UPDATE

A/C 207-288-3371

The National Committee

OF THE JACKSON LABORATORY BAR HARBOR MAINE 04609

November 1981

OCTOBER AT THE JACKSON LABORATORY

An interesting month as every scientist awaits the outcome of the Nobel Prize for Physiology and Medicine. You are most probably more aware of this particular event this year as Dr. George Snell of the Jackson Laboratory was a recipient of this coveted award in 1980.

This year, however, we are the spectators, not participants, as the Nobel Prize for Medicine is being shared by Roger W. Sperry of the California Institute of Technology and by David H. Hubel and Torsten N. Wiesel of Harvard University for providing major insights into how the brain is organized and functions.

According to Herbert Pardes, director of the National Institute of Mental Health, which has funded Sperry's research for 23 years, Sperry's "demonstrations that the left hemisphere contains the primary speech capacity while the right is involved in short-term memory are paramount to understanding brain function both normally and in abnormal states such as autism and Alzheimer's disease." Dr. Sperry began split brain experiments on animals in 1954 by surgically separating the two hemispheres. He also did some clinical work with epileptics and found that the two sides of the brain were independent regarding learning and retention. His work has aided in the understanding of abnormal brain function. His current studies exploring the capacities of the left and the right hemisphere to function in sustained attention and mental concentration undoubtedly will have implications in the future for the understanding of such illnesses as schizophrenia and depression.

Hubel and Wiesel share the other half of the Nobel in Medicine because of their discoveries concerning "information processing in the visual system." Before they started their joint research 20 years ago, it was thought that messages reaching the brain from the eyes were transmitted point by point, projecting the image on the cerebral cortex as a movie is projected onto a screen. Thanks to their experiments on cats and monkeys, it is now known that a complicated hierarchy of cells is involved in vision. In fact, due to their efforts, the primary visual cortex is the most thoroughly mapped area of the brain in terms of cell functions and organization. The Harvard neurobiologists have also found that normal functioning of the cells involved in vision requires stimulation in the early stages of development, showing the importance of correcting visual problems such as strabismus (crossed eyes) early in life.

IN SPEAKING

"OF 50 NOBEL WINNERS IN MEDICINE DURING THE LAST TWO DECADES, 30 HAVE BEEN AMERICANS."

TO BOAST A LITTLE

Work in this field is being done at the Jackson Laboratory.

We also have a Nobel Laureate on our Board of Scientific Overseers. Julius Axelrod, Ph.D., a pharmacologist at the National Institute of Mental Health, contributed early in his career to the field of humoral transmitters with tritium-labeled epinephrine and norepinephrine of very high specific activity. He showed that traces of the synthetic transmitters, when administered, equilibrated with the pools of transmitters in the nerve terminals. He was then able to show directly that many drugs acted by modifying the storage of neurotransmitters in one way or another. These included cocaine, tyramine, reserpine, chlorpromazine, bretyllium, and many other drugs. Uptake by the nerve terminals also proved to be an important mechanism for inactivating the transmitter.

Axelrod's furious pace in the laboratory is well known. In the middle of an experiment he does not stop for anything. There is a story that his colleagues, to test his powers of concentration, once moved a large centrifuge into the aisle near his lab bench so that it blocked his way. Axelrod never stopped his experiments but continued at the same pace even though he had to squeeze through the very narrow opening between the bench and the centrifuge over and over again during the day.

FROM ONE MOUSE TO ANOTHER

- Achievements during the summer include an increased membership which means that we may reach our first one hundred thousand dollars before the end of 1981!
- We have added the Green Mouse Category to our listing. This is a membership specifically set up for Mt. Desert residents. The prospect is an exciting one!
- You will find the Gift Selection Sheet and a return envelope enclosed with your Mouse Update. The Mouse Bags, Ties and Note Pads, hopefully, will become stocking stuffers or presents on your Christmas list this year.
- Remember - the smallest contribution means a great deal to the scientists at the Jackson Laboratory. You may help to add yet another Nobel Laureate to our list.
- Help us to increase our membership in 1982 by returning the enclosed Mouse Finder. We are preparing our lists now, and added addresses would help us in our quest for new members. The National Ladies Committee is a success thanks to your effort and generosity.
- Have a wonderful Thanksgiving.

Yours in Support of Research,

Louise S. Neilson

Mrs. Harry R. Neilson Jr.
National Ladies Committee