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GASPARD MONGE – THE RENAISSANCE MAN

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Gaspard Monge an outstanding French scientist of the 18th century is regarded as the inventor of **descriptive geometry**. Though the basis of the science was developed much earlier dating back to the 15th century when in one of his works L.B. Alberti presented the basis of the theory of perspective. However, he was not the only one interested in the matter. The subject has been discussed and referred to in works of many scholars, architects, painters and engineers of different times like Piero della Francesca, Leonardo da Vinci and Albrecht Dürer. What then made Gaspard Monge so distinctly special amongst them all? His main achievements include the gathering of all up-to-date techniques of sketching three-dimensional objects on a two-dimensional drawing plane and systemizing principles which can be applied to those techniques. In his work *GEOMETRIE DESCRIPIVE* he also set out the theory of descriptive geometry in a form that has been taught to this day. He defined the discipline as ‘the art of representing in two dimensions geometrical objects which are of three dimensions’. Descriptive geometry was not the only interest of Gaspard Monge. It extended to issues related to analytical and differential geometry as well as integral and variant calculus. He wrote many works in the field of metallurgy, chemistry, optics and mechanics, was a co-editor of an encyclopedia and the author of a dictionary of philosophy. He was fond of the possibility of air flights. The year 1794 saw the emergence of another science **the theory of mechanisms and machinery** (this year we celebrate the 220th anniversary of its invention) and in the same year Monge presented a discussion of a certain group of mechanisms within the framework of descriptive geometry.

Not only was Gaspard Monge distinguished scholar but also he was a great mentor and teacher. He graduated from and then started lecturing at the *École Royale du Genie* in Mézières, introducing a new profession – an industry officer, the equivalent of a contemporary engineer. He was also a lecturer in Paris and a member of *L’Académie des Sciences*. He took part in establishing *École Polytechnique* in Palaiseau near Paris, of which he was a vice-chancellor for almost 20 years.

Apart from his academic engagement, Gaspard Monge was active in public life chairing the Commission awarding patents and promotions in the French Navy, taking part in the commission

that established a decimal system of measurement and weight. For seven years he was the Naval Minister, organized the defense industry, chaired the commission for metallurgy and the arms industry. He was a commissioner responsible for science and culture related aspects of the army, he also participated in Napoleon's trip to Egypt.

The forms of activities described above do not exhaust the whole range of Gaspard Monge's interests. And it is because of his versatility that he fully deserves the name 'the renaissance man'. His scientific and educational activity was always closely related to industry and that is why he is worth remembering. At present such vast scientific versatility is not required of teachers lecturing in tertiary education, however, university-industry cooperation now takes priority for technical colleges. Constantly changing in terms of software and hardware the field of scientific research presents a continuous challenge for contemporary scholars. The knowledge of marketing, economics and legal regulations related to university education is also highly valued. All things considered it is clear that standards and requirements that contemporary scientists are facing are not far off those set by Gaspard Monge.