has been appointed assistant professor of botany in Washington University.

IN the department of geology at the University of Pittsburgh the following changes are announced: Professor Henry Leighton has been appointed acting head of the department; Dr. Ransom E. Somers, formerly head of the department, who has joined the staff of the Gulf Companies, retains a lectureship; Dr. Kenneth C. Heald, staff geologist of the Gulf Companies, has been appointed lecturer; Mr. R. E. Sherrill, of Cornell University, has been appointed instructor.

APPOINTMENTS made in the department of geology and geography at the University of Tennessee this year are as follows: Julia M. Shipman, who received her doctorate at Clark University in June, instructor in geography; Berlin C. Moneymaker, B.S. (Tenn.), teaching fellow in geology; A. H. Senter, assistant.

DR. E. B. C. MAYRS has been appointed to the chair of pharmacology and therapeutics at Queen's University, Belfast.

M. MOOG has been appointed professor of chemistry and toxicology in the University of Toulouse.

DISCUSSION AND CORRESPONDENCE

AN EXTINCT HOT SPRING BASIN IN WESTERN UTAH

WHITE VALLEY, known locally as Tule Valley, western Utah, lies nearly within the confines of northern Millard County. It is a typical desert valley of 4,500 feet elevation, with playa center and Lake Bonneville shore-lines. The length north and south is about thirty-six miles and the measure of its east and west extent is twelve miles. The valley is bounded on the east by the mile-high House Range of Cambrian rocks, dipping gently eastward, and the western limit is the Confusion Range, low by comparison, whose structure and stratigraphy are little known. A recent reconnaissance by the writers shows that the Confusion Range consists of Paleozoic sediments with strong westerly dip.

The main wagon trail to Nevada in this part of Utah crosses Tule Valley west-northwesterly from Marjum Pass in the House Range to Cowboy Pass in the Confusion Range. Several prominent structural ridges occur in the valley mainly south of this road near the gentle eastern slope of the Confusion Range, one being at the intersection of the meridian of one hundred thirteen degrees thirty minutes west longitude and the parallel of thirty-nine degrees fifteen minutes north latitude. A hasty examination of the limestone here suggested to Hayes its lithologic similarity to the Cambrian of the House Range described by Walcott.[1]

Davis[2] has shown that the House Range is bounded on the west by a great normal fault. Accordingly, Tule Valley appears to be a graben, although direct proof of the presence of a westward bounding fault would be difficult to find, owing to the fan-bayed condition of the Confusion Range.

About three fourths of a mile north of the above-mentioned ridge and north of the road there occur in a direct north and south line three separate structural masses of limestone with northwesterly and westerly dips, each one several acres in extent, and about one half mile equidistant from one another. They rise about sixty-five feet above the desert floor and are isolated by the sediments of former Lake Bonneville.

The top of the southern hill is covered with fifty or more small cones of calcareous material, whose heights vary from three to seven and eight feet. The orifices have collapsed. The material around the slopes of the cones resembles the hardened mud in the geyser basins of the Yellowstone Park. Some fine large sinter cones, showing dome structure, were found on the central hill. The northern knoll has no distinct cones, but is covered with sinter. Davis[3] may have visited this northern hill or a similar one twenty-four years ago.

From the above it would seem that we have here in western Millard County a basin of hot springs of relatively recent geologic age, judging by the good state of preservation of many of the cones. Faults undoubtedly occur, as the strike of the limestone of these low hills does not coincide with their linear extent, the same being true of the larger limestone ridge south of the road. Two miles west evidence of hot springs again appears at the base of another limestone ridge and the observer can detect scores if not hundreds of similar deposits over the valley as far as the eye can reach. The writers suggest that some of the white material carried by the wind in this part of the playa owes its origin to calcareous sinter. An investigation of the region to the north might repay the effort, as the topographic map[4] shows several isolated knobs in straight alignment about eight miles north of the northernmost of the knolls above described.

[1] Walcott, C. D., "Cambrian Geology and Paleontology," No. 5. "Cambrian Sections of the Cordilleran Area," Smithsonian Misc. Coll., Vol. 53, 1908, pp. 173–185.

[2] Davis, W. M., "The Wasatch, Canyon and House Ranges, Utah," Mus. Comp. Zool., Bull., Vol. 49, Geol. Ser., Vol. 8, No. 2, 1905, pp. 46–49.

[3] Davis, W. M., *op. cit.*, pp. 36–37.

[4] U. S. Geol. Surv., Fish Springs Quadrangle, Utah. Scale, 1/250,000.

About thirty miles north-northwest of the town of Delta, Millard County, near the Juab-Millard County line, there are several hot springs still flowing and forming bodies of tufaceous material like those found in Tule Valley. These active springs are at the edge of a recent flow of basaltic lava which is several square miles in area and varies in thickness from twenty to forty feet at its edge to perhaps three or four hundred feet near the cone from which it issued. It seems probable that these springs, as well as the springs in Tule Valley, are connected genetically with the igneous activity of which there are such abundant evidences in this part of the state.

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THE EFFECT OF ETHYLENE UPON THE VITAMIN B CONTENT OF CELERY

THERE appeared in SCIENCE for September 30, 1927, an article entitled "Artificially Ripened Fruit" in which it was questioned whether the employment of ethylene gas to speed up the ripening process in fruits and vegetables might not result in a reduction in their food value. The following excerpt will refresh the reader's memory and express the problem:

> The food value of the tomato, ripened by the application of ethylene gas rather than through natural agencies, is under question by the American Medical Association. During the last three or four years the use of ethylene gas to ripen fruits and vegetables . . . has increased by leaps and bounds. . . . The American Medical Association points out that while this development is of vast importance commercially, the health phases of the question have as yet received little attention. Certain fruits and vegetables are recommended by physicians largely because of their vitamin content; whether or not this has been altered by ethylene has not been determined.

The results of recent experiments indicate that ethylene used in blanching celery may exert no effect upon its vitamin B content. Young rats of the same litter were paired closely as to weight and placed upon a standard vitamin-B-free ration. Ethylene and board-blanched celery, for comparison, were fed in known quantities apart from the basal ration, and check animals from each litter were maintained.

When the differences in the percentage increases in growth of paired rats were compared by Student's method, odds of 17.8:1 were found to exist in favor of the ethylene-blanched product. The odds being insignificant, it can not be concluded that either method of blanching is superior from the standpoint of conserving food value. It does indicate, however, that the treatment, under the conditions existing in this experiment, can not be considered injurious to the vitamin B content of celery.

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TUBERIZATION OF POTATOES INCREASED BY X-RAYS

INCREASE in the number of tubers per hill was obtained by irradiating potatoes with one very light dose of X-rays before planting. Early Ohio potatoes from certified "seed" were used, and care was taken to select comparable pieces for both the controls and the experimental material. The irradiated tubers and controls were planted in alternating rows in the same plots of soil, so that all were subjected to the same environmental conditions with the exception of the X-ray treatment.

When the crop was harvested, it was found that 95 per cent. of the irradiated tubers had produced plants. Those irradiated before sprouting produced 27 per cent. more tubers per hill than did the controls. The average weight of these tubers, however, was 18 per cent. less than that of the controls. Consequently the average total weight of tubers per hill was practically the same for controls and experimental plants. There was no evidence that irradiation would result in an increased weight for the total crop.

A number of sprouted tubers were irradiated with a light dose of X-rays before planting and these also produced plants having a greater number of tubers per hill than the controls, but with a smaller weight per tuber.

A more detailed account of this investigation together with the results obtained by irradiating tomatoes is being prepared for publication in a botanical journal.

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THE ALUM QUESTION

I NOTE that the columns of SCIENCE have been opened to a discussion of the "alum" question. In view of the statements so frequently and widely made and the acrimonious disputings that have marked the discussion—suggesting the "war of the experts" so often seen in criminal trials—I would like to call attention to a serious neglect of correct terminology. In a recent letter in SCIENCE several statements are made in which "alum" is put for "aluminum." Thus, it is said on page 162 (August 17) that the chemists of the Department of Agriculture have found the quantities of alum in our agricultural food products "extremely minute." The quantities of "alum" in these foods will be represented by 0.0.

In these discussions which cover hundreds of pages and have cost in expert and lawyer fees thousands of