Obituary for George N. Papanicolaou, M. D., Ph. D.

Dr. George Papanicolaou died on February 19, 1962 of acute myocardial infarction, in Miami, Florida.

George Papanicolaou was born May 13, 1883 in Coui, Greece. His father was a physician and Papanicolaou was educated with the idea that he would continue his father’s practice after he had received his degree from the University of Athens in 1904. However, he did not have sufficient urge to practice medicine and so he went to the Universities of Vienna, Freiburg, and Munich. In the latter university, he did his work for a Doctorate in Philosophy, which he received in 1910. Dr. Papanicolaou married Mary Mavroyeni, the daughter of a Greek Army officer, and decided that he would continue his academic career. Accordingly, he left Athens and went to the Oceanographic Museum at Monaco where he had biological work and interesting contacts. The Balkan War interrupted this tour of duty and he was required to serve for two years as a Second Lieutenant in the military service. He decided then that he would leave Europe and come to America.

He was fortunate in meeting Dr. Thomas Morgan, Professor of Zoology at Columbia University, who helped him to secure an appointment as a pathological assistant in the New York Hospital. He was then transferred to the Department of Anatomy of Cornell Medical School, to which he was attached for nearly half a century. He was very fortunate in this association with the Chairman of the Department of Anatomy, the late Professor Charles R. Stockard, who was interested in experimental genetics and who directed Dr.
Papanicolaou’s attention to the chromosomes in their relation to sex. This work turned him toward the use of the guinea pig ovum as laboratory material. As the exact age of the ovum must be known, they found by making vaginal smears of the laboratory animals that they could determine the time of ovulation, and in this way, they were able to secure dated ova for their specific purposes. This was the inception of a long series of studies involving the vaginal epithelia in a number of laboratory animals; namely, mice, guinea pigs, rats; and he was, therefore, able to describe the four stages of the estrus cycle adequately. The result of this work made it possible for them to use these laboratory animals as test objects for hormone studies without the sacrifice of the individual animal. This was used to form the background of the work for the follicular hormones which opened the door to the ovarian cycle and its effect on other tissues of the body.

In 1923, he undertook the study of the cytology of the human vagina which allowed him to establish whether or not changes could be demonstrated which would represent the various phases of the menstrual cycle. Before long, he was able to catalog the information, which made it possible for him to forecast ovulation in the woman and to determine many factors concerning her sexual cycle.

In 1932, Dr. Stockard and Dr. Papanicolaou asked Dr. Herbert Traut to collaborate with them in a study of the various epithelial surfaces of the female genital tract. The gynecological laboratory of the Department of Obstetrics and Gynecology was used for this purpose, and the material came from the Clinical Department of Obstetrics and Gynecology of the Cornell Medical School. During the course of this study, beginning with the ovary, fallopian tubes, endometrium, cervix, and vagina, it became obvious that previous observations of Dr. Papanicolaou, which had been made a number of years before, had some relationship to the changes pertaining to malignant growth in patients who came under their observation. As the material from pathological specimens became available, and the vaginal smears matched with the observations from this material, it became probable that the vaginal smear might adequately represent the presence of early cancer. However, it took a number of years, approximately six, before there was enough data accumulated so that the collaborators could make a definite statement with regard to the reliability of vaginal smears as an indication of the growth of cancerous changes. The paper, read before the New York Obstetrical-Gynecological Society in 1938, by Papanicolaou and Traut, was the first contribution announcing these possibilities. The studies were not readily acceptable to pathologists in general, and the idea was not grasped with great vigor, partly because of skepticism on the part of clinical and pathological workers, but also because it appeared at the time when the United States were involved in World War II, and had many other matters to consider.

In 1943, the Monograph, entitled “The Diagnosis of Uterine Cancer by Vaginal Smear”, authored by Papanicolaou and Traut was published by the Commonwealth Fund. The following months and years have seen the gradual use of vaginal smears for surveying patients with the possibility of determining the presence of cancer, particularly of the cervix and of the endometrium.

From the first year the Dr. Papanicolaou was in the United States, he rose from the rank of Assistant to that of Professor of Clinical Anatomy at Cornell University Medical School, becoming emeritus in 1949. In November, 1961, he and his wife left New York, which had been their home for 48 years to go to Miami, Florida where he assumed the direction of a
newly organized Cancer Research Institute as a tribute to him. Against the advice of many of his friends who knew that his age and his dynamic devotion to his work might be more than his health would tolerate well, especially as the heading of the new Institute involved administrative duties of considerable degree, he decided to go to Miami. He survived only two years before his health broke down completely, and this was secondary to this final heart attack. There were many honors, awards, and degrees heaped upon Dr. Papanicolaou. Of only the few we can mention, are, of course, the Grand Commander of the Royal Order of Phoenix presented by the King of Greece; Honorary Degree of Doctor of Science, conferred by Hahnemann Medical College; the award of the Passano Foundation; the Lasker Award of the American Public Health Association; the Honor Medal of the American Cancer Society; the Wien Award; and General Federation of Women’s Clubs; the Borden Award of the American Association of Medical Colleges and the Arnory Award of the American Association of Arts and Sciences. In addition to his investigative work, he had a large following who came to his laboratory at the Cornell Medical School – a small army of pathologists, gynecologists, and cytotechnologists from fifty-six foreign countries came to learn cytological techniques and diagnosis. This source of diagnosticians was largely responsible for the spread of the use of this method in various parts of the world.

Herbert F. Traut, San Francisco

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