sents the British measure of the nautical mile, 6,080 feet rather than the American, 6,080.27 feet.

In the discussion of time, the author carefully clears up one point on which there has been considerable confusion—the precise meanings of Greenwich Mean Time, Greenwich Civil Time and Universal Time, indicating the common usage of each in the United States and Great Britain.

Ten to twenty problems are provided at the end of each chapter to illustrate the principles therein; answers are given to all in the back of the book. The four chapters making up the last quarter of the book, "The Stars," Stellar Motions," "Clusters and Nebulae" and "Telescopes," also contain a minimum of description. The material throughout the book is up to date and clearly presented. The book fills a need for a modern text in elementary mathematical astronomy.

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SOCIETIES AND MEETINGS

THE AMERICAN PHYTOPATHOLOGICAL SOCIETY

THE summer meeting of the American Phytopathological Society was held at Toledo, Ohio, on June 25 and 26. The theme of the discussions and reports was "The Role of the Plant Pathologist in the War Program." The activities of the War Emergency Committee, which was appointed at the Dallas meeting, were thoroughly discussed and suggestions for future activities were made. Considerable factual information was given in reports of available fungicides, substitute sprays and seed-treating materials and equipment priorities.

It was brought out that the depletion of the ranks of scientifically trained men constitutes a serious menace not only to present essential services to agriculture, but also jeopardizes the future because of the discontinuance of certain basic researches that are essential in furnishing a basis for intelligent action in plant disease control measures.

It was pointed out that losses from preventable diseases are still appalling. Epidemics often rage unchecked because proper control measures either are not taken at all—because they are not adequate, or because information regarding control measures had not been disseminated widely enough and at the proper time because of lack of sufficient trained personnel. One of the first and most important duties of plant pathology is prompt dissemination of information regarding the best available control measures. This responsibility can not be discharged properly under present conditions. A survey of the situation with respect to extension plant pathologists in the country indicates that very few states have an adequate extension service. Some states have no extension plant pathologist at all, and some of the most important agricultural states have a single extension plant pathologist, when two or three are needed. In only very few states can the situation with respect to extension work be considered satisfactory. Pathologists themselves are trying to do what they can by assembling and exchanging information, but the situation can not be alleviated properly until more men are made available for this very important phase of insuring the nation's supplies of essential materials from economic plants.

The following fields of research were cited as among those important to the nation's war effort: A better organized nation-wide plant disease survey service, fostered by the survey subcommittee, for effective direction of crop protection programs; work on new and improved fungicides and crop protection methods led by the fungicide subcommittee; development of disease-resistant crop varieties with coordinated, local trials under special subcommittees; research led by the seed certification and seed treatment committees on problems basic to certification or treatment of seed and planting stocks to reduce losses from seed- and plant-borne diseases; research on rotations, chemical treatment and cultural management of soils to reduce losses from soil-borne diseases; coordinated research on virus diseases of plants with entomologists helping on insect carriers; prompt investigation of newly discovered, potentially destructive plant diseases; research on diseases of new crops being grown to meet war-time shortages of oil, fibers, drugs, spices, etc.; more general study of soybean diseases; and work on effective home-made dusting, spraying and treating equipment where commercial equipment is unavailable.

It was brought out that the society's national and regional war emergency organization was well adapted for prompt exchange of research information. The necessity for adequate, coordinated plant disease survey work was repeatedly emphasized. Helpfulness of specialists in performing identifications for colleagues was commended. The *Plant Disease Reporter* was declared useful in facilitating such collaboration and for prompt dissemination of important new findings. Voluntary cooperation for adequate attack on many plant-disease problems was stressed. The tremendous national importance of plant disease eradication and control programs was said to demand their maintenance at highest efficiency during the emergency.

The War Emergency Committee consists of an executive committee, representatives of five geographical divisions, and members selected at large. Various subcommittees of the national committee have been appointed to take care of specific problems. The national committee is cooperating closely with the regional committees.

Executive Committee: J. G. Leach, University of West Virginia; Richard P. White, 636 Southern Building, Washington, D. C.; E. C. Stakman, *chairman,* University Farm, St. Paul, Minn.

The general objectives formulated by the committee are as follows:

(1) To provide for more adequate plant disease quarantines, foreign and domestic, to guard against introduction and distribution of new and destructive disease organisms.

(2) To intensify plant disease surveys to detect as soon as possible new disease introductions and to show where control efforts should be concentrated.

(3) To summarize and codify known control measures and make them available to extension men and growers in easily comprehensible form, and to encourage more adequate extension work in plant pathology.

(4) To attempt to get necessary priorities on chemicals and machinery used in controlling diseases.

(5) To concentrate effort on necessary experimentation and research designed to improve the effectiveness and economy of plant-disease control measures, by cultural practices, chemical treatments and resistant varieties.

(6) To summarize information regarding preservation of food and other products in storage and transit, make it available and provide for necessary studies to meet new situations.

(7) To scrutinize present basic and long-time research projects with a view to procuring support for those that are designed to yield facts and principles on which important procedures are based and those that could not be interrupted without serious loss of materials, accumulated results and experience.

(8) To maintain adequate personnel.

SPECIAL ARTICLES

THE EFFECTS OF JEJUNAL TRANSPLANTS ON GASTRIC ACIDITY[1,2]

ALTHOUGH a number of investigators have transplanted segments of jejunum into the wall of the stomach of animals for the purpose of observing the fate of such grafts, we are not aware of any published studies of the effects of such a procedure on gastric secretion. We wish therefore to report some observations on the free and combined acidity of the gastric secretion and the pH of various parts of the mucosa of the stomach before and after implantation of a pedicle graft of the jejunal wall.

Method: Mongrel dogs of both sexes were used for the experiments, which consisted in the resection under nembutal anesthesia of an area of the anterior wall of the stomach about 4 × 6 cm in size, midway between the cardia and pylorus, and the implantation into the resulting defect of a pedicle graft of upper jejunum with its circulation intact. This was obtained by isolating a segment 6 cm in length which was then opened along its anti-mesenteric border and fastened in place by means of interrupted sutures of silk. The continuity of the jejunum was restored by end-to-end suture.

The gastric secretion of each animal had been examined under nembutal anesthesia after 24 hours' fast at least once before beginning the experiments. At the time of operation direct measurements of the pH of the surface of the mucosa at seven definite areas in the stomach were made by inserting electrodes of the Beckman pH Meter through the defect in the anterior wall just prior to the implantation of the jejunal graft.

Subsequent gastric analyses were carried out in a similar fashion and pH determinations were made from 45 minutes to four months after the implantations, inserting the instrument through a gastrotomy. In two instances the transplant was then resected and further observations carried out.

Control animals were subjected to operations of similar length, as well as to resection of an area of the anterior wall of the stomach, after which the defect was closed without transplant.

The effects of this procedure on gastric secretion are most interesting, a striking feature being a reversal of the normal response to histamine in four of the five

TABLE I

pH OF GASTRIC MUCOSA BEFORE AND AFTER JEJUNAL TRANSPLANT
AVERAGE FIGURES FROM FIVE ANIMALS

	Before transplant			After transplant		
	Fasting	10 min. after histamine	20 min. after histamine	Fasting	10 min. after histamine	20 min. after histamine
Pylorus	4.6	2.3	2.3	5.2	5.4	6.0
Anterior antrum	5.0	3.7	2.7	5.7	6.1	6.1
Posterior antrum	4.3	3.2	2.7	5.7	6.5	5.9
Lesser curvature	4.8	1.9	1.4	5.2	7.0	5.9
Greater curvature	5.1	2.8	1.4	4.2	6.3	5.8
Fundus	5.2	3.5	1.5	3.6	6.3	5.8
Cardia	4.4	2.0	1.6	3.0	4.0	5.0
Composite averages	4.8	2.6	1.9	4.9	5.9	6.0

[1] From the Department of Surgery of the New York Hospital and Cornell University Medical College, New York.

[2] This study was carried out under a grant from the John and Mary R. Markle Foundation.