

lectures on terrestrial magnetism at the Johns Hopkins University a month or so previously."

Because Prof. R. Gans had used the same word quite early, I wrote to him to ask his aid in locating its earliest occurrence. He replied to me from Argentina, saying:—"Auch mich interessirt es zu wissen wer das Wort 'Magneton' zum ersten Male gebraucht hat. Ich selbst habe wohl das Wort zuerst in der von Ihnen erwachten Arbeit in den *Göttinger Nachrichten*, 1910, verwendet. Die Arbeit von Bauer, den Sie zitieren, kenne ich nicht." The article referred to by Prof. Gans in *Göttinger Nachrichten*, 1910, p. 200, was presented at the session of May 28, 1910, by C. Runge. In the course of the discussion we find this: "Die Lage jedes Molekularmagneten, oder wie wir kuerzer sagen wollen, jeden Magnetons. . ."

Since Prof. Pierre Weiss conferred on the word under investigation the quantitative meaning which it seems likely to retain, I turned to him also for assistance. He wrote me in reply:—"J'ai imaginé le nom de 'magnéton' à la suite de mes recherches expérimentales. L'analogie avec l'électron s'imposait. J'ai eu connaissance plus tard que M. Gans avait fait usage antérieurement du même terme dans un sens différent. Il me semble que, dans ce sens, l'expression de molécule magnétique convient tout aussi bien. Je n'avais pas connaissance jusqu'à présent de l'emploi fait de ce terme par M. L. A. Bauer et je vous remercie du renseignement."

In the *Comptes rendus* of the Paris Academy of Sciences, vol. clii., p. 189, session of January 23, 1911, occurs the first use of the word by the Zurich physicist in an article called "Sur la rationalité des rapports des moments magnétiques des atomes et un nouveau constituant universel de la matière." Near the close we come upon the following:—"Le nombre d'atomes dans l'atome-gramme est  $N=70 \times 10^{22}$  (Perrin). Le quotient  $m$ ;  $N=15.94 \times 10^{-22}$  est le moment de l'aimant élémentaire lui-même, correspondant à la partie aliquote des moments des atomes-grammes. Je l'appellerai magnéton. . . Le magnéton est donc un constituant universel de la matière."

It is surely interesting to note that three physicists in as many different countries independently introduced the word within a year. Priority appears to belong to Dr. Bauer.

As some uncertainty can be observed in the pronunciation of "magneton," I appealed to its sponsor, Dr. Bauer, for a decision. He replied: "I hesitate greatly desiring to appear competent to pass on the official pronunciation of the word 'magneton.' I prefer the accent on the second syllable, and giving the sound of *e* as in 'thee,' thus—magneeton. Still, I should not quarrel with anyone who wishes to put the accent on the first syllable and pronounce the *e* as in 'met.' Usage alone will decide." GEORGE F. STRADLING.

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#### An Optical Phenomenon.

A DESCRIPTION of the phenomenon mentioned by Capt. Cave in NATURE of October 18 will also be found in NATURE, vol. lxx., p. 107 (1904), and vol. lxxviii., pp. 255, 277, and 305 (1908). J. W. GILTAY.  
Delft, November 9.

#### THE NICKEL INDUSTRY.

THE complete report of the Royal Ontario Nickel Commission, of which a summary was published in March last, has recently been received in this country. It is a document of absorbing interest and exceptional importance. The commission was appointed on September 9, 1915, and asked to inquire into, and investigate and report

upon, the resources, industries, and capacities, both present and future, of the Province of Ontario in connection with nickel and its ores. Its reference also included an inquiry into the system of taxation by the province of its mines, minerals, and mineral industries. There were four commissioners, Messrs. Holloway, Miller, Young, and Gibson, representing metallurgy, geology, law, and administration respectively. They set to work at once and completed their labours in eighteen months—a remarkably short time considering what they did. Their report contains nearly 600 pages, and the appendix more than 200. It is a model of lucidity of exposition, and displays such a complete grasp of the subject in all its bearings and details, and such shrewdness of judgment in regard to its recommendations, that it will certainly rank as the most authoritative monograph on the nickel industry that has ever been published. The commissioners have rendered to Canada a service of remarkable value.

It appears that, so recently as 1900, as much as 65 per cent. of the world's market was supplied by nickel made from the New Caledonia ores, the balance being furnished by Canadian ores. New Caledonia, although discovered and named by Capt. Cook in 1774, was not claimed by any European country until 1854. In that year it is said that a French and a British frigate sailed simultaneously from Sydney (Australia) to take possession of it. The former was the first to find a way through the barrier reef and thus secured the island for France. The commissioners comment on the striking fact that "two countries so widely separated as are Ontario and New Caledonia, not only by distance, but in almost every other way, should alone be rivals, not merely in the production of nickel, but in that of cobalt as well."

For many years nickel from New Caledonia had an established world market. It was included in all British Government specifications where nickel was required. When the Mond Nickel Co., working on Sudbury ores, entered the field, it found an immensely strong prejudice both in Government departments and the trade against them, which was overcome only after elaborate and expensive trials and tests. Moreover, the New Caledonia nickel had for many years a tied market among the principal consumers in Europe, owing to the close business connections of the leading French producer—Le Nickel—with the great armament firms. This company has the financial backing of the Rothschilds and is the chief rival of the Canadian companies.

Since 1900 Ontario has forged ahead with its production. The world's output has increased sixfold since that time, and of this Ontario now furnishes about 80 per cent. The main factor in this change is the great difference in the size of the ore-bodies in the two countries. Whereas those of New Caledonia are reckoned in at most hundreds of thousands of tons, the Sudbury (Ontario) deposits are measured in millions. In spite of its apparently favourable position, how-