

Kochin, Nikolai Yevgrafovich | Encyclopedia.com

Complete Dictionary of Scientific Biography COPYRIGHT 2008 Charles Scribner's Sons

3-4 minutes

(*b.* [St. Petersburg](#), Russia [now Leningrad, U.S.S.R.], 1901; *d.* Moscow, U.S.S.R., 31 December 1944)

physics, mathematics.

Kochin's father was a clerk in a dry goods store. After graduating from Petrograd University in 1923, Kochin gave courses in mechanics and mathematics there from 1924 to 1934 and then at Moscow University until 1944. From 1932 to 1939 he worked in the Mathematics Institute of the Soviet Academy of Sciences, and from 1939 to 1944 he was head of the Academy.

Kochin's work covered a wide range of scientific problems. At the beginning of his career he published a number of very important works in meteorology. He made significant contributions in the development of gas dynamics. His research on shock waves in compressed liquids was of great importance in the development of this area of science. In hydrodynamics he was responsible for a number of classical investigations. His "K teorii voln Koshi-Puassona" ("Towards a Theory of Cauchy-Poisson Waves," 1935) gives the solution of the problem of small-amplitude free waves on the surface of an uncompressed liquid. In 1937 Kochin published "O volnovom soprotivlenii i podyomnoy sile pogruzhennykh v zhidkosty tel" ("On the Wave Resistance and Lifting Strength of Bodies Submerged in Liquid"), in which he proposed a general method of solving of solving the two-dimensional problem of an underwater fin, the formulas for the resistance of a body (a ship), forms of a wave surface, and lifting force. Using this method, Kochin in 1938 solved the two-dimensional problem of the hydro-planing of a slightly curved contour on the surface of a heavy uncompressed liquid. "Teoria voln, vynuzh-daemykh kolebaniami tela pod svobodnoy poverkh-nostyu tyazheloy neshhimaemoy zhidkosti" ("Theory of Waves Created by the Vibration of a Body Under a Free Surface of Heavy Uncompressed Liquid," 1940) provided a basis for a new theory of the pitch and roll of a ship, taking into account the mutual influence of the hull of the ship and the water.

In aerodynamics Kochin was the first (1941-1944) to give strict solutions for the wing of finite span; he introduced formulas for aerodynamic force and for the distribution of pressure.

Kochin also produced important works on mathematics and theoretical mechanics. He wrote textbooks on hydromechanics and vector analysis, was coauthor and editor of a two-volume monograph on dynamic meteorology, and was the editor of the posthumous edition of the works of A. M. Lyapunov.

BIBLIOGRAPHY

Kochin's works were brought together as *Sobranie sochineny* ("Collected Works"), 2 vols. (Moscow-Leningrad, 1949). There is also a bibliography: *Nikolai Yevgrafovich Kochin. Bibliografiya sost. N. I. Akinfievoy* ("Bibliography Compiled by N. I. Akinfieva" Moscow-Leningrad, 1948).

See also P. I. Polubarinova-Kochina, *Zhizn i deyatelnost N. Ye. Kochina* ("Life and Work of N. Y. Kochin" Leningrad, 1950).

A. T. Grigorian