to attend a closed briefing offered by the Administration on 10 June. Bingham said he was unwilling to agree not to discuss information acquired at the briefing on a topic he thought should be open to public debate.

Earlier, Bingham questioned the legality of abandonment of the case-by-case approval of reprocessing. In a statement he said, "If the policy violates the dictates of the NNPA [Nuclear Non-Proliferation Act], as it could, I am personally committed to devoting my full efforts to see that it is not implemented."

Other critics are voicing concern about the Administration's expressed willingness to discuss with the allies their export of sensitive technology and their possible use of the so-called "thermal recycle," in which plutonium from reprocessing operations is mixed in fuel for fission reactors. There is skepticism that the Administration can extract satisfactory guarantees for safeguards under the new policy.

As for the prospect of a direct collision between the Administration and its congressional critics on these issues, the advent of a statement on domestic policy on plutonium, which Administration sources indicate will soon be completed, could precipitate such a clash.

—JOHN WALSH

Survival of the Fittest in the Falklands

Charles Darwin made myriad observations on the political and biological struggle for existence during a visit to the desolate isles

"We arrived here . . . [and] found to our great surprise the English flag hoisted. I suppose the occupation of this place has only just been noticed in the English papers: but we hear all the southern part of America is in a ferment about it. By the aweful language of Buenos Ayres, one would suppose this great Republic meant to declare war against England!"

So wrote Charles Darwin in 1833, with a note of condescension that Margaret Thatcher might envy. The 24-year-old naturalist, aboard the H.M.S. *Beagle*, was at the start of a 5-year voyage of discovery that proved pivotal in the formation of his evolutionary theory. Darwin in the Falklands made observations of fauna, flora, and geology that later showed up in his mature theorizing, including the 1859 opus *On the Origin of Species*. He also witnessed the struggle for supremacy in the world of human affairs.

The Argentines some years earlier had seized the Falklands from Britain, which asserted sovereignty over the isles in the wake of claims made in 1690 by an Englishman. In January of 1833, less than 2 months before Darwin arrived, Royal Marines from the H.M.S. *Clio* expelled the Argentine governor and planted the Union Jack. "A Buenos Ayrean man of war was here at the time with some fresh colonists," wrote Darwin in his diary. But the British show of force paid off, and not a shot was fired.

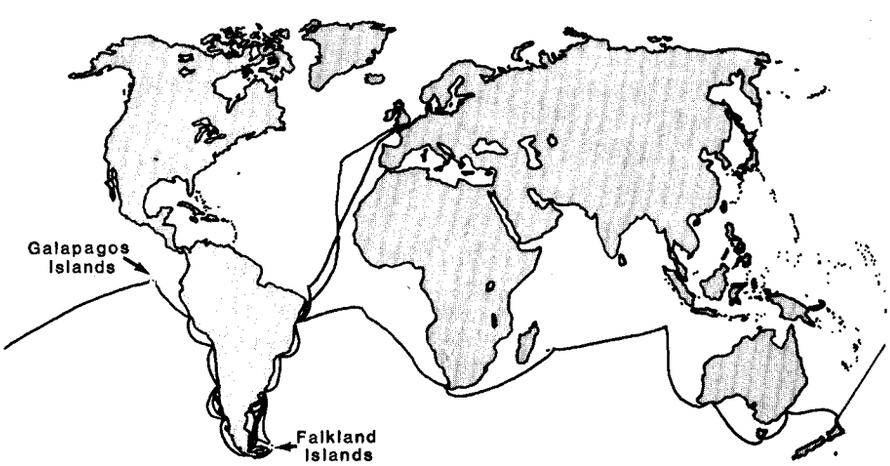
Aside from political intrigue, Darwin found the islands a bleak place. "The land is low & undulating with stony peaks & bare ridges; it is universally covered by a brown wiry grass," he noted in his diary. "Very few plants are found, & excepting snipes & rabbits, scarcely any animals. The whole landscape from the uniformity of the brown color has an air of extreme desolation."

According to Robert G. Frank, Jr., a historian of science at the University of California at Los Angeles who has studied Darwin's stay in the Falklands, the islands prompted doubts about the stability of species and prepared Darwin for the important observations he would make at another archipelago, the Galápagos. Further, says Frank, "Darwin later went back to observations made on the Falklands and found evidence in support of evolution."

Darwin toured the Falklands by horseback, accompanied by two friendly gauchos and a seemingly endless torrent of rain and hailstones. He was struck by the violence of the landscape, the lack of trees, and such geological oddities as "streams of stones" where lava flows had broken up in large chunks. Fossils, including "an obscure impression of the lobes of a trilobite," he found in abundance. Similar to ones in England, the fossils, he reasoned, might indicate a tropical climate at one point covered the entire earth.

Natural wonders were matched by ones of human origin, such as how the gauchos in a cold and driving rain immediately made a fire with nothing more than a tinderbox and piece of rag. "They seek beneath the bushes for some dry twigs or grass & this they rub into fibres & then (somewhat like a bird's nest) surround it with coarser twigs; they put the rag with its spark of fire in the centre & then covering it up with the fibrous matter, hold it up to the wind, when by degrees it smokes more & more & at last bursts out into flames. I am sure no other method would have any chance of succeeding with such damp materials."

According to Frank, the Falklands trained Darwin's eye. Having already visited the east coast of South America, Darwin now examined the productions of the archipelago. Did not the close connection of insects and plants point to some closer connection than migration?



The voyage of the H.M.S. Beagle*: 1831 to 1836*

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The trip from the mainland to the Falklands kept Darwin's thoughts on questions of geographical distribution and species. So, too, he pondered differences within the Falklands. Later, having visited the Galápagos and seen subtle variations of tortoise and bird, Darwin commented in a notebook: "The only fact of a similar kind of which I am aware is the constant asserted difference between the wolf-like Fox of East and West Falklands Isds.—If there is the slightest foundation for these remarks, the Zoology of Archipelagos will be well worth examining; for such facts would undermine the stability of species."

Observations from the Falklands also in time buttressed Darwin's view of evolution. After reading Malthus on population in 1838 and deciding that population pressure was the driving force of natural selection, Darwin found his Falklands notes fitting quite nicely into the evolutionary thesis. He wrote in the second edition (1845) of his *Journal of Researches* of the prolific Falkland sea slug, which lays 600,000 eggs but produces only a few adults. Hinting at the selective powers of a harsh environment, Darwin noted in italics that "No fallacy is more common with naturalists, than that the numbers of an individual species depend on its powers of propagation."

During his stay in the Falklands, Darwin saw not only varieties of fox but also differing breeds of men. "On Friday a sealing vessel arrived commanded by Capt. Lowe; a notorious & singular man, who has frequented these seas for many years & been the terror to all small vessels. It is commonly said that a Sealer, Slaver & Pirate are all of a trade: they all certainly require bold energetic men. . . . In their manner, habits &c. I should think these men strikingly resemble the old Buccaneers."

Darwin and the captain of the *Beagle*, Robert Fitzroy, worried about the fate of the few British citizens in such a bleak and turbulent land. They worried with reason.

According to Frank, up to 30 whalers and sealing ships were usually hovering about the islands or lying at anchor, the crews armed with clubs and rifles. In addition to the gauchos on the moorlands, there were about a dozen in the settlement. At Port Louis they gambled, quarreled, and fought each other with long knives. Fitzroy characterized them as "characters fitter for the pencil of an artist than for the quiet hearth of an industrious settler."

The *Beagle* left the Falklands in April 1833 and returned a year later. The voyagers found their worst fears confirmed.

Endangered Species Act Reauthorized

After months of perilous navigation the Endangered Species Act is headed for a safe port in the form of a 3-year authorization from Congress. Both houses have passed versions of the act which appear to be satisfactory to all parties, having rebuffed efforts by Interior Secretary James Watt to limit reauthorization to 1 year.

The bills, now in conference, contain numerous amendments designed to speed up the listing process. The Senate bill, for which environment subcommittee chairman John Chafee (R–R.I.) managed to engineer unanimous Senate confirmation, would require that the Interior Secretary take no more than 12 months to decide whether or not a proposed species should be listed as endangered or threatened. It also explicitly authorizes citizen suits to bring about compliance. Environmentalists regard this as a major improvement that could prevent the open-ended delays that have plagued the listing process since Watt took office.

The bill adds flexibility to the controversial provisions on designation of critical habitat by specifying that it should be designated concurrently with species listings "to the maximum extent prudent and determinable." This means a species could be listed even when insufficient data are available to determine the habitat. The House bill also contains this change, as well as the 1-year deadline. In addition, the House bill says determinations on whether species are endangered should be made solely on a biological basis. This represents a staving off of pressures by development interests to insert economic considerations into evaluation of a species' status.

Another significant amendment in the Senate version would prohibit removal of endangered and threatened plants from federal lands. Currently, listed plants are only protected by state laws.

Pleasing to industry groups are measures, contained in both bills, that would streamline the exemption process which was created so the Tennessee Valley Authority could go ahead with the Tellico Dam despite the snail darter. The Senate measure would shorten the maximum time allowed from 360 to 200 days; the House to 170 days.

Both bills would restore money for cooperative activities with states that the Administration wanted eliminated, and would continue authorizations at the current level of $39 million a year.—***Constance Holden***

Society Formed to Study Anomalies

The first meeting of the Society for Scientific Exploration was held this month at the University of Maryland, where about 35 scientists gathered to hear what's going on with UFO's, psychokinesis, and other assorted "anomalies."

"Heretical science" is what Peter Sturrock of Stanford University's Institute for Plasma Research called the field. The assumption of the group was that it is not getting a fair shake because the phenomena appear to violate both prevailing beliefs and the prevailing power structure in science. Ron Westrum, a sociologist from Eastern Michigan University, compared most scientists' attitudes with those who denied the existence of meteorites until a spectacular fall in France in 1790, which eventually compelled scientific acceptance of that phenomenon. The implication was that today's scientists are unlikely to consider the possibility that an unknown class of flying objects exists until a fleet of UFO's lands on the roof at a physicists' meeting.

Nothing in the way of new research was presented at the meeting, which was mostly devoted to UFO's. All in all, there did not appear to be much for researchers of anomalies to get their teeth into.

Some of the topics discussed, such as ball lightning and animal navigation, are poorly understood but science does not dispute their existence or eschew them as fields of study. Other topics are totally unsusceptible to research since there is zero evidence to work with—such as extraterrestrial intelligence and reincarnation. Others, such as UFO's and strange beasts of the Bigfoot variety (grouped under the heading of "cryptozoology")

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"The Gauchos, under pretense of a revolution, had murdered & plundered all the Englishmen whom they could catch," Darwin wrote to his sister Catherine. "Here we, dog-in-the-manger fashion, seize an island & leave to protect it a Union Jack; the possessor has been of course murdered. . . . A man of war, however, ventured to leave a party of Marines, & by their assistance & the treachery of some of the party, the murderers have all been taken:—there being now as many prisoners as inhabitants."

Despite the cost of the struggle, the importance of the Falklands was clear to Darwin. "This island," he continued to his sister, "must someday become a very important halting place in the most turbulent sea in the world." And so it was, until the opening of the Panama Canal made the torturous trip around the southern tip of South America unnecessary.—WILLIAM J. BROAD

Chess-Playing Computer Seized by Customs

On 4 May, Kenneth Thompson of Bell Laboratories traveled to New York's Kennedy Airport and boarded a British Airways flight to Moscow. He was on his way to a Central Chess Club meeting sponsored by the Soviet Sports Committee. With him, he thought, in the airplane's hold, was a small crate containing Belle, the world's champion chess-playing computer. The Russians had invited Thompson, who designed Belle, to bring the computer to their meeting so that Belle could compete against a grand master and against 20 lesser experts in chess tournaments.

When Thompson arrived in Moscow he discovered, to his dismay, that Belle was missing. British Airways put a tracer on the computer. Two days later the airline reported to Thompson that Belle was still at Kennedy Airport and would be shipped. The Russians obligingly rescheduled Belle's tournaments, expecting the computer to arrive momentarily, but Belle did not show up. As Thompson and the Soviets soon learned, the computer had been confiscated by the Customs Service as part of its Operation Exodus, a program to prevent the illegal export of high technology items to the Soviets.

For his first 4 days in Moscow, Thompson was baffled by the disappearance of his computer. Then he got a call from Belle's co-designer, Joseph Condon of Bell Labs. Condon told Thompson that the security department at the labs had received a call from the Customs Service saying that someone had stolen a Bell Labs computer and was trying to ship it to Moscow. But not to worry, Customs said, its Exodus team had seized the computer. The computer in question turned out to be Belle.

"I told the Russians what had happened and they couldn't believe it," Thompson says. "They had big demonstrations planned and they had been rearranging their schedules to put off the demonstrations as long as possible." Thompson too was astounded. Belle, he explains, is not a high technology item—all its components can be bought off the shelf. And the computer has no military use. It does just one thing—play chess. Moreover, Thompson planned to be with Belle the entire time the computer was in Moscow. Before going to Moscow, Thompson had asked one of Bell Labs' attorneys whether he needed an export license for Belle and he had been advised—erroneously, it turned out—that he did not.

The Soviets, at first, would not accept the fact that Belle was not coming to their chess meeting. "They kept saying that if we could just find the right person and slip him a bottle of vodka we could get the computer," Thompson remarks. "Then they said that if I could get the computer out of the country they would send a plane to pick it up and fly it to Moscow. They couldn't understand that this couldn't be done." Finally, the Russians went with Thompson to the American Embassy in Moscow and suggested that Belle might be shipped in a diplomatic pouch. This idea, too, met with a less than enthusiastic reception.

"When it became clear that Belle was not going to come, the Russians canceled everything to do with it, including my lectures. They left me my interpreter so I turned tourist for a week—I had nothing else to do," Thompson says. "When I came back, I tried to find who had the computer. It took me 3 weeks to find out who was holding it. You can't imagine the frustration. No one tells you anything and we were kept waiting for phone calls that never came."

Finally, Thompson and Condon learned that Belle was in the hands of Stanley Hoffman at the Office of Fines, Penalties, and Forfeitures. Hoffman sent Thompson a letter asking for $600, which is 10 percent of Belle's stated value, in return for the computer. Bell Laboratories sent in the $600, but it took more than a week for the computer to arrive at the labs. Finally, on 7 June, Belle was returned.

When asked about the seizure of Belle, Bohdan Denysyk, deputy assistant secretary for export administration at the Commerce Department, said that Customs recently assigned about 200 inspectors and investigators in 11 cities to look for possible illegal exports of high technology items. Six months ago, before Operation Exodus began, no Customs investigators were explicitly assigned to look for such exports. Consequently, says Denysyk, "More baggage and cargo are being opened and there are a lot more detentions."

Once Customs officials find suspicious-looking cargo, they call Commerce to ask if the cargo can in fact be exported without a license. In Belle's case, they were told that an export license was required. The reason, Denysyk says, is that it is a general-purpose computer and such computers are on the Commerce Department's list of controlled items.

Whether it belongs on the list is another question. "I can't believe that if the Russians want those general-purpose computers they don't have them," says Condon. "I can buy one for $1000 cash in New York City with no questions asked. So stamping down on one that is supposed to come back to the United States doesn't stop the hemorrhage of technology or whatever those guys call it," he remarks.

Thompson is left with a bad taste in his mouth. "The invoice on Belle said it was a computer going to Moscow, so I can't blame Customs for confiscating it. But I sure can blame them for not telling me anything about it," he says.—GINA KOLATA

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