nant group shows a statistically significant difference when the p value is calculated by the method of Fischer (*11*). This difference applies both to the absolute loss, and in terms of percentage of original phosphatase activity. In the 13 cases of cancer in which there was a low initial serum phosphatase (Table 1), a comparison of the Kase-Mg mean of this group with that of the noncancerous group also showed a statistically significant difference. Nine of the 13 patients with low initial phosphatase activity had malignancies of the gastrointestinal tract.

In 25 cases, no definite relationship between loss of phosphatase activity and changes in pH values was apparent under our experimental conditions. The addition of serum or resin treated serum to the buffered substrate employed resulted in no change in the pH of the substrate.

When serum was incubated with substrate for 24 hr, the dephosphorylation was 6-fold greater than that obtained in a 2-hr period, while that of the deionized serum was only twice as great as found in the 2-hr period. It is evident that the rate and amount of enzyme activity is definitely affected by the cation removal.

It is generally accepted that all phosphatases and phosphate-transferring enzymes require a metal for activation. However, as stated by Lehninger (*12*), an activating or inhibiting effect produced by a metal *in vitro* does not necessarily define a physiological function of the metal in question.

In order to determine the effect of adding the ions removed by the cation exchanger, K^+, Ca^{++}, and Mg^{++} were added, as the chloride, to the buffered substrate in the same concentration found in serum. Only the addition of Mg^{++} had any activating effect upon the phosphatase activity of the resin treated serum, causing a resurgence which approximated that of the original phosphatase under consideration. It appears that removal of Mg^{++} from serum has some inhibitory effect on the phosphatase activity. The Mg^{++} removed from the serum of both the normal and cancerous groups is of the same order of magnitude; therefore, it seems probable that alkaline phosphatase, as it exists in serum, consists of at least one magnesium activated fraction. This fraction designated as Kase-Mg is the one found to be statistically significant in the cancer group. Recently Gomori (*13*) has shown that alkaline phosphatases of the intestine consist of three fractions; two of these fractions were rapidly inactivated while acting on the substrate in the absence of Mg^{++}, whereas all three have different and specific rates of activation by Mg^{++}.

When serum is passed through a cation exchange resin there is a dimunition of alkaline phosphatase of both nonmalignant and cancerous individuals. The serum from patients with a malignant tumor seems to show greater loss of activity. The fraction involved is a magnesium activated one.

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Comments and Communications

Aphids Carried by Wind Currents

THE footnote on page 714 of SCIENCE, 116 (1952), regarding the possibility of aphids being carried by wind currents from the west to Puerto Rico, apparently requires an answer.

This is not a matter of opinion, but rather of fact, and my original statement as to wind direction was based on close to 30 years' residence in Puerto Rico, most of the time at Río Piedras. The most conspicuous industrial landmark there is Central Vannina southwest of town. When it begins grinding sugar-cane in December or early January, the noise of its continuous operation, against the prevailing northeast trade winds, comes rather faintly to the town. But toward the end of the grinding season in late May and June, the wind direction may be reversed sometimes for several days at a time, and the noise of grinding becomes very noticeable. Householders are especially annoyed by the deposits of flaky, black soot of burned bagasse from its stack, which float down on washing hung out to dry. After the grinding season is over, in summer and early autumn, fierce rainstorms may be expected from the west and northwest, as one learns by experience after having to rescue furniture from a porch on the west side of the house.

The first outbreak of the green peach aphid on tobacco in Puerto Rico, observed by Mario Pérez at Cidra on January 3rd, 1951, was already sufficiently severe to have been noted by growers several weeks previously and quite possibly had required a considerable period of build-up to have reached conspicuous outbreak proportions. Of the weather that autumn, Glenn Stallard, Meteorologist in Charge, Airport Station, Santurce, Puerto Rico, in a letter to the writer dated January 22nd, 1953, states:

"Normally easterly winds extend up to 20,000 feet or higher over Puerto Rico during the summer, but the belt of east winds is occasionally reversed by the passage of a hurricane to the north of the island. Such was the case in 1950 when a hurricane passed northeast of the Virgin Islands on September 1–2 and was centered about 260 miles north of San Juan on September 3. The hurricane, an unusually severe one, produced westerly or southwesterly winds over Puerto Rico for about three days. For at least a part of the period, September 3–5, air flowing over Puerto Rico from the surface to 18,000 feet had previously passed over Hispaniola. It is possible that at some levels the air stream may have crossed eastern Cuba, but it is considered most unlikely that there was a previous recent history of the air over Florida."

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Received January 30, 1953.

Books for Israel

I SHOULD like to bring to the attention of my fellow scientists a project in which they can participate with the satisfaction that comes from the fostering of international growth of science and scientific communication. At the request of the United States Information Service, and under its sponsorship, a co-operative project, "Books for Israel," has been formed, as an expression of cultural good will between the people of the United States and the people of Israel. Its object is to supply textbooks in all branches of learning for the secondary schools, universities and institutes of this newest democracy.

American scientists need no reminder of the volume and quality of scientific work emanating from such laboratories as those of the Weizmann Institute, the Hebrew University, and the Technion, to name only the best known. The training of the newer classes of scientists is being severely handicapped by the inability of these Israeli institutions to acquire dollar exchange for the purchase of American textbooks.

The United States State Department is therefore sponsoring this project so as to help overcome this difficulty. Many individuals, institutional and industrial libraries, as well as book-publishers, have textbooks published since 1940 which have been superseded by newer editions, or represent duplications or overstock. These can well be used by the scientists of Israel. Gifts of these books will be appreciated far beyond any monetary value they may have to their owners.

We scientists can all join in this important contribution to international amity by sending such books to: Books for Israel, 115 King Street, New York 1, N. Y.

These may be sent via parcel post at book rates. Packages should be marked "Book Rate," which, from any point in the United States to New York, is $.08 for the first pound and $.04 for each additional pound. Since packages weighing up to seventy pounds are acceptable, it may be possible for some individual in any institution or organization to undertake the collection from his colleagues and thus save in shipping costs.

These books will be transmitted to Israel from funds supplied by the State Department's Point IV Project.

A list of technical and scientific subjects, in which texts are desired, is appended. Please note that these books should be in good condition and published since 1940.

Aeronautics, agriculture, applied chemistry, architecture, astronomy, aviation medicine, bacteriology, biochemistry, biology, botany, business management, chemical engineering, chemistry, civil engineering, dentistry, electrical engineering, engineering.

Firearms, first aid, food technology, forest products, forestry, geography, geology, gynecology and obstetrics, heat and power engineering, hospitals, human anatomy, industrial management, industrial medicine, mathematics, mechanical engineering, medicine, mental hygiene, metallurgy and metallography, meteorology, military and naval medicine, military science, mining engineering, miscellaneous technology.

Natural history, naval science, navigation, nursing, oceanography, personal hygiene, photography, physics, physiology, psychosomatic medicine, public health, safety engineering, sanitary engineering, shipbuilding, surgery, time and motion study, zoology.

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A System of Nomenclature for the Varieties of Human Hemoglobin

RECENT studies have established the existence of three inherited variations of human hemoglobin (*1–4*). The occurrence of significant amounts of the fetal type of hemoglobin in a number of different anemias has also been demonstrated (*5*). Several different systems of nomenclature have been employed for the designation of the various hemoglobins thus far recognized.

On January 6, 1953, the Hematology Study Section of the Division of Research Grants of the National Institutes of Health sponsored a symposium on the general subject of hemoglobin abnormalities. One feature of that symposium was a consideration of the problem of nomenclature in this rapidly evolving field of investigation. There was general agreement on the need for a uniform and elastic system of designating the different kinds of hemoglobin. After considerable discussion of the various alternatives, it was agreed that the five varieties of hemoglobin thus far recognized be designated as follows:

1) Normal adult hemoglobin, or hemoglobin A, previously referred to as hemoglobin N (*5*), or hemoglobin *a* (*4, 6*). As subvarieties of normal adult hemo-