

From New Delhi by Susan Maitra

Academicians ahoy!

Forty top Russian scientists descended on India to discuss a science and technology treaty.

If the eight-day official visit of Russian scientists, led by Academy of Sciences chief and Deputy Prime Minister Guri Marchuk, produced a mouse, it was not for lack of Soviet effort. The huge Soviet delegation alighted with a barrage of offers of hardware, software, and various types of collaborations, only a fraction of which have been made public. Several rounds of talks were held with their Indian counterparts, led by Prof. C.N.R. Rao, head of the Indian Institute of Science and chief of the science advisory committee to the prime minister, in addition to visiting the key Indian facilities. The academicians also had high-profile press interviews and speaking engagements advertising their wares.

In the end two Memoranda of Understanding were signed pertaining to the holding of mutual science exhibitions in each others' countries during 1987-88. In addition, a "working paper" was initialed which sets out the parameters of a framework for future Indo-Soviet science and technology cooperation, supposedly along India's preferred lines. This framework is to be finalized over the next year.

Areas for future collaboration include biotechnology, immunology (including joint work on AIDS), materials science, lasers, catalysis, space sciences, synchrotron radiation technology, and prospecting for water from deep sources. It was also agreed to strengthen cooperation in basic research in mathematics, earth sciences,

radiophysics, astrophysics, chemical sciences, and ocean science.

According to press reports, projects under discussion are, for instance: pilot plants for production of hormones, production of industrial alcohol by microbial technology, waste treatment, powder metallurgy, diamond production and diamond-film coating technology, crystal growth techniques, production of lasers, carbohydrate chemistry-based technology, and materials processing in space and microwave remote sensing. Ongoing joint work will also be extended in MHD power generation and AC and DC high-voltage transmission.

The Soviet Union is also pushing for expanded student exchanges and a program for joint production of advanced textbooks.

According to Academician Marchuk, computers were a "hot point" of discussion. Himself a top computer technologist and applied mathematician, Marchuk advertised Soviet production of supercomputers with a capacity of 100 million operations/second. Indian computer experts will go to Moscow to see what the Soviets have to offer.

Another press account advertised the breakthroughs possible with joint cooperation in the power sector. Academician Aleksandr Sheindlin, head of Russia's High-Temperature Institute, noted that two new areas of great potential for India are coal-gasification processes to produce synthetic gas and use of solar energy for heating as

well as cooling of building and drying agricultural produce.

The coal-gasification process, Sheindlin said, could be applied for direct reduction of iron ore and in metallurgy. Sheindlin said India could be one of the most advanced countries in the development of coal-gasification technology and its applications.

Speaking in a public forum hosted by the Delhi Study Group, several members of the delegation including Nobel Laureate Dr. Aleksandr Trokhorov, also praised India scientists for their progress in thermonuclear energy, and indicated that Moscow had offered cooperation in fusion "on an equal relation."

Trokhorov also gave top billing to the Soviet Union's highly advanced laser technology—the type being used by the United States in the SDI program, he emphasized. "But we would like to stick to the positive uses of the technology," he said, "and not destroying nuclear warheads as the Americans were planning." Trokhorov said Moscow's great respect for Indian scientists makes possible setting up a joint international space center in India.

But the silence from the Indian side on this proposal, floated by Gorbachov himself during his recent visit, has been nearly deafening. It found no place on the scientists' formal agenda, and was only mentioned as one of the subjects raised by Marchuk with Rajiv Gandhi at a dinner hosted by the prime minister for the delegation in Jammu and Kashmir, where he was campaigning for state assembly elections.

Delegation head Marchuk is reportedly the brain behind Gorbachov's strategy for accelerating scientific and technical retooling of the Soviet economy, and the architect of the plan to set up a network of intersectoral science and technology complexes in the Soviet Union.