

*The Angle of Contact on Glass Made by Mercury when Covered
with Another Liquid.*

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Quincke¹ has measured the angle of contact between mercury and glass in air and has found that the value is about 148° for a freshly prepared surface of mercury and clean glass, but is somewhat smaller after a time. Pockels² has measured the angle of contact between glass and various liquids. Her success seems to depend on her method of cleaning and testing the cleanliness of the glass. For many liquids the angle made with glass is zero.

Some experiments on mercury in glass tubes, when covered with acidulated water, indicated that the angle of contact is, in many cases, zero. Lippmann³ states that for pure water and mercury in contact with glass, the angle is not zero, but for a H_2SO_4 solution, the value drops to zero. Experiments had been undertaken to determine the validity of the conclusion reached from study of such surfaces before Lippmann's remark was noticed. No quantitative measurements have been discovered, so the results are here recorded.

A large drop of double distilled mercury was placed in a cleaned watch-glass which rested on a steady platform. A spectrometer was fastened to a rigid support with the axis horizontal and so arranged that a small, silvered mirror mounted on its table was just above the mercury drop. The light from a distant high-power tungsten lamp fell on a large stationary mirror, placed higher up over the drop and arranged so that a strong beam fell on the edge of the drop. A third mirror, also stationary, placed below the apparatus, received the light from the rotating mirror and reflected it through a small tube provided with cross wires at each end.

A cover glass cleaned in boiling HNO_3 , KOH , distilled water, and finally by heating in the flame of a spirit lamp, was placed on top of the drop of mercury and the light and mirror arranged so that the reflection of the light occurred at the boundary of the glass and the mercury. The spectrometer reading was taken and then the small mirror rotated till the reflection took place from the convex surface of the drop. The

¹ Quicke, Pogg. Ann. 105. Weid. Ann. 2, 152, 1877.

² Pockels, Phys. Zeit. XV, 39, 1914.

³ Lippmann, Ann. de Chim. et Phys. (5), 494, 1875.