

dropped Professor Mayor's name from the titlepage, although acknowledging his indebtedness to that gentleman's book. The distinctive features of the work as now presented consist in its "building-up a boy's knowledge of Greek upon the foundation of his knowledge of English and Latin," and in the fact that "no Greek words have been used in the earlier part of the book except such as have connections either in English or Latin."

—Among the recent publications received from the United States Coast and Geodetic Survey Office is "Appendix No. 8, Report for 1888 (90 pp. sketch), entitled Geodesy. Geographical Positions in the State of Connecticut. Prepared for publication by Charles A. Schott, assistant." This collection of geographical positions, and of geodetic data resulting, is made in continuation of the scheme of publishing the results in those States where the field-work of the triangulation is substantially completed, and where the triangulation could be made to rest on the standard data of the survey.

—An interesting paper by Professor von Hofmann, upon the dissociation of carbon dioxide gas into carbon monoxide and oxygen by means of the electric spark, is referred to in *Nature* of Dec. 4. Dalton and Henry long ago showed that carbon dioxide, although formed by exploding a mixture of two volumes of carbon monoxide with one volume of oxygen by the passage of an electric spark, is again partially decomposed into carbon monoxide and oxygen by the continued passage of the spark. This dissociation, however, is very slow, and usually incomplete. Hofmann and Buff, in the course of their well-known work upon gaseous re-actions, further showed that "the electric spark passes through carbon dioxide with a violet glow, producing at first a rapid increase in the volume, which, however, becomes less and less marked until at the expiration of about half an hour the separated carbon monoxide and oxygen recombine with a sudden explosion, the re-formed carbon dioxide at once commencing to be

again dissociated." Deville and Berthelot afterwards investigated the same phenomena, and also found that the re-action was never complete, proceeding only until about 28 or 29 per cent of the carbon dioxide was decomposed, but they never observed any explosive recombination as described by Hofmann and Buff. Professor Hofmann has therefore determined the exact conditions under which the explosive recombination occurs. It certainly appears somewhat remarkable that the same spark can effect both dissociation and recombination; yet such, within the limits described in the memoir, is an actual fact. The first essential point to be observed is the length of path of the spark. The most suitable distance apart of the platinum terminals appears to be between two and a half and three millimetres, and Professor Hofmann advises the use of adjustable terminals rather than the ordinary platinum wires fused into the side of the eudiometer. A Leyden jar in the circuit renders the occurrence of periodical explosions more certain. The spark should also pass at about a quarter the height of the gas column, instead of, as usual, near the top. The current itself, moreover, should not be too strong: that from two Bunsen cells and only a moderate sized Ruhmkorff coil is quite sufficient, and yields the best results. It is also preferable to use a volume of carbon dioxide, previously dried over oil of vitriol, not exceeding ten cubic centimetres at a pressure of 650–700 millimetres: eight cubic centimetres give excellent results. Under these conditions, the first explosion usually occurs in from fifteen to twenty minutes, and sometimes earlier. The flame commences in the neighborhood of the spark, and then perceptibly spreads through the whole length of the gas column. It is colored blue in the first explosion, and green in the succeeding ones, owing to the volatilization of a little mercury vapor. The second and succeeding explosions occur after shorter intervals than the first. This experiment is certainly one of the most interesting in all the range of dissociation phenomena; and full details, with drawings of the apparatus, are given by Professor Hofmann in his memoir.

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CALENDAR OF SOCIETIES.

Philosophical Society, Washington.

Dec. 20.—Annual Reports of the Treasurer and Secretaries, and election of officers for the year 1891.

The Anthropological Society, Washington.

Dec. 16.—Robert Fletcher, The Vigor and Expressiveness of Older English.

Wants.

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