availability which identifies the quantities and forces that operate.

Further inspection of Fick's law reveals that the change in diffusivity with temperature is only partly (about 0.3% per degree near 20° C) explained by the proportionality with absolute temperature (T). The major influence must be associated with changes in frictional resistance (f) of the medium with temperature.

The above comments will serve to emphasize that the tension concept is not useful when one is concerned with diffusion within the liquid phase. Concentration units should be used in such situations, and if one wishes to account for changes in diffusivity the product Concentration × Diffusivity will provide the desired index.

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Received December 1, 1952.

Treatment of Mouse-Passaged Dengue Virus (Mochizuki-strain) with Protamine Sulfate

IT has been reported that certain viruses are precipitated by adding protamine sulfate to the crude suspensions (*1–3*), and that many species of virus fall into two groups, with few exceptions, i.e., those protamine-precipitated, of larger size, and those protamine-non-precipitated, of smaller size (*3*). Nakagawa (*4*) reported his results of the application of protamine to the Hawaiian strain dengue virus isolated by Sabin and Schlesinger (*5*). The author also, independently of Nakagawa, conducted experiments on the protamine treatment of the mouse-passaged Mochizuki-strain dengue virus (*6*).

From mice moribund after an intracerebral infection of dengue virus, the brains were removed and ground into a 20% emulsion with distilled water.[1] The emulsion was centrifuged at 3,000 rpm for 15 min, and the supernatant fluid taken out was the original virus suspension. Protamine sulfate (clupeine, powdered)[2] was added to the virus suspension at the ratio of 5 mg/ml. The mixture, containing flocculates formed, was set at 0° C for 24 hr, then centrifuged at 3,000 rpm for 60 min. The supernatant thus obtained was slightly opaque fluid. Virus concentrations of the original suspensions as well as the supernatant were measured by an ordinary ten-fold titration in mouse brain. Additionally, the nitrogen amounts of these materials were determined by the micro-Kjehldahl method.

TABLE 1

VIRAL CONCENTRATIONS AND NITROGEN AMOUNTS OF PROTAMINE-TREATED MATERIALS

Expt. No.	Crude suspensions		Protamine supernatants	
	LD50* (L_{10}g)	Nitrogen (mg/ml)	LD50* (Log)	Nitrogen† (mg/ml)
I	5.7	1.512	5.7	1.028
II	6.0	1.538	5.9	1.176
III	6.0	1.521	6.0	1.085

* By the Reed-Muench method (7).
† Containing the excess of protamine.

[1] Adjusted to be pH 7.0 with sodium bicarbonate.
[2] Prepared by the Kossel method at Kyoto University Department of Biochemistry.

Results obtained are summarized in Table 1, and indicate that (1) dengue virus remains abundantly in the protamine-supernatants, (2) therefore, it can be included in the Warren's "protamine-non-precipitated" group of viruses (*3*).

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[3] The author wishes to express his gratitude to Professor Ren Kimura, director of the Institute, for helpful advice in the experimentation. He is also indebted to Mr. Atsushi Sugii and Miss Miyo Sasaki for their technical assistance.

Received January 30, 1953.

Evidence for the Nonexistence of a New Highly Penetrating Component of the Solar Radiation

IN 1941, M. Takata and T. Murasugi (*Bioklim. Beiblätter der Meteorologischen Zeitschrift*, 8, 17–26, [1941]) had described a very surprising discovery. These Japanese authors had found that the amount of $HgCl_2$ solution which has to be added to produce protein flocculation in diluted human blood serum varies approximately 10 to 15% dependent upon whether the blood, from which the serum is prepared, is taken from the vein some minutes before or some minutes after the sunrise. It was particularly interesting that this effect (called by Takata the "cosmoterrestrical effect") is noted only if the person is electrically insulated from ground during the taking of blood. Furthermore, the effect is also present in the same intensity, if the person is in a deep cellar room protected from any solar radiation by thick layers of earth and concrete. So, it seemed that a very penetrating and, before Takata's work, absolutely unknown component of solar radiation was found for which only the biochemical test of Takata, but no known physical experiment, gave evidence. Because of the highly interesting physical aspect of the findings