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No. 72. American Wines at the Paris Exposition of 1900: Their Composition and Character. By H. W. Wiley, with a Monograph on the Manufacture of Wines in California, by Henry Lachman, of San Francisco, Cal. 1903. Pp. 40, pls. 2. Price 5 cents.

No. 73. Proceedings of the Nineteenth Annual Convention of the Association of Official Agricultural Chemists, held at Washington, D. C., October 2, 3, and 4, 1902. Edited by H. W. Wiley. 1903. Pp. 187, frontispiece, figs. 5. Price 10 cents.

No. 74. The Influence of Soil and Climate upon the Composition of the Sugar Beet. By H. W. Wiley. 1903. Pp. 42, charts 3. Price 5 cents.

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Sirup. By H. W. Wiley. I. Fertilizer Experiments on Sugar Cane, Conducted
by W. B. Roddenbery, Cairo, Ga. II. Reports of Special Agents on SugarCane Culture. Introduction by G. L. Spencer. 1903. Pp. 40. Price 10 cents.
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State laws governing the composition and sale of insecticides. By J. K.
Haywood. 1903. Pp. 63. Price 5 cents.

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Obtained in the Road Material Laboratory. By Logan Waller Page, Chief Road Material Laboratory, with the cooperation of Allerton S. Cushman and in collaboration with the Office of Public Road Inquiries. In press.

CIRCULARS.

No. 1. The Manufacture of Sorghum Sirup. Edited by G. L. Spencer. 1894. Pp. 3.

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No. 3. Revised. Proposed Reforms in Fertilizer Inspection Laws. (Out of print.)

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No. 6. Composition Chimique du Maïs et de ses Produits. Par M. H. W.
Wiley. 1900. Pp. 13.

No. 7. Amended Methods Adopted at the Eighteenth Annual Convention of the Official Agricultural Chemists. Edited by Wm. H. Krug, Referee on Foods and Feeding Stuffs. 1901. Pp. 3.

No. 8. Official Methods for Analysis of Tanning Materials. Adopted by the Eighteenth Convention of the Association of Official Agricultural Chemists. Edited by H. W. Wiley. 1901. Pp. 2.

No. 8. Revised. Official Methods for Analysis of Tanning Materials. Adopted by the Nineteenth Convention of the Association of Official Agricultural Chemists. Edited by H. W. Wiley. 1902. Pp. 2.

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FARMERS' BULLETINS.

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No. 52. The Sugar Beet: Culture, Seed Development, Manufacture, and Statistics. By H. W. Wiley. 1897. Pp. 48, figs. 24.

No. 52. Revised. 1899.

No. 52. Second revised edition. By G. L. Spencer. 1901.

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No. 146. Insecticides and Fungicides: Chemical Composition and Effectiveness of Certain Preparations. By J. K. Haywood. 1902. Pp. 16.

REPRINTS FROM YEARBOOK.

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REPRINTS FROM BULLETINS.

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Memorial Exercises in Honor of the Late John A. Myers. Edited by II. W. Wiley. From Bulletin No. 67. Pp. 65–74.

REPORTS OF SUGAR-BEET INVESTIGATIONS.

Experiments with Sugar Beets in 1898. By H. W. Wiley. Published as a part of "Progress of the Beet-Sugar Industry in the United States in 1898." Pp. 131–155.

Experiments with Sugar Beets in 1899. By H. W. Wiley. Published as a part of "Progress of the Beet-Sugar Industry in the United States in 1899." Pp. 135–193.

Experiments with Sugar Beets in 1900. By H. W. Wiley. Published as a part of "Progress of the Beet-Sugar Industry in the United States in 1900." Pp. 178.

Analyses of Sugar Beets Grown in Various States. By H. W. Wiley. Published as a part of a Special Report on the Beet-sugar Industry in the United States. 1900. Pp. 135–141.

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