wagneri. Within either of these groups, as yet, it has not been found possible to make any serological distinction. The study of blood relationship within the order Rodentia is being continued, using both birds and rabbits as antibody producers.

ROBERT A. HICKS
LABORATORY OF MAMMAL GENETICS,
UNIVERSITY OF MICHIGAN

LUMINESCENCE

I READ with very great interest the article on "The Excitation of Luminescence by the Agitation of Mercury in Glass and Transparent Fused Silica Tubes and Vessels" by W. L. Lemcke in SCIENCE of January 18. At the close of the article it was suggested that it would be of scientific interest to examine the radiations coming from a transparent fused silica vessel with the aid of a spectrograph with quartz prism and lenses. This problem has occupied my time for the past few months. It is my aim to examine, as Lemcke suggests, the effect on the luminescence produced when certain gases and solids are present in the vessel.

Using a standard "Shaker" tube of transparent fused silica and a Hilger E_2 Quartz Spectrograph I was able to record very definitely on a plate the resonance line λ 2537 Å of Hg with exposures as short as forty-five minutes. The tube was 2.5 cms in diameter and had the usual central inner tube. That part of the tube which contained the inner tube and the mercury was 15 cms in length. Only mercury, its vapor and air at very low pressure were present in the tube. A crank on the shaft of a small electric motor gave the tube a horizontal reciprocating motion in front of the slit of the spectrograph, which was distant about 3 cms from the axis of the tube.

A trial exposure of forty-two hours with the same apparatus brought out a great number of lines in the visible region as well as a faint continuous spectrum and a very interesting looking band extending from λ 2537 Å to about λ 2570 Å, where it cut off sharply. Further work is being done on this problem and the results will be published.

Interesting in connection with this problem is the work of Duffieux[1, 2] and of Robertson, MacKinnon and Zinn.[3] The former examined the luminescence produced when an evacuated spherical Pyrex bulb containing a large drop of mercury is rotated, and the latter rolled a drop of mercury on the inside of an evacuated quartz tube in order to produce a continuous mercury spectrum. In both cases the temperature was from 60° to 240° C. I have thus far confined my investigation to temperatures near 30° C.

LOUIS F. BROWN

1 Duffieux, *Comptes Rendus,* 1927, *184,* p. 1434.

2 Duffieux, *Jour. de Phys. et le Rad.,* 1928, *9,* p. 61.

3 Robertson, MacKinnon and Zinn, *J. O. S. A. and R. S. I.,* 1928, *17,* p. 417.

SPECIAL CORRESPONDENCE

THE DANISH CIRCUMNAVIGATION EXPEDITION

IN May, 1904, the Danish research vessel *Thor,* fishing over deep waters west of the Faroes, found a fully grown larva of the common European fresh-water eel. Up to that time corresponding stages were only known from the Straits of Messina, in the Mediterranean. The find led the young fishery biologist, Johs. Schmidt, into whose hands it came, to devote himself to the problem of the eel, and for twenty-five years he has been engaged upon the task. He is now on his way around the globe with an expedition mainly designed to ascertain the breeding grounds of eels all over the world. Endeavors will, however, also be made to elucidate various other oceanographical questions which have arisen during the past twenty-five years of research.

Thus, as so often before in the history of science, an apparently small discovery has led to far-reaching developments; many problems have been solved, and even more have arisen, in the course of the cruises organized by Professor Johs. Schmidt, of the Carlsberg Laboratory, Copenhagen, in connection with his investigations on the eel. During the past twenty-five years, the following expeditions have been sent out from Denmark, with eel investigations among their principal aims; the cost of these expeditions has been defrayed by the Danish government, by the Carlsberg Foundation, by the East Asiatic Company in Copenhagen and by private persons interested in the work.

Thor, 1905–06, in the Atlantic west of Europe.
Thor, 1908–10, in the Mediterranean.
Margrethe, 1913, Europe, West Indies.
Dana I, 1920–21, Europe, West Indies.
Dana II, 1921–22, Europe, South America, West Indies, Panama, West Indies, U. S. A.

The present *Dana* expedition, which is to occupy two years, left Denmark in June, 1928, and is under the patronage of His Royal Highness Prince Valdemar of Denmark.

The route to be followed is as follows, westward around the globe: First to Spain, Portugal and the Straits of Gibraltar, with the western part of the Mediterranean; then via Madeira to the West Indies and on through the Panama Canal into the Pacific, to Tahiti, the Fiji Islands and New Caledonia; thence to New Zealand and Eastern Australia. In the waters east of Australia, two months will be spent, and the