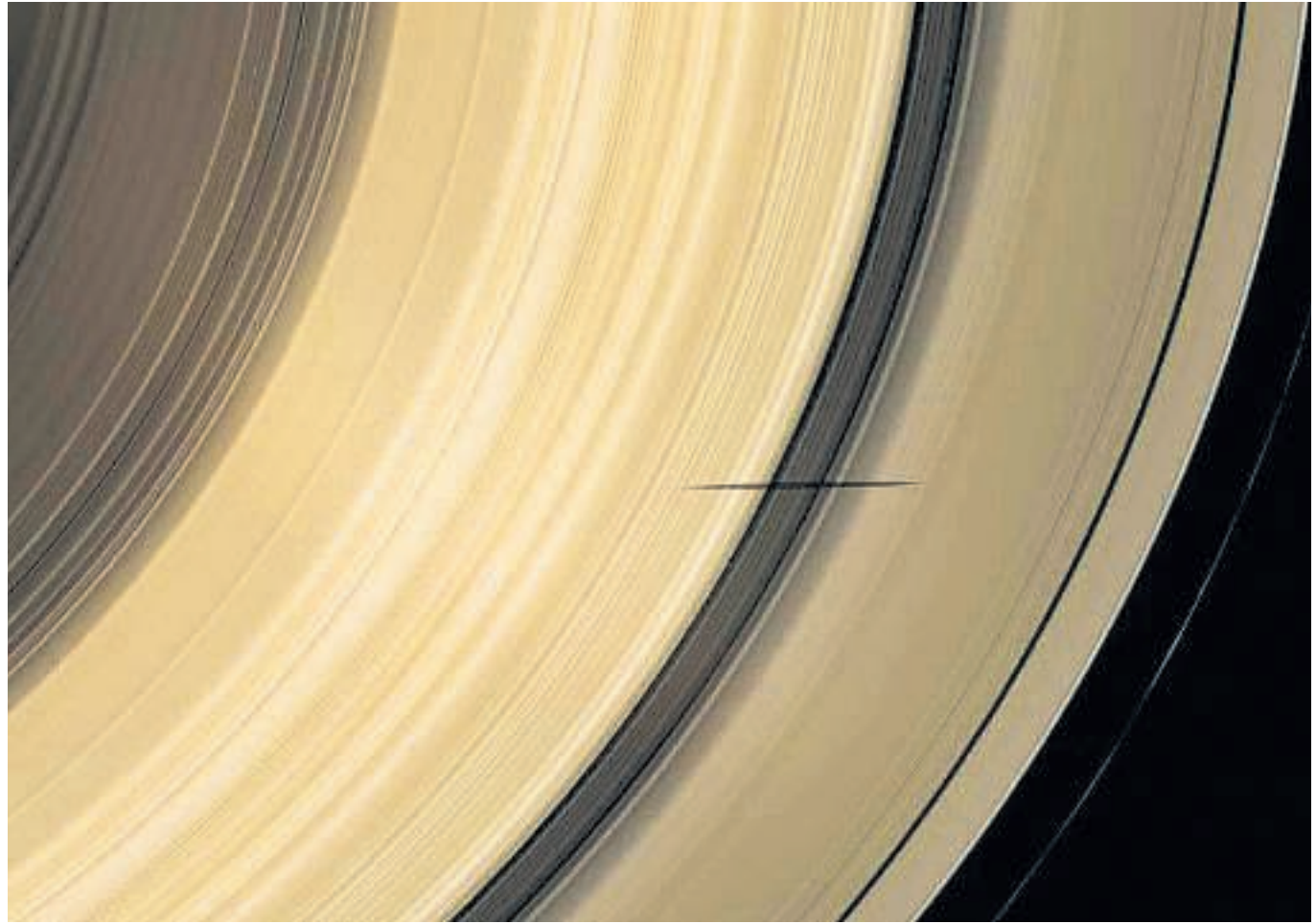
The European eel spends most of its life in rivers and lakes, but at some point it heads downstream to the ocean. Scientists are fairly certain that European eels journey to the Sargasso Sea in the Atlantic to spawn, but little is known about eel migration.

Using small devices, Kim Aarestrup, a senior researcher at the National Institute of Aquatic Resources at the Technical University of Denmark, and his colleagues tracked the eels from the west coast of Ireland for part of the 4,800-kilometer trip.

The researchers set most of the tags to be released on April 1. That was too early: the farthest any of the eels had traveled was about 1,300 kilometers.

The data also showed that the eels swim at depths of about 200 meters at night but descend to about 600 meters during the day. The descent to colder waters, the researchers suggest, delays the sexual maturation of the eels until they reach the Sargasso Sea.

HENRY FOUNTAIN



PHOTOGRAPHS BY NASA/J.P.L./SPACE SCIENCE INSTITUTE

**Taking a Grand Tour of Saturn's Famous Rings**

By DENNIS OVERBYE

It is twilight time on Saturn.

Shadows lengthened to stretch thousands of kilometers across the planet's famous rings this summer as they slowly tilted edge-on to the Sun, which they do every 15 years, casting into sharp relief every bump and warp in the solar system's most popular scenic attraction.

From her metaphorical perch on the bridge of the Cassini spacecraft, which has been orbiting Saturn for five years, Carolyn Porco, who heads the camera team, is ecstatic about the view. "It's another one of those things that make you pinch yourself and say, 'Boy am I lucky to be around now,'" Dr. Porco said. "For the first time in 400 years, we're seeing Saturn's rings in three dimensions."

On September 21, Dr. Porco and the Cassini team released a grand view of the rings in all their shadowed glory, including clumps, spikes, undulations and waves four kilometers high on the edge of one ring. "We always knew it would be good; instead, it's been extraordinary," Dr. Porco said of the results. "I feel I'm on a great human adventure," she said.

The work may be carried out by robots, Dr. Porco said, "but we are all explorers."

"It's thrilling," she added, "and I want everyone to know how thrilling it is."

Dr. Porco, 56, a senior researcher at the Space Science Institute in Boulder, Colorado, is the leader of the camera team on the \$3.4 billion Cassini mission, an adjunct professor at the University of Colorado and one of *Wired* magazine's 15 people who should be advising the president.

Dr. Porco was born and raised in a Bronx family with four brothers she partly credits for her subsequent success in astronomy. "I'm used to fighting and arguing with males," she said.

As a graduate student at the California Insti-



tute of Technology, she got a job helping to analyze data from the two Voyager spacecrafts, which toured the outer planets from Jupiter to Neptune from 1978 to 1989.

It was there, said Peter Goldreich, her thesis advisor, that she demonstrated a knack for picking out important things. Among them was a discovery that mysterious dark spokes in Saturn's ring system were connected to the planet's magnetic field. She did her thesis on aspects of the rings and how they were shaped by the gravity of tiny moonlets.

The \$3.4 billion Cassini mission was launched on a roundabout course toward Saturn in 1997 and arrived in 2004. Being on the imaging team is like standing on the bridge of the spaceship, she said. "We have the windows," she said. "That's what we're responsible for."

One of the most thrilling Cassini moments was in 2004 when the Huygens probe detached from Cassini and landed on Saturn's largest moon, Titan, a strange, frigid world where rocks are made of ice, and rivers and oceans are formed of what Dr. Porco has described as

One of Saturn's moons, Mimas, casts a shadow across Saturn's rings, above. The rings are tilted edge-on toward the sun and lit by light from the planet's surface.

"paint thinner."

They also discovered plumes erupting from the south pole of another Saturn moon, Enceladus. "Should we ever discover that life has arisen twice," Dr. Porco said, "that would be a game-changer." The Titan landing, Dr. Porco said in a talk in 2007, should have been celebrated with parades in every major city.

Dr. Porco is a member of the team for the New Horizons spacecraft, which is scheduled to arrive at Pluto in 2015. But she hopes to spend more of her time popularizing science and hopes to write a book about Cassini.

"To my mind," Dr. Porco said, "most people go through life recoiling from its best parts. They miss the enrichment that just a basic knowledge of the physical world can bring to the most ordinary experiences. It's like there's a pulsating, hidden world, governed by ancient laws and principles, underlying everything around us — from the movements of electrical charges to the motions of the planets — and most people are completely unaware of it."

"To me, that's a shame."

**Thanks to Technology, a Surplus of Cows**

By WILLIAM NEUMAN

HANFORD, California — Three years ago, a technological breakthrough gave dairy farmers the chance to bend a basic rule of nature: no longer would their cows have to give birth to equal numbers of female and male offspring. Instead, using a high-technology method to sort the sperm of dairy bulls, they could produce mostly female calves to be raised into profitable milk producers.

Now the first cows bred with that technology, tens of thousands of them, are entering milking herds across America — and the timing could hardly be worse.

The dairy industry is in crisis, with prices so low that farmers are selling their milk below production cost. The industry is struggling to cut output. And yet the wave of excess cows is about to start dumping milk into a market that does not need it.

"It's real simple," said Tony De Groot, an ear-

ly adopter of the new breeding technology, who milks 4,200 cows on a farm here. "We've just got too many cattle on hand and too many heifers on hand, and the supply just keeps on coming and coming."

Desperate to drive up prices by stemming the gusher of unwanted milk, a dairy industry group, the National Milk Producers Federation, has been paying farmers to send herds to slaughter. Since January the program has culled about 230,000 cows nationwide.

But the sorting technique, known as sexed semen, is expected to put 63,000 extra heifers into milk production this year, compared with the number that would be available if only conventional semen had been used, researchers estimate.

That number will jump to 161,000 next year, and farmers fear it could double again in 2011. While that is a fraction of the 9.2 million milk

cows nationwide, the extra cows this year and next could roughly equal those removed from production by the industry's culling program.

The sorting technology relies on slight size differences between the Y chromosome, which produces male offspring, and the X chromosome, which produces female offspring and has a slightly larger amount of genetic material, or DNA.

A typical Holstein herd using conventional breeding methods will produce 48 percent female offspring and 52 percent male. The male calves are sold for little money to be raised as meat, and the females are raised as milk producers.

Scott Bentley, dairy product manager at ABS Global, in DeForest, Wisconsin, a major producer of sexed semen, said that in the long run, the technology should be a boon. But first, the industry has to get through its worst economic crisis in decades.

"This is a really exciting thing," Mr. Bentley said of the technology. "And this is very difficult times. And you combine the two and realize it didn't work as well as we hoped."

## HEALTH &amp; FITNESS

## For a Training Push, Join a Tough Crowd

By GINA KOLATA

Dathan Ritzenhein, one of America's most talented runners, was in a slump. He had been a national star since high school but he felt as if he had reached a plateau several years ago. He wasn't improving the way he'd hoped, and had been suffering stress fractures in his left foot.

He and his coach thought perhaps it was the altitude training. He had been living and training in Boulder, Colorado, hoping to take advantage of the thin air, which can increase the red blood cells that help deliver more oxygen to muscles. But maybe, Mr. Ritzenhein and his coach reasoned, training at Boulder's elevation (about 1,655 meters) was putting too much stress on Mr. Ritzenhein's body.

So Mr. Ritzenhein, his coach and his family moved to Eugene, Oregon (131 meters). "It didn't work," Mr. Ritzenhein said.

In June, Mr. Ritzenhein joined a running group, a team of elite runners coached by Alberto Salazar, winner of three consecutive New York City marathons in the early 1980s. Mr. Ritzenhein said was re-energized, excited

about running again.

At a track meet in Zurich on August 28, Mr. Ritzenhein, 27, broke the American record for a 5,000-meter race.

Mr. Ritzenhein is convinced his success is because of running and training with a group. Running alone, he said, "You can't push yourself as hard — you feed off the energy of other people."

Mr. Salazar said in an e-mail message that he is a believer in group training. He had trained with a group himself, he said, and it "helped develop our great runners of the '70s and '80s."

Group training is an aspect of performance that has never been scientifically studied. Exercise physiologists say it can be impossible to demonstrate its value because too many things change simultaneously when people start to run in groups: the coach, the location, the training regimen.

But despite the lack of solid evidence that group training helps, more and more athletes are starting to think it does. And, they say, there are lessons for amateurs who want to run or swim or cycle faster. The right workout companions, they say, can make all the difference.



FILIP KWIATKOWSKI FOR THE NEW YORK TIMES

### Peer pressure helps athletes push themselves.

"In sports, you need to train at race pace," said Edward Coyle, an exercise physiologist at the University of Texas at Austin. "To do that, you need a coach and you need teammates to push you." Recreational athletes can benefit,

too, Dr. Coyle said. Many run by themselves or without a specific program. "They probably underestimate their ability," he said. Group runs "would help them tremendously."

There can be drawbacks. Slower athletes may try to push themselves beyond their abilities, and faster ones may not be challenged enough.

Yet the power of groups easily outweighs their drawbacks, says Kevin Hanson. He and his brother Keith start running groups that draw hundreds in Rochester, Michigan, and in 1999 started a team of elite runners, the Hansons-Brooks Distance Project.

Training with quality partners may help runners produce strong performances on race day.

Kevin Hanson said he and his brother got the idea for the elite team when they began asking why American performances had declined so much in the 1990s from the golden days of the '70s and '80s.

"Frank Shorter, Bill Rodgers, Greg Meyer," who, in 1983, was the last American man to win the Boston Marathon, "all trained in groups," Mr. Hanson said.

But in the 1990s, distance runners began training on their own, with the guidance of a coach. And Americans were no longer among the best in the world.

The countries whose distance runners were the best — Ethiopia, Kenya and Japan — all emphasized training in groups, he noted. So he and his brother started recruiting runners for their elite group. Its advantages, he said, are that athletes have "shared motivation, a shared sense of ideas." And they encourage one another.

"So often it may be hard to drag yourself outdoors," to go for a training run, Mr. Hanson said. "But when you have 8 or 10 or whatever number of teammates counting on you, then you're there."



STUART BRADFORD

## Probiotic Is More Than Just a Label on Food

By TARA PARKER-POPE

When the label tells you the food you are buying "contains probiotics," are you getting health benefits or just marketing hype? Perhaps a bit of both.

Probiotics are live micro-organisms that work by restoring the balance of intestinal bacteria and raising resistance to harmful germs. Taken in sufficient amounts, they can promote digestive health and help shorten the duration of colds. But while there are thousands of different probiotics, only a handful have been proved effective in clinical trials.

There is no standard labeling requirement to help buyers make sense of probiotic products. The word "probiotic" on the label is not enough information to tell whether a given product will be effective for a particular health concern. Different probiotic species and strains confer different health benefits.

"It's a huge problem for the consumer to try to make heads or tails of whether the products that are out there really work," said Dr. Shira Doron, an assistant professor of medicine at Tufts University in Massachusetts.

Consider Lactobacillus, a probiotic that comes in a number of strains, among them: Lactobacillus GG (often called LGG), which can be found in the diet supplement Culturelle as well as several milk products in Finland; L. casei DN114 001, included in Dannon products; and L. casei Shirota, found in Yakult, a popular probiotic drink from Japan.

Studies show that all of these strains are associated with reducing diarrhea; LGG has also shown a benefit in treating atopic eczema and milk allergy in infants and children, according to a 2008 report. Meanwhile, both LGG and Dannon's L. casei strain have been shown in studies of children attending day care to reduce illness.

"Lactobacillus is just the bacterium," said Gregor Reid, director of the Canadian Research and Development Center for Probiotics. "To say a product contains Lactobacillus is like saying you're bringing George Clooney to a party. It may be the actor, or it may be an 85-year-old guy from Atlanta who just happens to be named George Clooney. With probiotics,

there are strain-to-strain differences."

After gathering at a Yale University workshop to review the evidence, a panel of 12 experts concluded that there was strong evidence that several probiotic strains could reduce diarrhea, including that associated with antibiotic use. Studies have also suggested that certain probiotics may be useful for irritable bowel syndrome, with the strongest recommendation for Bifidobacterium infantis 35624, the probiotic in the Procter & Gamble supplement Align. (Two members of the panel had ties to Procter & Gamble; three others had ties to other companies that sell probiotics.)

"The evidence for the general immune strengthening is just not there," said Barry R. Goldin, a Tufts professor who helped discover LGG but no longer receives royalties from the patent.

But the gastrointestinal tract is an important part of the immune system, and studies show that intestinal bacteria play an essential role in immune defenses. These bacteria not only aid digestion but essentially help form a protective barrier inside the intestine.

Consumers interested in probiotics should look for products that list the specific strain on the label and offer readers easy access to scientific studies supporting the claims.

### The complicated health benefits of micro-organisms.

## Contradictory Advice To Counter The Loss of Bone

By KATE MURPHY

As people age, their bones lose density and they grow ever more vulnerable to osteoporosis, with its attendant risk of a disabling fracture. But how do you know just how vulnerable you are?

The question has been complicated by a relatively new diagnosis: osteopenia, or bone density that is below what is considered normal but not low enough to be considered osteoporosis.

Millions of people worldwide, most of them women, have been told they have osteopenia and should take drugs to inhibit bone loss. But the drugs carry risks, so many public health experts say the diagnosis often does more harm than good.

Now the World Health Organization has developed an online tool meant to help doctors and patients determine when treatment for deteriorating bones is appropriate.

A preliminary version of the tool, called FRAX, was released last year and can be found at [www.shef.ac.uk/FRAX/index.htm](http://www.shef.ac.uk/FRAX/index.htm). A revised version is to be released later this year.

But FRAX is proving almost as controversial as the diagnosis of osteopenia. While some experts applaud it for taking factors besides bone density into account, others say that the formula on which the tool is based is faulty and that the advised threshold for medication is too low.

"FRAX is coming from the same people who came up with osteopenia in the first place," said Dr. Nelson Watts, director of Bone Health and Osteoporosis Center at the University of Cincinnati, who said the diagnosis unnecessarily frightened women and should be abolished.

In 1994, a W.H.O. panel financed by the pharmaceutical industry defined normal bone mass as that of an average 30-year-old woman. Because bone naturally deteriorates with age, anyone much older than 30 is likely to qualify for a diagnosis of osteopenia.

The W.H.O. panel said its definitions of osteopenia and osteoporosis were not intended to provide reference points for prescribing drugs. But Dr. Watts warns that this is what is happening, as more drugs become available to treat thinning bones.

Since 2003, annual sales of osteoporosis drugs have about doubled to \$8.3 billion, according to Kalorama Information, a market research firm.

The main controversy still involves whether and when to start taking the drugs, whose side effects can include gastrointestinal and other problems.

"Clearly, doctors have been at fault," said Dr. Ethel S. Siris, director of the Toni Stabile Osteoporosis Center at Columbia University in New York. "But women need to educate themselves about the risks" before consenting to treatment.

### A tool to help deal with an ailment spurs controversy.

## ARTS &amp; STYLES

**Redefining Reading With Hybrid Books**By **MOTOKO RICH**

For more than 500 years the book has been a remarkably stable entity: a coherent string of connected words, printed on paper and bound between covers.

But in the age of the iPhone, Kindle and YouTube, the notion of the book is becoming increasingly elastic as publishers mash together text, video and Web features.

For instance, Simon & Schuster, the publisher of Ernest Hemingway and Stephen King, worked with a multimedia partner to recently release four "vooks," which intersperse videos throughout electronic text that can be read — and viewed — online or on an iPhone or iPod Touch.

And in early September Anthony E. Zuiker, creator of the television series "CSI," released "Level 26: Dark Origins," a novel — published on paper, as an e-book and in an audio version — in which readers are invited to log on to a Web site to watch brief videos that flesh out the plot.

Some publishers say this kind of multimedia hybrid is necessary to lure modern readers who crave something different. But reading experts question whether altering the parameters of books ultimately degrades the act of reading.

"There is no question that these new media are going to be superb at engag-

ing and interesting the reader," said Maryanne Wolf, a professor of child development at Tufts University in Massachusetts. But, she added, "Can you any longer read Henry James or George Eliot? Do you have the patience?"

The most obvious way technology has changed the literary world is with electronic books. Over the past year devices like Amazon's Kindle and Sony's

**Novels that have videos interspersed with the prose.**

Reader have gained in popularity. But the digital editions displayed on these devices remain largely faithful to the traditional idea of a book by using words — and occasional pictures — to tell a story or explain a subject.

The new hybrids add much more. In one of the Simon & Schuster vooks, a fitness and diet title, readers can click on videos that show them how to perform the exercises. A beauty book contains videos that demonstrate how to make skin-care potions.

Simon & Schuster is also releasing

two digital novels combining text with videos a minute or 90 seconds long that supplement the story line.

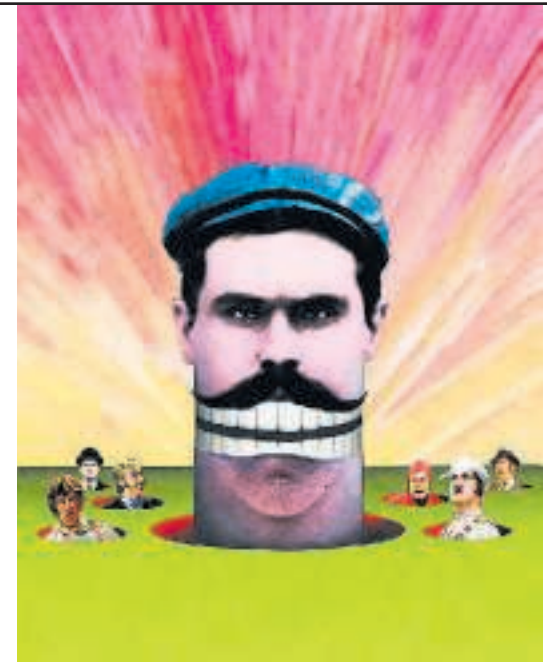
The children's division of HarperCollins recently released a young-adult mystery series called "The Amanda Project," and has invited readers to discuss clues and characters on a Web site. Some of the reader comments may be incorporated into minor characters or subplots.

Jude Deveraux, a popular romance author who has written 36 straightforward text novels, said she loved experimenting with "Promises," an exclusive vook set on a 19th-century South Carolina plantation in which the integrated videos add snippets of dialogue and atmosphere.

Ms. Deveraux said she envisioned new versions of books enhanced by music or even perfume. "I'd like to use all the senses," she said.

Some authors scoff at the idea of mixing the two mediums. "As a novelist I would never ever" allow videos to substitute for prose, said Walter Mosley, the author of "Devil in a Blue Dress" and more than 20 other books.

"Reading is one of the few experiences we have outside of relationships in which our cognitive abilities grow," Mr. Mosley said. "And our cognitive abilities actually go backwards when we're watching television or doing stuff on computers."



TERRY GILLIAM; BELOW, JASON MERRITT/GETTY IMAGES

A scene from a Monty Python animation. Below, John Cleese in a sketch on silly walks.

**Monty Python Hits Middle Age**By **CHARLES McGRATH**

Astonishingly, "Monty Python's Flying Circus," the groundbreaking BBC comedy series, is 40 years old this year. As Terry Jones, one of the six-member troupe who created and acted in the show, said recently: "Time just seems to get quicker. You look in the mirror in the morning and you think, 'I'm already shaving again!'"

The principals are all in late middle age now, and have in some ways become the very sorts of people they used to poke fun at. Michael Palin makes travel documentaries. Mr. Jones makes documentaries and writes scholarly books about the Middle Ages, the period the Pythons so memorably sent up in their film "Monty Python and the Holy Grail." Terry Gilliam, animator turned filmmaker, is still quixotically obsessed with making a movie about Don Quixote. Eric Idle, who's mostly responsible for the long-running Broadway production of "Spamalot," writes musical shows, many of them recycling Python material. And John Cleese, who at 70 is the oldest of the group, in addition to appearing in movies and television comedies and making golf-ball commercials, sometimes turns into a cranky old man complaining about Britain's tabloids. He doesn't watch much comedy anymore. "As you get older you laugh less," he says, "because you've heard most of the jokes before."

The show, on the other hand, hasn't aged a bit. In the United States, "Flying Circus" didn't catch on until 1974, when it was pretty much off the air in Britain.

But the show has had a surprisingly durable afterlife there, giving rise to second and third generations of fans who watch it on DVD and on YouTube. Even in American middle schools now, there's often a smart aleck or two who can do Mr. Cleese's Silly Walk and know the Dead Parrot sketch by heart.

On October 15 all five surviving Pythons are appearing in a rare reunion at the Ziegfeld Theater in New York. (Graham Chapman, the sixth member of the troupe, died of throat cancer in 1989.) And starting on October 18 the Independent Film Channel is devoting a whole week to Pythoniana and

will broadcast one episode a day of "Monty Python: Almost the Truth (The Lawyer's Cut)," a new six-hour documentary, along with some of the "Python" films and episodes from the first season of "Flying Circus."

There have been so many books, articles and documentaries that there is no truly reliable account of practically anything associated with the Pythons. Partly for this reason, a number of the Pythons were initially reluctant to take part in the documentary.

"We did it because Jones needed money," Mr. Cleese said, laughing, referring to the fact that Mr. Jones is separated from his wife and is now expecting a baby with his much younger girlfriend. "Anyone entering on fatherhood at age 67 needs all the help he can get."

The movies — "Monty Python and the Holy Grail," an Arthurian parody; "Monty Python's Life of Brian," a spoof of the Gospels; and "Monty Python's The Meaning of Life," a collection of sketches that deal with everything from contraception to death by overeating — gave the group a brief but very profitable second life until, with "The Meaning of Life," the members reached a kind of creative impasse.

"The one thing we all agreed on, our chief aim, was to be totally unpredictable and never to repeat ourselves," Mr. Jones said. "That 'pythonesque' is now an adjective in the O.E.D. means we failed utterly."

Hardly. The documentary includes several interviews with younger comics talking about how much the Pythons meant to them. And yet the Python example is so hard to imitate that the group's influence on contemporary comedy is less than one might imagine.

"A lot of contemporary comedy seems self-conscious," Mr. Palin said. "It's almost documentary, like 'The Office.' That's a very funny show, but you're looking at the human condition under stress. The Pythons made the human condition seem like fun."

He added: "I'm proud to be a Python. It's a badge of silliness, which is quite important. I was the gay lumberjack, I was the Spanish Inquisition, I was one-half of the fish-slapping dance. I look at myself and think that may be the most important thing I've ever done."



José Tomás, a star matador, in what may have been the last corrida in Barcelona if the regional Parliament bans bullfighting.



CARLOS CAZALIS FOR THE NEW YORK TIMES

**In Barcelona, the Twilight of the Matadors**

BARCELONA — Here in Catalonia, this persistently separatist-minded region of Spain, bullfighting has been in trouble for ages. And the economy hasn't helped.

**MICHAEL KIMMELMAN**

ESSAY

Reclusive, a matador of unearthly fearlessness and calm, he retired in 2002, at 27 and the height of his fame. He returned unexpectedly five years later in Barcelona for what turned out to be the first sellout in 20 years at the 19,000-seat Plaza Monumental, this city's bullring.

On September 27 he was back, for another special occasion: perhaps the last bullfight ever in Catalonia.

Over the last three decades or so, dwindling interest among young Catalans has combined with pressure from animal-rights advocates and from Catalan nationalists to cripple toreo in Catalonia. Now a referendum before the Catalan Parliament would

end bullfighting here altogether.

So José Tomás' corrida — the term refers to an afternoon's regular card of three matadors and six bulls — was more than just the last bullfight of the season. It was possibly the end of an era. And José Tomás (José Tomás Román Martín, but everybody knows him by his double-barreled first name) had come to lend his artistry to the anti-ban side.

Bullfighting is a matter of Spanish cultural patrimony, fans say. Opponents see it otherwise. A dozen or so animal-rights protesters stood outside the arena that day, holding signs splattered with red paint.

"At a point when Europe is becoming bigger and more multicultural, Barcelona is becoming smaller and more Catalan," is how Robert Elms, a British travel writer who has lived here, saw the situation. The possible ban on bullfighting, he added, is akin to a law here requiring children to receive much of their education in Catalan, not Spanish.

Paco March nodded at the mention of that connection. A Barcelona native, he is the bullfighting columnist

for La Vanguardia, the city's second biggest newspaper.

"I feel rage that in the name of democracy," Mr. March said about the pending referendum, "a minority of opponents of toreo could erase the rights of another minority, aficionados, who are enjoying what is in this country a legal spectacle that expresses deep truths about life and death taken to their extreme."

It would be a mistake to conclude that an end to bullfighting here portends its prohibition across Spain. While nearly three quarters of Spaniards say they have no interest in bullfighting, they're loath to have foreigners tell them what to do. This is why Spain has resisted pressure from the European Union to end toreo.

And so, amid the bursts of flashbulbs and chants of "Torero!" and "Olé!" José Tomás appeared at least one last time in Barcelona. Like Roger Federer, he makes every move look impossibly slow and stylish.

"We want to be different from the rest of Spain by not killing bulls," Mr. March said. "But we're just killing off our own culture."