

techniques of polling, are not likely to be fooled by "planted" polls with loaded questions, biased sampling or intimidated interviewees. They will beware also of the results of street-corner, amateur sampling of public opinions or judgments based only on the expressions of those who speak English or who volunteer to speak for the whole population.

One danger in thinking about the people of a foreign country, especially one so far away and culturally different from our own nation, is that of assuming that all the people are alike. This is easily

avoided by those who know the Japanese, and those who know psychology.

In Japan, as in any large country, the individual citizens include the good and the bad, the educated and the ignorant, the stupid and the intelligent. They have been regimented for many years, it is true, but our hope of eventual re-orientation and successful occupation lies in a recognition that individuals differ. Some of the Japanese will always be our enemies no matter how much "education" they receive. Others, perhaps, have always been our friends.

Science News Letter, October 13, 1945



Two Acres Per Head

► JAPAN is a nation of tiny, hand-worked farms. We read, with the kind of pity that verges on contempt, that their average size is less than three acres each, and that each one has to support the family that tills it, pay an extortionate rent, and send a surplus of rice or millet to supply urban areas, or perhaps raise mulberry leaves to feed to the silkworms. We think of the broader acres of the American farmer, and tend to feel a bit smug about our better fortune.

But have we the right to feel this way? Has anyone on earth the right to feel spacious and uncrowded, when it comes to food-producing land? Ward Shepard, in his new book, *Food or Famine*, brings us up short with some decidedly arresting facts. According to an estimate of the Soil Conservation Service, he says, there are approximately four billion acres of cultivable and pasture lands on this planet. The world's population is about two billion persons. That divides out to an average of two acres of food-producing land per person. Here in our own country, there are rather less than two acres of plowland per person, not taking pastures and rangelands into account. So we aren't too far a leap ahead of the Japanese peasant: the precariousness of his source of living is simply dramatized by the fact that he is actually domiciled on his scrap of soil.

Moreover, Mr. Shepard warns, we are wasting our patrimony at an alarming rate, despite all our fine talk about conservation during the past two or three decades. Soil erosion, from over-cultivated farms, over-grazed rangelands and over-cut forests, has rendered about a fourth of our once useable soil areas



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practically valueless and is inflicting progressively increasing damage on about half of what is left. To make money as fast as possible, we Americans are quite literally selling our farms down the river.

Nevertheless, Mr. Shepard is no mere Jeremiah, pessimistically prophesying unavoidable doom. There is yet time, he declares, and socially effective techniques for large-scale salvation of the land have already been invented. The two great nations with the largest areas of temperate-zone land, the U. S. A. and the U. S. S. R., approach the problem in different ways. On Russian collective farms, agronomic experts decide what needs to be done, and the farmers do as they are told. Americans farmers, with a long tradition of rather stiff-necked individualism, certainly would not be so biddable. With us, the democratically organized soil conservation district, hiring its professionally trained advisers, accomplishes the same end. If it becomes necessary to apply coercion to recalcitrant individuals, the moral as well as material weight of a majority vote is behind its actions. So far, this mechanism has been applied only to farm lands, but there is no reason why some modification of it should not be used on the even more difficult management problems of private forest lands.

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Graphite, a variety of carbon used as a lubricant, and in so-called "lead" pencils, crucibles and many industrial products, is found in most countries of the world, but much of it is not usable because of poor quality.

The *lima bean*, considered by many as the aristocrat of the bean family and the most delicious of all garden vegetables, is of South American origin but whether from Brazil or Peru is a matter of dispute.

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Books of the Week

ADVANCING FRONTS IN CHEMISTRY. Vol. 1, High Polymers—Sumner B. Twiss—*Reinhold*, 196 p., illus., \$4. A series of lectures sponsored by Wayne University under the direction of Neil E. Gordon, Chairman, Dept. of Chemistry.

THE ART OF CALCULATION—Harry Sticker—*Essential Books*, 256 p., \$2. Basic method of arithmetical calculation used by exports.

FOOD OR FAMINE, The Challenge of Erosion—Ward Shepard—*Macmillan*, 225 p., illus., \$3.

INTRODUCTION TO BIOLOGICAL LATIN AND GREEK—P. H. Yancey—Brooks, F. G., 24 p., paper, 20 cents. 2nd ed., revised. Bios Classroom series, no. 1.

MAN, MORALS AND SOCIETY: A Psycho-analytical Study—J. C. Flugel—*Int. Univ. Press*, 328 p., \$4.50.

ORIGINS FROM MYTHOLOGY OF BIOLOGICAL NAMES AND TERMS—P. H. Yancey—Brooks, F. G., 47 p., paper, 20 cents. Bios

Classroom series, no. 5.

REPTILES OF THE PACIFIC WORLD—Arthur Loveridge—*Macmillan*, 259 p., illus., \$3. The Pacific World series.

SCIENCE AND THE PLANNED STATE—John R. Baker—*Macmillan*, 120 p., \$1.75.

SIXTY MILLION JOBS—Henry A. Wallace—Simon and Schuster, 83 p., paper, illus., \$1. Cloth ed., \$2, published jointly by Reynal and Hitchcock and Simon and Schuster.

THE TECHNOLOGY OF PLASTICS AND RESINS—J. Philip Mason and Joseph F. Manning—*Van Nostrand*, 493 p., illus., \$6.50. Based upon a college course in the Chemistry of Plastics and Resins at Boston University.

WILLIS RODNEY WHITNEY: Pioneer of Industrial Research—John T. Broderick—*Fort Orange Press*, 324 p., illus., \$3. Foreword by Dr. Karl T. Compton.

Science News Letter, October 13, 1945

THE CHEMICAL ELEMENTS

Compiled by
PHILIP S. CHEN, Ph. D.
PROFESSOR OF CHEMISTRY, ATLANTIC UNION COLLEGE

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Crystalline form and color
Specific gravity or density
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Specific heat

Heats of vaporization and fusion
Heat conductivity
Electrical reactivity
Coefficient of thermal expansion
Occurrence, preparation, and uses
The radioactive elements
Activity series
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