trates furthermore the increased tendency of the body to retain water when part of the hydrogen has been replaced by deuterium. A decrease in the insensible water loss relative to the metabolism is described during the period when mice are being raised, either in two days or in five days, to the level of one fifth saturation with D_2O.

It is quite likely, too, that the reversible contraction of *Fundulus* melanophores, which we have also demonstrated,[5] depends partly upon an osmotic factor.

So far as mice are concerned, then, we have yet to find evidence that D_2O "violently" dehydrates living cells. But a number of interesting manifestations of its lower vapor pressure are illustrated by its pharmacological action in mammals.

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THE NON-VOLATILE ACIDS OF THE FRUIT OF NYSSA OGECHE[1]

THE "Ogeechee Lime" appears as a small fruit on the tree *Nyssa ogeche,* which grows in wet ground in the southern states. The fruit which came to the attention of the author was from along the Conoochee River in Georgia. They were light green, olive-shaped fruits, 2.5 to 3.5 cm long with a large single central stone and a thin skin, with cell-walls connecting skin and stone which were firmly attached to the stone, running lengthwise. Forty to 50 per cent. by weight of juice can be expressed by squeezing the fruit. This juice is strongly acidic, but lacks any distinctive flavor. The juice showed about 6 per cent. of acid, calculated as citric. It is said that natives of the regions where they grow use them to make a "limeade" drink and a preserve.

The non-volatile acids were isolated from 100 fruits weighing 637 gm and converted to ethyl esters by the usual method of lead salt precipitation and esterification. A small portion (2 gm) boiled at 150–171° at 10 mm and the remainder boiled at 171–172° at 10 mm (12 gm). The hydrazides of the fractions were prepared. From the low-boiling fraction malic hydrazide, m. p. 176–177° (mixed m. p. 176–177°) was identified. The fraction boiling at 171–172° at 10 mm was citric ester, giving a hydrazide melting at 102–104° when allowed to form spontaneously (hydrated form) and melting at 149–150° when seeded with anhydrous citric hydrazide. It is evident that the principal acid of the Ogeechee lime is citric acid with a small amount of malic.

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[4] H. G. Barbour and Lillie Rice, *Jour. Pharm. and Exp. Therap.*, 1937 (in press).

[5] H. G. Barbour and S. B. Bogdanovitch, *Jour. Pharm. and Exp. Therap.*, 61: 148, 1937.

[1] Food Research Division Contribution No. 348, Bureau of Chemistry and Soils, U. S. Department of Agriculture.

IODOACETIC ACID AND SULFUR METABOLISM

IN view of the suggestions in the literature that iodoacetic acid exerts its inhibitory effect on certain body processes (*e.g.,* absorption, muscle metabolism) by combining with a sulfhydryl compound which may be essential for these processes, experiments have been designed in an attempt to demonstrate *in vivo* a combination of iodoacetic acid with sulfur-containing substances which are of biological importance. Using a technique developed in this laboratory,[1, 2] it has been possible to markedly restrict the growth of young white rats, ingesting a relatively low protein diet, by incorporating suitable quantities of iodoacetic acid in the basal ration. Moreover, the addition of either l-cystine of dl-methionine to the basal diet already containing the iodoacetic acid results in an immediate growth response, and the animals continue to grow at a good rate. This response is striking and appears, to date, to be specific for cystine and for methionine. This study is being actively continued and expanded along the following lines of investigation: (1) To determine the mechanism by which iodoacetic acid appears capable of depleting the sulfur-containing amino acid reserves of the organism; (2) to determine the nature of the *in vivo* combination between iodoacetic acid and these sulfur compounds; (3) to determine the possible relationships of this type of combination to the processes of absorption from the intestine and muscle metabolism.

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AN INTERESTING HOAX PERPETUATED IN AN EARLY SCIENTIFIC BULLETIN

READERS of *Time* for June 7, 1937, were no doubt amused by the article concerning the spider hoax perpetrated by Ralph D. Paine in the 1890's. The article reported that several scientific journals printed the hoax as fact. It may be of interest to know that one of these scientific journals was the *Bulletin of the U. S. Department of Agriculture, Division of Entomology.* The title of the bulletin, which was published in 1897, is "Some Miscellaneous Results of the Division of Entomology." Under "General Notes" on page 82 there is the following sub-head and account:

A NEW DIRECT BENEFIT FROM INSECTS

When Kirby and Spence wrote their chapter on "Direct benefits derived from insects" and recorded the use of insects for food, the use of honey from bees for the same purpose, the use in medicine and the arts and manufacturers of blister beetles, insect galls, Coccidae furnishing lac, wax insects and the silkworm, the time had hardly

[1] A. White and R. W. Jackson, *Jour. Biol. Chem.*, 111: 507, 1935.

[2] A. White, *Jour. Biol. Chem.*, 112: 503, 1936.

arrived for the extensive collection of ants for the manufacture of formic acid or of their pupae as food for song birds, and we feel sure that they could hardly have anticipated an industry which has recently sprung up both in France and Pennsylvania, and which consists of the farming of spiders for the purpose of stocking wine cellars, and thus securing an almost immediate coating of cobwebs to new wine bottles, giving them the appearance of great age. This industry is carried on in a little French village in the Department of Loire, and by an imported Frenchman named Grantaire on the Lancaster Pike, 4 miles from Philadelphia. This Frenchman raises *Epeira vulgaris* and *Nephila plumipes* in large quantities and sells them to wine merchants at the rate of $10 per hundred.

Whoever inserted this note, however, may possibly have done it with his tongue in his cheek. The hoax, as reported in *Time,* mentions a spider named Sara Bernhardt and another named Emile Zola. The above note by omitting these and other details seems to have been pitched lower for its presumably less credulous entomological readers.

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BIOLOGICAL ABSTRACTS: A CORRECTION

THE chairman of the Periodicals Committee of the American Library Association has called our attention to an error in the statement appearing in last week's SCIENCE. The New York meeting referred to had only *representatives* of various groups present, and one of the constructive proposals made was covered by the first paragraph under "Financing Agreement." It is unfortunate that the statement reads that "it was agreed," when it should have been stated that "it was proposed," etc. The committee chairman writes as follows: "That not even our committee would have the right to agree that librarians would arrange a subsidy for *Biological Abstracts* from their institutions," but that "the chairman of the American Library Association Committee on Periodicals is very eager to come out in support of *Biological Abstracts* if the principle can be established that it is the duty first of the biological organizations and biologists to support financially their own abstracting journals."

THE COMMITTEE ON ARRANGEMENTS
FOR BIOLOGICAL ABSTRACTS

QUOTATIONS

THE PILGRIM TRUST LECTURES

AN informal discussion between the officers of the society and an officer of the National Academy of Washington has led to a very happy result. It was proposed that in alternate years the society should invite and entertain a distinguished lecturer from the United States, and the academy should arrange the converse proceeding. The Pilgrim Trust was consulted on the question of providing the money required for the scheme, and most generously offered a sum of 1,500 guineas, which in the opinion of the trust should provide for suitable honoraria to be paid to the lecturers in six successive years. An exchange of communications between the academy and the society has resulted in the completion of the necessary arrangements, and the first Pilgrim Trust Lecture will, it is expected, be given in London in the coming summer.

Fellows will, I am sure, feel that no more agreeable way of emphasizing the cordial relations between American and British science could have been devised. Although modern communications are so rapid and complete and views spread so quickly, there is a personal character in the research of each man who breaks into a new field, and this interesting and important character can only be communicated by the man himself. In my opinion these lectures should not be mere summaries of past work, nor general discussions of scientific advance. It might be their special feature that they should transfer from one side of the Atlantic to the other new ideas which had already begun to be fruitful and promised wide expansion in the future. Such lectures would associate workers in a common task, and encourage correspondence and the formation of friendships. The choice of lecturers would not be determined on the same plan as the choice for the awards of medals or other distinctions, but would rather bring into prominence the most important lines of advance of the day. The progress of science would be the object of the Pilgrim Trust Lecture, and not the honoring of scientists.

The provision of funds for six years is sufficient to make trial of the plan. If it is successful, as we may be sure it will be, we hope that means for its continuance will be forthcoming.

I am tempted to further hopes. It may be that the universal wish to promote peaceful relations between the nations of the world may find some who are willing to follow the example of the Pilgrim Trust. Of all the enterprises of mankind the acquisition of Natural Knowledge pays least attention to the divisions of men. We have national industries, national trade, national literature, national art, national characteristics, even national religion, but there is only one nature for us to know. One could wish that the seasonal interchange of men to show to other nations what new illumination was dawning in this or that subject of enquiry could be firmly established and honored by the emphatic