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HILGARDIA

A Journal of Agricultural Science

PUBLISHED BY THE

California Agricultural Experiment Station

VOLUME I

MAY, 1925 TO JUNE, 1926

With 11 Plates and 143 Text Figures

UNIVERSITY OF CALIFORNIA PRINTING OFFICE
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1926

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CONTENTS

	PAGE
No. 1, MAY, 1925	
MERRILL, E. D. Explanatory note.....	1
TUFTS, W. P. and MORROW, E. B. Fruit-bud differentiation in deciduous fruits. (Eleven plates.)	3
No. 2, MAY, 1925	
GOSS, HAROLD. The antiscorbutic value of commercially concentrated orange juice. (Fourteen text figures.).....	15
No. 3, MAY, 1925	
KNIGHT, HUGH. Factors affecting efficiency in fumigation with hydrocyanic acid. (Ten text figures.).....	35
No. 4, MAY, 1925	
TURNBOW, G. D. and TITUS, C. M. An accurate method of calculating ice cream mixes.....	57
No. 5, JUNE, 1925	
PROEBSTING, E. L. The relation of stored food to cambial activity in the apple. (Seven text figures.).....	81
No. 6, JUNE, 1925	
WINKLER, A. J. and JACOB, H. E. The utilization of sulfur dioxide in the marketing of grapes. (Four text figures.).....	107
No. 7, JUNE, 1925	
WEIR, WALTER W. Ground water fluctuations at Kearney Park, California. (Five text figures.).....	133
No. 8, OCTOBER, 1925	
BEACH, J. R. The effect of feeding cultures of <i>Bacillus acidophilus</i> , lactose, dry skim-milk or whole milk on the hydrogen ion concentration of the contents of the ceca of chickens	145
BEACH, J. R. and DAVIS, D. E. The influence of feeding lacrose or dry skim-milk on artificial infection of chicks with <i>Eimeria avium</i>	167
No. 9, NOVEMBER, 1925	
ROBBINS, W. W. and JONES, H. A. Secondary sex characters in <i>Asparagus officinalis</i> L. (Six text figures.).....	183

	PAGE
No. 10, NOVEMBER, 1925	
HART, GEORGE H. and WOODS, GLADYS M. The location and longevity in calves of <i>Bacterium abortum</i> ingested in milk and its effect on the agglutination titre of their blood.....	203
No. 11, NOVEMBER, 1925	
HOAGLAND, D. R. Physiological aspects of soil solution investigations.....	227
No. 12, NOVEMBER, 1925	
ROSA, J. T. Sex expression in spinach. (Six text figures.).....	259
No. 13, DECEMBER, 1925	
CRUICK, W. V., FONG, W. Y., and LIU, T. C. The rôle of acidity in vegetable canning. (Two text figures.).....	275
No. 14, APRIL, 1926	
HALMA, F. F. Factors governing the initiation of sprout growth in citrus shoots. (Eleven text figures.)	295
No. 15, APRIL, 1926	
SHAW, CHARLES F. The effect of a paper mulch on soil temperature. (Sixteen text figures.)	341
No. 16, MAY, 1926	
FROST, HOWARD B. Polyembryony, heterozygosis, and chimeras in citrus. (Seven text figures.).....	365
No. 17, MAY, 1926	
SMITH, RALPH H. The efficacy of lead arsenate in controlling the codling moth. (Nineteen text figures.).....	403
No. 18, MAY, 1926	
COSBY, STANLEY W. Utilization of the soils in the Gilroy region. (Eleven text figures.)	455
No. 19, JUNE, 1926	
HENDRICKSON, ARTHUR H. Certain water relations of the genus <i>Prunus</i> . (Nineteen text figures.).....	479
No. 20, JUNE, 1926	
WINKLER, A. J. Some responses of <i>Vitis vinifera</i> to pruning. (Six text figures.)	525

HILGARDIA

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CONTENTS

	PAGE
Explanatory note - - - - -	1
E. D. MERRILL	
Fruit-bud differentiation in deciduous fruits -	3
W. P. TUFTS AND E. B. MORROW	

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HILGARDIA

EXPLANATORY NOTE

With the completion of number twenty of the *Technical Papers* of this institution, the publication of which was commenced in January, 1923, this title has been abandoned and in the future the general type of articles formerly issued in the *Technical Papers* will be published under the title HILGARDIA. The numbers will be paged consecutively and as a volume of reasonable length is completed, a title page, table of contents, and general index will be prepared for each volume.

The chief reason for this change is the cumbersome title of the technical series, it being necessary to quote in full or by abbreviation of the major words the full title, which originally was: "University of California Publications. The Agricultural Experiment Station of the College of Agriculture, Technical Paper No. —." Due to policies adopted by the University Press it became necessary to change this title and the last few numbers were issued under the equally cumbersome title: "University of California, College of Agriculture, Agricultural Experiment Station, Berkeley, California, Technical Paper No. —." The advantages of a title consisting of a single word are manifest.

The title HILGARDIA has been selected to commemorate the services of Doctor Eugene Woldemar Hilgard (1833-1916), who organized the Agricultural Department of the University of California, and who founded the Agricultural Experiment Station in 1875.

President Benjamin Ide Wheeler at the Memorial Services held in honor of Doctor Hilgard, January 30, 1916, stated regarding his services:*

"Eugene Woldemar Hilgard has kept the faith. He has lived among his fellow men in active respect for the principles of order and authority. He has built his life into one of the most institutional forms of human society. He has been a

* Addresses at memorial services in honor of Dr. E. W. Hilgard, University of California, January 30, 1916. Univ. Calif. Chronicle 18:159-190. 1916. Reprinted by the University of California, Agricultural Experiment Station, under the title: In Memoriam, Eugene Woldemar Hilgard, 1-50. 1916.

gentleman. He has been true to the best methods and standards of the science in whose fields he has toiled. He has been loyal to the best traditions and standards of academic life.”

Doctor E. W. Allen,* Chief of the Office of Experiment Stations, United States Department of Agriculture, in speaking of Doctor Hilgard’s work states :

“The death of Dr. E. W. Hilgard, of California, closes a notable career of service to agriculture, both in length and in accomplishment. It marks the passing of the last of the earlier group of pioneers in agricultural education and research. The work he did dealt with the very fundamentals of agricultural advancement, at a period when men saw the needs less clearly and few were qualified to carry the work forward. Gauged by the time and opportunity, it will remain a great work. Who shall attempt to measure the result of it, or the influence of the high standards he set?”

It seems fitting and appropriate that the name HILGARDIA should be selected as a title of a serial publication of the California Agricultural Experiment Station in which is to be presented the results obtained by members of the staff from painstaking fundamental research on problems related to agriculture. This was the type of agricultural research for which Doctor Hilgard stood. Prominent biologists and patrons of science have had scientific periodicals named in their honor in such title as Addisonia, Bonplandia, Broteria, Candollea, Cassinia, Grevillea, Linnaea, Hedwigia, Malpighia, Muhlenbergia, Teysmannia, Torreya, Treubia, and Webbia. No valid reason exists why such an honor should not be extended to an agriculturist noted for his fundamental work, although the selection of such a title is an innovation in Agricultural Experiment Station literature. It is hoped that the articles that will appear in HILGARDIA, which will be of the same general type as those formerly issued in the series known as *Technical Papers*, will measure up to the high standards Doctor Hilgard set.

E. D. MERRILL,

Dean, College of Agriculture, and
Director of the Agricultural Experiment Station,
Berkeley, California.

April 1, 1925.

* Editorial in *Experiment Station Record* 34:301. 1916. In *Memorian*, Eugene Woldemar Hilgard, 35. 1916.

The titles of the Technical Papers of the California Agricultural Experiment Station, Nos. 1 to 20, which HILGARDIA replaces, and copies of which may be had on application to the Publication Secretary, Agricultural Experiment Station, Berkeley, are as follows:

1. The Removal of Sodium Carbonate from Soils, by Walter P. Kelley and Edward E. Thomas. January, 1923.
3. The Formation of Sodium Carbonate in Soils, by Arthur B. Cummins and Walter P. Kelley. March, 1923.
4. Effect of Sodium Chlorid and Calcium Chlorid upon the Growth and Composition of Young Orange Trees, by H. S. Reed and A. R. C. Haas. April, 1923.
5. Citrus Blast and Black Pit, by H. S. Fawcett, W. T. Horne, and A. F. Camp. May, 1923.
6. A Study of Deciduous Fruit Tree Rootstocks with Special Reference to Their Identification, by Myer J. Heppner. June, 1923.
7. A Study of the Darkening of Apple Tissue, by E. L. Overholser and W. V. Cruess. June, 1923.
8. Effect of Salts on the Intake of Inorganic Elements and on the Buffer System of the Plant, by D. R. Hoagland and J. C. Martin. July, 1923.
9. Experiments on the Reclamation of Alkali Soils by Leaching with Water and Gypsum, by P. L. Hibbard. August, 1923.
10. The Seasonal Variation of the Soil Moisture in a Walnut Grove in Relation to Hygroscopic Coefficient, by L. D. Batchelor and H. S. Reed. September, 1923.
11. Studies on the Effects of Sodium, Potassium, and Calcium on Young Orange Trees, by H. S. Reed and A. R. C. Haas. October, 1923.
12. The Effect of the Plant on the Reaction of the Culture Solution, by D. R. Hoagland. November, 1923.
13. Some Mutual Effects on Soil and Plant Induced by Added Solutes, by John S. Burd and J. C. Martin. December, 1923.
14. The Respiration of Potato Tubers in Relation to the Occurrence of Black-heart, by J. P. Bennett and E. T. Bartholomew. January, 1924.
15. Replaceable Bases in Soils, by Walter P. Kelley and S. Melvin Brown. February, 1924.
16. The Moisture Equivalent as Influenced by the Amount of Soil Used in its Determination, by F. J. Veihmeyer, O. W. Israelson and J. P. Conrad. September, 1924.
17. Nutrient and Toxic Effects of Certain Ions on Citrus and Walnut Trees with Especial Reference to the Concentration and Ph of the Medium, by H. S. Reed and A. R. C. Haas. October, 1924.
18. Factors Influencing the Rate of Germination of Seed of *Asparagus officinalis*, by H. A. Borthwick. March, 1925.
19. The Relation of the Subcutaneous Administration of Living Bacterium abortum to the Immunity and Carrier Problem of Bovine Infectious Abortion, by George H. Hart and Jacob Traum. April, 1925.
20. A Study of the Conductive Tissues in Shoots of the Bartlett Pear and the Relationship of Food Movement to Dominance of the Apical Buds, by Frank E. Gardner. April, 1925.