numerous than the first, evolve it. At very low temperatures, all possible reactions directly liberate heat; at high temperatures, the possible reactions which absorb heat become more and more numerous. Of all the reactions which can take place, that particular one tends to occur which will develop the greatest amount of exterior work, but it is usually impossible to find out which reaction satisfies these conditions, for want of data. Another way of stating it is that the reaction tending to occur is that in which the heat of reaction diminished by T times S is a maximum, where T is the absolute temperature and S is the variation of the entropy. It is thus seen that the diminishing term increases indefinitely with the temperature and, therefore, the tendency for a reaction to take place diminishes as the temperature increases; in case S is negative, the tendency for the reaction to take place increases as the temperature increases.

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INORGANIC CHEMISTRY.

The New Gas From Radium. BY E. RUTHERFORD. *Trans. Roy. Soc. Canada*, 7, 21–25.—The rates of diffusion of the emanation from radium was determined by means of the quadrant electrometer. The method of measuring the activity of the emanation was similar to that used by the author in studying the radioactivity of thoria (*this Rev.*, 25). The rate of diffusion indicated a gas of molecular weight between 40 and 100. This could not have been radium vapor as the molecular weight of radium is greater than that of barium. H. N. MCCOY.

The Conversion of Amorphous Carbon to Graphite. BY FRANCIS J. FITZGERALD. *J. Frank. Inst.*, 154, 321–348.—The paper is a review of the most important work on this subject. It treats especially of the commercial method of Acheson by which graphite is produced from anthracite, containing 5 to 6 per cent. of ash, by heating electrically. The resulting graphite is practically pure carbon, all other substances having volatilized at the high temperature employed. H. N. MCCOY.

The Conversion of Amorphous Carbon to Graphite. BY F. J. FITZGERALD. *J. Frank. Inst.*, November, 1902.—An exhaustive article of 28 pages giving the complete history of this subject, from the first experiments of Despretz to the last results obtained by Acheson. The discussion of the work of Moissan, and of the various patents covering this field is temperate and fair, and the whole article is a substantial contribution to the literature of this subject. J. W. RICHARDS.