REFERENCES

- Handysides, P. D. (1845). *Lond. med. Gaz.*, **32**, 805.
 Jolly, R. H. H. (1943). *Med. Offr.*, **69**, 13.
 Kershaw, W. E., St. Hill, C. A., Semple, A. B., and Meredith-Davies, J. B. (1956). *Ann trop. Med. Parasit.*, **50**, 355.
 Knox (1845). *Lond. med. Gaz.*, **32**, 805.

- Lizars, A. S. (1845). *Ibid.*, **32**, 805.
 Mackenzie (1845). *Ibid.*, **32**, 805.
 Madsen, H. (1961). *Medd. Grønland*, **159**, No. 7, p. 1.
 Turner, W. (1860). *Edinb. med. J.*, **6**, 209.
 van Someren, V. D. (1937). *Brit. med. J.*, **2**, 1162.
 Young, May R. (1947). *J. Helminth.*, **22**, 49.

The Drinking Driver

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A period of six years' experience in Manchester is covered in this survey. It includes the first 100 cases already described (Freeman, 1960). During this period a total of 392 persons were seen who had been apprehended by the police on suspicion of being under the influence of alcohol while in charge of a motor vehicle, and, though the clinical picture remained consistent throughout, several features emerged with greater clarity. A disturbing trend was the progressive increase in the number of drivers brought in for examination, and this appeared to be in line with conditions throughout the country. There was no consistency in the pattern of incidence save for the annual pre-Christmas "bulge." Because speed in calling the police medical officer had been emphasized, most of the arrested drivers were examined within 20 minutes of their arrival at the police station.

It was made clear to every driver at the outset that he had the right to refuse to be examined. Refusal was almost invariably associated with drivers manifestly certifiable as being intoxicated, and it was evident throughout that the less alcohol a driver had consumed the more ready—and even anxious—he was to agree to examination, while the more he had imbibed the quicker he was to clutch at the straw of refusal. It would be advisable to make it less simple to refuse to be examined, and we might well copy the method employed in New York State where application forms for driving licences contain a paragraph giving the police permission to order the necessary examination in such cases. Refusal is still permitted, but in that event the licensing authorities are immediately notified and the licence revoked.

Examination

Once the driver had given his permission and read and signed a form of consent he was examined along the lines laid down in *Recognition of Intoxication* (British Medical Association Special Committee, 1958). In arriving at an opinion a careful assessment had to be made of the overall picture, making full allowance for worry, fatigue, and excitement, together with all tests satisfactorily performed. Above all, one always had to bear in mind the oft repeated axiom: "With the exception of the smell of the breath each and every symptom or sign can be explained by a cause other than alcohol." While no single sign could conceivably be decisive in arriving at an opinion, the following signs appeared together with such consistency that their presence together was regarded as of the greatest significance diagnostically: (1) slurred speech; (2) full, bounding pulse; (3) impaired memory; (4) poor co-ordination; (5) widely dilated pupils with very little or no reaction to strong light—this sign presented itself with such consistency that it was considered to be one of the most suspicious and significant signs, and, indeed, one which cannot be "faked"—and this fact was borne out in the results; (6) fine lateral nystagmus. The consistent presence of this phenomenon corroborates to the full

the opinion emphasized in medical literature on the subject, and its value in diagnosis was considered to be second only to the state of the pupils. At the same time attention must be drawn to one significant fact which was revealed in the correspondence (Howells, 1960) that followed publication of my first survey. This was the observation that nystagmus disappeared temporarily when the content of alcohol in the blood reached an exceptionally high level. This was confirmed in this survey in seven cases in which the driver was well and truly drunk and yet nystagmus was not present. In three of the seven cases in which a plea of not guilty was tendered and urinalysis was carried out the blood-alcohol equivalent in each case was over 270 mg./100 ml.

The incidence of the outstandingly significant clinical phenomena in the present series is given in the following table.

TABLE I.—*Outstandingly Significant Clinical Findings*

Agreed to Examination and Certified	Lateral Nystagmus	Widely Dilated Pupils With Little or No Reaction to Light
281	270 (96%)	276 (98.2%)

It is felt strongly that, of the signs discussed, the consistent presence of pupils almost fixed in full dilatation has received insufficient emphasis in the literature.

Two drivers in this series who had been arrested on suspicion of being under the influence of alcohol were proved to be suffering from hypoglycaemia. Each made a speedy and dramatic recovery within a few minutes of appropriate emergency treatment. At first glance both had shown signs associated with a considerable intake of alcohol: grossly slurred speech, staggering gait, disorientation, and so on. Such cases emphasize the fact that one must never take it for granted that alcohol has been consumed nor must one's vigilance in this respect be relaxed for one moment.

Analysis of Figures

Age

The majority of drivers seen (71%) were between the ages of 20 and 40, and most were first offenders who had never before seen the inside of a police station. The bright spot in the analysis was the rarity of offenders in the teens (1%). In an era in which condemnation of youth has been more than fashionable, and even on occasion justifiable, this must be regarded with great satisfaction.

Occupation

In spite of the dangers of disqualification it was found that almost two-thirds of the drivers (63.5%) were dependent on

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driving for a livelihood. Employers must accept a large measure of blame, since only a tiny minority insist that their employees must not drink on pain of dismissal while driving a vehicle belonging to the firm. The drivers seen in this series represented all sections of the community, except that there were no women and no members of the Jewish race. It was found that 32% belonged to the professional classes; eight (2%) were members of the medical profession.

Time of Examination

With the advent in recent years of new licensing laws, together with the modernization of legislation regarding gambling, the growth of so-called clubs (drinking or gambling, but usually both) in which the sale of liquor was permitted into the small hours of morning has been spectacular. It was thus a natural sequel that the times at which drinking drivers were examined showed a corresponding change and moved to a much later hour of the night. The pre-Christmas rise in arrests is indicated in the Figure. It remains a saddening fact that well-meaning but stupid employers allow office and works parties in which much alcohol is consumed by experienced and inexperienced drinkers alike during the days preceding Christmas. It is such parties—known in Lancashire as

“Footing-parties”—which so often spell disaster to normally well-behaved family men who have been tempted by well-meaning colleagues and employers to have just a couple more drinks “for the road.”

Urinalysis

Limited use was made of urinalysis throughout—a limitation dictated by the need to save money and manpower. As a result it has not proved possible to undertake a comprehensive analysis of all the cases seen, though a sample survey of 82 cases in which urinalysis was undertaken gave the results shown in Table II. No urinalysis was undertaken where a plea of guilty was tendered.

TABLE II.—Sample Survey Urinalysis*

Below 150 mg.	151-200 mg.	201-250 mg.	251-300 mg.	Over 300 mg.
8 (7.5%)	15 (19%)	46 (58%)	10 (11.5%)	3 (4%)

* Converted to mg./100 ml. blood alcohol.

Such figures require a minimum of comment since their significance is apparent. A British Medical Association Special Committee (1960) came to the conclusion that “The Committee cannot conceive of any circumstances in which it could be considered safe for a person to drive a motor vehicle on the public roads with an amount of alcohol in the blood greater than 150 mg./100 ml.”

The inevitable conclusion is that only the worst cases are being taken into custody at the present time. In assessing the

results of urinalysis, it must be said that they have proved to be singularly ineffective as evidence and it is doubtful whether such tests are worth the time, labour, and expense involved under present-day legislation. Time and again it has been apparent that magistrates as well as juries have been reluctant to attach any importance to forensic laboratory findings; translation into equivalent pints of beer appeared to make little impression.

Certification and Disposal

Certification was carried out in 323 cases (82.4%). It must be said that almost without exception the remainder were borderline cases who were fortunate to escape. The fate of those certified followed what is now a familiar pattern. Over 90% were convicted, though the difference in disposal between magistrates' courts (97% convicted) and Crown courts with a jury (49%) is significant (Table III). As the penalties imposed in the Crown courts were almost identical with those of the lower courts, the obvious temptation was to elect trial by jury, provided the drivers concerned had the wherewithal to pay the considerable extra costs involved in barristers' fees, and so on.

TABLE III.—Difference in Disposal Between Magistrates' Courts and Crown Courts

Total Seen	Certified	Magistrates' Courts		Crown Courts	
		Certified	Convicted	Certified	Convicted
392	323 (82.4%)	278	270 (97%)	45	22 (49%)

Penalties

The record of fines imposed on conviction for a first offence shows that in 46% of such cases the fine was £10 or less; this is the penalty now enacted for dropping litter in the streets. Though disqualification remains the more effective penalty, the fines imposed hardly seem commensurate with the gravity of the offence.

Discussion

Looking back over the cases seen it is clear that certification was carried out only in cases in which there was no shadow of doubt. One would think that the evidence of the arresting officer, together with the confirmation of the divisional inspector and the findings and opinion of an experienced medical officer, would present a picture abundantly clear to those who administer justice. The fact that the latter could, and too often did, acquit the drivers concerned clearly demonstrates the amount of protection afforded to drivers in our courts.

Though one more link, that of urinalysis, has now been forged in the chain of evidence, it was found that it has hitherto been of little value in influencing court decisions. It is clear that no chemical test will have any real value until legislation is enacted laying down a specific blood-alcohol content above which conviction would be mandatory. It is heartening to note that in 1964 the Annual Representative Meeting of the B.M.A. asked that such legislation should be introduced.

It is widely known that many drivers who are involved in accidents when under the influence of alcohol escape the clutches of the law by exaggerating injury or shock and thus manage removal to hospital. By the time investigation in a casualty department has been completed so has the sobering-up process, and yet another driver has escaped the drag-net. It should not be too difficult to enact that all drivers brought to hospital after road accidents should have some form of chemical analysis carried out on admission to determine the level of alcohol, if any, in the blood.

The wide disparity in the fines inflicted raises the issue of whether such cases should continue to be tried by lay magistrates. I share the view of many that the time has come when all such cases, on summary trial, should be brought before full-time, legally qualified stipendiary magistrates.

Conclusions

Six years of service has made it clear to me that there will have to be much re-thinking on the increasing problem of the drinking driver. Not only are our laws outdated and totally inadequate, but the true significance of the magnitude of the problem and of its dangers has still to be fully appreciated by the public at large. Propaganda must be increased tenfold, and here the press, radio, television, and leaders of society should, and indeed must, play their part to the full. Above all, let us hear no more the boast of so many who ought to know better: "I drive better when I have had a drink."

In the age when denigration of the police appears to be a popular pastime, it would be remiss to conclude this survey without paying tribute to the police force in Manchester. There can be no more difficult, truculent, and even violent person than the driver under the influence of alcohol. The infinite tact, patience, and forbearance of all ranks of this police force under such circumstances were an object lesson in self-control which I envied. As far as my own dealings with the police were concerned, my opinion was received at all times with politeness and courtesy and my decisions accepted without question.

I thank all those who wrote to me, from Great Britain and abroad, after the publication of my original survey in 1960, and who asked me to continue with the task. It is hoped that this final effort will prove of some interest and use to them.

Summary

A series is described of 392 persons who over the last six years had been apprehended by the police in Manchester on suspicion of being intoxicated while in charge of a motor vehicle.

Certain clinical signs appearing together were held to be diagnostically significant: slurred speech; full bounding pulse; impaired memory; poor co-ordination; widely dilated pupils with little or no reaction to strong light; and fine lateral nystagmus.

Of the 323 drivers who were certified as intoxicated 97% of those who appeared before magistrates' courts were convicted. The percentage of convictions fell to 49% when drivers appeared before Crown courts with a jury.

Most of the drivers (71%) were between 20 and 40. Teenage offenders were rare (1%). Thirty-two per cent. of the drivers belonged to the professional classes, and all were male. None belonged to the Jewish race.

The advent of new licensing laws and the growth of gambling clubs meant that drivers were apprehended and examined at a later hour of the night than hitherto. There was a marked rise in arrests before Christmas.

It was thought that no chemical test would be of value until legislation was enacted that laid down a blood-alcohol content above which conviction would be mandatory.

REFERENCES

- British Medical Association Special Committee (1958). *Recognition of Intoxication*. B.M.A., London.
— (1960). *Relation of Alcohol to Road Accidents*. B.M.A., London.
Freeman, S. (1960). *Brit. med. J.*, 2, 1513.
Howells, D. E. (1960). *Ibid.*, 2, 1885.

Medical Memoranda

Plasma Renin in a Case of Conn's Syndrome with Fibrinoid Lesions: Use of Spironolactone in Treatment

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We previously reported (Brown *et al.*, 1963a, 1964a) clinical details of a patient in whom the combination of a subnormal plasma-renin concentration and increased aldosterone secretion suggested the presence of a Conn's tumour. The present paper describes the effect of prolonged treatment of this case with spironolactone, the subsequent removal of the tumour, and the demonstration of fibrinoid lesions in the renal arterioles. The case will be reported in detail elsewhere.

CASE REPORT

In 1961 a 33-year-old man lost consciousness briefly and his doctor found the blood-pressure was raised (190/100 mm. Hg). In 1963, after an episode of weakness in the legs, he was admitted to Ashford Hospital, Middlesex (in the care of Drs. K. D. Keele and A. Polak). His blood-pressure was then 210/130 mm. Hg, the plasma potassium was 2.6 mEq/l., and the optic fundi were normal. He was subsequently transferred to St. Mary's Hospital, where these observations were confirmed (Fig. 1). Renal arteriography revealed nothing abnormal. Total exchangeable sodium (Na_E 3,773

mEq) and aldosterone secretion (1,140 $\mu\text{g./day}$) were high, while total exchangeable potassium (K_E 2,102 mEq) and plasma renin (0.6 to 4 units/l.) were below normal.

The effect of treatment with spironolactone (tab. Aldactone-A, 300 mg./day) is shown in Fig. 1. The plasma electrolytes rapidly became normal, while the blood-pressure fell more slowly. When next measured, the Na_E (3,160 mEq) and K_E (3,280 mEq) were normal. The production of aldosterone remained unchanged, although in the later months of treatment the plasma renin was consistently in the upper part of the normal range of 5 to 18 units/l. (Brown *et al.*, 1963a, 1964c).

The spironolactone treatment was then stopped and during the next two months the plasma electrolytes, Na_E , K_E , plasma renin, and blood-pressure reverted to levels near the initial values (Fig. 1).

The patient's personal arrangements prevented operation at this stage, and he was treated with oral potassium supplements (156 mEq/day) for the next three months. During this period Na_E and K_E again became normal and the plasma renin rose, although the blood-pressure remained high (Fig. 1).

At operation (Mr. Kenneth Owen) a tumour (20 by 15 mm., weighing 5 g.) was removed from the left adrenal gland, and a biopsy of the left kidney was carried out. During the next two weeks the patient retained 911 mEq of potassium, while the net loss of sodium was 745 mEq. On his discharge three weeks later the blood-pressure was 140/90 mm. Hg, and the plasma electrolytes were normal (Na^+ 137; K^+ 4.8 mEq/l., Tco_2 28 mMol/l., and blood urea 26 mg./100 ml).

Histological examination (Dr. R. A. Parker) showed that the tumour was a benign cortical adenoma. The renal arterioles showed severe hyaline changes and fibrinoid lesions (Fig. 2).