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(b. Lyons, France, 11 October 1777; d. Nevers, France, 25 September 1828)

hydraulic engineering, mathematics.

The son of Antoine-François Brisson, inspector of commerce and manufacture for the financial district of Lyons, Brisson studied at the Collège Oratorien de Juilly and was admitted to the École des Ponts et Chaussées in December 1793. A year later, at the newly founded École Centrale des Travaux Publics (the future École Polytechnique), he became one of the brilliant team of aspiring instructors and was highly thought of by Gaspard Monge. In December 1796, upon graduation from this school, he was admitted to the Corps des Ponts et Chaussées, where he remained for the rest of his career.

After completing his professional training at the École des Ponts et Chaussées in May 1798, Brisson specialized in the design and construction of ship canals. In 1802 he and his colleague Pierre-Louis Dupuis-Torcy presented a brilliant memoir based on applying methods of descriptive geometry to the determination of crest lines and of thalwegs, as well as establishing the course of the canals. After having been the civil engineer for the department of Doubs, he collaborated from 1802 to 1809 in the construction of the Canal de St.-Quentin, and then in the extension of the dikes and canals of the department of l'Escaut (until 1814). Appointed professor of stereometry and construction at the École des Ponts et Chaussées in 1820, he later assumed the additional duties of inspector for the school (from 1821) and secretary of the Conseil Royal des Ponts et Chaussées (from 1824).

Brisson remained one of Monge's favorite disciples, and his marriage in 1808 to Anne-Constance Huart, the latter's niece, strengthened his admiration and affection for the famous geometer. In 1820 he edited the fourth edition of Monge's *Géométrie descriptive* and finished off the work with two previously unpublished chapters on the theory of shadows and on perspective, which he revised with great care. But his favorite field of study was the theory of partial differential equations. Brisson drew up two important reports on this subject. One was read before the Académie des Sciences by Biot, his fellow student at the École Polytechnique and his brother-in-law. This paper was published in 1808. The other was read in 1823 and was not published. The main idea in these reports was the application of functional calculus, through symbols, to the solution of certain kinds of linear differential equations and of linear equations with finite differences.

The 1823 report was the object of lively discussion in 1825 before the Academy and was approved of by Cauchy, who, although he had some reservations about the validity of some of the symbols used and the equations obtained, emphasized the elegance of the method and the importance of the objects to which they were applied. Cauchy followed the way opened by Brisson, who thus became one of those who developed the methods of functional calculus.

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I. Original Works. Brisson's writings include "Essai sur l'art de projeter les canaux de navigation," in *Journal de l'École polytechnique*, 7, no. 14 (Apr. 1808), 262–288; "Mémoire sur l'intégration des équations différentielles partielles," *ibid.*, 191–261; *Notice historique sur Gaspard Monge* (Paris, 1818); *Nouvelle collection de 530 dessins ou feuilles de textes relatifs à l'art de l'ingénieur et lithographiés... sous la direction de M. Brisson*, 2 vols. (Paris, 1821–1825); and *Essai sur le système gèneral de navigation intérieure de la France* (Paris, 1829).

II. Secondary Literature. Biographical sketches of Brisson are A. Debaube, *Les travaux publics et les ingénieurs des ponts et chaussées depuis le XVIIe siècle* (Paris, 1893), pp. 381–382; *École polytechnique—Livre du centenaire*, III (Paris, 1895), 62–64, *passim.*; F. Hoefler, in *Nouvelle biographie générale*, VII (1863), cols. 436–437; H. Massiani, in *Dictionnaire de biographie française*, VII (1956), col. 364; J. and L. G. Michaud, *Biographie universelle*, new ed., V (1843), 565–567; *Le Moniteur* (19 Oct. 1828); N. Nielsen, *Géomètres français sous la Révolution* (Paris, 1937), pp. 37–38, 83–84; J. Petot, *Histoire de l'Administration des ponts et chaussées (1599–1815)* (Paris, 1955); S. Pincherle, "Opérations fonctionnelles," in *Encyclopédie des sciences mathématiques*, II, fasc. 26, 10; Poggendorff, III (1898), col. 196; and *Procès verbaux de l'Académie des sciences*, VIII (Hendaye, 1918), 223–226.

RenÉ Taton