



*A mon Ami et brillant ancien élève
le Docteur J. A. Del Regato, affectueux souvenir
Lacassagne*

ANTOINE LACASSAGNE, M.D.
1884-1971

ONE of the most tenacious tillers of the obdurate grounds of neoplasia has fallen from behind his plow; we are left with his indefatigably harvested fruits, and with the indelible memory of a most inspiring and kind mentor.

The son of a famous criminologist and professor of forensic medicine, Antoine Marcellin Bernard Lacassagne was born on August 29, 1884, in Villerest (Loire) France.

After secondary school, and a year of German, in Munich, he entered the Faculty of Sciences of Lyon and then decided to study medicine. As an undergraduate, Lacassagne became an instructor under the associate professor of histology, Claudius Regaud. For his doctorate, Regaud gave him the subject of his thesis; the result, "*The histologic and physiologic effects of x rays on the ovary,*" has remained an unsurpassed clas-

sic. He received his B.S. degree from the Faculty of Sciences and his M.D. degree from the Faculty of Medicine of Lyon, in 1913. In the fall of the same year Emile Roux called Regaud to Paris to take charge of a new biomedical division of the Pasteur Institute; Lacassagne agreed to follow his mentor as a junior associate. Their initial radiobiologic experiments with *radon*, just initiated, were interrupted by the eruption of the first World War, in the summer of 1914.

Serving as an army medical officer, Lacassagne saw action in Sarrebourg and Meuse; he volunteered for *l'Armée de l'Orient* and served at Corfu and Salonika. Towards the end of the war Regaud obtained his appointment, as bacteriologist, to a large hospital center which he directed at Bouleuse (Champagne). Demobilized, in March 1919, they hurried, with other recruits (including Coutard, Roux-Berger and Ferroux) to organize the medical services of the Radium Institute; these services occupied a twin pavilion to that in which Madame Curie, Debierne, and their collaborators gave themselves to physical and chemical research. In the various spheres of their endeavor, the workers in these two small buildings (the Pasteur and Curie pavilions) brought fame to the Radium Institute of the University of Paris, in the brief years of peace before the second World War.

Lacassagne made extensive critical reviews of the world literature in the burgeoning fields of radiophysiology, as a basis for their early work; he also reported on the various aspects of the Institute's activities. These contributions and those of his co-workers were gathered in fascicles, published from 1928 to 1938: they constitute three volumes entitled "*Archives de l'Institut du Radium—Radiophysologie et Radiothérapie*" (Presses Universitaires de France). The quest for the information gathered in these out-of-print volumes moved Lacassagne and Gricouroff to summarize the data in a small volume, "Action of Radiations on Tissues," published in 1941, which has

guided the first steps of countless radiotherapists. Lacassagne also published monographs on radiation carcinogenesis and on chemical carcinogenesis. A patient didactician, Lacassagne's pioneering efforts were devoted also to the training of "Stagiers" who went to Paris, from all parts of the world, in quest of the new knowledge. On April, 1971, the *Fondation Curie* celebrated its fiftieth anniversary in Paris; for the official ceremonies he wrote his reminiscences of Madame Curie and of Regaud and of the institution's early days.

A capable clinician, as well as tumor histopathologist, Lacassagne participated with Regaud in the development of techniques of radium therapy which were adopted worldwide. His main assignment, however, was the laboratory of research. Lacassagne studied the effects of the irradiation of normal tissues and of embryos (1921). He showed the progressive histopathologic evidence of destruction, the anomalous abortive mitoses in irradiated tumors (1922). He studied the "purpuric syndrome" resulting from total body irradiation and the relative radioresistance of circulating blood cells (1923). He detailed the splanchnic distribution of *polonium* injected into circulation (1925); for the purpose, Madame Curie provided him with samples of her first discovery, named after her country of birth, which was to remain "her most cherished child;" in the course of this work he invented the process known as *auto-histo-radiography*. He was the first to report, and he brilliantly proved, the carcinogenic effects of estrogens on the mammary gland of male mice (1932). Using monochromatic radiations and cultures of unicellular organisms, he demonstrated the resulting variety of effects of irradiation (1934). He showed the role of anoxia in the animal resistance to total body irradiation and, indirectly, the role of oxygen in radiosensitivity (1943). He studied the carcinogenic effects of neutrons (1944) and of various drugs (1947). He demonstrated the synthesis of complicated organic compounds by irradiation (1953). He described

the mechanism of death due to total body irradiation (1957) and wrote on the combined effects of radiations and carcinogenic drugs on the rat's liver (1961). He also reported on the role of the adrenal cortex in the experimental oncogenesis of the liver by means of drugs (1962); his last reported work was a study of the role of pregnenolone in the experimental production of interstitial-cell tumors of the testis (1971).

Having served as a faithful associate for over two decades, Lacassagne became the Director of the Radium Institute upon Regaud's retirement, in 1937. He became Professor of the College of France, in 1941, member of the French Academy of Medicine, in 1948, and of the Academy of Sciences, in 1949. In 1950, he was President of the Fifth International Congress of Cancer, held in Paris. In 1962, he received a prize from the United Nations for his work in the field of cancer. Until his death he was President of the French League Against

Cancer and of the Centre Antoine Béclère. He was an Honorary Member of the American Radium Society; in 1963, the American College of Radiology, of which he had been an Honorary Member since 1927, offered him its highest honor, the Gold Medal.

A man of vast intellectual interests, Monsieur Lacassagne was a passionate doubter with a mystic's respect for the unknown: the search for truth was both his philosophy and his religion. He was a gentle rebel possessed of a wild compulsion to research. He had no reason to be modest; he was better than that, he was unpretentious. An introspective slave of thought, he was subject to its subversive and anarchic influences.

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