US warned about complacency on Japanese economy

[WASHINGTON] The United States should beware of economic competition from Japan and redouble its efforts to build links with that country's science and technology base, even at a time when US industry has regained its competitive edge, according to a report this week from the National Research Council (NRC).

The report notes that Japan continues to spend more on non-military research and development, and employ more scientists per head of population, than any other nation, despite its recent economic difficulties. It predicts that the Japanese government's new emphasis on basic scientific research will build a formidable base of research results which the United States could be ill-equipped to tap into.

"If the United States is complacent and underestimates Japan's ability to bounce back, we could find ourselves facing some of the same problems we faced in the early 1980s," says Eric Bloch of the Council on Competitiveness, who chairs the Committee on Japan at the NRC, the operating arm of the National Academy of Sciences.

Jim Martin, a research manager with Rockwell who chairs the task force that produced the report, says that "there is a feeling of complacency in every sector of America" about competition from Japan. But the report urges the US government to act on several fronts to "make the US–Japan science and technology relationship more balanced".

A new 'watch list' should be established, it says, to track the handling of patents applications by US citizens in Japan, and to ensure that patent protection is enforced. The US government should continue to expand its programmes to acquire important Japanese technical information, and make it available to US companies and scientists.

It should expand use of the US–Japan Science and Technology Agreement, an umbrella agreement which is supposed to simplify scientific collaboration, and develop new ways to measure its performance.,

Despite some progress, Bloch says, the science and technology relationship between the two countries is "one of asymmetry", with far fewer US scientists and engineers visiting Japan than vice versa.

But, in the six years since Congress requested the report, the United States has enjoyed surging economic growth and has come to regard Japan as less of a threat, panel members say. Asked for the source of this complacency, Bloch singles out the US press. But he admits the NRC itself may soon close its Office of Japan Affairs. **Colin Macilwain**

'Skewed medical goals' revealed by Indian survey

[NEW DELHI] A bibliometric study of medical research in India has concluded that much of the work being done is not directly relevant to the most urgent health needs of the population.

According to government statistics, diarrhoeal, respiratory, infectious and parasitic diseases account for most deaths and morbidity in India (see Table 1). But the study shows that researchers have been more active in studying diseases such as cancer and neurological disorders, whose significance is felt to be relatively limited, rather than more widespread diseases such as malaria, which affects 2.5 million Indians each year (see *Nature* **386,** 536; 1997).

Subbaiah Arunachalam of the M. S. Swaminathan Research Foundation in Madras — now Chennai — carried out a scientometric study in 1995, based on Indian medical papers cited in Science Citation Index, which showed a similar result. But this covered only one Indian medical journal out of the 250 or so published.

He has now carried out a study based on data from Medline, which indexes 30 Indian medical journals. The results, published in the journal *Current Science* (**72,** 912; 1997) of the Bangalore-based Indian Academy of Sciences, reached the same conclusion.

Arunachalam found that, between November 1987 and December 1994, Indian authors published 18,224 articles in 45 medical fields in 1,368 journals. One conclusion was that, in terms of the number of papers published, neither tropical medicine nor respiratory diseases figure in the top 10 fields in Indian medical research (see table 2).

Indian researchers published 584 papers in 101 journals in neuroscience, 1,367 papers in 94 journals in pharmacology, and 821 papers in 56 journals on cancer. But they published only two papers in an epidemiology journal in seven years.

Although agricultural research played an important role in transforming India from a food-deficient country into one with food surpluses, "medical research in India, but for a few exceptions, has not covered itself with glory despite the fact that medicine enjoys a better status and image than agriculture in Indian society," writes Arunachalam. He says the question of relevance is especially important in a developing country where scarce resources have to be used judiciously.

Table 1 **Leading causes of mortality and morbidity in India 1991–93**

Mortality	Diarrhoeal diseases
	Respiratory diseases
	Infancy diseases
	Pneumonia
	Infectious and parasitic diseases
Morbidity	Respiratory diseases
	Diarrhoeal diseases
	Malaria
	Whooping cough/measles
	Neonatal tetanus

Source: WHO

Table 2 **Indian research papers covered by Medline, 1987–94, by subfields (first 10)**

Subject	*No. of journals*	*No. of papers*
General medicine	57	2394
Paediatrics	43	1420
Pharmacology	94	1367
Immunology	74	928
Pathology	48	916
Oncology	56	821
Surgery	68	750
Cardiovascular	41	663
Gastro	26	606
Neuroscience	101	584

The Indian Council of Medical Research (ICMR) has challenged the study's conclusions, denying any mismatch between the work of its researchers and national needs. All the 21 ICMR institutes and five regional medical research centres in different parts of India "direct their efforts for research on diseases or disciplines which are on the national health agenda," the council said in a statement. "Evaluating their contributions in terms of mere publications in indexed (or even other) journals would be not only unfair but unrealistic."

ICMR's deputy director general, Lalit Kant, says that most Western databases, including Medline, cover diseases of the developing countries inadequately. "Any analysis of the relevance of medical research in India should be supplemented with authentic information from other databases like tropical disease bulletins and national databases," he says.

Marthanda S. Valiathan, a leading heart surgeon and vice-chancellor of the Manipal Academy of Higher Education, says that Arunachalam's findings "reveal a lopsided order of priorities in Indian medical research". Valiathan traces the origin of the mismatch to the nineteenth century, when Indians started using Western research tools and techniques without developing their own.

But Balasubramaniam Ramamurthi, one of India's leading neurosurgeons, based at the Voluntary Health Service Centre in Chennai, warns against blaming scientists. "Abolishing diarrhoea, tuberculosis and malaria requires public, political and administrative action, and not research," he argues. **K.S.Jayaraman**