

# CAREERS AHEAD

## Science Careers for Women

by JANE STAFFORD

*We are fortunate in having our first article of this series written by Miss Stafford, Medical Writer for Science Service. Especially significant for the BPW professional worker is her discussion of work being done by women in the peaceful use of nuclear energy, in keeping with the International Board's resolution at the Silver Jubilee Board Meeting in Switzerland last fall.*

Dr. Cecilia Payne-Gaposchkin, famous astronomer, recently named to the professorship of astronomy at Harvard University.

*So many requests have been received by the National Federation from young women asking how to get started in a career, that INDEPENDENT WOMAN is beginning a series on opportunities under the general subject "Careers Ahead."*

THE world of science is no longer exclusively a man's world. The small band of pioneers who showed that women could make contributions in medicine, astronomy, chemistry and physics is being followed by an ever-growing army of young women dedicated to the pursuit of science and its application to a peaceful, happy world.

Our nation's scientific manpower, vital to our continued free existence, now includes an impressive lot of scientific womanpower. These women, many of them still girls in their teens, are by no means the blue-stocking type. They have feminine charm and athletic ability as well as intellectual prowess. They become wives and mothers, many of them. And many of them are showing that playing this feminine role need not keep them from continuing their careers as scientists.

An example recently in the news is Dr. Cecilia Payne-Gaposchkin. She and her husband, Dr. Sergei I. Gaposchkin, are a famous husband and wife team in astronomical research. Together they made one of the most extensive surveys ever undertaken of variable stars over the entire sky. In doing this they made several million observations of thousands of variable stars. Each, however, has done outstanding independent research in astronomy. The wife of this famous team has now outstripped her husband in that she has been appointed professor of astronomy at Harvard University. She is the first woman to attain full professorship at Harvard through regular faculty promotion. In addition to her scientific and scholastic attainments, Dr. Payne-Gaposchkin has carried the duties of mother to three children, now in high school and college.

One of the youngest women in science, perhaps destined to become one of our important future women scientists, is Taimi Topper. This 18-year-old senior from Allentown, Pennsylvania High School looks as if proms and popularity and beauty contests would be her meat. The contest she has just won, however, was for a science project showing how electricity can be used to trace molecules of proteins, such as those in blood. The technique is called electrophoresis and is one which many a college graduate would hesitate to tangle with.

Taimi worked as a nurse's aid during a vacation last year and decided she wanted to use better techniques for laboratory studies than those available to her as nurse's aid. This led her to study electrophoretic methods. She was one of two girls and two boys winning top honors among 100,000 boys and girls from all over the United States who competed in regional Science Fairs culminating in the Seventh National Science Fair.

Whether Latvian-born Taimi, who has been in the United States only four years, will become a second Marie Curie or Lise Meitner cannot be told yet. Some of her older sister scientists, however, are now making their mark, though many are still in their twenties, with a lifetime ahead in which to conquer new frontiers.

A particularly interesting and promising group are the young women who were selected by a very tough science aptitude test given tens of thousands of boys and girls in their senior classes at high schools across the nation. These girls, winners of scholarships through the Science Talent Search, have gone on to fulfill their early aspirations to a career in science, and now many of them are contributing significantly to scientific knowledge.

Elizabeth Roemer, Ph.D., of the University of California's Lick Observatory, is one of these. The

Eighteen-year-old Taimi Topper, Latvian-born Allentown High School senior, won national honors for her exhibit of electrophoretic methods for studying protein molecules in the blood.

existence of an invisible companion of the North Star was confirmed for the first time by Dr. Roemer. She also found evidence in the brightness of Polaris, the North Star we see in the heavens, that the universe is actually twice as large as astronomers had thought it to be. These latest of Dr. Roemer's discoveries followed by only a year the rediscovery of a very faint comet known as the Wirtanen Comet, first spotted in 1948. The rediscovery of the comet was a joint finding by Dr. Hamilton M. Jeffers, also of Lick Observatory, and Dr. Roemer.

This distinguished scientist is a brown-haired young woman of 27 whose astronomy career began with sun spot observation from her backyard when she was in her teens. She is sufficiently expert at water sports to have been a swimming coach; she is the "handy man" in her home, chess is one of her hobbies and she raises prize-winning fuchsias.

At the U. S. Naval Ordnance Testing Station, China Lake, California, a 26-year-old woman chemist is working at classified research having to do with rocket propellants. She is the wife of a physicist, James G. Moldenhauer, who is working at the same naval station. She was born Marjorie Ann Gilbert,

All Photographs by Science Service





Elizabeth Roemer, Ph.D., University of California-Lick Observatory astronomer.

daughter of a Wisconsin farmer. A true farm girl, "ever since she was old enough to run errands" she helped with the chickens and the garden, later in the dairy and the fields, even to driving a tractor. But her mind turned to science while she was in grade school. Hard work plus her native curiosity helped her to success. Before going to the Naval Ordnance station, she worked on cancer research, studying the nucleic acid content of mouse skin during the beginning stages of cancer in the mouse.

Over in Uganda, Africa, the former Vera Rada Demerec, with a Ph.D. from Oxford University, and her anthropologist husband, Dr. Neville Dyson-Hudson, are engaged in a two-year study of a primitive pastoral tribe, their way of life, their relation to their environment and its effects on them.

Dr. Demerec, or Mrs. Dyson-Hudson, is an ecologist. In 1950, when barely 20 years old and still an undergraduate in college, she was reporting to the Society of American Bacteriologists research on the resistance of bacteria to the antibiotics, neomycin and chloromycetin. This work was done with her father, Dr. M. Demerec, distinguished geneticist and director of the Carnegie Institution Biological Laboratory at Cold Spring Harbor, New York.

As a girl in high school, Dr. Rada Demerec Dyson-Hudson did research on genetic variations in *Drosophila*, commonly known as fruit flies. But while she continued to study genetics and fruit flies at college

and university, she soon found "dealings with people" equally as important and meaningful to her as laboratory research. Now that she has acquired skills in studies of fruit fly populations, she is turning them to new discoveries about human populations.

"If only the day had 30 hours" is the cry of Elizabeth Lean Lyle, who combines a career in chemistry with one as housewife. Like many another woman with double careers, she finds an "agreeable husband is the prime requisite." Her husband is John Paul Lyle, a metallurgist whom she met when he was a graduate student at the University of Wisconsin where the then Elizabeth Lean was also studying. At the age of 18, while still an undergraduate at the university, she received an appointment as assistant on the chemistry department faculty and taught freshman laboratory courses and quiz sections.

Even with this encouraging early start, Elizabeth found competition keen in the field of chemistry, with men favored in some organizations. She had some discouraging times but these vanished when, after a period of being a housewife full-time through necessity, she got an appointment as chemist at the Koppers Company, Inc., Verona, Pennsylvania Research Center. Her work there has involved investigation of physical test methods as related to high polymers. Polymers are important compounds in many industries today. The ones perhaps most familiar to the non-scientific woman are in the (Continued on page 30)