

Letters to the Editor

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NOTES ON POINTS IN SOME OF THIS WEEK'S LETTERS APPEAR ON P. 31.

CORRESPONDENTS ARE INVITED TO ATTACH SIMILAR SUMMARIES TO THEIR COMMUNICATIONS.

Use of the Name 'Racemic Acid'

THE discovery of racemic acid by Karl Kestner or Koestner, a chemical manufacturer at Thann, in the Vosges, and the elucidation of its relationship to ordinary tartaric acid, more especially by Gay-Lussac, Berzelius and Pasteur, constitute one of the most important episodes in the history of organic chemistry. Upon an account of the nature of racemic acid there is no need, and we do not intend, to enter here; but, owing to the confusion which exists in chemical literature regarding the authorship of the name *racemic acid* (variously attributed to Gay-Lussac, Gmelin and Berzelius), a note on this subject may be of interest to students of the history of chemistry.

The author of the term *racemic acid* is Gay-Lussac. The first occurrence of the term in print is found in a publication, "Cours de Chimie par M. Gay-Lussac, comprenant l'histoire des sels, la chimie végétale et animale", published in Paris by Pichon et Didier, in 1828. In the "Summary" at the beginning of the 24th Lecture, one finds the term, "Acide racénique", and on p. 23 one reads: "Ce serait ici le lieu de parler de l'acide racénique". The mis-spelling which is found here, *racénique* (with or without the accent) in place of *racémique*, finds its explanation in the fact that the "Cours de Chimie" was reproduced from shorthand notes of the course of lectures "professé à la Faculté des Sciences" by Gay-Lussac, and published without the co-operation or sanction of the lecturer. Gay-Lussac, in fact, protested vigorously against this *nouveau genre d'industrie*, which had arisen in Paris, of publishing the lectures of certain professors without their permission or supervision. "Je ne sais", wrote Gay-Lussac¹, "jusqu'à quel point il est juste de s'approprier ainsi des leçons publiques, contre la volonté même des professeurs; . . . Mais il n'est pas indifférent que l'on sache que je n'ai pris aucune part à cette nouvelle spéculation de librairie . . . Je déclare donc que mes leçons de chimie sont imprimées contre mon gré; que j'ai refusé les émoluments qu'on m'a offerts pour me faire coopérer à leur publication, et que je n'y prends absolument aucune part."

Meanwhile, the publishers had issued a note that "le désir que nous avons de terminer la publication de cet ouvrage presque aussitôt que le Cours du Professeur; la promptitude avec laquelle il a fallu par conséquent corriger les épreuves; et d'ailleurs la nécessité où nous fûmes de recourir à une autre personne que le Professeur, pour faire cette correction à laquelle il ne voulait pas se livrer lui-même, ont été cause que plusieurs fautes d'impression se sont glissées dans quelques-unes des Livraisons que nous avons adressées à nos Souscripteurs". The text was

read by M. Gaultier de Claubry and a list of errata was drawn up. In this list, *racénique* is corrected to *racémique* (without an accent on the *e*). The unaltered text, however, was republished, with its errors, in 1833 by the firm of de Just Rouvier et E. Le Bouvier, Paris.

The authorship of the term, *acide racémique*, is established also by a footnote which appears in the French translation² of Berzelius's original Swedish paper. The French translation is entitled: "Composition de l'acide tartrique et de l'acide racémique (traubensäure), etc", and the footnote to this reads: "M. Gay-Lussac a donné, en 1828, le nom d'*acide racémique* à l'acide dont il est ici question." Thomas Thomson, who made an examination of racemic acid³, also states in his "Chemistry of Organic Bodies. Vegetables" (1838), p. 66: "This acid has been described in the Chemistry of Inorganic Bodies (Vol. ii, p. 69) under the name of *vinic acid*. But the term *racemic acid*, given it by M. Gay-Lussac in 1828, is better."

While the authorship of the specific term *acide racémique*, applied to the isomer of tartaric acid which Berzelius, in 1830, proposed to call *paratartaric acid*⁴, must undoubtedly be attributed to Gay-Lussac, the general application of the term racemic to the optically inactive, resolvable isomer of a substance, must be credited to Pasteur⁵.

With regard to the position of Gmelin and Berzelius in the naming of the acid called racemic by Gay-Lussac, the facts are as follows. Walchner, in 1827, had carried out an investigation of racemic acid and its salts⁶, and his results were communicated in Gmelin's "Handbuch der theoretischen Chemie", 3rd Edit., vol. 2, p. 53 (published in 1829). Here the acid is called, for the first time, *Traubensäure*; and in his paper communicated to the Swedish Academy of Sciences, Berzelius (p. 64) states: "Gmelin har gifvit den nammet drufsyra, Traubensäure". In this same paper, Berzelius suggested the name paratartaric acid, and this name was widely used. To sum up. To the acid discovered by Kestner and first called by John, "Säure aus den Voghesen", Gay-Lussac, in 1828, gave the name, *acide racémique*. In 1829, Gmelin called it *Traubensäure* (rendered by Berzelius in Swedish as *drufsyra*), and, in 1830, Berzelius called the acid, *acidum paratartaricum*.

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¹ *Ann. Chim.*, **37**, 441 (1828).

² *Ann. Chim.*, **46**, 113 (1831).

³ *Records of General Science*, ii., 97, 161, 241 (1835).

⁴ *Kongl. Vetensk. Acad. Handl.*, **49** (1830).

⁵ *Ann. Chim.*, **61**, 488 (1861).

⁶ *Schweigger's J.*, **49**, 238 (1827).