DR. WILLIAM S. MARSHALL, professor emeritus of entomology of the University of Wisconsin, has been appointed research associate in entomology at the Milwaukee Public Museum, and Dr. Lloyd H. Shinners, of the Milwaukee County Park System, has been appointed research associate in botany.

DR. GEORGE B. CRESSEY, chairman of the department of geology and geography of Syracuse University, representative in China of the U. S. Department of State, who has been in China since September as a visiting professor, will return to the United States in the near future.

DR. DONALD C. MACLACHLAN, associate professor of geology at Wayne University, will continue this summer his survey of ancient lake beaches in the Saginaw Valley to determine the nature and location of areas believed to contain important oil and gas pools. The survey was initiated a year ago as part of a project conducted by the Geological Survey Division of the Michigan Department of Conservation to discover undeveloped mineral deposits throughout the state.

THE annual science lecture of the Santa Barbara State College Club of the Society of Sigma Xi was delivered on the evening of June 3 by Dr. Francis Marsh Baldwin, chairman of the division of biology of the University of Southern California, president of the Southern California Chapter of the society. The title of the lecture was "How Burn the Fires of Life."

THE thirty-ninth annual meeting of the American Dairy Science Association was held on June 20, 21 and 22 at the Ohio State University under the presidency of Dr. A. C. Dahlberg, of the department of dairy industry of Cornell University. He is succeeded by the vice-president of the association, Dr. A. C. Ragsdale, of the University of Missouri.

THE department of pathology and bacteriology in the School of Medicine of the Louisiana State University received the gold medal, the highest award for exhibits at the meeting of the American Society of Clinical Pathologists in Chicago. The title of the exhibit was "The Pathology of Amebiasis, Malaria and Histoplasmosis."

A SCHOOL of Veterinary Medicine at Davis will be established by the University of California as soon as construction can be undertaken. On recommendation of Dean C. B. Hutchison, of the College of Agriculture, an appropriation of $500,000 has been made by the Legislature for the new school, and an additional $500,000 is expected from the post-war building funds provided by the Legislature. The department will be set up in the College of Agriculture, coordinate with the departments of agriculture, forestry and home economics. The faculty of the school will be drawn not only from the department of veterinary science, but from other departments, including the department of agriculture and the Medical School.

THE National Geographic Society has issued a ten-color wall map of Germany and its approaches. Taking in the Channel Coast of England and the coast of continental Europe from Le Havre to Copenhagen, the map reaches south to the industrial cities of northern Italy and includes nearly all Hungary and Yugoslavia as far as Belgrade.

The Times, London, states that the British Colonial Office has made arrangements for scientific research and survey work to be resumed in some of the most remote British possessions, the Dependencies of the Falkland Islands, the most important of which are the South Shetlands, South Orkneys, South Georgia and Grahamland. The research party and administrative officials have arrived, and bases have been established. The bases are fully equipped and self-contained, and the party is expected to remain in the Antarctic for a long time. The expedition is under the direction of Lieutenant-Commander J. W. S. Marr, R.N.V.R.

DISCUSSION

LIQUEFIED-GAS METHOD OF PRODUCING GERMICIDAL AEROSOLS

THE liquefied-gas method of producing insecticidal aerosols, as described by Goodhue and Sullivan,[1] Goodhue,[2] and Sullivan, Goodhue and Fales,[3] has proved very useful in the control of disease-carrying mosquitoes. It is especially well adapted to military needs in remote tropical areas, where transportation, simplicity of equipment and ease of operation are important. The product consists of a solution of pyrethrum extract and sesame oil in dichlorodifluoromethane, which is held in a pound-size handy container ready for use at any moment. The dichlorodifluoromethane acts as the solvent, furnishes the pressure for spraying and provides the energy to disperse the

[1] L. D. Goodhue and W. N. Sullivan, U. S. Patent 2,321,023, issued June 8, 1943.

[2] L. D. Goodhue, *Indust. and Engin. Chem.*, 34: 1456–9, 1942.

[3] W. N. Sullivan, L. D. Goodhue and J. H. Fales, *Jour. Econ. Ent.*, 35: 48–51, 1942.

insecticide as a colloidal suspension in air. The nontoxic and nonflammable nature of the gas is responsible for the success of this method.

Germicidal aerosols have been given considerable attention in recent years, and colloidally dispersed propylene glycol, hexylresorcinol and other compounds[4,5,6] have been found effective when applied in this form. The aerosols were produced by heat,[7] by some mechanical means such as the "Phantomyst"[8] machine developed in England or by some special atomizer.

An adaptation of the liquefied-gas method to the production of germicidal aerosols is logical. A few preliminary tests have been made to show the applicability of this method. The following solutions were tested: (1) Propylene glycol 5, ethanol 20, and dichlorodifluoromethane 75 per cent.; and (2) hexylresorcinol 0.15, olive oil 9.85, and dichlorodifluoromethane 90 per cent.

Since propylene glycol is not very soluble in dichlorodifluoromethane, a mutual solvent, such as ethanol, was necessary. In the second solution a commercial preparation consisting of 2.5 per cent. of hexylresorcinol in olive oil was used as the germicide.

A 216 cubic foot chamber was sprayed with a water suspension of nonpathogenic bacteria. After 10 minutes agar plates were exposed for 1 minute. Ten grams of the germicidal aerosol was then sprayed into the chamber and other agar plates were exposed. About 95 per cent. reduction in the bacterial growth on the plates was obtained with solution 1 and a considerable reduction with solution 2.

From these preliminary tests it would appear that this method of producing germicidal aerosols might be practical. These results are presented merely to call attention to the possibility of using a nontoxic, nonflammable liquefied gas as a self-propelling vehicle for dispersing germicidal aerosols. Since the study of germicides is outside the field of research of the Bureau of Entomology and Plant Quarantine, the writers plan no further tests of this method and hope that others will be interested in exploring its possibilities.

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[4] O. H. Robertson, E. Bigg, B. F. Miller, Z. Baker and T. T. Puck, SCIENCE, 93: 213–4, 1941.
[5] O. H. Robertson, E. Biggs, T. T. Puck, B. F. Miller and E. A. Appell, *Jour. Expt. Med.*, 75: 593, 1942.
[6] T. N. Harris and J. Stokes, *Am. Jour. Med. Sci.*, 204: 430–6, 1942.
[7] The Personnel of Naval Laboratory Research Unit No. 1, SCIENCE, 97: 208, 1943.
[8] J. V. Pulvertaft and J. W. Walker, *Jour. Hyg.* [London], 39: 696–704, 1939.

THE PREPARATION OF ISOLATED CELL NUCLEI OF RAT LIVER[1]

IN a recent volume on cytochemistry,[2] Hoerr in a chapter on liver cells (page 185) has referred several times to my work on the isolation of cell nuclei of rat liver.[3] Two of his comments in particular convey erroneous impressions.

One of the points is that Hoerr doubts the final pH of the original mixture of M/475 citric acid and liver (pages 226–227), and states that the dissociation constants of citric acid make it difficult to understand how the liver can buffer the suspension to a pH as high as 6.0–6.2. Apart from considering that the dissociation constants of the citric acid constitute only one factor in determining the final pH, the other factor being the ratio of the amount of citric acid to the amount of liver employed, it is useless to theorize about this point, since our final pH values were checked carefully on repeated preparations with the glass electrode. Of course the livers must not be allowed to stand at room temperature after removal from the animals, or glycolysis will cause a rapid accumulation of lactic acid.

Another point by Hoerr requiring comment is his statement on page 213 that "It is possible that the nuclei obtained by Dounce's method have gelled to a certain extent because of the beating they receive in the Waring blendor; nucleoproteins are probably thixotropic, and the ease with which nuclear substances may undergo gelation is evident, if the work of Chambers over many years is considered."

Usually one considers a thixotropic material as one which is in the state of a gel when quiescent but whose gel state breaks up on agitation. Aside from this, the amount of "beating" the nuclei receive while in the blendor is to a considerable extent dependent upon the total amount of suspension in the blendor. When the nuclei are first liberated by stirring 100 gm of liver with 500 cc of M/475 citric acid, a relatively small percentage is damaged, while on the other hand isolated nuclei can be torn completely to fine fragments if they are suspended in 100 cc of water or less and stirred in the blendor for sufficient time.[4] Moreover, nuclei have been prepared which one might with considerable justification call gelled nuclei,[4] and these show quite different properties from the nuclei prepared at pH 6.0–6.2.

Hoerr also makes the following statement on page

[1] From the Department of Biochemistry and Pharmacology, the University of Rochester School of Medicine and Dentistry, Rochester, N. Y.
[2] "Biological Symposia," Volume X. Edited by Jaques Cattell. The Jaques Cattell Press, Lancaster, Pa.
[3] A. L. Dounce, *Jour. Biol. Chem.*, 147: 685, 1943.
[4] A. L. Dounce, *Jour. Biol. Chem.*, 151: 221, 1943.