

Three share Nobel medicine prize for tropical disease

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The Carter Center called the three laureates “heroes in the truest sense of the word, saving lives through medicine.”

Campbell, 85, is a research fellow emeritus at Drew University in Madison, New Jersey. He told The AP he made his main discovery in 1975 while working at pharmaceutical company Merck.

“It was a great team effort,” said Campbell, who now lives in North Andover, Massachusetts. He said the award came as a “huge surprise.”

Omura, 80, is a professor emeritus at Kitasato University in Japan and is from the central prefecture of Yamanashi. He wondered whether he deserved the prize.

“I have learned so much from microorganisms and I have depended on them, so I would much rather give the prize to microorganisms,” Omura told Japanese broadcaster NHK.

Working in the 1970s, Omura isolated new strains of *Streptomyces* bacteria and cultured them so that they could be analyzed for their impact against harmful microorganisms, the Nobel committee said.

Omura said the crucial strain was found in a soil sample from a golf course near Tokyo. He said he always carries around a plastic bag in his wallet so he can collect soil samples.

Campbell showed that one of those cultures was remarkably efficient against parasites in animals, the committee said. The bioactive agent was purified, named avermectin, and modified to a compound that effectively killed parasitic larvae, leading to the creation of a new class of drugs.

Today, its derivative ivermectin is considered a highly effective preventive treatment against river blindness and lymphatic filariasis, the committee said.

“(Ivermectin) reduces the number of parasites in the blood so that when a mosquito bites someone, it cannot transmit the disease to someone else,” said Dr. Peter Hotez, dean of the National School of Tropical Medicine at Baylor College of Medicine in Houston. He said mass distribution campaigns have given out ivermectin for free to 450 million people in efforts to eliminate both river



ACCOMPLISHED OCTOGENARIANS. This photo taken in the 1980s and released by Xinhua News Agency shows Tu Youyou, a pharmacologist with the China Academy of Chinese Medical Sciences in Beijing, working on artemisinin, a drug therapy for malaria. Three scientists from Ireland, Japan, and China were awarded the 2015 Nobel Prize in medicine for discovering drugs against malaria and other parasitic diseases that affect hundreds of millions of people every year. Tu was awarded the prize for discovering artemisinin, a drug that has helped significantly reduce the mortality rates of malaria patients. (Yang Wumin/Xinhua via AP)

efforts to control it.

Colin Sutherland, a reader in parasitology at London School of Hygiene and Tropical Medicine, said that the impact of artemisinin has been profound and changed nearly every country's malaria treatment protocol.

Still, artemisinin resistance has already been confirmed in Cambodia, Laos, Myanmar, Thailand, and Vietnam.

There have been several previous Nobel Prizes for malaria research, including the 1902 award to British army surgeon Ronald Ross, who discovered that the disease is transmitted by mosquitoes.

The last time a Chinese citizen won a Nobel was in 2012, when Mo Yan received the literature award. But China has been yearning for a Nobel Prize in science. This was the first Nobel Prize given to a Chinese scientist for work carried out within China.

“This is indeed a glorious moment,” said Li Chenjian, a vice provost at prestigious Peking University. “This also is an acknowledgement to the traditional Chinese medicine, for the work began with herbal medicine.”

Stephen Ward, deputy director of the Liverpool School of Tropical Medicine, said the prize confirms that Chinese scientists “did fantastic work in the 1960s even when they were effectively ignored by the rest of the world.”

Besides the cash prize, each winner also receives a diploma and a gold medal at the annual award ceremony on December 10, the anniversary of the death of prize founder Alfred Nobel.

Cheng reported from London. Associated Press writers Malin Rising in Stockholm, Malcolm Ritter in New York, Didi Tang in Beijing, Mari Yamaguchi in Tokyo, and Geoff Mulvihill in Haddonfield, New Jersey, contributed to this report.

Glass walkway over China canyon cracks with tourists on it

BEIJING (AP) — A glass walkway that hugs a cliff above a scenic canyon in central China has been closed after cracks developed while dozens of tourists were walking on the newly built structure.

Only one of the three layers of glass that make up the walkway was damaged, so there was no safety threat, the management bureau of the Yuntaishan scenic area in Hunan province said on its microblog.

The walkway was supporting dozens of tourists when the cracks appeared with a loud bang. A single pane of the 223-foot section shattered into coin-sized segments, according to footage on state broadcaster CCTV.

Postings to China's Weibo messaging service described the fears of tourists who heard the panel crack, but there were no indications of mass panic or injuries.

The structure hugs a cliff side roughly 394 feet above a canyon in the remote mountain area renowned for its scenery. It opened September 20 and the problem occurred at the height of China's weeklong October 1 National Day holiday.

The post on the management bureau's microblog said the cracks formed due to external force, but wasn't specific. It added that the walkway can support weights of more than 175 pounds per square foot.

A glass walkway above London's Tower Bridge had a similar problem in November when a falling bottle shattered the top layer of one pane, which was designed to be easily replaceable if damaged.

Such walkways have grown popular in China as scenic areas compete to attract increasingly affluent Chinese tourists. The world's highest and longest glass skywalk is located in Hunan province's Zhangjiajie, known as the model for the planet Pandora in the film *Avatar*. The structure stretches 1,410 feet at a height of 984 feet above the canyon floor.

Researcher says children's cancer linked to Fukushima radiation

By Yuri Kageyama
The Associated Press

TOKYO — A new study says children living near the Fukushima nuclear meltdowns have been diagnosed with thyroid cancer at a rate 20 to 50 times that of children elsewhere, a difference the authors contend undermines the government's position that more cases have been discovered in the area only because of stringent monitoring.

Most of the 370,000 children in Fukushima prefecture (state) have been given ultrasound checkups since the March 2011 meltdowns at the tsunami-ravaged Fukushima Dai-ichi nuclear plant. The most recent statistics, released in August, show that thyroid cancer is suspected or confirmed in 137 of those children, a number that rose by 25 from a year earlier. Elsewhere, the disease occurs in only about one or two of every million children per year by some estimates.

“This is more than expected and emerging faster than expected,” lead author Toshihide Tsuda told The Associated Press during a visit to Tokyo. “This is 20 times to 50 times what would be normally expected.”

The study was released online and is being published in the November issue of *Epidemiology*, produced by the Herndon, Virginia-based International Society for Environmental Epidemiology. The data comes from tests overseen by Fukushima Medical University.

Making sense of the relationship between radiation and cancer is precarious: It's scientifically impossible to link an individual cancer case to radiation. Looking harder with routine checkups, like the one in Fukushima, leads to quicker discovery of tumors, inflating the tallies in a so-called “screening effect.”

Right after the disaster, the lead doctor

blindness and lymphatic filariasis.

Hotez said that in parts of Africa, adult sufferers of river blindness are often led around with a stick by a young child. Until ivermectin came along, Hotez said there was no way to effectively prevent the disease.

Tu, 84, is a researcher at the China Academy of Chinese Medical Sciences.

As a junior researcher, she was recruited by Chairman Mao's government to work on a military project in 1969 to find malaria drugs.

She turned to herbal medicine to discover a new malarial agent in an extract from the sweet wormwood plant. The agent, artemisinin (pronounced ar-tuh-MIHS'-ihn-ihn), was highly effective against malaria, a disease that was on the rise in the 1960s, the committee said.

Malaria is a mosquito-borne disease that still kills around 500,000 people a year, mostly in Africa, despite

brought in to Fukushima, Shunichi Yamashita, repeatedly ruled out the possibility of radiation-induced illnesses. The thyroid checks were being ordered just to play it safe, according to the government.

But Tsuda, a professor at Okayama University, said the latest results from the ultrasound checkups, which continue to be conducted, raise doubts about the government's view.

Thyroid cancer among children is one sickness the medical world has definitively linked to radiation after the 1986 Chernobyl catastrophe. If treated, it is rarely fatal, and early detection is a plus, but patients are on medication for the rest of their lives.

Scientists are divided on Tsuda's conclusions.

In the same *Epidemiology* issue, Scott Davis, professor at the Department of Epidemiology in the Seattle-based School of Public Health, said the key limitation of Tsuda's study is the lack of individual-level data to estimate actual radiation doses.

Davis agreed with the findings of the World Health Organization and UNSCEAR, or the United Nations Scientific Committee on the Effects of Atomic Radiation, both of which have carried out reviews on Fukushima and predicted cancer rates will remain stable, with no rises being discernable as radiation-caused.

David J. Brenner, professor of radiation biophysics at Columbia University Medical Center, took a different view. While he agreed individual estimates on radiation doses are needed, he said in a telephone interview that the higher thyroid cancer rate in Fukushima is “not due to screening. It's real.”

Conclusions about any connection between Fukushima radiation and cancer will help determine compensation and other policies. Many people who live in

areas deemed safe by the government have fled fearing sickness, especially for their children.

An area extending about 12 miles from the nuclear plant has been declared an exclusion zone. The borders are constantly being remapped as cleanup of radiated debris and soil continues in an effort to bring as many people back as possible. Decommissioning the plant is expected to take decades.

Noriko Matsumoto, 53, who used to work as a nurse in Koriyama, Fukushima, outside the no-go zone, fled to Tokyo with her then-11-year-old daughter a few months after the disaster. She had initially shrugged off the fears but got worried when her daughter started getting nosebleeds and rashes.

“My daughter has the right to live free of radiation,” she said. “We can never be sure about blaming radiation. But I personally feel radiation is behind sicknesses.”

Andrew F. Olshan, a professor at the Department of Epidemiology at the University of North Carolina, in Chapel Hill, noted that research on what follows a catastrophe is complex and difficult.

“Dr. Tsuda's study had limitations, including assessment of individual radiation dose levels to the thyroid and the ability to fully assess the impact of screening on the excess cases detected,” he said.

“Nonetheless, this study is critical to initiate additional investigations of possible health effects, for governmental planning, and increasing public awareness.”

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