strong eastward drift; he discovered what we now term the Gulf Stream which encircles the Atlantic Ocean, although he falsely ascribed it not to winds and Coriolis forces, but to the influence of the emergence of a yet undiscovered underground river.

Perhaps even more remarkably, he was apparently the first person to provide a good measure of molecular dimensions. He noted that when a quantity of the right kind of oil is poured onto water it spreads rapidly at first, but then stops spreading and retains cohesion. He concluded that the thickness of the oil film at the point of maximum spread mut be linked to what we would now term the size of its molecular constituents. Using measured quantities of oil he obtained an entirely reasonable value for those dimensions.

The second great scientists, namely Benjamin Thompson, is probably entirely unknown to many of you. He was born in Woburn, in what was then the colony of Massachusetts in 1753, and developed a strong interest in science during his youth. He was not sympathetic to the Revolution and moved to England in 1776 where he joined the military and served throughout the war as an administrator. In 1794, after serving in various roles in England and on the continent he was offered a high post in the Bavarian government which he held for eleven years. There among many other activities he supervised the boring of canon in the royal arsenal. Being highly observant, he noted that the extent to which the canon became heated during the drilling was essentially proportional to the length of time the drilling had taken place. He concluded that the heat content of the metal was a form of energy closely related to the energy of work. This proposal stood in sharp contradiction to the popular theory of the time to the effect that heat was the manifestation of the presence of a special weightless fluid called phlogiston. He wrote a convincing treatise on this topic, thereby opening the doorway to the field of thermodynamics and statistical mechanics which occupied some of the best scientific minds during the next century. I should add that the great Chemist Lavoisier, who was guillotined in 1794 and whom Thompson knew, had also come to the conclusion that the phlogiston theory must be wrong. Thompson's treatise pointed the way to a new positive approach.

Thompson, incidentally, joined with Joseph Banks, the President of the Royal Society in establishing the Royal Institution in London where Humphrey Davy and Michael Faraday later carried out their great researches and gave popular public lectures on science. It is easy to imagine that Smithson had the Royal Institution in mind as a role model for our country when he gave the money to create the Smithsonian. I should also add that Thompson came to terms with his native land at the end of the Revolutionary War, establishing good relationships with the Massachusetts community.

Skipping chronological order for the moment, the third great American scientist in my list is Henry A. Rowland, born in Honesdale, Pennsylvania in 1848. He received his higher education at the Rensselaer Polytechnic Institute in Troy, New York, and was appointed to the chair in physics at the Johns Hopkins University when it opened its doors in 1876. He carried on research in many areas of physics, but is probably best known for the development of a machine which engraved on a material such as glass so-called diffraction line gratings that were of special use in separating different wavelengths of light. He was also interested in telegraphic equipment and invented a widely used form of teletype machine.

Rowland gained early fame as a result of an experiment he carried out in Europe in the laboratory of Hermann Helmholtz in 1875, the year before he took residence in Baltimore. In the previous decade, the very brilliant Scottish physicists, James C. Maxwell, had collected all known information concerning electromagnetic phenomena and placed it in the form of a mutually consistent set of four mathematical equations, generally known as Maxwell's equations. To achieve what his intuition told him would provide appropriate symmetry and balance in the equations, he modified one of the set of four. In effect, the modification amounted to saying that an isolated, moving electric charge would have a magnetic field related to the velocity associated with it, but one so weak for normal velocities achievable at the time that it would be very difficult to measure. Helmholtz, recognizing that the young American was an exceedingly talented experimenter, suggested that he attempt to measure that field, which Rowland did with ingenuity and notable success in a remarkably short time. It should be added that Rowland had to repeat the experiment twice in later decades in order to convince others who had tried to duplicate his work without success.

I should also add that Maxwell noted that one set of solutions to his modified equations describe free electromagnetic waves traveling with the speed of light in a vacuum. He decided that ordinary visible light must consist of electromagnetic waves. Helmholtz was quick to pick up on this and convinced his brightest young colleague, Henrich Hertz, to look into the matter on a laboratory scale to see if he could generate much longer waves, independent of a light source, using available electrical equipment. The ages of wireless telegraphy, radio, television and radar loomed over the horizon.

It would be equivalent to shipping oil from Texas to Saudi Arabia for me to present a detailed biography of Joseph Henry on this occasion since his background is well known to most of you. In brief, he was born in Albany, New York, just 200 years ago and spent a portion of his early years living with his grandmother in nearby Galway, a few miles west of Saratoga. Incidentally, if you chance to pass through Galway please note the handsome high school building, probably built in the 1920's, which bears Henry's name. He studied at the Albany Academy, which still exists, and early on had difficulty deciding whether to become an actor or a scientist. Fortunately, science won. He began a series of highly innovative experiments with electromagnets and soon discovered the induction of electric fields by changing magnetic fields—the basis for one of Maxwell's equations. Michael Faraday, in England, made the same discovery somewhat later, but published his results before Henry managed to. Never the less the international community has given credit to Henry by naming the unit of measurement of magnetic inductance after him. In connection with this research, he invented the so-called electric transformer, so valuable in alternating current circuits.

Although well established at the Albany Academy, he accepted an appointment at what is now Princeton University in 1832, and continued to carry on his research there, focusing in part on various aspects of telegraphy. Much of his original equipment is well preserved in the physics department.

In 1846 he was offered the post of Secretary of the newly created Smithsonian Institution which he accepted even though he was reluctant to leave the special environment that he had enjoyed at Princeton. He was soon widely recognized as the dean of American science as he developed the new institution into a center for research as well as public exhibitions related to science. He was to serve in the post for thirty two years.

In 1863, when the Civil War broke out, a small group of scientifically oriented individuals in Washington, led by Alexander Bache, a great grandson of Franklin, and Commodore Charles Davis, succeeded in having a bill that created a National Academy of Sciences passed by the Congress. Their intention was to rally the available scientific community into research associated with the war effort. The bill was sponsored by Senator Henry Wilson of Massachusetts. President Lincoln signed the charter. Henry took an interest in the activities of the new organization from the start, recognizing fully its potentialities. During the course of the war Henry became a good friend of President Lincoln who expressed much admiration for him.

When, at the end of the war, the founders were at somewhat of a loss in deciding what to do with the Academy during peacetime, Henry agreed to become its president and retained leadership until his death in 1878. During that period he essentially made the Academy a temporary wing of the Smithsonian, holding regular scientific meetings, expanding the membership and challenging the members to do everything they could to increase the amount of basic scientific research being carried on in the country. By the time of his death, the National Academy, although still closely tied to the Smithsonian, was a well-running organization prepared to play a major role in guiding the progress of good science in the Republic.

I should add at this point that immediately after World War I, another great Secretary of the Smithsonian, Charles D. Walcott, who had served as the very effective president of the Academy during that war, succeeded in obtaining private funds which made it possible for the Academy to have a new home of its own on Constitution Avenue. Walcott, incidentally, was also a New Yorker, having been born in New York Mills near Utica in 1850.

Our debt to Joseph Henry can perhaps be summarized by saying that, in addition to establishing a high standard for scientific research through his own laboratory work, he encouraged general acceptance of those standards and took leadership in establishing National institutions which could carry them forward. In other words, he did for the promotion of science in our country what Washington had done in helping to establish the republic in which we have the good fortune to live. I can think of no higher praise.●

DANIEL URBAN KILEY, 1997 NATIONAL MEDAL OF ARTS WINNER

Mr. LEAHY. Mr. President, it is with great pleasure that I pay tribute to Daniel Urban Kiley, a landscape architect from Charlotte, Vermont, who was named by President Clinton as recipient of the 1997 National Medal of Arts. Established by Congress in 1984, this award honors individuals who have made outstanding contributions to the arts in our nation.

My wife, Marcelle, and I have enjoyed the work of Daniel Urban Kiley for many years and I am honored that a Vermonter, and a friend, has received this national recognition.

I ask to have printed in the RECORD a list of Mr. Kiley's accomplishments put together by the awards committee.

The material follows:

As one of this country's most eminent landscape architects, Daniel Kiley combines

experience and imagination with the vision to create classic civic design where building and site come together as one. In a professional career spanning over 50 years, Kiley has worked on some of this country's most important commissions along with many of today's most distinguished architects and firms in 16 foreign countries. He has helped design sites including the Washington Mall, the National Gallery of Art East Wing, National Sculpture Garden—all in Washington, D.C. More recently, he worked on the design of the Pittsburgh Cultural Trust plaza and museum, the Soros residence, and Riverfront Park in Corning, New York. He is the recipient of many awards and honors including the 1995 Arnold W. Brunner Prize in Architecture, the Outstanding Lifetime Achievement Award from the Harvard Graduate School of Design, and a 1991 Governor's Award for Excellence in the Arts from the Vermont Council on the Arts. Kiley's work has been shown at the Museum of Modern Art in New York, the Library of Congress, and in traveling national exhibitions. He has lectured extensively and served on many design juries. His work has been widely published in the U.S. and abroad. In 1998, Kiley will publish a book exploring the breadth of his work. He served on President Kennedy's Advisory Council for Pennsylvania Avenue, the National Council on the Arts, the Boston Redevelopment Authority, the Cambridge Redevelopment Authority, the Washington, D.C. Redevelopment Land Agency, and the Vermont Council on the Arts. He also has been a Landscape Architect-in-Residence at the American Academy in Rome. Kiley's designs have been widely cited for their ability to raise public consciousness and enhance awareness of man's relationship to nature, while maintaining a sense of joyousness, fun, and excitement.●

FIRST ANNUAL WORLD EDUCATOR AWARD

● Mrs. MURRAY. Mr. President, I rise to join the Washington World Affairs Council in congratulating Mr. Keith Forest of Decatur High School in Federal Way, Washington, as the very first recipient of the World Educator Award.

The World Affairs Council is a 1,200 member nonprofit organization of business and community leaders with more than 40 years of experience bringing the world to Washington State. Through its many programs, including the Global Classroom, the World Affairs Council has been an instrumental force in educating the people of my State about the world around us; our varied and diverse cultures, changing political and security environments, and of course, the importance of international trade. It is appropriate and noteworthy that this widely respected organization would annually recognize a World Educator in our State.

On December 6, 1997, Mr. Keith Forest will be presented with the World Educator Award. This award recognizes an outstanding teacher of the world including global cultures, contemporary world issues and world languages.

I would like to join the World Affairs Council in acknowledging and recognizing Keith Forest for his invaluable contributions to our children's understanding of the world. Keith Forest has been a teacher for more than 25 years. His own experience as a student of the world has been shared with thousands of students and future leaders.

Mr. Forest does not rely on easily outdated texts to teach about the ever changing world, but instead has designed his own curriculum. As a frequent traveler, Mr. Forest brings to his class slides and videos and stories from around the globe. The posters of Chairman Mao's Cultural Revolution and the pottery shards used by his archeology students are tangible examples of how Keith Forest's teaching brings world history to life.

Mr. Forest has taught social studies at Decatur High School in Washington State for 15 years and his reputation precedes him through the halls. Students line up to take his classes, knowing the hands-on, in-depth exposure they will receive in his class. His passion and enthusiasm for helping his students grasp socio-political concepts and foreign affairs easily transfers to his eager classroom participants.

A Fullbright Scholar, Mr. Forest has studied in Japan, Korea and China and has led numerous expeditions and exchange programs. He wrote the Washington State curriculum on the Holocaust after a trip to Israel. Additionally, he authored the Port of Seattle sponsored curriculum on international trade that is used throughout the State.

Congratulations to Keith Forest and the World Affairs Council. Your work in the classroom echoes through our State and educates us all.●

ADOPTION PROMOTION ACT OF 1997

Mr. CRAIG. Mr. President, I ask unanimous consent that the Senate now proceed to the consideration of calendar No. 66, H.R. 867.

The PRESIDING OFFICER. The clerk will report the bill.

The legislative clerk read as follows:

A bill (H.R. 867) to promote the adoption of children in foster care.

The PRESIDING OFFICER. Is there objection to the immediate consideration of the bill?

There being no objection, the Senate proceeded to consider the bill.

AMENDMENT NO. 1614

(Purpose: To provide a complete substitute)

Mr. CRAIG. Mr. President, I have a substitute amendment at the desk, and I ask for its consideration.

The PRESIDING OFFICER. The clerk will report the amendment.

The legislative clerk read as follows:

The Senator from Idaho [Mr. CRAIG] proposes an amendment numbered 1614.

Mr. CRAIG. Mr. President, I ask unanimous consent that further reading of the amendment be dispensed with.

The PRESIDING OFFICER. Without objection, it is so ordered.

(The text of the amendment is printed in today's RECORD under ''Amendments Submitted.'')

Mr. ROTH. Mr. President, today, it is my pleasure to support and urge passage of the Promotion of Adoption, Safety, and Support for Abused and Neglected Children Act or the PASS Act for short. This legislation contains the right combination of reforms to dramatically change the child welfare system for the better.

The foster care system reflects a part of modern society which prompts us to ask many questions of ourselves and each other. It is a mirror which can be troubling to look into.

Today, we join the tens of thousands of loving foster care and adoptive families and dedicated professionals who are daily witnesses of the successes and failures in a system through which millions of people pass each year. Each report to a child protective service agency involves a victim and a perpetrator—in most cases, a child and his or her parent. A case may take a single day or many years to close.

Many of these cases are complex and that the length of time in foster care has an effect on the child. Between 1985 and 1995, the number of children in foster care increased from 276,000 to 494,000, an increase of nearly 80 percent.

Much of this increase is due to the hurricane-force waves of drug abuse which continue to unleash their destructive powers on communities and families. Those who believe for even a foolish moment that drug use is a victimless crime are proven wrong by the recent trends in the child welfare system. One need only to look inside the hospital crib of an abandoned crack baby to understand the truth.

The Department of Health and Human Services estimates that 100,000 children currently in foster care cannot return home without jeopardizing their health, safety, and development.

There is great concern that more children are staying in foster care for longer periods of time. The very laws which are intended to protect children may in practice work against their best interests.

The child welfare system itself is complex and is composed of many parts and programs. Although the Federal Government has assumed a greater share of the cost of these programs in recent years, State and local governments still provide the majority of the resources for the child welfare system.

In fiscal year 1997, the Federal Government contributed approximately $5 billion to the child welfare system.

Of this amount, 85 percent was spent through title IV–E programs.

CBO estimates that under current law, outlays for foster care and adoption assistance will increase by more than 50 percent from $3.9 billion in fiscal year 1997 to $5.9 billion in 2002.

Federal funds are used to subsidize about half of the children in foster care and about two-thirds of the children receiving adoption assistance payments.

The Promotion of Adoption, Safety, and Support for Abused and Neglected Children Act includes much needed reform to the child welfare system.