

Physicists Walk Planck—and Survive

Physicists delight in testing their theories—often to dizzying precision. But although numbers such as the speed of light have been measured repeatedly, the uniqueness of Planck's constant—perhaps the most important constant in modern physics—hasn't been directly verified—until now.

Modern physics holds that atoms absorb and emit discrete amounts, or quanta, of energy. Planck's constant is a measure of the size of these quanta first proposed by Max Planck in 1900. That number has worked very well in all quantum mechanics calculations ever since. But that doesn't make it the only correct value, and there is no logical reason why each type of particle couldn't have its own constant.

Three physicists—at Purdue University, the Los Alamos National Laboratory, and the National Institute of Standards and Technology in Gaithersburg, Maryland—were surprised to find recently that no one had precisely tested the universality of Planck's constant. Looking more deeply, they observed that if multiple Planck's constants did exist, physicists would have to give up either the correspondence principle (that quantum

Genetics “Force de Frappe”

A “strike force in genetic research,” prominent French molecular biologist Daniel Cohen calls the private research laboratory that has just received backing from the French Association for Muscular Dystrophy (AFM) to the tune of 150 million francs (about \$50 million). Cohen may be prejudiced in its favor—he's one of the directors—but this new lab, named Généthon (in honor of the AFM's yearly fund-raising telethon), is ambitious and growing rapidly. Created jointly with the Center for Study of Human Polymorphisms (CEPH), where Cohen is deputy director, Généthon occupies new space in Evry, near Paris, and has already put together a team of 70 researchers and technicians equipped with automated machinery to tackle “on an industrial scale” the identification of genes involved in the 40 or so known forms of muscular dystrophy.

Lymphocytes of about 800 members of 60 large families are kept frozen in liquid nitrogen in the new Evry facility, ready to be cultured when researchers require DNA for genetic mapping. Généthon also has at its disposal CEPH's gene bank, which has so far mapped about 2000 polymorphic markers. CEPH, which has

been getting significant support from the National Institutes of Health and the Howard Hughes Foundation, will now be half financed by the Ministry of Research and Technology as part of France's participation in the Human Genome Project. CEPH and Généthon also receive support from the European Eureka-Labimap, which is developing a series of compatible automatic machines for molecular biology research.

The two organizations, however, will remain independent of the major state-run scientific and medical research apparatus and the attendant red tape. “If some day this mode of operations ceases, we'll close up shop,” says Cohen. “If we lose our flexibility, we die.”

Muscular Dystrophy Findings

Genetic findings in muscular dystrophy continue apace. Daniel Cohen and microbiologist Jean Weissenbach of the Pasteur Institute, co-director of Généthon, recently reported the identification of the gene for limb-girdle muscular dystrophy. And scientists at Howard Hughes Medical Institute and Baylor College of Medicine in Houston have announced a step toward gene therapy for Duchenne muscular dystrophy. Thomas Caskey, HHMI investigator and director of Baylor's Institute for Molecular Genetics, reported last month in *Nature* that they have cloned the coding part of the mouse gene responsible for dystrophin, a protein necessary for normal muscle function, and can now produce it for study.

mechanics agrees with classical mechanics for large objects) or, worse, laws on conservation of energy and momentum.

Not to worry, though. By re-examining recent experiments using their new assumptions, the

group reports in the 21 January *Physical Review Letters* that Planck's constant for the neutron, proton, and electron measured the same within several parts in 10^8 . For physicists, that spells relief.

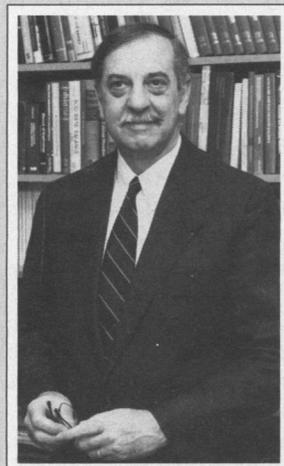
now to 2010, total carbon dioxide emissions will still grow by several percent.

And the situation worldwide is considerably bleaker. Although emissions per vehicle have declined steadily over the last 20 years, the number of cars has skyrocketed—motor vehicles spew at least 63% more carbon dioxide into the atmosphere now than in 1971. If trends continue, the report projects a further 20% to 50% increase in worldwide vehicular carbon dioxide emissions by 2010.

Canadian Statistics

Canada's collection of R&D statistics will not be axed after all to pay for its Persian Gulf contributions (see *Science*, 1 February, p. 156). The \$4.5 million in cuts will instead be applied to statistics on construction, radio broadcasts, food consumption, and pensions.

New NEJM editor. Jerome P. Kassirer of Tufts University School of Medicine, a national expert on kidney disorders and associate physician-in-chief at the New England Medical Center, will succeed Arnold Relman in the powerful post of editor of The New England Journal of Medicine.



Relman, 67, is retiring to take a post at Harvard Medical School. During 14 years as editor, Relman developed a reputation as a rigorous guardian of medical ethics and expanded the journal's purview to coverage of financial and conflict-of-interest matters. He also built circulation of the 179-year-old NEJM from 165,000 to 230,000. Kassirer, 58, has pledged to continue the journal's involvement with controversial issues in health care. He will assume the editorship in July.

No Tech Fix for Auto Population Bomb

The United States loves to imagine that new technologies will solve its environmental woes. But the country is fighting a losing battle against carbon dioxide from auto emissions so long as the auto population increases, says a report, “Driving Forces,” by the World Resources Institute in Washington, D.C. Gains in fuel efficiency are being canceled out as 4 million more cars and trucks take to the road each year. The report says that even if Congress mandates increases in the fuel efficiency of new cars by 1% each year from

Science

Canadian Statistics

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