

A Study of Chemical Tests for Alcoholic Intoxication

Richard R. Burgee

Follow this and additional works at: <http://digitalcommons.law.umaryland.edu/mlr>



Part of the [Motor Vehicles Commons](#)

Recommended Citation

Richard R. Burgee, *A Study of Chemical Tests for Alcoholic Intoxication*, 17 Md. L. Rev. 193 (1957)

Available at: <http://digitalcommons.law.umaryland.edu/mlr/vol17/iss3/2>

This Article is brought to you for free and open access by the Academic Journals at DigitalCommons@UM Carey Law. It has been accepted for inclusion in Maryland Law Review by an authorized administrator of DigitalCommons@UM Carey Law. For more information, please contact smccarty@law.umaryland.edu.

Maryland Law Review

VOLUME XVII

SUMMER, 1957

NUMBER 3

A STUDY OF CHEMICAL TESTS FOR ALCOHOLIC INTOXICATION†

By RICHARD R. BURGEE*

Prohibitive legislation is effective as a corrective measure only to the extent that it deters the undesirable conduct. In no area is this more apparent than in the legislation which has been enacted in an attempt to curb the drinking driver problem by prohibiting the operation of a motor vehicle by a driver who is "intoxicated" or "under the influence" of intoxicating beverages. The mere enactment of this prohibitory legislation has not had the desired deterrent effect, and the problem has continued, partly because the degree of drunkenness which is "under the influence" is a highly subjective state, often difficult to prove by observation. On the one hand, the arrested driver can come into court and say that he had "just had one drink" or that he was staggering from a blow he received on his head from the impact of the accident, and a sympathetic jury would probably acquit.¹ Also, the shock of the accident or arrest often enables the drinking driver to sufficiently pull himself together so that his condition can go unnoticed even by experienced investigators.

Conversely, the person whose apparent symptoms of drunkenness stem from an actual injury or physiological disorder is often placed under arrest and left alone to sober

† This article is based on a paper originally prepared for Professor L. Whiting Farinholt Jr.'s Seminar on Medico-Legal Problems at the University of Maryland School of Law. Grateful acknowledgment is made to Dr. Russell S. Fisher, Chief Medical Examiner of the State of Maryland, for materials made available to the author, and to Professor G. Kenneth Reiblich for advice in the article's final preparation.

* A.B., University of Maryland, 1955; LL.B., University of Maryland School of Law, 1957.

¹ *People v. Bobczyk*, 343 Ill. App. 504, 99 N. E. 2d 567, 570 (1951):

"Medical science recognizes sixty pathological conditions which produce symptoms similar to those produced by alcohol, yet the law permits nonexpert lay witnesses to testify to objective symptoms commonly associated with alcoholic intoxication on the theory that sobriety or intoxication are matters of common knowledge."

A false claim of one or more of these conditions could enable a person, accused of drunken driving, to escape conviction.

up at a time when immediate medical treatment should be administered.² Also, the person who has actually had but one drink often finds it very difficult to rebut the testimony of an arresting officer who has, for one reason or another, made an incorrect determination.

Chemical tests for intoxication have been offered as a solution to these problems. If these tests are practical and accurate, and if their use will violate no rights of the individual, they would be invaluable to the law enforcement bodies as well as to the wrongly accused driver. Before accepting or rejecting the tests and the legislation which sanctions them, thorough examination is necessary.

THE CHEMISTRY AND PHYSIOLOGY OF ALCOHOL IN THE BODY

Alcohol is present in the body of every person, drinker and non-drinker alike, as a natural constituent.³ However, the amount is negligible, and this article will deal with alcohol taken into the body by the drinking of an alcoholic beverage. While part of the alcohol in the beverage ingested is absorbed directly from the stomach, by far the greater part passes on into the small intestine where it is absorbed into the blood in the vessels located in the walls of this organ. Once absorbed, the alcohol is rapidly carried by the bloodstream throughout the body, being distributed in each part in about the same proportion as the water content of that part.⁴ Within a short time the concentration in the blood and in the tissues reaches an equilibrium, this being attained more rapidly in parts of the body having a generous blood supply such as the brain and the liver.⁵ As a result, it is possible to determine by an analysis of one body tissue or fluid, the alcohol concentration of another part of the body.⁶

Approximately ninety to ninety-five per cent of the alcohol distributed in the body is gradually metabolized or

² *Ibid.*

³ KRANTZ AND CARR, *PHARMACOLOGIC PRINCIPLES OF MEDICAL PRACTICE* (3rd ed. 1954) 391. The human brain concentration of ethyl alcohol is 0.0004%, the human blood concentration 0.004%, and the human liver concentration 0.0026%.

⁴ HANSMAN, *Driving Under the Influence of Intoxicating Drink*, 40 *Med. J. Australia*, Vol. II, 388 (1953); HARGER, LAMB, and HULPIEU, *A Rapid Chemical Test for Intoxication Employing Breath*, 110 *J. A. M. A.* 779 (1938).

⁵ NEWMAN, *Research on Alcohol*, 13 *Stan. Med. Bul.* 98, 101 (1955); 1 GRAY, *ATTORNEYS' TEXTBOOK OF MEDICINE* (3rd ed., 1940), Par. 59.05.

⁶ MUEHLBERGER, *Chemical Tests for Alcoholic Intoxication*, 1 *Am. Pract.* 360, 362 (1947); 1 GRAY, *loc. cit.*, *ibid.*

"burned", principally in the liver.⁷ As the alcohol is burned in the liver, its supply is replenished from all over the body, the concentration decreasing in each part at about the same rate.⁸ The five to ten per cent not metabolized is excreted in about equal parts in the urine and in the breath.⁹

It is common knowledge that individuals react differently to a given amount of alcohol swallowed. One of the reasons for this variation is the fact that alcohol is absorbed into the bloodstream at different rates, the rate of absorption being affected by such factors as the presence or absence of food in the stomach, dilution or concentration of alcohol in the beverage, length of the period of ingestion, distastefulness of the beverage to the drinker because of its flavor or unpleasant memories associated with it, buffer content of the beverage, emotional state of the drinker,¹⁰ and, possibly, consumption tolerance.¹¹ If by operation of one or more of these factors the alcohol is absorbed slowly, the metabolic process continuing, high concentrations of alcohol in the body will not be reached. Variation is also produced by the fact that although the rate of metabolism of alcohol in a given individual is practically constant,¹² the rate varies among different individuals. In the cases of those persons who burn alcohol rapidly, the amount absorbed is more quickly disposed of and high concentrations are never reached.¹³ Therefore, for the purpose of determining the degree of intoxication of any individual at a given time, the important fact to be ascertained is the concentration of alcohol in the body tissues and fluids at that time and not the quantity of alcoholic beverage consumed nor the amount of unabsorbed alcohol in the stomach.

Contrary to the common belief that alcohol is a stimulant, alcohol in the body acts as a depressant of nerve func-

⁷ Newman, *supra*, n. 5; Hansman, *supra*, n. 4.

⁸ Hansman, *ibid.*; HARRISON *et al.*, PRINCIPLES OF INTERNAL MEDICINE (2nd ed., 1954), 775-776.

⁹ Newman, *Proof of Alcoholic Intoxication*, 34 Ky. L. J. 250, 258 (1946); Fisher, *Alcohol, Accidents & Crime*, 14 The Foundation Says, No. 2, 26 (1956).

¹⁰ Newman, *supra*, n. 5, 100-101; Newman, *supra*, n. 9, 255-256.

¹¹ Muehlberger, *Alcohol Tolerance*, 1940 Report of Committee on Tests for Intoxication to National Safety Council (Street and Highway Traffic Section) 26-27 where after a survey and analysis of the problem the author concludes ". . . tolerant persons do not have as high a concentration of alcohol in their body fluids as do others under the same circumstances". Consumption tolerance (susceptibility of the walls of the gastro intestinal tract to absorption of alcohol) is not to be confused with constitutional tolerance (susceptibility of nerve cells to the depressant effect of alcohol).

¹² Newman, *supra*, n. 5, 101-102; HARRISON *et al.*, *loc. cit.*, *supra*, n. 8.

¹³ Gonzales and Gettler, *Alcohol and The Pedestrian In Traffic Accidents*, 117 J. A. M. A. 1523, 1524 (1941).

tion,¹⁴ and this depression of the nervous system produces the symptoms which are recognized as intoxication.¹⁵ The feeling of stimulation is attributable to a release of inhibitions and not to an increase in motor ability.¹⁶ The degree of nerve depression is more or less proportional to the concentration of alcohol in the center of nerve activity, the brain.¹⁷ Because of this relationship and because of the equilibrium that exists throughout the body, in proportion to water content, for alcohol absorbed, the authorities have felt that the concentration of alcohol in the tissues and fluids of the body is a reliable index of the degree of intoxication.¹⁸ This conclusion has not, however, been entirely free from criticism.¹⁹

If, as contended, there exists a close correlation between the concentration of alcohol in the body and the degree of intoxication, it is necessary next to determine what body substance is the most accurate and at the same time the most practicable for testing to ascertain this concentration. Since alcohol in the brain is required to produce intoxication, it follows that an analysis of brain tissue would yield the most accurate results. However, this is impossible unless the subject is dead. Spinal fluid has been suggested as a reliable testing substance because of its close proximity

¹⁴ Kaye and Haag, *Medico-legal Evaluations of Blood-Alcohol Levels*, 80 Va. Med. Mthly. 638 (1953); Muehlberger, *supra*, n. 6, 361; Newman, *supra*, n. 5, 103.

¹⁵ HARRISON, *op. cit.*, *supra*, n. 8, 776; *Chemical Tests for Intoxication*, 1938 Report of Committee on Tests for Intoxication to National Safety Council (Street and Highway Traffic Section) 4, 7-8; GREENBERG, *The Concentration Of Alcohol In The Blood and Its Significance*, ALCOHOL, SCIENCE AND SOCIETY (Q. J. of Studies on Alcohol, 1945) 45, 46.

¹⁶ Newman, *Research on Alcohol*, 13 Stan. Med. Bul. 98, 103 (1955):

"The apparent stimulating effect is generally ascribed to a removal of inhibitions, with a freedom of expression not otherwise attainable in the majority of people. That the productions of the mildly inebriated are brilliant only to others similarly affected can be vouched for by anyone who has done investigative work with alcohol in human subjects."

Accord: Hansman, *Driving Under the Influence of Intoxicating Drink*, 40 Med. J. Australia, Vol. II, 389 (1953).

¹⁷ Muehlberger, *Chemical Tests For Alcoholic Intoxication*, 1 Am. Pract. 360, 361 (1947); HARGER, *Practical Aspects of Chemical Tests for Intoxication*, Ch. 11, JUDGE AND PROSECUTOR IN TRAFFIC COURT, 200, 203 (1951).

¹⁸ Harger, Lamb and Hulpieu, *A Rapid Chemical Test for Intoxication Employing Breath*, 110 J. A. M. A. 779, 783 (1938); Muehlberger, *Medico-legal Aspects of Chemical Tests of Alcoholic Intoxication*, 39 J. Crim. Law & Crim. 411, 415 (1948); Newman, *supra*, n. 9, 263-267; Greenberg, *supra*, n. 15; Hansman, *supra*, n. 16, 389.

¹⁹ See mainly: Rabinowitch, *Medicolegal Aspects of Chemical Tests of Alcoholic Intoxication*, 39 J. Crim. Law & Crim. 225 (1948); Gardner, *Breath-Tests For Alcohol: A Sampling Study of Mechanical Evidence*, 31 Tex. L. Rev. 289 (1953) and authorities cited. However, many of the inconsistencies set forth in the latter work have proved to be non-existent; the former has been specifically rebutted. See n. 42, *infra*.

to the brain.²⁰ Not only is this difficult to obtain,²¹ but, further, it has been found that the alcohol content of the spinal fluid in the lumbar region, the area of the spine where punctures for fluid are customarily made, lags far behind the brain alcohol concentration.²²

Except in the experimental situation, sweat is not present in sufficient amounts to afford analysis.²³ Saliva, on the other hand, is more easily obtained and has been recommended as a testing substance by some of the authorities.²⁴ It should be noted, however, that if the subject has had a drink shortly before the test is made, the result of such test may be distorted by the residue in the mouth.²⁵ This residual alcohol disappears within five to ten minutes after the last drink is taken.²⁶

It is generally well settled that a fairly constant relationship exists between the concentration of alcohol in the blood and in freshly secreted urine, the ratio being about 1:1.35.²⁷ Although a specimen can be obtained with relative ease,²⁸ it may be quite difficult to obtain one that would afford accurate results. If non-alcoholic urine was present in the bladder prior to drinking, the alcohol concentration will be diluted.²⁹ On the other hand, if the alcohol concentration of the body is decreasing and the urine has been retained in the bladder for a long period of time, the alcohol content may be appreciably higher than the actual concentration in the blood.³⁰ To insure accuracy the subject should be made to urinate immediately, and a second sample

²⁰ Gonzales and Gettler, *supra*, n. 13; 1 GRAY, ATTORNEYS' TEXTBOOK OF MEDICINE (3rd ed., 1949), par. 59.07.

²¹ Cameron, *Alcohol and Automobile Driving*, 43 Can. Med. Assoc. J. 46, 47 (1940); Greenberg, *supra*, n. 15, 47.

²² Newman, *Proof of Alcoholic Intoxication*, 34 Ky. L. J. 250, 263-264 (1946).

²³ Cameron, *supra*, n. 21.

²⁴ Newman, *Research on Alcohol*, 13 Stan. Med. Bul. 98, 101 (1955); Holcomb, *Alcohol In Relation To Traffic Accidents*, 111 J. A. M. A. 1076, 1076-1077 (1938); Muehlberger, *supra*, n. 17, 362.

²⁵ Selesnick, *Alcoholic Intoxication*, 110 J. A. M. A. 775 (1938); Muehlberger, *supra*, n. 17, 362; but cf. *Chemical Tests For Intoxication*, 1948 Report of Committee on Tests for Intoxication to National Safety Council (Street and Highway Traffic Section) 4, 14, which says that contamination from recent drinking "can be avoided by proper collection of the sample".

²⁶ See n. 44, *infra*.

²⁷ Newman, *supra*, n. 22, 264; GRAY, *op. cit.*, *supra*, n. 20, 623; Haggard et al., *The Use Of The Urine In The Chemical Test For Intoxication*, 115 J. A. M. A. 1680, 1682 (1940).

²⁸ Southgate and Carter, *Excretion of Alcohol in Urine*, 1 Br. Med. J. 463 (1926), reported that intoxicated subjects frequently would not or could not produce a specimen when requested to do so; GRAY, *op. cit.*, *supra*, n. 20, 623.

²⁹ GRAY, *loc. cit.*, *ibid.*; Selesnick, *supra*, n. 25.

³⁰ Selesnick, *supra*, n. 25, 775-776; Newman, *supra*, n. 22, 264.

should be collected as soon thereafter as possible.³¹ This procedure has the disadvantage of being time consuming at a period when the individual may be sobering up or becoming more intoxicated.

Breath is perhaps the most easily obtained body material. Because of the rapidity with which the test of a breath sample can be made, results being available in five minutes,³² this determinant of intoxication would be highly preferred if accurate. Alcohol passes into the breath from blood in the vessels lining the respiratory tract and lungs.³³ It has been determined by a number of authorities that the relationship between the concentration of alcohol in the blood and the concentration in lung air (alveolar air) is approximately 2100:1.³⁴ Since the amount of carbon dioxide in air exhaled from the lungs is relatively constant,³⁵ by measuring the carbon dioxide content of a given breath sample, the fractional amount of lung air present in the sample can be ascertained. Then, by measuring the amount of alcohol in the same sample, the percentage of lung air being known, the amount of alcohol in the blood can be determined.³⁶

The four main breath testing devices are the Drunkometer, the Intoximeter, the Breathalyzer and the Alcometer. The Drunkometer, developed by Harger, determines the alcohol-carbon dioxide ratio of the subject's breath.³⁷ Based on a constant for carbon dioxide expiration and the 2100:1 ratio between alcohol in the blood and lung air, the test is complete when the breath sample containing alcohol reacts with a permanganate-sulphuric acid reagent. The carbon dioxide collected is weighed, and a result-

³¹ *Evaluating Chemical Tests For Intoxication*, 1953 Report of Committee on Tests for Intoxication to National Safety Council (Street and Highway Traffic Section) 11, fn. 11; HARGER, *Practical Aspects of Chemical Tests For Intoxication*, Ch. 11, JUDGE AND PROSECUTOR IN TRAFFIC COURT, 200, 215 (1951).

³² Harger, *loc. cit.*, *ibid.*

³³ GREENBERG, *The Concentration of Alcohol In The Blood And Its Significance*, ALCOHOL, SCIENCE AND SOCIETY (Q. J. of Studies on Alcohol, 1945) 45, 48.

³⁴ Report, *supra*, n. 31, 13; Harger, Forney and Baker, *Estimation of The Level Of Blood Alcohol From Analysis Of Breath*, 17 Q. J. Studies On Alcohol 1 (1956), and studies cited.

³⁵ Harger, "Debunking" *The Drunkometer*, 40 J. Crim. Law & Crim. 497, 498, 504 (1949); Harger, Lamb and Hulpieu, *A Rapid Chemical Test For Intoxication Employing Breath*, 110 J. A. M. A. 779, 780 (1938). Alveolar air of normal subjects always contains approximately 5.5 per cent carbon dioxide by volume; ". . . fluctuation due to posture, fasting and other factors . . . is not very great and most of it may be eliminated by placing the subject in a sitting or reclining position".

³⁶ Harger et al., *ibid.*

³⁷ Harger, *supra*, n. 35.

ing figure for breath alcohol is determined, which after conversion by the 2100:1 ratio gives the blood alcohol concentration.³⁸

The Intoximeter, introduced by Jetter, Moore, and Forrester, employs the basic principles of the Drunkometer. The main difference is in the method by which the amount of alcohol is determined. The alcohol and moisture in the breath are absorbed by magnesium perchlorate; this solid later being dissolved in water, the alcohol distilled off, and the distillate analyzed.³⁹

The two most recently developed breath testers, the Alcometer and the Breatholizer, do not collect carbon dioxide and provide results more quickly than the others. The Alcometer, developed mainly by Dr. Greenberg, utilizes iodine pentoxide which releases iodine upon coming in contact with alcohol. The released iodine is absorbed in a starch solution, the intensity of the resulting change in color being measured by a photoelectric cell in the instrument, and results in terms of milligrams of alcohol per cubic centimeters of blood are registered on a guage within a matter of minutes.⁴⁰ The Breatholizer employs a yellow potassium dichromate reagent which is discolored in proportion to the amount of alcohol in the breath sample. This discoloration is measured by two photoelectric cells located on either side of the reagent, and, as in the Alcometer, direct results are registered on a calibrated dial.⁴¹

Though breath testing has the advantages of speed and simplicity, it has been criticized on the grounds of accuracy.⁴² The chemical reagents used in the testing devices may be improperly weighed both before and after the tests;⁴³ the sample may be contaminated by alcohol remain-

³⁸ *Ibid.*, 497-498.

³⁹ Harger, *supra*, n. 35.

⁴⁰ Greenberg and Keator, *A Portable Automatic Apparatus For The Indirect Determination Of The Concentration Of Alcohol In The Blood*, 2 Q. J. Studies on Alcohol 57 (1941).

⁴¹ Dorlaque, *New Breath Smeller Is Best Of All*, *Indianapolis News*, March 2, 1955.

⁴² Newman, *Proof of Alcoholic Intoxication*, 34 Ky. L. J. 250, 265 (1946); Rabinowitch, *Medicolegal Aspects of Chemical Tests of Alcoholic Intoxication*, 39 J. Crim. Law & Crim. 225, 243-244 (1948) and authorities cited, but cf. Harger, *Medicolegal Aspects of Chemical Tests of Alcoholic Intoxication*, 39 J. Crim. Law & Crim. 402 (1948) and Muehlberger, *Medicolegal Aspects of Chemical Tests of Alcoholic Intoxication*, 39 J. Crim. Law & Crim. 411 (1948), both of which specifically rebut the article by Dr. Rabinowitch.

⁴³ *State v. Hunter*, 4 N. J. Super. 531, 68 A. 2d 274 (1949), where a conviction for driving while under the influence of intoxicating liquor was reversed, improper scales having been used to weigh the chemicals taken from a Drunkometer after a test had been performed on the defendant.

ing in the mouth from recent drinking,⁴⁴ eructation,⁴⁵ or regurgitation;⁴⁶ the testing equipment may contain traces of alcohol or oxidizable material from prior tests;⁴⁷ and temperature may affect test results unless controlled.⁴⁸ The advocates of breath testing acknowledge some error in these devices but declare that it is so small as to be negligible.⁴⁹

If it were not for the practical and legal difficulties which surround its procurement, all authorities would agree that blood is the material of choice with which to determine the alcohol concentration of the brain.⁵⁰ Blood reflects the alcohol concentration of the brain at the time the sample is taken more nearly than does any other of the test substances.⁵¹ There is no difficulty in the analysis of blood,⁵² and it is practically free from contamination.⁵³ However, the sample must be drawn and the analysis must be made by a physician or a skilled technician,⁵⁴ and this procedure is time consuming where no physician is available or where the suspect must be detained until results of an analysis are obtained.⁵⁵

⁴⁴ Muehlberger, *Chemical Tests For Alcoholic Intoxication*, 1 Am. Pract. 360, 362 (1947); Harger et al., *supra*, n. 35, 784: "... this effect is almost gone in five minutes and entirely disappears after about ten . . ."; *Evaluating Chemical Tests For Intoxication*, 1953 Report of Committee on Tests for Intoxication to National Safety Council (Street and Highway Traffic Section) 6, where, in tests made by the committee, fifteen minutes were allowed to elapse after the taking of the last drink before the sample was taken.

⁴⁵ Newman, *supra*, n. 42.

⁴⁶ Rabinowitch, *supra*, n. 42, 244; Selesnick, *Alcoholic Intoxication*, 110 J. A. M. A. 775 (1938).

⁴⁷ 1 GRAY, ATTORNEYS' TEXTBOOK OF MEDICINE (3rd ed., 1949), 624.

⁴⁸ Rabinowitch, *supra*, n. 42; Cameron, *Alcohol and Automobile Driving*, 43 Can. Med. Ass'n. J. 46, 49 (1940).

⁴⁹ Harger, "Debunking" *The Drunkometer*, 40 J. Crim. Law & Crim. 496, 498 (1949); 1953 Report, *supra*, n. 44, 10.

⁵⁰ Selesnick, *supra*, n. 46, 776; Newman, *supra*, n. 42; GREENBERG, *The Concentration Of Alcohol In The Blood And Its Significance*, ALCOHOL, SCIENCE AND SOCIETY, (Q. J. of Studies on Alcohol, 1945) 45, 47; Newman, *Research On Alcohol*, 13 Stan. Med. Bul. 98, 101 (1955), where because of the process in n. 70, *infra*, Dr. Newman claims capillary blood to be a more valid indicator of the brain alcohol concentration at the time the sample is taken than is venous blood.

⁵¹ Selesnick, *supra*, n. 46, 766; *Chemical Tests For Intoxication*, 1938 Report of Committee on Tests For Intoxication to National Safety Council (Street and Highway Traffic Section) 4, 14; Greenberg, *supra*, n. 50.

⁵² Greenberg, *supra*, n. 50.

⁵³ Selesnick, *supra*, n. 46, 776; Muehlberger, *Medicolegal Aspects of Chemical Tests of Alcoholic Intoxication*, 39 J. Crim. Law & Crim. 411, 413-414 (1948); Newman, *Proof of Alcoholic Intoxication*, 34 Ky. L. J. 250, 265 (1945).

⁵⁴ Newman, *supra*, n. 53; HARGER, *Practical Aspects of Chemical Tests For Intoxication*, JUDGE AND PROSECUTOR IN TRAFFIC COURT, Ch. 11 (1951) 200, 215-216.

⁵⁵ Constitutional problems will be dealt with hereafter, *circa*, p. 206, *infra*.

CHEMICAL TESTING LEGISLATION

All states have statutes which in general prohibit the operation of a motor vehicle while the operator is either "intoxicated" or "under the influence" of intoxicating beverages. The terms "intoxicated" and "under the influence" have, unfortunately, no generally accepted meanings, but the states may be divided into three categories by the conduct which is (by court interpretation) punishable by these terms: those which prohibit impairment of the driver's ability in the slightest degree⁵⁶ (so slight that it can go undetected by witnesses of his conduct); those which prohibit the appreciable impairment of the driver's normal control of his body and mental faculties⁵⁷ (conduct that could probably be witnessed by others); and those which prohibit the impairment in an appreciable degree of the driver's ability to operate the motor vehicle in the manner that an ordinarily prudent and cautious man in full possession of his faculties, using reasonable care, would use in driving a similar vehicle under similar conditions.⁵⁸ The states in which the terms have not been defined have left the problems of definition and application to the trier of facts.⁵⁹

The Maryland statute is embodied in Section 171 of Article 66½ of the 1951 Code. "It shall be unlawful for any person . . . who is under the influence of intoxicating liquor . . . to drive or attempt to drive any vehicle, streetcar or trackless trolley within this state." The Maryland Court of Appeals has not defined "under the influence", and it would seem that the lower Maryland courts have probably of necessity aligned themselves with the states in the second group requiring visible evidence of the accused's drunken conduct before conviction can be had.⁶⁰

A model statute for chemical tests for intoxication has been proposed by the National Safety Council, the Ameri-

⁵⁶ Arizona: *State v. Duguid*, 50 Ariz. 276, 72 P. 2d 435 (1937). Massachusetts: *Commonwealth v. Lyseth*, 250 Mass. 555, 146 N. E. 18 (1925).

⁵⁷ Idaho: *Packard v. O'Neil*, 45 Idaho 427, 262 P. 881, 56 A. L. R. 317 (1927). North Carolina: *State v. Blankenship*, 229 N. C. 589, 50 S. E. 2d 424 (1948).

⁵⁸ California: *People v. McGrath*, 94 Cal. App. 520, 271 P. 549 (1928); New York: *People v. Weaver*, 188 App. Div. 395, 177 N. Y. S. 71 (1919).

⁵⁹ Maryland: *Singleton v. Roman*, 195 Md. 241, 72 A. 2d 705 (1950); Kentucky: *Mahin's Adm'r v. McClellan*, 279 Ky. 595, 131 S. W. 2d 478 (1939).

⁶⁰ Whiteford, *Drunk Test Bill Moves*, *Baltimore Sun*, January 30, 1957.

"At present, he [Major William H. Weber, executive officer of the State police] said, members of the State police force can charge only the 'most flagrantly intoxicated', as they have to depend upon visual signs to detect those under the influence."

can Medical Association, and others, which establishes three classes into which the drinking driver may be placed:

- "1. If there was at that time 0.05 per cent or less by weight of alcohol in the defendant's blood, it shall be presumed that the defendant was not under the influence of intoxicating liquor;
2. If there was at that time in excess of 0.05 per cent but less than 0.15 per cent by weight of alcohol in the defendant's blood, such fact shall not give rise to any presumption that the defendant was or was not under the influence of intoxicating liquor, but such fact may be considered with other competent evidence in determining the guilt or innocence of the defendant;
3. If there was at that time 0.15 per cent, or more by weight of alcohol in the defendant's blood, it shall be presumed that the defendant was under the influence of intoxicating liquor."⁶¹

The essence of this statute has been embodied into the criminal law of twenty-three states and Puerto Rico.⁶² The

⁶¹ Uniform Vehicle Code, Nat'l. Comm. on Uniform Traffic Laws and Ordinances, Sec. 11-902(b) 1, 2, 3. (1954, U. S. Gov't. Print. Off., Washington, D. C.).

⁶² *Arizona*, ARIZ. REV. STAT. ANN., 1956, §28-692; *Delaware*, DEL. CODE ANN., 1953 (Cum. Supp. 1956), Tit. 11, §3507; *Georgia*, GA. CODE ANN., 1937 (Cum. Supp. 1955), §68-1625; *Idaho*, IDAHO CODE, 1948 (Cum. Supp. 1955), §49-520.2; *Indiana*, BURNS' IND. STAT. ANN., 1952 (Cum. Supp. 1955), §47-2003; *Kansas*, KAN. GEN. STAT., 1949 (Supp. 1955), §8-1001 through 1007; *Kentucky*, KY. REV. STAT. ANN., 1955, §189.520; *Maine*, ME. REV. STAT., 1954, c. 22, §150; *Minnesota*, MINN. STAT. ANN., 1945 (Cum. Supp. 1956), §169.12; *Nebraska*, NEB. REV. STAT., 1943 (Reissue of 1952), §39-727.01; *New Hampshire*, N. H. REV. STAT. ANN., 1955, §262:20; *New Jersey*, N. J. STAT. ANN., 1937 (Cum. Supp. 1955), §39:4-50.1; *New York*, MCKINNEY'S N. Y. LAWS, VEH. AND TRAFF. LAWS, §70(5); *North Dakota*, N. D. LAWS, 1953, c. 247; *Oregon*, ORE. REV. STAT., 1955, §483.630; *South Carolina*, S. C. CODE, 1952, §46-344; *South Dakota*, S. D. CODE, 1939 (Supp. 1952), §44.0302-1; *Tennessee*, TENN. CODE ANN., 1955, §§59-1032-1033; *Utah*, UTAH CODE ANN., 1953, §41-6-44; *Virginia*, VA. CODE, 1950 (Supp. 1956), §§18-75.1-75.3; *Washington*, WASH. REV. CODE, 1951, §46.56.010; *Wisconsin*, WIS. STAT., 1953, §85.13(4); *Wyoming*, WYO. COMP. STAT., 1945 (Cum. Supp. 1955), §60-414.

Chemical tests have been accepted in other states, not having specific legislation, by court approval: *California*, *People v. Haessler*, 41 Cal. 2d 252, 260 P. 2d 8 (1953) (blood); *Colorado*, *Block v. People*, 125 Colo. 36, 240 P. 2d 512 (1951) (blood); *Florida*, *Touchton v. State*, 154 Fla. 547, 18 So. 2d 752 (1944) (blood); *Illinois*, *People v. Bobczyk*, 343 Ill. App. 504, 99 N. E. 2d 567 (1951) (breath); *Iowa*, *State v. Haner*, 231 Iowa 348, 1 N. W. 2d 91 (1941) (blood); *New Mexico*, *Breithaupt v. Abram*, 58 N. M. 385, 271 P. 2d 827 (1954) (blood); *Oklahoma*, *Bowden v. State*, 95 Okla. Cr. 382, 246 P. 2d 427 (1952) (blood and urine); *Texas*, *McKay v. State*, 155 Tex. Crim. 416, 235 S. W. 2d 173 (1950) (breath).

main criticism of this legislation is that the levels of intoxication established thereby are not valid determinates in all people, or in other words, not all persons who have a blood-alcohol concentration of 0.15 per cent are "under the influence".⁶³ Whether or not this criticism is well founded largely depends upon what definition the courts of the individual state have given to this term.

Many clinical studies have been conducted to determine at what blood-alcohol level a given degree of intoxication occurs. Even as the courts have reached varied results while attempting to reduce this term to a workable formula, so also have the researchers used different standards to determine when a person was under the influence. Some studies have been based on clinical intoxication (the stage at which a person has a gross gait abnormality or is unable to walk and has at least two of the following: gross abnormality of speech, or is unable to speak, flushed face, dilated pupils, and alcoholic odor of breath) and they have reported that there is great variation in the constitutional tolerance of individuals to a given blood-alcohol level. Foremost among these is the study of Jetter who reported that of the 1,000 subjects observed only 47 per cent were clinically intoxicated in a group whose blood-alcohol level was between 0.125 and 0.175 per cent, and that 0.425 per cent was the level of absolute clinical intoxication.⁶⁴

Other studies have investigated the degree of deterioration in the individual before the outward signs of intoxication appear, testing such things as judgment, reaction time, and motor ability. While recognizing the degree of variation between individuals in their tolerance to a given level of blood-alcohol, several of these investigations have established that *all* persons are to some degree affected at blood-alcohol readings below 0.15 per cent.⁶⁵

⁶³ *Supra*, n. 19.

⁶⁴ Jetter, *Studies In Alcohol*, 196 Am. J. Med. S. 475, 479 (1938). See also Bogen, *Drunkness, A Quantitative Study Of Acute Alcoholic Intoxication*, 89 J. A. M. A. 1508 (1927); Smith and Stewart, *Diagnosis of Drunkenness From The Excretion Of Alcohol*, 1 Br. Med. J. 87 (1932); Bavis, *145 Drunken Drivers: A Blood And Urine Alcohol Study*, 25 J. Lab. & Clin. Med. 823 (1940). On the question of tolerance, see Muehlberger, *Alcohol Tolerance*, 1940 Report of Committee on Tests for Intoxication to National Safety Council (Street and Highway Traffic Section) 25, 27.

⁶⁵ Harger, Lamb and Hulpleu, *A Rapid Chemical Test For Intoxication Employing Breath*, 110 J. A. M. A. 779, 784 (1938); GREENBERG, *The Concentration Of Alcohol In The Blood And Its Significance*, ALCOHOL, SCIENCE AND SOCIETY (Q. J. of Studies on Alcohol, 1945) 45, 50; *Evaluating Chemical Tests For Intoxication*, 1953 Report of Committee on Tests for Intoxication to National Safety Council (Street and Highway Traffic Section) 11.

Newman and Fletcher, *The Effect Of Alcohol On Driving Skill*, 115 J. A. M. A. 1600 (1940), testing individuals in an experimental situation

The reports of at least three studies have indicated that the problem is more complicated than a simple classification by blood-alcohol readings. After observation of both humans and animals, these investigators claim that the blood-alcohol concentration is not alone an accurate determinant, but that the time in which the concentration was reached and the length of time it has been maintained directly affect the degree of intoxication.⁶⁶ If the results of these tests are to be taken at face value, the validity of the model statute's classification of a person as being under the influence at 0.15 per cent would be in serious doubt. However, the results of the most recent of these studies, that of Newman and Abramson, have been discounted in a later article by Dr. Newman⁶⁷ in which he acknowledged:

“. . . it has recently been demonstrated by three investigators working independently that the degree of intoxication in a given individual is dependent not only

under simulated driving conditions, concluded that there was deterioration in the performance of all individuals whose blood-alcohol concentration had risen above 105 mg./100 cc. or 0.105 per cent. Newman, *Research On Alcohol*, 13 Stan. Med. Bul. 98, 104-105 (1955), affirms these prior findings.

Brecher, Hartman, and Leonard, *Effect Of Alcohol On Binocular Vision*, 39 Am. J. Ophth., No. 2, Part II, 44, 51 (1955), studying the effect of alcohol on eyesight concluded:

“It is interesting to note that legal intoxication is generally accepted as a 0.15-percent alcohol concentration. In the 0.05-0.15 percent range an individual is considered ‘under the influence’. From these experiments it can be seen that at the level of definite intoxication, fusion power and convergence are very markedly impaired. At the 0.05-percent level neither of these mechanisms seems seriously handicapped but, somewhere between 0.05 and 0.15 percent, all subjects showed definite impairment.”

Bjerver and Goldberg, *Effect Of Alcohol Ingestion On Driving Ability*, 11 Q. J. Studies on Alcohol 1 (1950), administering laboratory and practical driving tests to a control and alcohol group in Sweden concluded that the threshold of impairment in driving ability is a blood alcohol concentration of 0.035-0.04 percent and that all subjects tested were impaired in at least one of the tests administered at blood alcohol concentrations well below 0.15 percent.

Hansman, *Driving Under The Influence Of Intoxicating Drink*, 40 Med. J. Australia, Vol. II, 388, 389 (1953), lists eight ways in which a person is affected by slight doses of alcohol: (1) over confidence, (2) psychic disturbances, (3) disturbances affecting eyesight, (4) disturbances affecting reaction time, (5) disturbances affecting powers of concentration, (6) disturbances affecting judgment of distance, (7) disturbances affecting judgment of time, and (8) disturbances of coordination.

⁶⁶ Mirsky, Piker, Rosenbaum, and Lederer, “Adaptation” Of The Central Nervous System To Varying Concentrations Of Alcohol In The Blood, 2 Q. J. Studies of Alcohol 35 (1941); Eggleton, *Effect of Alcohol on the Nervous System*, 32 Brit. J. Psychol. 52 (1941); Newman and Abramson, *Relation Of Alcohol Concentration To Intoxication*, 48 Proc. Soc. Exp’tl Bio. & Med. 509 (1941).

⁶⁷ Newman, *Proof of Alcoholic Intoxication*, 34 Ky. L. J. 250 (1946).

on the alcohol concentration, but also on how rapidly that concentration was achieved."⁶⁸

but concluded:

"In spite of the variability in tolerance to alcohol and the variation due to different rates of increment of alcohol concentration, the work of Newman and Fletcher has shown conclusively that in all individuals a blood alcohol concentration appreciably above 105 mgm. per 100 cc. is capable of affecting the ability of the individual to perform skilled acts in an appreciable degree."⁶⁹

This would seem to indicate that Dr. Newman considers this variation to be a factor in determining intoxication⁷⁰ but not sufficiently significant to impeach the 0.15 per cent standard.

Thus, in those states which prohibit the impairment of the individual driver's conduct in the slightest degree, the presumptions of the model statute viewed in the light of the reported studies would seem to be valid. However, in states where appreciable impairment or impairment of ability below the standard of the reasonable man is needed for conviction, the claim of a possibility of unjust conviction under the model statute would be valid.

Maryland has not defined the term "under the influence".^{70a} In the absence of a judicial definition of this term, any legislation establishing chemical tests should also clearly define it if the above problems of prosecution and enforcement are to be avoided. Since every citizen owes a duty to his fellow motorists and pedestrians to at all times

⁶⁸ *Ibid.*, 261.

⁶⁹ *Ibid.*, 262.

⁷⁰ Newman, *Research, supra*, n. 65, 101, explained:

"With rapid absorption of alcohol from the gut, the entry of alcohol into the bloodstream exceeds the rate at which it can be distributed to the tissues; as a result the organs with the most adequate blood supply may achieve an alcohol concentration a good deal higher than would be expected from the dose administered. This 'overshooting' may be an important factor in the observation that the degree of intoxication is higher at a given blood alcohol concentration when this is rising than when it is declining."

^{70a} *Cf. Lilly v. State*, 212 Md. 436, 129 A. 2d 839 (1957), affirming a conviction of manslaughter by automobile. Evidence that the defendant's blood alcohol content was .11 per cent was used by the State to show that the driver had been drinking as an element of gross negligence, although whether he was under the influence was not an issue in the case. The Court of Appeals recognized "that the intoxication point is .15%", probably using "intoxication" synonymously with "under the influence".

be at his best while operating an automobile, the "slight degree" test is not unreasonably high.⁷¹

THE PHYSICIAN-PATIENT PRIVILEGE

Where a physician is called to treat an injured person and is at the time requested by the authorities to secure a sample of a body fluid (especially in the case of blood) for chemical determination of intoxication, the physician-patient privilege has been raised in some jurisdictions when the doctor later sought to explain in court the results of the determination.⁷² This privilege did not exist at common law.⁷³ Many states have enacted statutes providing that information obtained by a physician in the treatment of a patient cannot be introduced in evidence against the injured party over his objection. These statutes are generally limited to information necessary to the proper treatment of the patient, and therefore it does not seem likely that a court would allow the results of these chemical tests to be brought within the privilege.⁷⁴ One statute has, however, been interpreted to allow this defense.⁷⁵ There is no physician-patient privilege in Maryland either by statute or case law.⁷⁶

CONSTITUTIONAL QUESTIONS

When the results of a chemical test for intoxication are offered in evidence by the prosecution, certain constitutional questions may arise: Is the enforcement of a presumption of intoxication when blood-alcohol reaches .15 per cent, a denial of due process? Is the taking of a body fluid or breath sample from the accused without his consent an unreasonable search and seizure? Is admission of the

⁷¹ See: Spriggs, *Alcohol And Road Accidents*, 23 Med.-Leg. J. 47, 48-52 (1955), which discusses the incidence of slight intoxication in automobile accidents.

The argument has been advanced that a highly skilled driver may be a better driver while "under the influence" than are many unskilled licensed drivers while sober. It should be noted that in the analogous problem of speed limits, a skilled driver operating a vehicle in good mechanical condition may be able to drive safely at speeds in excess of the posted limits, but the speed limits are set considerably lower for the protection of all.

⁷² Hanlon v. Woodhouse, 113 Colo. 504, 160 P. 2d 998 (1945); Richter v. Høglund, 132 F. 2d 748 (C. C. A. 7) (1943).

⁷³ 8 WIGMORE, EVIDENCE (3rd ed., 1940) 802.

⁷⁴ Ladd and Gibson, *The Medico-legal Aspects Of The Blood Test To Determine Intoxication*, 24 Iowa L. Rev. 191, 252, 262 (1939).

⁷⁵ OKLA. STAT. (1951), Art. 12, Sec. 385, as applied in Clapp v. State, 73 Okla. Cr. 261, 120 P. 2d 381 (1941).

⁷⁶ O'Brien v. State, 126 Md. 270, 284, 94 A. 1034 (1915).

evidence obtained a violation of the accused's right against self-incrimination? Is due process denied by a forcible extraction of the test sample?

The Presumption and Due Process

The presumption of intoxication in the model statute set out above is a presumption of fact. Legislation providing that proof of one fact shall constitute *prima facie* evidence of another is merely codification of a rule of evidence and is well within legislative power.⁷⁷ However, certain standards must be followed before such a legislative enactment will meet the requirements of due process. In the case of *Mobile, J. & K. C. R. R. v. Turnipseed*,⁷⁸ a Mississippi statute provided that proof of injury inflicted by the operation of locomotives or cars of a railroad company shall be *prima facie* evidence of lack of reasonable care and skill on the part of the company in reference to such an injury. The United States Supreme Court speaking through Mr. Justice Lurton upheld the statute, over a claim of denial of due process, and set forth the following rule:

"That a legislative presumption of one fact from evidence of another may not constitute a denial of due process of law or a denial of the equal protection of the law it is only essential that there shall be some rational connection between the fact proved and the ultimate fact presumed, and that the inference of one fact from proof of another shall not be so unreasonable as to be a purely arbitrary mandate. So, also, it must not, under guise of regulating the presentation of evidence, operate to preclude the party from the right to present his defense to the main fact thus presumed."⁷⁹

The Court further pointed out that statutes involving presumptions of fact are numerous both in civil and criminal law.⁸⁰ Their effect in the criminal case is merely to create an inference (in opposition to the accused's presumption of innocence) casting upon the defendant the duty of producing some evidence to the contrary. When this is

⁷⁷ *Mobile, J. & K. C. R. R. v. Turnipseed*, 219 U. S. 35, 42 (1910).

⁷⁸ *Ibid.*

⁷⁹ *Ibid.*, 43. See also *Tot v. United States*, 319 U. S. 463, 467 (1943), citing the *Turnipseed* case and others, and stating:

"... a statutory presumption cannot be sustained if there be no rational connection between the fact proved and the ultimate fact presumed, if the inference of the one from proof of the other is arbitrary because of lack of connection between the two in common experience."

⁸⁰ *Supra*, n. 77.

done, the inference ends, and the question is for the trier of facts.⁸¹ In the absence of opposing evidence there is no reason why the jury may not find according to the presumption.⁸²

To be a valid presumption according to the rule of the *Turnipseed* case: (1) there must be some rational connection between the fact proved and the fact presumed (the weight of medical authority attests that this connection exists, a conclusion which has been criticized);⁸³ (2) the inference of one fact from proof of another shall not be so unreasonable as to be a purely arbitrary mandate (even the advocates of chemical tests admit that the tests are subject to error but claim that the standards are high enough to allow a sufficient margin for error and that the presumption is therefore reasonable);⁸⁴ and (3) the defendant must be afforded a reasonable opportunity to submit to the jury, in his defense, all of the facts bearing on the issue (the model statute expressly affords this right to an accused).⁸⁵ Tested by these criteria it would seem that enforcement of the proposed statute would not be a violation of the due process clause.⁸⁶

Self Incrimination

The Fifth Amendment to the Federal Constitution provides, "No person shall . . . be compelled in any criminal case to be a witness against himself . . ." This provision was interpreted by Justice Holmes in *Holt v. United States*:⁸⁷

". . . the prohibition of compelling a man in a criminal court to be witness against himself is a prohibition of the use of physical or moral compulsion to extort communications from him, not an exclusion of his body as evidence when it may be material."⁸⁸

⁸¹ *Ibid.*, 43; MODEL CODE OF EVIDENCE (1942), Rule 704.

⁸² 9 WIGMORE, EVIDENCE (3rd ed., 1940) 411.

⁸³ *Supra*, n. 19.

⁸⁴ *Supra*, n. 49.

⁸⁵ Uniform Vehicle Code, *supra*, n. 61, Sec. 11-902(b)4:

"The foregoing provisions shall not be construed as limiting the introduction of any other competent evidence bearing upon the question whether or not the defendant was under the influence of intoxicating liquor."

⁸⁶ For a comprehensive discussion of presumptions and the chemical testing statute see: Puett, *Chemical Tests For Intoxication In Tennessee*, 23 Tenn. L. Rev. 178, 181 (1954).

⁸⁷ 218 U. S. 245 (1910).

⁸⁸ *Ibid.*, 252. The rule of this case remains the federal law but *cf.* the concurring opinion of Mr. Justice Douglas in *Rochin v. California*, 342 U. S. 165, 179 (1952), and the dissenting opinion of Justices Black and Douglas in *Breithaupt v. Abram*, 352 U. S. 432, 442 (1957).

Dean Wigmore in his treatise on EVIDENCE agrees with the interpretation of the court in the *Holt* case. After reviewing the history of the privilege and the spirit of the struggle by which its establishment came about he concludes that the object of the protection is to prevent ". . . the employment of legal process to *extract from the person's own lips* an admission of his guilt, which will thus take the place of other evidence."⁸⁹ Thus a distinction has been made between testimonial and real evidence.

The Fifth Amendment affords protection only in the case of federal prosecutions and is not a bar to state action.⁹⁰ However, this privilege has been adopted by the constitutions in all but two of the states. The variety of phrasings which exist in the various state constitutions,

" . . . *neither enlarges nor narrows* the scope of the privilege as already accepted, understood, and judicially developed in the common law. The detailed rules are to be determined by the historical and logical requirements of the principle, regardless of the particular words of a particular constitution."⁹¹

Most of the state courts have also adopted the distinction made between real and testimonial evidence, holding the former to be outside the scope of the privilege against self incrimination.⁹² Some state courts have been unwilling to follow the interpretation of Justice Holmes and Dean Wigmore, but these have been criticized for enlarging the privilege beyond any intended limitations without thought of the object sought to be accomplished.⁹³

The Maryland Declaration of Rights, Article 22, provides, "That no man ought to be compelled to give evidence against himself in a criminal case." Three recent Maryland cases have dealt with this provision. In the case of *Allen*

⁸⁹ 8 WIGMORE, EVIDENCE (3rd ed., 1940) 363.

⁹⁰ *Twining v. New Jersey*, 211 U. S. 78 (1908). Confirmed in *Adamson v. California*, 332 U. S. 46 (1947); *Breithaupt v. Abram*, 352 U. S. 432 (1957). Cf. *Palko v. Connecticut*, 302 U. S. 319 (1937), noted 2 Md. L. Rev. 174 (1938).

⁹¹ WIGMORE, *op. cit.*, *supra*, n. 89, 320-324.

⁹² Puett, *supra*, n. 86, 191, providing a list of cases; Wilson and Edman, *Evidence — Scientific Tests For Intoxication — Admissibility*, 51 Mich. L. Rev. 72, 81 (1952).

⁹³ Ladd and Gibson, *Legal-Medical Aspects Of Blood Tests To Determine Intoxication*, 29 Va. L. Rev. 749, 764 (1943); McCORMICK, EVIDENCE (1st ed., 1954) 265. See also MODEL CODE OF EVIDENCE (1942), Rule 205:

"No person has a privilege . . . to refuse (a) to submit his body to examination for the purpose of discovering or recording his corporal features and other identifying characteristics, or his physical or mental condition, or (b) to furnish or to permit the taking of samples of body fluids or substances for analysis."

*v. State*⁹⁴ the accused was convicted of assault with intent to rape. At the trial the prosecution sought to have the defendant, who had taken the stand voluntarily, try on a hat which was alleged to belong to him. This was allowed by the trial court over the defendant's objection. The Court of Appeals reversed, laying down the rule for what it termed "borderline cases" dealing with self-incrimination. The factor determining admissibility is:

" . . . who furnished or produced the evidence? If the accused, especially in open court and on the witness stand, is made to do so by performing an act or experimentation which might aid in connecting him with the crime and establishing his guilt, it is inadmissible."⁹⁵

One year later the Maryland courts were again faced with this problem in *Shanks v. State*.⁹⁶ In this case blood was taken from the coat of a criminal defendant and examined by a toxicologist who was later allowed to testify in court as to what type it was. In affirming the lower court, the Court of Appeals quoted from the *Allen* case to illustrate the difference between experiments made by the accused in court and experiments made outside of court and testified to by other witnesses in court and concluded:

"In the case at bar the appellant did not testify. The blood was taken from his coat, and the evidence as to it was produced by another witness. We can find no justification for his contention that his constitutional rights were violated in this respect."⁹⁷

Davis v. State,⁹⁸ decided in 1948, again involved the admissibility of a toxicologist's determination of blood grouping from a sample taken from the defendant under the guise of a medical examination. The lower court allowed the testimony in evidence, and the Court of Appeals, viewing the case as if there had been no consent, affirmed. The court acknowledged the rule of the *Allen* case but concluded as in *Shanks v. State*.

Thus in Maryland, where physical evidence is obtained from the accused before trial and testimony based thereon

⁹⁴ 183 Md. 603, 39 A. 2d 820, 171 A. L. R. 1138 (1944), noted 13 Md. L. Rev. 31 (1953).

⁹⁵ *Ibid.*, 611.

⁹⁶ 185 Md. 437, 45 A. 2d 85, 163 A. L. R. 931 (1945).

⁹⁷ *Ibid.*, 444.

⁹⁸ 189 Md. 640, 57 A. 2d 289 (1948).

is given in court by another, there is no violation of the privilege against self-incrimination. The sample taken for use in a chemical test for intoxication being physical evidence and the analysis thereof being made out of court, the results of such a chemical test would therefore be admissible over the objection of self-incrimination in the federal courts, a majority of the state courts, and in Maryland.

Search and Seizure

The search and seizure clause of the Federal Constitution is set out in the Fourth Amendment: "The right of the people to be secure in their persons . . . against unreasonable searches and seizures, shall not be violated . . ." Although the Fourth Amendment, as such, does not apply to state action, the Supreme Court has held that the due process clause of the Fourteenth Amendment forbids unreasonable searches and seizures by state officers but does not preclude the use in state court proceedings of evidence so obtained by them.⁹⁹ Provisions prohibiting unreasonable searches and seizures can be found also in most state constitutions. All jurisdictions, both federal and state, allow search of an individual and seizure of evidence following a valid arrest, and the evidence so obtained is admissible.¹⁰⁰ The question of non-admissibility arises where the search and seizure are not made pursuant to a valid arrest.

The federal courts have held that evidence illegally obtained by a federal officer,¹⁰¹ or by a state officer acting in conjunction with a federal officer,¹⁰² is inadmissible, both in state and in federal proceedings. However, the federal courts have held that evidence obtained by state officers, acting alone, is admissible in federal proceedings although the product of an illegal search.¹⁰³ A minority of the state

⁹⁹ *Wolf v. Colorado*, 338 U. S. 25 (1949); *Irvine v. California*, 347 U. S. 128 (1954); *Rea v. United States*, 350 U. S. 214 (1956), noted 16 Md. L. Rev. 240 (1956); *Brethaupt v. Abrams*, 352 U. S. 432 (1957).

¹⁰⁰ *McCORMICK, loc. cit., supra*, n. 93, 291; *Ladd and Gibson, supra*, n. 93, 767; *Wilson and Edman, supra*, n. 92, 82.

¹⁰¹ *Weeks v. United States*, 232 U. S. 383 (1914). Evidence seized by federal marshal after illegal search was held inadmissible in federal proceeding. *Rea v. United States, supra*, n. 99. The Supreme Court held that a federal officer should be enjoined from introducing in a state criminal proceeding evidence obtained by an illegal search and seizure or testifying as to facts revealed by such search.

¹⁰² *Weeks v. United States, ibid.*; *Lustig v. United States*, 338 U. S. 74 (1949).

¹⁰³ *Weeks v. United States, supra*, n. 101; *Feldman v. United States*, 322 U. S. 487 (1944), *dicta*; *United States v. Moses*, 234 F. 2d 124 (7th Cir., 1956); *Gallejos v. United States*, 237 F. 2d 694 (10th Cir., 1957). The one

courts follow the federal rule and hold that evidence illegally seized is inadmissible.¹⁰⁴ Although severely criticized, the rule has been considerably strengthened since its adoption.¹⁰⁵

The majority of the state courts hold that pertinent evidence, no matter how obtained, is admissible against an accused.¹⁰⁶ A provision similar to the Fourth Amendment is found in Article 26 of the Maryland Declaration of Rights and court decisions interpreting it have placed Maryland with the majority. In *Davis v. State*,¹⁰⁷ the Court of Appeals stated:

"This State has aligned itself with those jurisdictions holding that the question of how evidence is obtained is collateral to the issue of the guilt or innocence of the accused, and, therefore, pertinent evidence, no matter how obtained, will be admitted."

However, this rule was modified by the passage of Chapter 194 of the Acts of 1929, Code (1951) Article 35, Section 5, commonly referred to as the "Bouse Act". Under this act evidence obtained by illegal search and seizure is generally inadmissible in the trial of a misdemeanor.¹⁰⁸

In a majority of the states the results of a chemical intoxication test would be admissible in a trial even where the testing sample was the fruit of an illegal search and seizure. The federal courts and a minority of the state

exception is presented where the state officer is acting to enforce a federal law. *Gambino v. United States*, 275 U. S. 310 (1927). For a recent discussion of federal search and seizure see 16 Md. L. Rev. 240 (1956).

¹⁰⁴ *Wolf v. Colorado*, *supra*, n. 99, 29.

¹⁰⁵ For criticism see: 8 WIGMORE, EVIDENCE (3rd ed., 1940), Secs. 2183, 2184, 2184a; Ladd and Gibson, *The Medico-legal Aspects Of The Blood Test To Determine Intoxication*, 24 Iowa L. Rev. 191, 215 (fn. 60) (1939). But cf. Chafee, *The Progress Of The Law*, 35 Har. L. Rev. 673, 695 (1922), where the author states that without such a holding the Fourth Amendment would be practically unenforceable, the civil action for damages and possible criminal action being insufficient to uphold the rights of the individual; *Gambino v. United States*, *supra*, n. 103; *Rea v. United States*, *supra*, n. 99; 50 A. L. R. 2d 531.

¹⁰⁶ *Wolf v. Colorado*, *supra*, n. 99, 29; *The Constitution of the United States of America, Analysis and Interpretation* (1953) 830; *Wilson and Edman*, *supra*, n. 92. The majority would, however, be subject to the above federal policy regarding a state officer acting to enforce a federal law and a federal officer participating in a state proceeding, *supra*, *circa*, p. 211.

¹⁰⁷ *Supra*, n. 98, 645.

¹⁰⁸ The Act is not applicable to prosecutions for carrying a concealed weapon, to prosecutions under the state narcotic laws, in certain counties for prosecutions for violating gambling laws, and in other counties for prosecutions for violating lottery laws. An exception is also made in Wicomico County to prosecutions for violation of alcoholic beverage laws. For a discussion of the history and validity of the Bouse Act and the exceptions thereto see *Salsburg v. Maryland*, 346 U. S. 545 (1954), noted 14 Md. L. Rev. 299 (1954).

courts would admit results procured by their own officers only where they were obtained incident to or following a valid arrest. In Maryland, since "driving while under the influence" is a misdemeanor, the test results would be admissible under the Bouse Act only where, as in the federal and minority state courts, prior to the procurement of the sample there was a valid arrest. Where no arrest precedes the procurement of the test sample, unless consent is found, the evidence is not admissible in the absence of enabling legislation.¹⁰⁹

Due Process and Physical Violence

The Supreme Court in *Rochin v. California*,¹¹⁰ has indicated another possible constitutional objection to the admissibility of the results of chemical tests for intoxication. In that case capsules of morphine were forced from the defendant's stomach by the use of a stomach pump after physical attempts to recover the capsules failed. A conviction for a narcotics offense obtained in the state courts was reversed by the Supreme Court on the ground that the method used to recover the evidence violated the due process clause of the Fourteenth Amendment. In its opinion the Court said:

"This is conduct that shocks the conscience. Illegally breaking into the privacy of the petitioner, the struggle to open his mouth and remove what was there, the forcible extraction of his stomach's contents — this course of proceeding by agents of government to obtain evidence is bound to offend even hardened sensibilities. They are methods too close to the rack and screw to permit of constitutional differentiation."¹¹¹

The doctrine of this case could conceivably be applied to the chemical testing situation; for even where there is a valid arrest it could be argued that if the defendant has refused to submit to the test, forcible extraction of a testing substance from his body would be "conduct that shocks

¹⁰⁹ House Bill No. 13, Maryland's recently defeated (by a voice vote in the Senate Committee on Judicial Proceedings) chemical testing statute, a facsimile of the model statute, provided: "The results of any such tests as specified hereinabove in this section shall be received as evidence in any court of law or equity or before any judge, justice of the peace or other tribunal in this State as presumptive evidence in the case or cases at issue" and would thus have avoided the effect of the Bouse Act in the chemical tests for intoxication area.

¹¹⁰ 342 U. S. 165 (1952).

¹¹¹ *Ibid.*, 172.

the conscience".¹¹² It would seem that the answer to this argument lies in the language used by the Court in the *Rochin* case where at page 171 it said:

"The Due Process Clause places upon this Court the duty of exercising a judgment, within the narrow confines of judicial power in reviewing State convictions, upon interests of society pushing in opposite directions."

The "interests of society" are, on the one hand, the right of the individual not to be deprived of life, liberty, or property without due process of law; and, on the other, the desire of the state to keep its roads free from the driver who is under the influence and who is thus endangering the lives of his fellow citizens.

This problem was squarely presented to the United States Supreme Court in the recent case of *Breithaupt v. Abram*,¹¹³ the first chemical testing case to be argued before that body. Breithaupt was involved in a serious automobile accident in New Mexico in which three persons were killed. While he was lying unconscious in the emergency room of a hospital the attending physician, at the request of a state patrolman, withdrew a sample of his blood which upon analysis was found to contain 0.17 per cent alcohol. Breithaupt was tried for involuntary manslaughter, and testimony of the results of the analysis and the significance thereof was admitted into evidence over his objection. He was subsequently convicted and sentenced. Instead of appealing the conviction, Breithaupt petitioned the Supreme Court of New Mexico for a writ of habeas corpus, arguing that the conviction based on the results of the involuntary blood test deprived him of his liberty without due process of law as guaranteed by the Fourteenth Amendment.¹¹⁴ The petition was denied,¹¹⁵ and the United States Supreme

¹¹² *Bednarik v. Bednarik*, 18 N. J. Misc. 633, 16 A. 2d 80, 90 (1940); *State v. Cram*, 176 Ore. 577, 160 P. 2d 283, *dis. op.*, 292 (1945); *State v. Weltha*, 228 Iowa 519, 292 N. W. 148 (1940); *State v. Kroening*, 274 Wis. 266, 79 N. W. 2d 810 (1956). However, see: *People v. Duroncelay*, 146 A. Cal. App. 96, 303 P. 2d 617 (1956); *Block v. People*, 125 Colo. 36, 240 P. 2d 512 (1951); *State v. Ayres*, 70 Idaho 18, 211 P. 2d 142 (1949); *State v. Cram*, 176 Ore. 577, 160 P. 2d 283 (1945).

¹¹³ 352 U. S. 432 (1957).

¹¹⁴ The petitioner also claimed, unsuccessfully, that the search and seizure clause of the Fourth Amendment and the self incrimination clause of the Fifth Amendment should be applied in this case by extension of these protections through the due process clause of the Fourteenth Amendment. Citing *Wolf v. Colorado*, 338 U. S. 25 (1949), the court summarily dismissed these arguments.

¹¹⁵ 58 N. M. 385, 271 P. 2d 827 (1954).

Court granted certiorari.¹¹⁶ In affirming, with three justices dissenting and after a comparison of the immediate case with the *Rochin* case, the Court concluded, "that a blood test taken [from an unconscious person] by a skilled technician is not such 'conduct that shocks the conscience', [citing *Rochin v. California*] nor such a method of obtaining evidence that it offends a 'sense of justice' . . ."¹¹⁷ The Court warned that the indiscriminate taking of blood under other conditions or by persons not competent to do so might amount to such brutality as would come under the *Rochin* rule,¹¹⁸ but held ". . . the absence of conscious consent, without more, does not necessarily render the taking a violation of a constitutional right",¹¹⁹ thus indicating that although a chemical test might violate due process under the *Rochin* case, the methods used would have to be equally "shocking" and "brutal". As before, the Court indicated that the public policy underlying its decision was a balancing of the interests of society against the rights of the individual.¹²⁰

The Maryland Declaration of Rights, Article 23, provides:

"That no man ought to be taken or imprisoned or disseized of his freehold, liberties or privileges, or outlawed, or exiled, or in any manner destroyed, or deprived of his life, liberty or property, but by the judgment of his peers, or by the Law of the Land."

¹¹⁶ 351 U. S. 906 (1956).

¹¹⁷ *Supra*, n. 113, 437. At p. 436, the court explained ". . . due process is not measured by the yardstick of personal reaction or the sphygmogram of the most sensitive person, but by that whole community sense of 'decency and fairness' that has been woven by common experience into the fabric of acceptable conduct." In a footnote to the majority opinion the court reasoned, "The fact that so many States make use of the tests negatives the suggestion that there is anything offensive about them."

¹¹⁸ *Supra*, n. 113, 437-438.

¹¹⁹ *Ibid.*, 435.

¹²⁰ *Supra*, n. 113, 439-40:

"As against the right of an individual that his person be held inviolable, even against so slight an intrusion as is involved in applying a blood test of the kind to which millions of Americans submit as a matter of course nearly every day, must be set the interests of society in the scientific determination of intoxication, one of the great causes of the mortal hazards of the road. And the more so since the test likewise may establish innocence, thus affording protection against the treachery of judgment based on one or more of the senses. Furthermore, since our criminal law is to no small extent justified by the assumption of deterrence, the individual's right to immunity from such invasion of the body as is involved in a properly safeguarded blood test is far outweighed by the value of its deterrent effect due to public realization that the issue of driving while under the influence of alcohol can often by this method be taken out of the confusion of conflicting contentions."

The Court of Appeals in *Solvuca v. Ryan & Reilly Co.*¹²¹ has interpreted "Law of the Land" to be the equivalent of "due process of law" used in the Fourteenth Amendment to the Federal Constitution. If the conduct of state officers in extracting a testing sample would not be a violation of due process under the Fourteenth Amendment it would probably also not be a denial of due process under Article 23 of the Declaration of Rights. Viewed in the light of the *Breithaupt* and *Rochin* cases it seems unlikely that this conduct, short of brutality or physical violence, would violate either clause.¹²²

CONCLUSION

There is a definite need for a valid test for intoxication. Viewed in the light of the above analysis it appears that the tests which utilize blood and breath are sufficiently accurate and pose no insurmountable problems of constitutionality or admissibility. The states which have enacted the model statute and have utilized the chemical tests which it sanctions report favorable results.¹²³ It is for the legislature and the law enforcement agencies to determine whether this is to be the solution to the problem in Maryland.¹²⁴

¹²¹ 131 Md. 265, 270, 101 A. 710 (1917).

¹²² For a collection and discussion of cases dealing with chemical tests and the constitutional questions involved see 164 A. L. R. 967, 25 A. L. R. 2d 1407, Secs. 2-6, and A. L. R. 2d Supp. Serv., pp. 1538-1540.

¹²³ Lester, Greenberg, Tiernan, *Driving Under The Influence of Alcohol*, 14 Q. J. Studies on Alcohol 614 (1953); Harger, Lamb, and Hulpleu, *A Rapid Chemical Test For Intoxication Employing Breath*, 110 J. A. M. A. 779, 784 (1938).

¹²⁴ Although chemical tests can be used without companion legislation, passage of House Bill No. 13 by the Maryland Legislature would have greatly facilitated their administrative and judicial acceptance in Maryland. See n. 109, *supra*.