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CHEMICAL EVIDENCES OF INTOXICATION

R. W. GETCHELL

Chemical methods to determine whether the driver of an automobile is under the influence of alcohol are replacing the older physical tests. The technique consists of distilling the alcohol from a known quantity of body fluid — blood or urine — into a standard solution of acidified potassium dichromate. Through subsequent titration, the quantity of unreduced dichromate is determined and the number of milligrams of alcohol per 100 milliliters of body fluid is computed. Reliable methods of analysis, differing in details but not in principle, have been developed by Widmark of Sweden, Nicloux of France, Harger of Indiana, Muehlberger of Illinois, Heise of Wisconsin, and others. Harger has also perfected a breath test, using potassium permanganate as the oxidizing agent. These methods have been endorsed by the National Safety Council and by the American Medical Association, and are widely used both here and abroad.

Numerous researches indicate that the degree of intoxication is in close agreement with the quantity of blood alcohol. This quantity also correlates closely with the amount of alcohol in the urine and in the breath. For a given quantity of blood alcohol, that of urine runs about 35 per cent higher. Courts quite generally concede that a subject is intoxicated, insofar as his ability to drive an automobile is concerned, if the blood alcohol exceeds 150 milligrams per 100 milliliters of blood (150 mg. per cent) or the urine, 200 milligrams of alcohol per 100 milliliters of urine. Tolerance to gastric alcohol may be developed, but not so tolerance to blood alcohol. The legal right to remove a body fluid without consent of the subject has not been established.

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