

# Brashman, Nikolai Dmitrievich I

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(*b.* Rassnova, near Brno, Czechoslovakia, 14 June 1796; *d.* Moscow, Russia, 13 May 1866)

*mathematics, mechanics.*

Although Brashear's family was of limited means, he was able to study at the University of Vienna and the Vienna Polytechnical Institute by working as a tutor. In 1824 he went to Russia, and after a short stay in [St. Petersburg](#) he obtained the post of assistant professor of physicomathematical sciences at the University of Kazan, where he taught mathematics and mechanics.

In 1834 Brashman accepted a professorship of applied mathematics (mechanics) at the University of Moscow. Here he became known as a gifted scientist and teacher, and laid the foundations of instruction in both theoretical and practical mechanics.

In his lectures on mechanics and in his articles Brashman not only tried to show the achievements of this science, but also worked out its most difficult sections. He also prepared textbooks for Russian institutions of higher education. His texts on mathematics and mechanics reflect the state of science at that time, and his proofs of important theorems show originality, clarity, and comprehensiveness. Brashman wrote one of the best analytical geometry texts of his time, for which the Academy of Sciences awarded him the entire Demidov Prize in 1836.

In 1837 Brashman published the textbook on mechanics, *Teoria ravnovesia tel tverdykh i zhidkikh*, which contains an original presentation of problems of statics and hydrostatics. Upon the recommendation of Ostrogradski, this work also brought Brashman the full Demidov Prize.

In 1859 Brashman published a textbook, *Teoreticheskaya mekhanika* ("Theoretical Mechanics"), dealing with the ories of equilibrium and the motion of a point and of a system of points.

In addition to texts, Brashman wrote articles on various problems in mathematics and mechanics. Brashman's memoirs on mathematics were intended for those interested in the progress of the mathematical sciences, and dealt with the latest results of Russian and foreign scientists.

More important are Brashman's memoranda on mechanics. "O prilozhenii printsipa naimenshego deystvia k opredeleniu obema vody na Vodoslive" ("On the Application of the Principle of Minimum Action to the Determination of Water Volume in a Spillway", 1861), which was published in both Russian and foreign periodicals, drew much favorable attention.

Also in 1861 Brashman published "Note concernant la pression des wagons sur les rails droits et des courants d'eau sur la rive droite du mouvement en vertu de la rotation de la terre" (*Comptes rendus de l'Académie des sciences*, **53**, [1861], 370–376). With the aid of general equations, he tried to prove in this article that the rotation of the earth invariably imposes a pressure on the right rail of a railroad track as a train travels over it and on the right bank of a river as the current moves along it, no matter in what direction the train is moving or the river is flowing, provided this force is a single one (i.e., the motion must be rectilinear and uniform).

Another article of considerable interest is his "Printsip naimenshego deystvia" ("Principle of Minimum Action") that appeared in *Mélanges mathématiques et astronomiques* (**1** [1859], 26–31).

Brashman was not only an important scientist but also an excellent teacher. His students included such prominent scientists as P. L. Chebyshev, I. I. Somov, and other talented specialists in mathematics and mechanics. He founded the Moscow Mathematical Society and its journal, *Matematicheskii sbornik* ("Mathematical Symposium"), the first issue of which appeared in the year of his death. This journal was equal to the best European publications in its scientific value and wide range of contents.

For his distinguished services to science, Brashman was elected a corresponding member of the Petersburg Academy of Sciences in 1855.

# BIBLIOGRAPHY

Original Works. Brashman's writings include *Kurs analiticheskoy geometrii* ("Course in Analytical Geometry"; Moscow, 1836); *Teoria ravnovesia tel tverdykh i zhidkikh. Statika i gidrostatika* ("Theory of Equilibrium of Solid and Liquid Bodies. Statics and Hydrostatics"; Moscow, 1837); and *Teoreticheskaya mekhanika* ("Theoretical Mechanics"; Moscow, 1859).

II. Secondary Literature. Works on Brashman are A. Davidov, *Biograficheskiy slovar professorov i prepodovateley Moskovskogo Universiteta* ("Biographical Dictionary of Professors and Teachers at Moscow University"), I (Moscow, 1855), 206; *Matematicheskiy sbornik*, 1 (1866); A. T. Grigorian, *Ocherki istorii mekhaniki v Rossii* ("Essays on the History of Mechanics in Russia"; Moscow, 1961), pp. 96–107; I. I. Liholetov and S. H. Yanovskaja, "Iz istorii prepodavaniya mehaniki v Moskovskom Universitete" ("From History of Teaching Mechanics at Moscow University"). in *Istorika-matematicheskie issledovaniya*, 8, 294–368; M. Viyodski, "Matematika i eyo deyateli v Moskovskom Universitete vo vtoroy polovine XIX V." ("Mathematics and Its Representatives at Moscow University in the Second Half of the Nineteenth Century"), *ibid.*, 141–149.

A. T. Grigorian