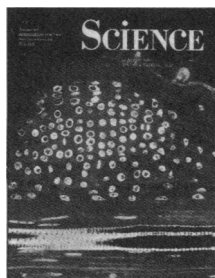


	923	This Week in <i>Science</i>
Editorial	925	A Changing China
Letters	926	Existence of Cannibalism: T. J. RILEY; T. LIDZ; D. R. SCHRYER ■ Diet and Cancer: V. HERBERT
News & Comment	927	Deficits Haunt Science Budgets
	928	For-Profit Hospitals Loom Large on Health Care Scene ■ Dissenters See For-Profits As Threat to Public Interest
	930	France Weighs Benefits, Risks of Nuclear Gamble
	933	<i>Briefing</i> : Chemical Weapons Plan Hangs by One Vote ■ Illinois Psychiatric Research Restored ■ NAS Panel Says Airlines' No Smoking Sign Should Be Turned On for Good ■ OTA Enters Inflamed Debate on Ocean Incineration ■ Nuclear Waste Program Hits Senate Roadblock ■ Nobelists Unite Against "Creation Science" ■ Tax Reform Package Jars University, R&D Sectors ■ Humane Society Fires Animal Rights Activist
Research News	936	Phase Transition Seen at Alloy Grain Boundary
	937	Tokamak Sets Records in Temperature and Confinement
	938	Prime Tests and Keeping Proofs Secret ■ The Theory of Computation Comes of Age ■ How to Keep Your Proof a Secret and Yet Convince Your Colleagues That You Have a Proof
	939	<i>Briefing</i> : Mars Is Getting Wetter and Wetter
	940	<i>Briefing</i> : Ancient River System Across Africa Proposed
Articles	941	The Neurobiology of Learning and Memory: R. F. THOMPSON
	948	Long-Range Electron Transfer in Heme Proteins: S. L. MAYO, W. R. ELLIS, JR., R. J. CRUTCHLEY, H. B. GRAY
Research Articles	953	Cross-Regulatory Interactions Among Pair-Rule Genes in <i>Drosophila</i> : K. HARDING, C. RUSHLOW, H. J. DOYLE, T. HOEY, M. LEVINE

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COVER Emerging alfalfa root nodule, resulting from *Rhizobium meliloti* infection. The bacteria stimulate plant cortical mitoses, cause deformation of epidermal root hairs, and invade the root through an infection thread (blue-staining cell, upper right). The *R. meliloti nodABC* genes, required for all these events, are transcriptionally controlled by a plant-synthesized flavonoid, luteolin. See page 977. [Photograph by Mark Dudley and Sharon Long, Department of Biological Sciences, Stanford University, Stanford, CA 94305]

Reports

- 961 Eruption of the Nevado del Ruiz Volcano, Colombia, on 13 November 1985: Tephra Fall and Lahars: J. L. NARANJO, H. SIGURDSSON, S. N. CAREY, W. FRITZ
- 964 Eruption of the Nevado del Ruiz Volcano, Colombia, on 13 November 1985: Gas Flux and Fluid Geochemistry: S. N. WILLIAMS, R. E. STOIBER, N. GARCIA P., A. LONDOÑO C., J. B. GEMMELL, D. R. LOWE, C. B. CONNOR
- 967 Insulin-Stimulated Hydrolysis of a Novel Glycolipid Generates Modulators of cAMP Phosphodiesterase: A. R. SALTIEL, J. A. FOX, P. SHERLINE, P. CUATRECASAS
- 972 Measurement of Single Channel Currents from Cardiac Gap Junctions: R. D. VEENSTRA AND R. L. DEHAAN
- 975 A Physiological Role of Epidermal Growth Factor in Male Reproductive Function: O. TSUTSUMI, H. KURACHI, T. OKA
- 977 A Plant Flavone, Luteolin, Induces Expression of *Rhizobium meliloti* Nodulation Genes: N. K. PETERS, J. W. FROST, S. R. LONG
- 980 Immortalization of Human T Lymphocytes After Transfection of Epstein-Barr Virus DNA: M. STEVENSON, B. VOLSKY, M. HEDENSKOG, D. J. VOLSKY
- 984 Conodont Survival and Low Iridium Abundances Across the Permian-Triassic Boundary in South China: D. L. CLARK, C. Y. WANG, C. J. ORTH, J. S. GILMORE

Technical Comments

- 987 Calmodulin, Cyclophilin, and Cyclosporin A: W. N. HAIT, M. W. HARDING, R. E. HANDSCHUMACHER; P. M. COLOMBANI AND A. D. HESS

Book Reviews

- 990 Controlling Chemicals and Loading the Dice, *reviewed by* H. DOWLATABADI AND R. W. HAHN ■ The Origins and Relationships of Lower Invertebrates, J. W. VALENTINE ■ The Sea Urchin Embryo, E. SPIEGEL ■ Biological and Inorganic Copper Chemistry, S. J. LIPPARD ■ Some Other Books of Interest ■ Books Received

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A Changing China

One of the many initiatives fostered by William Carey, Executive Officer of AAAS, has led to friendly interactions with the Peoples' Republic of China (PRC). There have been visits of delegations from the respective countries and symposia with presentations by Chinese at AAAS annual meetings including the recent one in Philadelphia. These contacts have provided perspectives on enormous changes that have occurred and are in process in the PRC. Were recent progress to continue, the country might emerge as a leading world power early in the next century.

To reach such a status, China has a long way to go. In 1984, its gross national product was about \$450 billion, corresponding to an annual income per capita of about \$450. In addition, the country must recover from nearly 30 years of mismanagement under the leadership of Chairman Mao. Mao's lifelong ambition was to serve the people, but his economic and political leadership led to less food in the stomach of the average Chinese; per capita grain consumption in 1976 was less than in 1952. This was occurring at a time when grain yields elsewhere were increasing dramatically. The ruling party's ideas about the class struggle led it to exalt and to give favored treatment to workers, peasants, and soldiers. Intellectuals and technocrats were called "the stinking ninth class." During the Cultural Revolution of 1966–1976, many of the best scientists were sent to do menial labor in the countryside. When a delegation from AAAS visited China in 1978, the scientists had been brought back to the universities, but they seemed still in a daze and uncertain about what the future might bring. The years 1966–1976 were also times of near total loss for the production of new scientists and engineers.

But after the death of Mao in 1976, rigid egalitarian policies were gradually modified. Reforms were introduced first in the rural areas. The commune system was modified and individual initiative encouraged. From 1979 to 1982, agricultural production increased at an annual rate of 7.5 percent. In 1984, the production value generated by small rural firms exceeded \$46.5 billion, an increase of 24 percent over 1983, and accounted for 40 percent of the national agricultural output value. In business egalitarianism is also in the process of abandonment while private initiative is being permitted. Most units are still owned by the state, but managers are rewarded for good performance and workers in efficient plants get higher wages.

The effect of these and related measures has been to improve industrial production. Annual percentage increases were: in 1981, 3.5; in 1982, 7.8; in 1983, 10.5; in 1984, 13.6; and in 1985, 17.7. In the first half of 1985, production was at an even higher rate, and authorities found it necessary to slow the economy somewhat.

In view of the zigzags that have occurred in Chinese political and economic policies, the future is unpredictable. However, leaders of the Chinese Communist party have repeatedly stated that in the future, their country must effectively utilize science and technology. Fundamental basic research is to be supported by a science foundation, but principal emphasis is to be on applied science and technology. To help make up for the shortfall in expertise caused by the Cultural Revolution, China has sent about 30,000 students abroad, as well as more senior scholars.

The Chinese leadership is also completely aware of the relative competence of various nations in science and technology and seems bent on learning from the best. In consequence, the United States and Japan are most closely studied as possible models. The Soviet Union is not. In their drive to improve the status of their country, the Chinese wish to develop a system of their own, but it will resemble more closely the model of the West than that of Chairman Mao.

There is no doubt of the competence and high intellectual capacity of many Chinese. The question that remains is: Will China create and maintain a system that permits the potential of its citizens to be manifest?—PHILIP H. ABELSON