blue-print paper. A glass plate may be used to maintain a good contact between the strips and the sensitive paper. Thirty to ninety seconds exposure in sunlight is sufficient for medium speed blue-print paper. The sheets may be fixed by washing under running tap water. When purchased in fifty yard rolls, the blue-print paper for tables of convenient size, two or three feet by three feet, costs about five cents per table.

Any number of tables representing any groupings or any rankings of the data which are desired may be made with no more work than is required for a rearrangement of the strips. Groupings of the data may be conveniently separated by a white band on the printed table by placing an opaque strip in the frame between the groups. An inspection or an average of the groups in the columns under the various headings will often be sufficient to determine whether a relationship is worthy of further study.

If it is desired to study the data with regard to two different dimensions, they may be ranked according to the chosen variables, divided into appropriate groups, blue-printed, and the various columns of data cut and pasted on separate sheets to show the distribution of any desired third variable with respect to x and y.

CHESTER W. DARROW
BEHAVIOR RESEARCH FUND, AND THE
INSTITUTE FOR JUVENILE RESEARCH
CHICAGO, ILLINOIS

AN IMPROVED CAPILLARY MERCURY VAPOR LAMP

THE capillary mercury vapor lamp designed by Daniels and Heidt[1] has been extensively used in some radiation studies. With this use of the lamp we have introduced several changes in construction which have made it more practical and have extended its usefulness.

Instead of using quartz tubing of uniform diameter throughout, the part of the lamp above the upper pair of bulbs is made of tubing of inside diameter 0.5 mm larger than that of the remainder of the lamp. Through this capillary of larger diameter is introduced a short piece of graphite (fired pencil lead). Otherwise the lamp is arranged in the usual manner. In the completed lamp the graphite is caused, by slight tapping, to come to rest at the point where the capillary of smaller diameter begins, that is, at the base of the lower bulb of the upper pair. The piece of graphite now blocks the capillary and is in contact with the mercury column above and below. When the current is passed through the lamp the graphite, because of its high resistance, becomes very hot. Some of the mercury vaporizes and the arc starts immediately. By following the above procedure the lamp may be started as many times as desired.

The advantages of this self-starting lamp are: (1) the awkward procedure of starting the lamp with a flame or heater is avoided; (2) the lamp is started under water and is constant immediately; (3) breakage of lamps due to the sudden cooling of the exterior by water when they are started by the older methods is largely avoided; (4) when light of wave-length longer than 3100 Å is desired materials other than quartz may be used. It was found possible to use lamps constructed with special glass, thus cutting their cost to a few cents each.

It has also been practicable to fill these lamps with amalgams (Hg + Cd, Hg + Zn, etc.) of such composition that they can be used repeatedly without breakage. These amalgams supply light of wave-lengths not present in the mercury spectrum.

ALEXANDER HOLLAENDER
J. F. STAUFFER
UNIVERSITY OF WISCONSIN

SPECIAL ARTICLES

INVESTIGATIONS IN PUERTO RICO ON MANSON'S BLOOD-FLUKE INFECTION (SCHISTOSOMIASIS MANSONI)

AN intensive study of *Schistosoma mansoni* infection in Puerto Rico is being undertaken this summer by cooperative efforts of the School of Tropical Medicine of the University of Puerto Rico under the auspices of Columbia University and the Department of Tropical Medicine of Tulane University. The investigation has been made possible by grants from the Bailey K. Ashford Fund and the National Research Council.

Schistosoma mansoni is a unisexual blood-fluke living in the portal vessels of its host, usually man. It produces dysentery and later fibrous and papillomatous modifications of the intestinal tract and cirrhosis of the liver. The female worms lay large lateral-spined eggs into the mesenteric and rectal vessels, so that the majority of these eggs work their way through into the intestinal lumen and are passed in the feces. In water the eggs hatch and the emergent larva (*miracidium*) attacks and penetrates the soft tissues of the appropriate snail (species of *Planorbis*), in the "liver gland" of which a twofold

[1] Farrington Daniels and L. J. Heidt, *Jour. Amer. Chem. Soc.*, 54: 2381–2384, 1932.