

associations is therefore without foundation. In fact Smith used the word precisely as other botanists are using it to-day.

Mr. Bather calls the form *ecology* a 'vagary of incorrect spelling' of *æcology*. The shorter spelling was formally recommended in 1893 by the foremost botanical organization in this country, on the general ground that the same considerations which make *economy* preferable to *æconomy* make *ecology* preferable to *æcology*. The recommendation has been followed by practically all writers on botanical subjects in this country and occurs in nearly all of the botanical works of the highest educational and scientific standing in America, (Campbell's recent text-book is the only exception I have noticed), and in most if not all papers now appearing based on original work upon adaptations. Whether under these circumstances the form *ecology* can be properly described as a vagary of incorrect spelling I leave the reader to judge.

W. F. GANONG.

TO THE EDITOR OF SCIENCE: In spite of the number of letters written with regard to the word *ecology*, the fact has been overlooked that the Standard Dictionary gives *ecology*, so spelled, with a cross reference to *æcology*, and so it is a great mistake to say that the newest spelling is not in the latest dictionary. It seems only just to the Standard Dictionary that this statement should be made.

WALLACE CRAIG.

HULL ZOOLOGICAL LABORATORY.

In view of the recent discussion as to the tardy recognition of scientific terms by the dictionaries, it may be interesting to note that the word *tropism* which is now so commonly used in the discussion of the origins of motor reactions in organisms does not appear in any of the dictionaries (including the 'Century') that are accessible to me. Neither this term nor the term *ecology* belong to the class of narrow technical terms but would demand general definition on account of their comprehensive connotation. I am not aware of the origin or the exact degree of recentness of the term *tropism*; but my impression is that it has been used sufficiently long

to have secured some recognition. Still it must be remembered that the word *appendicitis* was not current enough when the first volume of the 'Century Dictionary' appeared, to warrant its inclusion.

JOSEPH JASTROW.

INDIAN SUMMER.

TO THE EDITOR OF SCIENCE: I wish to call the attention of your readers to the exhaustive articles on the origin of the term Indian summer, which is published in the *Monthly Weather Review* for January and February of this year. Mr. Albert Matthews (145 Beacon Street, Boston, Mass.), the author of this memoir, has spared no labor in collecting the early examples of the use of this term. Its first recorded appearance is in the year 1794 in the journal of Major Ebenezer Denny for October 13, 1794, while at Le Boeuf, a few miles from the present city of Erie, Pa., and there can be no doubt but what the term was in extensive use and well recognized at that time. Since that date numerous explanations have been given by different persons as to the origin and original meaning of the term, but these are of the nature of myths or hypotheses and it is very much to be hoped that we shall yet discover earlier cases and the true history of its introduction. We shall be very glad to hear from any one who can add anything of value to the elaborate paper by Mr. Matthews.

CLEVELAND ABBE.

WEATHER BUREAU,
U. S. DEPARTMENT OF AGRICULTURE.

BOTANICAL NOTES.

NATURE STUDY.

WE have had all sorts of books on 'Nature Study,' and for the most part they have been an abomination with nothing to redeem them, possibly with the exception that the authors 'meant well.' Enthusiastic persons who knew nothing exactly about nature, and still less about children, wrote impossible lessons for the pupils in the schools, and too often the superintendents knowing no more in regard to either, 'adopted' these misbegotten productions, and issued instructions to teachers to dole out so many pages a week to the defense-