Bush, Chirac call for ban on cloning

CRAWFORD (TEXAS) DEC. 27. The U.S. President, George W. Bush, is 'deeply' troubled by efforts to clone human beings and wants Congress to ban the practice, the White House said today. The French President, Jacques Chirac, denounced efforts to clone human beings and appealed to countries around the world to outlaw and severely punish any attempt to create a clone.

"The President believes, like most Americans, that human cloning is deeply troubling and he strongly supports legislation banning all human cloning," a White House spokesman said.

"Despite the widespread skepticism among scientists and medical professionals about today's announcement, it underscores the need for the new Congress to act on bipartisan legislation to ban all human cloning."

In a statement released in France, "Regardless of whether this claim is true or not, the President (Mr. Chirac) took this occasion to renew his energetic condemnation of all research on reproductive human cloning and reaffirm that, for France, this practice is criminal and contrary to human dignity."

"He calls on all states to forbid and severely punish all attempts at human cloning." France and Germany proposed a worldwide ban on cloning last year. — Reuters

Sect claims birth of world's first cloned human

S Rajagopalan
Washington, December 27

A COMPANY associated with the Raelians — a religious sect that believes space travellers created the human race by cloning themselves — claimed on Friday to have produced the world's first cloned human baby.

Dr Brigitte Boisselier — director of the company, Clonaid — made the announcement at Hollywood, Florida, but did not offer any immediate proof.

Boisselier, who is also scientific director of the Raelians, said: "The baby was born at 11.55 am yesterday...We will call her Eve." She said the baby weighs 7 pounds, is doing fine and that her parents are very happy.

Neither the baby nor the parents were produced at the news conference. Boisselier, a Frenchwoman, also refused to reveal the city or country where the cloned baby was born. All she would say was that the baby's parents are American citizens. "We used the egg of the mother, a 31-year-old American."

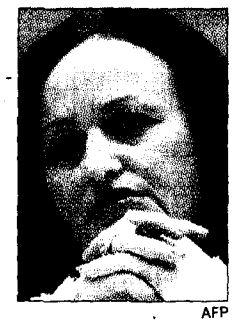
Scientists have greeted the announcement with scepticism, but Boisselier said Clonaid was ready for an independent evaluation. She invited a freelance journalist, Michael Guillen, to coordinate the evaluation. Guillen said he has accepted the invitation on two conditions: That no strings will be attached to the offer and that he will assemble his own team of independent experts. The baby will be out of hospital in three days and the evaluation should be over within the next eight or nine days, Boisselier said.

She announced that the second cloned baby is due in Europe next week. "Three more babies are due by end of January or early February" — two in Asia and one in North America.

Attacking the "appalling and scientifically irresponsible announcement", scientist Robert Lanza said: "This group has no scientific track record. It has not cloned even a mouse or rabbit." Lanza's Advanced Cell Technologies, which claims to have cloned a human embryo, believes in therapeutic cloning as opposed to reproductive cloning.

The Raelian sect, with some 55,000 followers worldwide, believes that life on Earth was established through cloning by extra-terrestrials who arrived in flying saucers 25,000 years ago. Its founder, Rael, is a former French journalist. His real name is Claude Vorilhon and he lives in Quebec.

SPRINTERS IN THE RACE



AFP

Boisselier at the news conference.

THE WINNER: According to Clonaid, it's Clonaid, led by chemist and Raelian cult 'bishop' Brigitte Boisselier and set up in the Bahamas in 1997. Since 1998, 'about 100' clients have reportedly paid up to $200,000 each to be cloned

THE RUNNER-UP: The second place should go to Italian fertility expert Dr Severino Antinori. The 55-year-old, known as "the father of impossible children", was supposed to announce the birth of the world's first human clone last month

THIRD: Prof Panayiotis M Zavos, who had been working with Antinori till the two fell out. Dr Zavos started his own project based in Kentucky. He has not been in the news of late

Miracle of life in human hands...

Associated Press

HOLLYWOOD (Florida), Dec. 27. — A chemist connected to a group that believes life on Earth was created by extra-terrestrials claimed on Friday to have produced the world's first human clone, a baby girl named Eve.

The 7lb (3.2 kg) baby was born on Thursday, said Ms Brigitte Boisselier, head of Clonaid, the company that claimed success in the project; but she wouldn't say where the baby was born. Scientists have expressed doubt that her group could clone a human.

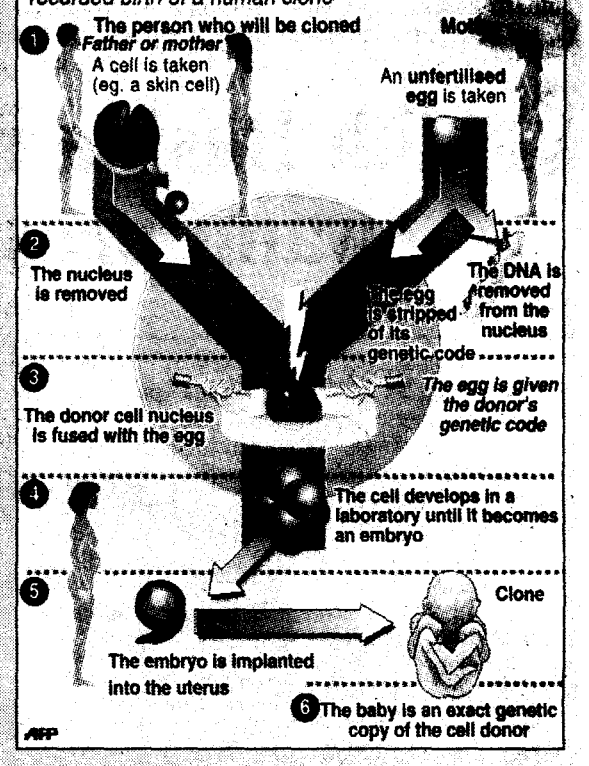
Brigitte Boisselier claimed to have produced the world's first human clone. She didn't present DNA evidence, which leaves the claim scientifically unsupported

Ms Boisselier, who spoke at a news conference, said the baby is a clone of the 30-year-old American woman who donated the DNA for the cloning process, had the resulting embryo implanted and then gestated the baby. If confirmed, that would make the child an exact genetic duplicate of her mother. "The baby is very healthy. She's doing fine ... the parents are happy," she said.

But Ms Boisselier did not immediately present DNA evidence showing a genetic match between mother and daughter. That omission leaves her claim scientifically unsupported. The group expects four more babies to be born in the next few weeks.

How to clone a human being

Raelian cult Thursday claims the first recorded birth of a human clone



...Or is it?

Rael as portrayed in a 2001 picture from the Clonaid website. — AFP

DENVER, Dec. 27. — The religious sect connected to Clonaid was founded in The Bahamas in '97 by Claude Vrilhon, former French journalist and leader of a group called the Raelians. The sect is clearly unlike anything that science has grappled with. Vrilhon, who now calls himself Rael, says he met little green space aliens on a visit to a French volcano in the 1970s, where the extraterrestrials told him they created life through genetic engineering.

Ms Brigitte Boisselier is a Raelian herself — a bishop, in fact. At the news conference she appeared to be wearing the Raelian silver medallion combining the Star of David and a snowflake, symbolising infinite time and space.

Cloning humans is at the heart of the Raelian theology of "scientific creation", which they describe as an alternative to both Darwinian evolution and creation dogma of the religions. "Cloning is the key to eternal life," Rael says. The group claims 55,000 devotees worldwide and operates its own theme park, UFOland, near Montreal. — AP

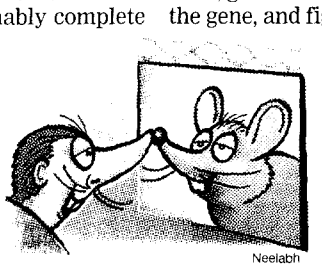
Mouse, human genes similar: study

science & tech

By Nicholas Wade

New York: An analysis of the mouse genome by an international consortium of scientists, a landmark event in biology, shows it is so similar to that of people that it should speed efforts to understand the human genome and the genetic roots of disease.

This is the first time that the reasonably complete genomes of two mammals, mouse and man, have become available for comparison. While the genome of a mammal even closer to the human, like the chimpanzee, may some day be decoded, the mouse is both genetically close and also an ideal laboratory animal.



Neelabh

Man and mouse are cousins, each descended from a small mammal that split into two species toward the end of the dinosaur era. Despite 75 million years of separate evolution, only about 300 genes—1 percent of the 30,000 possessed by the mouse—have no obvious counterpart in the human genome, according to the new analysis published in Thursday's issue of 'Nature'.

This similarity makes the mouse genome an excellent surrogate for studying the human genome, especially for tests that would be ethically impossible in people. To understand the role of any newly found human gene, researchers can identify the counterpart gene in mice, genetically engineer a strain of mouse that lacks the gene, and figure out from the mouse's defects what the missing gene is meant to do.

The analysis has also yielded new insight into the workings of evolution and brought to light the existence of a large class of novel genes that produce a substance related to DNA.

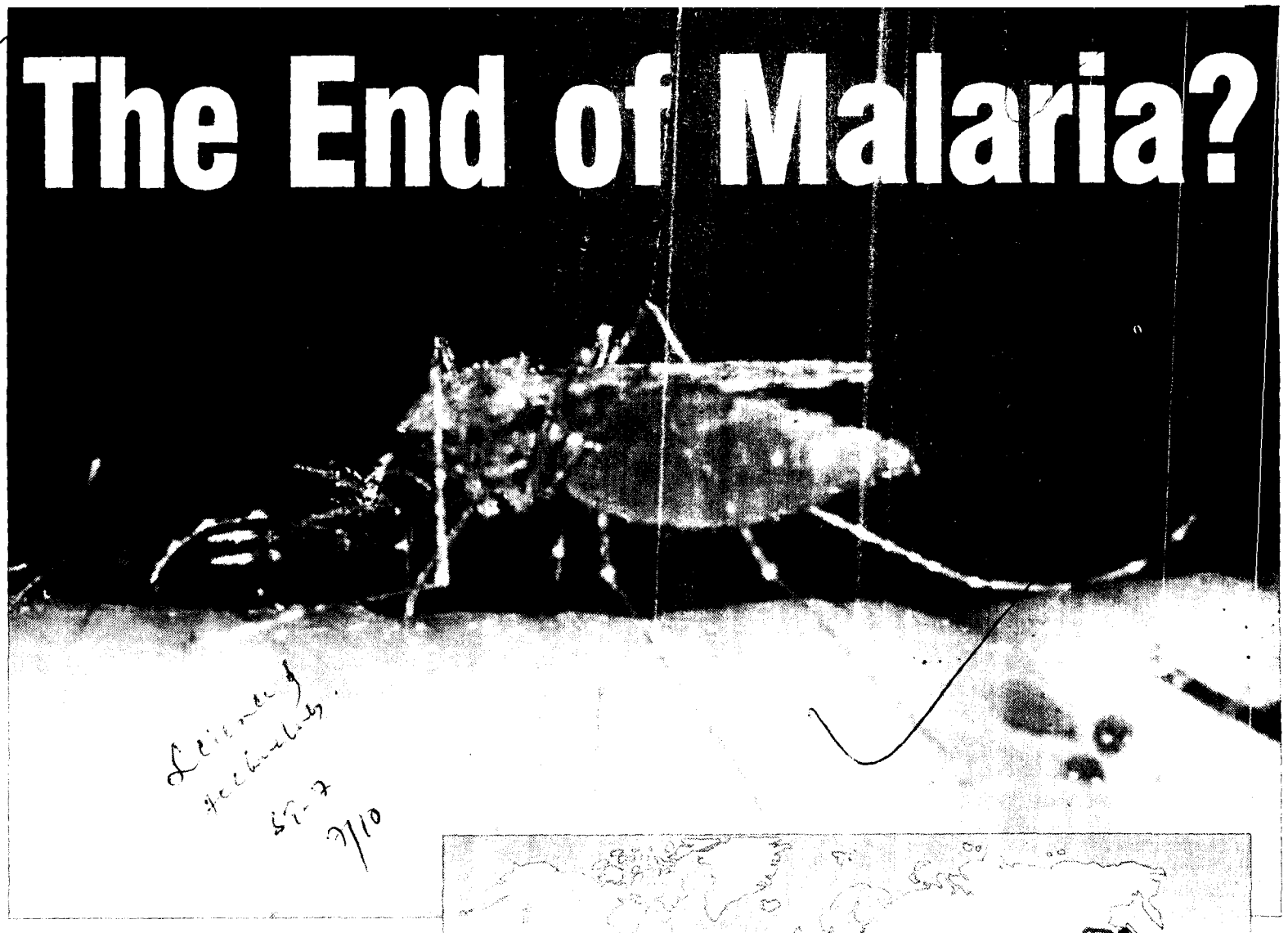
Dr Robert Winston, a human fertility expert at the Imperial College London, called the analysis a "landmark announcement" that "will undoubtedly further our understanding of the molecular basis for human diseases and the treatment of the widest range of human disorders." NYT News Service

Comment: Don't feel guilty about joining the rat race — it's all in the genes.

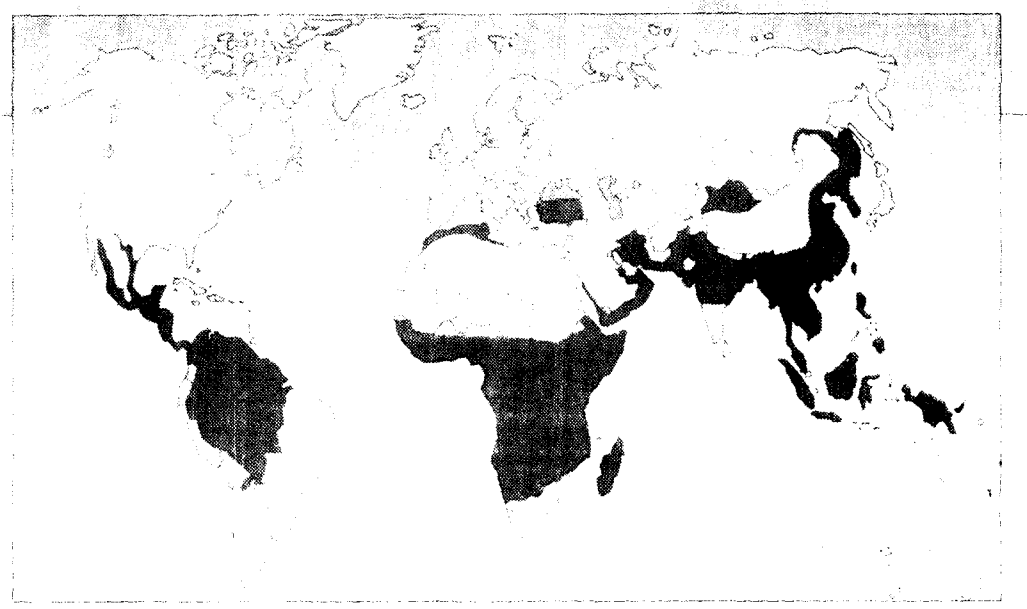
THE TIMES OF INDIA

6 DEC 2002

The End of Malaria?



Advances in genetic research have experts talking about the eradication of malaria for the first time since the WHO abandoned the goal as unrealistic in the 1970s. **Mark Henderson** reports



Map of malaria affected areas

A NEW generation of drugs to combat malaria should be available within five years, after scientists unlocked the genetic codes of both the malaria parasite and the mosquito species that transmits it.

The twin breakthroughs pave the way for therapies, vaccines, insecticides and repellents that will save millions of lives and finally make eradication a realistic target.

Malaria, which is caused by the parasite Plasmodium falciparum and passed to human beings by the mosquito Anopheles gambiae, is responsible for 2.7 million deaths a year, more than any infectious disease apart from HIV/Aids. It is a particular scourge in sub-Saharan Africa, which accounts for 90 per cent of all cases, and kills a child every 20 seconds. The discovery of the genetic keys will transform research into the disease, which costs an estimated 45 million years of productive life annually by death and disability.

Carlos Morel, director of the World Health Organisation's tropical diseases research programme, said the achievement was "an extraordinary moment in science". Chris Newbold, Professor of Tropical Medicine at Oxford University, spoke of a "quantum leap in our understanding of malaria".

The results, however, are unlikely to spark a multi-million dollar race for a new drug or vaccine. Major pharmaceutical companies have little incentive to conduct such research, because the disease is endemic in poor countries unable to afford expensive patent medicines. Even the tourist market is not large enough to be lucrative, and most research will continue to be funded by governments and charities.

The advances were made by two separate international teams, both including British scientists, and will provide researchers with every conceivable piece of genetic data that might be useful in the fight against malaria.

"The genome contains every possible vaccine target and every possible drug target," said Neil Hall of the Wellcome Trust Sanger Institute near Cambridge, who led the British contribution to the P. falciparum project.

"It is not going to be instantly possible to say where they are, but we are giving scientists the tools they need to find them. We have presented them with the haystack and they have got to go and find the needle." The first practical benefits are likely to come from the parasite sequence, in the shape of new drugs that attack its genetic weaknesses.

The need for new treatments has never been more acute, as resistance to the cheapest, most effective drug, chloroquine, has made it virtually useless in many parts of the world. Other antimalarials, such as Lariam (mefloquine), can have severe side effects, including depression and psychosis. Researchers have found seven important genes that are present in P. falciparum but not in the human genome — making them highly promising targets for non-toxic drugs. "In terms of drugs, we are looking at a relatively short time-scale, just five years or so," Professor Newbold said.

Within ten years the blueprints should bring advances in every field of malaria research. The parasite genome will aid the hunt for a vaccine; the Anopheles data will be used to design insecticides and repellents. Genes linked to insecticide resistance and the mosquito's taste for human blood have been identified.

The parasite's genome was unusually fragile because 80 per cent is made up from just two of the four letters of DNA. Dr Hall likened it to "doing a jigsaw puzzle with all the pieces the same colour".

Another prospect is a chemical that would stop the Anopheles mosquito from carrying the parasite, making the insects harmless. A similar approach, pioneered by Imperial College London, involves genetically modifying mosquitos so that they cannot transmit malaria.

Details of the research are published this week in *Nature* and *Science*. Experts are now talking of the eradication of malaria for the first time since the WHO abandoned the goal as unrealistic in the 1970s.

— The Times, London

Malaria gene code cracked

PATRICIA REANEY

London, Oct. 2 (Reuters): Scientists have cracked the genetic code of the parasite that causes the most deadly form of malaria, in what has been called a quantum leap in the fight against the disease that kills one child every 20 seconds.

A team of 150 researchers in the US and Britain has sequenced all the genes in the threadlike *Plasmodium falciparum* parasite that causes malaria, an illness that threatens half the world's population.

"We've provided new tools and new insights, hopefully for new targets for drugs and vaccines, and hopefully for new treatments," Neil Hall of Britain's Sanger Institute told a news conference.

The malaria genome, which was published in the science journal *Nature* today, was announced jointly with the genetic map of the Anopheles Gambiae mosquito that transmits the parasite to humans and was reported in the journal *Science*.

Together, the two genetic sequences, along with the human genome that was mapped earlier, give scientists the best means ever of defeating malaria, which claims more than a million lives each year, most of them children aged below five years.

Along with HIV/AIDS and tuberculosis, malaria is one of the biggest infectious killers in the world. "This is the time to put malaria on the agenda. It is a very serious disease," said Fotis Kafatos of the European Molecular Laboratory in Heidelberg, Germany, who worked on the mosquito genome.

With 14 chromosomes and 5,279 genes, the malaria genome is one of the smallest sequenced so far. The human genome has about 30,000 genes, the nematode (any parasite or free-living worm) has 18,000 and the Anopheles Gambiae genome has more than 13,000 genes.

But the parasite genome was a major challenge for the scientists because parts of its DNA are very unstable and broke apart as they worked on them.

Researchers from the Sanger Institute, Stanford University in California and the Institute of Genome Research in Maryland collaborated on the six-year, £18.5 million parasite genome project. "The amount of data involved was phenomenal. It was a bit like tearing up half a dozen Bibles, scattering the pieces over a playing field and then trying to put them together again," Hall said.

Scientists who are working on developing new drugs or a vaccine are already using data from the project which is available on the Internet and have identified potential new drug targets which scientists believe could be available in about five years. "This is an extraordinary moment in the history of science," said Carlos Morel, of the World Health Organisation (WHO), adding that it opens up a new era in public health.

■ See Page 3

Scientists create life in deadly virus

LONDON, JULY 12. Scientists have taken a giant step towards creating artificial life by building a synthetic polio virus from mail-order DNA.

It multiplied and worked like the real thing. Mice injected with it became paralysed within a week.

Viruses lie on the borderline of life, being complex chemicals that need a living host to replicate and spread.

But Prof. Eckard Wimmer, who headed the research in America, told *The Daily Telegraph* on Thursday that he had "no doubt" it would one day be possible to 'awaken' inanimate chemicals to make the simplest truly living thing, a bacterium.

He said: "Our work is worrisome indeed, but it is a message necessary to wake up the public."

The creation of the virus, described in the journal *Science*, took two painstaking years by Prof. Wimmer, Dr. Jeronimo Cello and Prof. Aniko Paul at the State University of New York.

The genetic molecule at the core of polio is RNA rather than DNA.

But because this is unstable, the scientists tweaked the RNA chemical sequence instructions to convert them to DNA.

Then they ordered the components — carefully arranged chemical units — from one of the many companies that deal in piecemeal DNA.

It took about a year to layer the DNA fragments together to form the first third of the virus. Once the basic "shape" of the virus was established, a DNA synthesis company was hired to assemble the rest.

The researchers then immersed the DNA-version virus in enzymes to convert it back to RNA.

The work raises a host of ethical and practical issues, with Prof. Wimmer likely to be compared in some quarters to Dr. Frankenstein.

He tried to calm fears about terrorism.

Even if terrorists managed to create the virus, the World Health Organisation's vaccination programme had ensured that the world was now well protected against polio, he said.

"Any threat from bioterrorism will only arise if mass vaccination stops."

The WHO said last month that polio had been eradicated in Europe.

Asked if his work would allow new diseases to be made, Prof. Wimmer said: "At present it is impossible to design a totally new, dangerous infectious agent."

But existing agents could be modified, he added. —

THE HINDU

US patent for cow urine distillate

NEW DELHI, July 3. — A team of Indian scientists have developed a particular cow urine distillate that can enhance anti-microbial effects of antibiotic and anti-fungal agents. The USA granted a patent to the "activity enhancer and availability facilitator for bio-active molecules" last week.

Describing the pharmaceutical composition as a combination of Indian traditional wisdom and modern science, Union science and technology minister Mr Murli Manohar Joshi said the patent had demonstrated a successful use of the cow urine distillate to enhance the activity of toxic anticancer drugs like taxol.

"The present invention has direct implication in drastically reducing the dosage of antibiotics, drugs and anti-cancer agent while increasing the efficiency of absorption of bio-active molecules, thereby reducing the cost of treatment.

The composition was developed by scientists at Centr Institute of Medicinal and A omatic Plants, Central Scen tific and Industrial Researc and Go-Vigyan Anusandha Kendra in Nagpur. — SNS

THE STATESMAN

The S&T policy

By V.V. Krishna

The MUCH-AWAITEd draft of a new science and technology (S&T) policy has been under revision for about six months now. Called the Draft Science and Technology Policy 2001 (STP2001), it was issued on websites for comment last October by a committee headed by Goverdhan Mehta, then president of the Indian National Science Academy. Eventually, the document was to be finalised and released by the Prime Minister in January 2002. This did not happen. As is well known, the Scientific Policy Resolution (1958) was followed by the Technology Policy Statement in 1983. While the former in many respects was legitimised from time to time as a "testament of faith" in science and as a vision of society, the latter reaffirmed the country's commitment to the "attainment of technological self-reliance". Given this lapse of 17 years, between 1983 and 2001, it was expected that the draft regime would systematically analyse why a new policy was needed in the first place. In last decade, research and development (R&D) funding as a per cent of GNP fell from 0.92 in 1990 to 0.70 in 2000. Considering that over 55 per cent of the R&D allocation is accounted for by atomic energy, space and defence research establishments, the actual sum available for civilian R&D is rather low and thinly spread over a wide spectrum of areas. Compared to the 2 to 3 per cent of GNP in industrially advanced countries; and 1.5 to 2.5 per cent in East Asia, India lags far behind. Unfortunately, STP2001 only 'anticipates' that the Government may increase the figure to 2 per cent in the next five years but does not provide any road map for this.

The draft fails to specify what type of fiscal policies will "dramatically enhance" the contribution of the private sector to the overall R&D effort. The South Korean experience is a case in point. Between the 1970s and the 1990s, S&T policies through state mediation including fiscal measures and incentives reduced the Government's burden in the total R&D expenditure (about 2.4 per cent of GNP) from 75 to 25 per cent. South Korea promulgated at least 15 S&T laws. One of them related to punishing firms which drew R&D tax incentives but justified them against non-R&D activities. But in India, neither the Department of Science and Technology nor any other body has so far thought of underpinning the R&D tax incentives scheme with such penal laws.

On innovation, the draft still adheres to the now outmoded 'pipeline' innovation model assuming that "innovation may be the consequence of traditional scholarly research"; and that "mechanisms will be developed for channelling creative talent towards the process of invention and discovery". There is nothing wrong in this but to legitimise the promotion of innovation in terms of discovery is to completely miss the empirical reality of the processes in national laboratories and enterprises underlying the innovation success. There is ample evidence to suggest that success in innovation is the outcome of a coupling between science and technology on the one hand, and the market and industry on the other, often in the mould of networks. R&D is important but is one amongst several other technical and non-technical factors crucial for innovation success. Amul in Gujarat and the success of chemical research-industry network around UDCT and NCL amply demonstrate this insight in our own county. One needs to have a much broader definition and thinking on innovation, wherein institutional and organisational innovations are as important as R&D *per se*. The draft neither assigns the space deserved to the crucial issue of building linkages between different actors (Government sectors, national laboratories, universities and industries) of the national system of innovation (NSI), nor does it address the crucial issue of in-house R&D in PSEs.

In the current phase of globalisation, STP2001 only makes a passing reference to the small and medium scale enterprises (SMEs). Industrial clusters are not mentioned at all. It is clear now that cheap labour and natural resource endowments, which in the past gave comparative economic advantage, are rapidly losing ground. If this sector has to even sustain its present levels of growth and employment in the globalised era, it will have to be essentially via value addition through technological change, skill upgradation and the role of knowledge. There is no short cut or alternative other than this route. It is here that the knowledge institutions (IITs, universities, CSIR laboratories, colleges, private actors etc) can play a significant role in meeting the current internal challenges through intermediary institutional mechanisms. We need to seriously explore how the "neighbourhood effect" of knowledge institutions in partnerships with decentralised public and private institutions can become effective through a 'new perspective' or 'model' of regional or rural innovation systems.

The overarching science and technology policy statement needs to spell out a perspective to orchestrate the signals from the various sectors, conventional as well as newly emerging.

Two features uppermost in the STP2001 document are reconstruction of the academic science system and a new funding mechanism for basic science. In an era when students are losing interest in science, a plea for its revival in colleges is a positive feature of the document. It specifies special support for 25 universities and an equal number of technical institutions in raising the standards of science teaching and research. One would expect that the institutions selected would not be the ones such as JNU or IITs but those which have been at the receiving end as far as funding and support are concerned. There is, however, no reference to the X Plan Profile of Higher Education in India issued by the UGC, which also advocates the promotion of academic science. STP2001 does not give any clue but our aim should be to double the current level of academic science funding which is staggeringly low (7 to 10 per cent of the total R&D funding) compared to 25 to 30 per cent in industrially advanced countries.

There are three important features of human resource development that have been bypassed in the draft policy. The first is the organisational and institutional mechanisms to be put in place for fostering mobility of personnel between different segments of the NSI. Currently, there is very little or no mobility at all for example between the CSIR and the university system; and between these two and the industry. Second, the draft has not given any space to the idea of building a cadre of technicians and instrument professionals who will in future be the backbone of the knowledge-based economy and institutional setup. Third, in continuation of the earlier policies, the features of "brain drain and brain gain" and 'brain circulation' do not find the space they deserve.

The overarching science and technology policy statement needs to spell out a perspective to orchestrate the signals from the various sectors, conventional as well as newly emerging. STP2001 does not give any indication as to how the existing policy statements (over a dozen issued by various Government sectors since 1991) have a bearing on it or its radiating effect on them in future. The draft mentions about S&T inputs in planning and governance but has not paid any attention to the widening gap between 'theory' and 'practice' of S&T policies. How to forge linkages between industrial and S&T policies; and what bearing these will have on the goal directions of national laboratories, on the one hand, and industrial actors, on the other are the core issues not addressed in the draft.

(The writer is Professor, Centre for Studies in Science Policy, JNU. The views expressed are his alone.)

THE HINDU

2002

Blood test to identify Alzheimer's early

Washington, March 22

BODY TALK

A SIMPLE blood test could soon be available to predict who will develop Alzheimer's disease up to 20 years before they show any symptoms, scientists said last night.

With no treatment yet available, a test is the kind of medical fortune telling few healthy people would want to turn to. But it could be a boon for middle-aged people anxious to know whether memory problems are a harmless sign of growing older or a sign of something worse.

The researchers, whose work is published in today's edition of the journal *Science*, caution that the test has so far only been proven to work in mice, genetically modified to develop Alzheimer's. Now, the only way to be certain that someone has Alzheimer's is to look inside their brain, impossible while they are alive. The devastating brain condition which affects about 600,000 people in Britain is characterised by a build-up in the brain of a protein called amyloid-b, which clumps together to form plaques.

It was already known that Amyloid-B accumulation begins up to 20 years before symptoms appear. Scientists have looked to see whether the amount of amyloid-b in the bloodsteam was an indicator of levels of the protein in the brain. It was not. The new technique, developed by Washington University together with the drugs firm Eli Lilly, involves injecting mice with an antibody called m266. This draws amyloid-b out of the brain and into the blood. After injecting M266 into 49 animals, then sacrificing them and examining their brains 24 hours later, researchers found a direct link between amyloid-b levels in their bloodstream and the amount in their brain.

"This has obvious implications for developing a similar blood test for brain amyloid load in humans," said Dr Holzman. "Such a test also could distinguish individuals suffering from dementia caused by Alzheimer's from those with other types of dementia."

The Guardian

Small pox pill to combat terror attacks

Science & Technology. HT-11 2873

London, March 22

US SCIENTISTS are developing a pill for smallpox in case the deadly virus is used in a bioterrorist attack, and have reported promising results in tests on mice.

Experts have said it would be impractical to rely on the smallpox vaccine in an emergency because they would not be able to immunize everybody in time. The US Government has thus been searching for new medicines to combat the virus.

Scientists have screened hundreds of drugs and tested about 20 on animals. They discovered five years ago that a drug used for an aids complication could kill the smallpox virus in a test tube. But the drug, Cidofovir, must be injected and has serious side effects and therefore has been considered impractical for fighting a bioterror outbreak.

Researchers from the veterans affairs San Diego healthcare system and the university of California, San Diego reported yesterday that they have developed a pill derived from Cidofovir, one of six similar compounds that can be given in pill form.

"This one, so far, looks like the best one," said John Huggins, chief of viral therapeutics at the US Army medical research institute of infectious diseases, which is evaluating the various drugs. He is studying the pill in mice infected with the cowpox virus, which is closely related to smallpox. The smallpox virus cannot grow in mice.

"This drug has been more effective at inhibiting virus replication in the lungs - which is the first target—than an other drug that we've looked at. It completely eliminated virus growth, so we're pretty excited about it," Huggins said.

The three scientists presented their findings yesterday in Prague, Czech republic, at a meeting of the international conference on antiviral research.

"This initial result is promising, but the new drug is a long way from being demonstrated sufficiently safe and effective for human use.

The additional studies needed are being undertaken as a highest priority," said Catherine Laughlin, chief of virology in the division of microbiology and infectious diseases at the US National institute of allergy and infectious diseases.

Huggins is evaluating the pill, called HDP-CDV at the moment, in two animal experiments designed to mimic what might happen in humans when the drug is given. One experiment mimics human infection by release of the smallpox virus in an aerosol as a weapon while the other model looks like person-to-person spread, Huggins said.

Huggins has found that the new drug is 100 times more potent than its parent, Cidofovir, in slowing smallpox replication in human tissue samples grown in a laboratory.

The drug also prevented mice with cowpox from dying from the infection and that virus levels in the lungs of infected animals were reduced to nearly undetectable levels by the new drug, but not when the parent medicine Cidofovir was injected into the mice.

AP

THE HINDUSTAN TIMES

UK ruling allows scientists to set up world's first cell bank

Nod to clone human embryo

FROM DOMINIC EVANS

London, Feb. 27 (Reuters): Britain's scientists won a green light today to pioneer the cloning of human embryos for research and set up the world's first embryo cell bank.

An influential House of Lords committee ruled that embryo cloning — which federally funded academics in the United States are barred from carrying out — should be allowed to proceed under strict conditions.

Committee chairman Richard Harries, the Bishop of Oxford, said the cells taken from early embryos could be crucial for research into finding a cure for debilitating diseases such as Parkinson's and Alzheimer's.

"We conclude that for this to be fully realised, no avenue of research should be blocked off at this stage," Harries told a news conference. Last year Britain became the first country explicitly to allow the creation of embryos as a source of stem cells — the primitive master cells which turn into other cell types and could be used to find cures to a wide range of diseases.

The regulations were held up by a court ruling in November.

Prime Minister Tony Blair's government rushed through revised legislation and an appeal court upheld the new laws last month, but research was effectively put on hold until today's announcement by the Lords' committee.

"Stem cells offer enormous potential for therapies in the future, for long-term therapies for many serious common diseases," committee member Professor Chris Higgins said.

The British Medical Association said it strongly supported the verdict. "This research offers real hope to the millions of patients with conditions like Alzheimer's, Parkinson's and diabetes," it said in a statement.

The committee said that one condition for granting a research licence to clone human embryos should be that any "cell line" generated from it be deposited in a stem cell bank.

Before any licence was granted, health authorities should also ensure that there were no suitable existing cell lines in the bank. "We are pleased that the Lords have recommended the establishment of a stem cell bank as a matter of urgency. Such a bank will allow researchers to explore this enormous potential in a controlled environment," said Prof. Sir George Radda, chief executive of the Medical Research Council.

Critics of human embryo cloning say it represents the first step on a slippery slope to reproductive cloning — a charge the committee strongly denied.

But paralysed Superman actor Christopher Reeve says he hopes stem cell research might give him the chance to walk again. Reeve, confined to a wheelchair since breaking his neck in a riding accident in 1995, told BBC radio this week he hoped scientists would be able to turn the stem cells into spinal cord tissue.

Red alert

Britain's farmers remained on red alert for foot-and-mouth today even though initial tests on two suspected cases of the disease had proved negative. Jumpiness over a new flare-up of the virus, just six weeks after Britain was declared free of the world's worst outbreak, even showed up on currency markets overnight, with news of the suspected outbreak weighing on the pound in New York.

'Time for a practical response to cloning'

HT Correspondent
New Delhi, January 8

THE RECTOR of Imperial College of Science, Technology and Medicine in the UK and Glaxo Smithkline chairman, Sir Richard Sykes, today spoke in favour of therapeutic cloning and stem cell research. "We must get away from an emotional response to cloning," he said.

He was delivering a lecture on Latest trends in Biotechnology Research leading to Development of Innovative Medicinal Products at the Tata Energy Research Institute as part of the India-UK Science Festival.

Sykes said stem cell research, which is still at an early stage, could lead to "dramatic medical developments" and the outcry against it may be quite detrimental as the benefits far outweigh the risks.

But to become widely acceptable, it would require changes in attitude and legislation, Sykes said.

He said that as far as human cloning was concerned, it's still not time to lift the ban.

Sykes said he does not believe in "ring fence research" though patents only "protect your invention".

While the old model was of one chemist working for one week to search one molecule for use as a drug, the new model is that of one chemist working with one computer and one robot and searching out almost 10,000 molecules in a week.

In today's interdisciplinary scenario, new areas like Proteomics, Genomics, Metabonomics, High Powered Computing and Bio Informatics, Transgenics have developed from physics, mathematics, chemistry, biology and computing all put together. This helps in drug research, identifying new drug targets and disease mechanism, retrospective and prospective genotyping for prescribing the right medicine.

In the order of bases in a section of DNA, some people have different bases at a given location or SNP (Single Nucleotide

Polymorphism). SNP mapping, which is likely to become a standard process for patients with risk, can be identified to reduce adverse affect of drugs.

Metabonomics is also a new concept to find a drug potential to be toxic or efficient and thus a drug could be thrown out at an initial stage.

Besides simulated and robotic surgery, some other new areas where work had been done at the Imperial College was to develop analogue power micro chip cochlea implant, develop a transgenic anopheles mosquito to attack the parasite in the vector rather than the human subject and search for treatment of rheumatoid arthritis.

Former Lt Governor of Delhi and Ranbaxy Laboratories Limited chairman Tejendra Khanna talked of the traditional Indian belief that prevention is better than cure.

Sykes said prevention is going to be very important in the future and knowledge of specific genes which make us susceptible to specific diseases is going to lead us to prevent it by changing our lifestyle.

Chairman and Managing Director of Morepen Laboratories, Sushil Suri, said India has not yet conducted any 'mega researches' in the field and her expertise is limited to genetics research.

Arthritic Dolly may put cloning out of joint

LONDON: Dolly, the world's first cloned sheep, has developed arthritis, raising fears that the cloning process may have given her a genetic defect. Professor Ian Wilmut of the Roslin Institute in Scotland said on Friday that Dolly, the first mammal cloned from a cell taken from an adult animal, had arthritis in her left hind leg.

Dolly

Arthritis is not unknown in sheep, but Dolly, born in 1996, has developed it at an unusually young age, suggesting that it could be the result of a genetic defect, possibly caused by cloning.

Cloning is a hot area of medical research. Rival teams this week announced the birth of cloned, genetically engineered pigs that may be suitable for animal-to-human transplants. *(Reuters)*