Jonquières, Ernest Jean Philippe Fauque De | Encyclopedia.com

(*b*. Carpentras, France, 3 July 1820; *d*. Mousans-Sartoux, near Grasse, France, 12 August 1901)

mathematics.

Jonquières entered the Èole Navale at Brest in 1835 and subsequently joined the French navy, in which he spent thirty-six years. He achieved the rank of vice-admiral in 1879, and retired in 1885. He traveled all over the world, particularly to Indochina. In 1884 he was named member of the Institut de France.

In the 1850's Jonquièes became acquainted with the geometric work of Poncelet and Chasles, which stimulated his own work in the field of synthetic geometry. In 1862 he was awarded two-thirds of the Grand Prix of the Paris Academy for this work in the theory of fourth-order plane curves. Geometry remained his main scientific interest. He was outstanding in solving elementary problems, for which, besides traditional methods, he used projective geometry. In addition to elementary problems Jonquières studied then-current questions of the general theory of plane curves, curve beams, and the theory of algebraic curves and surfaces, linking his own work with that of Salmon, Cayley, and Cremona. In his studies he generalized the projective creation of curves and tried to obtain higherorder curves with projective beams of curves of lower order. In 1859-1860 (before Cremona), he discovered the birational transformations (called by him "isographic"), which can be considered as a special case of Cremona's transformations; in nonhomogeneous coordinates they have the form:

where α, β, γ, δ are functions of x and $\alpha\delta - \beta\gamma y$ does not equal zero.

A number of Jonquières's results were in the field of geometry which Schubert called "abzählende Geometrie."

Besides geometry, Jonquières studied algebra and the theory of numbers, in which he continued the tradition of French mathematics. Here again his results form a series of detailed supplements to the work of others and reflect Jonquières's inventiveness in calculating rather than a more profound contribution to the advancement of the field.

BIBLIOGRAPHY

An autobiographical work is *Notice sur la carrięre maritime, administrative et scientifique du Vice-Amiral de Jonquières, Grand officier de la Légion d'honneur, Directeur général du Dépôt des cartes et plans de laVice-Président de la Commission des phares, Membre de la Commission de l'Observatoire* (Paris, 1883).

On Jonquières's work, see Gino Loria, "L'oeuvre mathématique d'Ernest de Jonquières," in *Bibliotheca mathematica*, 3rd ser., **3** (1902), 276--322, and "Elenco delle pubblicazioni matematice di Ernesto de Jonquières," in *Bullettino di bibliografia e storia delle scienze matematiche e fisiche*, **5** (1902), 72-82. See also H. G. Zeuthen, "Abzählende Methoden" L. Berzolari, "Allgemeine Theorie der höheren ebenen algebraischen Kurven" and L. Berzolari, "Algebraische Transformationen und Korrespondenzen" all in *Encyklopädie der mathematischen Wissenschaften, III, Geometrie*.

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