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Nobel Prize winners for Medicine or Physiology 2015

By Adrienne Papp

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As much as we love the Oscars, the Emmys, the Grammys and other entertainment award shows, the Noble Prizes have a special place in our hearts, as they are awarded to people who have made significant contributions to improving the world. Be it in economics, literature, physics, medicine, or peace, the work of Nobel Prize winners have made our world a safer, richer and healthier place.

This time we salute the Nobel Prize winners for Medicine or Physiology, given to three researchers whose discoveries have sought to eradicate common scourges of third world countries and whose work has come very close to completely eliminating them

The three, 85-year old William C. Campbell, 80-year-old Satoshi Omura and 85-year-old Youyou Tu, developed several antimicrobial treatments for tropical diseases that have plagued the human species since the origin of man.

Campbell, an Irish biochemist and parasitologist at Drew University in New Jersey, and Omura, a bioorganic chemist at Kitasato University in Japan and Wesleyan University in Connecticut, will share half the prize for their development of the drug Avermectin and the closely related drug Ivermectin. These medications have been effective in of the roundworm-caused diseases River Blindness and Lymphatic Filariasis, also known as Elephantiasis.

Youyou Tu is associated with the Academy of Chinese Medicine. Her studies led to the creation of the drug Artemisinin, which has lowered mortality rates from malaria, which is a threat to about half the world's population. Both types of drugs cited in the award are examples of the effectiveness of natural chemistry, isolating compounds from organisms that naturally produce them or similar molecules and had exhibited healing potential in trials. It's a case of Mother Nature providing the cure to misery-causing diseases that have run rampant in human history, once the compound has been isolated.

That's a large part of the reason these scientists have been singled out for the prestigious award. "The impact of Avermectin and Artemisinin goes far beyond reducing the disease burden of individuals," said Hans Forssberg of the Nobel Committee. "By allowing children to go to school and adults to go to work, the treatment helps them to escape poverty, which also contributes to economic growth of the community. The discoveries of the 2015 Nobel Laureates represent a paradigm shift in medicine, which has not only provided revolutionary therapies for patients suffering from devastating parasitic diseases, but has also promoted well-being and prosperity for both individuals and society. **The global impact of their discovery and the resulting benefit to mankind is immeasurable."**

In Japan, Omura explored the antibacterial properties of agents produced by the naturally occurring Streptomyces microorganism, which lives in common soil. Campbell, an expert in parasite biology working in New Jersey, acquired Omura's cultures and conducted extensive tests of them in farm and domestic animals.

Among the most efficient killers of parasites, he discovered, was a purified version of Avermectin. Chemically modified to produce Ivermectin, the result was found to kill parasites in their larval stage, proving its effectiveness as an antidote to the disease. **Ivermectin's global impact on human health has been compared to that of penicillin.** It continues to be administered to some 300 million people annually.

The other half-prize winner Tu, was cited her work for the Chinese government that resulted in the discovery and development of Artemisinin, the treatment for malaria. Drawn from the extract of fever-reducing plants long used in traditional medicines, Artemisinin continues to be the primary drug used in the treatment of malaria. Annually, almost half a billion doses of the drug are administered.

As head of Chinese Government's Project 523 in the 1960s, Tu and her team of researchers isolated the active ingredient that protected against the malaria parasite and developed an extraction method that allowed its therapeutic use.

After testing the extract and finding the drug to be effective in mice and monkeys, Tu and her team tested the early form of Artemisinin on themselves to establish its safety in humans. That's human drug trial testing at its most immediate.

"When it comes to translation of scientific discovery, this is one of the greatest examples of the century," said Dyann Wirth, chair of the Department of Immunology and Infectious Diseases at the Harvard T.H. Chan School of Public Health and a member of the Alpert Foundation's scientific advisory prize committee. **"This is classic basic research that has resulted in a drug that saves lives."**

The Nobel Prize in Physiology or Medicine (Swedish: Nobelpriset i fysiologi eller medicin), administered by the Nobel Foundation, is awarded once a year for outstanding discoveries in the fields of life sciences and medicine. It is one of five Nobel Prizes established in 1895 by Swedish chemist Alfred Nobel, the inventor of dynamite, in his will. Nobel was personally interested in experimental physiology and wanted to establish a prize for progress through scientific discoveries in laboratories. The Nobel Prize is presented to the recipient(s) at an annual ceremony on 10 December, the anniversary of Nobel's death, along with a diploma and a certificate for the monetary award. The front side of the medal provides the same profile of Alfred Nobel as depicted on the medals for Physics, Chemistry, and Literature; its reverse side is unique to this medal.

About the Author of This Article: Adrienne Papp is a recognized journalist, economist and feature writer, who has written for many publications including Savoir; The Westside Today Publications ; such as Beverly Hills 90210; Malibu Beach; Santa Monica Sun; The Beverly Hills Times; Brentwood News; Bel-Air View ; Celebrity Society ; Celeb Staff ; It Magazine; Chic Today; LA2DAY; West Side Today among many others. She is the President and CEO of Los Angeles / New York-based publicity company, Atlantic Publicity and publishing house, Atlantic Publisher. Adrienne writes about world trends, Quantum Physics, entertainment and interviews celebrities, world leaders, inventors, philanthropists and entrepreneurs. She also owns Atlantic United Films that produces and finances true stories made for theatrical release or the silver screen. Spotlight News Magazine is owned by Atlantic United, Inc. Atlantic Publicity just opened a new extension to it : PublicityLosAngeles. Adrienne Papp is a member of the International Press Academy.

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