dictionaries give as their first definition of this verb, "to carbonize; to reduce to carbon." One dictionary (The Universal) gives no other definition, and another (The Century, 1911 ed.) omits any mention of this meaning, giving as the sole definition, "to impregnate or saturate with carbonic acid" (as in the formation of carbonated waters). The New Standard Dictionary gives both meanings listed above, but does not mention the formation of carbonates. Webster's New International, which probably is used as widely as any dictionary in this country, defines "carbonate" (the verb) as follows (1934 ed.): "1. To burn to carbon; carbonize. 2. *Chem.* a, To convert into a carbonate. b, To impregnate with carbonic acid or carbon dioxide." This same dictionary, and others, define "carbonation" as "act or process of carbonating," thus involving the noun in the diverse usage of the verb. Dictionary makers, then, do not by any means give the unequivocal guidance suggested in Tarr's note. Since "carbonize" is given as a synonym of "carbonate," there appears to be dictionary license for using "carbonation" in reference to the accumulation of organic matter in soils or in marine muds; the concentration of fixed carbon in maturing coals; the charging of subsurface waters with carbon dioxide; and the development of carbonates, either by weathering or by hydrothermal action. Although this full range of license is not met in common usage, geologists show no disposition to restrict "carbonation" to one specific meaning.

Probably "carbonatization" originated from a desire to have a term that means unmistakably the development of carbonates. Certainly this desire explains the use of the word by some writers within recent years. Another and apparently older form, "carbonatation,"[3] may have had its origin in the same consideration. Users of these longer words in lieu of "carbonation" probably have felt that clearness is more important than euphony in scientific writing. They need not be disturbed by lack of conformity with the words "hydration" and "oxidation." The English language is not noted for exact consistency in word-form; moreover, any one disposed to quibble in this matter might claim that if "carbonation" and "hydration" refer to production of carbonates and hydrates, then "oxidation" should signify the formation of *oxidates!* It is a more effective argument that "hydration" and "oxidation," as now defined and used, are not in any way ambiguous, whereas "carbonation" may be misunderstood.

Thus the advocates of "carbonatization" are not without justification. They could even compile an imposing list of articles and books to make a case on the ground of usage. However, the writer has used "carbonation" in reference to the formation of carbonates, for the following reasons: (1) The verb "carbonize" and its derivative "carbonization" are adequate in expressing reduction to and impregnation with carbon; if geologists are careful to observe this logical usage, considerable confusion will be avoided. (2) Although the verb "carbonate" and its noun "carbonation" must still do double duty, ordinarily it should be clear from the context whether the formation of carbonates or merely charging with carbon dioxide is intended. However, the more cumbersome "carbonatization" at least has the advantage of precision, and the present writer will not be unhappy if he continues to meet the term in geologic literature.

[3] *Cf.* Century Dictionary, 1889 and later editions.

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THOSE annotating changes in scientific vocabulary are probably aware of the roots of the English language. Yet workers rarely employ the devices of philology. We, naturally, say "rarefaction," but would not suggest "rarization." Yet the form mentioned recently in SCIENCE, "carbonization," means to render foreign, as of shoes, using rough, uncivilized leather. The chemists can not have thought twice. (Greek, *Karbanos,* page 137, Hamilton, London, Crosby, Lockwood and Co., 1887; *-ize* is Greek.)

The Latin word *carbo(n)* means "coals." Its etymology is thought dubious (White, Ginn and Co., Boston, 1893, page 95). The form *ifaction* is good Latin: "Carbonifaction" or "carbonify."

We do say "temporize." And do not say "temporization." It is possible to say "temporizing." Instead of the term "carbonatization" for "carbonating," why not use it? And for products or processes "carbonators" and "carbonative," "carbonifactors" and "carbonificients," as well as "carbonifacts"? And "carbonatifacts," with "carbonatifactors" and "carbonatories"?

THOMAS HORACE EVANS

THE FIRST RECORD OF THE BLACK WIDOW SPIDER FOR IOWA

IN "Notes on the Distribution of the Black Widow Spider," by L. D. Anderson and H. G. Walker, in SCIENCE for January 22, 1937, Minnesota and Iowa are listed as the only states from which this spider has not been officially recorded. The writer believes that Iowa may be added to the "black list."

In the fall of 1936 a specimen was collected in the warehouse of a Cedar Rapids machinery company. While the author identified the specimen as a female black widow spider, the unusual color markings, combined with the fact that this species of spider had not been reported from Iowa, made him cautious about reporting it without verification. It was first sent to Donald G. Lowrie, of the University of Chicago, who

verified the author's identification. He suggested that because of its unusual color markings it might be a geographical subspecies. The markings were not typical for any of the three varieties described for the United States by Chamberlain and Ivie,[1] so it was then sent to Professor Chamberlain, who identified it as an extreme variation of *Latrodectus mactans texanus*. Since this spider was collected in a warehouse, it was thought that it might represent an import; but Professor Chamberlain stated that while this is a possibility it need not be true; that while Iowa would be the northern range for it, the form no doubt occurs here, as it is not uncommon in Kansas.

Field studies will be made next summer in an effort to determine the abundance and varieties of the black widow spider in this locality, and it will be especially interesting to observe whether the extreme variation of this first record will be found again in future investigations.

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SOCIETIES AND MEETINGS

THE PENNSYLVANIA ACADEMY OF SCIENCE

THE regular annual meeting of the Pennsylvania Academy of Science was held at Lancaster, Pa., in conjunction with the Pennsylvania Conference of College Physics Teachers and the Pennsylvania Junior Academy of Science, on Friday and Saturday, March 26 and 27. The meetings were all conducted on the campus of Franklin and Marshall College, President Thomas D. Cope, of the academy, ably presiding. The college and the Lancaster Branch of the American Association for the Advancement of Science were hosts. A total registration of 355 was recorded, including over 150 for the Junior Academy.

Friday was mainly devoted to the reading of papers before the academy. Thirty-six titles were presented, the distribution by subjects being as follows: Zoology 16, geology 10, botany 3, physics 2, education 2, miscellaneous 3. The Pennsylvania Conference of College Physics Teachers and the Junior Academy held independent sessions during Friday afternoon. At the former, thirteen, and at the latter, twenty-one titles were presented. The reading of the papers was supplemented by a number of exhibits and demonstrations, chiefly biological. There was a joint session of the academy and conference and guests on Saturday morning, at which seven invited papers were read. The sessions ended shortly after noon on Saturday.

Following the annual dinner on Friday evening at the Hotel Brunswick, the several organizations and guests assembled in Hensel Hall at the college to listen to the guest speaker for the annual academy lecture, Dr. F. R. Moulton, recently elected permanent secretary of the American Association for the Advancement of Science. Dr. Moulton chose for his subject "Science." He pointed out the present rapid growth of the value of applied science to human affairs and then indicated what a vast potentiality remains in this field for the future.

During the regular business meeting the following officers for 1937–38 were elected:

President: Dr. Geo. H. Ashley, state geologist of Pennsylvania.
Vice-President: Jaques Cattell, The Science Press.
Secretary: Dr. V. Earl Light, Lebanon Valley College.
Treasurer: Dr. C. W. Thurston, Pennsylvania State College.
Assistant Secretary: Charles E. Mohr, Reading Senior High School.
Editor: Ralph W. Stone, the Pennsylvania Topographic and Geologic Survey.
Press Secretary: Dr. Bradford Willard, the Pennsylvania Topographic and Geologic Survey.

The summer meeting for 1937 will be held at a date to be announced. It is planned to assemble at Wellsboro and visit Harrison State Park and the Coudersport ice mine. The regular annual meeting for 1938 is scheduled to be held at Bucknell College, Lewisburg, the date to be announced later.

The sessions just closed are considered to be among the most successful and best attended in the history of the academy. Much of this success is due to the efforts of the members of the Lancaster Branch of the American Association for the Advancement of Science and Franklin and Marshall College, particularly to Jaques Cattell, chairman of the Lancaster Branch and of the local committee on arrangements, and to Professors R. L. Charles and Howard M. Fry, of Franklin and Marshall College.

BRADFORD WILLARD,
Press Secretary

THE KANSAS ACADEMY OF SCIENCE[1]

THE Kansas Academy of Science was organized on September 1, 1868. For three years it was called the "State Natural History Society," but on October 25, 1871, the name was changed to the "Kansas Academy of Science." The society has held 68 annual meetings and has published 39 volumes of *Transactions*. These volumes comprise about 9,000 pages of printed matter, of which about 8,600 pages are devoted to scientific

[1] *Bull. of the University of Utah*, Vol. 25, No. 8, 1935.

[1] Report to the Annual Conference of the Academies, December 28, 1936.