

AMPHIBIANS IN MEDICAL RESEARCH

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In a previous article published in the June 2015 issue of *Biophilately* (Vol. 64, no. 2), I noted the importance of amphibians in biomedical research. The use of frogs in basic research is so notable that almost ten percent of all research that earned the Nobel Prizes in Medicine or Physiology have utilized frogs.

The island country of Palau has issued a stamp (Sc#560) noting the early contributions of frogs to what became the Human Genome Project. The stamp is one of five issued on a 2000 miniature sheet commemorating advances in science and medicine in the 20th Century.

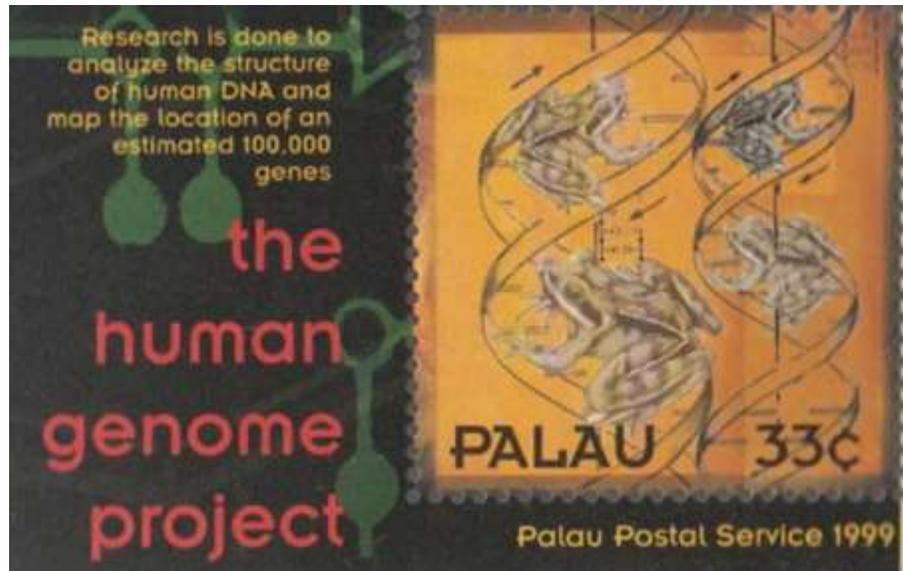
The Human Genome Project was initiated in 1990 by the international scientific community to identify and map all of the genes on human chromosomes.

The map so created has opened up the field of “molecular medicine” useful in treating many diseases in humans, and also with applications in agriculture, animal husbandry, applied forensic science, anthropology and other fields.

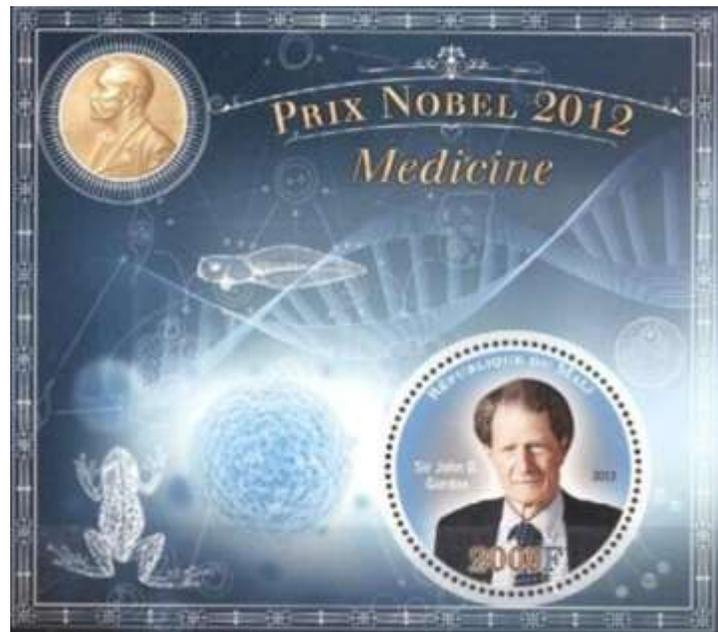
A 2013 souvenir sheet issued by the Republic of Mali pictures Sir John Gurdon, a researcher who shared the 2012 Nobel Prize in Medicine or Physiology “for the discovery that mature cells (of frogs) can be reprogrammed to become pluripotent.” This research is an important step toward discovering the nature of stem cells.

Stem cells have the potential of replacing or repairing damaged tissues. Use of these embryonic-type cells have replaced neurons in damaged spinal cords, allowed people with diabetes to produce their own insulin, repaired damage to the heart following a heart attack, and show promise in treating neurological problems such as Alzheimer’s or Parkinson’s disease.

Of special interest to collectors focused on amphibian development are the many illustrations in the margin of this sheet that depict the egg, blastula, larval, and adult stages of frog development as well as a superimposed image of the DNA double helix from the cell nucleus that controls development of animal tissues and organs.



Human Genome Project
Palau, 2000, Sc#560e



Sir John Gurdon
Mali, 2013, not yet cataloged