limit the pressure approximately to that of a four inch column of the fluid.

This arrangement had been in daily service for ten years. A new charge of mercury was last put in about one year ago.

During the night of November 19th a violent explosion occurred, fortunately limited to a small area at the surface of the mercury on the ammonia side of the U. The 3/16″ iron of the pipe was opened out at this point over an area of about four square inches and a piece about one inch square was driven out with great force. There was no damage or evidence of high pressure elsewhere in the system.

The presence together of metallic mercury and ammonia vapor is not recorded as an explosion hazard, and the ten-year record of the installation herein involved would appear to support this implication of safety.

It would seem that a special combination of circumstances must have existed in the present instance, but a search of the literature has given no positive indication as to what these might have been. There is, however, a suggestion.

Several violently explosive compounds of mercury with nitrogen are known. Mercury fulminate is one of the more stable of these. Among the less stable are recorded certain compounds of mercuric oxide and ammonia, some of which are formed by union of the gas with the solid, but none, reputedly, at temperatures below 100° C. These compounds, however, come nearer to what might conceivably have been formed in the present instance than any others. If we assume that (1) the mercury had a layer of mercuric oxide on its inner surface and that (2) the explosive mercuri-ammonium oxides can in reality form in course of time at a temperature but slightly in excess of what we term "room" temperature, we have a good explanation of what may have happened in the case before us.

It is possible to say further only that the formation of anything more than minute traces of oxide is at least improbable here, and that, as before stated, there is no record of the combination taking place at any but much higher temperatures than could have been reached in this installation.

It remains, however, almost beyond a doubt that a mercury-nitrogen compound was responsible for the explosion; and in the absence of any definite knowledge of the necessary contributing conditions, it would seem the part of safety to class the co-presence of ammonia, in any form, and mercury as an explosion risk.

CHARLES VAN BRUNT

RESEARCH LABORATORY,
GENERAL ELECTRIC COMPANY,
SCHENECTADY, NEW YORK

OBSERVATIONS ON SCORPIONS

THE life history of one of the European scorpions, *Scorpio occitanus* Lat., has been known since Fabre published the results of his investigations in his "Souvenirs." Regarding the life history of American species of scorpions, very little has been published as far as I know. Comstock states in "The Spider Book" that the scorpion does not lay eggs, while Fabre has observed that the European species does lay eggs and that it breaks the eggs and devours the shells.

The scorpion *Centruroides vittatus* Say is fairly common in northwest Arkansas. It is most frequently found on dry hillsides, where it hides under stones and similar shelter.

A study of the life history of this species was undertaken during the summer of 1925. A number of pregnant females were collected and placed in an observation cage. The first young were seen on the morning of September 5. Later, careful watch was maintained through about twenty-four hours of the day, with the result that the actual arrival of several litters of young was observed. They were fully developed in the body of the female. Each young one was born in a very thin and transparent envelope from which it freed itself in about fifteen minutes time. If the young succeeded in freeing themselves, they were assisted by the mother in getting on her back. They molted here after three to six days, and remained on her back for from five to fifteen days.

The mating dances have been observed in the American scorpion; they correspond very closely to those observed by Fabre in the European species.

Judging by the rate of growth in scorpions kept in the laboratory and by various sizes secured in the field, our scorpion probably attains maturity in three or four years.

Scorpions are easily kept in captivity if provided with water and food. They will eat small insects such as grasshoppers and roaches, but refuse caterpillars. They will also eat raw lean beef. Young scorpions feed readily upon termites, apparently in preference to anything else.

FRANK R. SMITH

DEPARTMENT OF ENTOMOLOGY,
UNIVERSITY OF ARKANSAS

A CONFUSION OF TERMS

AS shown in the discussion which follows, there is a confusion as to the meaning of the terms *dialyze, dialyzable* and *dialyzate*. Does the substance which passes through a semi-permeable membrane *dialyze,* and is it therefore *dialyzable?* Is the *dialyzate* the material which passes through the membrane or is it the material which remains in the dialyzer? Different authorities and usages do not agree.