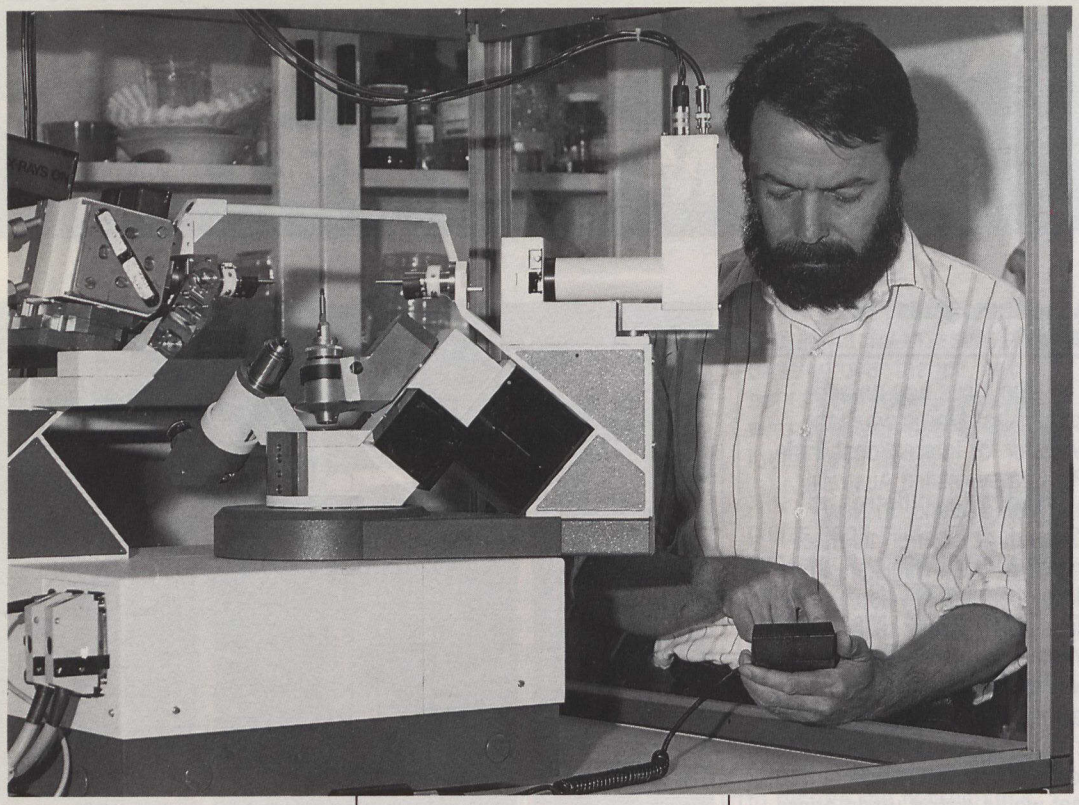

mayors' meeting, to be held in Ottawa October 20 to 23, 1987. The initiative for such a forum came from Ottawa's mayor, James Durrell. "Canada is proud that Ottawa is playing a leadership role in yet another example of international co-operation," Madame Landry said.

The Capitals of the World Conference will feature workshops, technical tours, and a succession of keynote speakers, including Sir Shridath Ramphal, Secretary-General of the Commonwealth of Nations, New York Mayor Ed Koch, and consultant John Naisbitt, author of the best-selling book, *Megatrends*. Workshops will address a range of important topics, including fiscal management, housing, and transportation. Some 140 nations have been invited to attend.

Superior Superconductor

Scientists at the National Research Council of Canada (NRC) have made a major breakthrough in materials research, defining the atomic structure of a new superconducting material. This revolutionary material is already foreseen to have applications in computer science, applied physics and medical technology. The superconductor could also improve the design and construction of power-transmission lines.

Dr. Yvon Le Page, a crystallographer with NRC, solved the puzzle using X-ray diffraction. Running experiments day and night, Dr. Le Page beat out researchers throughout the world in a race to analyse the atomic arrangement of a chemical whose composition had been identified by scientists in the United States and China just two weeks before. The superconducting material, a yet-unnamed oxide composed of yttrium, barium, copper and oxygen, loses all resistance to electricity at 90K ($-183°C$). The relatively high temperature at which the material becomes a superconductor means it can be cooled with liquid nitrogen at relatively low cost.

Fibre Optics Links Continents

Canada is set to participate in one of the largest telecommunications projects of the decade. Teleglobe Canada recently signed an agreement to construct and maintain two international communication fibre-optic cables. The TAT-9 cable will link Canada and the United States with the United Kingdom, France and Spain, while the MAT-2 will connect Spain with Italy.

NRC's Dr. Yvon Le Page used X-ray crystallography apparatus to define the atomic structure of a new superconductor.

By increasing the number of telephone circuits in the North Atlantic from 1 700 to 7 300, Teleglobe will boost its own ability to meet future demand. The system will feature digital transmission facilities suitable to the emerging Integrated Services Digital Network (ISDN), a communications network on which telephones, facsimile machines, microcomputers, and printers can interact on one telephone loop. The MAT-2 cable will add 690 ISDN-compatible circuits to the Mediterranean, and will have the capacity to hook up with the TAT-9 network.

As part of this important high-technology research and development project, Teleglobe Canada has arranged for a Canadian manufacturer to develop and supply the electronic equipment required to distribute traffic between the five landing points. For the first time, switching equipment will be located on Canadian soil, allowing direct transmission to Europe instead of requiring routing through the United States.

Young Cultural Ambassadors

North America's only four-part non-liturgical boys' choir, The British Columbia Boys Choir, will sing in the Netherlands and Germany this summer. This internationally acclaimed choir of males aged 8 to 24 has made numerous recordings of classical works, madrigals, folk songs, and carols. All are considered fun to sing and a challenge to learn.

The choir's many radio, television and live performances in Canada, the United States, Europe, and the Soviet Union, since 1969, have drawn favourable reviews. Their pure tone and impeccable phrasing are born of innate talent wedded to disciplined practice.

The group will tour China in 1988, following an appearance at the Olympic Arts Festival in Calgary.

Bracing for the Future

Thanks to the space program, some Canadians are supporting their paralysed limbs with much lighter braces. Peter Paul Kraft, of the House of Kraft Orthopedic Institute in Ottawa, developed the space-age braces from the material found in the outer skin of the American Voyageur spacecraft.

Kraft mixed the new lightweight, carbon-fibre material with a plastic fluid, injected it into moulds of his patients' limbs, and came up with a slender, skin-coloured brace that is one-quarter the weight of traditional plastic, leather