

They are colorless, or of a pale yellowish tint, and turn black upon immersion in alcohol, the rest of the beet remaining colorless. The spots are composed entirely of parenchyma tissue, the cells having fine delicate walls. The cells, in the specimens examined, measured .03 to .075 mm. in diameter, while the cells of the adjoining parenchyma measured .15 to .25 mm. in diameter. The measurements were taken in transverse sections of the root. No parasitic organism, either animal or vegetable, was found associated with them, and no explanation of their presence is known.

The scabs, discoloration, and water-core spots do not seem to affect the size of the beets, as they are oftener found in medium and large beets than in smaller ones. The effect of their influence on the sugar content is not known.

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PLANT ZONES OF ARIZONA. By D. T. McDOUGAL.

[ABSTRACT.]

The author, while collecting plants in Arizona during May to October, 1891, for the Botanical Division of the U. S. Department of Agriculture, made a series of observations resulting in additional data on a biological survey of the San Francisco Mountains made by Dr. C. H. Merriam in the previous year.

The feasibility of the correlation of the life forms of this region into the Alpine, Timberline, Hudsonian, Canadian, Pine, Piñon and Desert Zones was recognized. Detailed notes of the occurrence of plants peculiar to each zone were made, and the bounding lines of each were carried southward through the Mogollon, Graham and Chiricahua mountains, and over the edge of the Colorado Plateau into the Verdi Touti, Salt and Gila basins to the Mexican boundary.

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RELATION OF AVAILABLE ENZYME IN THE SEED TO GROWTH OF THE PLANT. By J. C. ARTHUR.

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THE POTATO TUBER AS A MEANS OF TRANSMITTING ENERGY. By J. C. ARTHUR