

GENERAL SCIENCE

Medical Fair Awards

Six young scientists won top medical awards at the 12th National Science Fair-International. The winners were chosen from 385 participants in the yearly event.

► **SIX BRIGHT YOUNG** high school students were given the top medical awards at the National Science Fair-International in Kansas City, Mo. The Science Fair was a competition, by scientific exhibits, of 385 young scientists who have won highest honors at local and regional fairs.

The two top awards of the American Medical Association were given to Rita Carol Manak, 16, of Lourdes Academy, Cleveland, Ohio, and Christopher George Cherniak, 16, of Melbourne High School, Melbourne, Fla. Carol won with her project on Intermediary Metabolism of Normal White Blood Cells, and Christopher was given the high honor for his project on the Development and Use of Tissue Culture of Functioning Single Neurons.

The two will be guests of the AMA at its annual meeting in New York in June.

The American Dental Association awards were won by Ann Elizabeth Stuart, 17, of Camp Hill High School, Camp Hill, Pa., for her project, Development of Lysozyme-Resistant Mutant, *Bacillus megaterium*, and Barbara E. Parker, 17, of St. Cyril High School, Detroit, Mich., for her exhibit on Effects of High Frequency Waves on Animal Tissue. Both young girls will attend the American Dental Association's annual meeting in Philadelphia next October.

The American Veterinary Medical Association has invited Charles Theodore Womack III, 17, of Greenwood High

School, Greenwood, Miss., to be a guest at its annual meeting in Detroit in August, as a top Science Fair winner for his project, The Effects of Splenic Extracts on Sarcoma in Two Animal Species.

Winner of the American Pharmaceutical Association's top award is Wayne Young, 17, of Provo High School, Provo, Utah, for his exhibit on Screening Mushrooms for Antibiotics. He will be the Association's guest at its annual convention in Las Vegas, Nev., next March.

The boys and girls attending the 12th National Science Fair-International were accompanied by some 1,000 teachers and educators and others, to determine the winners in various scientific fields. The Fair is administered by SCIENCE SERVICE.

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EDUCATION

Scientists Should Have Varied Education

► **TODAY'S** scientist needs a "smorgasbord" education, a generous sampling of many different disciplines.

Dr. Reidar F. Sognaes, dean of the school of dentistry at the University of California Medical Center, Los Angeles, told high school students attending the health awards banquet for the National Science Fair-International in Kansas City, Mo., that

"we need and want specialists." But the different sciences are becoming more and more dependent upon each other and upon the non-scientific fields.

The person who does not have a working knowledge of fields other than his own will soon be obsolete, and the entire society, as well as the individual, suffers the loss.

Concepts are changing, Dr. Sognaes said, and certainly formal education cannot teach the student everything he will need to know during his lifetime.

It should, however, give him the background on which to build.

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GENETICS

Chromosome in Evolution

► **THE PUZZLE** of just how man got to the top of the list in the animal world and just who his closest relatives were during the evolution of primates is slowly being unraveled by scientists comparing the similarities and differences of chromosomes found in each primate species.

Drs. E. H. Y. Chu and M. A. Bender of the Oak Ridge National Laboratory in Tennessee, have pieced together the information from separate studies. Changes in the sizes and shapes of primate chromosomes, microscopic strands of heredity-carrying units, occurred in a particular way, they believe.

Today's primates, from the lowest lemur to man himself, show a wide variety of chromosome numbers, but tests on animals representing the three major primate groups show that the same amount of chromosome material, deoxyribonucleic acid or DNA, is found in each.

The basic set of primate chromosomes, the investigators believe, is a relatively large number of chromosomes each much like a piece of string with a knot at one end

rather than in the middle or somewhere in between.

As time passed, some of the knots joined together, essentially making fewer separate strings, but longer ones, tied together in the middle. When short strings joined long strings, the knot of course was off center when the composite was stretched full length. More complex joinings probably also took place.

Different amounts of joining can be seen in different primate species now, the scientists report in *Science*, 133:1399, 1961, and the inference is that the more closely the joined strings of one species resemble those of another, the more closely the animals are related.

One pertinent fact is that when there are fewer primate chromosomes, there are also fewer strings with knots in the end.

The scientists also found one case of knotting together that occurred in man without any obvious change in his appearance.

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