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(*b*. St.-Hilaire-Cotter, Pas-de-Calais, France, 18 March 1839; *d*. St.-Genest, Loire, France, 28 January 1889).

mathematics, astronomy.

The son of a former soldier, Barbier was singled out in primary school for his mathematical and scientific aptitude. After secondary schooling at the Collège de St.-Omer, and then at the Lycée Henri IV in Paris, he was admitted in 1857 to the École Normale Supérieure, where he astonished his fellow students by his acute intelligence and his ability to grasp the deeper meanings of complex problems. He also had a taste for subtlety that led him to detect the errors in the most classic demonstrations.

In 1860 Barbier passed his *agrégation* and taught mathematics at the *lycée* of Nice, where he does not seem to have been appreciated by his students. Le Verrier, director of the Paris Observatory, was impressed by Barbier's keen insight and offered him a position as assistant astronomer. A good observer, Barbier showed himself also to be an able calculator. He was fully aware of the usefulness to astronomy of mathematics, physics, chemistry, and instrumental techniques, and he was thus a valuable collaborator. During this period he published numerous reports concerned with various problems in astronomy and the most diverse types of mathematics. His ingenuity led him to perfect a new type of thermometer.

But after a few years Barbier seemed to become more and more unstable and strange. In 1865 he left the observatory, and after attempting to enter a religious order broke off all contacts with his associates. Only in 1880 was he discovered in the asylum at Charenton-St.-Maurice, where he had been sequestered for several years. Joseph Bertrand, permanent secretary of the Académie des Sciences, encouraged him to return to scientific writing and was able to secure for him regular financial help from a foundation connected with the Academy. The numerous reports published thereafter were irreproachably sound and often most original. Although Barbier never recovered his sanity, the gentleness of his behavior caused him to be released, and he spent his last years in a more serene environment.

Barbier's work is scattered in thirty or more memoirs and reports, of which about two-thirds were published during his brief career as a professor and assistant astronomer (1860–1866); most of the others were published between 1882 and 1887.

Several of the studies in the first series bear on the mathematical aspects of astronomy (spherical geometry and spherical trigonometry), on the construction of new thermometers, and on other aspects of instrumental techniques. The others deal with infinitesimal calculus and elementary and infinitesimal geometry, as well as with the calculus of probabilities. The last works of Barbier dealt almost entirely with mathematics and made several interesting contributions to geometry (the theory of polyhedra, the indicatrix of Dupin), integral calculus, and the theory of numbers.

Despite the illness that ruined his career, Barbier deserves to be numbered among the good unspecialized mathematicians of the late nineteenth century.

BIBLIOGRAPHY

I. Original Works. Barbier's scientific work consists of thirty or more memoirs and reports published in various French journals, particularly in *Nouvelles annales de mathématiques; Les mondes;* and *Comptes-rendus hebdomadaires de I'Académie des sciences*. Nearly complete lists of his publications are given in the *Catalogue of Scientific Papers of the Royal Society:* I (1867), 178; VII (1877), 85; IX (1891), 118–119; XIII (1914), 289; and Poggendorff, III (1898), 68, and IV (1904), 64.

II. Secondary Literature. Articles on Barbier are J. Bertrand, in *Association des anciens élèves de I'École normale* (Paris, 1890), pp.35–36; P. Gauja, *Les fondations de l'Académie des sciences (1881–1915)* (Hendaye, 1917), pp.348–349; and A. M. Lautour, in *Dictionnaire de biographie française*, III (1951), col. 326.

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