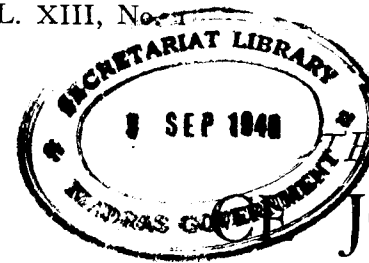


VOL. XIII, No. 1

JANUARY-MARCH, 1940



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*... A Review for the Police Forces
of the Empire*

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Recent Judicial Decisions

UNINSURED MOTOR VEHICLES

Goodbarne v. Buck and Another

IF a person drives or permits someone to drive a motor vehicle on a road and there is no policy of insurance in force in relation to that vehicle such as is required by the Road Traffic Act, 1930, he is liable to a fine of £50 and/or three months' imprisonment and to be disqualified from holding a driving licence for twelve months from the date of the conviction (Road Traffic Act, 1930, sec. 35 (2)). But if there is in force a policy which is subsequently avoided by the insurance company (*e.g.* on the ground of the policy having been obtained by fraudulent misstatements) although the result will be the same from the point of view of any person who was injured by the driver whilst he held such a policy, namely, that the driver is not insured in respect of such accident, neither the driver nor anyone who permitted him to drive is guilty of any offence under sec. 35 of the Road Traffic Act, 1930. This seemingly rather illogical result arises from the wording of sec. 35 (1) of the Act, the material parts of which are as follows:

"it shall not be lawful for any person to use or cause or permit any other person to use, a motor vehicle on a road, unless there is in force in relation to the user of the vehicle by that person or that other person, as the case may be, such a policy of insurance . . . as complies with the requirements of this Part of this Act."

Hilbery J. has held that these words cover only the case of a motor vehicle being driven without any insurance policy,

but do not apply to a case where an insurance policy has been issued; but the insurance company were at all times entitled to avoid the policy and do avoid it.

The case in which Hilbery J. reached this decision was a civil action tried in the King's Bench Division on October 9th, brought by the widow of one Goodbarne, who was killed by the negligent driving of a motor van by the defendant, W. E. Buck. The action was brought against W. E. Buck for negligence and against his brother, H. A. Buck, for breach of statutory duty in permitting W. E. Buck to drive a motor vehicle in relation to which there was no policy of insurance in force. The facts as found by the learned Judge were that H. A. Buck signed an insurance proposal for the motor van which he described as his and untruly stated that neither he nor anyone who to his knowledge would drive the vehicle had been convicted of an offence in relation to a motor vehicle. He knew that his brother was going to use the vehicle and his brother had been convicted of such an offence. The insurance company, after the accident, as they were entitled to do, repudiated liability under the policy.

The learned judge further found that although H. A. Buck purported to be the owner of the motor van, in truth it was owned by W. E. Buck, who had obtained the assistance of H. A. Buck in order to give a colourable title and so avoid the vehicle ever being available to W. E. Buck's creditors. Assuming that it could be said in the circumstances (which he doubted) that H. A. Buck had permitted W. E. Buck to use the motor van, Hilbery J. held that as the policy was voidable and not void, no offence had been committed under sec. 35 of the Road Traffic Act with the consequence that the plaintiff had no remedy for breach of statutory duty against the only solvent defendant, H. A. Buck.

This decision does not mean that a person who has obtained a voidable insurance policy which is subsequently avoided may not have been guilty of a criminal offence. Where such a policy was obtained by deliberate misstatements there could undoubtedly be a prosecution for obtaining the policy by false pretences under sec. 32 of the Larceny Act, 1916.

POOL BETTING

Stovell v. Jameson

The prohibitions contained in our laws relating to betting may not be based upon any logical principle but they have at least been consistent in forbidding the public to resort to particular premises in order to make betting transactions. This prohibition was relaxed when the Racecourse Betting Act, 1928, permitted the use of totalisators on horse racecourses approved by the Racecourse Betting Control Board and a similar indulgence was granted by sec. 3 (1) of the Betting and Lotteries Act, 1934, in respect of dog racecourses licensed under that Act. In addition to the prohibition of pool betting or similar transactions to be implied from the wording of sec. 1 of the Betting Act, 1853 (see *Everett v. Shand* [1913], 2 K.B. 522) by subsec. (2) of sec. 3 of the 1934 Act it was provided that:

"Save as is permitted by the preceding subsection" (legalising the use of totalisators on "approved" horse racecourses and licensed dog racecourses) "no person shall use any premises whether situate on a track or not or cause or knowingly permit any such premises to be used as a place where persons resorting thereto may effect pari-mutuel or pool-betting transactions."

In *Stovell v. Jameson* on October 12th and 13th, 1939, the Divisional Court (Lord Hewart, L.C.J., Charles and Humphreys, JJ.) had to consider a condition of affairs which, if its legality had been upheld, would have meant that anyone could have invited people to his premises, if he were so minded, to engage in pool-betting transactions, provided that he resorted to a little ingenuity as to the place for the receipt of the bets. *Stovell v. Jameson* was a case stated by the Croydon Borough Justices upon an information by a police officer against a tobacconist for breaches of subsec. (2) of sec. 3 of the Betting and Lotteries Act, 1934. The facts proved or admitted before the justices were that on various dates in October 1938 members of the public had gone to Jameson's shop and obtained from him coupons for a football betting pool conducted by Messrs. Strang of Edinburgh. On other dates in October and November 1938 persons had resorted to Jameson's

shop in order to return the coupons duly completed and to hand over money which they owed to Strang's in respect of previous transactions. The coupons contained conditions under which Messrs. Strang could by notice to the competitor refuse to accept any particular competitor's coupons. It was further proved that Jameson sent the money handed over to him to Edinburgh after deducting commission to which he was entitled on each transaction. The justices held upon these facts that no offence was disclosed and dismissed the information.

Delivering judgment allowing the appeal Lord Hewart, L.C.J., stated that although there was a labyrinth of reported cases under the Betting Acts it was fortunately only necessary for the Court to consider three decisions. Of the cases to which the Lord Chief Justice referred, two related to the attempts of one Stoddart to defeat the provisions of the Betting Act, 1853, by having an office in Holland as well as in London. In the first of these cases (*Stoddart v. Hawke*, [1902], 1 K.B. 359) Stoddart was charged with keeping an office at an address in London for the purpose of money being received by him on betting transactions contrary to sec. 1 of the Betting Act, 1853. It was proved that coupons were procurable at the London office and that competitors were required to and did post the coupons and their money to Stoddart at an address in Holland and further that Stoddart had remitted money from Holland to a bank account in London from which he had paid successful competitors. Stoddart was duly convicted and the Divisional Court affirmed the conviction upon the ground (as stated by Lord Alverstone, C.J., at p. 389) that the London office was "an essential part of the system" under which Stoddart "received" the money. The second report (*Lennox v. Stoddart*; *Davis v. Stoddart* [1902], 2 K.B. 21) relates to two civil actions by competitors seeking the return of their money under sec. 5 of the Betting Act, 1853. In the course of a judgment upholding the decision in the previous case in the Divisional Court Vaughan-Williams, L.J., said (at p. 33):

"the issuing of these coupons from the office in this country was really a material and necessary step for the purpose of the receipt

of the money by the defendant and there was a use of this office for the purpose of money being received within the terms of sec. 1 of the Betting Act, 1853."

The third case to which the Lord Chief Justice referred arose out of the Street Betting Act, 1906 (*Dunning v. Swetman* [1909], 1 K.B. 774), it being held that a person who distributed leaflets in the street advertising the terms upon which another person (Morton) would bet was loitering in the street "for the purpose of betting" because

"he was doing that which was a substantial part of the business of betting, namely, giving a man who was invited to bet, information as to the terms upon which Morton would bet" (per Lord Alverstone, C.J., at p. 777).

Applying the principles laid down in these cases to the subsec. (2) of sec. 3 of the Betting and Lotteries Act, 1934, Lord Hewart, L.C.J., stated that the relevant words were: "may effect pari-mutuel or pool-betting transactions." This did not mean the carrying out of the whole transaction upon the premises forbidden by the statute. The Act was infringed if a substantial part of the business of betting was done there. In the present case it was quite obvious that the moneys handed over in the tobacconist's shop were (after deducting commission) automatically transferred to Edinburgh. As a "substantial part" of Strang's business was being done in the shop at Croydon, the premises were being used "as a place where persons resorting thereto might effect pool-betting transactions." An offence had therefore been proved and the appeal would be allowed.

Charles and Humphreys, JJ., gave judgments to the same effect.

"KNOWINGLY" IN POSSESSION OF AN EXPLOSIVE SUBSTANCE *R. v. Timothy Dacey*

The statement of Humphreys J. in the above case of what must be proved in order to establish a charge of being "knowingly" in possession of or having under one's control an explosive substance, should prove of considerable use to police officers engaged in detecting this type of crime.

The occasion for this statement of the law was an application by one Timothy Dacey to the Court of Criminal Appeal (Lord Hewart, L.C.J., Humphreys and Singleton, JJ.) for leave to appeal against his conviction and a sentence of seven years' penal servitude which he received at Glamorgan Assizes when convicted before Cassels J. on an indictment containing two counts, sec. 4 of the Explosive Substances Act, 1883, the material terms of which are as follows:

"Any person who . . . knowingly has in his possession or under his control any explosive substance, under such circumstances as to give rise to a reasonable suspicion that he . . . does not have it in his possession or under his control for a lawful object, shall, unless he can show he . . . had it in his possession or under his control for a lawful object, be guilty of felony."

The first count of the indictment charged the appellant with having explosive substances "in his possession," and in the second count he was charged with having them "under his control."

The facts were that a police officer went to the appellant's premises with a search warrant granted under sec. 8 of the Explosive Substances Act, 1883. On arrival at the premises the appellant was seen to emerge from his cellar. On being told the purpose of the visit, the appellant said he had a parcel that had been left with him a week ago. He thereupon produced a number of parcels found to contain a saucepan, wooden spoon, paraffin wax and potassium chlorate. A search revealed a bag containing explosives and detonators hidden under the rafters of the cellar ceiling. When asked for a further explanation the appellant said that a man had brought these things about a week ago.

Delivering the judgment of the Court dismissing the application, Humphreys J. stated that it was desirable that it should be clearly known what is necessary to be proved by the prosecution in order to establish a charge under sec. 4 of the Explosive Substances Act. First, it must be proved that the accused was in possession of something which is an "explosive substance" within sec. 9 of the Explosive Substances Act, 1883. This section does not attempt to define an "explosive substance" but states that it shall be "deemed to include"

both materials for making an explosive substance and any "apparatus, machine or implement" or part thereof intended to be used or adapted for causing an explosion. Secondly, it must be proved that the accused had such "explosive substance" in his possession or control under circumstances giving rise to the reasonable suspicion that it was not for a lawful object. The learned judge then added these important words:

"It is not necessary for the prosecution to prove knowledge by the accused person of the explosive nature of the substance. No doubt evidence that the accused did or did not know or suspect the use to which the substance might be or was intended to be put, would be material on the question of the reasonableness or otherwise of the suspicion that possession by the accused person was not for a lawful object, but that is very different from saying that the prosecution must fail unless it can prove some degree of chemical knowledge on the part of the accused person" (27 Cr. App. R. at 88).

"USING" PREMISES FOR BETTING

R. v. Milne, Boundford and Leonard

The decision of the House of Lords in this case reversing that of the Court of Criminal Appeal and allowing the defendants' appeal against their conviction at the Central Criminal Court throws much new light upon the complex provisions of the Betting Act, 1853. An appeal from the Court of Criminal Appeal to the House of Lords is, it may be remembered, only allowed if the Attorney-General certifies that the point of law involved is "of exceptional public importance," and there is no doubt that this can very definitely be said of the point involved in the present case. The Betting Act, 1853, though often before other courts, has seldom been considered by the House of Lords, the last occasion indeed being so long ago as 1899 when (in *Powell v. Kempton Park Racecourse Co.* [1899] A.C. 143) a friendly action was brought in order to test the validity of a decision of a Divisional Court (in *Hawke v. Dunn* [1897], 1 Q.B. 579) which had decided, no doubt much to the consternation of racegoers, that the presence of bookmakers on a racecourse was a breach of the

Betting Act, 1853. In that case their Lordships decided that a bookmaker although he may be found by his clients usually in a particular part of a racecourse does not "use a place" there within the meaning of the Betting Act, because, as Lord Halsbury put it, he does not exercise "dominion and control" over the place. From that statement of the law arose what the House of Lords has now shown to be an entirely mistaken view of the law that in order to convict a person who is not the occupier of using a place you must show that he is using it with the permission of the occupier (*R. v. Deaville* [1903] 1 K.B. 468). Their Lordships' judgments show that the current interpretation of "using a place" was in this respect far too narrow. On the other hand the decision in *Samuel v. Adelaide Club* [1934] 2 K.B. 69, that a bookmaker who supplied betting information to a club and gave the club a commission on bets telephoned from its premises, is a person "procured" by the club to use the premises for betting, does not admit of the general interpretation that a person to whom bets are telephoned from a particular place can be treated as being at that place for the purpose of the Betting Act.

An account of this case was given when it was before the Court of Criminal Appeal (pp. 259 *et seq.*); it is therefore unnecessary to do more than briefly summarise the facts. The appellant Mrs. Milne was the proprietress of a social club known as the Byculla Club. The appellant Boundford assisted her in the conduct of it. The appellant Leonard was a member of the club. The club had two public telephone boxes. A room on the club premises had been let to a bookmaker Payne who had installed a clerk there who settled members' accounts with Payne. The telephones were used (*inter alia*) to make bets with Payne, whose office was fifty yards away. The only count of the indictment which it is material to consider is that which alleged that Mrs. Milne was using the club premises for the purpose of another person (namely Payne) who was using them for the purpose of betting with persons resorting thereto. The trial judge had told the jury that they could treat Payne as if he were personally present on the premises, provided that they were satisfied that there was "an arrangement" between Mrs. Milne and Payne that it was to their mutual advantage that

these bets should be telephoned to him from her premises. This direction was affirmed by the Court of Criminal Appeal.

The judgments delivered by the House of Lords (Lord Maugham, L.C., Lord Atkin, Lord Macmillan, Lord Wright and Lord Porter) showed that this was not the relevant inquiry which the jury should have made. Their Lordships followed a decision of the Scottish Courts (*Young v. Darrah* [1929] S.C. (J) 17) that the "dominion and control" referred to by Lord Halsbury may be a *de facto* control without permission of the lawful occupier, in preference to the English cases (such as *R. v. Deaville (supra)*) in which it was held that there must be an arrangement with the occupier before the person conducting the betting business could be convicted. In the Scottish case a workman was convicted for using part of his employer's premises (namely, the canteen) for the purpose of betting, although this was absolutely unauthorised by his employers. So in the present case each of their Lordships stated that Payne (who in fact was never charged) might on proper evidence have been convicted of using the premises without any proof of an "arrangement" with Mrs. Milne. On the other hand if the case against these appellants was sought to be established, it was not enough that Payne received telephone messages from the club over a public telephone to constitute a "user" by him. In order to make a "user" in the case of telephone bets the type of evidence necessary was summarised by Lord Atkin as follows:

"I do not think he [the bookmaker] need have any legal right of occupation; or that he need be a partner with the actual occupier. Payments made to the occupier or keeper or user of the premises, either by way of commission or otherwise, for the privilege of betting with the persons resorting to the premises, the installation by the bookmaker on the premises of facilities for betting with him, such as a private telephone or possibly a private letter box, the provision by the occupier, etc., of the premises of special messengers to convey betting communications, or special facilities for the reception of such messages . . . might well afford evidence on the question of fact, whether the bookmaker was, in fact, carrying on his business on the premises" (27 Cr. App. R. at 122).

In such a case it is to be observed that the occupier himself could on such evidence be convicted of having "procured" the user of the premises by the bookmaker upon the principle established in *Samuel v. Adelaide Club* (*supra*).

MEASUREMENT OF DISTANCES IN SPEED-LIMIT CASES

Morrison v. M'Cowan (1939) Sc.L.T.423

The usual method of measuring distances not in a straight line on a map is with a rotameter, that is, a small instrument having a wheel connected with a recording dial. There is no reported decision by the Courts of this country as to whether judicial notice will be taken of this method as an accurate means of calculating distances. It has, however, recently been decided in Scotland that measurements calculated by a rotameter from a map made by public authority are *prima facie* accurate measurements.

This decision was given by the High Court of Justiciary on a case stated by the Sheriff-Substitute of Falkirk upon his dismissal of a prosecution for alleged contravention of sec. 8 (1) (b) of the Road and Rail Traffic Act, 1933, by the holder of a "C" licence, that is, a private carrier's licence. The material provisions of the above enactment are as follows:

"It shall be a condition of every licence . . . that any provisions (whether contained in any statute or statutory rules or orders) with respect of limits of speed . . . are complied with in relation to the authorised vehicle."

The licence holder was charged with having contravened these provisions by causing and permitting persons in his employment to drive certain vehicles specified in the charge at more than 20 m.p.h., being the maximum speed permitted for such vehicles.

The evidence in support of this charge consisted of the log books of these vehicles showing the journeys they had done and the times they had taken to do them. An examiner from the Traffic Department of the Ministry of Transport and his clerk were called to state that they had each independently

measured these distances with a rotameter on an Ordnance Survey map, taking in every case the shortest practicable route and that in every such case, according to the log books, the vehicles could not have travelled over these routes in the times given by the log books without exceeding their speed limit. No evidence was called for the licence holder. Upon these facts the Sheriff-Substitute dismissed the charge but stated a case for the opinion of the High Court of Justiciary, who allowed the appeal.

On appeal the only point of substance taken in supporting the judgment of the lower court was that evidence of measurement by a rotameter was not admissible to prove distances. It was not and could not be disputed that the Ordnance Survey Maps were other than accurate. The law in England (and apparently also in Scotland) is that Ordnance Survey maps being made by public authority (*i.e.* under the Ordnance Survey Act, 1841), although they cannot be used as evidence to affect private rights (*e.g.* whether a particular route shown on the map is a private road or a public highway) are *prima facie* evidence of what the surveyor saw and measured (*e.g.* that a road goes from point A to point B on the map). Upon this admitted state of the law it had to be argued that the further step could not be taken (at least without scientific evidence of its probable accuracy) of measuring that route with a rotameter. Their Lordships, however, found no difficulty in taking judicial notice that measurement by a rotameter constituted satisfactory proof. Delivering the leading judgment the Lord Justice-Clerk (Lord Aitchison) said:

"The rotameter is a familiar instrument for measuring distances on maps. It is scientifically exact—at least sufficiently so for all practical purposes. I am at a loss to understand what other practicable method can be suggested . . . Ordnance Survey sheets are accurate records—indeed as accurate records as can be obtained—of distances between places, and if the distances are accurately plotted on the Ordnance Survey by any recognised method of measurement, such as by a rotameter or by calipers, then that is as good evidence as can be expected, and is more than sufficient for the purposes of a complaint of this kind."—(1939) *Sc.L.T.*, at 425.

Criminal Law and Practice in Scotland

THE POLICE AND SUSPECTS

IMPORTANT questions concerning the relationship of the Police to persons who have been arrested were raised in the recent case of *H.M. Advocate v. Cunningham*, 1939 S.L.T. 401. The case is of special interest to police officers in Scotland in that it suggests an innovation in police procedure. While the views expressed, being those of a single judge only, may not be the last word, they must meantime be treated with respect and the suggestion made should probably be acted upon in all really serious cases, more especially where the charge is one of murder.

At Ayr Circuit, Cunningham was charged, before Lord Moncrieff and a jury, with murder and robbery. In course of the evidence for the Prosecution, a police witness was asked about a statement said to have been made by the accused while in custody. Accused's counsel at once objected. It appeared that accused, having been taken into custody, was cautioned and charged (presumably by the officer in charge of a police station) with assault to the danger of life and robbery (the victim being, at that stage, still alive). To the charge, he made a "negative response." Thereafter, on his way to the cells, his attention was drawn to a notice hanging in the corridor intimating that a prisoner was entitled to communicate with a law agent and would be given facilities to do so. A constable explained the notice to him and said that, if he could not pay for a lawyer, he could have the services of an agent for the poor, for which arrangements would be made at the court in the morning. Accused made no request for assistance. At a later hour, accused made the statement referred to.

In repelling counsel's objection and admitting evidence

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of the contents of the statement, Lord Moncrieff (after recounting in detail the antecedent circumstances) said: "The accused then proceeded voluntarily to offer to make a statement. It was urged by his counsel that that was an offer which, as matter of routine in all cases, the Police should refuse to accept. . . . I would, however, be slow to affirm as a general proposition . . . that it is the duty of the Police in all cases to refuse to accept a statement offered in appropriate circumstances and to insist that such a statement should only be made before a magistrate. I think that might prove unfortunate to an accused and I do not think that it is required in the interests of fairness in all cases. I require only to consider—was it unfair to take the statement in the circumstances in which it was offered? . . . If the Police observed every requirement of fairness and did not in any sense elicit information—and I think that these requirements are satisfied in this case—I see no reason in principle why an item of evidence, which the interests of justice may require should be made available, should nevertheless be excluded." Lord Moncrieff rejected an argument by accused's counsel that proof of the statement should be disallowed because he had, when he made it, been charged only with assault and robbery, not (as later happened, when the victim died) with murder. "I do not think," he said, "the fact of death having followed affects the relevancy or the materiality of the statements of the accused."

It was at an earlier stage in his opinion that Lord Moncrieff committed himself to a suggestion which, so far as the present writer's experience goes, is entirely novel, *viz.* that intimation that an accused may have the services of a law agent should be given to him formally (not in an incidental way, as by calling his attention to a printed notice) "at the very outset, before the making of any charge." "I am satisfied," he said, "that, in not so making it, the police officers followed their usual practice and acted with an intention of complete fairness. None the less, any such practice, in my opinion, ought to be reformed. . . . I am of opinion that in future cases it would be desirable and would be in the spirit of the requirements of Section 17 of the Criminal Procedure (Scotland) Act, 1887, that this intimation should be given at an earlier stage." Lord

Moncrieff gave no authority for his opinion, but it is at least arguable that the position now taken up by this judge is a natural extension of the view expressed in earlier cases, notably in *Goodall*, 1888, 2 White 1, and *Aitken*, 1926, J.C. 83.

Clearly, this opinion, if it is intended to be applied universally, can be no more than a counsel of perfection. One cannot imagine the officer in charge of a busy city station formally and solemnly intimating to every "drunk" presented at his counter that he has a right to communicate with a law agent; (and, strictly, if this procedure is to apply to indictable crimes it should equally apply to trivial charges—see the Summary Jurisdiction (Scotland) Act, 1908, Section 15, which is in similar terms to Section 17 of the Act of 1887). Further, can it be the intention that, where an accused responds to the intimation by expressing a desire for legal assistance, the putting to him of the formal charge should be deferred until an agent has arrived? If so, what are the agent's rights? Is he to be entitled to see his client privately before the formal charging, or has he merely a right to be present as a silent witness of the proceedings in the charge office? As already indicated, we think the sensible course is to follow Lord Moncrieff's suggestion only in serious charges and to ignore it (retaining the present procedure) when the charge is trivial. For this distinction, there is some support to be found in *Goodall's* case, where the judge differentiated between "a charge of murder against an illiterate woman" and an "ordinary case where the services of an agent at the preliminary stage may well be considered superfluous."

DOGS ACT, 1871—PRIVATE PREMISES

In the recent case of *Philp v. Wright*, heard on October 25th, the High Court of Justiciary has gone far to clear up the vexed question of the application of the Dogs Act to dogs which, while on their owner's premises, attack persons who have business there. Although more than one Complaint had, to the writer's knowledge, been raised in such circumstances and prosecuted to a successful conclusion, the present case is the first authoritative ruling on the matter.

The Complaint, in Philp's case, was at the instance of the Burgh Prosecutor in Dunfermline. It charged William Philp, a local solicitor, that he was the owner of an Alsatian dog which was dangerous and not kept under proper control, in contravention of the Dogs Act, 1871, Section 2. Two incidents of biting were libelled, one on May 30th and the other on June 4th. In both cases, the *locus* of the incidents was "at your dwelling-house."

To this Complaint the accused objected on the ground that, as appeared *ex facie* of the Complaint, the acts libelled took place on his own private property and the dog was therefore under control and not dangerous. This objection being repelled by the magistrate, evidence was led. The following facts appear to have been proved to the magistrate's satisfaction:

The accused, who was the owner of the dog in question, lived at 106 Rose Street, a house occupied partly by accused and partly by other parties. All persons having occasion to visit the house, whether their business was with accused or with other occupants, used one access from Rose Street, approaching by a six-foot passage about fifteen yards in length, through a gate five feet high in a fence of similar height and finally over private ground.

On May 30th, a girl of fifteen years, on an errand to accused's house, reached it by the route described. As she went down the area stairs to the back door, she heard the dog bark. As she approached the door, the dog ran out and jumped at her face. She put up her arm in defence and the dog bit a piece out of her coat. It was pulled away by accused's maid-servant, but again jumped up on the girl and bit her. Her arm was slightly bruised. The maid then put the dog inside and closed an inner door.

Five days later, a second incident occurred. A man, having business at the house (not with the accused, but with other occupants) used the access described. He delivered his message and was leaving when the dog, which on his arrival had been on the back green, jumped up on him, put its front paws on his chest, and bit his arm. In his evidence, this man said that he thought the dog was playful rather than vicious.

On the evidence above narrated, the High Court judges rejected the argument that the Dogs Act applied only to incidents occurring in public places. There was nothing in the Section to limit Section 2 of the Act to such occurrences and the Court was not prepared to limit the usefulness of an effective Act. It would be monstrous to suggest that the Act was so limited in its purpose that it did not protect message-boys or persons with a visit to pay to occupants of a house or tenement.

STORAGE OF PETROL

With the coming of war conditions, it was only natural that many motorists (of whom certain, at least, had acted with the best intentions in the world) should have found themselves faced with charges of illegally storing petrol. During the first few weeks of the war, prosecutions were frequent throughout the country and, in certain cases, where public safety had been flagrantly endangered, drastic penalties were imposed. Provisions of the Petroleum (Consolidation) Act, 1928, and of the relative Regulations, which had been pretty much of a "dead letter" for ten years, were invoked daily. It is hardly to be wondered at that proceedings were instituted without a full appreciation of the position and that, in more than one district, the statutory provisions were misconstrued by the criminal authorities.

The difficulty arose from the peculiar structure of the Act and Regulations. Standing by itself, the Act of 1928 is easy to interpret—particularly so in its application to the storing of petrol. "Subject to the provisions of this Act," so runs the first Section, "petroleum-spirit shall not be kept unless a licence is in force under this Act authorising the keeping thereof"—i.e. a licence from the Local Authority. To this, Section 1 allows one exception only—the keeping of petrol in securely stopped vessels containing not more than one pint to an aggregate amount of three gallons. So far, so good. But the "snag" is found in Section 10, which empowers the Secretary of State to make Regulations as to the keeping and use of petrol by persons intending to use it *inter alia* for any class of motor vehicle, and such Regulations may exempt

from the operation of the licensing provisions of the Act the keeping and use of petrol by persons intending to use it for such vehicles.

Taking advantage of this power, the Secretary of State, in the following year, made the Petroleum-Spirit (Motor Vehicles, etc.) Regulations, 1929, by which he enacted that "subject as hereinafter provided, the keeping and use of petroleum-spirit by persons intending to use it for the purpose of any motor vehicle . . . and not either wholly or partly for the purposes of sale shall be exempt from the operation of Sections 1 to 9 of the Act and petroleum-spirit kept and used by persons intending to use it as aforesaid shall be kept and used in accordance with the regulations hereinafter contained; *provided that* on the application of any person intending to use petroleum-spirit as aforesaid, the local authority may grant a licence authorising the keeping thereof and the said exemption and regulations shall not apply in respect of any petroleum-spirit so authorised to be kept." (The point of the proviso would appear to be to meet the case of a motorist who wishes to have a private store of petrol of, say, a greater amount than the Regulations permit. Such a person would go to the Local Authority and disclose his intention and the Authority, if satisfied, would issue a licence.)

The Regulations go on to specify meticulous conditions as to the nature and size of containers, the labelling of containers, the nature of storage places, the quantity of petrol to be stored in one place and so on. The permissible maximum varies with the nature of the accommodation, but can never exceed sixty gallons.

In this state of affairs, confusion would appear to have arisen in the minds of certain at least of the Fiscals responsible for raising proceedings under the Act and/or Regulations. In a number of cases—including those brought in the Sheriff Court at Banff—the prosecutor was content to take the "easy way out" of charging all cases of improper storage of petrol as contraventions of Section 1 of the Act—keeping without a licence.

Such charges were, on the face of them, unexceptionable; but, as was pointed out by the Sheriff at Banff, before whom a

batch of such cases was brought, they were misdirected when laid against motorists. Such persons, the Sheriff contended, were expressly catered for by Regulation 1, which is quoted above. A person storing petrol for use in his car required no licence, but could be prosecuted for breach of the Regulations, *e.g.* for exceeding the maximum of sixty gallons, or using the wrong size of container, or failing to label the containers. With this view, the Fiscal (after consultation with the Crown Office in Edinburgh) agreed. The complaints originally tabled were dropped and fresh charges brought in appropriate form.

Yet the difficulty, as the present writer sees it, does not end there. Assume that the Police, or Inspectors charged with the duty of administering the Petroleum Act, have discovered a store of 100 gallons of petrol in premises occupied by A. B., who has no licence. It may well be doubtful for what use the petrol is intended—whether for A. B.'s car or for sale. In such circumstances, the only safe course would appear to be to frame the complaint alternatively—*i.e.* to charge (1) a contravention of Section 1 of the Act—keeping without a licence *or alternatively* (2) a contravention of Regulation 6—keeping more than sixty gallons at the same time in one storage place. Such a complaint, charging alternatives, is, of course, perfectly competent *in Scotland*.

UNREGISTERED CLUBS

Before the passing of the Licensing (Scotland) Act, 1903, widespread abuse of the Licensing Laws was practised by persons who had formed clubs of which the true *raison d'être* was the distribution among the members of liquor brought in. Such distribution, the courts held, was not sale and supplying members of the club by the club itself was not trafficking. (*McWilliams*, 1902, 4 F.(J.) 54). Clubs required no certificate and were indeed "a law unto themselves" outside the ordinary licensing code. This being so, it was easy to see how many of such clubs became nothing more or less than "drinking howffs."

To meet this evil, the Act of 1903 (1) instituted a system of registration of clubs and elaborated a code for the control of

registered clubs and (2) restricted drastically the supply of liquor in clubs which chose to remain unregistered. The restrictions are set out in Section 83, by which "if any excisable liquor is supplied or sold to any member or other person on the premises of an unregistered club, every person supplying or selling such liquor, every person who shall pay for such liquor, and every person authorising the supply or sale of such liquor" is liable to penalties. The Section also provides for the seizure of liquor under warrant and subjects every officer and member of an unregistered club where liquor is kept for supply or sale to penalties of a drastic nature "unless he proves that such liquor was so kept without his knowledge or against his consent."

In the recent case of *Matthewson v. Blance and Laurenson*, an appeal from the Sheriff Court at Lerwick, the High Court of Justiciary decided that Section 83 means precisely what it says and refused to countenance a gloss sought to be put on its terms by the Sheriff who had held that the Section was limited in its application to supplies made (from the club's common stock of liquor) by office-bearers or officials of the club, as distinct from supplies made by a member from his own private store. The facts of the case are particularly instructive and a summary of the findings in the Stated Case may be of service to Scottish police officers charged with the duty of enforcing the provisions of the Licensing Acts. It should, of course, be kept in mind that Lerwick is a "dry" area under the Temperance (Scotland) Act, 1913.

The Hillside Club, which was involved in the case, was formed in 1936, with a membership of eight men, subsequently increased to twelve. The accused Blance was President, while Laurenson was a private member. In the club there were facilities for darts and cards. It was the custom that each week a supply of beer varying from fourteen to eighteen dozen pints was delivered at the club premises on the purchase (wholesale) by a member of committee. The money was collected from the members in advance in proportion to the amount of beer which each wished to be shared out to him. On February 17th the Secretary gave a prepaid order to a local wholesale dealer for eighteen dozen pints of beer. These, being delivered at

the club premises, were placed in a locked cupboard. Next day the cupboard was unlocked and Blance took six bottles (part of his share as pre-arranged), consumed four and placed two in his private locker. Laurensen took three bottles (part of his share), consumed one and placed two in his private locker. Later on the same day, police officers arrived in possession of a warrant under Section 96 of the Act of 1903. They found eight men in the club—Blance, Laurensen and two other members and four non-members. Three of the non-members were drinking beer. One of these had been invited to the club as a private guest of Blance, had been given a bottle of beer by Blance and was drinking it. The beer had been taken by Blance from his private locker. Similarly, the other two non-members had been brought in as Laurensen's guests and supplied by him from his private locker.

On these facts the Sheriff found the accused Blance and Laurensen not guilty of the first charge libelled against them, *viz.* of authorising and supplying in contravention of Section 83 (1). The accused Blance and Laurensen and the other two members present were, however, found guilty under the later provisions of the Section of being members of the club on the premises of which liquor was kept for supply or sale. The Sheriff's refusal to convict under the first half of the Section was, as already indicated, based upon the view that the Section had no application to the supply of liquor from a member's private stock. Against this refusal to convict, the Procurator-Fiscal successfully appealed to the High Court. The Judges of the High Court, holding that the words of the Section were to be accepted literally and were all-inclusive, allowed the appeal.

DIRECT IDENTIFICATION OF AN ACCUSED

R. v. Neary

That the prosecution must submit evidence of direct identification of an accused person charged with careless driving arising out of a motor collision was the finding of Sheriff-Substitute Jameson, at Haddington, East Lothian, Sheriff Court on October 5th, 1939.

At the time of the collision the accused was a member of

the Territorial Army and was riding a motor-cycle, with another territorial as pillion passenger. Both these men were in army uniform. The accused's motor-cycle was involved in a collision with a saloon motor-car, which contained the driver and a passenger.

At the trial the witnesses for the prosecution consisted of three civilians and two police officers. One of those police witnesses was a member of a neighbouring Force. Apart from the accused, there were no other witnesses for the defence.

Evidence, all of a corroborative nature, was led. The driver of the motor-car stated that his vehicle was involved in a collision with a motor-cycle driven by the accused. On alighting from the car they found the accused lying semi-conscious on the road, suffering from multiple injuries to his face and head. His wounds were bleeding profusely, and as a result they could not identify him in Court as the person they had seen in that mutilated condition.

The first police constable stated that when he arrived at the scene of the collision the accused was bandaged heavily about the head and face, and that he accompanied him in an ambulance to the hospital. The accused was conscious, and in reply to the constable's enquiries he furnished his name and address. He further informed the constable that he could not remember anything about the collision. This constable, in his evidence, stated that owing to the accused being bandaged, and in a mutilated condition, he was unable to identify the accused in Court.

The other police constable, of a neighbouring Force, stated that, acting on instructions, he called at the hospital in question with a view to charging the accused. He interviewed the accused in hospital, and asked him if he was Anthony Neary, of a certain address. The accused replied in the affirmative, whereupon the constable cautioned and charged him. In reply to the charge the accused said, "I have nothing to say." This constable further stated that the accused was suffering from head and facial injuries, and that he never questioned the constable regarding his visit. He identified the accused in Court as the person he had charged in the hospital, and who answered to the name of Anthony Neary.

At the conclusion of the prosecution's case, the agent for the accused appealed to the Sheriff, saying that as no prosecution witness had identified the accused as the person who was riding the motor-bicycle at the time of the collision, he must ask him to discharge the accused. The Sheriff agreed with the agent, whereupon the Fiscal argued that he had submitted a complete case, and that identification was proved. He agreed that four of his witnesses had been unable to directly identify the accused owing to his face being in a mutilated condition and heavily bandaged, but he argued strongly that the constable who had charged the accused in hospital had identified him as that person. He commented on the fact that during this constable's interview with the accused in hospital the accused had, apart from his reply to the charge, made no other remark regarding the constable's visit.

The Sheriff, in giving his finding, stated that the prosecution had failed to directly identify the accused in Court as the person who had driven the motor-cycle in question. He therefore, on the evidence as submitted, must find the accused not guilty.

The Procurator Fiscal asked the Sheriff to submit a Stated Case.

Studies in Identification. No. 5

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IN my last contribution, I told how the recovery of a few bones from a disused well was sufficient to permit, not only of a fairly full identification of the deceased girl, but also of a reconstruction of the manner in which she met her death. If the present case should seem to present a number of similar circumstances, it is nevertheless entitled to a place in the series if only to emphasise that what happened once can happen twice, and what has happened twice may happen again to-morrow.

Early in 1923, the management of a certain factory decided to recommence work after a considerable period of inactivity. The scheme of preparation included the reconditioning of a well on the premises, and on February 9th, 1923, a large number of bones were discovered in the well during dredging operations. There were indications, even to the inexperienced eye, that the bones were human, and moreover they were accompanied by certain unmistakable fragments of clothing and a purse. The Police were informed and an examination locally led to the opinion that the remains were those of an individual who had fallen down the well and had struck his head on a stone at the bottom, and the case was about to be closed as an accident to someone unknown. Fortunately, however, it was decided to take expert opinion and the remains were forwarded to the laboratory for examination.

The general appearance of the collection is well indicated in Fig. 1. In all, it comprised well over a hundred bones, some of them separate and bare, some of them retaining their usual joint relationships to one another and also some fragmentary attachments of soft tissue. Most of the individual bones were intact, and where this was not so the fracturing

was post-mortem in time of occurrence and almost certainly due to accident, either during the dredging and removal, or to the pressure of superimposed matter in the well. The significant exceptions to this will be noted later. The bones were mingled, of course, with much nondescript débris from the well, which included some pieces of sacking, filthy and rotten.

The first problem—not a difficult one in this case—was to decide whether the bones were all human and whether they came all from the same body. The answer to both questions was in the affirmative. The collection included an almost entire skull, all the vertebrae, all the ribs except two, the breast bone, the shoulder blades, collar bones and arms, complete except for the right radius. Both thigh bones and the tibia and fibula from each leg were present, but the two knee caps were missing. Of the many bones which form the skeleton of wrists, hands, fingers, feet and toes, there were but 28 in the collection. Although that means that 78 of these small bones were missing, the 28 included representatives from each of the parts to complete the picture of an all-but entire skeleton. At the risk of unnecessary recapitulation, I can summarise the extent of the collection by saying that, apart from many small bones of the extremities, the only missing parts of the skeleton were the radius from the right forearm, the knee caps, and the lowermost "floating" rib on each side.

The completeness of the skeleton and the absence of duplication strongly suggested a single common source for all the bones. This opinion was further justified by the fact that all the parts were well proportioned with regard to one another, and also by the accurate articulation found possible in the process of reconstruction. The skull was in two main parts, forming roughly a front half and a back half. Six of the neck vertebrae were still linked together in one piece by decomposed ligaments and muscles. The remaining neck vertebrae and those of the back were joined with ribs and breast bone to form a more or less intact thoracic cage, to which were attached the collar bones and shoulder blades. The pelvis was complete and was in continuity with the lumbar vertebrae from the small of the back. In addition, the thigh bones were still



FIG. 1: Material as found in the well



FIG. 2: Skull showing male characteristics. Note the rounded margin of the jaw due to loss of molar teeth, lines of fracture in the vault and extensive fracture of the base



FIG. 3: Partial reconstruction showing acute flexion of the thigh bones on the trunk
(face p. 24)

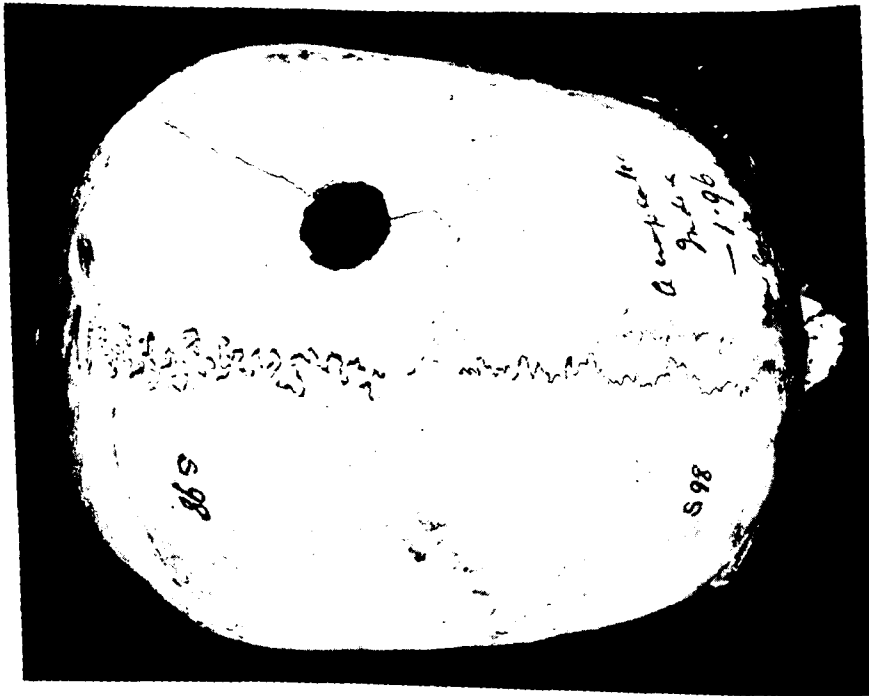


FIG. 4: Upper surface of skull showing hole in the left parietal bone caused by the entrance of a projectile

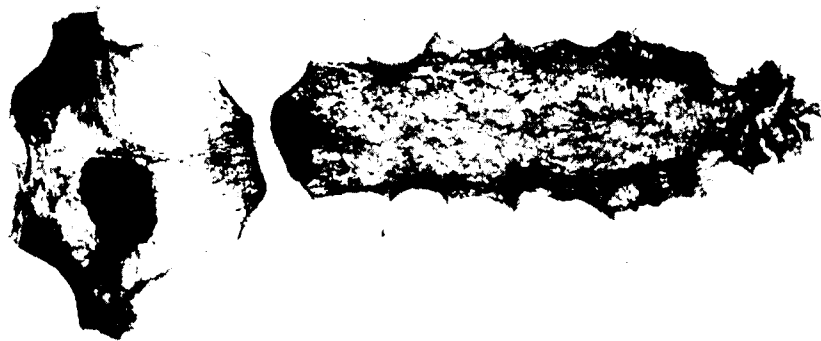


FIG. 5: X-ray of sternum showing bullet embedded in its substance. There was no obvious wound of entrance

articulated to the pelvis at the hip joints, and were found fully flexed or bent up over the front of the trunk. The extreme flexion of the thighs was indicated also by the forward curve of the lumbar portion of the vertebral column. The remaining bones of the limbs were more or less separate and almost denuded of flesh.

In the soft parts attached to and linking up certain of the bones, there was a considerable amount of adipocere. I have previously discussed in some detail the phenomenon of adipocere formation as a possible alternative to putrefaction in a moist environment. Its presence at all requires a matter of months from the time of death, but its extent in this case, along with the extent of the disintegration of the body, suggested about half a year, and possibly more. In considering the destruction of the body, however, one bore in mind that the weather was warm, and that the water in the well was very foul, dirty, and heavily infected. In such circumstances, the rapidity of post-mortem disintegration is at times amazing.

In the course of the preliminary survey, it was noted that the appearance of the bones was male rather than female in character. In a general way, it can be said that male bones are the heavier and more massive, and that their surfaces are more roughened and uneven owing to stronger muscular attachments and greater muscular activity. This impression was confirmed by further and more detailed examination of those parts of the skeleton which give the clearest evidence of sex. Chief of these, as has been indicated in earlier contributions, is the pelvis. In this case, the iliac bones were "splayed" and there was a progressive narrowing of the pelvic cavity from top to bottom. The pubic arch was relatively narrow and angular, and its margins showed the eversion so typically found in the male. There was no pinching of the pubic ramus at its junction with the body of the pubic bone, and the sciatic notch was narrow. The sacrum was long, rather than broad and triangular. Readers of my preceding article will observe that these points are all in contrast to the findings in a female pelvis, and they are sufficient in themselves to decide the sex of the deceased.

Additional evidence was obtained from other sources.

The skull (Fig. 2), though the sex characteristics were not outstandingly marked, showed nevertheless that angulation between the forehead and nose which is associated with the heavy eyebrow ridges and rounded eyebrow margins in the male. In the female such ridges are absent, the upper eyebrow margin is sharp, and the line of the forehead curves smoothly into that of the nose. The slope of the forehead, the relatively large mastoid processes, and the roughness of the base were other skull characteristics suggestive of the male sex. So also were the dimensions and proportions of the breast bone, and the measurements obtained from certain parts of the limb bones, notably those of the legs. Tables of such measurements have been prepared after study of many thousands of bones, and the differences found are true sex differences, and do not depend on whether a man or woman is large or small. Altogether, therefore, one could state with certainty that the skeletal remains were those of an individual of the male sex.

In this country the question of race is seldom of importance in identification problems. It may be quite otherwise in countries where the population is more racially heterogeneous, and this is notably so in many of the urban areas of the United States and in the cosmopolitan cities of the East. The subject of racial characteristics is too extensive and specialised to be dealt with here, but it may be said that, besides such obvious outward indications as colour of skin, type of hair, tribal markings or tattooings, and so on, there are certain skeletal differences in size and form which have been studied in much detail by anatomists and anthropologists. These differences are most striking in the skull, which is, of course, the part forming the basis for that distinctive mould of head and face with which we are all more or less acquainted. In the present case, the characteristics and measurements of the skull were such as to exclude European or Negroid race, and indicated with some degree of accuracy that the deceased man was an Egyptian.

The usefulness of the skeleton in determining the age of an individual lies largely in the regularity of the order in which the "epiphyses" at the growing ends of bones unite with the

shafts. Examples of this have been given previously, and it has been explained that the areas of latest union are to be found in the hip bones, the collar bones, and in certain parts of the ribs. The sequence of such unions covers approximately the first twenty-five years of life, during which its value is supplemented by the orderly eruption of the teeth and by the evidence of progressive sexual development in all its aspects. The subsequent period of five to ten years is largely devoid of any positive skeletal evidence of age, but in bones of persons of about thirty-five years or over there will be found the signs of what may be called maturity. Examples of these are the commencing obliteration of the sutures or lines of union between the cranial bones, and the ossification which commonly takes place in previously cartilaginous parts of the breast bone. For these, I have employed the term "maturity" in preference to the less complimentary term "degeneration." The latter I would reserve for more senile changes such as the complete obliteration of the sutures, pitting of the internal surface of the skull, loss of teeth, narrowing of the edentulous jaw bones and calcification of the rib cartilages and of other areas normally cartilaginous. It will be noted that the occurrence of any such definite evidence is by no means ubiquitous, and where the material is scanty, it may be quite impossible to be definite about age, especially from twenty-five years onwards.

In the bones taken from the well, union at all the epiphyses had obviously occurred long since; not only so, but the additional findings indicated a condition of maturity and even a fair degree of retrogressive change. In the breast bone certain lines of ossification were firm and well established, and the sutures of the skull as seen from the inside were partly obliterated, although they appeared quite open on the outer surface. A fair extent of calcification was present in the rib cartilages and in certain of the cartilages in the neck. These findings suggested that the deceased was past middle age, but had not reached a stage of actual senility.

In keeping with such an opinion was the condition of a sample of head hair found along with the bones, and also the condition of the teeth. The hair was black with an admixture

of grey, and while it was impossible even to guess the age of the individual from whom it might have come, it did not suggest the hair of a young person. Nor, on the other hand, did it show the general deterioration either of colour or of texture which often occurs in really old age. In the jaws some of the teeth remained, some had certainly been lost before death, and some had dropped out during putrefaction in the well. Detailed examination showed that all the molars, except the lower wisdom teeth, had been lost a considerable time before death, which fact may be observed from an examination of Fig. 2. The remaining teeth were much worn as if by prolonged misuse and overwork in mastication owing to the absence of the molars. Such information contributes nothing to the knowledge of the deceased's age, but again, it was not contradictory, and the greater number of related details which are compatible with the main opinion, the more probable it becomes that that opinion is correct. At all events, the dentition should always be noted in such cases, because it is so frequently helpful in establishing individual identification at a later stage. From the objective findings at the time of the examination, the opinion was formed that the deceased was a man, somewhat past middle age, and probably between fifty and sixty years of age.

When all the bones were assembled, the total length of the skeleton was measured. This was 160 cm.—about 5 feet 3 inches. Even when only parts of the skeleton are available, it is frequently possible to estimate stature from a knowledge of the relationship of the length of certain bones to the total length of the body. Considerable variations occur, of course, but average figures have been compiled from large series of observations which are very reliable when used with discretion. The greater the number of suitable bones available, the greater the confidence which can be placed in the results. In this case, measurements of individual bones were made as follows: Femur, 39.7 cm.; Tibia, 34.2 cm.; Humerus, 29.5 cm.; and Radius, 20.2 cm. Using the appropriate indices, these give the following figures for the total length: 156 cm., 160 cm., 154 cm., and 156 cm. respectively. The average of these would indicate the height of the deceased as being about

5 feet 2½ inches, and shows a close approximation to the measured length of the articulated bones.

The deceased, then, had been a short man, but, from the general appearance of the skeleton, stockily built and muscular. The fragments of clothing suggested, both in style and material, that the wearer had belonged to the poorer classes. The purse was a cheap, simply-constructed affair, tied with string, which had served its utilitarian purpose without any attempt to be also ornamental. The purse was empty, but in the clothing was found a used portion of a third-class railway ticket.

So far, however, while considering the problems of race, sex, age, stature and social status, I have given no indication as to the cause of death, nor, with one exception, any feature which suggested that that cause might be other than drowning or injury through an accidental fall into the well, which, as I have remarked above, was the opinion held by the local authorities.

The exception was the observation of the abnormal flexion of the skeleton at the hip joint, which suggested that the body had been doubled up after death (Fig. 3), had stiffened in that position, and had been artificially maintained in that position for a considerable time after death. Of course, such a folding of the body might possibly have resulted from its being wedged in that position by a fatal fall, but there was nothing in the structure of the well to support such an idea, and the circumstance was certainly one to give rise to suspicion. Such an attitude could easily be produced by thrusting a doubled-up corpse into a sack and leaving it there, and, as I have stated, there were rotting pieces of sacking amongst the debris from the well.

When the skull was reconstructed there was seen, on the left side of the crown, a circular hole in the left parietal bone, nearly ¾ of an inch in diameter, with a margin so regular and sharp as to give it a drilled-out appearance (Fig. 4). On the inside of the skull, the margins of this hole were bevelled, and radial fractures ran outwards from the hole across the vault of the skull, back towards the occipital bone, and down into the temporal bone and base of skull. This was the injury

attributed to a fall on a stone ; but the clean-cut appearance of the margins and the bevelling of the interior made this diagnosis appear improbable. It suggested the passage of a projectile as a more probable cause, but an entrance wound of that size in the top of the head is sufficiently rare to render the diagnosis somewhat doubtful. The base of the skull was fractured, but no trace of an exit hole could be recognised, nor the presence of any projectile. However, it looked so much like a bullet wound that a systematic search of the rest of the debris was made bit by bit and bone by bone, the search being aided by passing the material under the X-rays.

On handling the breast bone it felt heavier than normal, and a close examination showed a small break in the upper rim, that is the bit that you can feel in the neck between the two collar bones. Placed under the X-ray screen, a bullet of large size and obviously home-made was seen embedded in the middle of the upper segment of the bone (Fig. 5). The bullet must have struck the top of the head, passed through the brain, smashed the bones at the base, and then passed into the breast bone, thus making a straight line downwards. The bullet showed no evidence of grooving and had almost certainly been discharged from a smooth-barrelled shot-gun or pistol of about 12 bore. The range was uncertain, but was probably not great, because, with such a projectile and with a weapon such as is postulated, any considerable distance would be likely to reduce the velocity to such an extent as to make such clean penetration improbable. From the position of the entrance wound, the assailant must have been almost directly above the victim, or, what is much more likely, the latter was shot while lying down on his right side, possibly asleep.

Following the examination, therefore, a report was sent to the authorities to the effect that the bones from the well constituted the almost complete skeleton of an adult Egyptian male of between fifty and sixty years of age. He was a man of the labouring class, about 5 feet 3 inches in height, stockily built and muscular, with black hair going grey. He met his death about six months or more previously, by being shot through the head at close range by a home-made lead projectile fired from a large bore, smooth-barrelled pistol or

shotgun, probably whilst he was lying down. Immediately after death his body was thrust, in a doubled-up attitude, into a sack, which was then thrown into the well.

As a result of police enquiries, relatives were found of a man who had, as they thought, simply left the town without explanation the previous August, that is almost exactly six months before, and who was, in fact, an employee at the factory in question up to the time of his disappearance. The description given by these relatives tallied exactly with the reconstruction as given above, and they confirmed the condition of the teeth of the missing man. Suspicion attached to another workman who had left the factory about the same time, and who had made, before going, certain unguarded remarks, which passed unheeded at the time but were now recalled with an added significance. He was traced and confessed to the crime, which had been carried out exactly as postulated while the victim lay sleeping.

I have to acknowledge the help of my assistant, Lieut. F. S. Fiddes, R.A.M.C., in the production of this article.

Emergency Powers

By FREDERICK T. TARRY, O.B.E.
Chief Constable of Exeter

THE tempo of events in war, and the uncertainty of military operations, make it essential that the machinery of legislation and of public administration generally shall speedily be adapted to war conditions. How successful the adaptation has been in the present war is reflected in the steady resolve of the people to submit to restrictions which, in many cases, appear to be the very antithesis of the system of democratic government to which they are accustomed. In the passing of the Emergency Powers (Defence) Act, 1939, and the many similar emergency measures enacted since the commencement of the war, Parliament has given to various Ministers of the Crown, and thereby in effect to numerous officers acting under the Crown, virtually unlimited powers to introduce and impose measures for the defence of the realm, to secure the public safety, the maintenance of supplies and essential services, and to ensure the prosecution of the war on the Home Front to the victorious conclusion which is steadily being assured by the efforts of the land, sea and air arms of His Majesty's forces.

Whatever the judgment of history upon the cause and effect of international events in Europe in 1939, there can have been no doubt of the unanimity with which war was embarked upon by the British people, or of the national consciousness of a duty to civilisation which could be discharged in but one direction, and that in the declaration of war upon Germany. On Sunday, September 3rd, 1939, the Prime Minister's announcement that "We are at war with Germany," made in a form in which the personal message, together with that of His Majesty the King, reached millions of people in this country and beyond, was accepted with resolution and a quiet though firm determination which, in the passing of the weeks,

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has come to be accepted as the normal outlook of citizen and statesman alike.

In immediate retrospect, the change from peace to war conditions was accomplished with a readiness on the part of the public, and a skill on the part of those in authority, which can here be recorded as unparalleled in modern history. Preparedness, after all, seems to have prevented. Those who, with the Police, accepted Civil Defence at its full value, and who recognised that while bombing aircraft remain as weapons of war, A.R.P. must be also maintained in the machinery of defence, can share with the various branches of our Active Defence the credit for the satisfactory record of the Allies during the first three months of the struggle.

Precedent has an undoubted value both in the framing of new law and in its administration and enforcement. And in the enactment of the emergency legislation of 1939 the precedents and the experience of the war of 1914-18 have not been without their value. Planned on similar lines, the Emergency Powers (Defence) Act, 1939, has avoided some of the defects which experience proved to exist in the Defence of the Realm Act of 1914. The financial provisions of the Act (Section 2) and the financial provisions of other emergency legislation need not be noticed here except to observe that Parliament does not propose to relax its oversight and control over public expenditure for the prosecution of the war, colossal as this must be. The recent appointment of a Select Committee to examine civil and military expenditure connected with the war is but one instance of Parliament's prescience and readiness to shoulder the burden of its true war functions, more readily than its predecessor of the war years of 1914-18, when the war had progressed for three years before this scrutiny by the legislature, through the medium of the Select Committee of 1917, was set to work.

The fact is more widely recognised to-day that words, no less than arms and men, food and machines, are important to the winning of a modern war. The fact will be made more obvious at a later stage that words play an even greater part in the making of a modern peace. A considerable part of the regulations so far issued under the Emergency Powers

(Defence) Act, 1939, deals with words, or as it is more colloquially termed, propaganda, and information which may be of use or otherwise to the enemy. The value and importance of propaganda as a weapon of war may later be written down as perhaps the one department in which, at the outset of the war, the enemy was better equipped than ourselves ; but as Lord Halifax has pointed out, the propagandist who is anxious to use only the truth suffers from some obvious disadvantages. But only temporarily, as time may tell.

The Defence Regulations, 1939, are divided into five parts. Part I deals with the provisions for the security of the State, and the following citation of the marginal references and subject headings indicates their scope :

Regulation

No. INTERFERENCE WITH ESSENTIAL SERVICES

1. Misleading acts and misrepresentation.
- 1A. Interference with persons in His Majesty's service, etc.
2. Interference with telegraphic communications.

ASSISTING THE ENEMY AND SABOTAGE

- 2A. Acts done with intent to assist an enemy.
- 2B. Sabotage.

SAFEGUARDING INFORMATION USEFUL TO AN ENEMY

3. General provisions for safeguarding information.
4. Communication with enemy agents.
5. Photography, etc.
6. Inventions and designs.

CONTROL OF MEANS OF COMMUNICATION

7. Signalling.
8. Wireless telegraphy, etc.
9. Pigeons.
10. Means of secret communication.
11. Postal communications.

ACCESS TO CERTAIN PREMISES AND AREAS

12. Protected places.
13. Protected areas.
14. Byelaws as respects certain places and areas.
15. Trespassing and loitering.
16. Control of highways over or near defence works and protected places.

Regulation

No. RESTRICTIONS ON MOVEMENTS AND ACTIVITIES OF PERSONS

17. Entering enemy territory.
18. Entering and leaving United Kingdom.
- 18A. Restriction on movements of suspected persons.
- 18B. Detention orders.
- 18C. Prisoners of war, etc.
19. Stopping of ships and aircraft.
20. Change of name (amending Aliens Restriction (Amendment) Act, 1919), etc.

AMENDMENTS OF OFFICIAL SECRETS ACTS

- 20A. Amendments of Official Secrets Acts.

Part II deals with Public Safety and Order, and its provisions cover a wide field, as follows :

PUBLIC SAFETY

21. Evacuation of areas.
22. Billeting.
23. Precautions in the event of hostile attack.
- 23A. Power of local education authority to provide air raid shelter in non-provided public elementary schools.
24. Control of lights and sounds.
25. Danger in premises.
26. Power to cut off supplies of electricity, gas and water.
27. Measures for dealing with outbreaks of fire.
28. Powers and duties of auxiliary firemen.
29. Co-ordination of fire brigades.
30. Deaths occurring in consequence of war operations.
31. Appointments of additional registrars and deputy registrars of births and deaths.
28. Hospitals and ambulances.
- 32A. Transfer of persons of unsound mind and mental defectives under evacuation plans.
33. Exemption of certain women from Acts relating to midwives.
34. Explosives, ammunition and firearms.
35. Manufacture and transport of dangerous articles.
36. Precautions to be taken in connection with the storage of certain liquids.
37. Curfew.
38. Exercise of certain powers by Minister for purposes of Civil Defence Act, 1939.

PUBLIC ORDER

39. Assistance of one police force by another.
- 39A. Seducing persons from duty and causing disaffection.

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- 39B. Propaganda.
- 39C. Display of flags, etc.
- 39D. Unlawful drilling.
- 39E. Processions and meetings.
- 40. Additional inspectors of constabulary.
- 40A. Making of declarations by persons appointed to serve as Metropolitan police constables.
- 41. Visiting committees for certain prisons.
- 42. Visiting committees for prisons in Scotland.

Part III deals with Ships and Aircraft, as follows :

- 43. General control of navigation.
- 44. Control of lighthouses, etc.
- 45. Measures for safety of British ships.
- 45A. Employment in British ships and aircraft.
- 45B. Employment abroad of agents for ships and aircraft.
- 46. Control of trade by sea.
- 46A. Power of competent authority to prosecute for certain offences.
- 47. Transfer and registry of British ships.
- 47A. Deserters from ships.
- 48. Amendments of Air Navigation Act, 1920.

Part IV deals with Essential Supplies and Work, and covers the following regulations :

GENERAL PROVISIONS

- 49. Competent authorities for purposes of Part IV.
- 50. Power to do work on land.
- 51. Taking possession of land.
- 52. Use of land for purposes of His Majesty's forces.
- 53. Requisitioning of property other than land.
- 54. Special powers as to ships and aircraft.
- 55. General control of industry.
- 56. Public utility undertakings.
- 57. Disposal of reserves of essential commodities created under the Essential Commodities Reserves Act, 1938.
- 58. Licensing of explosives factories.
- 59. Exemptions from Acts relating to factories, mines and quarries.
- 60. Safety and welfare of factory workers.

AGRICULTURE AND FISHERIES

- 61. Preservation of agricultural land.
- 62. Control of cultivation and termination of agricultural tenancies.
- 63. Killing of rabbits, etc., and game.
- 64. Control of fisheries.
- 65. Suspension of fishing rights.

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No.*

- 66. Delegation of functions of Minister of Agriculture.
- 67. Agricultural returns.
- 68. Felling and sale of trees.

TRANSPORT

- 69. Special provisions as to taking control of railways.
- 70. Traffic on highways.
- 71. Maintenance of highways.
- 72. Modification of enactments relating to road vehicles and drivers thereof.
- 73. Modification of enactments of Parliament of Northern Ireland relating to road vehicles and drivers thereof.
- 74. Control of traffic at ports.
- 75. Congestion of traffic at ports and on railways.
- 76. Handling and conveyance of ammunition, etc., in ports.

SUPPLEMENTARY PROVISIONS

- 77. Inquiries.
- 78. Institution of proceedings under Part IV.

Part V deals with General and Supplementary Provisions, which require to be consulted on any occasion when the question of the enforcement of the Defence Regulations arises :

GENERAL PROVISIONS

- 79. Derelict articles.
- 80. Amendment of Geneva Convention Acts.
- 80A. Power to obtain information.
- 81. Affixing of notices.
- 82. False statements.
- 83. Obstruction.
- 84. Restrictions on disclosing information.

ADMINISTRATIVE PROVISIONS

- 85. Entry upon, and inspection of, land.
- 86. Removal of offices, etc.
- 87. Permits, licences, etc.
- 88. Fees for permits, licences, etc.
- 88A. Entry and search of premises to obtain evidence of offences.
- 88B. Power to stop and search vehicles.
- 88C. Power to arrest without warrant.
- 88D. Identification of persons in custody.
- 89. Use of force in entering premises.

OFFENCES AND LEGAL PROCEEDINGS

- 90. Attempts to commit offences, and assisting offenders.
- 91. Offences by corporations.
- 92. Penalties.

Regulation

- No.
- 93. Legal proceedings.
 - 94. Disposal of articles in possession of executive authorities.
- SUPPLEMENTARY PROVISIONS
- 95. Recovery of expenses.
 - 96. Entrusting of functions to statutory bodies.
 - 97. Service of notices.
 - 98. Revocation and variation of orders, etc.
 - 99. Exercise of powers of Board of Trade, Attorney-General and Chief Officers of Police.
 - 100. Interpretation.
 - 101. Application to Scotland.
 - 102. Application to Northern Ireland.
 - 103. Application to Isles of Scilly.
 - 104. Special provisions as to India, Burma and Southern Rhodesia.
 - 105. Short Title.

A schedule to the Regulations makes a number of amendments to the Official Secrets Acts, 1911 and 1920.

It is important to remember that, while for all practical and administrative purposes each Part of the Defence Regulations is a separate code of law, the power which the particular regulation confers may be subject to the general and supplementary provisions contained in Part V. Many of the regulations are merely parents of numerous orders, made by a Secretary of State or other competent authority, the power being derived from Section 1 (3) of the Emergency Powers (Defence) Act, 1939, which empowers "such authorities, persons or classes of persons as may be specified in the Regulations to make orders, rules and byelaws for any of the purposes for which such Regulations are authorised by this Act to be made, and may contain such incidental and supplementary provisions as appear to His Majesty in Council to be necessary or expedient for the purposes of the Regulations."

Cases in point are the Lighting Restrictions Orders, and the Public Entertainment Orders, the latter made under the powers conferred on the Secretary of State by Regulation 23 (3) to order, or prohibit, or restrict, or empower a chief officer of police to prohibit or restrict,

"assemblies of persons and the use of premises or any class of premises as places of public resort, in so far as such prohibition or restriction appears to be necessary in order to minimise the risk of loss of life or

personal injuries being caused in consequence of war operations; and any constable may take such steps, and use such force, as may be reasonably necessary to secure compliance with any order under this paragraph."

Using this power in the light of experience as the war progressed, the Secretary of State gradually relaxed the restrictions imposed on the outbreak of war for the closure of theatres, cinemas and places of entertainment, leaving the way open for reimposition of any restrictions which may again become necessary in various areas in the event of air attack and renewed danger to the public.

The enforcement of the Defence Regulations, with the exception of Part IV, is primarily the responsibility of the Police. Except in relation to Part IV, which deals with essential supplies and work, no prosecution in respect of an offence against any of the Defence Regulations, and consequently also in respect of any offence against the provisions of any Order, rule or byelaw made under the authority of one of the Defence Regulations, may be instituted otherwise than either by a constable or by, or with the consent of, the Director of Public Prosecutions. This requirement does not prevent the arrest, or the issue or execution of a warrant for the arrest, of any person in respect of such an offence, or the remand of such a person in custody or on bail, notwithstanding that the consent of the Director of Public Prosecutions to the institution of the proceedings has not been obtained. Nor does it restrict the institution of any proceedings under the Naval Discipline Act, the Army Act, or the Air Force Act. Proceedings must be commenced within six months,* and the venue for proceedings can be the appropriate court having jurisdiction in the place where the alleged offender is for the time being. In the case of offences against the provisions of Regulations in Part IV (essential supplies and work) the proceedings may be instituted by or on behalf of a competent authority for the purposes of the particular regulation which is infringed. The "competent authority" is a Secretary of State or the appropriate Minister of the Crown as head of the department concerned, or such authority or person as may be specified by an order of the competent authority.

* It may be noted that this time limit relates only to proceedings when taken under the Summary Jurisdiction Acts.

In addition to the power under the general law to proceed against persons who aid and abet, counsel and procure others to commit offences against the Defence Regulations, it is an offence (Regulation 90) to attempt to commit, or do any act preparatory to the commission of, an offence against the Regulations. Further, no person, knowing or having reasonable cause to believe that another person is guilty of an offence against any of the Defence Regulations, shall give that other person any assistance with intent thereby to prevent, hinder or interfere with the apprehension, trial or punishment of that person for the offence.

Directors and officers of bodies corporate are deemed to be guilty of offences committed by such bodies corporate unless it can be proved that the offence was committed without the knowledge of the director or officer concerned, or that he exercised all due diligence to prevent the commission of the offence (Regulation 91).

The Defence Regulations confer wide powers and impose important duties upon the Police. Chief officers of police are given specific executive and administrative powers, in various directions, either to act administratively on behalf of the Secretary of State, as in the case of the licensing of pigeons (Regulation 9), the exemptions from compliance, in certain specified premises, with the Lighting Restriction Orders (Regulation 24), or in a quasi-judicial capacity in determining the prohibition or restriction of the assemblies of persons and the use of premises as places of public resort (Regulation 23). In the case of premises in which there is danger to the public by reason of substantial damage having occurred, or works of demolition or construction are being or are about to be executed, or that premises are contaminated by gas, or that unexploded bombs are present, and it is expedient in the interests of public safety or the defence of the realm so to do, an officer of police of a rank not below that of inspector may take such steps or give such directions for the protection of persons and property in or in the vicinity of the premises affected (Regulation 25).

Constables (and it is well to repeat that the term includes special constables, who have conferred upon them, on appoint-

ment, "all the powers, privileges and duties" of a constable), and any member of His Majesty's forces acting in the course of his duty as such, and "any person authorised by the Secretary of State to act under this Regulation (88c) may arrest without warrant any person whom he has reasonable ground for suspecting to have committed an offence to which this Part (V) of these Regulations applies." Further, by Regulation 88B, the person driving or in control of any road vehicle in motion shall stop the vehicle on being required so to do by any constable in uniform or by any member of His Majesty's forces being in uniform and on duty; and if there is reasonable ground for suspecting that there is to be found in the vehicle evidence of the commission of an offence to which Part V applies, the constable may search the vehicle and seize any article found which he has reasonable ground for believing to be evidence of the commission of such an offence. It is to be noted that such action can be taken without warrant.

In the case of premises, however, the powers conferred by the Defence Regulations are limited to action under a search warrant granted by a justice of the peace, on being satisfied by information on oath, and then only to an officer of police of a rank not lower than that of inspector, or any commissioned officer in His Majesty's forces.

Section 6 of the Emergency Powers (Defence) Act enables the court, if satisfied that it is expedient, in the interests of the public safety, or the defence of the realm so to do, to hear the proceedings or any part thereof in camera, and for directions to be given at the discretion of the court prohibiting or restricting the disclosure of information with respect to the proceedings. An important constitutional point is to be observed in Section 9, which enacts that the powers conferred by the Act are in addition to, and not in derogation of, the powers exercisable by virtue of the prerogative of the Crown. The Act also requires that every Order in Council containing Defence Regulations shall be laid before Parliament as soon as may be after it is made. That Parliament has every intention of maintaining its supervision over what lawyers term subordinate legislation, even of an emergency character, was shown in the debate on October 31st, 1939, on a motion by a

private member for the annulment of an amending Order in Council relating to the Defence Regulations.

It was equally clear from the same debate that when, as was explained by the Home Secretary, measures are included in the Defence Regulations which, like the curfew, are inserted purely for precautionary purposes, for use if circumstances arise to demand their application, Parliament is prepared to trust the good sense and wise discretion of chief officers of police. Critics of the Police, and those who hesitate to confer on the Police powers to enable them to carry out their important responsibilities of maintaining law and order, and safeguarding the lives and property of the civil population in conditions of modern war, may well be advised to examine the methods used by the Police in enforcing the Defence Regulations in the initial months of war. Proceedings, even for the offence of failure by householders and occupiers of premises to screen their lights, have been rare, in spite of much reluctance and omission on the part of many citizens effectively to screen their lights. The Police "caution," that extra-judicial document which has no recognition in law but which, with the motor age, has come to be regarded as a most valuable feature of the law-enforcement functions of the Police, has been again an effective instrument in securing a black-out so real as to be effecting the object of the restrictions imposed by Regulation 24 of the Defence Regulations.

Happily the relationships between Police and public, and the loyal and ready support now being given to the police by their civilian auxiliary services, the special constable and the A.R.P. volunteer, would seem to remove all clouds from the horizon on the Home Front as it is seen in these first months of the struggle.

These notes on war emergency powers would not be complete without brief reference to local government. The war has meant, in many areas, almost a complete cessation of the popular control and democratic administration on which English local government administration is founded. The business of many local authorities has been delegated to permanent officials working under the supervision of small "emergency" committees vested with their executive powers

by resolution of the council following the receipt from the Lord Privy Seal of a circular, some time before the commencement of the war, which pointed out the need, in the event of war, for machinery to facilitate the adaptation of local government administration to war-time conditions. The measures thus taken are said to be without precedent in local government, but in this respect they are no different from other phases of civil defence. Few of the conditions of modern warfare furnish any precedents upon which the organisation can be built. There is evidence that in those areas where the terms of the circular indicating the Government's policy on the subject were faithfully acted upon, the difficulties have been rare; on the contrary, the machinery of local government has shown itself sufficiently elastic to meet the needs of the case.

Civil Defence clearly demanded that, since quick decisions must be made to meet rapidly moving circumstances which are inevitable to war conditions, some such machine should be set up temporarily to replace the peace-time administration. Experience is showing that in some respects a return to normal administration by routine meetings of committees and councils is possible and desirable, but this fact does not supersede the "emergency" committee's function of planning and strengthening Civil Defence. And while the war is waged, Civil Defence must have priority over all other local services. The A.R.P. Controller is in most areas outside London (where special machinery is in force) either the chief constable or the clerk to the council. His functions include the responsibility for taking decisions in emergency in all spheres of Civil Defence which affect the local authority, in consultation with the heads of the services and departments concerned, and to ensure co-ordination and co-operation between the various services of the local authority. He also carries out any instructions given by the Government or by the regional commissioner appointed for the area in which the local authority is situated. The Controller, as such, is not directly concerned with the operation of fire brigades, except to be kept informed, through a fire brigade liaison officer at the control centre, of the general situation as regards fires and

damaged water mains. The A.R.P. Controller also has no responsibility for the Police, who act in matters of police duty under the directions of their superior officers. The status and appointment of constable is unchanged by war conditions. Police forces continue to be locally administered, but the Police are not servants of the local authority, but are officers of the Crown. In accordance with precedent, the Defence Regulations provide for the transfer by, or on behalf of, the Secretary of State, of constables from one force to another for the purpose of Police assistance.

The adaptation of local government to war conditions has been facilitated, in the first months of war, by the absence or perhaps more correctly the frustration of air-attack, and in spite of minor shortcomings the ground seems well prepared for the war-time local government duties with regard to rationing, evacuation, local relief of war distress and in other directions in which, by tradition and practice, the government and care of the civil population are matters for local rather than central administration. The claim may be made that the Police are ready to play their part in the times ahead.

Identification of Objects by Radioactive Labelling

By PROFESSOR F. G. TRYHORN, D.Sc.
and E. E. WIDDOWSON, Ph.D.

THE need arises frequently in police investigations for the marking of objects in such a way that an identification of them at a later date is both certain and rapid. Such a procedure is necessary in many cases of pilfering, anonymous letter-writing, tampering with documents, and many other offences.

Methods of marking commonly employed have been secret marks or scratches placed on coins, or chemical or pencil marks on papers and documents. The use of dyes has been fairly widely used in recent years with some success.

Frequently these methods of marking offer difficulties: clearly the marks employed must be minute in order that they may not be easily noticed by a suspect; equally they must be sufficiently permanent and distinctive so that there can be no doubt in court as to their value as means of identification.

The use of dyes is open to the objection that the culprit almost certainly will notice stains on his hands after handling objects "labelled" by means of such materials, and, unless he can be apprehended almost immediately, will seize the opportunity of removing the stain more or less completely by vigorous washing. The use of dyes has the further drawback that when applied to coins or pockets of jackets contamination of other objects to an objectionable degree is almost certain.

Papers and documents are difficult to "label." Any chemicals applied to the surface are liable to be detected by a careful or suspicious offender, and any visible markings are even more readily detected. Glazed papers are almost impossible to "label" by means of chemicals applied to the surface, because of the obvious damage caused to the glazing.

But for this drawback, a wide range of chemicals, giving a characteristic colour reaction with a second chemical, might be employed for marking both papers and fabrics.

A method for successfully marking both papers and fabrics has been found in the use of chemicals which give a characteristic coloured flame when heated sufficiently strongly.

Solutions of thallous nitrate or lithium nitrate are suitable for this purpose. In the case of papers the solution is applied by a camel-hair brush along the *edges* of the paper, avoiding wetting any portion of the *surface*: it is sufficient to draw the *edge* of the paper along a brush charged with solution. In the case of fabrics a drop of the solution should be placed on an identifiable portion of the fabric. Recognition of the articles is then obtained by taking a minute portion of the edge of the paper, or a few fibres from the fabric, and burning them in the hottest part of a Bunsen flame. A *green* flame-coloration will be obtained in the case of thallous nitrate, or a *crimson* one in the case of lithium nitrate.

The principal drawback to this method is that it involves the destruction of some portion (although only a tiny one) of the "labelled" article.

The method described below suggested itself to the authors as being free from the drawbacks of the above method, and has been investigated to determine its scope. The chief advantage of the method is that the presence of the "labelling" cannot be detected except by the use of a particular type of apparatus: the method has the further advantages that the articles "labelled" are not damaged in any way, that the "labelling" is permanent and impossible to confuse with other methods of marking, and that the material needed for the preparation of the "labelling" solution is not difficult to obtain.

The method consists, briefly, in rendering the object or article radioactive by applying to it a trace of a solution containing some soluble radioactive compound. An article so marked may then be identified with certainty from among a collection of its fellows by reason of the radiations it emits. The apparatus described below is not difficult of assembly and can be put together by anyone accustomed to simple wireless technique.

RADIOACTIVITY AND ITS IDENTIFICATION

A radioactive atom is one that is unstable in that its nucleus is liable to break up by ejecting a high speed particle, being converted in the process into a more stable nucleus. The ejected particle may be either (1) a negatively charged electron (beta-particle); (2) a positively charged electron of the same mass (positron); or (3) an alpha-particle or helium nucleus, which carries a positive charge twice that on the positron, and with a mass about 7,000 times as great. At each disintegration the nucleus usually emits in addition gamma-rays; these are radiations similar in character to X-rays, but of greater penetrating power.

Positive and negative electrons are about only a tenth as penetrating as gamma-rays, and alpha-particles are roughly a tenth as penetrating as electrons: thus, while gamma-rays will pass through the human body, or through several millimetres or even centimetres of metal, beta-particles are stopped by less than a millimetre thickness of aluminium, and alpha-particles by even a sheet of writing-paper.

Identification of small quantities of radioactive material is best made by counting the particles emitted by the use of some suitable detecting instrument.

The counting of alpha-particles is difficult owing to the fact that the apparatus employed to detect them must have exceedingly thin and fragile "windows" in order to admit them. Measurement of beta- and gamma-ray activity is easier because of their greater penetrative power, and may suitably be carried out by means of an electroscope, ionisation chamber or tube counter. The last of these is the most sensitive since it responds to *individual* particles. Inasmuch as the radioactive sources used for "labelling" articles in common usage must necessarily be weak, a very sensitive instrument is required to measure their activity.

A Geiger-Müller tube counter suitable for the present purpose consists of a tube of thin aluminium containing dry air at $1/10$ atmospheric pressure, with a tungsten wire stretched along the axis of the tube between ebonite end-pieces. A size convenient for this type of work is a tube 5 cm. long, 1.5 cm. diameter, made of metal 0.2 mm. thick. If the outer cylinder is connected to a high negative potential (about 1,500 volts) and the inner wire to a suitable amplifier then any beta- or gamma-ray passing through the counter causes a very small pulse of current to flow between the tube and wire. This pulse is amplified until it is strong enough to operate some counting device, so that the number of beta- and gamma-rays received by the counter during a given time can be recorded. The source of high potential may be either a series of high tension wireless batteries, or an eliminator whereby alternating current from the mains is stepped up by a

transformer to the required voltage and subsequently rectified and stabilised. References are given to several forms of eliminator.*

Numerous amplifiers have been designed, of which the one whose circuit is given in Fig. 1 is both simple and satisfactory. The amplifying valve is a pentode (MS/PEN. A) and the second valve is a gas-filled relay or thyatron. So long as the grid potential on a thyatron is more negative than a certain critical value (about -15 volts) it will not pass any current no matter how high the anode potential. Once the negative grid potential is reduced below the critical value, however, a current commences to flow and will not stop until the anode circuit is broken. The thyatron is therefore used to count the current pulses. The pulse, amplified by the pentode, reduces the grid potential on the thyatron to just below its critical value so that a discharge is initiated in the thyatron, filling it with a bluish glow. The discharge operates a relay in the anode circuit in which a switch is incorporated so that the recording of the "count" automatically breaks the circuit rendering the thyatron non-conducting and ready to receive the next pulse. The counting relay in the anode circuit may conveniently consist of a telephone counter (resistance about $2,000$ ohms) with a switch attached to the moving iron part. The maximum speed at which the pulses may be counted is determined to a large extent by the mechanical inertia and other properties of the recorder: these should receive careful consideration in design. As an alternative, a stop-watch may be used as a recorder.†

A pair of headphones is usually inserted in the anode lead of the pentode for testing the working of the Geiger-Müller counter separately from that of the thyatron and recorder. The high tension supply for the pentode and the thyatron are the same two 120 -volt batteries in series: the two grid bias batteries must of course be separate ones. The resistances are of the ordinary 1 -watt type, except for the variable $10,000$ ohm resistance and the high resistance through which the central wire of the counter is earthed. This resistance, of the order of 10^9 ohms, may be made from a Pyrex glass tube 10 cm. long, 3 to 5 mm. diameter, filled with a mixture of equal volumes of xylol and amyl alcohol. A lead of copper-clad wire is sealed in at each end. The small condenser connected to the central wire of the counter may be made by winding stout copper wire round a piece of Pyrex tubing 4 cm. long and 3 to 5 mm. diameter. The second terminal is provided by a piece of thick copper wire pushed through the tubing. The various

* Barasch, *Proc. Phys. Soc.* 47, 824 (1935). Hamblin and Johnson, *Phil. Mag.*, 24, 553 (1937).

† Tuck, *J. Sci. Inst.*, 13, 366 (1936).

General reference: Hevesy and Paneth, *A Manual of Radioactivity*, O.U.P. 1938.

components of the circuit need adjustment to obtain satisfactory results: the numerical values given here should, however, serve adequately as guides. The amplifier is conveniently built in a metal box with the Geiger-Müller counter mounted vertically on the top of the box.

As the voltage on the Geiger-Müller counter is increased the rate of counting will be represented by a curve of the type shown in Fig. 2. This curve refers actually to the case when no radioactive source is near the counter: the counts then recorded are due to "cosmic rays" which also produce a pulse of current in the counter. The working voltage should be chosen near the centre of the flat portion of the curve, so as to minimise the effect of fluctuations in the value of the applied voltage.

If a radioactive article is brought near the counter the rate of counting increases, becoming proportional at any time to the number of particles or rays passing through the counter.

The accuracy of any measurement of the radioactivity of a source is determined by the number of counts taken. The number of counts recorded each minute will not be exactly the same because radioactive disintegrations do not occur at regular intervals: if counts are taken over a period of several minutes an average rate per minute may be determined: thus, in a ten-minute count the figures might be 51, 48, 47, 53, 50, 50, 49, 46, 48, 51 (total 493). These figures include cosmic rays as well as counts due to radioactive emissions from the source. A separate count of cosmic rays (*i.e.* with the radioactive source removed) might give a total of 213 over a ten-minute period. Thus, the average rate of count of radioactive particles would have been $(493 - 213)/10 = 28$ per minute. A mathematical treatment of the figures would indicate a probable error of 2.7 , and the corrected count would be 28.0 ± 2.7 per minute.*

PREPARATION OF RADIOACTIVE SOURCES

The most suitable and easily obtainable radioactive material for this type of work may be prepared from radon tubes or "seeds" used in hospitals for cancer treatment: after the radon has decayed and rendered the tubes thereby

* It is evident that the value given, 28.0 , represents the average count per minute, and, if based on a short series of counts, will be less accurate than if a long series of counts is used. A measure of the inaccuracy may be obtained by the application of statistical theory to the data. This shows that the inaccuracy of any single count may be measured by its square root, and that the inaccuracy of the difference of two counts may be measured by the square root of their sum. In the example given this is $\sqrt{(493 + 213)}$, *i.e.* 27. These counts were for 10 minutes, and therefore the inaccuracy in the one-minute average (28.0) is 2.7 . The final value of the one-minute average may therefore be written 28.0 ± 2.7 .

useless for further therapeutic purposes (in less than a week), other radioactive elements remain in the tubes. To extract this radioactive deposit the tubes are covered in a mortar with concentrated nitric acid and crushed finely; the mixture is boiled for about an hour in a covered beaker and most of the acid is then neutralised with ammonia. The filtrate is bottled for use and the residue of broken glass is retained and added to the next batch of radon tubes for a further extraction. The liquid must be left slightly acid in order to retain the radioactive salts in solution, but must, of course, not be sufficiently strongly acid to attack articles (*e.g.* paper, cloth, etc.) which are to be labelled.

The preparation must be carried out in a place removed from the vicinity of the counting apparatus, or radioactive contamination will invalidate any measurements taken. Care must be taken also to clean the hands: vessels used for radioactive preparations must not be used for other purposes.

The radioactive solution may conveniently be applied to articles by means of a small camel-hair brush.

Coins, paper (*e.g.* note-paper, treasury notes, postal orders, stamps), fabrics, etc., may be "labelled" in this way. The "labelling" cannot be detected except by the use of an apparatus of the type described above, and the process causes no harm or damage to the article "labelled."

It must be borne in mind that the activity imparted to an article in this way *cannot be removed* unless the article can be treated with hot concentrated nitric acid. In that sense, therefore, the marking may be taken as permanent.

A *small* amount of the activity may usually be rubbed off the article, but the contamination of other articles in contact with the labelled one is negligible under normal circumstances: for example, coins shaken up with one labelled radioactively will acquire only a trace of the activity, and there is no difficulty in distinguishing the originally labelled coin when it is brought near to the counting apparatus.

ILLUSTRATIVE CASE

The following is an example of the application of this method to a case of long-standing pilfering.

Coins and treasury notes had been disappearing from handbags and coats in an institution over a period of several years. Suspicion, but without any means of proof, fell on several employees whose duties took them on a round of the rooms in the building several times a day.

It was noted that a sequence of thefts occurred from a table-drawer in a particular room which was left untenanted at certain regular hours.

Two methods were then adopted to identify the offender in this series of thefts. Firstly, the floor near the table was sprinkled with anthracene powder, and the drawer handle was treated with the same substance. Anthracene was chosen because it gives a very strong green fluorescence in ultra-violet light. Secondly, several florins were made radioactive by the above method, and left in a handbag in the table drawer.

After one of the suspects had just completed a round, and before anyone else but the occupant had entered the room, several of the coins were found to be missing. Questioned about the theft the suspect strenuously denied all knowledge of it. He was then invited to submit his hands and boots to examination by ultra-violet light, to which invitation he willingly agreed. His boots, and his left hand, which, from the position of the table, was the one which would naturally be used to pull open the drawer, showed marked green fluorescence in ultra-violet light. The procedure that had been adopted was then explained to the suspect, but he still denied any knowledge of the theft, and claimed that "it must have been some stuff from some beer-bottles" that he had been removing.

It was reported that the suspect, after his round, had bought some cigarettes at the canteen, tendering a florin in payment. The coins from the till in the canteen were then examined, and a florin was found to be radioactive. The suspect was then asked to submit for examination other money in his possession: in this, the other two radioactive florins were discovered, and, in the face of such facts the suspect realised that further denial was useless, and made a full confession of this particular theft.

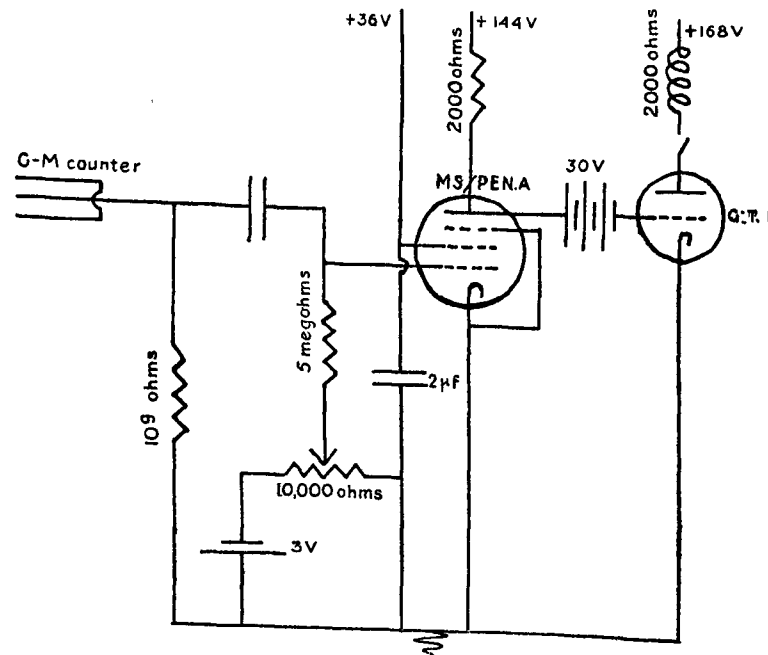


FIG. 1: Amplifier for Geiger-Müller Counter.

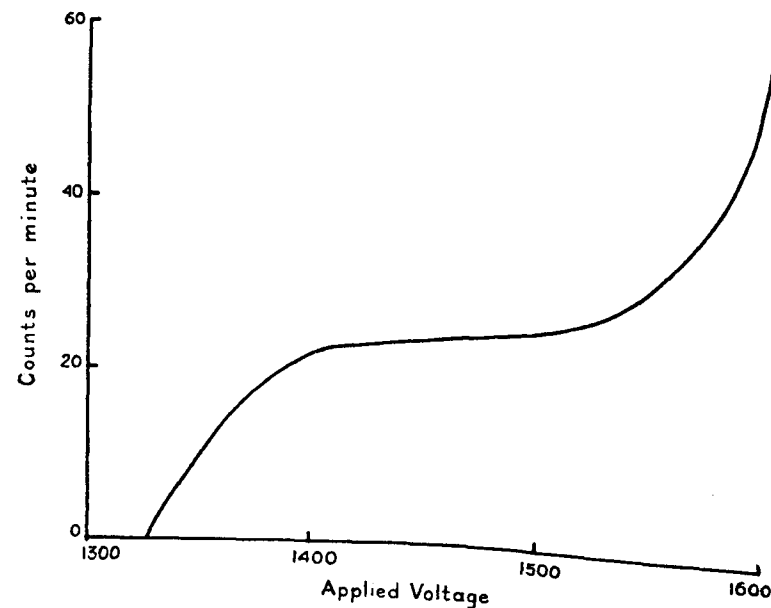


FIG. 2: Characteristic of Geiger-Müller Counter.

A Psychologist Looks at Crime*

By PROFESSOR F. C. BARTLETT, M.A., F.R.S.

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I AM a psychologist; nevertheless the first thing that I must say is that during the last few years a large amount of unmitigated nonsense has been written and spoken about crime and the criminal in the name of psychology. For this there are several reasons. Psychologists are no more immune than other people from the kindly but often misleading impulses of an uncritical humanitarianism. Further, the most popular psychology of the last twenty years tries to account for very nearly all the disasters of human life in terms of extremely early individual training and growth, and it has been widely proclaimed that if these can be controlled or corrected society will everywhere become healthy and its moral as well as its physical troubles will disappear. For such a view there is inadequate evidence. Most important of all is the fact that a psychologist must approach his problems mainly by a study of the individual and of what shapes his behaviour. This is all very well so far as it goes, but when, as in the case of crime, the problems have a tremendously important social side, it never goes far enough. I am sure that I need not remind an audience of this kind that any study of crime which is concerned only or even mainly with a consideration of individual case histories can be enormously misleading, because far and away the most important part of the whole story concerns the relation of the individual to society, and the control by society of the individual.

However, when the psychologist looks at crime he must first try to get a picture of the outstanding characteristics of the criminal as a person. This is our point of departure, and fortunately it is not necessary to be plunged at once into

* A lecture delivered at the Annual Meeting of the Chief Constables' Association at Cambridge in 1939, and here printed by courtesy of the Association and of the lecturer.

speculation. Twelve years ago a group of scientists in Harvard University began to make an elaborate and comprehensive survey of crime in the United States of America. Their results are just beginning to be made public. Throughout they have concerned themselves, not with theories, but with facts. They have collected, sifted and analysed evidence on a scale and with a care never before achieved or even attempted. It is true that they have dealt with a society very different from ours, containing a vast amount more of racial and national diversity, possessing a number of very different penal systems, and with its own methods of detection and conviction. Nevertheless the problems are fundamentally the same, and their results have an unquestionable application to crime in all civilised nation groups.

What kind of a picture do they give us of the people who resort to crime as a way of life? If we take four groups, sane civilians, sane criminals, insane civilians, insane criminals, each succeeding group displays greater ignorance and a lower level of intelligence, and comes from a lower occupational grade. Each succeeding group also, by practically all the accepted measures of physique, drops to a lower grade of physiological efficiency. Further, if we take any haphazard large sample of the law-abiding population, and then collect from prisons and other places of detention a similar sample of convicted criminals of comparable origin, the average age of the first group is consistently greater than that of the second, as if, in a civilised society, crime tends to find a rather early expression. There are many other interesting points—the constant occurrence of particular sorts of crime within particular sorts of group, racial or social, and in association with particular levels of intelligence and special characters of physique—but there is no time to consider these now. When all possible allowance is made for the great difficulties of this kind of investigation and analysis, the main result stands impressively and, I think, completely demonstrated, an astonishingly consistent connection between a criminal career and certain mental and physical characters, and the fact that those characters develop early so that most criminals are, or were, young criminals.

These are facts, but facts must be understood. Of course it would be silly to say that because a person has a poor physique, a low level of intelligence and attainment, and a particular racial or social origin and early development he will become a criminal. The physique, the mental equipment, the early environment become significant only in relation to the demands made upon the individual by the society to which he is introduced as he grows up. This is the central and fundamental condition of all crime and of all insanity, that the individual cannot, or will not, adapt himself to the demands of some social group which has authority over him.

Before I go on to consider more closely the social implications of this state of affairs, there is a further point about the individual that must be discussed. Within limits poor physique can be remedied, intelligence awakened and a low level of attainment raised. Supposing remedial measures were adopted sufficiently early in life and sufficiently widely could all or most crime be prevented? No precise answer to this question is possible at present, but one or two things can be said. Improvement of physique alone would do little or nothing to diminish the amount of crime, though it is extremely likely that certain crimes of violence would become more frequent. Improvement of education and level of intelligence alone would do little or nothing to diminish the amount of crime, though it is more than likely that certain crimes of fraudulence and some types of theft and burglary would become more common. Mental and physical amelioration must go hand in hand, and if they were successful it is probable that the total amount of crime would fall to some extent, but very likely not nearly as much as would be expected by many people.

For this there are three main reasons. First the limits of remedial treatment on the physical and especially on the mental side are narrow, particularly as they can affect the life of the individual. It would take several generations for them to produce their full results. Secondly, there is a factor which wide-scale statistical investigation can hardly at present take into account, but which is extremely important. Adaptability can be improved by the right kind of training, but by itself it is no particular guard against anything. The man who is the

more adaptable to an established order of society may also be the more adaptable to the demands of a criminal group, if the chances of life bring him into contact with one. What is required is a ready adaptability combined with a sense of responsibility to established social order, and this sense of responsibility is just about the most difficult of all things to train. Consequently, while early remedial measures ought to be socially encouraged as vigorously as possible, it is very easy to expect from them more than they can achieve.

As regards remedial measures applied later in life all kinds of wild statements and beliefs are current concerning them. It is often implied that a psychologist with a knowledge of the character and common history of criminal tendencies can take the man who has already started on a life of crime and by suitable analysis and treatment can turn him into a law-abiding citizen. This is possible in a minority of suitably selected cases. That it could be done on a large scale is practically out of the question, for the treatment required is intensely individual and is usually prolonged and costly. Theoretically, moreover, there is exceedingly little justification for supposing that it could be genuinely successful.

The third reason why educative and remedial measures applied to individuals are not likely to solve more than a small part of the problems of crime is probably the most important. In crime always there are at least two parties to be considered: the criminal and that social order against which he is in rebellion. And when two parties get to loggerheads it is very rarely possible, in this case or in any other, to do very much merely by altering one of them.

Now, if it is a difficult and a slow job to change the individual, it is even harder and slower to bring about an effective change in a large society, for to do that all, or a great number, of individuals have to be changed, law-abiding as well as law-breaking, sane as well as insane. Thus to change the individual, but to leave the character of the demands made upon him in a normal social environment otherwise untouched, is very heavily to weight the scales against the effects of the individual change being permanent. For these, and other reasons, while physical and mental remedial measures applied at an early age

deserve to be exploited much more fully and intelligently than they have been as yet, it cannot be expected that they alone will produce anything like a crimeless society.

Let us turn now to a brief consideration of some problems of crime as they might be seen by the social psychologist. He will begin with the fact that every known form of society makes demands upon the behaviour of its individual members, and that some of those demands appear silly, unjust, or unnecessary to some of the individuals affected to the extent they will refuse to obey, and may openly defy them. Very broadly speaking the resulting problems, from the point of view of the society concerned, are first those of control, and secondly those of prevention. For practical reasons problems of control are almost universally the first to be attacked, and machinery for solving them the first to be developed. As the penal systems of every country show, crime forms no exception to this general rule. Nowadays, however, it seems that problems of control of crime and problems of prevention of crime have become terribly muddled up one with the other. The administrator is constantly urged to adopt methods of control the main virtue of which is that they are said to be going to prevent crime. I wish to say as emphatically as ever I can that I consider that all the evidence shows this to be a wasteful and a disastrous mistake. Nobody shuts a tiger up in a cage for a month, treating him with enlightened discipline, and then lets him loose in a crowded city in the hope that he may have learned to behave like an ordinary citizen. If we are to control, let us control; if to prevent, let us prevent. So long as we try to do both by the same ways, we shall go half measures with each and succeed with neither.

What, then, of control? Control of crime, in every social system, means punishment of crime. Now let me try to be very definite and plain. More sheer nonsense has been talked about punishment and discipline in recent years than about most subjects. There is perfectly good experimental evidence that punishment may have a positive function in deflecting certain individuals from an unwanted to a wanted course of conduct. But to do this it must be sharp, it must follow the fault quickly, it must be over speedily, it must be associated with an equally

marked reward when the unwanted behaviour is avoided and the wanted behaviour achieved, and most important of all it looks as if the person punished must himself want to do something different from that which, in fact, he has done. A punishment removed from the action which precipitated it, long drawn-out, planned, nearly always produces resentment, and reversion to the very conduct which it professes to control. All this makes punishment in the form of the sudden sharp infliction of pain or inconvenience much more suitable to personal relationships or within rather small groups than to the operations of large societies. I do not say that the large society cannot use it. But it is likely to be effective only with first offenders, or early offenders, only when it is clearly tied up with rewards, and only then with carefully selected individual cases.

Consequently, as regards all crimes which a society has come to treat as major offences—and it is these alone with which we are concerned—the social group is flung back upon some system of forcible detention. We are talking now only of the control of crime. It is obvious that if a criminal is convicted and forcibly detained in some special institution at any rate his share of crime is being controlled so long as he is held a prisoner. But what about it when he comes into the world again? This is where ideas about prevention get most disastrously mixed up with practices of control. It is customary to suppose that if prison life is properly organised and directed, when the prisoner returns to freedom he will not return to crime. In the very large majority of cases this does not happen. The title of a recent and very clever book about prisoners is well on the way to the truth: "*They Always Come Back.*" Yet still modern society and its administrators go on stubbornly shutting their eyes to facts and stubbornly attributing the return to criminal ways to faults in the detention systems.

The main reasons are twofold for this failure of control to prevent. As I have said already, it is not much use to alter the criminal and to leave the social order unchanged, and to change the latter is too big and too complicated a job to be completed in a lifetime. In the second place the facts definitely indicate that the most important bodily, mental and social

conditions that produce crime cannot be effectively ameliorated once adolescent or adult age is reached, except in very special cases. They are exceedingly deep-seated and persistent. They will express themselves again and again once the least chances are offered.

Thinking still wholly in terms of control this is what I should say. Sudden, swift, sharp punishment can control permanently and effectively in some cases and with first or early offenders. When it is not suitable, or where it breaks down, first or early offenders ought to be given a long, probably a very long, period of strict probation. Where this breaks down, as it often will, the repeated offender ought to go into forcible detention, and to stay there. At first for all and for some always this must mean prison life, though there is no reason why such life should not be as humane and even as pleasant as possible. But if it is at all practicable I would agree with the proposal of Dr. Hooton, one of the Harvard investigators, that from time to time paroled prisoners should be permitted to proceed to some special reservation or township of their own, where they would continue under detention, but with considerable self-government. However, if such communities were formed I agree also that it would be essential to keep out all extraneous "politicians, criminologists and uplifters," and, I would add, all extraneous psychologists.

And now, what about prevention? Control of crime is a makeshift policy at best, necessary, but not final. Control and prevention ought not to be confused, but they ought to proceed side by side. Prevention is beyond anything else at present a matter for organised and intelligently directed research.

I have said already that something could be done by early remedial measures, both physical and mental. But if society were in earnest with this a vast deal more might be done. Here, as at many other points, problems of crime and of insanity are closely similar. We want a new type of detective at work, one who will not merely catch the criminal when he has committed his crime, or the insane person when he has already become certifiable, but who will catch the potential criminal and insane before they have broken out into their disastrous careers, and who will hand them over to the doctor,

the nutrition expert, the physiologist, the psychologist, and, if you will allow me to say so, to the Chief Constable ; and these will collaborate in trying and improving remedial treatment to prevent the threatened disaster.

This is not all. Perhaps unfortunately, but I am afraid unquestionably, the evidence has slowly accumulated which forces us to admit that insanity and criminality, with their attendant evils, are largely a matter of human breeding. The criminal and the insane have their spots, like the leopard, and are not, like the chameleon in the story, able to change colour very easily with a change of their background. Prevention will not be really effective until society takes seriously and attacks wholeheartedly the immense problems of human genetics. I am all for social improvement and the provision for everybody of a good and happy environment. But give the poorly endowed, the inferior strain, a good environment and they will speedily make it bad again. It is true that we are not yet within measurable distance of the knowledge by the application of which we might produce a race of individuals adaptable, intelligent, companionable and of high morale. No nation ever will be unless it takes seriously the organisation of research into early remedial training and into the inborn characters of the human constitution. I do not say, because I do not know, that if this knowledge is acquired and applied crime and insanity will be wiped out and prisons and mental hospitals disappear. But I do say that only by measures based upon this knowledge is there any real chance of preventing them both from being the overwhelming menace to human efficiency and to human happiness that they are at present.

Co-operation between C.I.D. and Uniform Branch

A SHORT time ago I was taking part in a conversation between a number of C.I.D. officers from various forces. One of them, a senior officer in a large urban force, was telling us that he had been requested to give a talk on co-operation between the C.I.D. and the uniform branch. He said that it had caused him some embarrassment because, "As you know, in practice it just doesn't exist."

This statement caused me, at least, some astonishment. One hears from time to time of cases where non-co-operation has shown itself blatantly and of undercurrents of friction between the two branches, but I had never heard the case stated quite so bluntly. Nor had it occurred to me that the position was anything like so bad even in very large forces, and I still think it possible that what was said was an exaggeration.

County and town work obviously must differ enormously on this question of co-operation between the two branches. In the average county force the C.I.D. is composed of a mere handful of men whose function is to take responsibility for the investigation of the more serious crimes and to act as co-ordinators for the remainder. Every uniform man is perforce partially a detective. Co-operation in these circumstances is not merely desirable but inevitable, the work could not go on without it. The C.I.D. takes up its natural position, that of adjunct to the uniform branch, not exactly subsidiary to it but as part of a whole.

Admittedly the situation is different in large urban forces. There specialisation is the rule and not the exception. Departments tend regrettably to become watertight compartments, and the working of beats is carried on with much more rigidity than in a county. Naturally these factors do create obstacles in the path of co-operation, but there is no reason

why these obstacles should ever be regarded as insurmountable. The Report of the Departmental Committee on Detective Work and Procedure contains this significant remark: "Obviously the success of any measures for associating uniform police with detective enquiries depends entirely on the co-operation of the detectives particularly concerned. . . ." In other words the onus rests with the C.I.D., and that means each member and not merely the efforts of the C.I.D. officers of high rank.

Somewhat unfortunately there has grown up a belief that appointment to the C.I.D. is analogous to promotion. As in all cases of half-truths there is some basis for this belief in that appointment as a detective carries with it certain allowances and, in addition, despite the manifold duties which now fall to the lot of the police, the crime aspect of our work is still regarded as the most important. In any case this belief has led some of the younger newly appointed officers to adopt an indefinable but nevertheless recognisable air of superiority towards the uniform men which cannot fail to give rise to a sense of irritation, especially among the more experienced uniform officers. Because it is indefinable this tendency is difficult to eradicate, but it could be done by example on the part of higher officers, by strict injunctions to officers newly appointed, and by maintaining a certain fluidity as between the two branches by seconding uniform men to C.I.D. duties for say three months at a time.

The last practice is carried out in some forces and works well, but in others the objection is put forward that uniform men become "too well known." Such an objection is puerile. Any worth-while C.I.D. officer knows and is consequently known to large numbers of persons, criminal and otherwise, in his district. It is true that in mufti he is not immediately known to a stranger as a policeman, but this applies equally to the seconded uniform officer, and the whole argument must fall to the ground.

Another cause of friction is the habit (or it may even be an order in some forces) of "snatching" cases from the uniform men. When an arrest for a crime is made by a uniform officer, that officer should never be replaced in the

CO-OPERATION—C.I.D. AND UNIFORM BRANCH 63

case by a member of the C.I.D. who says in evidence: "On a certain date I was at Blank Police Station where I saw the accused detained." In very serious cases an exception might have to be made, but, generally speaking, whenever an arrest is made by a uniform officer, or even where information is obtained which justifies a subsequent arrest, the officer concerned should be allowed to see the case through with the help and guidance of the C.I.D. Beat systems are important but they are not so important as removing this fruitful source of friction between the C.I.D. and uniform branch. The circumstances outlined are not likely to arise so frequently as to cause any serious dislocation of beat patrol.

Much information is obtained by the uniform branch from time to time, and if the C.I.D. expect to benefit from this information they must treat the uniform men as equals. Where possible the C.I.D. should promote good feeling by co-opting uniform men on enquiries, especially in connection with the more troublesome larcenies from vehicles and the like, and if a detection results the C.I.D. should fade discreetly into the background.

Statistically these petty crimes can be very serious, and they can best be checked by vigilant uniform patrol. Very few C.I.D.s have sufficient personnel to keep up persistent observation in petty larcenies, and if the uniform branch is encouraged to regard this type of crime as peculiarly a matter for them only good can result. But this can only be done by allowing them to take part in enquiries and appearing in cases. As "snatching" cases is perhaps the most damaging thing to co-operation, so conversely is handing over cases the most beneficial.

If the best results are to be obtained the uniform branch should be made to feel that crime detection is as much their responsibility as that of the C.I.D. There are many ways of doing this, but primarily it depends on the friendly attitude adopted by the C.I.D. A C.I.D. office ought never to be barred to members of the uniform branch, and discussions on interesting cases, points of law and the like should not be confined to the C.I.D. The important thing is that each branch should know what the other is doing in the common cause.

Crime statistics presented for the information of the uniform men will always arouse interest. They like to know how things are going not only in their own territory but as between their district and the next.

It is essential too that the patrol men should know what type of crime is happening and when. Unusual methods adopted by criminals should be explained, the peak hours and days on which breakers operate and the class of premises attacked should be brought to their notice, and any new series of crime should be at once made the subject of special instructions to patrols.

Crime informations are always available to uniform men, and every encouragement should be given to the men to read them as keenly as is done in the C.I.D. Where it does not interfere with the system of patrolling beats routine enquiries can well be entrusted to uniform men. In most counties this is done as a matter of course and the advantages are two-fold. First, it stimulates interest in crime and secondly it relieves pressure on the C.I.D.

Most forces now have albums containing photographs of local criminals, and the advantage of patrol men being familiar with them is too obvious to need comment. Patrols should also be shown or supplied with photographs of persons wanted and likely to be found in the district.

During the winter months lectures on crime matters could be arranged for the uniform branch. Technical knowledge amongst C.I.D. officers has increased enormously since the inauguration of the Detective Schools at Hendon, Wakefield and Birmingham. There seems to be no real reason why some of this knowledge should not be passed on to the uniform branch. Very commonly a uniform man is the first arrival at the scene of a crime, and we have been told so often that an investigation can be made or marred in its initial stages that it is superfluous to point out the desirability of improving technical knowledge all round.

Promotion examinations may seem to be rather remote from this question of co-operation, but it is natural that C.I.D. officers should have a greater knowledge of criminal law and procedure than the uniform branch. It is also natural that the

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uniform man should have a better grasp of say traffic law than his C.I.D. confrère, so that a pooling of resources at examination time not only produces harmony but is beneficial to all concerned.

The subject of co-operation is as vast as it is important, and in the space of a short article one cannot do more than hint at a limited number of ways of promoting it. Fundamentally it is a problem which the C.I.D. should tackle themselves.

The old maxim that prevention is better than cure is never truer than of police work, and prevention is primarily the work of the uniform branch. Let us not lose sight of this fundamental fact. *Uniform patrol always has been and always will be the backbone of police work.* It is patrol which keeps down crime, and many of us hold firmly to the view that the numerous other duties which the police now have to perform, with the consequent diminution of patrol work, is the factor mainly responsible for the increase in crime. The experiment carried out in Lancashire in connection with road traffic shows plainly that additional patrol will keep down offences more or less proportionately to the intensity of the patrol.

Economic factors are such that it is not practicable to increase preventive patrol to any great extent, and the only palliative open to us is to increase the quality of the patrol. Wholehearted co-operation between the uniform branch and the C.I.D. would achieve this.

COUNTY C.I.D.

Air Raid Protection for Police Officers

IN spite of the intensive study given to the problems of modern aerial warfare, our actual experience in this country is comparatively meagre—at least, at the time of writing ! It needs little effort of the imagination, however, to realise that, quite apart from ordinary humanitarian motives, there are very sound reasons why particular attention should be paid to the question of protection for police offices and the personnel of the Service.

In the case of the ordinary factory, some indication of what may be expected is furnished by the statutory requirements of shelters which are to rank for the Government grant. Briefly, they are that the maximum number of persons in each shelter shall not exceed fifty and that the personnel shall receive preliminary training which will ensure that those of the same trade branches are not congregated in the same shelter. In this way it is hoped to limit casualties to such proportions as can adequately be dealt with by the local first-aid posts, hospitals, etc., and to avoid as far as possible the entire dislocation which would ensue in the event of all workers belonging to one particular branch of production being killed or seriously injured. Even with these precautions it is obvious that in any large-scale organisation considerable staff disorganisation and consequent slowing-up of production must inevitably ensue as a result of a successful air raid.

If such drastic upheavals are to be apprehended in the case of ordinary factories, it is clear that the effect of any considerable number of casualties among police personnel is likely to be infinitely more serious so far as the general public are concerned. Lest this statement should rouse indignant criticism, I hasten to add that it implies neither disrespect to the members of other trades and professions nor extravagant praise of the police; but is merely dictated by the logical conclusion that in the former case the effects apply only to a

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limited section of the community—*i.e.* the particular firm or firms affected—whereas in the case of the whole or a substantial number of the staff of a police headquarters being incapacitated, the whole community must inevitably suffer by reason of the temporary suspension of the functions of the Service.

Even in the event of there being no other bombs dropped, save upon the local police station, the immediate result would be that the public would be deprived of ordinary police attention in regard to such matters as crime, accidents, fires, etc. When, as is far more probable, a considerable number of bombs are dropped in the same district, the local police headquarters would naturally become the centre of rescue operations, and one can well imagine the innumerable calls for active assistance in the rendering of first aid, the control of traffic, suppression of fires, prevention of panic, looting, etc., which would be received within a few minutes of a serious raid. And it is quite certain that casualties and incidental damage to property would be tremendously intensified by any failure or delay in responding to such emergency calls.

Incidentally, although police authorities are not compelled to administer their functions with profit and loss as their main consideration as private firms are, there is a very serious financial angle to this question which may not appear immediately obvious. That is the question of pensions and allowances payable to members permanently incapacitated, and to dependants of those killed in the performance of their duty. Granted, this aspect of the matter is of secondary importance in comparison with the more humanitarian considerations of the subject, but since finance plays such an important part in the winning of—and the recovery from!—wars, it is one which cannot be entirely ignored.

From whatever angle the matter is viewed, therefore, it is clear that in the interests of both the Service and the public, it is of the utmost importance that adequate protection should be available for police officers. At the same time, it is manifestly impossible to prescribe a shelter suitable for all police stations owing to the variations in situation, local working conditions and size of personnel, so careful consideration

should be given to these factors before finally deciding upon which particular type of shelter is most suitable.

Most police headquarters have sufficient space available in the shape of adjoining gardens, parade yards, etc., for the construction of an outdoor shelter and it is therefore suggested that those suitable for immediate construction in such places should be considered first. These may be roughly divided into four classes:

1. The arch type made from corrugated steel as marketed by several reputable firms, which are really larger examples of the familiar "Anderson" shelter, and are sunk in the ground in the same way.
2. The surface type for use where rocky ground, the presence of underground cables, etc., make sinking in the ground impracticable.
3. The pill-box type, affording protection for three to five adults, suitable for the protection of men in key positions.
4. The trench type, which is really nothing more than a somewhat elaborate hole in the ground, suitably reinforced and drained.

Expert opinion is heavily in favour of the first-mentioned type, providing as it does the maximum protection against high-explosive blast, incendiary bombs, falling debris, anti-aircraft shrapnel and all other possible eventualities—save, of course, the million-to-one-chance of a direct hit by one of the larger explosive bombs, against which no claim to protection is made even by the Government experts.

Having regard to the particular requirements of the Police, the chief points which should be borne in mind in the selection of a ready-marketed shelter, are :

1. Can it be erected quickly without the necessity of engaging architectural or engineering experts ?
2. Is it of a permanent nature, requiring no further outlay on maintenance ?
3. Can the design be modified to suit particular requirements, such as the installation of telephone services, dressing-

rooms, first-aid equipment, etc., and, if so, can this be done without expert supervision and excessive cost ?

4. Is the necessity for emergency exit or exits embodied in the design ?

5. Is the cost reasonable ?

One of the most admirable types which fulfils all these requirements is that marketed by Messrs. John Booth & Sons (Bolton) Ltd. (Fig. 1). Arch-shaped and soundly constructed of all-welded steel, it has safe accommodation for forty to fifty persons and offers the alternative of being sunk in the ground and covered with earth or concrete, or where this is impracticable of being erected on the surface and covered with sand-bags.

An outstanding feature of this particular production is the soundly-constructed door fitted with two wedge-type latches which can be easily operated from either inside or outside. An angle bar welded to the inside of the door enables it to be lifted completely off its hinges in case of emergency, and a rubber gasket fitted all round the inside edges which makes the door completely gas-tight, are further advantages.

The same features are also incorporated in a smaller shelter, produced by the same firm, intended for the use of twelve to sixteen persons (Fig. 2).

A great deal of publicity has been given recently to the value of reinforced concrete shelters, but the complicated system of shuttering required in the production of a correctly contoured external arch is frequently overlooked by laymen. Particular interest is therefore attached to the production of a shelter by Messrs. Connies & Meaden Ltd., of Cardiff, in which this difficulty is completely overcome (Fig. 3). The framework of this shelter is entirely welded and therefore exceptionally strong, while the simplicity of design makes its construction both rapid and simple. It will be noted that the corrugated sheets are affixed with the corrugations in a horizontal direction, which enables ordinary sheets to be easily fixed to the desired curve—in fact, it is almost impossible to affix them otherwise than correctly!—by unskilled labour. The advantages of these features need no stressing at a time when the limitations of both finance and man-power are

already imposing severe handicaps upon the administrative authorities, and the same alternative of sinking in the ground and covering with concrete or of partial sinking and reinforcement by sand-bags is also available.

Although it is generally recognised that all persons should temporarily suspend their normal work and seek the nearest shelter during a raid, it is obvious that in the case of the vital services this is a counsel of perfection which is wellnigh impossible. Particularly does this apply to the case of men stationed at vital points, such as telephone switchboards, reservoirs, power stations, bridges, explosive stores, etc., and Messrs. John Booth have attempted to overcome this problem by the production of "key men" shelters (Fig. 4). They are soundly constructed of $\frac{1}{4}$ -in. steel plate throughout, with a height of 6 ft. 8 in. in the centre and 6 ft. 2 in. at the side. There is a ventilator on top of the domed roof and ventilation apertures at the bottom. Spy-holes, hanging hooks for masks and lifting hooks welded on to the shell are provided; while the door is held in position with ball catches top and bottom. Full protection for four to five adults is available in this shelter.

A number of somewhat similar shelters have also been produced by Messrs. J. Symington & Sons of Newcastle (Fig. 5).

Although the above-mentioned figures are the manufacturers' estimates of the available accommodation, it must be remembered that the position of the police is rather different from that of the ordinary factory personnel, inasmuch as the functions of the Service must go on even in the face of enemy action. For this reason due provision must be made for the installation of at least skeleton office equipment, emergency apparatus, respirators, tools, telephones, first-aid kit, lamps, decontamination equipment, etc. All this will reduce the available space and it is therefore suggested that the above-mentioned figures should be reduced by at least 50 per cent. in the case of shelters intended for police use.

A further important point to be borne in mind is the Government experts' advice against installing all members of a particular branch or occupation in one shelter. It will probably be found preferable to install a series of smaller

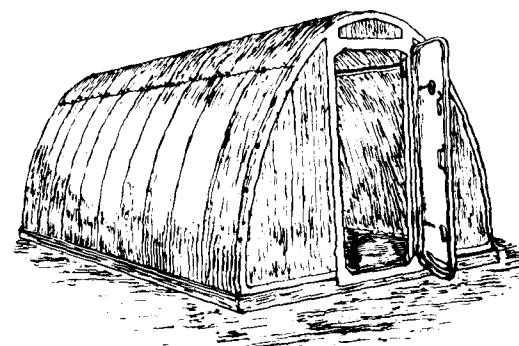


FIG. 1.

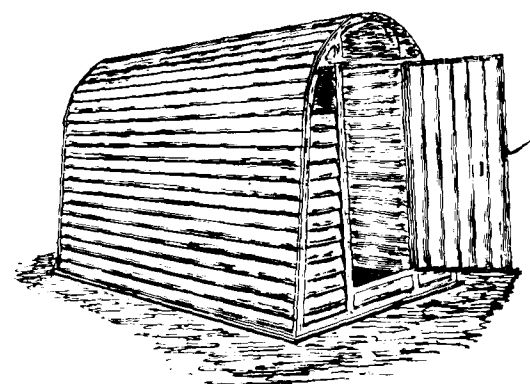


FIG. 2.

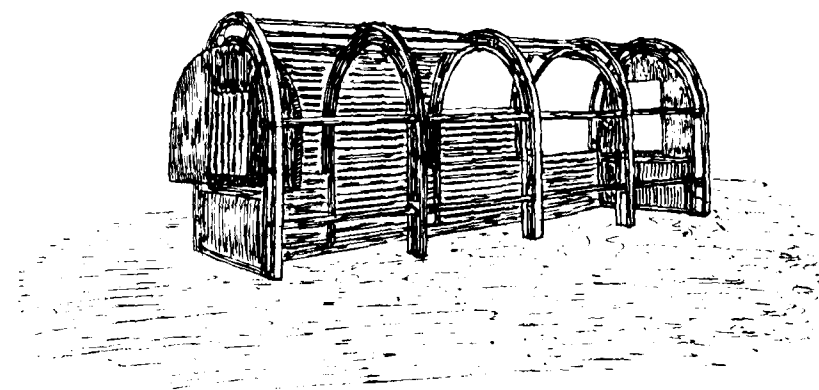


FIG. 3.

(face p. 70)

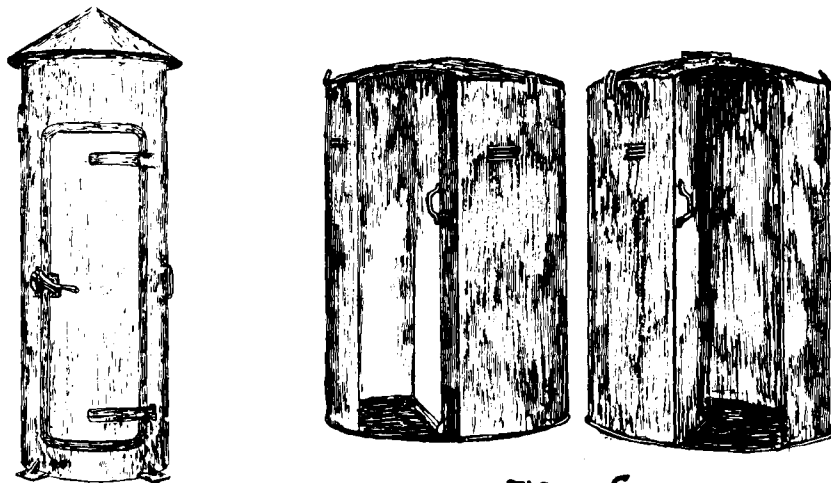


FIG. 4

FIG. 5

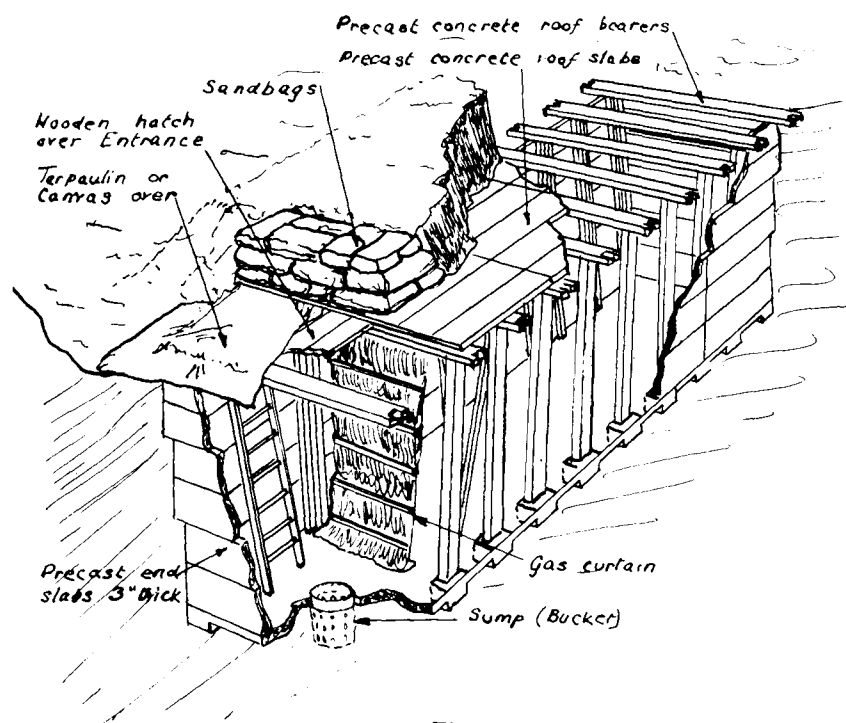


FIG. 6.

shelters connected by tunnels or passages rather than one large one in which all the staff of a station is congregated.

Although by no means as satisfactory as a permanent shelter offering accommodation for both staff and the efficient functioning of the Service, the trench type of shelter offers excellent protection against splinters and blast caused by high-explosive bombs, and where the installation of a more permanent type is impracticable a trench should certainly be installed. An excellent plan for the construction of trench-type shelters which offers the maximum degree of protection is embodied in a leaflet issued by the Cement and Concrete Association, of Grosvenor Gardens, London, S.W.1. The lay-out and dimensions recommended are based upon the official recommendations of the Home Office A.R.P. Department, and naturally it is suggested that concrete should be used in preference to timber for the lining of the trench. The wisdom of this course is obvious when the continual cost of maintaining a wooden structure is taken into consideration, and the cost of the initial construction need be little more than doing the same thing with more perishable materials (Fig. 6).

If possible, the trench should be at least 20 ft. from any building so as to avoid the danger of falling debris, and it is suggested that the entrance should be fitted with a gas-tight door or screens. This will, of course, necessitate due provision being made for proper ventilation either by periodical opening of the doors or, better still, the installation of a ventilation and gas-filtration plant capable of delivering 150 cu. ft. of filtered fresh air per person per hour.

The materials required are Portland cement, sand and shingle or broken stone in proportions of 1, $2\frac{1}{2}$ and 4 respectively, and provided due care is shown in mixing, etc., the construction by unskilled labour should present little difficulty.

Various other types of shelter are appearing on the market, but having regard to the particular requirements of the Police Service it is suggested that the above-mentioned examples are particularly suitable for consideration by administrative authorities.

A further method of protection is, of course, the reinforcement of existing buildings by sand-bagging, concreting, the

strengthening of floors and roofs by additional timbering and the installation of steel girders ; but the adoption of what sometimes appears a perfectly simple precaution in this direction is so beset with unforeseen pitfalls for the layman that there is only one safe policy—that is, supervision by a specialist. In particular, it should be remembered that many old police buildings are already sorely tried by building alterations in connection with garage accommodation, telephone systems, etc., and indiscriminate increases of existent stresses may well prove very costly—if not actually dangerous.

E. F. ROGERS.

POSTSCRIPT.—As we go to press we are informed by Messrs. John Booth & Sons (Bolton) Ltd. that in addition to A.R.P. Shelters they are now able to supply steel blast-resisting doors and shutters. These are to take the place of the unsightly and perishable sandbags that have become such a feature of our streets. These shutters allow the use of daylight: police stations protected by them will be able to function normally during an air raid.

The Recovery of Bullets from High Speed Ammunition*

By DWIGHT W. RIFE, M.D.

Medical Examiner, New Mexico State Police

IN the sparsely populated areas of the South-west, killings by means of firearms present a somewhat different problem from those which ordinarily come to the attention of the firearms identification expert. Unlike the thickly settled urban localities of the East and Middle West, where most crimes are committed with small arms, which are more easily concealed and carried, here the majority of murders are committed with rifles.

From the opening up of frontier territory down to the present, ranchers and stockmen have carried rifles in the saddle scabbards wherever they went. There is hardly a ranch home without one or more rifles behind the kitchen door, conveniently at hand to take a shot at a lurking coyote, hawk, or even a trespasser. With weapons of this class in such common everyday use, and with no necessity for concealment, even when carried into the towns, it is small wonder that rifles are used so frequently in crimes of violence. Small arms are not carried with the abandon of former days in spite of the lax laws in this section, though it is surprising what an amount of "hardware" can be shaken loose from the clothing of the native population at the usual Saturday night "baile." The rifle, however, still figures as the weapon of choice. The user can be farther away from the victim; hence concealment is easier. Many shootings that come to our attention occur from ambush, or at night into the window of a lighted room.

The comparison of empty cartridge cases is essentially the same problem in shootings by pistols as in shootings by

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rifles. However, when it comes to the recovery of bullets from rifles using the higher velocity ammunition, certain difficulties arise. The ordinary recovery box used by most firearms identification experts for bullet recoveries is unsuitable for recovering rifle bullets where the velocity exceeds that of the ordinary .22 calibre loads.

The rifle still in favourite use in the South-west is the old Winchester .30 calibre centrefire, or "thirty-thirty" as it is commonly called. This calibre is widely distributed, and ammunition can be purchased at the smallest store or trading post anywhere. Next in popularity are the .32/20 and .25/20, with the .44/40 close behind. Then come the various varieties of .22 calibre models, and, surprisingly enough, there are a number of .22 W.R.F. still doing duty. The small bores offer no difficulty so far as recovery of bullets fired through their barrels is concerned; their most exasperating problems appear when making comparisons under the microscope, because of difficulties occasioned by the easy scouring of the bullet, or to the troublesome bubbling and flaking of the copper and cadmium coatings often used.

One occasionally sees the old black powder large bore guns figure in shootings—guns that came out in the early days of the West and have remained in use ever since. Now and again one of these old relics figures in the commission of a crime—.44/40, .45/70, etc., left-overs from the old Army of occupation or the buffalo days of the Santa Fe Trail. Traditionally, the ammunition most used in the South-west is still of the type which could be used in either the revolver or rifle, *e.g.*, the .25/20, .32/20, .44/40. Most of the old revolvers chambered for this ammunition have long since disappeared, but the rifles have persisted, and many are still in use. However, very often, even to-day, the .44 W.C.F. ammunition (.44/40) is fired in a .45 Colt old Service or Frontier model revolver. This particular combination recently turned up in a murder case from Lincoln County. It occasioned the firearms expert considerable difficulty for a time, because of the erratic course of the bullet in the barrel.

The ordinary box used for small arms recoveries is out of the question in making recoveries from these "Big Berthas."

The bullet goes right on through the cotton as well as the steel plate backing or whatever else happens to be in the way. Recovery boxes as usually described will stop small arms ammunition whose muzzle velocity seldom exceeds 820 to 860 feet per second. It was found that some other means of recovering bullets from the higher speed ammunition must be devised. The temptation at first was to reduce the powder load in the test cartridges to the point where the muzzle velocity was low enough not to exceed the stopping power of the ordinary recovery box of about four feet in length. One Government law enforcement agency actually recommends boring a hole in the cartridge and shaking out part of the powder load. This practice is to be frowned on for several highly objectionable reasons. More and more, defending solicitors and counsel are reading articles on firearms identification, and becoming more astute in their comments and objections to evidence submitted. Time and again with this procedure, counsel for the defence has objected on the ground that conditions were not duplicated, as compared with the loaded cartridge delivering the fatal shot. They are inclined to make a great issue of this one point. With a jury of laymen this may carry some weight. Consequently, an otherwise watertight case for the prosecution might be severely handicapped.

In order to make a direct comparison between fatal and test bullets, one must have the same components in both test and fatal bullets. This would be possible only if the powder charge were not altered. The velocity of the bullet through the barrel must be nearly the same in all cases, so that the bearing surface of the lands and grooves will exert nearly the same radial compressive forces on fatal and test bullets shot through the barrel. Bullets pushed through a gun barrel by slow mechanical force, or propelled through the same barrel with a reduced load of powder, are not at all suitable for comparison with the fatal bullet. This the writer has demonstrated to his own satisfaction on many occasions.

To-day's high speed projectiles in most instances have a lead core, encased in a gilding metal jacket. Autopsies of bodies shot with such ammunition almost invariably disclose that the

metal jacket has been stripped from the lead core and retained in the body. Sometimes the core itself emerges, and, if deformed as it usually is, it will leave a large, ragged wound of exit. The jacket is more or less distorted and crumpled, but often, fortunately for identification purposes, the base portion of the jacket retains pretty much of its original cylindrical shape with the barrel engravings thereon. The composition of the gilding metal happily furnishes a medium on which the engravings of the inside of the rifle barrel are faithfully reproduced. Comparison is far easier in most cases where a jacketed bullet or jacket alone is found, than in the case of lead bullets. This is particularly true where black powder has been used in firing the lead bullet.

It is surprising what can be done with these sloughed, distorted jackets, if persistence and a series of clean undistorted recoveries are used for comparison. One needs every bit of help possible in arriving at a conclusion when the case involves one of these badly distorted fatal bullets.

The author as a surgeon has been greatly interested for a number of years in the effects of bullets on the human body, and he has had considerable opportunity to observe these effects. It is of more than ordinary interest that the vast majority of rifle bullets, even among the larger calibres delivering a high muzzle velocity, are stopped within the human body. The bullet may plough through a vertebra, slide along a rib, or enter the abdominal cavity to curve around the iliac crest in the most startling manner, and come to rest beneath the skin. Anyone who has seen many gunshot wounds must be impressed with the bizarre and unpredictable course a bullet takes when penetrating human tissues.

There may be several reasons why a bullet fired at high velocities behaves in this fashion. Lymph and blood are present in living body tissue, and the soft parts are in semi-fluid and elastic condition. What happens on the sudden impact of a small object at high speed can only be conjectured. There is probably a sudden reflex spasm from nerve stimulus, coupled with certain electro-chemical changes in the fluid-filled tissues themselves. The same conditions do not hold in dead, inert animal tissues, as many experiments conducted

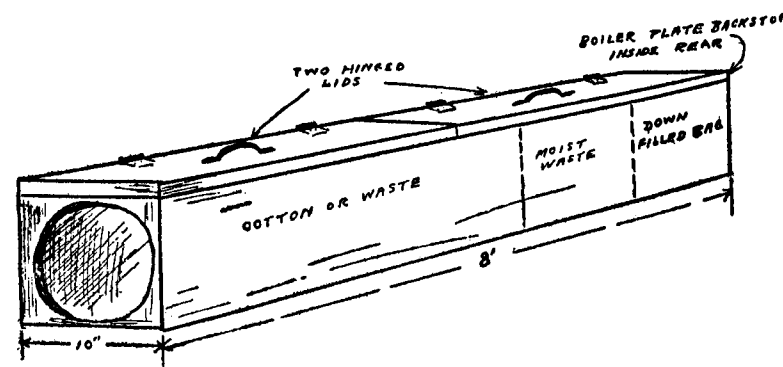
by the author have failed to duplicate the action of bullets on living animal tissue.

It is quite essential that recovered bullets for comparison with fatal bullets show as many of the characteristics of the gun barrel as possible. Fatal bullets may be so distorted that they cannot be compared around their circumference, land for land and groove for groove. With this in mind, an effort was made to determine which method was best suited for recovering undistorted, clean-cut test bullets from rifles having high muzzle velocities. There are several objections to the use of dead flesh as a recovering medium, apart from the economic and æsthetic points of view. It acts as too sudden a brake to the speed of the bullet, and even without bones in the way, the jacket has a tendency to strip or crumple.

Various materials or combinations of materials, such as cotton, cotton waste, waste and soap, kapok, etc., proved inadequate. The materials either did not brake the velocity sufficiently, or else they scoured the surface, particularly in the case of lead or lead alloy bullets. Ammunition with muzzle velocities of over 2,200 feet per second resulted in deformed bullets which could not be used for comparison purposes. Anyone who has made recoveries from small-bore arms knows almost to an inch how deep in the recovery medium he has to look for the bullets fired therein. The penetration into cotton or cotton waste progresses more or less in proportion to the ballistic coefficient of the ammunition fired. This is not a hard and fast rule, but depends upon the ability of the recovery medium to "ball round" the projectile and bring it to a stop without too much scouring of the bullet surface. (Incidentally, the author wishes to report that for years he has been recovering his .22 bore bullets in a foot of soft laundry soap backed with cotton, which combination produces clean-cut test bullets. Cotton and other plant products simply scour off the elements which must be preserved.)

Were the penetration of bullets constant we could make a recovery box sufficiently long, and figured mathematically, which would hold bullets fired from the highest speed ammunition. For most investigators, however, this would be highly impractical because of size and also because of other factors,

chief among which is the destruction of the very elements which are necessary for perfect recoveries, even though there were no distortion. Moreover, braking the speed of a bullet is not the whole story. It is believed that the following arrangement and recovery media are the most effective for recovering undistorted, clean-cut bullets having a maximum number of gun-barrel markings on their surfaces.



Bullet Recovery Box.

The recovery box (illustrated above) is eight feet long, of heavy 1-inch wood, 10 by 10 inches on the sides, lined with sheet steel ($\frac{1}{4}$ inch thick), and backed on the closed end with boiler plate ($\frac{3}{8}$ inch thick).^{*} The hinged cover is in two sections, so that it can be used for the recovery of low velocity bullets by simply lifting the front section of the lid without disturbing the rear half. In the case of high-speed recoveries, the front half may be disregarded, the rear lid being raised when searching for the bullets. It may be mounted on trestles or on a long bench in a convenient safe place. But wherever mounted, too much trust should not be placed in the stopping power of the recovery medium or of the boiler plate. It is best to keep the closed end with the boiler plate backstop against a brick or stone wall or against a bale of peat moss or cotton waste, just as a precaution. This may be an unnecessary warning, but the author has seen at least two police officers try to recover rifle bullets in the most flimsy makeshift equipment with almost disastrous results. (Nothing need be said here regarding the

^{*} Thinner linings and plating may be used in order to keep down the weight of the box, but the above measurements provide for a considerable margin of safety.

inexcusable practice of firing rifle bullets into banks of wet sand or earth. This is as reprehensible a practice as an autopsy surgeon who claws out a bullet with toothed forceps instead of using rubber-tipped forceps or his fingers for its removal from the body.)

The recovery box is packed firmly for the first six feet with cotton waste free of lumps, or with long staple cotton of surgical grade. The latter is expensive, but it is a very satisfactory braking material. Then comes a foot of cotton waste *lightly* damped with water. (In the damping process do not soak the waste; damp it lightly in layers of a few inches at a time.) Behind this, press firmly a light canvas bag of down feathers, somewhat compressed. Lacking a canvas bag, a large down-filled feather pillow-case may be stuffed into place.

When this arrangement and recovery box were first tried, too many bullets crashed into the boiler plate backstop with other combinations of materials until a bag of feathers was used as outlined above. Instantly trouble ceased, and clean undistorted recoveries were obtained. The cotton waste and moist cotton seem to act as a sufficient brake before the feathers are reached. The bullets do not always ball in the cotton, but are slowed sufficiently so that when the mass of feathers is reached, there is a violent upset in the flight of the slowed bullet and it tumbles over rapidly, often coming to a stop with the nose pointing to the front of the box. This is probably due to the many small air spaces between the fine elastic fibres of the feathers. There is a sudden compression of air in many planes, coupled with as many stresses exerted on the bullet, which upsets it violently but not sufficiently to distort or rumple it in any way.

It is hoped that this method, arrived at by trial and error, will be of assistance to firearms identification experts who may have occasion to recover high velocity rifle bullets for comparison purposes.

The Police and the Public*

By O. W. WILSON

Chief Constable of Wichita, Kansas.

THE protection of the life and property of its citizens is a primary function of government. Representatives of the people hire police officers to perform this most important task. The police are paid for their service, and, as in any other employment, there must exist a proper employer-employee relationship.

A failure to recognise and understand this employer-employee relationship in the case of an individual policeman is usually referred to as "officiousness." It results in an attitude which the public finds intolerable. Police executives also frequently fail to understand this relationship properly. With some hazy notion of "divine right," they usually call the resulting attitude "independence," and at the same time make some proud reference to "everyone being alike in the eyes of the law." Citizens refer to it as "arbitrary" and "dictatorial"!

It might better be called an ignorant misconception of the police function, a failure to understand that the duty of the police is to *serve*. Unconsciously transmitted by the police executive to the rank and file of the force, this misconception accounts for most of the misunderstanding between the police and the public. Because of it the police of some communities find their going hard. Their public seems unappreciative of their efforts. Theatre audiences applaud the shooting of a policeman and chuckle with glee at the ridiculous figure of a comedy cop performing his antics on the screen.

The nature of any relationship is determined by the attitude of the parties involved. A proper relationship between the police and the public is impossible unless both have a

* A paper read at the Annual Convention of the International Association of Chiefs of Police, 1936-7. Here printed by courtesy of the Association and of W. P. Rutledge, Esq., its Executive Vice-President, and of the author.

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proper attitude. The actions and conduct of each are determined by their own attitudes. The attitude and conduct of each influence the attitude and conduct of the other. The attitude of the public is moulded and built by the police themselves. It reflects our attitude. We shall receive from them the respect that is due to us, no more and no less. As a general rule the treatment we receive is the treatment we may expect in view of our attitude towards them.

POLICE RESPONSIBILITY

Since action is determined by frames of mind, we must carefully scrutinise our own viewpoint to determine that it is a proper one. Our attitude will be determined by our concept of the police function, of our duty towards the public. We must recognise that the essence of a proper police attitude is a willingness to serve. We must not confuse servility and service, nor courtesy and softness. We must recognise that our sole excuse for being is to serve, and that there is nothing servile in the act. We must be firm but at the same time courteous. We must avoid an appearance of rudeness.

A public which co-operates, which supports the police in their efforts, and which observes laws and regulations, may be said to have a proper attitude. It is the purpose of this paper to point out the need for such co-operation and to describe methods which may be used in developing this attitude.

A public which observes laws and complies with regulations relieves the police of a large share of their normal burden. The co-operation of the public is obviously necessary in the successful administration of any police department. A co-operative public renders distinct assistance in many ways. It is necessary in the enforcement of major laws as well as of minor regulations. Arrests are difficult and convictions almost impossible without it. Proper public support is not limited to an observance of regulations and to co-operation in criminal cases, but it provides improved working conditions: shorter hours and satisfactory relief and vacation.

Fortunate are the police who have the support and

co-operation of the public. Without it they are held up to ridicule, they are criticised and buffeted about, and censored at every move. No opportunity is overlooked to make their tasks more onerous, their working conditions more disagreeable.

PUBLIC RELATIONS ACTIVITY BY POLICE MISCONSTRUED

There are two common misconceptions regarding the activity of the police in establishing a proper public relationship. The less common is based on the opinion that the police should take no action in this matter. Supporters of this plan stand on the principle that such action is unethical. This principle is based on a misconception of the relationship between the police and public; a failure to recognise that the success of the police job is dependent upon a degree of public co-operation which is forthcoming only when the public has a proper attitude. Police officials with this view must make a reappraisal of the police function. Viewed in the proper perspective, they cannot fail to see that police functions cannot be most effectively performed without the co-operative assistance and support of the public. This public co-operation is not forthcoming unless it be actuated by a proper frame of mind on the part of the public. This public attitude can and must be moulded by the police if they are to do their job most efficiently.

The much more common misconception concerning the activity of the police in creating a proper public relationship is based on a false premise. There is a failure to understand the fundamental purpose of the attempt to promote a proper public relationship. Police executives who fall into this error are guided less by the desire to improve the police service than by a wish to enhance their own position. This failure to appreciate the real purpose of the act results in an improper technique. The executive speaks of selling his department to the public. He becomes more and more concerned with propaganda and less and less with service. Any department which undertakes a programme of propaganda with this distorted point of view is justifiably subject to criticism.

HOW TO OBTAIN A PROPER PUBLIC RELATIONSHIP

The idea behind the work of creating a proper relationship between police and public must be based on an earnest desire to serve the public, and on an appreciation of the responsibility of the police in keeping the public informed. The public has the same right to demand an accounting of the stewardship of a police force as has any other employer. Just as any employer may reasonably expect those in his employ to give an account of their activities and an explanation of their procedures, so is the general public entitled to similar information from the police. And just as an employee has the right of gaining the confidence and understanding of his employer, so should the police have the opportunity of explaining to the general public their procedure and informing them of their actions.

Since the function of the police is to serve, they may best and most easily obtain public support and a proper public attitude by serving well. In the act of serving, there are certain dangers which should be avoided. The very nature of police work easily arouses public resentment. Any police action regulating the conduct and action of good citizens involves this risk. The police job must be done despite this danger; but it is important that the police recognise the risk and adopt a technique which will minimise the resentment.

It is relatively easy to make a person angry. It is much more difficult to handle a situation in such a diplomatic way that anger is not aroused. Some police officers are remarkably successful in doing this. Their success proves that there is a right and a wrong way of handling such situations. The police must analyse their approach to and procedure in handling the public in order to develop a technique which will create a minimum of resentment.

The police may serve wisely and well and still not avoid resentment because of situations which the public does not understand. Explanations are sometimes in order. The adage, "Explain nothing; your friends do not need it, and your enemies won't believe you anyway," may be a wise one at times. But there are many police procedures which will arouse

resentment unless a word of explanation is supplied. Under such circumstances, it is foolhardy not to provide the necessary information. Often it is the duty of the police to inform the public of their course of action and to explain their procedure and the purpose of their actions. On many occasions the police function cannot be satisfactorily and properly performed unless the public is prepared by proper information.

As an example: The police may do an excellent job of traffic enforcement, applying the pressure intelligently according to the best principles of selective enforcement. Such a programme of enforcement is a genuine service to the public. Lives are saved, damage and injury to property are avoided. The police are splendid! If the police fail to inform the public of their programme; if they fail to explain the casual relationship between the accident rate and the enforcement pressure; if the public stands in ignorance of the principles of selective enforcement, it will labour under the impression that the enforcement is a broadside directed at traffic generally without good reason, and will resent the pressure applied. Under such circumstances the most intelligent enforcement programme will be severely criticised. The public is entitled to know the true situation, and only by informing the public of all of the facts may the police hope to avoid resentment and secure the support so necessary to a successful campaign.

Most devices used by the police for informing the public will accomplish more than is apparent to the casual observer. While their primary purpose may be to inform, in many instances they will provide added service, and in most cases a definitely improved service.

Any act of service by the police in itself is the best device for informing the public of the quality of police service. Actions speak louder than words, and if the police create resentment by their failure to serve or by a very inferior service, or by a service marked by rudeness and impropriety, no amount of information will counteract the ill effect thus created.

PUBLIC CONTACTS

A police force is made up of the component members of its personnel, and as a chain is no stronger than

its weakest link, so a police force is not likely to have a reputation much better than the reputation of its weakest member. For this reason, it is important to pay careful attention to personal contacts between the police and the public. The deportment of the personnel at headquarters, the treatment of the public who call on business, the handling of complaints and reports are all of great importance. A reception equal in quality to that provided by the best retail shop in town, whose existence depends on public goodwill, should be accorded the citizen who comes to the police for help. The answering of a telephone or the offering of assistance to the citizen who calls at headquarters may seem to be a matter of small moment, but small matters bulk large in the aggregate. On them the reputation of the force is built.

Personal contacts are not limited to headquarters, however. Officers in the street are in constant touch with the general public, who are forming their opinion of the police through these contacts. Not alone will the public judge the police by the demeanour and attitude of the officers they actually contact, but the matter of the appearance of the policeman seen on the beat, his dress, his appearance, his carriage and poise will all be taken into account by the citizen in appraising the force.

Any police force wishing to build up a proper relationship with its public must give first attention to its personnel; it must study its individual officers, analyse the procedures used in public contacts, develop proper methods for dealing with the public, and otherwise attempt to create situations which will meet with the greatest favour.

The man on the beat is more than the eyes and ears of the force; he is the personality of the force. On his beat he has an excellent opportunity to make contacts with the public and to win friends for the force. With the advent of the motorised officer, the maintenance of such contacts has become a problem. The police officer in a car fails in a measure to perform this function. Attention must be given to the question of assuring this contact. Some police forces have found it desirable to create situations which will force the officer to make certain contacts as a matter of routine. Such

contacts would not be made were it not a matter of police routine.

PUBLICATIONS

Practically all police forces in the country to-day publish an annual report; many provide semi-annual reports as well. These reports are of a semi-technical nature and as a rule are not interesting to the layman. Recognising this weakness, many police forces in the U.S.A. are providing the general public with information regarding the operation of the police department by monthly or weekly publications. Usually these publications are multigraphed and as such are probably more acceptable to the public than they would be in a more finished and expensive-looking form. Procedures for the distribution of the entire circulation vary with different forces. Efforts are usually made to place them in public places where the largest number of citizens may have an opportunity to examine them at their leisure.

In addition to such publications, many police forces find it advisable to supply a limited group with specialised information. The activities of the Vice Division are a matter of great importance to a certain group. In every community there is a specialised group of citizens interested principally in traffic. Every police force will profit by providing these groups with some specialised information on the activities of the force in their field of special interest. Such information should be published regularly and every effort should be made to digest tabulations rather than to present columns of figures which the average business man finds no time to analyse. Especially in the traffic field is it important that the police themselves make the analysis and draw the conclusions, giving the results rather than the statistical facts.

Several police forces provide the retail merchants with a weekly warning bulletin regarding the operations of shoplifters, cheque artists and counterfeiters, and outlining fraudulent schemes used against the shopkeepers. Such a bulletin is a definite service and, in addition, it informs the shopkeeper about police activities in this field. Those

members of the force responsible for its preparation have an unlimited opportunity of providing special instruction in such subjects as counterfeit money, bad cheques, shoplifters and their technique to classes made up of shop assistants.

LECTURERS

Every police force should compile a rota of lecturers, and provide special training for a selected group of officers best qualified to serve in this capacity. Provision must be made to provide these men with opportunities to appear before the public. This is not a difficult task. In every community there are clubs and organisations seeking interesting speakers, and no subject is of such keen general interest as police work. Fortunate are those police forces which have qualified and experienced speakers to appear before the public presenting the police side of the picture, informing them on police policies, methods, and procedures.

CO-OPERATION WITH CITIZEN GROUPS

Intelligent police service in itself, proper personal contact by the officers, publications and a lecturers' rota should be constant fixtures in every police force. But the activity of informing the public should not be limited to them. There is an unlimited number of devices which may be used to interest and educate the public. Every force should organise citizens interested in special problems. Most forces have some form of public safety organisation either as an entirely independent unit or as a committee of some parent organisation. The assistance which may be derived from such interested citizens is immeasurable. There is no finer opportunity to inform the public on police activities and policies, and no better supporters have the police in the matter of broadcasting this information to the community at large. Some forces, in addition to maintaining regular contacts with such a committee, have a special traffic squad of citizens to assist them in their work.

The police should not lose sight of the fact that there are other special interests in the community besides traffic. There

are those who are interested in commercialised vice. There are others who are interested in criminal prosecutions. Left to themselves, unguided in their direction, uninformed on the policies of the police, these groups may do the police actual harm. Properly organised, understanding the attitude and plans of the force, these groups stand as powerful bulwarks against outside criticism.

The interest and support of every civic group in the community should be enlisted on behalf of the force. This may be done in the fields already mentioned. It is necessary, as in the case of the other groups, that the police provide the guiding hand, and serve as the mainspring on which the activity of the group will depend. Unless the police are prepared to carry on an aggressive leadership, they should avoid enlisting the active interest and support of any group. Without such leadership they may become liabilities instead of assets.

PUBLIC DISPLAYS

Police forces should not overlook any opportunity to hold athletic competitions of all kinds, fire brigade and first-aid displays, etc., which will inform the public about their activities. Police demonstrations are always of great public interest.

TOURS OF INSPECTION

Tours of inspection of police headquarters and rides in patrol cars for citizen guests have been used most successfully for informing the public. If police headquarters are inadequate; if the site is the dusty ground floor of an ill-smelling town hall; if the cell facilities are inadequate; if the equipment is not satisfactory, invite important citizens to make a tour of inspection in order that they may determine the facts for themselves. How can the police expect the public to provide them with proper accommodation if the responsible citizens of the community are unaware of the conditions? Civic leaders, members of civic clubs and church groups will appreciate the importance of providing adequate facilities if given an opportunity to inspect the present quarters. Guides

carefully selected and properly qualified to explain the operations of the department can easily and quickly inform the public on many points of interest. Let your force occasionally invite leading citizens to ride in their patrol cars, to see them actually at work. Citizens may thus determine at first-hand exactly the treatment accorded to the public by the police. What better answer could there be for a public erroneously informed that the police are brutal, unreasonable, and unnecessarily harsh?

THE DANGER OF AN ENLIGHTENED PUBLIC

Do not fail to note the definite dangers involved in such plans for informing the public regarding a police force. Before inviting your guests to inspect your home, make sure there are no skeletons in your cupboard. Before urging the public to become intimately acquainted with your personnel, make sure that you have a force of which to be proud. Before inviting your citizens to scrutinise your technique and procedure, make sure these are presentable.

If a police force be caught out in misrepresenting something, the public will lose confidence in its integrity. If it be obsolete in its procedure, behind time in its organisation; if its technique be improper; if its attitude toward the public be wrong, then that department had better hide these facts rather than invite the public to scrutinise them carefully. If you are ashamed of your force; if you have not selected your personnel wisely; if they are not properly trained; if their operations are questionable; if they have no carefully outlined procedure, then you should not attempt to inform the public of the true facts.

If, on the other hand, you have a snappy and up-to-date force; if its weaknesses result from items over which you have no control, then take the public into your confidence, show them your strong points, point out the weaknesses, and urge them to assist you in strengthening your force.

An enlightened public is the greatest friend of a good police force and the greatest enemy of a poor one. If your police force is a good force, make of the public a friend and

supporter by informing them of the facts and urging them to assist you in strengthening the weak points.

Police forces which have taken the public into their confidence, informing them of the operations, their methods and procedures, and arranging for them to become personally acquainted with the personnel of that force find that they have the complete support of the public in all of their projects.

By the very nature of their work, the police find themselves constantly in situations where they are subjected to unfair attacks. It behoves the police to strengthen their stand with the public in order to withstand the onslaught of the critics. There is no better way to accomplish this end than for the force to win the friendship of the public by taking them into its confidence.

The Tactics of Criminal Investigation*

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INFORMERS

CERTAIN writers on criminal investigation, notably that great authority Dr. Edmond Locard, are strongly opposed to the use of informers and prefer scientific and technical methods. That is a point of view to which we cannot subscribe. Twenty years ago (less in some countries) when modern methods of criminal investigation were being developed, encouraged by the writings of certain experts who quite rightly thought they should be more generally employed in police work, it was the correct thing to belittle the policeman's job—there is nothing new in that—and to claim, in season and out of season, that only experts in "police science" could solve criminal cases. They also held that police officers were incapable of finding out anything without the use of informers, those questionable individuals who continually get away with law-breaking because the Police, "for services rendered," look the other way.

But the still small voice of certain police officers who managed to get themselves heard adduced the other side of the question: that the experts could not obtain results without the equally valuable co-operation of the police and that it was time this should be recognised. Actually, the eyes of authority were soon opened. What was the good of finding at the scene of the crime a fingerprint, a hair, a few threads of material, a spent cartridge, a forged document, etc., if they did not lead to the wanted person? We have no wish to belittle the rôle of the expert in criminal enquiries, for it is a considerable one;

* Translated, with the author's permission, from his recent book, *Cours de Police Technique et de Tactique de Police Criminelle*.

but the task of the Police remains, and will always remain, of primary importance.

Nevertheless it is not wise to bring these two spheres of action into opposition ; far wiser to join them, making the one the indispensable complement of the other. To-day, the experts and the Police understand one another, and each realises the value of the other's work. Yet there lingers a tendency among the experts, particularly those who in the past have been most critical, to fail to recognise the fact that many police officers refuse to employ informers whom they know to have committed a crime or misdemeanour. The remedy for this misunderstanding lies in the hands of the Police themselves. They should take strong measures to put a stop to this practice.

Does this mean that we are to deny the Police the use of informers ? Before we answer that question let us ask another one : what do we mean by " informer " ? What the cheap thrillers and yellow press mean by the word ? Or do we mean the quiet, honest—but timid—middle-class man who, as a good citizen looking to the Police to protect him, points out to the Police a man, lately come into the neighbourhood, who looks and acts very much like a criminal ? Is the business man an " informer " who, fearing reprisals from smash-and-grab men, tells the Police that he has been offered obviously stolen goods ? Is the publican an " informer " because he tips the Police that certain new customers look like crooks ?

Then there are the people who regularly give information to the Police, *e.g.* high officials, lawyers, financiers, industrialists, all those persons who want to help the cause of justice but don't want to be bothered with a lot of questioning or made to look foolish in the witness-box. And there are those old " clients " of the Police who give information in criminal cases not only out of gratitude for good treatment (there is more of that than is generally supposed), but also for reasons of hate and jealousy, and sometimes in the hope of getting money out of the prosecution (for some police forces, particularly in Belgium, do not give monetary rewards). Ought the Police to send such informants away in disgust and refuse to have anything to do with their information because it comes from

" old lags " ? If you say " yes " to that, it is as good as saying that a barrister should refuse to defend an ex-convict ; for the police officer who receives such confidences uses them on behalf of honest people and for the good of the whole of society.

The public, the experts and the rest are wrong when they over-estimate the importance of informers to the Police. The informer rarely gives such precise information as will allow the criminal to be picked up immediately and convicted of his crime. The informer always hedges by saying, " There's a shady-looking bloke lodging in that house," or " A chap come into the bar Saturday and I bet he's a pick-pocket," or " I know a man who looks like a receiver to me," or " That job was done by so-and-so; take my word for it." Such statements simply don't go to *prove* anything ; but patient work by the Police on vague hints of this kind can achieve excellent results, since all the evidence has been procured by the Police themselves. The informer who supplies " information received " is usually surprised that the Police don't rush off at once to arrest the suspect ; and sometimes he expresses this astonishment forcibly to a lawyer, boasting of his help to the Police—with the idea of helping himself in some little trouble of his own. Police should always treat the statements of informers with the greatest reserve, especially of those who are labelled undesirables, not only on account of their shady past but also because later on these same gentry may themselves be under arrest and because their motives for giving information at all are highly suspect. These are often motives of hate or jealousy. The Police should always check up carefully on the real and apparent reasons for denouncing a suspected person.

Informers usually come into contact only with the lower ranks of a police force. On no account should a police officer of higher rank who is in charge of an investigation have anything to do with these gentry. Any such collaboration would be most unfortunate and would damage the prestige of the chief constable as well as bring into question that impartiality from which he must never depart. Besides, relations between the Police and an informer make a very bad impression when

they come out in court. The lower ranks of the Police who come into contact with informers should deal with them with correctness, firmness, and politeness, and should take care to see that they are themselves respected. No exchange of familiarities or gossip should be tolerated. An informer will give ten times as much information to a police officer whom he respects and fears as to one with whom he is hail-fellow-well-met.

When disbursements have to be made to an informer for fares or drinks, the Police should hand out only what is strictly necessary ; for the well-lubricated " collaborator " usually produces interesting but entirely fanciful statements in the hope of making a bit more out of it. When the prosecution has promised a reward for information leading to an arrest by the Police, it is desirable, in our experience, that it should be the prosecuting party in person who pays the informer. In this way the Police avoid any suspicion of keeping a " rake-off " for themselves—and it is not only the informer who harbours such dark suspicions ; often enough the prosecutor himself (always ungrateful and aggrieved) thinks that the Police " have their price."

No police officer should ever allow an informer to enter police premises : arrange to meet him in a quiet spot or at some quiet public house on the outskirts of the town. The police officer should never, for any reason whatever, hand over to an informer any document, form or visiting-card. Informers should always be told that they must not in any circumstances provoke or take part in any crime, and that if they do so they will risk being arrested by the police officer himself. Young police officers are often tempted, in the hope of promotion which might follow the successful handling of a big case, to make absurd, exaggerated or illegal promises to informers : they should remember that these practices are strictly forbidden. Only mature and experienced police officers who can make discreet and reliable enquiries off their own bat should be authorised to treat with informers.

But in criminal investigation information is not always obtained from informers already known to the Police ; after every big crime the Police receive a large number of anony-

mous letters which, ninety-nine times out of a hundred, are quite misleading, since their writers have no other motive than revenge.

Nevertheless, the officer in charge of a case must verify every anonymous communication which comes into his hands. The men he uses for this purpose will not be the same as those engaged on the main case, unless the information received is so precise and apparently important that he is justified in thinking it true. But in any case, the officers entrusted with this task should be put in full possession of statements taken on the spot and of all further developments.

GENERAL PROCEDURE IN ENQUIRIES

The police officer in charge of a case should not form preconceived ideas about the way in which the crime was committed or the identity of the criminal. It is only after he has verified and collated the various statements and the results of his subordinates' enquiries, and after he has checked all these thoroughly, that he can make his first cautious conclusions. Other evidence may later be forthcoming that will confound these conclusions : the police officer who delivers himself prematurely of an opinion which later events tend to prove wrong is tempted to stick to it stubbornly, for fear that his subordinates—or superior officers—will see that he has made a mistake. But acknowledging one's mistakes in criminal investigation—where mistakes are so easy in the great maze of known and unknown facts with which the Police have to deal—is more honest than risking checkmate through misguided pride.

The police officer should never allow himself to be put off by bad luck, opposition or false scents : patience and pertinacity often end all that just at the moment when success is least expected.

The police officer handling a case should keep in close touch with his superiors and with the experts, and should also be always on the spot to encourage and direct his subordinates. In his contacts with the press, he must be careful never to give away facts the publication of which might

hinder his efforts ; for the criminal often learns too much from the columns of the newspapers. Relations with the press should be guided by two considerations : one, the quite respectable desire of newspapers to give their readers the fullest and latest news they can get, and the other the danger which might result from publishing material that should be kept secret. Good judgment, therefore, is shown by releasing information that is not too guarded (for then the reporters are tempted to play the detective, which is dangerous), nor yet too full, for then the criminal benefits.

When assigning their tasks to his subordinates, the officer in charge of an investigation should display his knowledge of psychology as well as his good judgment. He must know his men inside out, intellectually, physically, and in relation to their jobs.

Too much importance should not be given to old saws such as "cherchez la femme." Freudian theories are very clever and attractive, no doubt, but it is wrong to suppose that crime is invariably sexual. Other motives for wrongdoing are common enough.

The senior police officer in charge of an enquiry should always keep in touch, through his subordinates, with persons commonly found on or near main roads, railway stations, entertainment and business centres, etc., *e.g.* hawkers, cheap-jacks, newspaper sellers, taxi-drivers, bus-conductors, commissionaires, prostitutes, and so forth.

PROCEDURE AT THE SCENE OF THE CRIME

Hereto are appended a few general remarks on the subject of the first steps to be taken in a new case.

The police officer in charge of the investigation should immediately see to it that all sightseers and other superfluous persons are sent away from the scene of the crime. The fewest possible number of persons should be allowed to remain. The officer should listen carefully to the statements of those police who first arrived on the scene, and also to that of the person or persons who discovered the crime and gave the alarm.

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He should set about the taking of statements calmly and methodically. Nobody should be allowed to smoke. Those previously on the scene should be closely questioned to make sure that any ash or matches they may have dropped are removed, to avoid later confusion. Enquiry should also be made as to whether any object has been touched, and if so by whom and in what manner, in order to simplify the identification of fingerprints.

The officer in charge should be accompanied by a police photographer, who after a rapid preliminary examination of the premises or immediate neighbourhood (if the crime was committed out of doors) should, at the discretion of the investigating officer, take his photographs. If there is a dead body, this should also be photographed from *above*. Photographs showing metrical measurements are recommended, either according to Bertillon's method of "framing" (photographs taken horizontally and vertically at a distance of 1.50 metres); or, preferably, by the Heindl system (Berlin), which permits the calculation of distances and the measurements of objects and planes shown on the photograph by means of a square of known dimensions placed on the ground at the time the photograph is taken (the "horizon" determined by the producing of the two sides parallel to the plane of the lens, in the same way as the measurements proportionate to the various sides of the square allow, by the calculation of ratios, the calculation of distances and dimensions).

The most modern method of taking photographs on the scene of a crime, whether exterior or interior, consists of using two appliances made by the firm of Wild de Heerbrugg (Swiss) based on researches made in collaboration with the Institute of Photographic Measurement at the University of Zürich. The first instrument, of which there are large and small models, is called a "stereometer." The large model is specially designed for exteriors (crimes, fires, street accidents, etc.) and takes views at distances ranging from 4 to 80 metres, whereas the small model is useful for views at 1.50 to 6 metres. At each of the two ends of a tube is placed a lens, in such a manner that one is able to obtain photographs which, when imposed one on the other, bring out a picture in relief.

The second appliance, called "Autograph," allows views to be taken at shutter speeds of from exactly $1/10$ th to $1/400$ th of a second, whether exteriors or interiors; moreover, these views are photometric, so that dimensions, distances and ratios of measurements can be exactly determined, thus making it unnecessary to take measurements on the scene. All these photometrical operations can be carried out in ten minutes.

When taking views it is recommended that lamps be used. Magnesium powder, etc., not only gives off smoke and dust but may set fire to property.

Professor Ribeiro, of Rio de Janeiro, has been experimenting with cine-cameras, not only for photographing the scenes of crimes but also, where possible, the crimes themselves as they are being committed (*e.g.* in the case of fires, riots, etc.). The Marseilles assassinations, which were photographed by news-reel men, gave him the idea for this method. The camera is turned successively on every aspect of the scene, particular attention being paid to salient points: position of body, position of weapon, doors and windows, bloodstains, etc. Such films may be very useful in checking up on witnesses' and suspects' statements, to limit mistakes of various kinds, and even to measure dimensions and distances.

The search for fingerprints and taking of casts should not be begun until the officer in charge of the case has made his preliminary examination, for otherwise there is a risk that important clues will be lost.

Similarly, the police officer in charge should not under any consideration change the position of the body before the police surgeon has made his examination. But immediately the medical examination is over the ground underneath the corpse and the underside of the corpse itself should be examined, as clues or significant objects, or even the weapon used, may have been hidden by the position of the body.

At the same time a skilled draughtsman, preferably a police officer, should make a complete and detailed sketch of the scene of the crime. This should be drawn to a convenient scale according to the area to be included, and upon it should be clearly shown whether the doors and windows were open or not (and if so how much), staircases and other features.

While making his examination the officer in charge should tell the fingerprint expert, as he goes on, just where the latter should set to work. We once had the painful experience of seeing this part of the procedure started off before the arrival of the officer in charge of the case and before any real examination of the place had been made. The whole scene, including all the furniture, was plastered with grey powder and, needless to say, results were nil.

The following points must be elucidated: the method of entry of the criminal; method of exit of the same; the exact spots where he was seen by witnesses; all signs of the criminal's movements on the scene of the crime, so as to establish both where he was and where he was not; signs of hesitation or waiting by the criminal and the reasons therefor; places where the criminal has been active in any way whatsoever; the circumstances in which the crime was committed; if a homicide, any signs of the victim's being surprised, signs of a fight, fall, personal damage, etc.; any changes which may have been made in the scene by reason of the crime, as well as any damage done; the exact aim of the criminal; the weapons and instruments which may have been used by victim or criminal; any objects which may have been taken away by the latter; any places where the criminal in his flight, or when returning to the scene, may have dropped or abandoned certain articles.

In certain circumstances, particularly when the homicide of a well-to-do person is being investigated, the police should make careful search not only in desks, boxes and other furniture, but also in any suspected hiding-places for lists of stocks and shares, wills, notebooks, bank statements, etc., which may furnish details of valuables owned by the victim.

The places at which such discoveries are made can be conveniently marked on the sketch and later photographed.

The officer in charge should not allow any person familiar with the premises and on whom any suspicion rests to remain during the above examination; and anyone else not strictly needed should be excluded from the scene.

Garages, stables, barns, greenhouses, cellars, gardens, w.c.s and other outbuildings, etc., should be visited and examined by the officer in charge.

Sometimes thieves and those committing robbery with violence leave very odd things on the scene. This is the result of superstition. These objects may be lucky charms or mascots, medals even of a religious nature, excrement, etc. Sometimes homicides, too self-confident, wash their hands before leaving the premises. Basins and towels should be examined for signs of this.

The senior officer should be careful to visit each place or point of interest in turn. To verify a fact here and then to turn to something else there simply because one's attention has been drawn at random, leads to untidiness of mind and also to an imperfect view of the situation, since it is quite likely that in this way important clues will be overlooked. The officer in charge should always pay immediate attention to a discovery made by a subordinate, in order to verify its importance, and return at once to the point at which he was interrupted, naturally after he has taken any steps that may be rendered necessary. It should be noted here that a senior officer should always pay attention to what his subordinates have to say; for these, in close contact as they are with the general public, often notice details that escape their superiors.

Observation and examination at the scene of the crime should be carried out with the aim of getting as clear a picture as possible of the crime, together with what happened before and after it and the personality of the criminal. Hans Gross, grandfather of criminal investigation, used to say that its aim must be the answers to the following questions: *who, what, where, with what, when?* This could not be better put, and needs no comment here.

To get results the police officer should not limit himself to taking down statements and visiting the scene of the crime: he should also examine the entire neighbourhood within a certain radius. He should become acquainted with roads giving access to the place in question and with all gardens, walls, enclosed premises, alleys and paths, woods, streams and rivers in the district; he should also instruct his subordinates to make enquiries in neighbouring localities. He should have firmly fixed in his mind's eye the whole topography of the place as well as its immediate neighbourhood, in order to be

able to follow easily the statements and information he will later receive.

We have mentioned Hans Gross's "prescription" in criminal investigation, "*who, what, where,*" etc. Does that mean that the questions must be answered in the order given? Naturally not. The first question is "*who?*" and the answer to that "*who?*" can usually be given only after finding the answers to the other questions. Sometimes one and sometimes another question must be taken first. Often, for instance, you have to know "*how*" before you know "*who*" when a crime has been committed. Gross's questions are more a list of the tasks to be done than a formula or an exact programme.

POLICE OBSERVATION AND SHADOWING

When is it necessary to place an individual under observation? That depends not only on the acts committed by that person but also on the way in which he has aroused suspicion.

It is easy to see *how* anyone may arouse the interest of the Police. Perhaps he has been suspected of an unlawful act. In that case it will usually be necessary, according to the circumstances, to keep him under observation. Or information may have been laid against him alleging that he has committed or is accessory to a crime; or an informer may have "blown the gaff."

When a suspect has been accused by an informant the identification may not be complete enough to prove that he is actually the wanted man. In such a case observation will establish the suspect's contacts and show whether he is indeed the man required.

When an information has been laid by an informant or informer, the officer in charge of the enquiry should be very careful about doing anything prejudicial to the person thus accused. Such accusations rarely amount to anything more than "So-and-so did that job." Information of this kind may be useful as a tip; but it provides no evidence which one can put before a jury. It usually means that the enquiry—and the difficulties of the Police—have only just begun. The

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fact that So-and-so has really "done the job" must be established beyond reasonable doubt. It is rarely indeed that at the time the accusation is made there is any *proof* of his complicity. Proof has to be established and the search for it is often laborious. Meanwhile police observation is necessary.

How are you to choose the right men for this work? First of all they must be very intelligent; they should have a wide experience of life; they should be thoroughly acquainted with the topography of their district; their physique should be good. It is better if they are rather on the short side. They should not have any marked or visible blemish or deformity. They should not wear a moustache. They should enjoy good sight and not need to wear glasses. They should be of sober habits but have a good head for liquor, since they will often have to "knock back a few" in the cause of justice.

A word about clothing. The man on observation duty should be able to adapt himself to various circumstances. Obviously, for instance, he should not get himself up smartly if he is to work in mean streets. But he should not dress exaggeratedly either way. He ought not to dress up like an Apache in a novel if he has to frequent a low "dive." If he has to visit a club in the evening he should wear the dinner-jacket worn by most of the members. In fact the rule is to avoid attention by being inconspicuous in clothing, manner, speech, etc.

Now comes the question of disguise and make-up.

Disguise and make-up should as a rule be left severely alone, particularly make-up. Remember that the make-up of actors, whether on the stage or the films, when seen by artificial light, rarely escapes the public's notice, unsuspicious as the members of the public are and as criminals are not! When you realise that false whiskers are immediately spotted, as a rule, even when they have been put on by make-up specialists with the greatest possible care, you will see that camouflage by the Police is a dangerous thing. But make-up is not entirely useless, for in certain circumstances, say in half-light or at a good distance from the person shadowed, it may be helpful to change the appearance of the shadower. On

the other hand artificial wrinkles and scars are very risky indeed.

The dyeing of hair and moustache may sometimes be useful. It is not difficult and is more or less unnoticeable.

It is not only dress that matters in disguising oneself. The detective got up as a beggar, street musician, hawker, plumber or builder's labourer, or chauffeur, must not only look the part: he must *be* the part. For instance, it is easy to imitate a lame beggar for a few minutes, but when it comes to doing so for hours on end and for many miles of city streets, the effort is almost impossible without great physical, and even mental, endurance.

The accessories of a disguise are just as important as the disguise itself. The plumber carries quite a different set of tools from, say, the carpenter. The detective officer playing the part of a plumber or carpenter should be in character down to the smallest detail of dress, bearing, and "properties."

Now, how is one to set about shadowing? Usually the person to be shadowed will be found either at home or at some known place, and the police officer must watch outside the premises until the suspect comes out. Either the neighbourhood is a busy one or it is not. If the street is much frequented, the police officer, mixing with the crowd on the pavement, will naturally not be conspicuous, and in these circumstances he can watch at a convenient distance for the wanted person to come out. But when the street is a quiet one it will not be very long before the passers-by and the people living in the street begin to stare.

This in itself, to begin with, is a handicap to the task in hand. A detective officer told off to shadow a man in a quiet locality must take particular pains not to be noticed before the quarry breaks cover. What exactly should he do? The evening before his vigil commences the officer should look up the names of those living in adjacent houses, particularly in the house or houses just opposite the place from which the suspect must come out. (It is taken for granted that the locality is one with which he is intimately acquainted.) Among these people he will almost always find one or two whom he knows or whose confidence he has gained, or who by reason of

their work or standing can be trusted. He talks the matter over with his sergeant and selects one of these inhabitants as being the most likely to help, then obtains permission from the man (or woman) to watch the suspected premises from his or her house or room.

Having obtained this permission and made sure that his temporary host will keep his own counsel, he installs himself, well before the time he expects the suspect to put in an appearance, in a position where, without being seen, he can watch the entrance or entrances in question.

It may happen, of course, that this method is impossible, and then some other means must be found. One that has often been successful is for the officer to drive up in a closed car wearing the uniform cap of a motor hire-service firm. He stops the car just near enough to be able to keep an eye on the house under observation, but without going too near. Sitting in the driver's seat he starts to read a newspaper, but without losing sight for a moment of the house he is watching. When the person to be shadowed comes out and it is seen that he has no eyes for the car and its occupant, the officer quickly changes his hat and starts his shadowing.

If neither of the above methods can be used and it is essential that watch should be kept, the police officer should take up a position far enough away to avoid drawing attention to himself.

In busy thoroughfares it is necessary to follow the suspect as closely as possible in order to make sure that he is not lost in the crowd, or slips unnoticed into a house on the way, or turns into a side-street unobserved.

On the other hand, in quiet streets and country roads the officer must stay far enough away to be unnoticed by the man under observation. If the latter hires a taxi, the officer must take another and follow him that way. But great care must be taken, especially if the suspect travels a long way, makes frequent stops or goes far beyond the outskirts of the town or city.

When the person being shadowed is on foot and stops at houses on the way, the detective should either wait some distance away or pass him and wait farther along the street. During such waits the officer should pretend to be interested in a

handy shop-window. If the wait is very long, it is a good idea to change head-gear. The officer should always have with him another cap or a soft hat that can be folded and put in a pocket. In rainy weather it is a good plan to carry an umbrella with a slit in it through which the officer can watch his man.

It often happens that the suspect goes into a station, bank, restaurant, public house, or other place having several exits. If for no other reason, he should be watched from the *inside* of such buildings, in case he gives one the slip; but inside surveillance also enables the officer to discover the real motive for the suspect's visit to the building. He may, for instance, be going to catch a train or wait for incoming passengers, to cash a cheque or meet friends, etc. It is unnecessary to add that everything the officer sees should be noted down carefully, for things which appear insignificant at the time may be of value to the enquiry: accomplices, accessories, receivers, depots of stolen goods, etc., may be found in this way.

The detective officer on shadowing work should take the greatest care to remain unsuspected, not only by the person he is shadowing, but also by the suspect's friends and associates, who might, in that case, follow the shadower and start trouble. If there is one principle the officer engaged in work of this kind should never forget it is this: at the least suspicion of being "tumbled" he should call off his shadowing and report back to his superiors.

When suspected persons get the idea that they are being watched, they adopt various tricks to put the watcher off the scent. Their aim is either to give the shadower the slip or just to make certain that they are being watched. For instance an "old lag," even if he has not been getting into trouble of late and has nothing to fear, cannot get out of the habit of stopping from time to time to watch people coming up behind him. Others, as soon as they arrive at a place where they are going to do a "job" of some kind or other, use the classic trick of going back on their tracks, making the circuit of the block of buildings in which they are interested, and then, if they see that they are being watched, going on their way. Some jump on a moving tram, or take the last taxi from a rank; they get out somewhere quite remote from their ultimate destination

and then take another taxi. Dope-peddlars often use these methods.

Immediately after finishing a shadowing job the police officer should make out a detailed and strictly accurate report. This report should be sent, as soon as possible, direct to his superior officer. Remember that the smallest detail may be important. In particular, descriptions of persons should enable them to be identified by this report. Addresses and the exact positions of all points of interest should be carefully noted.

If the shadowing is to continue the following day, the officer should get in touch with his chief, not only to report to him but also to find out if his superior officer has received further information that might help the "sleuth" in his task.

In very ticklish or difficult shadowings the officer in charge of the investigation should not keep the detective on this duty for too long, both to avoid any chance of his being recognised and to give him the necessary rest. Observation and shadowing are thankless jobs; more than that, they are very exhausting.

SEARCHING PREMISES

In the course of a search something more than objects themselves are usually looked for, namely indications as to where objects may have been. The wanted objects *may* still be on the scene of the crime, but they may well have been taken somewhere else to thwart police investigation or for other reasons. What would be thought of a police officer who omitted to look for *traces* showing that objects had been taken away by the criminal? A body, sacks, metal or other receptacles, heavy articles, liquids, objects giving off perfumes or other odours, may leave behind sufficient signs of their passage to show what they were at any rate, if not who took them away.

There are no fixed rules to be applied in looking for articles themselves, so long as it is remembered that criminals, or their accomplices or associates, will take care not only to hide proceeds of thefts or traces of crimes, but to shut them right away and hide them in the most unlikely places they can think of. To carry out an effective search is one of the most difficult tasks

a police officer can be called upon to undertake. He can never be quite certain after a search that the things he was looking for really were not there or never were there. It is only sound reasoning, sometimes laboriously built up by a chain of deductions, that guides him to the right spot or the right man. Some people call this ability a "flair"; but to the good police officer such things as "flairs" or "intuition" do not exist. The successful police officer has at his command only his knowledge of the technique of criminal investigation, his experience, his power of reasoning—and sometimes the help of a bit of luck. These things, or the lack of them, make the good, middling and bad police officer. In a general sense it is impossible to give rules for finding wanted articles during a police search. The criminal imagination is often an ingenious one. But we shall try to give here a few hints on the subject of special hiding-places.

Floors must be examined for recent signs of hammer-marks, particularly near where nails have been knocked in; also the wooden surrounds. See if planks have been taken up recently and whether there is any unevenness or wobbling when walked over.

Walls can be tested by tapping with a hammer to indicate the presence of cavities.

On one occasion—helped by the statement of a thief—we found stolen money hidden in the hollow door of a room. We ought to have examined the door screws, and as a matter of fact, if we had done so, we should have found recent traces of a screw-driver.

Documents or banknotes, real or forged, are sometimes hidden in mirrors, pictures, behind prints, in marble or plaster statues, in the feet or legs of furniture or washing-machines, in starched and newly washed linen, in lamp-shades, etc., in hollow bed-legs, in typewriters or sewing-machines, in dolls and toys, bunches of flowers, hunting trophies—antlers and the like—in stuffed birds, in chimneys and the pipes of stoves and central heating systems, in w.c. cisterns, in loaves of bread. Such things have also been found in coal or heaps of potatoes, in the linings of clothes, soles of shoes, thermos flasks, pianos, sofas, mattresses, bed-extensions, etc.

Drugs, of course, can be hidden even more easily, *e.g.* in such articles as suit-cases, boxes, or trunks with double bottoms, penholders, the hollow tube framework of iron beds or chromium steel furniture, the hollow parts of tools, in babies' napkins, gas-pipes, etc.

Burglars' tools also are sometimes found in unlikely places, *e.g.* under garret-beams, in cornices and wainscotings, under stairs, etc. Remember too that hotel thieves often use a type of tool—and especially the "cat-burglar"—which takes the form of a toilet article, nail-file, tooth-brush, scissors, etc.

The weapon that has been used to commit a crime is sometimes thrown into a cistern, manure pit, dung-heap or buried in a garden. Note that when you suspect that a weapon or any other object has been buried in a garden, it is possible to narrow down the ground to be searched before you begin to dig, by watering the suspected places: water sinks more quickly into ground that has been recently dug over.

On a farm, give special attention to haystacks, granaries, barns, piles of firewood, etc.

It sometimes happens that persons on premises about to be searched hide the individual or object wanted behind a door just as the police enter: they will then tell the police officer to go ahead and look, and make sure for himself that what he wants is not there, meanwhile throwing open the door and standing in front of it. Always suspect the man or woman who, while you are busy searching, stays in one place, especially against door or furniture.

WATCH THE BYSTANDERS!

During a search, if the attitude of any persons seems suspicious, keep a close watch on them and try to make out what is passing in their minds. As a matter of fact the occupiers of premises under search should always be watched, whether their behaviour appears suspicious or not. The officer in charge of the proceedings should always keep a quiet and unobtrusive eye open for such things as furtive actions, glances turned on any special places, trembling of limbs, paleness of face, and similar interesting symptoms, for these may prove extremely

significant. The abnormal attitude of a suspect will often give the Police an idea where to look, or put an officer on the track of other persons who must be carefully watched. This is particularly important when search is being made in a house or on business premises where only one of the persons under observation can have committed the act being investigated, but where no special suspicion attaches to one individual more than to another.

In one serious case, we had to search an office occupied by a large number of employees, only one of whom could have committed the crime. Suspicion had fallen upon a certain underling because of circumstantial evidence; but during the search we happened to notice the peculiar behaviour of the head of the firm. From that moment he became the centre of interest for us, and the search ended in his arrest, when proof positive was found upon him.

In another case, we went to search the house of a safe-breaker in whose neighbourhood a theft from a safe had been committed. This gentleman had seen us from a window and recognised us; we noticed that he suddenly disappeared. We hurried up to his room on the second floor just in time to catch him coming down, either from the third floor or from the attic immediately above. So we came to the conclusion that he must have hidden stolen goods or tools in one of those two places. He was out of breath and obviously worried, but on being searched nothing was found on him. We went straight up the stairs to the attic, without searching the third floor. The attic was an open one, empty and very big. If anything had been hidden there it would probably be under the floor in a place easily got at, and probably at the opposite end to the head of the stairs. We went to the most likely spot, and under the floor near the wainscoting we found a roll of oilcloth, still warm, in which were 177 false keys made by the safe-breaker just before our visit.

These two examples are enough to show the importance of keeping an eye on everybody present during a search.

(To be continued)

Identification of Glass in Motor-car Headlights*

By P. CHAVIGNY

UNTIL recently motor-car headlights were, in most models, the part most exposed to shocks sustained by the front of a car. It was therefore scarcely surprising that, in cases of accident, the headlights should be frequently put out or destroyed in a collision with another car or with a pedestrian or cyclist.

In very recent models the headlights tend more, in a sense, to disappear, built-in as they are into the coachwork. But most headlights still jut out.

Thus, if the person responsible for the accident, or it may be for the manslaughter, decamps, the Police will look for fragments of headlight glass among the débris and in the immediate neighbourhood. In an investigation of this kind recently entrusted to me, the results were particularly detailed and precise:

On a road, by the side of the dead body of a man who had been knocked down and killed by a motor-car, was found a large piece of glass, obviously from one of the headlights of the car. The driver had disappeared. Various points led, next morning, to enquiries being made of a certain motorist. On this man's car the glass of one of the headlights had been broken into a number of pieces, some of which were missing. Despite this fact, however, the motorist denied that he was the cause of the accident.

I was therefore asked to compare the different fragments of glass—one picked up at the scene of the accident, the other taken from the suspect's car—and to find out if they were identical, also whether there were any peculiarities which would

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enable me to establish beyond doubt that both portions of glass had originally made a single whole. The instructions given to me were that I was to examine in particular "the thickness of the glass, the incidence of bubbles in the glass, and the presence of metallic oxides in the substance of the glass." Finally I was instructed to find out if the piece of glass found at the scene fitted one or other of the fragments taken from the headlight of the suspect's car.

My work on this case completes and extends the paper which I published in 1930 on "The Identification of Glass in Motor-car Accidents." This previous article dealt only with the glass panels of motor-car windows and doors. Of the two practical investigations carried out in connection with the present subject, one ended in complete identification, whereas the other on the contrary resulted in non-identification.

Before discussing the procedure employed in the investigation which is the subject of the present article, certain general information of a technical kind must first be given.

Exposed headlights and built-in headlights. The tendency of motor-car designers is to sink the headlights into the streamlined body in accordance with the laws of aero-dynamics. Headlights thus positioned are usually separated from the outside by glass placed at the level of the front mudguards. In certain other cases the headlights are set under a kind of protective grille composed of vertical parallel strips of metal.

The glass of the headlights. When the headlights are built into the body, they have in front the usual glass which fills exactly the rim of the parabolic mirror forming the reflector. But in addition, as a rule, further forward, a glass is similarly embedded in a kind of window in the wing or body of the car behind which the headlights are placed. This latter glass is in a sense *exterior* to the headlight itself.

In the examination of headlights of this kind, therefore, one must distinguish between:

1. The glass of the headlight proper;
2. The glass "window" fronting the cavity in the body or wing.

In the case of accidents to cars whose headlights are sunk

into the body, it is the glass of the "window" in the body-work or wing which is most frequently damaged or broken; for the glass of the headlight proper in that case is placed more deeply, and is less liable, in consequence, to be destroyed; in a measure it is protected by the glass in the "window."

The kinds of glass used in making 1 and 2 are extremely varied.

It is important that in cases of this sort the expert should have a good knowledge of the various models of headlights in use. To this end a garage proprietor could certainly be consulted; but a method even simpler and just as effective is at our disposal, and it does away with having recourse to an intermediary who may, quite unconsciously, supply one with information coloured by his point of view as a mechanic, having no idea of the special kind of information which the expert requires. It is therefore definitely preferable to go to the car-parks in the most frequented part of one's district. Although the number of cars there may not be very large, one gets in a few moments a pretty exact idea of the various glasses and headlights in use in the district at that particular time.

If it should happen that the fragments of glass to be examined and compared be of a type very little used, the results of experiments which enabled one to identify the *group* would give strong presumption as to *individual* identification, or at least would give a strong lead in the right direction.

Generally speaking, headlight reflectors have a parabolic shape. In order to shape the luminous beam of a headlight effectively, it is necessary to have ripples either in the reflecting mirror itself or in the glass in front of it; thus as a rule, when the mirror has an undulating surface, the glass in front of the headlight is flat or, if it is curved, it is smooth. When, on the other hand, the mirror is smooth, it is the glass in front which is fluted.

At one time the headlight glass of certain makes of car was curved back and front, forming a lens. But this is now rare. In the majority of cases the glass is plain.

When the glass in front of the headlight consists of plain glass, this glass is *semi-double*.

In the trade, glass is made in various thicknesses:

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First of all there is *Super-thin glass*, such as is used for certain photographic plates or for other special purposes; then comes *Ordinary glass*, which has a thickness varying from 1.7 mm. to 2.2 mm.; then *Semi-double glass*, ranging from 2.7 mm. to 3.2 mm.; *Double glass* ranges from 3.3 mm. to 3.4 mm. in thickness; then comes *Triple glass*, varying from 3.8 mm. to 4.5 mm., followed by other special categories, one varying from 4.8 mm. to 5.5 mm. thick, and the next from 5.6 mm. to 6.5 mm.

So far as the thickness of glass is concerned, it must be remembered that a piece of glass, a transparent plate resulting from a direct moulding which has not been touched up, has slight irregularities in its thickness. These small variations of thickness are perfectly appreciable and may be measured with the aid of precision instruments (*e.g.* a micrometer).

The mirror surface has a different composition from glass properly so-called,* and has moreover been polished after being moulded.

The glass of a mirror surface can be distinguished by looking very obliquely at the surface of the sheet. When looked at in this way the piece of ordinary glass shows up its irregularities, a kind of wide undulation, like long and very shallow waves. When, having placed oneself in front of a strip of glass, one looks through it at a regularly shaped object placed at a sufficient distance and moves one's head from side to side, the object appears to be wavy.

This also occurs when an object of regular geometrical shape is reflected at a certain distance on a strip of glass. In these circumstances, the contour of the geometrical object is distorted: a perfect rectangle, such as a window, appears as though it has curvilinear undulating edges.

On the other hand, a mirror having both sides perfectly flat distorts objects either very little or not at all, whether they are seen through the transparency or by reflection.

A useful method of determining whether a small fragment of glass which one is examining is made of glass proper or mirror, is to place a looking-glass immediately behind the fragment under examination and touching it. If it is a frag-

* It contains a higher proportion of soda.

ment of plain glass, the images reflected in these circumstances will be distorted, whereas through a mirror surface there is no distortion.

Naturally the undulations on the surface of glass are larger and are more easily seen when a piece of considerable size is available.

When two specimens have to be compared, it is very important to examine their colouration by looking at them "on edge." Held in this way, one is looking through them from one edge to the opposite edge, *i.e.* through the maximum thickness of the glass. Thus one can judge the colour of the glass. Seen in this way the glass may be:

colourless
greenish
bluish
yellowish

The intensity of the colouration varies according to the size of the piece of glass thus examined. When a fragment has the form of an acute angle long drawn out, its colouring is much less *intense* towards its point than at the base. This is important, since one has to compare the colour of fragments widely different in size by looking at their cut edges.

Thus, by combining these characteristics, namely the thickness and the colour, one obtains a pointer in the right direction.

Now we come to peculiarities belonging to groups rather less extensive. These are again *group characteristics*, that is to say one may meet with them in glass which has never formed part of motor-car headlights.

Most glass in motor-car headlights is plain. It consists sometimes of glass which is smooth on both sides; but often it has parallel flutings on one surface. These flutings are more or less close together, and more or less numerous over any measured portion. One can thus speak of "intervals" in the fluting, and these "intervals" may be effectively measured by taking the distance between the ridges of any two adjacent flutings.

Usually when it is a question of plain glass, and where the

flutings are only on one side, these appear, in the case of headlights, on the inner surface. (This makes it easier to clean the outside.)

Sometimes one comes across glass on which the flutings are squared or grilled.

In some cases, but rarely, in certain headlights the whole or part of one of the plain glasses is *ground*. This again might sometimes prove useful for identification purposes.

The tendency on cars to-day is for the glass of headlights to be more or less curved. Sometimes the curvage is slight, sometimes very pronounced, forming almost a prominent bulb. Headlamps of this kind—they are chiefly American—give forth rather a feeble ray. Among these spherical glasses, some are smooth and others are fluted.

When these types of glass have to be replaced, they can only be obtained through commercial channels, as each is made under its own trade mark. Consequently, when an investigation requires it, one can usually find an assortment of glass of this type of manufacture at any good motor accessory dealer's.

If it is found necessary to measure the radius of the curvature of a small piece of spherical glass, recourse can be had to the measuring apparatus used by an optician when replacing the lenses of broken spectacles.

When an examination of a piece of cylindrical glass has to be made, it should be remembered that the curve is variable, from a minimum parallel to the axis of the glass to a maximum in the direction at right angles to the axis.

We now come to peculiarities which may help in *individual* identification.

1. There may, for example, be an old *crack* in the glass under examination. Old cracks may be distinguished from others by a uniform deposit of dust, etc., a sort of patina, on the edge of the crack.

2. In the course of an inspection in a number of car-parks, I found that in two cases the headlights had a sprinkling of *insects* sticking to the glass. It would be possible, in a case of that sort, and if the incidence of the insects tended to an identification, to discover the *density*, that is to say the number of insects thus stuck on a measured portion of the surface. In

the cases I met with, the insects stuck to the glass in a uniform density. In one case the distribution was much more dense than in the other.

It would then be necessary to determine, or to have determined, the *species* to which the insects stuck to the glass belonged. In both the cases observed the insects were all of the same kind. A friendly insect-collector or the curator of a natural history museum might be able to help one here.

Usually, the presence of insects on headlights indicates that the car has been out at night.

3. There may chance to be, on the outer surface of a glass, fine *scratches* showing that in cleaning the glass a product containing highly abrasive powder has been used.

4. It is necessary to study very closely the *edge* of fragments of glass. For on such edges it is possible to find peculiarities of great significance. When one examines edgewise the end of a piece of glass which has been cut by a diamond it will be noticed that this edge on one surface is very slightly and very regularly nicked, corresponding to the "bite" of the diamond into the glass, whereas on the other surface the edge has no such marks.

On the rest of the edge of the glass there are almost always irregularities, kinds of waves of varying design which are specially visible when one moves the glass so that it catches the light.

When a sheet of glass has been broken, not by a diamond but by external violence, *i.e.* by shock, the irregularities of the edge are more pronounced, more outstanding. When such irregularities are found on a fragment under examination, it remains to find out if there may not be corresponding irregularities on other fragments which one may have found, similar in form, position, length of wave, etc. If one happens to come across two pieces of glass which correspond, and if one places the surfaces against each other, these irregularities along the edges will appear to be traced inversely to each other. This is obviously so, since they are symmetrical. It is because they are symmetrical that, if put together, they fit each other exactly.

5. Finally, one will carefully study the *lines of fracture*

and try to discover whether one or other of the fragments collected on the scene will fit the fragments supplied from the suspect's car. If it is a question of regular curves, two curves may by chance correspond exactly, without proving their respective fragments of glass to have come from the same piece. But since the breaking of a piece of glass always produces irregular curves, this risk is really negligible. In order to make sure if the two curves correspond exactly, they should be slid one along the other. It can then be seen if they really do correspond, and if their edges join properly in one position only (this procedure is merely a matter of patience).

To the means of identification I do not add either the existence of *bubbles* in the thickness of the glass nor the existence of metallic oxides in the vitreous mass. The question how far these peculiarities could be used in identification was brought up by the instructions which I received. I discussed this matter fully with a mirror-maker who had an extensive and long experience of his trade. He informed me that bubbles in glass, owing to the perfecting of processes of manufacture, had become most rare. As for the presence of metallic oxides, this specialist told me that he knew nothing about this; in fact he did not understand my question. Probably, therefore, it is very rarely indeed that one will ever come across either of these peculiarities.

Grinding of the edges. The rim or periphery of the glass of headlights is regularly ground. The kind of grinding may help to provide a means of identification. Actually, the grinding of the edge, particularly when it has been done mechanically, consists of three planes cutting each other obliquely, and may vary considerably in form. If the grinding has been hand-done, it is much more uniformly rounded.

The presence of a length of ground edge on a fragment under examination indicates that the fragment belongs to the rim of the glass. And so, by means of measuring the arc of the ground edge it is possible to get the exact diameter of the glass. For practical purposes it is sufficient to put the fragment on a piece of paper and trace round the ground edge with a pencil several times.

It must not be imagined that the ground portion always

belongs to a *circular* rim. In the case of headlights built into the body, the edge of the glass often has a more or less oval form.

When making identifications of this kind it is obviously necessary to make quite certain that your proofs are unchallengeable, and to see that they agree completely among themselves. Finally, make sure that there is agreement in *individual peculiarities*. The examination can always be stopped if it is found that there is strong dissimilarity, even if it is a question of a group characteristic and not of an individual characteristic.

A group identification, however absolute, is not a *complete* proof; no magistrate would convict if no other evidence were put before him.

To conclude, a word about the results which may be expected from a chemical analysis in such cases. The work of René Malaval* has shown the methods to be used in the analysis of fragments of glass. One can get into touch with specialists in this type of examination by applying to the Home Office. Important glass manufacturers employ highly specialised chemists for researches of this kind. Speaking generally, from the point of view of criminal investigation, chemical analysis by itself does not furnish anything beyond *group* identification. Therefore, whenever conclusions are to be drawn, chemical analysis, if employed, should be rounded off by an exhaustive *criminal investigation* analysis.

The investigation which gave rise to this paper resulted in precise and complete conclusions as to identity. Both specimens of glass were of exactly the same thickness, had the same characteristics in the grinding of the edges, showed on the edge the same colouration, had—again on the edge—“waves” which exactly corresponded and fitted into each other.

Finally, the line of breakage of one of the fragments agreed exactly with that of one of the fragments used for comparison.

* René Malaval, expert chemist, Assistant at the Laboratory of Police Technique, Lyons—“Identification of glass in motor-car accidents.” *Revue de Criminalistique*, 1930, p. 437.

Seeing Things on the Beat

By EX-CHIEF INSPECTOR R. MORRISH

THE chief officer of a large police force was asked some years ago what the real difference was between police officers in relation to their powers of observation. His reply was to this effect: “If you ask one constable whether he noticed a cat cross the road some time previously, he would probably say, ‘Yes, I believe I did see a cat cross the road about that time.’ Another constable would not only be quite sure that he saw a cat, but he would be able accurately to describe the animal.”

This is a simple illustration of that important distinction between merely seeing a thing, and that inner reception of knowledge of external things by the medium of the senses. Although the powers of observation are more keenly developed in one person than in another, it is certain that any weakness of this power may be overcome by concentrated effort.

No police officer may hope to merit the approbation of his superiors unless he can be regarded as perspicacious. Moreover the training of the powers of perception is an essential factor in the important field of promotion. Officers of high rank are of necessity keen and alert in mind, and the positions they occupy to a large extent reflect the training of their earlier years of service.

It is however fairly obvious that no officer will develop in any important direction unless his interest is stimulated. To some extent it is true to say that the failures of officers to observe what they should on the beat cannot well be discovered, but from time to time instances of such laxity come under notice in rather remarkable ways. I will give two examples.

A constable in my district one day stopped a man carrying two packages. This officer had displayed remarkable ability in detecting criminals, and appeared to know intuitively when thieves were carrying stolen property. The thief in this case,

after close interrogation, admitted that he had broken into a cinema, and stolen the contents of the packages he carried. He then told the constable that before being stopped by him, he had passed close to another officer who took no notice of him.

There is nothing very remarkable about the above case, but the following incident surprised me. A C.I.D. sergeant had detained a local criminal for warehouse-breaking. A constable present at the station at the time made this remark: "I saw that fellow a few days ago, in the middle of the night, pass me on the opposite side of the road. He had a large bundle on his back." The sergeant, amazed at the confession, knew at once which crime it was that the thief had committed, when he was fortunate enough to get away.

Whilst we do not urge any officer to go about his duty suspecting everyone he meets, we do expect him to display some initiative. Again, officers must not be too credulous when questioning persons as to their business, especially in the night or early hours of the morning. An officer who finds it necessary to ask questions should certainly carry the matter through to a definite and satisfactory conclusion. In this connection I will give an example to show what I mean.

A police officer in the early hours of the morning saw two men in a private lock-up garage. He questioned them, and they told him what afterwards proved to be a pack of lies. Unfortunately the officer believed the story, and passed along. The next morning two motor vehicles were reported stolen from the garage. The vehicles were subsequently recovered, and the thieves arrested, but the credulous officer did not feel too proud about his powers of observation and interrogation.

Now an illustration to show that astuteness and persistence bring their own reward. A constable stopped a man in the street on suspicion that he had stolen the bicycle he was wheeling along. The suspected person strenuously denied having stolen the machine. He gave his name and address, and actually offered to take the officer to his home to prove that his story was true. Now it is fairly certain that many officers would have considered the matter at an end. The constable in question replied, "Very well, I will go with you to verify your statement." The suspect walked with the

officer about half a mile, went into the gateway of the address given, and the officer knocked at the door. In response a lady came out. The officer said, "Do you know this man?" At the same time he looked round just in time to catch hold of the thief as he was running away.

In a suburban area in which I worked we had been troubled with housebreakers. A constable in uniform saw a man carrying a sack. The man had been observed loitering about the passages leading to the rear of dwelling houses. The man was stopped and questioned by the constable, when he replied to the effect that he had an appointment to keep with a lady who was going to sell him some old clothes. When pressed, the man gave the lady's name and address. Still not satisfied, the officer asked the man to accompany him to the lady's house. The story was found to be false, the suspect was charged under Sec. 4, Vagrancy Act, 1824, and it was afterwards found that he had a large number of convictions recorded against him.

In view of the seriousness of taking away a person's liberty unlawfully, no one will blame any officer who, in cases of doubt, chooses not to detain a person suspected. At the same time officers should be able to cultivate that tact and discernment which will enable them to obtain sufficient information to act subsequently if necessary, and, in deciding not to detain a person, the interview might conclude this way: "I shall make further inquiries, and on the result of those inquiries will depend my action."

It was in this way that the writer decided to let a man go. I had stopped him on suspicion of stealing a cycle. He was able to give a good account of his possession of the machine, but I was not quite satisfied. Before allowing the man to go I obtained his name and address, and other details sufficient to enable me to arrest him later if his story proved false. On returning to the police station I ascertained that the cycle had been stolen shortly before I stopped the thief. The address he had given me was false, but from information I obtained there I was able to trace the thief at a common lodging-house, and the same night he was arrested. The cycle had been sold, but was recovered, and to my surprise the thief told me the

name and address of another man who was implicated in the theft.

On another occasion I saw a man in a side street wrapping up material which he took from his pockets. I was curious and asked him what he had in the parcels. He showed me a quantity of brass and copper, which, after further questions, he admitted having stolen from his place of employment. I further ascertained that this thief had previously stolen metal, which he said he had sold to a receiver of stolen property. The arrest of the latter was effected, other metal recovered, and both men were convicted.

In a provincial city quite recently an officer saw a man wheeling a barrow. The constable was suspicious and stopped him. The barrow was found to be loaded with several coils of lead, and the man in possession was arrested on suspicion of theft. The inquiries showed that an empty house had been practically stripped of lead pipes. Considerable damage had been done to the premises, and it was proved beyond all doubt that the lead recovered came from the house in question. Little difficulty was experienced in joining up the pieces to the ends from which they were cut. Other evidence was furnished from the wallpaper, which was still adhering to the stolen pieces.

It is often possible for officers on beat duty to show their initiative if they take a keen interest in police publications, especially those showing descriptions and photographs of persons wanted. It is surprising what cleverness is shown by some officers in identifying criminals whilst walking their beats. I know that some critics may doubt this method of identification, and may suggest that the officer received information from some other source. The writer knows from experience that time after time arrests have been effected merely from photographs well studied.

On one occasion I caused to be inserted in the *Police Gazette* the photograph and description of a man wanted for embezzlement. An officer on duty in the provinces, about 100 miles away from my station, saw a man cross the street, and was at once struck by the resemblance of the man with the photograph he had seen. The constable went after the man and

stopped him. After many questions the wanted man admitted his identity, and was arrested.

It is of course true that the better the photograph the more likely will some officer be to detain the wanted man or woman. In this connection I was fortunate after eighteen months to be able to prosecute a heartless criminal wanted by me for a series of frauds on women. His arrest took place under peculiar circumstances. The only photograph I was able to secure was one taken some years before whilst the fraud man was serving in the army. A constable in another division saw the published picture, and at once recognised it as that of an old army comrade. The P.C. did not forget to keep his eyes open for eighteen months. At last he saw the wanted man, not in army uniform, not smart, but ragged and dishevelled in appearance. The officer was not looking at his clothes, but he at once recognised the man and arrested him.

It is very important that this power of recognition be developed to the fullest extent. Police officers who aspire to high rank should be able to memorise the face of each officer in his Force; moreover to connect the face with the name, which is still more difficult, requiring constant practice. It is possible to identify persons of one's acquaintance after many years, not merely by the face, but by the walk and general bearing.

Two C.I.D. officers were walking toward the Strand from Bow Street Police Court. One of them, referring to a man with a particular stride, walking along the Strand about fifty yards distant, said, "There goes a man I have not seen for twenty years. I know him by his walk." The officer ran after the man and found he was quite right, although he was not at first able to convince the "stranger" that they had met before.

On another occasion a police officer known to the writer was performing special duty at the motor show held at Olympia. He saw a large crowd of persons round a particular make of car. In the crowd the officer at once recognised two men he had not seen for fifteen years, and they were known to him previously in the West of England. Neither of the two men could remember the officer until he assisted their memory.

Thieves are clever and unscrupulous, and police officers should study to outwit them without going beyond the normal bounds of expediency. A short time ago a motor-car containing several men stopped for want of petrol. A constable approached, and the men explained the position they were in. The officer courteously offered to telephone a garage for petrol, but his astute eye had not overlooked the fact that the car contained a quantity of furs. He communicated with police cars instead of a garage, and this resulted in the arrest of the thieves, and the recovery of property of considerable value.

It is not an easy matter to effect a suitable disguise whilst patrolling in uniform. Officers may hesitate to discard their helmet and coat, but I remember an occasion when a P.C. did this in order to follow a suspicious character. The officer found a watchman's hut, took off his helmet and tunic, put on the watchman's coat and cap, and successfully followed his man. It is perhaps advisable for many reasons, when this is done, to send word to the station by a pedestrian, or endeavour to communicate by telephone. It may be that the sergeant or inspector will be wondering what has happened to the man on the beat if he is absent for any length of time. In many cases it might be preferable to arrange for the observation to be carried out by other officers in plain clothes, and remember, the credit, if any, is due to the man on the beat who gives the information.

A few years ago it would have appeared strange for an officer to telephone his station, hoping for assistance, on observing that premises had been broken into. In these days of wireless patrol cars it is better, in many instances, not to attempt to arrest two or three men alone. Success has been achieved over and over again in later years by constables, on observing something amiss with premises, getting in touch with wireless cars. Within the space of a few minutes cars and officers have surrounded the premises entered by thieves, and important arrests have taken place.

In cases where the cars have arrived too late to surround the premises, the constable has been able to observe sufficient to assist in their subsequent arrest. Sometimes districts have been scoured for an hour, and then success has followed.

Thieves have been found at omnibus stops in possession of suitcases and other packages.

It pays the beat duty officer to take an intelligent interest in the employees of shops and warehouses in his district. He should also study the habits of the firms, methods and times of opening and shutting the premises. He should get to know by sight the persons responsible, so that if anything unusual occurs the officer is able to judge correctly what is happening.

In this connection it is worthy of note that from time to time serious cases of shop- and warehouse-breaking have occurred, and under the very eyes of the patrolling constable. Thieves are clever at disguising themselves as shop assistants and warehousemen. They wear appropriate overalls or aprons, and in this way have been able to deceive officers on their beats, especially in the early morning, when pretending to load up a van for delivery; the fact being that they have been loading up to steal. Such criminals have been known to pass remarks to constables as they have walked along, such as "Good morning, guv'nor, nice morning," or other words sufficient to take away suspicion from their real actions. Such thefts cannot occur if constables are fully aware of the habits of the occupiers of the premises, and are able to recognise at once the employees. It is only fair to add in relation to all these types of crime, that for one case where the officer has so been deceived, many others have occurred in which the criminals have been foiled, and have suffered for their impudence.

Constables on their beats may sometimes be tempted to avoid a crowd. It should be borne in mind that a crowd means something unusual, and sometimes it means that a crime has been committed, and a criminal is endeavouring to escape. The writer once observed such a crowd, and on approaching the people I found that a thief had stolen some articles from a shop in the locality. He was struggling violently to get away from the shopkeeper. I took him into custody and later found that he had about thirty convictions recorded against him.

Complaints are frequently received from members of the public of petty annoyances, such as the stealing of milk; clothes from the lines in the garden; the pulling up of plants;

the cutting of flowers; the stealing of fruit and vegetables. In some Forces the details of such complaints are brought to the notice of constables by means of beat cards (complaints).

There is no real reason why many such complaints cannot be satisfactorily dealt with, provided the officers on the beats display the necessary initiative. I have known officers earn the praise and gratitude, not only of their superiors, but of the public generally, as a result of their keeping observation in plain clothes in their own time. Such officers have, by making an interesting study of the complaints, determined to detect and arrest the offenders in one way or another. A winter morning may not be very inviting to get up in plain clothes in one's own time to arrest a milk thief. But it has been done time and again. This type of duty, often voluntary, shows the constable at his true value. Many officers make it their boast that they would do anything, including the working of extra hours, so long as they kept their beat or district clear of complaints.

There are of course danger spots on most beats, and the wise officer gives them special attention. Such places as banks, post offices, and warehouses, where valuable property is stored, should be specially marked so that the constable patrolling knows at a glance, on walking round his beat, whether there has been any interference.

Other danger spots are passageways leading to the rear of dwelling-houses; and other obvious places where thieves are likely to get into hiding away from the street or road. It should be remembered that if a thief manages to escape notice in entering private grounds, it is almost impossible to discover him; moreover he is able to commit crime almost with impunity.

There is however a good chance to detect such a thief, when he emerges from his place of hiding. He may not be caught actually making his way into the main road, but many an astute officer has succeeded in effecting important arrests by watching the early morning trains, trams, buses, etc., and by keeping an eye on persons as they pass in the early morning carrying suitcases and other packages.

In this connection important information can often be

gleaned from various employees. A police constable must of course know exactly where to draw the line in relation to his associates, but certainly no objection will ever be taken to his cultivating the friendship of those persons in a position to give him useful information.

It is certain that no single police officer can ever hope to observe all there is to see, and he must use the eyes of other people. He should however be always on the alert for outbreaks of fire, escaping steam or gas, the overflow of river banks, and indeed anything which might be dangerous to life or property. For these reasons too much time cannot be spent in any particular part of the beat. It is better to send for assistance than to leave any part of the district unprotected for lengthy periods.

The most important factor in the life of a constable is to observe all that he can possibly see, and to take a keen interest in his work. He should make a complete study of his district, and strive to give satisfaction. He will thus pave the way for the more important duties of the higher ranks.

CORRESPONDENCE

To the Editor of THE POLICE JOURNAL

DEAR SIR,

With reference to my article on "Some Applications of the Spectrograph to Criminal Investigations," in *THE POLICE JOURNAL*, p. 421, Vol. XII, October-December 1939, some of the cases quoted were investigated and successfully completed by Dr. C. W. RANKIN, New York State Police Laboratory, and by Dr. J. T. WALKER of the Massachusetts State Police.

F. H. NEWMAN.

The Washington Singer Laboratories,
Exeter.
November 6th, 1939.

To the Editor of THE POLICE JOURNAL.

Port Said,
February 12th, 1939.

SIR,

I am sending to you herewith four photographs of the Alsatian Police Dog "Nasr," which, together with another of the same breed, were brought to Egypt under the directions of H.M. King Farouk I of Egypt.

In so far as the Suez Canal Police is concerned, this is the second occasion on which Police dogs have been used, and on both occasions the results have been satisfactory. The four photographs are marked in the order of the sequence of events.

1. "WAITING." This represents the dog on arrival at the police station from Cairo by train.

2. "READY." The dog surveying the collection of people gathered in the yard of the police station.

3. "SEARCHING." This shows the dog passing down a line of twelve people including innocents and suspects in the case.

4. "FOUND." Showing the dog "arresting" the suspect by the sleeve of his coat.

The procedure adopted by the Judicial Authorities may be of interest.

The dog was first made to smell a handkerchief found at the place where the theft was committed. The dog was then unleashed and followed the "Dog-man" down the line of paraded persons twice. On the second occasion he went to and seized one of the suspects. The dog was then taken out of sight, and the man identified by the dog was made to change clothes with another man present in the parade. Alterations were made also in the position of the twelve people in the line. The dog was once more sent down the line, and once more identified the same man as on the first occasion, although this individual was now wearing some of the clothes belonging to another man in the parade, who was known to have no connection with the case.

So much for the work of the dog and these photographs. It is interesting to record that the man arrested by the dog was identical with the man suspected by the C.I.D. officer in charge of the investigation.

Yours faithfully,
W. J. ABLITT,
Miralai,
Commandant, Suez Canal Police.

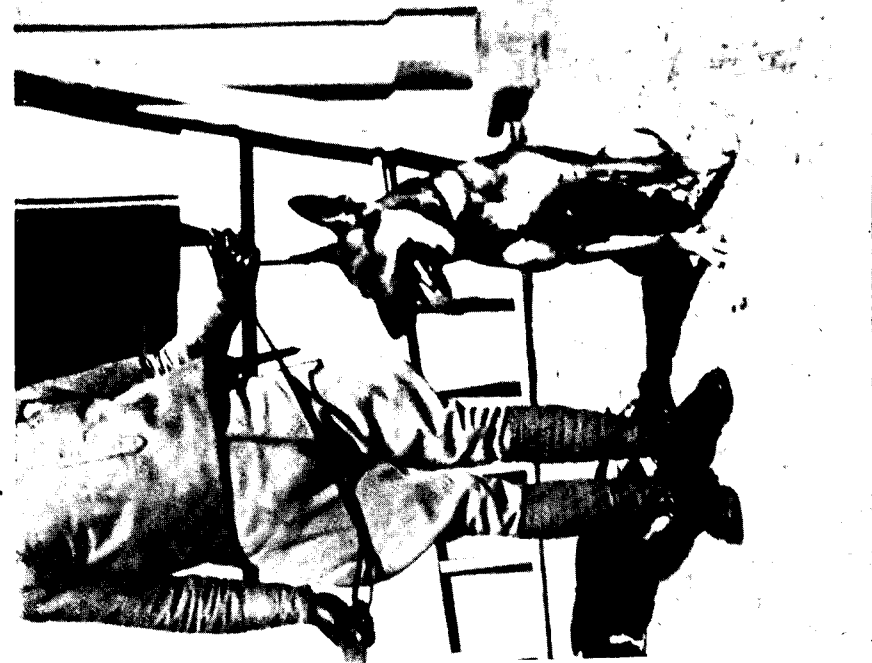


FIG. 1: "Waiting" (face p. 128)



FIG. 2: "Ready"



FIG. 3: "Searching"



FIG. 4: "Found!"

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The Police and the Law

AIDING AND ABETTING

Thornton v. Mitchell

AIDING and abetting a crime usually involves active co-operation in a deliberate course of criminal conduct. There are, however, an increasing number of offences usually of a minor character in respect of which the Legislature has made it unnecessary to prove that the person doing the prohibited act had any wrongful intention. In respect of such crimes all who assist in the prohibited course of conduct can usually be dealt with as principal offenders. On the other hand some of these offences are of such a kind that although more than one person's acts may have been necessary to produce the result, only one of them can be charged as principal offender. Thus if a passenger sitting in a motor-car jolts the driver's arm so that he loses control and runs down a pedestrian, the only person who can be charged with careless driving is the driver. It might at first sight be supposed that in any such case, even if the passenger could not be charged with any specific offence, he would be liable at any rate as a person who had been present and aided and abetted the driver in driving without due care and attention. This consequence indeed may follow, but the recent decision of the Divisional Court in *Thornton v. Mitchell* (1940, 56 *T.L.R.* 296) shows that this is far from being an invariable result.

In that case a motor omnibus which had reached its destination was about to be reversed. Owing to its construction the driver could not see out of the back, but had to rely

on the conductor to inform him that the road was clear. It was the custom for the conductor to remain on the vehicle after it had reached its destination, look to see that the road was clear, ring the bell as a signal to the driver, and then get down. On the occasion which led to the present case the conductor followed this course of conduct, but owing to very poor visibility he did not see two pedestrians, with the result that the bus, when backing, collided with them.

Upon the above facts informations were preferred before the Rochdale justices charging the driver with both the offences described in section 12 of the Road Traffic Act, 1930, namely, driving without due care and attention; and driving without reasonable consideration for other users of the road. The conductor was charged on two informations with aiding and abetting these offences. By section 5 of the Summary Jurisdiction Act, 1848:

“every person who shall aid, abet, counsel or procure the commission of any offence which is or hereafter shall be punishable on summary conviction shall be liable to be proceeded against and convicted for the same either together with the principal offender or before or after his conviction and shall be liable on conviction to the same forfeiture and punishment as such principal offender.”

In the present case both informations against both the defendants were heard at the same time, a convenient and usual procedure. After hearing the evidence the justices acquitted the driver of both charges and acquitted the conductor of aiding and abetting the driver in driving without reasonable consideration, but convicted him of aiding and abetting the driver in driving without due care and attention.

On an appeal by way of case stated the Divisional Court quashed the conviction of the conductor on the ground that as the justices had acquitted the driver of driving without due care and attention there could equally be no evidence upon which they could convict the conductor of aiding and abetting. As Lord Hewart, L.C.J., put it:

“the magistrates in one breath had said that the principal had done nothing which he ought not to have done, and in

the next breath that the conductor had aided and abetted him in doing something which he should not have done” (56 *T.L.R.* at 296, 297).

One understands and indeed sympathises with the justices who no doubt formed the opinion that the accident was caused solely through the carelessness of the conductor, but there is no such offence as negligence on the highway by someone not the driver of a vehicle, unless it amounts to manslaughter, so that once the justices had decided to acquit the driver they had no option but to treat the charge against the conductor in the same way.

Rubie v. Faulkner

With this case may be contrasted the decision of the Divisional Court a few days afterwards in *Rubie v. Faulkner* (1940, 56 *T.L.R.* 303), in which a somewhat different aspect of the law relating to aiding and abetting was considered. The question in this case was whether the defendant by not preventing a breach of the law had *ipso facto* aided and abetted it. Generally speaking, of course, it is well known that to refrain from preventing the commission of a crime is no offence, though this case shows that where a person is charged by the law with a duty to seek to prevent a certain thing happening, even though no direct penalty is imposed upon him if he fails to take any steps towards its prevention, it may be possible to charge him, in the event of his failing to prevent it, with aiding and abetting.

In this case the defendant was a licensed driver who had undertaken to supervise the driving of a learner-driver in accordance with the requirements of regulation 16 (3) of the Motor Vehicles (Driving Licences) Regulations, 1937, which state that:

“A provisional licence shall be granted only subject to the condition that until the holder thereof has passed the appropriate test he shall use [the vehicle] only when under the supervision of the holder of a licence other than

a provisional licence, who has been the holder of a licence for at least two years or who has passed a test [under the Road Traffic Act, 1934.]”

The above regulation is the only statutory description of the duties of a supervisor of a learner-driver and, it will be observed, is entirely silent as to what is to happen if the supervisor does not effectively carry out his supervision.

The facts in the present case were that a learner-driver when reaching the bend of a road marked down the centre with a white line decided to overtake a horse and cart. For this purpose he drove on to his off-side and whilst on that part of the road the engine of his vehicle stopped, with the result that there was a collision with an oncoming motor lorry. The learner-driver was charged before the Saffron Walden justices with driving without due care and attention and the supervisor with aiding and abetting. Both were convicted. The supervisor appealed to the Divisional Court, who dismissed his appeal.

The gist of the decision of the Court was that although the regulation had made no specific provision for a failure to supervise being an offence, it was clear that the effect of the regulation was to put the supervisor in a different position from a mere passenger: he had duties to perform. The question could only be whether there was evidence upon which the justices could find that by his inactivity the supervisor had aided and abetted the careless driving of the learner-driver. The position is perhaps most clearly put in the following words from the judgment of Hilbery, J.:

“There is no hint in the case that the supervisor in evidence ever asserted that he did anything. His duty being, if possible, by acts of supervision to prevent the unlawful act, and he having the opportunity of seeing the act was about to be done; for him to refrain from doing anything was to aid and abet.” (56 *T.L.R.* at 304.)

The decision, affecting as it does all who undertake to supervise learner-drivers, is of considerable importance both to such persons as well as to those who are charged with the enforcement of the law upon our highways.

Recent Judicial Decisions

IS A REFUGE PART OF A PEDESTRIAN CROSSING ?

Wilkinson v. Chetham-Strode

IT will be remembered that just over a year ago the Court of Appeal in *Chisholm v. London Passenger Transport Board* (1939, 1 *K.B.* 426) held that there was no breach of the Pedestrian Crossing Places (Traffic) Provisional Regulations, 1935, if a motorist is unable to avoid a collision with a pedestrian who suddenly steps on to the crossing. Where a pedestrian, who has crossed by a pedestrian crossing from the kerb on to a street refuge in the centre of the road, walks from the refuge into the course of a motor vehicle, does the same principle apply? In other words, is the pedestrian to be regarded as being on the crossing during the whole time he is making his way across the road, including that which he spends on the crossing, or is the refuge no part of the crossing, so that when he steps from it on to the other half of the crossing he is legally in the same position as if he had suddenly walked from the footpath into the road?

This interesting and highly practical question was considered by Asquith, J., in an action for damages for personal injuries brought by a pedestrian, a Mr. Wilkinson, against a motorist, a Miss Chetham-Strode. Common sense would suggest that a refuge has been put into the centre of a road to enable pedestrians to halt there in safety and survey the oncoming traffic. Consequently a motorist would be likely to assume that a pedestrian who was on a refuge would not step off it without regard to vehicles approaching the crossing. If, however, the plaintiff was right in the present case, he could treat the refuge as if it were non-existent and claim immunity once he had, as it was put in *Chisholm's* case, “stepped fairly

and squarely " on to the crossing. In the result the learned Judge decided that the refuge was no part of the crossing and accordingly found in favour of the defendant.

The accident giving rise to the case occurred where Victoria Street is met on the north by Buckingham Gate and on the south by Artillery Row. There is a pedestrian crossing at the mouth of Artillery Row. In the middle of the crossing is a refuge composed of a lamp standard and two pylons raised on pavement but separated from one another by the roadway, so that the road can be crossed between either of the pylons and the lamp standard without leaving the level of the road. Buckingham Gate is much narrower than Artillery Row and is opposite its western side, so that, as the learned Judge found, a pedestrian on the refuge who wishes to see, whilst facing east, traffic emerging from Buckingham Gate must not only look to his left, but also to his rear. The intersection of the roads is controlled by traffic signals, two of which show north-south and two east-west.

The learned Judge found that the plaintiff began to cross Artillery Row from west to east with the traffic lights in his favour, but that before he had reached the refuge they had turned to red; that he halted on the refuge and then proceeded across with the lights against him. The defendant came from Buckingham Gate and emerged into Victoria Street whilst the plaintiff was on or about to get on to the refuge, but the defendant apparently failed to see him and continued from Victoria Street into Artillery Row, where she collided with the plaintiff. Upon these facts Asquith, J., held that both plaintiff and defendant had been negligent and that their negligence was simultaneous, which would mean, if the case fell to be determined solely by the common law, that the plaintiff's claim was barred by his own contributory negligence. The accident had, however, occurred on a pedestrian crossing and it was therefore necessary to consider the case in relation to Reg. 5 of Pedestrian Crossing Places (Traffic) Provisional Regulations, 1935, which is in the following terms:

" The driver of every vehicle at or approaching a crossing at a road intersection, where traffic is for the time

being controlled by a police constable or by light signals, shall allow free and uninterrupted passage to every foot passenger who has started to go over the crossing before the driver receives a signal that he may proceed across the crossing."

Upon the facts found by the learned Judge the driver had received a signal (by the light being in her favour) when she was about to emerge from Buckingham Gate into Victoria Street and when the plaintiff was on the western half of the pedestrian crossing. If therefore the refuge (which was then still to be reached by the plaintiff) formed part of the crossing the plaintiff had most clearly started to go over the crossing and was " fairly and squarely " on it (as was said in *Chisholm's* case) when he was knocked over. But if the refuge formed no part of the crossing, when the plaintiff stepped into the eastern half of the road, the defendant had some time before received a signal to proceed and her duty to him was regulated solely by the common law.

There was no reported authority upon this point though there was mentioned by counsel an unreported decision of a court of quarter sessions which had quashed a conviction of a pedestrian for lingering on a crossing upon it being shown that the defendant had stood on a refuge. Asquith, J., stated that in his opinion this was correct and that accordingly he held that the refuge formed no part of the crossing. The defendant had not therefore broken the regulations and the action failed on the ground of the contributory negligence of the plaintiff.

SALE OF LIQUOR IN INCORPORATED CLUBS

*Trebanog Working Men's Club and Institute Ltd. v. Macdonald ;
Monkwearmouth Conservative Club Ltd. v. Smith*

By Section 65 of the Licensing (Consolidation) Act, 1910, re-enacting Section 3 of the Licensing Act, 1872:

" Subject to the provisions of this Act, a person shall not sell or expose for sale by retail any intoxicating liquor

unless he holds a justices' licence authorising him to hold an excise licence for the sale of that intoxicating liquor."

It is well known that an excise licence is not required to enable a members' club to "sell" intoxicating liquor to its members. This was decided so long ago as 1882 in *Graff v. Evans* (8 Q.B.D. 373). The reason for this decision was stated in that case by Field, J., in the following words:

"The question here is, Did Graff, the manager, who supplied the liquors to Foster [a member of the club] effect a sale by retail? I think not. I think Foster was an owner of the property together with all the other members of the club. Any member was entitled to obtain the goods on payment of the price. . . . Foster was acting upon his rights as a member of the club, not by reason of any new contract, but under his old contract of association by which he subscribed a sum to the funds of the club, and became entitled to have ale and whisky supplied to him as a member at a certain price. . . . I think it [the transaction alleged as a sale] was a transfer of a special property in the goods to Foster." (8 Q.B.D. at 378, 379.)

Did it make any difference if for convenience the club was incorporated, each member being a shareholder in the limited company formed for this purpose? Six years later in 1888 Lord Coleridge, C.J., in *Newell v. Hemingway* (53 J.P. 324) thought that it did not. The position of course is very different where the club is owned by one or more persons (not necessarily members of the club) or by an incorporated body, who seek to make a profit out of the club. Such a club, usually described as a "proprietary" club to distinguish it from a members' club, is not essentially different from an inn or public-house and requires an excise licence if the club proposes to sell intoxicating liquors. It is believed that in practice many proprietary clubs avoid selling liquors by arranging for their purchase by a committee of the members who then supply them to the rest of the members in the same way as does a members' club.

Relying upon the above-mentioned decision in *Newell v. Hemingway* many members' clubs were incorporated as limited companies or as industrial and provident societies. It was not supposed that the fact of incorporation altered the nature of the transaction when a member ordered intoxicating liquor at his club. Considerable doubt, however, was thrown upon the correctness of existing practice by the decision of the Divisional Court a few years ago in *Wurzel v. Houghton Main Home Delivery Service Ltd.* (1937, 1 K.B. 380). In that case indeed the Court was considering different legislation, namely Section 2 (4) of the Road and Rail Traffic Act, 1933, the relevant provisions of which are that no vehicle having a private carrier's licence "shall be used for the carriage of goods for hire or reward."

The facts in that case were that a society was incorporated and registered under the Industrial and Provident Societies Act, 1893, having (*inter alia*) as its object the business of haulage and carting contractors to provide for its members the delivery of home coal supplies from the Houghton Main Colliery. All persons employed at the colliery were entitled to membership, and the qualification for membership was the holding of one shilling share in the society. The method by which the society transacted its business was, upon a member ordering coal, for the price of the coal to be deducted from his wages by the colliery company which then gave a corresponding credit to the society. No deliveries of coal were made to non-members. For the purpose of effecting deliveries the society owned a motor-van in respect of which the society held a private carrier's licence. It was held that the society used the van "for the carriage of goods for hire or reward." The decision in *Newell v. Hemingway* was expressly disapproved by Swift, J.

In the above circumstances a test case to determine the validity of *Newell v. Hemingway* was brought by the superintendent of police for Pontypridd, Glamorgan, against the Trebanog Working Men's Club and Institute Ltd. for an alleged breach of Section 65 of the Licensing (Consolidation) Act, 1910. The information was heard on March 23rd, 1939, by the stipendiary magistrate of Pontypridd, who found that

the charge had been proved and imposed a fine of £1 and £5 5s. costs.

At the hearing before the magistrate it was admitted that the club in question was registered under the Industrial and Provident Societies Acts, 1893 to 1913, and had for its object the carrying on of the business of a club proprietor to provide for the benefit of its members and honorary members the "means of social intercourse, mutual helpfulness, mental and moral improvement, rational recreation and other advantages of a club." Intoxicating liquors were bought in the name of the club by a duly authorised committee. The society was registered as a club under Section 91 of the Licensing (Consolidation) Act, 1910. It was proved by the evidence of police officers who entered the club premises that members obtained intoxicating liquors upon payment being made. On the above facts it was contended on behalf of the superintendent of police that the society sold such intoxicating liquors by retail to the members contrary to Section 65 of the Licensing (Consolidation) Act, 1910.

This case, together with a conviction in similar circumstances by the Sunderland justices, came before the Divisional Court (Lord Hewart, L.C.J., Humphreys and Hilbery, JJ.) on January 17th. The only distinction in the Sunderland case was that the club, the Monkwearmouth Conservative Club, was incorporated under the Companies Acts and not under the Industrial and Provident Societies Acts. At the date of the hearing their Lordships decided that both appeals should be allowed, but owing to the important effects of their decision judgment was reserved until February 9th, when Lord Hewart delivered the judgment of the Court upon both cases.

Delivering judgment in the *Trebanog* case the Lord Chief Justice stated that the rules of the club showed beyond doubt that it was a members' club. It had been generally agreed since *Graff v. Evans* (*supra*) that when a member of such a club was supplied with intoxicating liquor the legal effect of the transaction was:

"the transfer of a special property in the goods from all

the other members of the club to the consumer in consideration of the price paid."

It had been said by Channell, J., in *National Sporting Club v. Cope* (1900, 16 *T.L.R.* 158) that there would be no difference if the legal property in the excisable articles was vested in trustees, for the members would nevertheless have the beneficial interest in them. It might be that the duty of holding the property of the club instead of being vested in trustees might be vested in an incorporated company or society which in law was a legal person distinct from the members. But this made no difference; what was essential was that such a vesting of the property should be on behalf of the members and not antagonistic. Herein lay the distinction between a members' club and a proprietary club which sold intoxicating liquors; for the latter was carrying out the transactions for the benefit of the proprietors and such transactions were in every sense of the words a selling by retail. This appeared from such decisions as *Bowyer v. Percy Supper Club* (1893, 2 *Q.B.D.* 154). The decision in *Wurzel v. Houghton Main Home Delivery Service Ltd.* was distinguishable upon the particular wording of Subsection (2) of Section 4 of the Road and Rail Traffic Act, 1933.

Further the Court would be most loath to disturb the law having regard to the fact that many hundreds of clubs had been registered under the Industrial and Provident Societies Acts or under the Companies Acts on the faith of the decision in *Newell v. Hemingway*. The appeal was accordingly allowed and the conviction quashed.

Delivering a short judgment in the *Monkwearmouth* case Lord Hewart said that case was similar to the *Trebanog* case except that the club was registered under the Companies Acts. This difference was immaterial and the appeal in this case also would therefore be allowed.

Criminal Law and Practice in Scotland

EVIDENCE

AN application of the "rule of recent possession," which is novel in modern practice and which may prove of great service in bringing home charges of theft by housebreaking, was sanctioned by the High Court of Justiciary in the recent case of *Christie v. H.M. Advocate*, 1939 J.C. 72. Christie was charged in a Sheriff Court on indictment with theft by housebreaking. At the trial before Sheriff and Jury, it was proved (1) that the house in question had been broken into—by someone; (2) that articles stolen therefrom at the time of the housebreaking were, within five days at most, found in Christie's possession; and (3) that, when arrested, Christie made a statement which implied that, at the time when, according to his story, he acquired possession of the articles, he knew that they were stolen and was, therefore, at least guilty of reset. Christie himself did not give evidence at the trial. The Sheriff charged the jury that the possession of recently stolen property, if no reasonable explanation was given, would justify a conviction of theft or—and here is the novelty in modern practice—of theft by housebreaking if the theft was accomplished by breaking in, or of reset. The jury found the accused guilty of theft by housebreaking. Against this conviction Christie appealed.

In affirming the conviction the Judges of the High Court of Justiciary expressed the opinion (1) that, in such circumstances as were proved in Christie's case, the more logical verdict might be one of guilty of reset, as all that was really established against the accused was that he was in dishonest possession of stolen goods; but (2) that if a jury went further and convicted of theft—or, where there had been housebreaking,

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of theft by housebreaking—the High Court could find no good reason for interfering with the verdict. It was noteworthy that the precedent followed by the High Court, by which they justified the application of the "rule of recent possession" to cases of theft by housebreaking, was a case decided as far back as 1826. It should further particularly be noted that the Judges made it clear that they were not prepared to apply the rule to any crime involving the use of violence, *e.g.* to robbery.

In the case of *McLeod v. H.M. Advocate*, 1939 J.C. 68, an authoritative ruling was given on a point which frequently arises in our criminal courts. The charge was one of contravening Section 5 (1) of the Criminal Law Amendment Act, 1885, and the difficulty of the Crown was to find corroboration of the evidence of the leading witness, the girl of 15 years alleged to have been assaulted. In support of the girl's story only one witness was adduced who could give material evidence. This witness, when examined by the Procurator-Fiscal and cross-examined on behalf of the accused, spoke to no facts of a directly incriminating character. There followed, however, an unusually long questioning of the witness by the Sheriff, in course of which the witness definitely deponed to having seen an act of intercourse between accused and the girl. The accused, being convicted, appealed, on the ground that "the evidence of the principal witness for the Crown was uncorroborated and that such evidence as was adduced in support of her was self-contradictory."

While allowing the appeal and quashing the conviction for reasons with which this report is not concerned, *viz.* on the ground that accused's counsel should, at the conclusion of the Sheriff's examination of the witness, have been allowed an opportunity for further cross-examination, the Judges of the High Court brushed aside the argument that the evidence of a witness who contradicted herself in course of her testimony could not be used for the purpose of corroboration. "The jury," said Lord Normand, "were entitled to judge for themselves of the credibility of the witness and to accept, if they chose, that part of her evidence which was incriminating."

DISTRIBUTION OF HANDBILLS—TRADE DISPUTE

By Section 193 of the Edinburgh Corporation Order, 1933, which re-enacts a provision of the earlier Act of 1913, "every person who shall distribute in any street any handbills, pamphlets, leaflets or other printed matter or things except those relating to political meetings or purposes or who lays or spreads out any handbill, etc., on the surface of any street" is subject to a penalty. This provision, so far as the writer has been able to discover, is unique in Scotland.

On December 30th, 1939, Mr. W. P. Earsman, who is secretary of the local Trades Council, distributed, in certain streets of the City, to members of the public entering the Theatre Royal and also to passers-by, handbills in the following terms: "Musicians' Union. Trade Dispute at the Theatre Royal, Edinburgh. Please withhold your patronage from the Theatre Royal, Edinburgh, until the management agrees to pay Musicians' Union rates. Local musicians were dismissed because they refused to play Saturday Matinées without payment. Issued on behalf of the Musicians' Union. Endorsed by the Edinburgh Trades Council. W. P. Earsman, Secretary. 4th December, 1939." Mr. Earsman, being prosecuted for a contravention of the Section above quoted, pled not guilty and evidence was led before Bailie Thomson, who was accompanied on the Bench by the Senior City Assessor, Mr. J. L. Clyde, K.C. There was no real dispute between parties as to the facts, but Counsel for accused submitted an elaborate argument against his conviction. He submitted (1) that the handbills distributed fell within the exception allowed by Section 193, as being handbills relating to a political purpose; and (2) that, in any event, conviction was barred by the operation of Section 2 of the Trades Disputes Act, 1906, which expressly makes it lawful for any person acting in contemplation or furtherance of a trade dispute to attend at or near a place where a person resides or works or carries on business or happens to be, if he so attend merely for the purpose of peacefully obtaining or communicating information or of peacefully persuading any person to work or abstain from working. This was, of course, the section which legalised what is now known as "peaceful picketing."

Both these arguments were, after a very full argument, rejected by the magistrate, who found accused guilty. It was not easy, he said, to define precisely what are handbills relating to political purposes. A handbill concerning some question of national or municipal government or some reform of existing legislation would clearly fall within the exception. It was only proper that such a handbill should be distributed among the public, who are the proper judges on the issues involved. The handbills with which the case was concerned, however, raised no such issue, but referred only to a private disagreement between a particular employer and a small group of employees. The interests of the community were not affected. Nor was the position affected by the endorsement by the Trades Council. This was a dual body, as had been proved by the evidence led. It possessed two functions, one industrial the other political, the former in the hands of delegates from the Trade Unions, the latter in the hands of delegates from the Divisional Labour Parties. The facts proved suggested that it was in the exercise of its industrial, not its political, function that the Trades Council had endorsed the handbills which were being distributed by its secretary.

Further, the magistrate found himself unable to accept the submission that conviction was barred by the Trades Disputes Act of 1906. Apart from the fact that no evidence had been led proving that Mr. Earsman had acted "in contemplation or furtherance of a trade dispute," it was open to considerable doubt whether picketing a theatre to persuade the public to abstain from going there fell within the terms of the section (*Topin*, 1909. 43 *I.L.T.*, 190). In any case, accused could not plead immunity under the Act of 1906 when he had breached a later provision of the law.

PEDESTRIAN CROSSINGS

Traffic officers will find instructive the decision of the High Court of Justiciary in the case of *Watson v. Wright*, of which an abbreviated report is now available in 1939 Session Notes at page 113. This is the first case in which the terms of the Pedestrian Crossing Places (Traffic) Provisional Regulations,

1935, have been considered by the High Court. It should be read along with the previous decision of the Glasgow Stipendiary reported in the issue of this JOURNAL for April-June 1939, at page 162.

Watson was charged, in the Police Court of Dunfermline, with failing to allow a free and uninterrupted passage to Alexander Hoggan, a foot-passenger on the crossing concerned, in contravention of the Regulations above-mentioned, No. 4. The facts proved at the trial may briefly be summarised as follows:

Appin Crescent, Dunfermline, which was the *locus* of the offence, runs east and west. At a point near the entrance to the Public Park, there is a traffic island and a pedestrian crossing running north and south. At this point the carriageway is 30 feet wide. The crossing is marked by beacons and consists of two rows of brass studs set in the carriageway, the eastmost row being seven feet distant from the westmost. The pedestrian, Hoggan, who was slightly deaf and blind, had allowed an omnibus going westwards to pass him before he stepped on to the crossing at its south end. He had proceeded about nine feet from the kerb when he was struck by the van driven by Watson, the accused. Watson had been following the bus. He was driving at about 10 m.p.h., proceeding slightly uphill upon a dry road. From his own evidence at the trial, it appeared that he was about 15 feet from the crossing when he saw Hoggan, who was looking in his direction and who then took a step on to the crossing. The van stopped two feet short of the western line of studs. The magistrate, on the facts proved to him, reached the conclusion that the van could have been drawn up safely within the distance of fifteen feet referred to if close observation had been maintained by the driver.

The magistrate having convicted, Watson appealed. In refusing the appeal and affirming the conviction, the judges of the High Court held that as there was evidence to justify the magistrate's inference that the van, while approaching the crossing, could have been drawn up in time to avoid the collision if close observation had been maintained by the driver, the magistrate was entitled to hold that a contravention of Regulation 4 had taken place.

STREET TRADING

The use of public streets by traders anxious to sell their wares to passers-by may raise ticklish problems for the "man on the beat." What precisely is meant by "street trading"? How is it regulated? When may the Police intervene? To judge from questions put, from time to time, to the present writer, a good deal of confusion would appear to exist in the minds of officers whose duties bring them into contact with street hawkers and who, while anxious to do what they can to enforce the law, wish neither to exceed their powers nor to restrict unduly persons who are trying to earn an honest penny. No doubt many such officers have a natural sympathy with men who, instead of lining up in a Public Assistance queue, lay in a stock of cheap fruit and set up shop at the kerb of a busy thoroughfare. Their trading may offend technically against the law of the land, or more commonly against some local by-law, but so long as it does not amount to an active nuisance, there is something to be said for the application to the circumstances of the technique of the "Nelson eye." Unfortunately, a sympathetic policy of non-intervention is often rendered difficult by complaints from shopkeepers who resent competition with open-air traders whose prices need not reflect the cost of rates, rent, wages and other "overheads," and who insist upon the law's exaction of its "pound of flesh."

What exactly is "street trading"? As illustrative of the difficulties of precise definition, consider the case of a juvenile under 17 years of age who takes up his stand at a street corner and there sells newspapers, matches, flowers or the like to passers-by or plays or sings or performs for profit or acts as shoe-black. Clearly, both such person and his employer commit offences (Sections 30, 31 and 37 of the Children and Young Persons (Scotland) Act, 1937). On the other hand, the ordinary message boy delivering orders does not engage in street trading although, in acting as intermediary between shop and customer, he necessarily walks along a public street. Between these two extremes, however, difficult marginal cases arise in practice. A baker, say, employs a lad of 15, equips him

with a hand-barrow, supplies him with morning rolls and sends him to a housing area where shopping facilities are lacking. Some of the rolls may be ordered beforehand by regular customers. The delivery of these does not involve street trading. But the lad may have extra rolls, not previously "booked," which he has instructions to sell, if he can find customers for them. In that event, in the opinion of the present writer, (1) he does not engage in street trading by going from door to door vending his stock, although the transaction, cash or credit, is carried through there and then from start to finish and even although, where the house abuts directly on to the foot-pavement, he may never leave the street.

This view receives support from an opinion delivered, some years ago, by the Sheriff at Ayr and from such English decisions as *Stratford Co-operative Society*, 1915, 2 *K.B.* 70. House-to-house trading is not street trading. (2) Where the whole transaction takes place on the street, but not at or near the customer's door—as in the case of a sale to a casual passer-by—this normally amounts to street trading. But (3) caution is necessary even then, for an isolated transaction of this sort might be exceptional and capable of explanation, *e.g.* where, to accelerate delivery, a regular customer whose breakfast hour had arrived left her house and went round the corner into the next street in the knowledge that she would find the lad there. It is well, before actively intervening, to be able to prove a number of separate transactions on one day or, better still, a number on each of several consecutive days. It may be added that an English court has held that a child selling from a street stall at a market was employed in street trading (*Vann*, 52 *T.L.R.* 14).

The problem of the adult street trader is somewhat different. Here the law does not prohibit; it is content to regulate. Thus No. 6 of the Street Hawking By-laws for the City of Edinburgh enacts that "a street trader shall not carry on business *on any stance* in any street unless he holds a permit from the Chief Constable for such stance." The important words are "on any stance." The static trader, who takes up his stand at the kerbside and waits for customers to come to

him must have a permit; the peripatetic trader, who tours the city seeking custom, is free to do so provided he keeps moving. He merely stops long enough to serve a customer or customers and then moves on—"Stop me and buy one!" So, in the case of *Grieve v. Macpherson*, 1933 *J.C.* 65, the High Court quashed a conviction where a trader, without a permit, hawked fruit and vegetables from a cart in various streets in the City, which he usually visited twice a week. On arrival at each street, he cried his wares, and when customers came he stopped his cart. The cart remained standing, sometimes for a period of over half an hour, until the last of the customers was served, and the trader then moved on. The Judges drew a clear distinction between stopping so that customers' needs might be attended to, on the one hand, and "squatting on a bit of the street and using that as a shop to tout for business" on the other. The difficulty for the police officer, in view of this decision, is to know where to draw the line. Perhaps the best test, in the practical working of such by-laws, is whether it can be proved that the hawker was waiting, or touting, for custom, and not just seeking out customers at their homes. To convict, it must at least be proved (1) that the trader stood on a particular part of the street for an appreciable time, (2) that he was prepared to sell to passers-by, and (3) that, having reached a time when no further customer had come forward to purchase, he failed to move on.

Studies in Identification. No. 6

By SYDNEY SMITH, M.D.

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IN my previous notes I have indicated from time to time the necessity of preserving every particle of material found in connection with a case, and have stressed the value of everything found, however small, for the purpose of identification. I propose in this number of THE POLICE JOURNAL to describe two cases in which small fragments of the body have led to absolute identification.

The first case concerns the disappearance of a man and his wife, whom we may call Mr. and Mrs. A. They were known to have spent a night in the premises of an individual whom we shall call B. No further information was obtainable about them after that night, and B's statement that they had left in the morning to travel to another town was accepted. As, however, the disappearance was complete, the A's friends became suspicious and an investigation was opened. Suspicion fell upon B, and a search was made of his house.

Certain rather suspicious stains were found in the house, which were thought to be bloodstains, but, on examination, no traces of human blood were found in them. In general the search of the house was negative, except for faint traces of a washed bloodstain on the shirt sleeve of B.

The garden adjoining the premises was dug up. At one portion a distinct putrefactive smell was observed, and in this area, at a depth of a little over a foot, a piece of skin was found, which appeared to be the skin of a hand. Nearby there was found a dead worm similar to the round worms infesting the human intestine. Nothing else was found. Even without the piece of skin the worm would have been of importance.

The investigation continued and information was obtained

to the effect that the accused had been seen digging at a certain spot on the banks of a canal about a quarter of a mile from his house a few days before the enquiry opened. On digging in this area two sacks were found containing two bodies. One contained a male body doubled up in the sack, which, though decomposed, was identified by his relatives from his general appearance and clothes, and from a tattoo mark on the forearm, as being the body of A. There was a contused wound behind the left ear over a comminuted fracture of the skull. There was also bruising about the tissues of the neck and fracture of certain of the left ribs penetrating to the lung. The hands of this body had the epidermis and nails intact.

The cause of death was obvious, and the state of putrefaction was consistent with the period elapsing since the night of the alleged crime.

The other sack contained the body of a female. This body was more decomposed than that of the male, but was identified by relatives as that of the wife of A. There was a bruise on the scalp at the back of the head, and a comminuted fracture of the skull. The left thigh had lost most of its flesh, and the right hand and most of the right forearm had disappeared. The appearance of the body suggested that it had been partially eaten by wild animals. The left arm and hand were present, but the epidermis of the hand had disappeared by putrefaction.

Identification of these bodies was a simple matter, as was the cause of death and the time since death, but the interest of the case to us, from the point of view of identification, was to ascertain whether the two bodies, or either of them, had in fact been buried in the garden of B's house, and subsequently removed and buried in the position where they were found.

The worm which I have mentioned was submitted to an expert helminthologist who gave an opinion that it was a specimen of *Ascaris lumbricoides*, or round worm, infesting the human intestine. The body of A was found to contain similar worms, and no doubt one of these escaped from the body into the soil.

The piece of skin found in the mud of the garden was carefully washed, hardened in formalin, and photographed. Skin,

as you probably know, withstands putrefaction fairly well, and the patterns and details of skin of the fingers and palm could be made out fairly easily. It is well to remember in connection with the development of the skin ridges which have been so useful in finger-print identification, that they are formed at a very early age in the deeper parts of the true skin long before the child is born. As the epidermis grows, it retains the form of these ridges, and as the epidermis is gradually shed, the ridges are re-formed from the pads beneath. These pads can first be seen on a foetus between six weeks and two months after impregnation, and are quite well developed by four months. The ridge patterns which give you the finger-prints are therefore found below the surface before their counterparts appear on the skin. Therefore in every case when the skin is lost, the pad or true skin from which the pattern was formed will remain intact until destroyed by putrefaction. In this instance the patterns on the piece of epidermis or outer skin found in the garden of B's house were compared with the patterns on the dermis or true skin still remaining on the fingers of the left hand of the body of the female victim, and were found to have a sufficient number of identical points to warrant a definite statement that this skin had been removed from that body, and therefore that the body had almost certainly been buried for several days in B's garden, before being disinterred and reburied in the *locus* where found.

CASE NO. 2

During the night an individual broke into a certain house with intent to rob. During his wandering in the house he entered the bedroom of a woman, who, upon hearing the intruder, began to scream. The intruder grasped her, placing his hand across her mouth to prevent her screaming. She promptly bit the hand with sufficient force to remove a portion of one of the fingers. This fragment she retained and handed to the police when she made her complaint the following morning. The fragment, on examination, was found to be the tip of a finger, removed, not at the terminal joint, but by breaking through the bony phalanx near that joint. The nail



FIG. 1: Tip of finger with nail, removed by bite



FIG. 2A: X-ray of right hand of accused showing fracture of bone in the index finger



FIG. 2B: X-ray of finger tip showing the end of the terminal bony phalanx

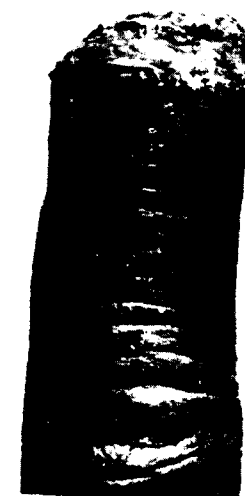


FIG. 3: Right index finger of accused
(face p. 150)



FIG. 4: Photograph of the finger tip removed by the bite (reversed for comparison)

Index droit السبابة اليمن

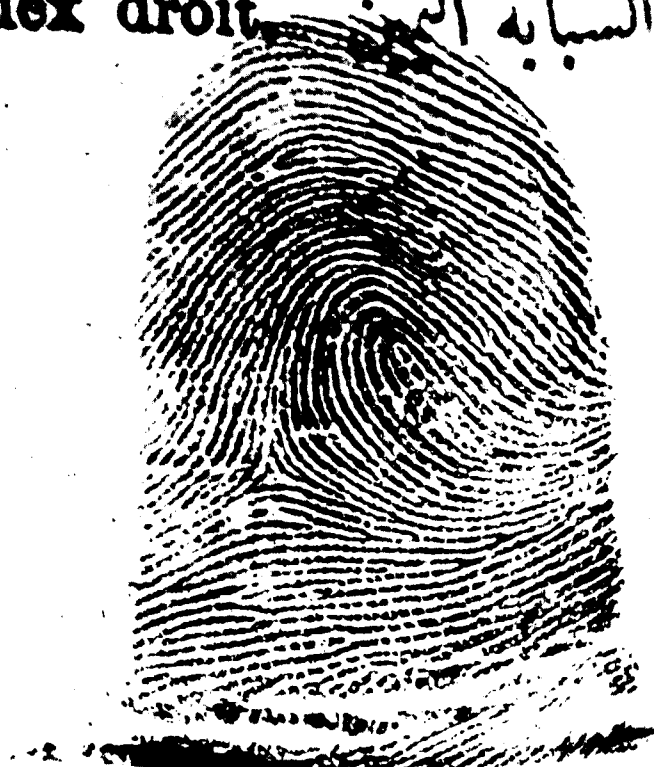


FIG. 5: Print of right index finger of accused

was intact. From an examination of the finger tip, it appeared to be that of a person, probably a man, who had not been accustomed to hard manual labour, but little else could be deduced from it (Fig. 1). The ridges on the palmar surface were quite distinct and available for comparison purposes.

Instructions were issued to Police and hospitals to watch for a man with a mutilated finger, and about ten days later a man was arrested on suspicion. On examination he was found to have lost a portion of his right index-finger. He said that he had had an accident with a reaping machine and had lost a finger thereby. The remainder of the finger was X-rayed and it was ascertained that the terminal phalanx of the right index-finger was broken through at a place corresponding with the fragment removed by the bite (Fig. 2 a, b). The raw end of the finger was roughly torn, and though no teeth marks could be seen, it could readily have been the result of a severe bite (Fig. 3). The nail, in appearance and size, on the piece removed by the bite, corresponded with the other nails of the arrested person; the general size and appearance corresponded, and the fragment of bone in the part removed corresponded with the end of the terminal phalanx which had been broken across. In general, the finger tip removed by the bite could readily have been the tip of the mutilated finger, and one would have been justified in stating that it was.

Up till that point the obvious thing had not been done, and it was the accused himself, in course of conversation, who stated that he had been arrested on a false charge several years before. The finger-print bureau was then asked to supply the finger-prints taken on that occasion, and on comparison of the finger-print of the right index-finger with the ridge patterns on the tip, they were found to be identical (Figs. 4-5). This completed the absolute identification of the accused, who pleaded guilty to the charge.

Enforcing the Black-out

By CHIEF INSPECTOR C. R. HEWITT

City of London Police

THE "black-out" law may now be presumed to have settled down for a time. The way of its growth, the sweeping prohibitions followed by a rapid accumulation of "relaxations" announced by Ministers of the Crown, might be thought a novel way of forcing the public to fulfil its democratic duty by making its own laws; but in fact it was very much like the making of the common law itself, except that it packed the centuries of trial and error into about five irksome months, substituting the temper of public opinion for the historical researches of His Majesty's Judges. Thus there is now some hope that, in discussing the more general provisions of the Lighting (Restrictions) Order, 1940, one's words may not be written in sand.

Probably no examination of this far-reaching Order from the Police point of view could be achieved without appearing to criticise the way in which it is drafted. This follows from the fact that all the offences created by the Order must in due course be described in summonses addressed to defendants. It is true that a summons is declared by section 32 (1) of the Criminal Justice Act, 1925, to be "sufficient" if it contains "a statement of the specific offence with which the accused person is charged," and that by section 32 (2) it *must* describe the offence shortly *in ordinary language*; but this is probably the most consistently disregarded clause in all the statutes controlling courts of summary jurisdiction, the courts having found that excursions into "ordinary language" are beset with traps for the drafter of summonses, and result too often in the failure of ordinary language to represent statutory passages which are the reverse of ordinary. Seeking safety in

exact reproduction, they have therefore performed brave feats of phrase-making in their efforts to combine the essence of two, three, and sometimes four different clauses which are all relevant to the one offence; and they have evolved long screeds of accusation which must puzzle the average offender.

The Order opens abruptly in paragraph 1, with an all-embracing prohibition. "During the hours of darkness it shall not be lawful (a) for any light to be displayed inside any roofed building, closed vehicle or other covered enclosure in such circumstances that any illumination therefrom is visible from outside the building, vehicle, or enclosure; (b) for any light to be displayed *otherwise* than in a roofed building, closed vehicle, or other covered enclosure." In other words, no one may show any light, anywhere, during the hours of darkness, except indoors in a hermetically lightproof building or enclosure.

The life of the nation would come to a dead stop, like this. There follows, therefore, a host of exceptions; but all these exceptions are carefully described, so that if you fail to conform to the conditions of one of them you are not enjoying the exception, but committing an offence under paragraph 1. The exceptions relate to lights which are either "required" or "authorised" elsewhere in the Order, for the Order compels the display of some lights and merely permits the display of others; and they all spring from paragraph 3. Some of them, in operation, are probably startling to the motorist who has been fined for sending his little beam of light above the horizontal, or for failing to obscure the light with which he has never adequately illuminated his back number plate. But one condition is common to nearly all of them—they must be extinguished when an air raid warning is sounded; and the few cases in respect of which this has not been embodied in the exempting clause fall, nevertheless, within paragraph 4, which empowers a constable, acting under the "special or general direction" of his Chief Constable, to order the extinction of any lights (except those used by the armed forces) not only during an air raid but when an air raid is anticipated.

In case there should be any doubt as to what constitutes a "light," paragraph 4 expressly applies the Order to "the emission of flames, sparks, or glare." There is thus no escape,

on the meaning of words, for those who set their chimneys on fire, burn their garden rubbish, or leave a gas fire burning in an uncurtained room, during the hours of darkness; but even this provision has needed to carry its own exemption in favour of electric trains, trolley vehicles and tramcars, which light up cities with their brilliant short-circuit flashes and harass the sense of comparison of the citizen whose hand-torch is (or should be) peering downward through its two thicknesses of tissue paper.

LIGHTS IN BUILDINGS

In cities the normal duty of Police attention to lock-up premises has acquired an immense new responsibility in finding and extinguishing lights left in buildings by occupants leaving business for the night—the week-end producing, at present, the largest crop because the hurried exodus at midday on the Saturday takes place in daylight, when any lights in a building are less obvious. In the summer months, when business folk leave by daylight all the week, the numbers will certainly increase.

In business districts the finding of the real offender has presented great difficulties. The only person named by the regulations is the “occupier” of the premises, who is given special mention in Regulation 24 of the Defence (General) Regulations, 1939, under which the Lighting Order was made. But even this mention of the occupier does nothing to absolve other people, for paragraph 52 (4) of the Order provides that “without prejudice to the liability of the occupier of the premises, any provision of this Order rendering unlawful the display of any light . . . shall be construed as including a *specific* provision that no person shall cause or permit that light to be displayed.” It follows that the occupier is not always, or even usually, made the defendant, most of the offending lights being left by employees or by tenants.

The problem whether both employee and occupier should be prosecuted yields to the rough and ready solution that where blinds have been provided for the windows and an employee has neglected to use them the “occupier” is not at fault.

But where no employee can be found who will admit responsibility (and employees are rapidly growing artful) there is no alternative to prosecuting the occupier. The knowledge will probably spread that the Police have, as a rule, no evidence whatever against the defaulting employee apart from his own confession; and employees will find that they have a free choice as between getting their wrathful masters convicted by denying complicity themselves, or basking in a little pleasant martyrdom by owning up and incurring a fine in the hope that the boss will pay.

But what does “occupier” mean? It is not defined in the Order or the Regulations. The *Oxford Dictionary*, having said that it means a person in possession of land or a house, adds “especially temporary or subordinate” possession. There is no difficulty where business premises are completely occupied by one firm. But where one building houses a dozen or twenty firms, who all share a staircase and the electric lights on the landings, it is not often that one of them will admit leaving a light on one of the landings at night. The Police are then faced with the alternatives of prosecuting every firm in the building (in some buildings there are hundreds), or turning their attentions to the owner or his agent. Often the owner is quite inaccessible, and sometimes the owner is the Crown and therefore exempt from the Lighting Order altogether. Estate agents have already been the astonished recipients of summonses which tell them that they have permitted a light to be displayed in a roofed building which they hardly ever see; and in some cases landlords or lessees of houses, summoned as “occupiers” for permitting the display of lights by tenants over whom they have no control, have been found not guilty and told that they should never have been prosecuted. It is thus possible for a light to be left in premises under such circumstances that no one can be successfully prosecuted; but before it is concluded that this is due to the way in which the Lighting Order is drafted, it is instructive to make an attempt at drafting such an Order oneself. It is difficult to imagine anything wider than paragraph 52 (4) of the Order.

Much use has necessarily been made in cities of Regulation 24 (2) of the Defence (General) Regulations, which

empowers a constable to enter any premises in which an Order made under the Regulations is not being complied with, and of Regulation 89, which authorises him to use "such force as is reasonably necessary" in doing so. This is probably simple enough in some districts; but where blocks of offices and large warehouses are jumbled together in narrow, winding streets, and lights are seen from the backs of premises overlooking "wells" between buildings, there is a great risk of breaking into the wrong building to put out the light. It is a risk that, subject to every possible safeguard, must be taken.

LIGHTS ON VEHICLES

Various paragraphs of the Order require, in dealing with vehicles of different classes, that the vehicles must display the lights required "by and under the Road Transport Lighting Act, 1927." Failure to display any of them is therefore an offence under the Lighting Order as well as under the Road Transport Lighting Act, though a prosecution must obviously proceed on one of them, not both. But merely to display them does not now meet the law. The lights must "as respects any front light, be displayed from an *authorised* side-lamp, and, as respects the rear light, be displayed from an *authorised* rear lamp fixed so that its centre is not higher than 3 feet 6 inches above ground level" (paragraph 20 (2)). For what is an authorised lamp one must turn to paragraphs 14 to 19, which define side-lamps, rear-lamps, stop-lights, head-lamps, dual-purpose lamps, bicycle lamps, and cart lamps in terms of what they must do to be "authorised." (It is thought by many who have to enforce the Lighting Order that these paragraphs, which are purely definitive, could more happily have been put in a schedule at the end of the Regulations.)

One principle that soon made itself evident was that, whereas each of these descriptive paragraphs has several sub-paragraphs dealing with reflectors, area of light visible, obscuration with paper, or some similar requirement, the failure to comply with any or all of the sub-paragraphs constituted only one offence, the offence being the mere displaying of a light, contrary to paragraph 1 (b). Once this was acknow-

ledged it logically extended to other paragraphs making additional conditions about the same lamps, as in the case of the requirement of paragraph 20 (2) that a rear-lamp, in addition to being an authorised rear-lamp, must not be more than 3 feet 6 inches above ground level; with the difference, in this case, that if the height from the ground constitutes the only breach of the Order the offence is under paragraph 20 (2) itself.

The use of a head-lamp is still optional, but if used it comes under restriction, and for the purpose of the restriction it is declared to be a lamp of a power exceeding 7 watts. One only may be used (except in the case of public service vehicles and trolley vehicles) and it must be fitted with an approved mask. The intensity of the light, as thrown on a vertical surface 10 feet from the head-lamp, must not exceed 2.5 foot candles, and this is roughly equivalent to 36 watts. It seems that lamps of higher wattage than this may be used, but their light must be reduced by the effect of the mask to 36 watts or less. Breach of any of these conditions is an offence under paragraph 1 (b). It is submitted that, if a motorist uses two head-lamps, whether or not the extra head-lamp is efficiently masked, the only offence committed is that under paragraph 1 (b).

"CAUSING" AND "PERMITTING"

These two words, the use of which in Statutory Rules and Orders has now become general, are able to bear various interpretations. Where they concern the relationship of one person to another they seem to be almost synonymous so far as liability goes—as in section 35 of the Road Traffic Act, 1930, which says that "it shall not be lawful for any person to use, or to cause or permit any other person to use," an uninsured motor vehicle. But where they relate to a state of affairs, where the offence being created is expressed in the passive voice ("cause or permit a light to be displayed"), it has become fashionable to say that an employee "causes" and his employer "permits."

By this means you can, if you wish, get two defendants for nearly every summons. This is, superficially, quite just in the multitude of cases in which men are seen driving vehicles which

their employers have failed to treat in accordance with the Lighting Order, but in practice it does not always work justly and it is notoriously inconvenient. It is unjust because, if the driver is prosecuted in an area some hundreds of miles from his base, the owners of the vehicle are faced with high witnesses' costs if they are summoned for "permitting," while they are enjoying an unfair advantage, due solely to geography, if they are not summoned at all. It is inconvenient because quite often it entails bringing a Police witness from a great distance merely in order to prove (in a disputed case) that the owners admitted ownership when he called on them on behalf of the prosecuting police force.

The common-sense test of the owner's liability is similar to that applied in the case of an occupier of premises. Did he attend to his share of the responsibility? Has he, in the words of the proviso to Regulation 24 (2b) of the Defence (General) Regulations, "exercised all due diligence to secure compliance with the Order"? A road transport contractor who has the lamps of all his lorries treated in the prescribed way is nevertheless technically liable to prosecution if one of his drivers removes the paint or paper used to obscure the light, or the diffusing material from a head-lamp mask. But his discharge would be certain, and it is therefore considered futile to prosecute him; the award of costs against the Police is one way in which Courts can supplement the obvious implication of the proviso to Regulation 24 (2b) where it is disregarded.

EXEMPTIONS GRANTED BY THE POLICE

There are a number of cases in which exemption from the Lighting Order, for obvious reasons of expediency, are granted outright by the Order itself. Among these are fog-flares for the guidance of traffic, lights in signs directing people to hospitals, police stations, fire stations, and air-raid shelters, lights in taxi-cabs' "for hire" signs, numerous railway and shipping lights, and lights used for urgent rescue, demolition, and repair work. Some of these lights must be extinguished immediately a public air-raid warning is received; others must be extinguished at any time upon the order of a constable; but in any

case, paragraph 4 empowers "a chief officer of police or a constable acting under his general or special direction" to prohibit or restrict any of them "in the event of the apprehension of hostile attack"—which seems to mean whether an air-raid warning has been sounded or not.

Chief officers of police have, however, wider powers of granting exemption under the 1940 Order than they had under that made in 1939. The use of illuminated sky signs, facias, and advertisements, or the display of any kind of advertising lighting, "outside or at the entrance to any premises," was at first entirely prohibited. Now, by paragraph 3 of the 1940 Order, a chief officer of police may authorise such lighting subject to any conditions imposed by him. It is, indeed, a rather curious fact that paragraph 3 of the 1940 Order enables a chief officer of police to authorise *any* lighting, regardless of the prohibitions set out elsewhere in the Order; the maintenance or relaxation of the black-out is entirely in the hands of the Chief Constables. The principle they have been bound to adopt is that every case must be considered not merely upon its merits but in relation to the flood of similar applications which must follow any that succeeds without special circumstances of outstanding importance.

HAND TORCHES

No review of black-out conditions would be complete without a reference to the pedestrian's hand torch and to the painting of vehicles. The wording of paragraph 50 (1) has apparently made it possible for the conclusion to be drawn that the user of a hand torch is allowed two alternative methods of dimming the light emitted from it—either by using two thicknesses of tissue paper (or their equivalent) or by making it conform to the British Standard Specification No. BS/ARP.3. A careful examination of the paragraph shows, however, that BS/ARP.3 is mentioned only in relation to hand lamps (the lamp concerned being obviously the official ARP lamp used by the Civil Defence Services, which is certainly not a hand torch in the universally accepted sense); while torches are mentioned only in relation to the tissue paper method. All

the user of a torch must do, therefore, is to dim the light with two thicknesses of tissue paper or their equivalent, make sure that the light thus emitted is white, and direct it downwards at all times.

A pedestrian using a bicycle lamp, or any kind of lamp which is not a hand torch, has the option of trying to conform to BS/ARP.3 instead of dimming the light with paper. And though, presumably, no one will want to do this, the fact that such a person is allowed to do either means that a prosecuting constable who has given evidence that the tissue paper method was not used may be called upon to prove that BS/ARP.3 was not conformed to as an alternative. The production of the published specification itself (it can be obtained from the British Standards Institution, 28 Victoria Street, London, S.W.1) might be held insufficient without evidence from the Institution who published it; so that the prosecution of a person using a lamp other than a hand torch might well be like taking a steam-hammer to crack a nut.

WHITE PAINT

The new Order has made it clear that the white paint requirement applies only to vehicles used on roads during the hours of darkness, and clearer than it was in the 1939 Order that the requirement applies to vehicles of every kind, mechanically propelled or otherwise—which formerly was at most an inference to be drawn from the reference to the “equivalent positions” on vehicles where no bumpers or running-boards were fitted. “No vehicle,” says paragraph 35 (1) of the 1940 Order, “shall be on a road during the hours of darkness” unless the white paint or material has been applied. It also introduced a concession permitting the use of “other white material not less conspicuous than white paint,” which legalised the practice of binding the bumpers with white wrapping material. Sooner or later (perhaps before this is in print) the question will be raised whether chromium-plated or stainless steel bumpers need any treatment or comply with the law as they are. Chromium, for example, is a “material” which has been “applied”; the question remaining is whether it is “less

conspicuous than white paint.” It will be pointed out that paragraph 4 of the Fourth Schedule to the Motor Vehicles (Registration and Licensing) Regulations, 1924, having required that the letters and figures of a motor-car number-plate must be in white on a black surface, says that “if they are exhibited on a flat rectangular plate the plate may be constructed of cast or pressed aluminium having raised letters and figures”; and the Court will be asked to take the view that if the legislature regards aluminium figures as white figures, it should certainly regard chromium bumpers as white bumpers. It will, in any case, be difficult to prove in a court in the daylight that chromium bumpers on a road in the dark are less conspicuous than white-painted bumpers in the same conditions. Meanwhile many thousands of motorists have spoiled their chromium fittings with white paint, while others who shrank from doing so, and who chanced conviction under the old Order by binding them round with white cloth instead of painting them, now find themselves justified and their chromium unspoiled. It is important that the new Order requires the white paint or material to be “maintained in a clean condition and unobscured”; the omission of this clause from the 1939 Order enabled the motorist to apply white paint once only and then let it wear off without troubling further.

The black-out is a difficult thing to enforce, and prosecution is not always the ideal method, as Ministerial answers in Parliament have fully acknowledged. This, if it is to represent the executive attitude, is one of two reasons why the High Court will probably hear little of the Lighting (Restrictions) Order; the other is that the process of Ministerial “relaxation,” which grew until the 1939 Order was swamped by permissive announcements, has now begun nibbling at the 1940 Order. This process is entirely unavoidable in an imperfect world; the Police must embrace the general hope that there may be no need for a Lighting (Restrictions) Order in 1941.

The Scope and Fallacies of the Florence Reaction for Seminal Stains

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INTRODUCTION

THE reaction described by Florence in 1896 is widely used as a preliminary test for seminal stains, and it is usually considered that if the test is negative spermatozoa will not be found in the material. Conversely it is maintained that if a positive reaction is obtained spermatozoa will always be found after a prolonged search (Smith). At first it was hoped that the reaction would be specific for seminal fluid, but since it has been recognised that this micro-chemical reaction depends on the action of the iodine in the reagent on the choline in the spermatoc fluid to produce crystals of periodide of choline, the lack of absolute specificity has been admitted. The reason for this admission is that choline is a basic substance in most animal tissues though spermatoc fluid contains more choline than any other body tissue or secretion. The work of Fletcher, Best, and Solandt has shown that spermatoc fluid from the adult white rat contains 514 m.grs. of choline per 100 grs. of tissue, while the spinal cord and brain, the organs with the next largest choline content, each contain 370 and 325 m.grs. per 100 grs. of tissue respectively. The Florence reaction is therefore not specific for spermatozoa nor for that matter for spermatoc fluid, but according to Kahane is so for all substances containing choline. With this finding I do not entirely agree.

TECHNIQUE

The suspect stain or a portion of it is extracted in distilled water to which has been added concentrated Hydrochloric Acid in the proportion of 1 minim to the ounce. The extraction is carried out on a glass slide and only sufficient fluid is used to moisten the fabric. The question of over-dilution of the stain extract is most important and will be discussed later. The material in the case of a fresh stain, or in the case of one only a few days old, should be soaked for from two to four hours. In dealing with old stains extraction for from twelve to twenty-four hours is required to obtain reliable results. In performing the test the suspect fluid may be placed on a slide, covered with a cover glass, and the reagent run in under the edge of the latter. An alternative method is to place a drop of the suspect fluid and a drop of the reagent side by side on a slide and cover both drops with the same glass. It has been found that this second method gives more satisfactory results. Where the fluids meet a clear line of demarcation is obvious and the crystals first appear on the side of this line nearest the iodine solution. The test is more satisfactory if the fluids do not become intimately mixed to form a uniform solution, because if the crystals are scanty they are sure to be found near the line of contact of the two fluids and the presence of such a line makes searching for them very much more simple.

The crystals are needle-shaped, brown or black in colour, and may appear singly, in rosettes, or in groups of various forms. The number and size of the crystals, and to some extent also their shape, depends on the concentration of choline in the solution. The crystals are at first small rods with square or obliquely cut ends, but if the choline content of the solution is high the crystals become roughly spindle-shaped with pointed ends and with the original rectangular crystal incorporated towards the centre. Sometimes a step-like formation is seen near the ends of a crystal as if two small crystals had been imperfectly opposed. In all cases care was taken to ensure that a relative excess of iodine solution was present and the reaction is most satisfactory when the medium is mildly acid.

When the reaction is strong crystals appear almost at once and are numerous and large in size. On the other hand if the choline content of the extract is low the crystals may be small and scanty, but if no reaction appears in ten minutes the test can be recorded as negative. The crystals of periodide of choline do not, as is sometimes stated, disappear quickly but remain for an hour or two at room temperature and their disappearance has been attributed to evaporation of the reagent.

CONTAMINATION

This work was originally undertaken with a view to discovering the effect of contaminants on the Florence reaction. In many cases where garments have to be examined for seminal stains the clothing in question is more or less grossly impregnated with all manner of filth. Urine, faeces, blood, leucorrhœal and gonorrhœal discharges are the usual contaminants of such stains on female garments. Neither nasal secretion, saliva, nor vaginal discharge contain any choline and, as would in consequence be expected, no positive reaction was obtained with any of these materials whether the stains were fresh or were up to eight months old. Vaginal discharges from females varying from eight to sixty-five years old were tested directly with negative results, and these secretions when superimposed on known seminal stains did not produce any diminution in the speed or intensity of the reaction. The presence of *Trichomonas* in vaginal discharge does not seem to influence the result one way or another. Whether the woman was pregnant or not was likewise non-influential, and smears from a case of gonorrhœal vulvo-vaginitis were also negative and had no adverse influence as contaminants. The fact that large numbers of vaginal cells were present in some of the samples did not seem to be of any importance. In one case where a positive reaction was obtained from a garment bearing abundant vaginal stains, and the presence of sperm was suspected, it was necessary to search through forty-two stained preparations before a single undoubted sperm could be seen. In some of the slides however there were numbers of

what appeared to be sperm heads, but great difficulty was experienced in finding an entire sperm. This difficulty no doubt arose through the garment having been worn for some time after the deposition of the sperm, and this finding emphasises the importance of steps being taken by police officers to ensure that suspect garments are secured at an early stage in the case and are not roughly handled.

Female urine alone always gives a negative reaction and does not interfere as a contaminant. Of course large volumes of urine might hinder the reaction by dilution, but this factor will be discussed later. Small numbers of spermatozoa may be found in male urine, but the dilution of the mother fluid in which the sperm normally float is so great that a positive reaction would almost certainly not be obtained. In any case the matter is not one of practical importance from a medico-legal point of view.

Fæces do not give a positive reaction and do not interfere with the test when spermatic fluid is present. Blood has a very small choline content varying from twenty-two to thirty-one milligrammes per 100 grms. of blood and does not, and would not be expected to, give a positive result. Neither does fresh blood direct from a vein, blood a few hours old, nor stains eight months old interfere with the reaction when spermatic fluid is present. An important point is that menstrual blood is equally ineffective.

All these remarks of course apply to stained fabrics which have been kept dry. Under those circumstances the reaction does not vary for months. However, it is equally true that under the influence of the organisms of putrefaction the reaction quickly disappears, and if spermatic stains are contaminated with putrescent material, or are uncontaminated and allowed to remain moist at ordinary temperatures, the Florence reaction will rapidly become negative. According to Bagchi if the reaction is positive and no sperm are found the result may have been due to pus, blood, or some other choline-containing substance. I have proved beyond question that neither blood nor pus gives a positive reaction. He also states that blood may interfere with the test, but this has never been my experience.

THE EFFECTS OF WASHING SEMINAL STAINS

Quick rough washing of old seminal stains that had thoroughly dried into the fabric was tried. The cloth was rubbed with soap and water and rinsed in running water. To the naked eye the cloth appeared to be quite clean but a positive reaction was still obtainable though the crystals were scanty and took about ten minutes to appear. Furthermore after this treatment definite spermatozoa were seen in stained preparations. To completely destroy all evidence of the presence of a seminal stain thorough washing is essential, though of course if the garment be boiled all morphological evidence of the presence of spermatozoa would be eliminated. While the stain is still wet it is much more easily destroyed by washing than if it is allowed to dry and become fixed in the meshes of the fabric. Thorough sponging of a fresh stain with warm water will remove all microscopic and micro-chemical evidence of the presence of spermatic fluid.

DILUTION AS A FACTOR IN THE REACTION

Before a positive reaction can be obtained a certain, but so far undetermined, concentration of available choline must be present in the test fluid. It follows from this that dilution of the extracts from the suspect stain is an important factor. Fluid taken direct from the seminal vesicle alone or after the addition of prostatic secretion always gave a positive result. This material was then diluted with distilled water and the test repeated till a negative result was obtained. It was hoped that at a certain more or less constant dilution the reaction would always become negative, but it was found that the amount of dilution which samples from different individuals would stand varied within relatively wide limits. In all cases the conditions of obtaining the material were as nearly as possible the same. In one case it was found that after dilution to the extent of one in three of distilled water the reaction failed to appear, while in another case dilution up to one in forty was necessary before the reaction became negative. The other results were all intermediate between those figures. It

was found that as dilution progressed the crystals became steadily smaller in size till finally the preparation had to be examined under the high-power microscope to be certain of the identity of the crystals. In every case after the reaction had become negative sperm could still be seen in relative abundance.

These findings indicate three important facts. The first is that the choline content of different samples of sperm varies within relatively wide limits. This variation may depend on the age or the physiological or pathological condition of the individual at the time. Secondly it emphasises how important the question of dilution of the stain extract may become and points to the necessity of employing small volumes of fluid to extract the stain. The third and most important conclusion is that the presence of a positive Florence reaction has nothing to do with the actual presence of spermatozoa as such, and that the choline-containing substance responsible for the reaction is in the fluid medium and not in the bodies of the spermatozoa themselves. This finding agrees with that of Bagchi. If the reaction is due to some substance in the fluid part of the ejaculate then it follows that in a case of aspermia a positive result might be obtained though no spermatozoa are present.

According to Marcille a positive reaction is obtainable even at dilutions of 1 in 70,000, but no dilutions anywhere approaching these figures were found to give a positive result.

THE COMPONENT OF THE EJACULATE RESPONSIBLE FOR THE REACTION

Attempts were made to discover to which glandular secretion the credit for the reaction is due. As it was impossible to obtain the individual glandular secretions which make up the ejaculate in a fresh state the tests had to be carried out on post-mortem samples. The bladder, prostate, and seminal vesicles were removed *en bloc* with as little manipulation as possible, in order to avoid expressing any fluid from the vesicles, and the urethra divided just distal to the prostate. The seminal vesicles, having been cleared of fascia at the point where they enter the posterior surface of the prostate, were

then clamped. Next the vesicles were dissected off the base of the bladder, divided close to the clamps, and their contents expressed into a watch glass. The prostatic urethra was then split along its anterior wall and by pressure on the gland the secretion was collected direct from the prostatic ducts. By this method the two secretions could be obtained pure. In all cases, with one exception, it was found that the fluid from the seminal vesicle gave an immediate strong positive reaction without the addition of prostatic secretion. Prostatic secretion was added to the material which did not react, but this addition made no difference to the result. Tested alone prostatic fluid never gave a positive result, and the addition of this to diluted vesicular contents that were not reacting did not have any influence. It is quite clear therefore that the choline-containing substance is present either in the pure product of the testis or epididymis, or is added to this when the latter reaches the seminal vesicles.

These results directly contradict those published by Kahane and Levy (1937). These authors maintain that the free choline is liberated from a mother substance in the sperm by the action of an enzyme in the prostatic secretion. During this investigation great care was taken to avoid contamination of the contents of the vesicles with prostatic fluid, and therefore the prostatic secretion could not possibly have had any bearing on the results. It has of course to be remembered that the material used was obtained post-mortem. If one assumes that in the living state the pure product of the testis gives a negative reaction then one must postulate the development after death of an enzyme in the wall of the vesicle which is capable of liberating choline in the free state.

THE FLORENCE REACTION ON TISSUE EXTRACTS

The entire lack of specificity of the reaction is due to the fact that apart from the seminal fluid most other tissues contain a greater or lesser proportion of choline. The choline may not however be present in the free state which renders it detectable by the Florence test, but enzymatic action may liberate additional choline which could then be detected micro-

chemically. Samples of tissues taken fifteen to forty-eight hours after death were cut into small fragments and extracted in distilled water at room temperature for from twenty-four to thirty-six hours in the proportion of one grm. of tissue to 1 c.c. of water. Extracts of pancreas, small intestine, salivary gland, and liver always responded with a positive reaction. Negative results were obtained from extracts of heart, blood, subcutaneous fat, uterus, thyroid, pituitary gland, thymus, skeletal muscle, and brain. Variable results were given by large intestine, spleen, suprarenal, tongue, lung, stomach and kidney. This variability depends almost certainly on the choline content of the tissues of the individual and this is in turn influenced by his condition before death. These variations run parallel to the degree of dilution the spermatid fluid can stand before the reaction becomes negative. When these findings are compared with those of Fletcher, Best and Solandt (1935) it will be seen that the results of the test give no indication of the total choline content of the tissues. Brain, for example, contains a high proportion of choline but does not respond, while salivary gland with only 131 milligrammes of choline per 100 grammes of tissue was always positive. It is therefore clear that a tissue with a high total choline content may contain so little free choline that extracts of it do not respond to the test.

As putrefaction progresses the reaction gradually fades. In one series of specimens extracts of liver and salivary gland were strongly positive, giving a reaction almost at once after 24 hours' extraction, while at 72 hours, though both were still positive, the reaction was slow and the crystals small. Extracts of the pancreas were strongly positive after 28 hours but did not respond when the extraction had been allowed to proceed for 72 hours. Putrefaction has a similar effect on seminal fluid and indicates the necessity for keeping suspect garments dry. Testing watery extracts of the organs of the genital tract gave interesting results. Extracts of testis, epididymis and seminal vesicle were strongly positive. While prostatic secretion alone always failed to react, watery extracts of the prostate were positive. This result is no doubt due to choline in the tissue fluids of the gland which does not appear in the actual secretion.

PRACTICAL CONCLUSIONS

From the strictly practical point of view one can safely conclude that this test is one on the results of which no definite conclusions can be based. If the result is negative several possibilities present themselves. The spermatic fluid of the individual may have a very low choline content and therefore may not be capable of reacting at all though sperm are present in abundance. On the other hand the stain extract may be over dilute, or lastly the stain may not contain seminal fluid. On the other hand if a positive result is obtained one need not necessarily find spermatozoa, as the reaction may be positive in a case of aspermia. If the case is one where the possibility of tissue extracts being present cannot be excluded, then a positive result might be due to that fallacy. The reaction does not depend on the presence of the bodies of spermatozoa but on some choline-containing substance in the fluid medium in which the spermatozoa are suspended. If no result is apparent in ten minutes at room temperature a negative can be recorded. The usual contaminants which might be found on garments bearing seminal stains are urine, faeces, blood, vaginal discharge, gonorrhœal pus, saliva and nasal secretion. None of these gives positive results and they do not in any way interfere with the reaction.

Garments bearing suspect stains must be handled very carefully and must be kept dry to avoid the chance of putrefactive changes. If this is done a positive reaction may be obtained months and possibly years after the deposition of the stain on the fabric. Rough quick washing may not completely destroy a stain once it has become dry and fixed in the meshes of the cloth, but thorough sponging with soap and water will remove a fresh moist stain.

The amount of dilution which different samples of spermatic fluid will stand before the reaction becomes negative varies within relatively wide limits, and a similar and parallel variability is found when dealing with tissue extracts.

SUMMARY

The effects of contamination of seminal stains as a factor in the Florence reaction is discussed.

The influence of putrefaction and the effects of washing on seminal stains is noted.

The extent to which spermatic fluid can be diluted consistent with a positive reaction varies with the individual.

A positive result does not depend on the presence of the bodies of spermatozoa.

The contents of the seminal vesicles alone gives a positive reaction without the addition of prostatic secretion.

Tests carried out on tissue extracts indicate that free choline content of tissues depends on the condition of the individual at the time in question and a similar variability is found in spermatic fluid.

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Some Black-out Problems and Their Investigation

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THE "black-out" has introduced new difficulties to the policeman in his task of investigating and detecting crime, and this is particularly true in connection with motoring accidents. Under the cover of darkness it may happen that a motorist, who has been involved in an accident, may be able to get away and so entirely avoid detection.

It might therefore be of some interest if I refer to the investigation of two "black-out" accidents in which recourse to scientific assistance has been useful. In one case, it helped to establish the guilt of a motorist, whilst in the other it served to exonerate a lorry driver from blame.

The first case refers to a couple of incidents in two distinct parts of Exeter in which a young motorist was involved one night in the early autumn. Some time during the day he had motored from Exmouth to Exeter and set out on the return journey after darkness had fallen and when visibility had become poor owing to drizzling rain. He admitted in Court that before starting he had taken whisky, but emphatically contended that he reached the main Exmouth road by passing through a series of side-streets. He could not say the precise course he had pursued. Eventually, he reached the main road by a road on the left-side, but almost immediately crossed over the road and entered a cul-de-sac on the opposite side. This led to an unfinished building estate where, at the end, he ran his car into a heap of builders' refuse and in so doing smashed the glass of one of his head-lamps.

Owing to the noisiness of his car—it had been running on

a flat tyre—he attracted the attention of some special constables who happened to be nearby. They assisted him to fix on the spare wheel in the place of a back wheel, the tyre of which had been badly damaged, for both the cover and inner tube had been severely ripped. From the peculiar mannerisms of the motorist the constables formed the opinion that he was under the influence of drink and decided to take him to the police station.

It happened that before his arrival there, the Police had received information that a collision had occurred between a motor-car and a stationary car earlier in the evening in another district of Exeter. The question then arose, whether the motorist could have been responsible for the earlier collision. After preliminary investigations the Police decided to associate the motorist with this collision as well as with the charge of driving "under the influence." The second charge was preferred on the evidence of the constables, in spite of the police-surgeon's unconvincing tests, which had of necessity been made some time after the two episodes had taken place. The difficulty now was to secure convincing evidence that the motorist had, indeed, taken a roundabout route and passed along the road in question before he reached the main Exmouth road.

At the time of the collision the driver of the stationary car was calling at a house for a passenger, but he noticed that immediately after colliding with his car the motorist reversed across the road in the direction of a lamp-standard, before making away. Soon afterwards a witness had his attention directed to a noisy car which passed him, the noise being such as would have been caused by a wheel running on its rim. So far, it appears that a noisy car was witnessed in two districts of Exeter on the same evening.

Owing to the "black-out" no one had been able to identify the car itself and, in the absence of such vital evidence, the need which arose was to obtain proof that the defendant had travelled along the road where he had been in collision with a stationary car and it was in this regard that scientific examination was able to provide several items of valuable circumstantial evidence.

Car paint marks were found adhering to the defendant's car which were exactly similar, both in appearance and chemically, to that with which the stationary car was covered. Moreover, paint from defendant's car had been deposited on the stationary car, or at any rate were of the same colour and composition. Furthermore, the defendant in reversing his car must have struck the lamp-post and also have mounted the kerbing which happened in this particular street to be of granite. It was here that he very probably burst one of the tyres. This became apparent, for not only had paint been chipped off the lamp-post, but green oil-paint marks, exactly similar to the lamp-post paint, had managed to get on to the rear of defendant's car. On mounting the granite kerb, the rim of one of the back wheels had been indented. An examination of the indentation showed it to consist of series of exceedingly fine incisions which must have been caused by the abrasive action of something made up of a large number of very small sharp points. In some of these incisions extremely small crystals of quartz were embedded. Quartz is one of the constituents of granite. This and the nature of the dent suggest that the dent was caused by impact with a granite block.

Although any single item in the foregoing observations can scarcely, in itself, be considered to supply conclusive proof, the probability that, when all the items are taken together, they do not point conclusively in single direction is extremely remote.

A heavy fine was imposed and the defendant's licence was suspended for a year. The charge of driving under the influence was reduced to one of dangerous driving.

Another point which arose in these investigations, although in this particular case it happened to be of no importance, was the examination of fragments of glass which had once formed part of a car's headlamp. It is quite possible that in certain cases such fragments might furnish valuable clues and the point of first importance is to ascertain the diameter of the broken glass plate. It might not be possible to collect all the fragments, but if such pieces can be obtained which when fitted together provide three or four inches of the circular circumference, then with the aid of a little geometry it is quite

an easy matter to calculate the diameter with a considerable degree of accuracy.

To calculate the diameter, fit the fragments together on a sheet of paper and trace round the arc of the circle with a sharp pencil. On this arc mark off any two points, A and B, preferably from two to four inches apart. Join the points A and B by a straight line. Bisect the line, A-B, at a point C, and at C draw a line perpendicular to A-B, cutting the arc at a point D. Measure A-C, say, it is x centimetres and also C-D, say it is y centimetres, then the diameter of the circular glass is equal to

$$\frac{x \times x}{y} + y \text{ centimetres}$$

Example: A-B=4 inches, $\therefore x=2$ inches.

C-D= $\frac{1}{2}$ inch, $\therefore y=\frac{1}{2}$ inch.

$$\therefore \text{Diameter} = \frac{2 \times 2}{\frac{1}{2}} + \frac{1}{2} \text{ inches} \\ = 8\frac{1}{2} \text{ inches.}$$

The second case was one in which a lorry proceeding in one direction was involved in a head-on collision with a motor cyclist, who was killed outright. No one saw the accident. At the inquest the lorry driver maintained that he was on his proper side of the road and that he did not go on to the wrong side at any time. The cyclist's body was found on his right side of the white line on the crown of the road. On the other hand, marks which must have been caused by the lorry driver's tyres were clearly visible on the white-painted kerbing on his "off-side" of the road. The design and dimensions of the tread marks left on the kerb agreed exactly with those of the lorry's tyres, and incidentally some of the kerb white paint was present on the side of one of the tyres. The curved path taken by the lorry wheels was to be seen from the impressions made both on the road and the pathway. The marks on the kerb were about a yard farther on from the point where the body had fallen.

It would appear at first sight that the head-on collision was caused by the lorry being on the wrong side of the road

when the motor cyclist approached. This, however, was not the case, for it was found that a series of small oil drops had fallen on the road for a distance of fifty yards before reaching the spot where the deceased's body had fallen.

An examination of the lorry revealed that the cyclist had run his bicycle between the lorry bonnet and its off-side wing and there it became jammed. In so doing the tube, under the wing, of the Lockheed Oil Brake System of the lorry had been broken and it was from this broken tube that the brake-oil had fallen on to the roadway at periodic intervals. The place where the collision must have occurred must have been very near to the spot where the oil drops were first found. The trail of drops was on the lorry driver's right side of the road and so it follows that the cyclist must have been on his wrong side when he collided. Thereafter, he must have been carried by clinging to the wing for some yards before falling. It would appear that subsequent to the accident the lorry driver must have lost control, at least temporarily, and then have steered across the road, mounting the pathway, before getting the vehicle on to the right side of road.

Foreign Enlistment

By DAVID MURRAY

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ONE day in February, 1940, it was stated by competent authority in the British House of Commons that licences would be granted to British subjects authorising them to join the armed forces of the Republic of Finland for the purpose of fighting for that country in its struggle against its giant neighbour—Russia. The announcement also covered others who might be engaged in enlisting such persons for that purpose.

This statement must have caused some speculation and no little amazement. It was most unusual in its import and far-reaching in its consequences. No one had ever heard of such an exposition and perhaps many wondered why such a statement was at all necessary. Could individuals not go and fight for Finland or any other country if they wished? Does it mean that, if war is being waged abroad between two foreign powers in which we as a nation are not involved, a British subject may not, if he so desires, take up arms and join one of the belligerents? That is exactly what it means. It might, therefore, be both interesting and instructive at such a time as this to look at the legislation creating this prohibition and also to some extent its background or history.

The Foreign Enlistment Act, 1870, provides for the issue of these licences by the Sovereign. The main object of this Statute is to regulate the conduct of His Majesty's subjects during the existence of hostilities between foreign States with which His Majesty is at peace and to prevent injury to the public by involving this country in misunderstandings with foreign powers.

The chief offences forbidden by this Act are:

By Section 4.—For a British subject to enlist or for any person within the British dominions to enlist others, without a licence from the Sovereign, for service with a foreign power at war with another foreign power at peace with His Majesty.

By Section 5.—For a British subject to quit His Majesty's dominions with intent to take such service or, whether a British subject or not, within His Majesty's dominions, induces any other person to take such service.

By Section 8.—To equip, build, dispatch or even agree to build within the British dominions, without a licence from the Sovereign, a ship, with reasonable cause to believe that it will be employed in such service. If, however, the building or equipping was in pursuance of a contract made before the commencement of such war no penalty will be incurred if the contractors or persons responsible forthwith, upon a declaration of neutrality, give notice to the Secretary of State, furnish any particulars which may be required, and take such steps as may be prescribed to ensure that the ship shall not be delivered or removed, without a licence from the Sovereign, until the termination of the war.

By Section 11.—To fit out, within the British dominions, without a licence from the Sovereign, any naval or military expedition to proceed against the dominions of any State that is at peace with His Majesty. It is not necessary to constitute an offence under this section that the expedition should be completely fitted out in this country. Any act of preparation of the expedition in this country is within the section. Therefore where the defendant had purchased arms and ammunition in this country and had shipped them on a general ship here for the purpose of being put on board another ship in a foreign port with the knowledge that they were to be used against a friendly State, it was held that he was guilty of having prepared a naval expedition within the meaning of the section.

Each of these offences is a misdemeanour, punishable with a fine and with imprisonment for a period not exceeding two years, with or without hard labour. All ships, equipment

and materials of war in respect of which the offence is committed are to be forfeited to the Crown.

The first statute dealing with this subject was the Foreign Enlistment Act, 1819, which was repealed and replaced by the more stringent enactment of 1870. This first Act was passed with the object of preventing British subjects from assisting the revolutionaries in Spain's South American colonies who were dissatisfied with conditions under their Spanish masters. This Act proved insufficient, during the American Civil War, to prevent the building and equipping of ships in British shipyards for the Confederate Government.

During that century other Foreign Enlistment Acts were passed with the object of preserving England's neutrality by forbidding her subjects to give any assistance to foreign belligerents. It is obvious that such prohibitions were necessary having regard to the modern growth of the principle of neutrality. Furthermore they were necessary in order to determine the course of conduct to which we as a nation were bound to adhere whenever a condition of war exists between foreign powers with whom His Majesty is at peace.

Prior to the passing of these statutes the Sovereign had authority to prevent his subjects from committing acts which might be at variance with the modern conceptions of the obligations of neutrality. These ancient powers of the Sovereign proved insufficient and Parliament found it necessary to make participation in hostilities between foreign powers a criminal offence. These offences are now punishable under the Foreign Enlistment Act, 1870.

Before Parliament took action by the passing of legislation no obstacle was placed in the way of a British subject from following the profession of a soldier of fortune if he so desired. The King of England could still lay claim to his continued loyalty and, if necessary, his services. Both these considerations were in jeopardy when men were allowed to join Continental armies. There they were likely to be contaminated in religion and loyalty by persons whom they met, and an attempt was made by legislation to counteract this—the success of which seems very doubtful.

All these difficulties and dangers have now been overcome.

British subjects are no longer free to jeopardise the safety of the public and neutrality of the nation by attaching themselves to the forces of foreign belligerent powers. All persons whether British subjects or not are also forbidden, within His Majesty's dominions, to enlist others for any such purpose. The traffic in men and materials having this object in view is now adequately controlled by the Foreign Enlistment Act, 1870.

Police Gold Medal Essay Competition

REPORT

The Council of the King's Police Gold Medal Essay Competition have the honour to present their report on the Competition which closed on November 1st, 1939. The subject was: "Discuss the Psychological Aspect of Crime and Punishment."

The number of essays received was less than last year but the proportion from the Dominions and Colonies was much higher, being nearly fifty per cent. of the total. The standard, however, was not so high as formerly, and it was accordingly decided not to award the King's Gold Medal and First Prize this year.

Awards were made as follows:

Second Prize of Fifteen Guineas:

Leslie James, Junior Station Inspector, Metropolitan Police.

Third Prize of Ten Guineas:

Thomas A. Woodward, Superintendent, Sheffield, West Riding Constabulary.

The following Competitor has been "Highly Commended":

James D. Adams, Police Constable, Dewsbury, West Riding Constabulary.

The following Competitors have been "Commended":

R. H. Barker, Corporal, Royal Canadian Mounted Police.

Arthur Cain, Inspector, Special Branch, Metropolitan Police.

Ernest Harvey, Police Constable, Metropolitan Police.

The Council have decided that, owing to war conditions, there will be no Essay Competition in 1940.

Air Raids and Earthquakes

IT may seem that there can be no connection between an air raid and an earthquake but the writer, when standing by in the more or less uneventful watches of the night waiting for a raid to occur, has allowed his mind to carry him back to his experience of an earthquake and it seems to him that, in some respects, both calamities give rise to similar situations and that the problems which arose then may be repeated if our enemies indulge in the bombing of open towns.

Up to now we have had but little experience of attack from the air and perhaps the worst efforts of puny man could not cause so much devastation as Nature when it stages an earthquake. On the other hand, given time to carry out a series of raids with large numbers of aeroplanes, the ultimate result would be more or less the same.

The earthquake which the writer has in mind affected an area as large as Scotland and the earth swayed and shook so that railway lines were twisted into serpentine switchback tracks, lamp posts bent as though to a mighty wind, while houses collapsed like so many packs of cards built up by a child and blown down by his mischievous playmate. Could even the Hun cause such havoc? Perhaps not by one or two attacks but the cumulative effect, should our enemies drop many heavy bombs on selected cities, might soon enough make these places look as though they had been stricken by an earthquake. In any case the damage caused by even half a dozen bombs would yield results in the area affected akin to that of an earthquake, houses would collapse, people would be buried in the debris and to make confusion worse, on top of all there would be fire. Oddly enough in the earthquake referred to fire did not play any serious part.

This article will be confined to observations on what happened in one town of about sixty thousand inhabitants of

whom some fourteen hundred were crushed to death in the space of two minutes, and will be directed to the problem of rescue. The town was virtually flattened out, houses collapsed or fell into the streets and the narrower the street the less chance there was for the unfortunates who happened to be in it. There were no trained services to deal with the situation and the police had to step into the breach though their houses had suffered with the rest and many of their families were casualties.

At this point it might be of interest to note that from first to last there was no attempt at looting. Whether this would be the case after an air raid is open to question. When Mother Earth quivers beneath your feet you are filled with awe, or terror, but it is possible that repeated air raids might breed contempt of them so that after each one certain criminal elements might sally forth to pick up what they could.

The extent of destruction of life and property in this town could not at once be estimated and the devastation was so great that it was impossible to direct attention to any one area. The first step was to find and extricate any wounded but very few were located, most of the victims being buried beneath so much debris that it was impossible to know where to search. The next thing to do was to start systematic clearing of the streets with a view to recovering the killed and preventing disease. The use of wheeled transport was impossible except on the fringes and therefore labour was collected to the number of about a thousand men and they began to clear lanes in the streets for lorries to enter and carry away the debris from the ruined buildings on either side. These operations went on for many weeks, the dead bodies of men and animals being gradually recovered. Throughout this period the survivors had to be provided with food and shelter.

Is not this situation very much what we must expect after a series of air raids?

It has already been suggested that the result of one air raid would not present such a difficult problem as that just described. We are told that the blast effect of bombs is great and may cause whole buildings to collapse, but buildings vary in strength and modern reinforced concrete structures, or even

well-built stone or brick buildings, are hardly likely to fall to pieces unless as the result of several direct hits. The air raid problem will therefore be, in the first place, one of dealing with a series of damaged areas, the number and extent of which will depend upon the size of each raid.

When an earthquake occurs the wise thing to do is to run out of doors, but our A.R.P. handbooks tell us to do just the opposite in the case of air raids. If we have a properly reinforced room or a shelter we are to take cover there or if we are in the street we are to go to the nearest shelter or trench, failing which the advice seems to be to go into a neighbouring building. There may be two schools of thought about the wisdom of taking shelter in a building which is not likely to withstand even the blast from a heavy bomb, but the point is that people will run for cover and most casualties will be found buried under collapsed buildings. The rescue problem will be therefore, as in the case of the earthquake, first to find where people are buried and second to devise means of rescuing them.

The earthquake experience showed that very few people were wounded and the collapse of buildings was so complete that the victims were buried too deeply to make rescue possible within a reasonable time even if the victims were still alive. After the first twenty-four hours all hope of saving life was abandoned. The air raid problem is rather different for the reason that the public have been told to provide safe rooms in which they can take cover. Anderson shelters have been made available and the bigger industrial and commercial concerns have gone to some pains to provide for the safety of their employees. This means that during an air raid these places of safety (let us hope they are not death traps) will be full of people and should the surrounding buildings collapse over them they will be trapped. Had there been any means of knowing where people were buried beneath debris the earthquake might have shown a smaller casualty list as rescuers would have been able to get to work at once in the right places. The situation in this country is now very different and we have the means of collecting information beforehand if we care to do so.

The work of rescue will be enormously helped if it can be known where the protected places and even Anderson shelters are. Each warden should be required to mark on his map the sites of these shelters and protected places, together with the positions of exits and entrances in the chief public shelters or those in big stores and offices. This would mean that on the arrival of a rescue party an aimless search would be avoided and the warden would be on the scene with his map to indicate the points at which the work of rescue should commence on the assumption that the places of safety were in occupation during the raid. The time of the attack is also important as at different times of the day people congregate in different places. It would thus be a waste of time to dig out a protected room in a big London shop if the raid occurred at night when there were no shoppers in the building: the City of London has a big daytime population but a small residential one. Such local factors merit consideration.

In the first few hours of the earthquake many people came with pathetic reports of cries being heard from the midst of collapsed houses and usually these were found to be the product of imagination. Preliminary investigation before rescue work is started would tend to prevent the dissipation of time and labour.

So far the main lessons which this experience suggests are (a) to know where official shelters are situated and in which areas householders have been provided with protection, (b) to make the wardens learn the position of the entrances and exits of the larger shelters as well as the sites occupied by Anderson shelters, (c) to keep on record the times at which public shelters are likely to be occupied.

When air raid damage is reported rescue and demolition parties have to be sent out. What orders will they have, how are they to be used and what difficulties are they likely to encounter?

In the first place there may be casualties in the streets and these should not be a very difficult problem to handle so far as rescue work is concerned; but if the people have obeyed the injunction to take cover the serious work will be in buildings which have been struck by bombs. In these buildings people

may either be imprisoned, unhurt, in their shelters or protected rooms or buried under debris. This is where our preliminary knowledge is going to come in useful. The warden should be at hand to guide the rescue parties to collapsed buildings where he knows there are shelters and he will be assisted by the knowledge that, at the particular time of the raid certain places are likely to be occupied and others not. Thus the more urgent problems will be tackled first. Without systematic work on these lines time and labour would be wasted and the loss of life correspondingly greater.

It is inevitable, as has already been remarked, that many unreliable reports would be made of the presence of wounded or buried people, and if the rescue and demolition parties are expected to act upon each and all of these their usefulness is going to be impaired. The need is therefore apparent of a person in authority who would receive these reports and direct the labour to the places most urgently in need of it. This authority will no doubt be the Controller, but he cannot issue sound orders without full knowledge of each and every incident, and to assist him in his decisions he requires a staff to promptly investigate each one and report on its accuracy and urgency. Naturally, a warden cannot be expected to estimate the extent of an incident before making his first report and the first information thus received may be an over or an under estimate of the situation. Only the officer receiving all the reports can judge of their relative urgency.

It therefore follows that it would not be wise to send out big rescue and demolition parties at once to each incident in rotation, unless of course there were only one or two which could be dealt with without hesitation. The appropriate action would appear to be to send out small rescue parties to the scene of each incident with orders to deal with casualties on the streets and to send back an estimate of the situation with particular mention of the need of further help. The demolition parties would be held in reserve to deal with the bigger jobs in order of urgency and on the basis of information received through the rescue parties.

A rescue party would not be expected to deal with a collapsed building or anything of that sort and might number

not more than five men of whom one would be a leader and another a messenger. Crowbars would be the most useful instrument for their work. They would all be first-aiders.

One point is very evident and that is that a great many of these light rescue parties would be necessary in any city seriously attacked from the air. These parties should be more in the nature of scouts and investigators who are, nevertheless, trained to rescue the injured when this can be accomplished without prolonged labour.

When a rescue party reports that a building has collapsed and that people are believed to be entrapped in the wreckage the demolition squads are called to the scene. Unlike the rescue parties the personnel should be composed of men trained in the work of moving fallen masonry, beams and girders. This is skilled work as one false move may bring down more masonry and increase the danger of the imprisoned people, indeed possibly kill them. What is more it is not work that can be hurried. The squads must be equipped with tackle suitable for moving heavy objects. It is equally clear that they cannot work without light, and some portable form of illumination should be at their disposal, unless reliance is to be placed on the light supplied by fires caused by incendiary bombs! It is hard to estimate the proportion of demolition squads to rescue parties but it would seem that they should not be so numerous though the squads themselves would be stronger. It might be possible to train rescue personnel for demolition work so that when the preliminary rescue and survey duties were over two or more rescue parties could combine to form one demolition squad.

These suggestions are based upon the writer's personal experience of rescue work in an earthquake, and as the official publications on the subject of rescue work do not appear to be very exhaustive they may be of interest to those whose duty it is to train men to cope with this problem of modern war. The kindred problems of fire, what to do with the injured and where to care for the homeless, are outside the scope of this article.

R. W.

Martial Law

"IT is reported that a state of martial law has been declared."

When some major catastrophe befalls a nation—civil war, *coup d'état*, rebellion or earthquake—it is not infrequently reported by the news agencies that a state of martial law has been proclaimed. In war time it is of more than academic interest to examine the authorities to see what the term implies. In England the Statute Book has no place for martial law, for the reason that the law of England has from time immemorial been administered in the King's name, originally through the Shirereeve (who subsequently became the Sheriff) and later through the Magistracy and the Court of King's Bench. The framework of our judicial system, built on such pillars as the Assize of Clarendon (1166), the Statute of Winchester (1285) and the Bill of Rights (1688), excludes all possibility of the application of martial law to the administration of civil and criminal justice.

The nearest approaches to a state of martial law which England has known were in the reign of Charles the First, which led to the famous declaration in the "Petition of Right" (1628), and again in 1655, in the appointment by Cromwell of his Major-Generals, each assigned to one of the twelve regions into which England and Wales was divided, and largely endowed with inquisitorial and penal powers. The major-generals remained under the personal supervision of the Lord Protector, and exercised powers which exceeded and indeed superseded those of the constitutional ministers of the peace. Originally instructed to "co-operate with other Justices of the Peace," the soldier magistrates were provided with a special force of militia, 6,420 strong, all but two hundred of them mounted, their cost being defrayed by a tax imposed on the estates of the Royalists.* Unconstitutional in form, and

* *History of Police in England*, Melville Lee.

unpopular with the people, Royalists and Roundheads alike, the major-generals' power survived but two years, although it may be claimed in their favour that having regard to the difficulties of the times their work was effective. Cromwell's regions may not have been dissimilar in character to the twelve regions, created in 1939 by the exigencies of Civil Defence, presided over by "regional commissioners," except that the regions of 1939 differed from those of 1655 in that the powers of the commissioners do not extend to the administration of justice and are concerned alone with the functions of the executive.

The programme set before the major-generals comprised measures "for the security of the peace as a nation, the suppressing of vice, and the encouragement of virtue." * Horse racing, cock-fighting, and bear baiting were to be forbidden, drunkenness, blasphemy and sabbath-breaking were to be severely punished, and ale houses, not absolutely necessary for the refreshment of travellers, were to be suppressed. The duties of the soldier-magistrates also extended to aliens, the re-distribution of seized and confiscated weapons, weights and measures, vagrants and the suppression of gambling. The Regional Commissioners' Act, 1939, by way of contrast, applies only to regional and deputy regional commissioners appointed by His Majesty for the co-ordination during a period of national emergency of measures for Civil Defence which fall to be promoted and administered by the central government departments and local authorities.

In time of peace, "Martial law, in the proper sense of the term, in which it means the suspension of ordinary law and the temporary government of a country or parts of it by military tribunals, is unknown to the law of England." † Thus Professor Dicey; but with regard to war time, "Martial law, in the sense in which the expression is here used, means the power, right and duty of the Crown and its servants, or, in other words, the Government, to maintain public order, or, in technical language, the King's peace, at whatever cost of blood or property may be in strictness necessary for that purpose." Hence martial law may come to be a necessity, when and where

* *History of Police in England*, Melville Lee.
† *Law of the Constitution*, Dicey.

the King's peace cannot be maintained. "This power to maintain the peace by the exertion of any amount of force strictly necessary for the purpose is sometimes described as the prerogative of the Crown, but it may more correctly be considered, not only as a power necessarily possessed by the Crown, but also as the power, right or duty possessed by, or incumbent upon, every loyal citizen of preserving or restoring the King's peace in the case, whether of rebellion or generally of armed opposition to the law, by the use of any amount of force whatever necessary to preserve or restore the peace. This power or right arises from the very nature of things. No man, whatever his opinions as to the limits of the prerogative, can question the duty of loyal subjects to aid, subject to the command of the Crown, in resistance, by all necessary means, to an invading army. Nor can it be denied that acts, otherwise tortious, are lawful when necessary for the resistance of invaders." *

Accordingly there may be interference with personal freedom and with rights of property, and in certain circumstances "a general and his soldiers acting under the authority of the Crown may lawfully do acts which would otherwise be an interference with the personal liberty, or even, under conceivable circumstances, which may cause the death of British subjects, if these acts are a necessary part of military operations. The point to be borne in mind is that the power to exercise martial law, which is not ill-described by an expression known by the American Courts, *viz.*, the 'war power,' as it originates in, so it is limited by, the necessity of the case." †

From the same source comes the statement that "martial law is merely a cessation from necessity of all municipal law, and what necessity requires it justifies." Another authority is quoted by Professor Dicey in the following terms: "The only principle on which the law of England tolerates what is called Martial law is necessity; its introduction can be justified only by necessity; its continuance requires precisely the same justification of necessity; and if it survives the necessity on

* *Opinions on Constitutional Law*, Forsyth.

† *Opinion of Sir John Campbell and Sir R. M. Rolfe*, Forsyth.

which alone it rests for a single minute, it becomes instantly a mere exercise of lawless violence." When circumstances render it impossible for Courts of Law to sit, or to enforce the execution of their judgments, it becomes necessary to find temporary substitutes for them, and to employ for that purpose the military, which is the only remaining force in the community. "While the laws are silenced by the noise of arms, the rulers of the Armed Force must punish, as equitably as they can, those crimes which threaten their own safety and that of society; but no longer." *

The existence of martial law on this basis, taken in combination with the rules of the common law as to the duty of loyal subjects, gives very wide authority to all persons, and above all to the military commander. "He holds the armed forces completely under his control; they are governed by military law; so too are all citizens who, though not in strictness soldiers, are persons subject to military law; and in this connection it must be remembered that the King and his servants have the right to call for the help of every loyal subject in resisting invasion, whence it follows that the number of persons subject to military law may be greatly, indeed almost indefinitely, increased. . . ." †

From Halsbury's *Laws of England*‡ we learn that in time of peace the Crown may not issue commissions to try civilians by martial law. "But when a state of actual war, or of insurrection, riot or rebellion amounting to war, exists, the Crown and its officers may use the amount of force necessary in the circumstances to restore order, and this use of force is sometimes termed martial law. When once this state of actual war exists, the civil courts have no authority to call in question the actions of the military authorities; but it is for the civil courts to decide, if their jurisdiction is invoked, whether a state of war exists which justifies the application of martial law. The powers, such as they are, of the military authorities cease and those of the civil courts are resumed *ipso facto* with the termination of the state of war; and, in the absence of an Act of Indemnity, the civil courts may enquire into the legality

* *Opinion of Sir John Campbell and Sir R. M. Rolfe, Forsyth.*
† *Ibid.*
‡ Second Volume, Volume VI, p. 498.

of anything done during the state of war; even if there is an Act of Indemnity couched in the usual terms, malicious acts will not be protected. Whether this power of using extraordinary measures is really a prerogative of the Crown, or whether it is merely an example of the common law right and duty of all—ruler and subject alike—to use the amount of force necessary to suppress disorder, is not quite free from doubt. It is, however, clear, that so-called military courts set up under martial law are not really courts at all, and so the writ of prohibition will not issue to restrain them. Probably the correct view to take of martial law itself is that it is no law at all."

The judgment of Lord Halsbury, in one of the numerous cases which arose from the military operations in South Africa in the early years of the present century, may usefully be quoted: "It is by this time a very familiar observation that what is called 'martial law' is no law at all. The notion that 'martial law' exists by reason of the proclamation . . . is an entire delusion. The right to administer force against force in actual war does not depend upon the proclamation of martial law at all. It depends upon the question whether there is war or not." *

Again, quoting from Halsbury's *Laws of England*: "The term martial law is also used to express the powers exercisable by the general in command of an army in a hostile land over the inhabitants thereof, and it is this species of martial law which the Duke of Wellington had in his mind when he described it as the will of the general in command of the army. But martial law in this sense is quite outside the range of municipal law: 'Martial law must be distinguished according as it is a foreign or international fact or as it is a domestic or municipal fact.'"

The Duke of Wellington spoke thus in the House of Lords: "Martial law is neither more nor less than the will of the general who commands the army. In fact, martial law means no law at all. Therefore the general who declares martial law, and commands that it shall be carried into execution, is bound to lay down distinctly the rules, and

* *Tilonko v. Att. General of Natal* (1907) 23 T.L.R. 21.

regulations, and limits according to which his will is to be carried out." *

Another authority, Professor J. Erskine Holland, in his book *The Laws of War on Land*, laid down a number of general principles, based on the Hague and Geneva conventions and the rules agreed between the High Contracting Parties, in which reference is made to the justification for the application of martial law. The rules are reproduced below in so far as they relate to the subject of martial law, minus the footnotes and authorities upon which the author relied:

1. The object of war is to bring about the complete submission of the enemy, as speedily as may be, and with the least possible loss of life and damage to person or property.

2. Military necessity justifies a resort to all measures which are indispensable for securing this object; provided that they are not inconsistent with the modern laws and usages of warfare.

3. These laws and usages prohibit all needless cruelty, and even needless destruction of human life, or of property. They permit, on the other hand, that an invading army may, on grounds of military necessity, devastate whole tracts of country, burning dwellings, and clearing the district of supplies. In this case, it is, however, the duty of the invader to make the best provision he can for the dispossessed population.

4. Martial law consists of such rules as are adopted, at his own discretion, by a commander-in-chief in the field, supplementing, or wholly or partially superseding, the laws ordinarily in force in a given district. He will, for instance, treat certain acts as offences. He will decide upon the means to be taken for ascertaining the guilt of persons charged with such acts, and the punishment to be inflicted on such persons, if found guilty. He should, so far as may be, make generally known the principles by which he intends to be guided.

5. Martial law, as thus defined, must be carefully distinguished from "military law," *i.e.*, for the British Army, that fixed body of rules, now contained in the Army Act, 1881, as

* Hansard, Third series, cxv, 881.

continued in force by the Army (Annual) Act, which is applicable, in peace or in war, at home or abroad, to "all persons subject to military law," and to such persons only.

6. In exercising his discretion in the administration of martial law, a commander should always be guided by the laws and customs of war, as generally accepted.

7. Punishment under martial law should, as far as possible, be inflicted only after enquiry by a military court, convened for the purpose. (Such a court is not to be confused with a court martial, since that term is applied, in the British Army, only to a court instituted under the Army Act for dealing with offenders belonging to the British Army.)

8. Martial law is most stringent when hostile armies are face to face. It may be less stringently applied in districts which are fully occupied than in those in which a renewal of hostilities may probably be expected.

9. Martial law applies to all persons, and to all property, within the district over which it is in force, irrespective of the nationality of such persons, except in the case of diplomatic agents accredited by neutral states to the territorial sovereign.

14. In time of invasion, or in expectation thereof, exceptional powers are often assumed by the executive government of a country, acting usually through its military forces, with a view to resisting the invasion or to the maintenance of good order within its own territory. The lawfulness of the measures then taken, which are conveniently, though not necessarily, preceded by a "proclamation of martial law," or some equivalent notification, is a question not merely of international law, but also, and more especially, of the national law of the country in question.

There remains to be consulted the Manual of Military Law, which is published under the authority of His Majesty's Stationery Office, and in which the distinction is carefully drawn between "martial law" and "military law." Military law is the law which is to be distinguished from the Civil law in that it relates to and is administered by military courts, and

is concerned with the trial and punishment of offences committed by officers, soldiers and other persons who, for the time being, are subject to the same law as soldiers. The prime object of military law is the maintenance of military discipline and efficiency within the Army. The attempts of Charles the First to issue commissions for the execution of martial law were finally frustrated by the Petition of Right in 1628, and proved to be the last effort in England in which the operation of the traditional machinery for the administration of justice was brought into question. "Military law," therefore, must be clearly distinguished from "martial law," the latter meaning "the suspension of ordinary law and the government of a country or parts of it by military tribunals." In 1640 it was held that martial law could not be executed in England "but when an enemy is really near to an army of the King's." The writer of the Introduction to the Manual of Military Law (Lord Thring) makes the following reference to the absence from English law of the *Loi sur l'état de siège*, or Declaration of the State of Siege, which is known to the law of other nations.

"The law of most foreign countries recognises an intermediate stage between war and peace, known by the name of the state of siege, under which the ordinary law is suspended for the time being by proclamation, and the country is subordinated in whole or in part to military authority by proclamation, but such a state of things cannot exist under English law, which never pre-supposes the possibility of civil war and makes no express provision for such contingencies. In short, although in the arbitrary times of our history attempts were made to apply military law to the civil population, such attempts have long been recognised to be illegal. Martial law, in the proper sense of the term, can be established in the United Kingdom or in a self-governing British Possession only by an Act of Parliament or of the local legislature."

Professor Dicey* draws four conclusions to his authoritative survey of the question of martial law: (i) martial law cannot exist in time of peace; (ii) the existence of martial law does not in any way depend upon the proclamation of martial

* *Law of the Constitution.*

law; (iii) the Courts have, at any rate in time of peace, jurisdiction in respect of acts which have been done by military authorities and others during a state of war; and (iv) the protection of military commanders and others against actions or prosecutions in respect of unlawful acts done during a time of war *bona fide*, and in the service of the country, is an Act of Indemnity.

So much for the authorities. With the advances made in the present century in the general efficiency of the Police, and in measures for the co-ordinated activity of police forces in England and Wales, it is not possible to conceive of conditions arising in which the necessity for the application of martial law in this country would be justified. Moreover, by the provision made through the Administration of Justice (Emergency Provisions) Act, 1939, the Lord Chancellor is enabled to remove, modify or vary the normal sittings of the several courts in order to meet any special circumstances which may arise through the effect of war.

To sum up, the principle which limits the right of a military commander to create a state of martial law "is the same principle which determines the rights and duties of magistrates, of constables, and of loyal citizens generally when called upon to disperse or prevent unlawful assemblies or to suppress a riot."* All the King's subjects enjoy the advantages of the broad and fundamental principle of English law that the subject is presumed to possess at all times in England his ordinary common law rights, and especially his right to personal freedom.

F. T. T.

* *Law of the Constitution, Dicey.*

Hints for Young Detectives

BY DET. SUPERINTENDENT ARTHUR PELLING
County Borough of Brighton Police

PERSONAL QUALITIES

WHEN a young officer enters the C.I.D. he usually has a vague and queer idea as to the way in which the work is carried out. He quickly finds that it is not run on the lines adopted by Sherlock Holmes, and possibly for the first few months he is engaged on circulations, Crime Index and interviewing callers, etc.

Eventually he is drafted to a district and shown "the ropes" by an experienced officer. He soon begins to realise that he requires to have imagination, a good stock of patience, tact, courtesy, a sense of fairness and consideration for prisoners and, above all, *just common sense*.

As he proceeds he will become possessed of an immense and intimate knowledge of the private lives of many people. Yet he must never hint at or make this knowledge public. Imagine the social mischief that would ensue otherwise.

In the course of his daily duties, the detective will encounter many matters of much difficulty upon which he must decide on the instant. Unlike the solicitor, who can refer to his musty law books and generally has time for reflection, the detective must carry his knowledge of law and duty in his head.

There is only one way in which he can do this. He must be prepared. If he makes a wrong decision, he is likely to come in for plenty of criticism in the courts. Indeed, it sometimes appears that the detective is as much on trial as the prisoner. Too frequently His Majesty's Judges administer severe rebukes.

I would recommend any young detective not to be

afraid to ask questions of his superiors. Sometimes he has the mistaken notion that by doing so he is showing ignorance; but he should remember that questions are both good for the one who asks and for the one who must reply.

After a man has been on the streets for a few years, he acquires certain habits and mannerisms. On transfer to the C.I.D. he should endeavour to forget them. For instance, he should drop the "policeman's measured tread." It is said that a crook can smell a "busy." On the other hand, an experienced detective's intuition readily recognises a "crook."

In matters of dress, a young detective should adopt attire suitable to all walks of life. At one moment he may be interviewing a titled person at her hotel regarding her jewellery which is alleged to have been stolen but which invariably has been mislaid, and the next he may be turning over the occupants of a lodging house in connection with a case of wounding. He must adapt himself to the circumstances of each case and the people involved.

I recommend perfect loyalty on the part of the young detective to his Chief Constable and his superior officers in his department. Remember that the harmony, contentment and good working of the branch depend to a great extent upon the loyalty of each individual member. My experience has been that where there is contentment there is also efficiency.

It should be remembered also that detectives usually get better results with team-work, and although occasionally an individual brings a case to a successful conclusion through his own initiative, perseverance and energy, generally speaking the Criminal Investigation Department should be regarded as a team, each helping the other for a common purpose. In a major crime such as murder, practically the whole of the Investigation Departments of the country may be brought into one big team, each doing its part. It is a matter of national importance and should not be regarded as somebody's local crime.

One's powers of observation are of the greatest importance to the young detective. When sitting in a public vehicle, try making a mental note of the features and description of other passengers, their clothing, mannerisms, etc., and after

a time you will be doing this instinctively, to your great advantage.

When giving evidence, "Stand up," "Speak up" and "Shut up." By this I mean stand properly to attention, speak up so that everybody in court can hear you, and under cross-examination answer questions as shortly as possible. "Yes," "No," or "I don't know" are the best answers. Remember that the more you say in your replies, the more material you are supplying to Counsel for him to "fire back." Always be polite and don't lose your temper. Have confidence in yourself and those dealing with the case will have confidence in you; if an officer gives his evidence inaudibly, some doubt might be entertained as to whether he is speaking the truth.

In all branches of the Service, discipline is, of course, most important; but in the C.I.D. a little more rope is allowed. A detective is more or less his own master and must of necessity be given a certain amount of freedom. It is a matter of trust, and the licence thus given should never be abused. Take orders and obey them. One who cannot do this will never be in a position to give them.

Of all the duties that an officer can be called upon to perform, those of a detective are certainly not the least important, and his labours should be full of interest.

One quality demanded is *absolute accuracy* in the sense of being exact. Do not be content with the evidence of third parties or "hearsay" when it is possible to ascertain the truth with your own eyes or by more minute investigations.

The detective must know men, and the knowledge of human beings plays an important part in his work. Every person with whom he comes into contact may be taken as an object of study. Swiftiness in reading men is a wonderful asset, and something can always be learned from even the biggest fool.

Be agreeable in your manner. Calmness and absence of passion are indispensable, particularly when interviewing a suspect. There are always two ways of doing a job. Do not be over-officious. Do your job as pleasantly and as decently as possible. Above all, be fair.

When you have landed your prisoner inside for a term he

will not, providing you have given him a straight deal, bear any malice. He is more likely, when he gets out, to come and ask for a few shillings to be going on with.

PRISONERS AND SEARCHING

Remember when you make an arrest that you are the custodian of the prisoner. See that you land him inside; try to weigh him up and do not take risks.

Quite recently I had occasion to speak to an officer who was taking a statement from one of those fellows. As I passed the office, the door of which was open, I saw the prisoner sitting near the door and the officer on the other side of the prisoner busily writing. As far as I could see there was nothing to stop the prisoner making a run for it with a reasonable chance of getting away. That man had twelve months staring him in the face and, as a matter of fact, that is what he got. Sometimes it is good to put oneself in the prisoner's shoes. I know what I should do if I saw a good chance of escape. How often has a prisoner bolted just at the entrance to a police station?

Must we all have one of these unfortunate experiences before we take sufficient care? Do not take silly risks. Be on your guard. The consequences of losing a prisoner might be serious.

Suppose a young detective is sent a long distance to escort a prisoner back. He should not settle himself in a train and think there is nothing to worry about until he arrives at his destination. He should run over in his mind what his mission is. He may have to cross London on his return—on the Underground. Why not get the return tickets on the way up?, then there is no bother when coming back with the prisoner.

On a long journey, make a note of the ticket number in case of loss. Have you got your handcuffs? You may need them. On arrival the prisoner and his property are handed over to you. On your arrival at your home town do you search him again. It would not be the first time that something has been found during the second search.

Some time ago a constable brought, on description, to the police station two young men who were suspected of

housebreaking. One of them asked to use the lavatory. The constable conducted him there and remained outside. The result of this was extra work and no end of questioning for the C.I.D. Nothing incriminating was found in the possession of the men and they denied the offences, until somebody went to the lavatory and there found a screwdriver and revolver. When confronted with these articles, the one who had been to the lavatory confessed to thirty-four cases of housebreaking and larceny. He further admitted that he had thrown several pieces of stolen jewellery down the lavatory, and these were never recovered. All this because the constable did not search his man before allowing him to go to the lavatory.

Some officers are a little timid about searching. They are possibly afraid of an action for assault; but if you have taken an innocent man inside, the damage is done, and you cannot make it any worse by searching him at once.

How many times has property been found in the various detention rooms? Simply because the prisoners are not searched at once. Directly a uniform man brings in a prisoner for crime, it is the duty of a detective to take charge. I do not mean take the case away from the constable, but to supervise and see that everything that should be done *is* done. Search at once, and search properly.

I remember being called to a jeweller's shop some time ago over a valuable ring that was missing. We brought in a respectably dressed man and woman who were suspected. We searched the man, and the matron searched the woman. The ring was not found, and without it there could be no charge. The matron affirmed that she had searched thoroughly, but she was asked to have another go. This time the ring was found in the woman's vagina.

Never take your eyes off a prisoner until he or she has been properly searched. On one occasion, with another officer, I arrested a woman suspected of a series of cheque frauds. Looking at her made us wonder if we had made a mistake. But what happened? We took her to the nearest police box, and while I was telephoning for a vehicle I happened to look round—just in time to see her put something to her mouth. I pulled her hand away and discovered little tablets which were

afterwards found to be a fatal drug. What would our position have been if she had taken them?

Talking of women, never interview one alone if you can possibly avoid it. Some of them are dangerous creatures and you might have a serious accusation levelled at you.

There are all sorts of difficulties where the fair sex are concerned. Your would-be prisoner might be in bed and refuse to get up. If so, get a woman's assistance.

I remember one woman who had to dress while the officers remained outside the door. They heard the noise of a window being opened, but they were too late. She was on the ground, having jumped from the second floor and had broken her thigh. Always be within arm's length of your prisoners. One that I know of took a header through a window, taking glass and part of the frame with him. He got away and had several months at liberty, during which he wrote several letters to the officer concerned explaining in quite definite terms what he thought of him, and in addition there were no stamps on the envelopes.

What is the feeling like, coming back to the station empty-handed, having lost your prisoner? Remember the fate of Sergeant Willis at Cambridge. He, and two other persons, were shot and killed when he went to interview a man suspected of cheque frauds. The table separated the suspect and the officer. Therefore keep your suspect within arm's length. When you are going up or down stairs, always keep your man between you. If you are alone take hold of him.

THE IMPORTANCE OF DESCRIPTION

When taking a description of a suspect, do not be put off readily but go into detail, and you will find that you will get quite a good description from a person who probably at first said "I cannot describe him."

Distinguishing characteristics can be sometimes obtained by a little extra trouble and are well worth while. In the same way when reading a description of a wanted person look for any outstanding features in appearance or dress as an aid to identification. On the other hand one must not always pay strict attention to descriptions; as an instance I quote the

case of a housebreaker who was caught in a clergyman's house, but who escaped before Police could be summoned. The description furnished and circulated by wireless included the fact that the wanted man was wearing a bowler hat. Shortly afterwards a constable saw a man answering to the description not far from the scene of the crime, but as the man was wearing a soft trilby hat he considered he was not the man. A few minutes later a second constable challenged the same person, who promptly made a "run for it" but was captured, and this constable was properly commended.

This reminds me of a difficult situation that taught me two lessons. We had several complaints regarding a young man described as good looking. His M.O. was to make the acquaintance of holiday girls and to obtain articles of jewellery from them on the pretence of having some minor repair done or as a pledge of good faith that the girl would meet him on some future date. Needless to say the girls saw him no more.

We were furnished with a good description, which included a distinguishing characteristic, and after some enquiry we located his address. On calling there we were informed that he was out. We were not particularly welcome at the house and there was only one thing to do—keep observation from outside.

After we had waited for nearly four hours, the suspect came along. The time was 11.30 p.m. We allowed just sufficient time, as we thought, for him to settle down, and then walked straight in. The landlady's face was not too reassuring, but she said that he had gone to the lavatory. Out to the back we went, but "handsome" was not there. My colleague went over the walls to the left and I went over those to the right. It was pitch black and, like "good" detectives, neither of us had a torch. (That was one lesson. When out after dark *always* carry a torch. It need only be a small one.)

I saw a light in the rear of a house and asked myself if "handsome" had gone through there into the street, so I knocked on the back door. I heard a man shout and a woman scream. Then there was a heavy dull thud. The woman had dropped in a dead faint, and she weighed about fourteen stone. I remember what the husband called me, and at the time I had

visions of the woman's death from heart failure. In the middle of the commotion I heard a voice call out "Here I am, sir. I will not give you any more trouble."

I went over the next five walls in good style, came back with my prisoner, and made apologies to the furious husband, which he did not seem to appreciate. However, the prisoner got nine months, so all was well.

The above instance made me wonder if direct or indirect enquiries are best. In this case we did not know the occupants of the house and the result would, perhaps, have been less unfortunate if an indirect enquiry had been made. I afterwards ascertained that the landlady "tipped off" her lodger directly he entered the house. It is an asset to know at least one reliable person in every street.

OBTAINING INFORMATION

An experienced police chief once said to me, as a result of a question I put to him, "The fellow who is good at making enquiries will invariably make a good detective." He was right, because such a policeman reveals certain qualities necessary in the detective.

It will be realised quite early by the young detective that a great deal of his time will be spent in making enquiries in order to obtain information. There are two factors which stand out in detective work. They are: (a) The public has in its possession most of the information which the detective wants, and (b) it takes a good deal of tact and perseverance to get it.

A little information automatically drifts into the detective branch of its own accord, but otherwise a good deal of ground has to be prepared before it comes in just when we want it. Points of contact with people who are friendly disposed towards the Police must be established. This work repays itself in course of time. In return you must always support your informant and indicate your appreciation of his help.

When Police are requiring particular information it usually only comes as a result of close and persistent enquiries. In these enquiries lies the basis of the future success of the young detective. The work must be done thoroughly: his

whole interests must be wrapped up in detective work before he can make a success of it. He must be no eight-hours-a-day man, and his mind must be on his job, even when he is off duty.

SCIENTIFIC AIDS

Scientific Aid has in recent years played a prominent part in the evidence for the prosecution, and although, as a general rule, it does not assist you to catch your man, it does materially assist to convict him. I quote briefly just one perfect example in which, without scientific aid, the evidence otherwise available would not have been sufficient to launch a prosecution. I therefore recommend a close study of this aspect of your work; it can never be wasted time from the point of view of the young detective.

During the early winter months of 1938 we were troubled with a series of safe-breakings, and on the 3rd November yet another was reported. The premises concerned were those of a wholesale leather merchant. Entrance had been forcibly effected and the backs of two safes had been ripped off, and about £80 stolen therefrom.

Samples of the safe ballast were taken, and a few days later a local prostitute, when interviewed, stated that two male acquaintances, who were more or less without means prior to this robbery, were certainly in funds following it. They had been spending money freely; further, they were wearing new clothing.

Enquiries at outfitters revealed that these men had purchased new suits locally on the morning the theft was discovered, had changed to the new clothing in the shop, and had requested that the old clothing be delivered to a certain local address. This was immediately followed up, with the result that the clothing was recovered in the parcels as delivered from the shop.

Dust extracted from the clothing by vacuum at the Metropolitan Police Laboratory was forwarded to Dr. H. S. Holden, Forensic Science Laboratory, Nottingham, together with the original samples of safe ballast. These samples were found to contain sawdust of a very unusual combination, i.e. poplar, pine, mahogany, and Douglas fir. An examination

of the dusts from the clothing revealed the same unusual combination. In addition, the Doctor was able to say that particles of pale green paint found in the dust extracted from one of the jacket pockets were identical with that from the interior of one of the forced safes.

The jury did not hesitate over their verdict, and when one of the prisoners was sentenced to penal servitude and the other to a substantial period of hard labour, our troubles with regard to safe-breaking ceased, anyway for a time. There is little doubt that these two men had been responsible for a number of similar offences in London and the Home Counties; but for Scientific Aids they would doubtless have been responsible for many more.

To secure a cast of the rifling of a gun or revolver, melt down a quantity of hard white wax (*cera alb*) and add black lead sufficient to colour it a dark grey. Oil the barrel well with a pull-through and stop up one end with cotton wool. Pour in the hot wax and allow to set. When set, remove the cotton wool and push the cast gently out.

For metal casts of impressions an alloy as mentioned below melts quite easily in boiling water and sets very hard in a reasonable time. The cast is made in a mould fitted round the impression, the whole being greased or oiled before the metal is poured in. This alloy is similar in form to "Wood's Metal" but has a slightly lower point of fusion.

Tinsmith's solder	35%	Lead	5%
Bismuth (metal)	45%	Cadmium	15%

By way of conclusion, I recommend that thoroughness be applied in every case you investigate, be it large or small. The seemingly unimportant things mean so much in criminal investigation and are frequently of vital importance. Give attention to your health by endeavouring to keep fit in mind and body, and you will be alert. Education is an asset, but the best "thief catcher" is not always so blessed. Exercise care and perseverance, and your efforts will undoubtedly be recognised and rewarded.

The Value of Dogs to the Police*

By H. S. LLOYD

IN April 1934 a Home Office committee with Lieutenant-Colonel W. D. Allan, O.B.E., as chairman, was formed to consider the possibilities of dogs as auxiliaries to the police forces, and after careful deliberation it was decided to start, in a very small way, experiments to discover the ideal dog for police work.

At the commencement it was thought that dogs for general utility purposes, to undertake all the duties for which they might be called on, could be discovered. Early on, however, experiments proved this to be impracticable.

The distinct difference between dogs and hounds is greater than the average man imagines. A dog, when once he gets to like his handler and is properly trained, works for the pure love of pleasing his handler, and can be trained to do almost anything if harmony exists between his handler and himself. There is no limit to an individual dog's intelligence and desire to please, if steadily persevered with.

The hound, on the other hand, seems to work entirely on his own, by inherited instinct, and has little or no affection for his handler, or any desire to please him, but hunts to please himself. Also, when once he is distracted from his quest, he takes no interest in his task.

Thus it will be seen that for a protective and patrol dog, the hound had to be ruled out entirely, and a dog more pliable and more humanised was searched for. After extensive tests the selection fell on Labradors, experiments proving that a greater percentage of success was obtained from these than from any of the other varieties used. Pressure was brought to

* A lecture delivered at the Annual Meeting of the Chief Constables' Association at Cambridge in 1939, and here printed by courtesy of the Association and of the lecturer.

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bear from many outside sources to embrace bull-mastiffs, and Alsatians. The former were given opportunities, but proved far too heavy and clumsy for the job, by no means active enough; and although their presence looked forbidding, their accomplishments were not impressive. With regard to Alsatians, public opinion was rather against the use of these, and the Committee dealing with this matter wisely refrained from making use of them, as so many cases are on record in which they have proved to revert to native.

Two distinct sections were then formed, (1) for tracking, and (2) for patrol and protective work, particularly for officers on night duty.

Having reached this stage, bloodhounds were tried out for tracking, and it was quickly found that those tried lacked stamina, their constitution being delicate; but it was also apparent that they certainly had wonderful scenting powers, which gave indication that any other breed would have to possess super qualities to supersede them, their lack of stamina being the great drawback.

Casting around for other good-nosed hounds, experiments were made with Fellhounds, and unfortunately the first hound tried proved most successful; the effort was most misleading, as although this first one tried was a complete success as a tracker, it was most difficult for a man on foot to keep up with, and was terribly misleading. After securing a score or more of the hounds, none of these in any way approached the standard of the original hound, and although demonstrating degrees of success collectively, they were hopelessly inadequate when worked singly, having no inclination when once the line had been faulted to persevere and recover lost ground, preferring to "cast forward" in the hope of accidentally running into their quarry, or giving up entirely.

After discarding Fellhounds, a start was made with otterhounds, from the Dumfries and Windermere packs, and a certain amount of success was obtained; preconceived ideas, however, were strongly against them, previous experience showing that otterhounds were all too prone to leave an original scent in favour of a newer and stronger one. Sufficient knowledge, however, had been gained to realise that the

otter-hound had many points in his character that were well worth preserving and persevering with, particularly the sensitive nose, stamina, and hardiness.

From these findings it was decided to cross otterhounds with bloodhounds, which undoubtedly claim common ancestry and are remarkably alike in essential points, the otter-hound having the same outline, tail carriage, size, colouration, and slightly similar head, but carrying a wire-haired coat as opposed to the smooth skin of the bloodhound; also the overhanging brow, dewlap and bloodshot eyes are not so exaggerated in the otterhound.

Two otterhound bitches, obtained from the Dumfries and Windermere packs, were mated with a fairly strong-constituted bloodhound, whose nose had been proved, and the results are only just now coming to maturity, as it has definitely been established that a hound of one to two years does not possess the qualities of one of four years old. Apparently hounds reach maturity and sensibility at a later date than most dogs.

The results now being obtained appear to justify the cross, and may be taken a step further.

At a later date I imported two bloodhound bitches from America, both trained for police work, and both in whelp to a famous trained hound. From these two litters five hounds have been selected, and at least two already show every indication of becoming excellent trackers. They are bolder than our English hounds, and their stamina seems excellent. Curiously enough, neither of the imported bitches, themselves, have given much of a show at tracking here. This may, however, be due to the climatic conditions being so different, as cases are frequently reported of thoroughly trained gundogs exported from this country to India and other hot countries being useless with their noses for the first season. So one need not yet despair of these imported hounds.

In a recent issue of *The Field*, great prominence is given to a most interesting article by Major-General Sir Thomas Russell Pasha, on his experiences in Cairo with a police-trained Alsatian, which after four days tracked and identified the criminal. The performance is a wonderful one, but in assessing it one must take into consideration the different conditions

existing as compared with England. There was no motor traffic with its oil leaks and petrol odour to overcome, and little or no crossing of the line by other individuals. All credit must be given to the dog and handler for this marvellous performance, but I venture to suggest it would have proved impossible in England.

Recently at the request of the G.P.O. efforts were made to discover the shortings in the cable of a new broadcasting receiving station erected near Rochester. Several miles of cable had to be dug up if the leakages could not be ascertained from the surface. After careful thought and collaboration with the P.O. Chemical Experimental Staff, it was decided to endeavour to teach a dog to recognise a very pungent odour. In this case mercaptan-amyl was tried, and once the dog became proficient at discovering this, an effort was made at Rochester after the gas had been pumped through the metal containers through which the cable is carried. The dog, a Labrador, discovered fourteen leakages. After these had been repaired a further test was made, one leak being confirmed by the dog. This has enabled the G.P.O. successfully to start operations at the Station.

Adverting to bloodhounds, it has been found that the further one travels from these the less likelihood there is of success. If stamina can be improved and maintained, there is no reason to doubt that bloodhounds or bloodhound crosses are the ideal dogs for tracking, as they have the persistence no other hound possesses, and will constantly re-trace and re-cast their tracks if they feel themselves at fault; no other hounds or dogs attempt, so far as these experiments show, to *prove* themselves correct.

I have proved this to my own satisfaction with young hounds, by getting the man whom the hounds are tracking to tie white cotton on hedges, some 6 ft. above ground, where he makes his turns. Following the hounds closely, it has been noticed that when they reach these, what may be described as right or left angle turns on the track, the hounds immediately raise their noses and endeavour to climb up the bushes to where the cotton is tied, to satisfy themselves that they are correct in continuing.

Bloodhounds rarely "cast forward," by which I mean go blindly quartering on like other breeds, in the hope that they may eventually hit the line again, but immediately they are in doubt they return on their tracks and endeavour to discover where the loss of scent occurred. It is a most curious trait, and appears to be possessed by the bloodhound breed alone.

There appears every possibility that bloodhounds may again be bred up to a hardy standard of proficiency and stamina.

One of the greatest difficulties to surmount was the weakness of bloodhound puppies at birth, probably due to the abnormal size of the litters; from three bitches bred from, the average litter numbered fifteen.

To overcome this, calcium was injected, and fed to the pregnant bitches, and cross-bred or lurcher foster mothers arranged for which were also treated with calcium. The puppies from these latter were destroyed, and the lustiest bloodhound pups reared by them. These puppies appear very much stronger than previous litters, and have been hardily reared, having stood up to weather conditions admirably.

Here it may be wise to mention that in the opinion of people in a position to voice their views, it is not entirely a question of the bloodhound having lost his nose, but more likely the fact that breeders during the last few decades have rarely thoroughly trained and kept at work their hounds, most being retained purely for Show. Bloodhounds, in the main, are kept entirely by people of substance—as they undoubtedly are an expensive luxury—and have become merely their playthings. Enquiries made have elucidated the information that their training and hunting efforts have been entirely spasmodic, and were controlled entirely by the social engagements of their owners, a most unsatisfactory state of affairs, and one that must of necessity prove of great harm to bloodhounds.

Since the Home Office has taken up this work, the bloodhounds have been worked constantly at practice, say three times a week, and it has always been the earnest endeavour in all these practice runs to make the victim so easily found that the hound eventually acquires a superiority complex, and

realises that he can easily find the man he is tracking. It has been proved that it is fatal to let a hound, during his education period, fail to get his quarry. Interest has been maintained for the hound by always rewarding him at the end of the run. This creates a lot of labour, as if the quarry were to take with him a piece of meat or other delicacy, the probability would be that the hound would be hunting that scent and not the scent of the actual man. Consequently the meat has to be delivered to the man from the opposite direction by an entirely neutral individual, whose scent has not crossed the line. It is found that to hunt the same man in training is the wisest course. A new scent thus becomes a treat to them, when they are actually used for practical purposes.

Commander Legge, whose district is the nearest to the training Kennels, has called in the assistance of the hounds on ten occasions since the experiment started, and I am very much indebted to him for a summary of these cases, which makes very interesting reading. It is as follows:

"Called in 10 times since 1936. On two occasions the missing person had been found before the arrival of the hounds; on six occasions we were satisfied that the hounds took the right lines.

"(1) In one instance at Wellington College in 1938, a pig killing affair, the hound discovered a bloodstained envelope which had been missed by the officers making the search. The finding of the envelope was regarded by the Police as of the greatest assistance.

"(2) Housebreaking at Cumberland Gate, Windsor Park.—The hound took up the scent 7 hours afterwards, from a book dropped by the thief, and took a line across country, leading the Police in a certain direction. The thief was eventually captured a quarter of a mile further on. Scent was foiled on the last part of the line by the presence of a large number of road workers.

"(3) Man missing at Welford in February of this year—hound followed trail for 1½ miles to main road. The man had returned home. Line taken by hound was verified by him as correct.

"(4) At Hungerford in April a hound followed the trail of a man to the river, and the body was recovered from the water immediately opposite where the hound stopped."

These are a few of the verified instances in which the hounds have proved their value as assistants to the Police.

Here it might be as well again to stress the fact that in all hound work the Police must realise that the hounds are only acting as assistants, and the intelligence of the police officers must be brought to bear should a hound lead the hunt to a certain spot and refuse to hunt further. This is where co-operation is so essential. Once the *direction* has been definitely established by the hound, it surely leaves play for the super-brain of the human, and it has been proved more than once that had the Police continued their search from where the hound lost scent (or faulted) they would have been able to bring the hunt to a successful conclusion.

Up to now, with few exceptions, the bloodhounds have more often than not been regarded in the nature of a joke by the Police. Frequently, after all human research has failed to discover a clue, the hounds have been brought to the scene, a most unfair proceeding, and one that must spell failure before a start is made. Not long ago a Chief Constable rang me up and asked me to send bloodhounds along, *three days* after a crime had been committed. It is definitely essential, particularly whilst a frost lasts, or in heavy rain, that a hound should be laid on without loss of time.

Many people, with little knowledge, imagine that they know something about the elusive matter called scent; but experienced Masters of Hounds and others, after years of research, usually admit that it is so elusive that one can only generalise, and no one knows a lot about it.

During the present experiments it has been proved that no two breeds of dogs pick scent in the same way. Some run confidently on the actual footprints, and these help most, as a bright intelligent handler can, on soft going, assist the hound; others run some 20 to 100 yards to windward, cut all corners off, and reach the quarry quicker than the persevering foot-by-foot hound.

Others, again, never appear to put their nose to the ground

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but lift the scent breast high, and when checked, cast either right or left with a forward action, in the hope of picking the line further ahead. These as a rule prove unreliable, as they are apt to be foiled by picking up a fresher line, and following this.

Many other variations of hunting a line have been recorded, but the worst offender of all is the hound that endeavours to "mark" the quarry, and once a hound gets its head up it rarely goes back to the scent. This is frequently noted in the hunting field with foxhounds.

This brings one to the conclusion that it is impossible to expect every bloodhound to hunt a line successfully, but that only certain picked individuals can really be relied upon.

I would impress on all police authorities that if they require the services of the hounds, application should be made immediately a crime has been discovered and not after everyone has trodden around and spoilt the scent. The handler and the hound would not be in the way of the other officers investigating the crime, as they should, on being given some article of the suspected person, cast wide from the surroundings and get well away if there is any scent at all available.

One Labrador, now in the Kennel, is equal to any bloodhound and is absolutely reliable, but he is utterly useless for practical purposes as he hunts faster than any man on foot could follow, and when it is considered that usually these chases represent an obstacle race, and a man on a horse or cycle would be handicapped considerably in following on to the kill, it proves that a fast hound is not required for this task.

It is gratifying to me to be able to report that one of the bloodhounds owned by the Home Office won the Bloodhound Field Trials last May in an hour quicker time than any of the other competitors.

In Palestine and South Africa, Dobermann Pinschers have been used with the greatest success, and I am in the fortunate position of having the opportunity to test them here for myself. At present I have in quarantine at Washwater, Dobermanns belonging to a police officer resident in Malacca, who has been so impressed by the work of these dogs in other countries that he is anxious to give them a thorough try-out

in the Straits Settlements. The Home Office have kindly allowed me to quarantine these Dobermanns. We shall have the chance, when once their period of isolation is over, of being able to work them under different conditions, and try to assess their properties and value in this country. There are great hopes that they will turn out the success they are claimed to be in their native land, and in the hot countries.

If successful at work, the only other trouble I can foresee is that they must of necessity prove a far greater expense than a native breed, as first there are the quarantine charges to meet and loss of six months of their life, then they will probably have to be re-trained to our words of command. If, as is hoped, a litter is born in quarantine, a start can be made to train them at an early age, and as these from all reports are particularly a one-man type of dog, better results possibly will be obtained.

The drawback, however, appears to arise when their education is completed and they have to be handed over to police officers. It will probably take a month or two before they really respond to their new master. However, the experiment is well worth trying.

THE POLICE PATROL DOG

The patrol dog for use with officers on night duty on the fringe of large cities and rural districts should prove of the utmost service in saving the man from surprise attacks, and in preventing and detecting crime.

A man patrolling with a trained dog will quickly observe—when once he gets to know his dog well—that the dog is so immeasurably more sensitive to any movement or presence of a person lurking in the dark. The attitude of the dog, and the way he creeps forward, are indicative of alarm, and there is no necessity for him to bark to warn his handler, if, as I say, he is an observant man.

In some respects there is divided opinion as to what the qualifications should actually be. Some Chief Constables advocate a dog that will actually bite; others say that to give the alarm by barking or deportment is sufficient; but it is

definite that the knowledge that dogs are being used by the Force on night work acts as a deterrent to crime.

As before stated, it was decided that Labradors and retriever crosses should be selected for this work, as generally speaking they prove easier to teach, having come from many generations of dogs which have been trained. But let it be understood that this by no means excludes other dogs of high intelligence, as there is no monopoly of brains in any one breed, and the further one goes with this work the more it becomes apparent that it is the individual and not the breed that is the main essential. Further, it has been discovered that for this type of work young dogs are useless, but a dog of mature age, with his character formed, makes a much more reliable dog.

Implicit obedience is essential from the start. There must be quick response to word of command or whistle, walking to heel, following a cycle, keeping his place when the officer is stationary, then jumping obstacles, long and high, remaining "put" both in sight of the handler and, when commanded to do so, completely out of sight. The dog is taught to guard a cycle or a gateway, search a house, attack or use voice as required, hunt scrub land, gardens, and country estates for possible lurkers, climb ladders, and any other duty the officer may decide is necessary for his particular locality and needs.

The uses a dog can be put to in this category are innumerable, and the officer who takes an intelligent interest in his work, and his dog, will find his task considerably lightened. He will not have to cover so much ground and to all intents and purposes can be in two places at once.

The unofficial use of dogs as aids to the Police has been in practice for many years; individual officers owning their own dogs have frequently been accompanied on night duty by them, and they have derived benefit. Several of the Chief Constables have encouraged the movement, and I understand that in Liverpool, Cheshire and Wiltshire remarkably good results from the use of these dogs have been reported.

Some score or more trained dogs have been sent out from Washwater to various divisions. The procedure has been that selected officers have been sent to the Kennels for a week or

two of intensive training in the art of handling the dog. After the first few days the officer has been given the opportunity of selecting the one which he prefers from half a dozen subjects, and the remainder of his stay is devoted to getting accustomed to the peculiarities of the individual and putting the dog through the various training tests. When a certain degree of proficiency has been reached, the officer returns to his headquarters with the dog, and it is impressed upon him that the obedience tests must be practised with the dog to ensure the standard of efficiency being maintained.

These tests in themselves are more or less elementary, but they have the effect of ensuring the prompt response to instructions.

I would like to impress on Chief Constables the desirability of making the right selection of men to send on these courses. It is not sufficient that these men are fond of dogs; many men with that qualification fail hopelessly in the matter of instilling obedience into their charges. There have been occasions when officers selected have been far from suitable for these duties, and it is sheer waste of time if the man as well as the animal does not possess natural ability and initiative.

A dog is quick to sense any slackness or laziness in the matter of giving instructions. All orders should be quick and precise, as no matter how well trained a dog may be a slack or unappreciative handler can ruin a dog in a very few days. Dogs are not machines, and effort must be made to find out their "personalities" and peculiar little weaknesses, possessed by even the best, and once this is mastered half the work is accomplished. With a view to finding out for myself how the dogs have progressed since leaving their training quarters, I have obtained reports from the officers in charge which have been most helpful and instructive, and will benefit all in the mode of training others.

In every instance it is evident that none of the officers would like to be without the dog for night work. Extracts from these reports are illuminating and confirm that in the main the training lines are correct.

At the request of the Home Office I went down to Skewen, where the B.P. Petrol Refinery is established, to discuss the

possibility of using dogs to patrol the weak spots on the boundary fences. For the last three months or so three dogs have been patrolling these very efficiently. According to the reports of the officials in command, these dogs have had an excellent effect in keeping people clear of the danger zone, and they have had no incident to report. The Chief Constable for that area confirmed to me the valuable work the dogs are doing.

I can never understand why the Police have not adopted the "liaison" manner of working dogs which proved so successful in the French Army in the late war, and could so easily be adapted to police work. Any of the dogs now trained for patrol work could easily be taught this, and to my mind it would be of the very greatest value on lonely rural beats. The method is simple. An officer when leaving his home, or headquarters, should get a person with whom the dog is familiar to give the dog some titbit, and make a fuss of him. If, when some distance away on his beat, the officer sees something which he cannot deal with single-handed, the dog could be sent straight back to headquarters with a message in the collar. On arriving back he could be sent back again to the officer on the beat with the reply. The two points can be varied daily, or hourly; distances make no difference. In the army the dogs were trained to run from the front line to H.Q. and back again. This was maintained for a week, sometimes three times a night, without either man exposing himself or running risks. It is hoped to demonstrate this work to the army with a team of four I now have trained.

The use of dogs in war time, as messengers, is a far better practical proposition than the pigeon service, which can only function at great distances. There is no real limit to the uses to which dogs can be put. The use of dogs in air raids would definitely conserve man power, and reduce the risks to a minimum.

Police Organisation in Finland

IT was thought that at a time when Finland is in the forefront of the news and winning world-wide admiration by reason of her gallant stand against invasion, some brief account of the organisation of police services in that country might be of interest to readers of THE POLICE JOURNAL.

The Minister of the Interior (Home Secretary) of Finland is, *ex officio*, the chief of police: a branch of the ministry is in control of all police affairs in the country, and is responsible for the administration, organisation and finance of the police forces. A departmental secretary is in charge of this Department, with the necessary staff of officials and a chief inspector of police as assistants.

The country is divided into nine Departments, corresponding roughly to our counties: in each of these there is a chief official or governor who acts as chief of police for the Department and who is responsible to the Minister of the Interior.

As a rule, the governor is so fully occupied with his duties as the chief administrative official in his Department that he has insufficient time at his disposal to carry out the work of chief of police, and it is customary therefore to delegate the duties of that office to a "police inspector." The duties of this officer correspond approximately to those of a chief constable of a county in this country. He is, however, responsible for the control of police work throughout his Department, both in the towns and country districts. Further, just as the police organisation of the whole country is concentrated in the Police Department of the Ministry of the Interior, so the control of the police in the Departments is vested in the governor of each Department, and, by delegation, is under the control of the "police inspectors." Next in authority to the governor and "police inspector" in the Departments are, in the case of the

large and medium-sized towns, the "police master," and in the smaller towns, the "police commissar": these correspond respectively to the city chief constables and superintendents of this country. In the country districts the duties of the police are carried out by the "Rural Police," of which the Rural Police Superintendent acts as chief. In the larger rural police forces the superintendent is assisted by an assistant superintendent. In the whole of Finland there are thirty-eight urban police forces, and three hundred rural forces. The urban forces are usually organised in two sections, corresponding with our uniform and detective branches. In the larger forces further subdivision has been made into sections such as mounted police, mobile squads, traffic control officers, vice squads, officers to administer aliens regulations and passports, etc. Provision is made in the detective sections for record and photographic work. In the urban forces there is sometimes an assistant "police master" in addition to the "police master"; this officer is often in charge of the clerical staff. The normal ranks subordinate to the "police master" include the chief of the detective branch, the detective superintendents, the chief inspectors and inspectors: the rest of the force is divided into senior and junior constables, and reserve or auxiliary officers. Police women are attached to some forces.

The composition of the rural forces is similar to that of the urban forces, except that the duties of the detective branch are merged in those of the normal. The rural chief of police is able to call for the help of specially trained detective officers in serious or difficult cases: these officers are attached to the Department rather than to any particular force, and are available for duty anywhere within that Department.

There are also under the direct control of the Minister of the Interior in Helsinki the State Police School and the Central Bureau of Criminal Investigation ("Rikostutkimuskeskus"). At Hämeenlinna there are the State Police dog kennels. These, like the Political Branch, the Sea Patrols and the Frontier Police, are under the direct control of the Minister of the Interior.

The State Police School provides courses of two grades. The courses of the first grade are subdivided into those for the

uniformed police and those for the detective branch. The second grade includes courses for senior officers such as superintendents of both the uniform and detective branches, and for senior officers of the rural forces. The successful completion of courses of the first grade is regarded as a qualification for the post of inspector. The second grade course lasts five months and is given yearly; the first grade course lasts between four and five months and is given twice yearly.

The State kennels at Hämeenlinna serve the police forces throughout Finland. Dogs are bred and trained in these kennels, in which also is organised a yearly course in the handling and employment of dogs in police work. Officers from all over the country attend these courses. The various forces draw their supply of dogs from the State kennels.

The political branch of the central police deals with all cases of espionage, treason, and is responsible also for curbing the subversive activities of the communists. The headquarters of the political branch is in Helsinki, but subsidiary depots have been established in some of the principal towns in addition.

The Sea Patrols are charged mainly with the suppression of smuggling, and also with general supervision in territorial waters and along the coasts. The introduction of prohibition some years ago led to much smuggling of alcoholic liquor from Scandinavia by Finnish fishermen; it has been stated that one of the reasons for the relaxation of the prohibitionist laws was that smuggling had come to occupy so much of the fishermen's energy that the fish trade had become reduced to scanty dimensions. The relaxation of prohibition has caused a considerable drop in smuggling.

The Frontier Police are organised on military lines; they are divided into companies and stationed mainly along the eastern boundary of the State. Their main duties consist in maintaining a frontier watch, and in the control of those crossing the frontier in either direction.

The police system of Finland is organised essentially on State lines, but the towns are required to contribute a third of the cost of the urban forces and to provide the necessary buildings and police stations: the State bears the full cost of the rural forces.



Finnish Constable

(face p. 220)

The Central Bureau of Criminal Investigation was founded in 1926 and serves the whole of the country. It is in close liaison with the police authorities of such neighbouring countries as Sweden, Estonia and Lithuania. When necessary, the Bureau undertakes investigations, both police and technical, for the forces of these countries.

The laboratory of the Bureau is housed in a separate building about half a mile from the Helsinki Police Headquarters. Its director is a lawyer, who is assisted by a scientific staff, a photographer, and some semi-skilled laboratory assistants. The Records and Fingerprint Departments are also under the charge of the director. These Departments are housed in the same building, and most of the work in them is carried out by women clerks.

Pathological work is done by the members of the staff of the Medical School of Helsinki University. These specialists are consulted freely by the Bureau on matters outside the scope of the official chemist and physicist. The work of the Bureau has been defined as "the carrying out of technical investigations, giving or procuring expert opinions for the police forces of the whole of Finland, assisting foreign police forces when required, undertaking the technical training of detective officers, and the purchase and distribution of all materials and technical equipment used by detective officers."

The scientific section of the Bureau consists of chemical, physical and photographic laboratories, adequate although not lavishly equipped. Excellent use is made of these laboratories, and the number of cases which are handled lies between 800 and 1,000 a year. In a typical year about 90 per cent. of such cases were handled exclusively by the laboratory staff, and in the remaining 10 per cent. assistance was sought from outside specialists, in particular, the Government chemist. In about 83 per cent. of the cases handled positive scientific evidence was obtained.

The Identification Bureau is in charge of all fingerprint records, files of personal data, registers of missing persons, and of all photographic records. This Department acts also as the liaison Department with the International Criminal Police Commission, of which Finland is a member.

THE POLICE JOURNAL

The Editorial Department of the Bureau issues weekly the Police Bulletin which circulates police information throughout the country.

The incidence of serious crime in Finland is fairly heavy. The population is roughly $3\frac{1}{2}$ million, and murders average one a day. These occur largely in the forest areas and are attributed to the practice of the woodsmen of carrying knives. Most of the cases seem to originate from drunken quarrels, and are principally ones of stabbing.

F. G. T.

 THE COLONIAL POLICE

The following appointments are announced by the Colonial Office:

KIRBY-TURNER, J. G. (Constable,
Palestine) Assistant Superintendent of Police,
Trinidad.

MALLARD, R. F. (Assistant Superintendent of Police) Superintendent of Police, Malaya.

OAKESHOTT, B. F. (Assistant Superintendent of Police) Superintendent of Police, Malaya.

The Arson Racket*

By CHIEF FIRE MARSHAL THOMAS P. BROPHY

New York City

ARSON, one of the oldest rackets in the world, strikes at the very heart of the home, the safety of its members, and has as well a most serious effect on the community. The atrocious nature of this crime is recognised throughout the world. It has contributed to a considerable extent to the annual enormous fire waste of this country, and has resulted in the ruthless murder and injury of many innocent persons. It is a crime against which public officials are fighting continuously. As police officers, you all have had more or less experience with this crime and know some of the difficulties with which you are confronted when making an investigation.

The incendiary fire today is quite different from the one of years ago. The up-to-date firebug has acquired all the skill that science can teach him. Like other criminals, the firebug has advanced in his methods with the times. To keep up with him, the public official has to study constantly in order to familiarise himself with all the tricks of the trade. The schemes and contrivances of the incendiary in his fiendish operations are sometimes exceedingly ingenious, particularly in the arrangement of time plants, so that he can make his get-away considerably before the discovery of the fire and thus establish an alibi. The present-day firebug endeavours to convey the impression that his crooked fire is of spontaneous or accidental origin. He will remove all incriminating evidence whenever possible before he leaves the scene. It frequently happens, however, as in the case of most criminals, that no matter how

* A lecture delivered at the Forty-third Annual Convention of the International Association of Chiefs of Police. Here printed by courtesy of the Association and of W. P. Rutledge, Esq., its Executive Vice-President, and of the author.

carefully planned the crime may be, he slips up on some point that will result in his detection.

FLUCTUATIONS IN ARSON CASES

Contrary to the common impression that the business depression has caused an increase in fires, particularly in arson, the fact is that business or commercial fires have actually fallen off, resulting in a decrease in incendiary fires, as compared with several years ago. The principal explanation of this reduction in fires and fire losses is low inventories. If there is no surplus stock on hand a fire is unprofitable. This has also resulted in a reduction of the amount of fire insurance carried, because the insurance companies have been more careful in underwriting risks or placing insurance, eliminating in many cases the incentive for a fire.

There has been a decided improvement in economic conditions during the last year or two, which has been largely brought about by the financial aid of the government, and I have no doubt that when things again become normal there will be an increase in fires. Carelessness and trade hazards obviously increase as demands are made upon manufacturers for goods. This is true of both the manufacturer and retailer, and it is an admitted fact that during prosperous times there have been more fires.

Arson is the most cowardly of crimes, perpetrated by those who sneak and cringe in an effort to avoid at all times the risk of detection. The bandit at least takes a chance in the open. The incendiary is a cold-blooded fiend, who sets fire either while a peaceful public sleeps or while hard-working men and women are earning their daily bread. Incendiaries are frequently encouraged by unscrupulous assessors of fire losses, whose sole aim is greed for money gained through crooked fires. In saying this, I am not unmindful of the fact that the majority of assessors are respectable law-abiding citizens.

MOTIVES OF INCENDIARIES

To achieve success in the investigation of the crime of arson, the investigator should have a clear understanding of

the motives which inspired the commission of the crime. In my discussion, therefore, I shall endeavour constructively to place before you, first, the usual and general underlying motives for this crime. They fall into five general classifications:

1. The collection of fire insurance.
2. The concealment of a previous crime.
3. The destruction of books, records, or other incriminating evidence.
4. Revenge, intimidation, racketeering, and extortion.
5. The thrill of making a blaze and seeing the flames; in other words, pyromania.

I will discuss each of these motives in the order stated.

The first motive inspiring incendiary crimes deals with the commission of the crime of arson for the purpose of collecting fire insurance—arson for profit. This, of course, is a very common motive. It is usually established by determining the financial status of the assured at the time of the commission of the crime; this will be found to have been bad, and is often accompanied by a sudden increase in excess insurance shortly before the crime was committed.

On many occasions following a fire, it has been learned that fire insurance existed on stock that was never on the premises, stock which the assured claimed was burned and could not be inventoried for that reason. Therefore, he readily finds fraudulent means to increase his inventory by making false entries in his books of account or by using other methods to conceal the fact that his insurance far exceeds the value of his merchandise or property.

The second motive I mentioned is the concealing of a previous crime. By this I mean the commission of arson to cover up a criminal offence, such as a prior theft or murder. The assured can then claim that the merchandise (which really was previously removed) had been destroyed by the fire, or that the dead person had lost his life in the fire. An example of this type of motive was the burning of a bonded government warehouse in New York City containing merchandise on which the government had not as yet received its customs duty. Merchandise had been surreptitiously removed from the

warehouse. Subsequently, the warehouse was burned, the claim being made thereafter that the merchandise had been destroyed by the fire. The incendiaries and those involved landed in prison.

It is, of course, difficult to provide a remedy that would remove or reduce such motivating forces. The only possible way to uncover these motives is to make a very careful check-up of the physical condition of the premises after the fire, and through reason to deduce that fire could not have destroyed the merchandise alleged to have been there. This, of course, will depend upon the duration of the fire, its location, its intensity, and the area burned.

The third motive is to destroy books, records, or evidence that might be incriminating. I have in mind particularly the destruction of books and records in an attempt to hide a forgery or to relieve the assured of the burden of producing books of account. A common occurrence is a fire planned to destroy books which the assured knows government inspectors are about to examine for the purpose of determining a tax liability or to determine whether the assured has paid to the government the correct amount of taxes.

The fourth motive mentioned is revenge, intimidation, racketeering, and extortion. In racketeering, fire is employed as a threat that unless a merchant pays tribute to these criminal agencies, his business will be destroyed. Then there are fires brought about by competitors in the hope of eliminating business rivals.

In the past several years there have been numerous fires in America as the result of racketeer warfare. In many of the larger cities, investigation has shown that most of the victims are those engaged in industries and trades such as building construction, laundries, the dyeing and cleaning industry, beauty parlours, and the motion picture business. Racketeers have found in most instances that the torch is more terrifying to their victims than knives, or guns.

PYROMANIA AS THE CAUSE OF ARSON

The fifth cause of arson is pyromania. Of course, pyromania is classed as a disease, and the offenders are usually

found to be in the feeble-minded or subnormal classes. This is a subject that should be treated by the medical profession, and to which I can add very little other than to say that in the city of New York we keep known or suspected pyromaniacs under strict surveillance and trace their whereabouts at various times. We also keep a close contact with different institutions to which they may have been committed, so that we may know when they are released.

Pyromaniacs are the most dangerous incendiaries we encounter because they never consider human lives in their abnormal operations. To satisfy their craving for fires they will start a fire on impulse in any type of building, regardless of the danger to the occupants.

Many pyromaniacs are inspired by a desire to start a fire so that they can pretend they discovered it, and then assume the rôles of heroes. They will start a blaze and rush about warning tenants, taking the leading part in the rescue work, and even assisting the firemen to extinguish the fire. At other times, after applying their torch, they will wait until the fire gains headway, and then will turn on a fire alarm.

One of the peculiarities of pyromaniacs is that they always work alone. Because of the lack of motive, the investigation of their fires is the most baffling of all, and it takes trained men to detect their work.

Strange as it may seem, pyromaniacs usually select combustible material that is already at hand for starting their fires. They have a weakness for perambulators in hallways, and will also ignite combustible material in cellars, dumbwaiter shafts, unoccupied apartments, isolated or abandoned buildings, hotels, lodging houses, schools, churches, and timber yards. Whenever a series of fires of mysterious origin occurs in any particular locality under like circumstances, it is safe to conclude that a pyromaniac is at work.

The offenders are usually between the ages of twelve and thirty. Senile persons also are sometimes affected by similar impulses. These types have an irresistible desire for fire, and will start one merely to see the flames. Practically all, in explaining their acts, insist that they get a thrill out of the excitement occasioned by fire. It has been found in many cases

that pyromaniacs have suffered from epilepsy or head injuries.

An alcoholic pyromaniac is one who operates when he becomes intoxicated. He is regarded as the most dangerous because he kindles fires late at night, usually when the occupants of homes are deep in slumber. This type is also given to wandering in strange localities, and after such fires will disappear. Unless the alcoholic pyromaniac is captured at or near the scene of fires, it is very difficult to obtain any admission from him, because as a rule he suffers a lapse of memory and forgets all about it.

In an effort to collect fire insurance, some incendiaries have burned not only buildings, but have been fiendish enough to burn animals, particularly horses, and also, in rare instances, have even brutally and deliberately burned human beings.

SOME EXAMPLES

Some of you may possibly remember a crime that occurred in New York City a few years ago, for which a man named Raffa was convicted of murder. This demon in human form lured a poor derelict from the Bowery—a young chap in his early twenties—to his home on a pretext of giving him a job as a soda dispenser. He plied him with liquor until he had become hopelessly intoxicated. Then he put him to bed. When I later saw this poor fellow in hospital, he told me a most harrowing story. He came out of his stupor, gasping for breath, to see Raffa bending over him. The latter told him that everything was all right, and that he was to go to sleep again. He felt something being sprinkled over him, but was too drunk to realise what was happening. The next thing he recalled was awakening to find the bed ablaze and his clothing afire. Plunging through a window, he ran through heavy brush to a nearby petrol station. Attendants there tore his clothing from him, and he was rushed to the hospital. Everything possible was done for him, but he was so frightfully burned that he died about ten days later.

In the meantime a policeman, seeing the building ablaze, turned on an alarm. Firemen, on their arrival, detected the

incriminating odour of alcohol. The bed had been saturated with the liquid, and trailers to extend the fire were found in different rooms. Raffa had disappeared. His wife and children, who had absolutely no knowledge of the crime, had been sent by him several days before to visit friends. Investigation disclosed that the motive for the crime was a double one, the collection of both fire and life insurance. Raffa had over-insured his building and household furnishings. He had also taken out a life insurance on himself with a double indemnity clause in case of accidental death. He had selected his unfortunate victim because the latter was about his own height and build, and he planned to make it appear as though he himself had perished in the blaze. It came out that Raffa had planned to abandon his wife and children and to leave the city with another woman, with whom he was in love. He was thoughtful enough, however, even with his mentally twisted viewpoint, to make ample financial provision for his wife and children. He was arrested several months later, convicted of murder in the first degree, and was subsequently electrocuted.

Women play an important part in incendiarism, and I do not want you to think that men alone exercise a monopoly in the fiendish work of setting fires. Some of the most adroit and skilled incendiaries are women. I have found mothers of families—yes, even a grandmother—who did not hesitate to engage in this cold-blooded, diabolical business of burning homes for money, and they were entirely indifferent to what might happen to their neighbours.

In many cases wardrobes occupy the attention of the women, and they will burn wearing apparel which is out of date in order to collect from fire insurance companies. Cases of this sort are usually found when a decided change of fashion makes the incendiaries wish to replenish their wardrobes.

Sometimes the evidence that will clinch a case against a suspect will arise from the most unexpected source. One case I have in mind, although tragic in its final outcome, was also amusing.

There was a fire in an apartment building in a residential district. The blaze originated in a three-room flat occupied by a widow who lived alone. When the firemen, in answer to the

alarm, broke into her flat, they found unmistakable evidence of incendiarism. The chief called for a fire marshal. The people living in the house voluntarily vouched for the woman, stating that she was a most respectable person and apparently in comfortable circumstances. In their sympathy for the woman, they unconsciously attempted to influence the investigators. But the physical evidence was of such a character that everything pointed to her guilt.

While the investigation was in progress and a detailed inspection of the flat was being made, the woman returned. She appeared deeply moved and her features registered amazement and horror, but somehow her attitude was not convincingly genuine. There seemed to be a collected calm under her apparently ruffled appearance. She professed to be utterly astounded and declared that she was unable to explain the origin of the fire. She had left her home several hours before to dine and spend the evening with friends. She displayed an unusual interest in the examination being made by the fire marshals in her home. They examined the contents of drawers and closets in their search for evidence. Finally, one of the fire marshals reached the kitchen. The woman, who had followed him closely, suddenly asked, "For heaven's sake, what do you hope to find here?"

"I don't know," he replied, "you never can tell." Turning, he opened the door of the gas stove, in which he found a carefully wrapped package. As soon as the woman saw the package in his hand she screamed and fainted, and upon being revived exclaimed, "My poor husband, my poor husband! to think that a strange man should desecrate your ashes!" Anticipating the fire, the woman had placed the urn containing her late husband's cremated remains in the oven, where she felt confident they would be safe until her experiment was over. The finding of her husband's ashes, however, proved to be her undoing, causing her to break down and confess. Her conviction resulted.

METHODS EMPLOYED BY INCENDIARIES

It is a very common thing for people, before a fire, to remove articles cherished more for their sentimental than for

their intrinsic value. Photographs will be removed from a family album, a mechanic will remove his tools, and household pets will be left with relatives or friends.

As I have said, the modern firebug uses up-to-date methods. He will go to any lengths to throw a screen about his actions in an effort to frustrate detection and to try to prove that the fire was of accidental origin.

An interesting case was that of two incendiaries who employed rather novel means to obtain the petrol to be used in a fire which they had planned. First, they obtained six empty five-gallon cans. They didn't risk buying the petrol at any local service station, however, for fear their purchase might be remembered and that it would lead to their detection. Instead, they drove out into the suburbs and stopped at a filling station, where they had the tank of their car filled with fifteen gallons of high-test petrol. A few miles away, they drew into a country lane and in the protecting darkness syphoned ten gallons into two of the cans. A few miles farther on they stopped at another filling station. The tank was refilled, and again was stealthily syphoned into two other cans. The process was repeated for a third time several miles farther on.

The firebugs were in high glee at their own cleverness in so completely covering their tracks. But, as is always the case, they weren't quite as smart as they had thought, for, as the old saying goes, the best laid plans oft go astray. These gentlemen of the torch were trapped, despite their precautions and foresightedness.

I shall refrain from disclosing the methods used by present-day scientific incendiaries. To do so would but broadcast these methods, and this would be against the public interest and contrary to the purposes of this organisation, which seeks to withhold from the public methods of crime of which someone might take advantage in a moment of temptation, if not through deliberate criminal intent.

EVIDENCE TO LOOK FOR

I want to impress upon you the great value of physical evidence in arson cases. Physical evidence is possibly more

important in arson cases than in any other crime, because without physical evidence of the crime it is absolutely impossible to prove the commission of the act, or what is legally known as the *corpus delicti*. My reference is to circumstantial cases only, because if we had an eye-witness, we should have direct evidence.

Too much emphasis cannot be laid upon the value of physical evidence in arson cases, and it is most important for an investigator to determine first of all the point of origin by making a careful physical examination for the purpose of obtaining this information. Fixing the point of origin will also place the responsibility upon the occupant of the premises to give a satisfactory explanation regarding its origin.

To illustrate this, an amusing incident occurred one night at a fire in a tenement in a district that is famed for its large black population.

Shortly after midnight the neighbourhood was startled by shrieks of "Fire," and the air echoed with the shrill blasts of a police whistle blown by a young negro who stood at the kerb partly dressed. As the engines dashed down the street, he pointed excitedly to his flat on the ground floor of a large tenement. The blaze was in the rear rooms, and when the firemen had it under control they discovered that the fire had been kindled with the aid of paraffin oil.

The fire was reported in the usual way, and a fire marshal immediately went to the scene. The coloured occupant who had given the alarm said he could offer no explanation for the fire, as he and his wife had been asleep in the front room and that the door between had been closed. His only explanation was that some burglar or enemy had done the job, but an alert policeman had observed the negro in front of the building and had noted that he was wearing but one slipper. He made a search and found the missing article in the vestibule. The sole of the slipper was reeking with paraffin. When the fire marshal and police officer carefully examined the clothing of the young negro, they not only found that his trousers had been spotted with paraffin, but that his hands literally reeked with a very powerful perfume. When he was confronted with a large bottle of the same perfume, which had been found in his

room, he broke down and confessed that he had bathed his hands in it to hide the odour of the paraffin.

Unfortunately for him, his precaution had not extended to his feet. He gave as his reason for starting the blaze the fact that he needed the money, as he wanted to move down south for a change of scene. I might add that he is getting a change of scene, but not down south.

Common sense is one of the best guides to be used in making any investigation, and it should be applied equally well to any investigation of the crime of arson. Be alert, keen, and alive to surrounding circumstances and physical conditions, because your early observations are most valuable. The premises wherein the crime is committed should be guarded and the evidence photographed immediately. Before it is removed, it should be marked or tagged for proper identification, and should be kept in official custody so that it can legally be introduced in the trial of the accused.

Too much emphasis cannot be placed on the value of reconstructing a case during the preliminary investigation, because important details might otherwise be overlooked, and it will provide a better mental picture of what actually occurred. To achieve success in arson cases, remember one thing: the investigation must be thorough. Too much information cannot be obtained. No detail is too small to be overlooked. Nothing should be taken for granted, and the investigator should never be guided by any theories advanced, even though the person who offers them be held in high esteem in the community in which he lives. Facts and evidence only should be considered. Personalities and politics should never enter into the matter.

It is most important to have complete records of all suspicious and incendiary fires, with the personal history of those involved, so that the "repeater"—a person known as having been responsible for more than one crooked fire—may be discovered. By an interchange of such information with officials of other cities, the interstate firebug, and even the pyromaniac with the wanderlust, can be detected.

The Tactics of Criminal Investigation*

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(Continued from page 109)

TAKING POSSESSION OF ARTICLES

THE question of what to take in the course of a search is important from many points of view. To begin with, you have to make up your mind what should be taken—and what should not. Only those objects and documents should be seized which tend to prove guilt, whether they were used in the actual commission of the crime or resulted from it. Don't take anything which is not essential to your case, and certainly nothing that does not come in one or other of the above categories. But it is better to err in taking too much than too little.

The suspect should be closely questioned about any articles that may be taken, and particularly about their origin, for this may help to extend suspicion in new and unsuspected directions. But there are times when you should not press the suspect too hard about an object or document that has been taken, lest you should put him wise to the importance of the article in the eyes of the Police. The answers to all questions should be carefully written down at once.

An inventory, countersigned by the owner, should be made of all objects taken away. The owner, or one of his people, should always be present when articles are taken possession of, in order to avoid argument and unpleasant incidents. A suspect is quite capable of asserting in the witness-box that a

* Translated, with the author's permission, from his recent book, *Cours de Police Technique et de Tactique de Police Criminelle*.

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certain object was not found in a given place or even on his premises at all. Or he will falsely accuse the Police of having stolen jewels or other valuables. The officer in charge should therefore take the utmost pains to make such accusations and arguments, if not impossible, at least obviously untrue.

Articles taken possession of should be carefully stored so as to avoid deterioration.

In the case of documents, these should be numbered and initialed (by the suspect as well as by the officer in charge), and then put into classified bundles or files.

It goes without saying that objects and documents taken possession of should be removed when the officer in charge leaves the premises. They should never be left behind for a moment. But it sometimes happens that the key to a desk or drawer or safe cannot be found for some time. The officer in charge should then take such steps as he thinks best to safeguard his case. If he thinks he can safely leave the premises for a time without opening the safe, etc., he should first seal it with tape fixed by means of sealing-wax; this sealing should be done in such a manner and so carefully that the seals cannot be broken without the fact being at once noticeable. Naturally, when the officer in charge of the case returns to the premises in question, he will immediately look over the seals to make quite sure they have not been tampered with.

INTERROGATING WITNESSES

Every experienced police officer knows how easy it is to pick holes in the statements of practically all witnesses. Does that mean that witnesses lie? Sometimes, of course, witnesses do lie; but as a rule it is simply that they make mistakes, and you are lucky indeed if they are at fault only on points of detail. How many times have you yourself found an object in a certain place, where you and no other put it, and have said to yourself, "Well, I could have sworn it was somewhere else!" Take a group of any twenty intelligent people to an unfrequented cross-roads and there stage for their benefit an imaginary traffic accident. Then make them describe, with every possible detail, just what happened. The result will be twenty extraordinarily different statements.

Many factors influence evidence : education, general knowledge, specialised training, a professional standpoint, fatigue of mind or body, physiological considerations, psychological influences. Witnesses may be influenced by sympathy, fear, hate, desire for vengeance, self-interest, love, bad instincts, loyalty or group feeling, vanity, unconsciously received suggestions, false deductions from something observed, the filling-out of gaps of memory or observation by reasoning correct or incorrect, sensory illusions, religious feeling, politics, and so on.

Thus one sees how much the statement of any given witness is the result of a " complex " of multiple factors, both active and passive.

The police officer who has to question witnesses should have the gift of psychological insight : he should " feel " if the witness, whatever his skill in dissembling may be, is telling the truth or not. When necessary the officer should look for the motive behind the witness's reticence or mistakes, whether these are apparently intentional or not. If his assistants have informed him beforehand as to the character and personality of the witness, so much the better. When the latter is making his statement, the police officer should have a clear picture in his head of the place concerned, so that he can check up at every step on the information given by the witness. The witness should be asked to give as many details as possible, so that fact and fiction can more easily be shown up.

It is obvious from the foregoing that the witness who does not tell the truth is not necessarily " lying." He may have put a wrong construction on what he saw, or may have misheard something. In such a case of doubt it is advisable, *after* the witness has made his statement (not, of course, during it lest answers should be " suggested " to him), to go over with him the points which have been absolutely established, by means of photographs, drawings, proved facts, etc. His memory may be at fault in certain particulars : in that case it is no use trying to fill these voids by prompting. It is better to put down that the witness does not remember. But sometimes the witness will remember things for himself if certain facts which preceded or followed the debatable point

are recalled to his notice, for in this way the feelings and mental state he experienced at the time are reproduced. Remember that at the time of the occurrence about which you are questioning him, his sentiments, emotions, and mental state probably left a certain impression upon his mind. This impression usually remains for some time and is recorded more or less faithfully by memory. When required, this more or less accurate record can, by skilful questioning, be more or less faithfully reproduced as evidence. Taking into account, however, not only the various influences brought to bear at the time of a given incident, but also the effect of those influences on the witness after the incident and on him again when he is called upon to describe it, it is obvious that a recapitulation of this kind is bound to be imperfect.

Emotion, both that which is evoked at the time of the crime and later when the witness, upset by legal procedure, is making his statement, plays a big part, especially when violence has entered into a crime, such as robbery with violence or threats, attacks by armed men, blows and wounds, rape, murder, and so on. The most usual mistakes in this type of case occur in descriptions of the assailant, the estimation of the duration of the attack, and the weapon used.

On one occasion we were seeking information about an individual who had committed a number of robberies with threats from women, whose bags he had snatched or whose money he had demanded in outlying streets at night. Almost all the victims described their assailant as a very tall man, with black hair and a big moustache (some said the moustache was black, others red). As it happened, the criminal turned out to be about five feet high, fair-haired and clean-shaven.

On another occasion, when we were looking for a certain man who had been snatching handbags from women in the middle of the city, all the victims said, " He's a young man, about eighteen or twenty, pale-faced, wearing a cap." Yet when we caught this man in the act we found that he was about thirty years of age, with a full red face, who always wore a soft hat. When we asked one good lady how she had come to be so mistaken, she answered, " But didn't I tell you he was a pale-faced sort of wretch ? "

Both witnesses and victims habitually make out the duration of the attack as inordinately long. Thus, one will say, "He was choking me for at least five minutes." In such cases there is a simple way of making the witness see his mistake: it is enough to make him or her think over the incident for a moment and indicate the actual length of time taken for the commission of the act by making a sign at the end of the estimated period. You, of course, have your eye on your watch the whole time, but not ostentatiously. Not infrequently you will find by this means that the witness gives the "stop" signal at the end of a few moments although he has alleged that the attack lasted "at least five minutes."

As regards weapons very odd statements are sometimes made. In fact, a woman who has been threatened and robbed will sometimes speak of "an enormous" revolver or a butcher's knife when, as a fact, the criminal had no weapon at all.

Mistakes are almost always made when precise measurements are asked for. If the objects are not roughly bigger than a man, it is a good idea to get the witness to stand up and indicate their size on a piece of furniture or, better still, on another object of the same kind. If a person's height has to be arrived at, the witness can measure this off on you, you wearing a hat or not as the occasion demands. Similarly when you are trying to find out from a witness's statement whether an assailant was fat or thin, you can pretend to various degrees of corpulence by adjusting your coat.

Mistakes in colour are difficult to correct, because many people who are not colour-blind have different visual perception. In such cases it is necessary to show the witness objects of various colours and discover his reactions.

There are cases when the victims make absolutely fantastic statements, especially when they have been hit on the head and are suffering from loss of memory.

When you are dealing with frightened people put them at their ease first of all and show them that they have nothing to fear, and that they are under the protection of the Police. It is important to know why a witness is frightened: it may be for quite a trivial reason, *e.g.* that she is afraid of being blamed for some negligence or mistake. In such cases the

police officer should point out that little things like this are not really so important as the witness thinks, and that it is better to confess the fault and try to make amends for it than to make a statement to the Police which is intentionally incorrect, false, or misleading.

Whenever a police officer obtains an important statement from a witness which completely upsets the accused's defence, he would be making a grave mistake if he made this evidence known immediately to the accused, and a still greater mistake if he confronted the accused too hurriedly with the witness. Important statements should be checked with the greatest care and strengthened by a following up of every detail, not only to prevent the witness from going back on his statement for any reason whatsoever, but also in order that the Police may make quite sure of the witness's sincerity and the truth of what he has said. To be efficient, therefore, the police officer must have a deep knowledge not only of the enquiry in hand but of human nature, especially as concerns the outlook and way of living of the people in his immediate district. It is of course useful if he already knows something about his witnesses, in order the better to judge the reactions and sentiments which govern them.

Children should be handled with the greatest of care. The police officer should never allow himself to be alone in a room with a young girl, for perverse imaginations and the resentment of parents often concoct grave and unjustifiable charges which on the surface may seem genuine.

It must be borne in mind that children have not the same sensory perceptions as adults. Thus their ideas about speed, distances, dimensions, their repugnance to certain things, to danger, etc., as well as their mental reactions, are quite different from those of their elders. The attitude of the police officer to children must therefore be different; he should never, for instance, give them the impression that their statements are important, for young people are easily tempted to make fantastic statements either to please the police or to make themselves out important. This is especially so in cases involving morals: in such cases children sometimes make extraordinary statements. Happily it is often sufficient to

get them to give details and descriptions in order to realise how fragile the tissue of their story is. Of course, the police officer can neither approve nor improve on statements while they are actually being made: to do so would be to risk statements even more diffuse and even more inaccurate. But when the child says that he has nothing more to say and when certain things he has said are obviously false, then the police officer should try to prove to him, either by demonstration or handy examples, that the facts don't agree with his claims. Particularly with young girls should precautions be taken against imaginary statements, because of their coquetry, vanity, and lack of worldly knowledge. On the other hand girls are more inquisitive than boys and often watch grown-ups closely, so that frequently they can give important information about points that have escaped everybody else.

Unlike the little girl, the little boy is more natural, more free, more sincere and less reticent.

Old people often switch from one mood to another: they will be disappointed, bored, passionate, childlike, and greedy by turn.

Where abnormal persons are concerned, extra precautions must be taken to distinguish the false from the true in their statements. Hysterical types, particularly in sexual matters, are tempted to exaggerate and aggravate affairs even to the point of accusing innocent people. Epileptics practically always make statements with great gaps in them; sometimes they do not remember at all acts in which they have played a principal part. The police officer should therefore mention all abnormalities and signs of mental debility in his witnesses when reporting to his superiors, particularly in cases where the persons concerned are actually accused of a crime.

When a witness is making his statement he should be allowed to tell his story in his own way. Interruptions should be avoided as much as possible, so as to help the witness to arrive as soon as possible at the essential acts which he has to describe. It is only in very exceptional cases—for example, when one is dealing with a chatterbox who is making much ado about nothing—that the witness should be tactfully led back again to the point at issue. Witnesses should be treated

with politeness and tact; remember that they are entitled to full credit for their willingness to leave their work and suffer other inconvenience, perhaps even hardship, in order to help the cause of justice. Thus a witness should never be kept waiting unduly or made to kick his heels in the passage for half an hour or so. When a number of witnesses are being interviewed on the same day they should be given appointments at successive times in order to avoid long and useless waits on police premises. Besides, it is unwise to give witnesses the opportunity of getting together and discussing the case; any kind of understanding among them is prejudicial not only to truth but to justice. And a still more practical point is this: the impatient witness who has been allowed to "work himself up" in a waiting-room is not in the most tractable of moods when he comes before the examining officer.

THE QUESTIONING OF PERSONS UNDER ARREST

Many of the suggestions for questioning witnesses given above apply also to the questioning of prisoners, particularly those regarding politeness and tact. Even the perpetrator of a vicious crime should be treated decently, for if punishment is to be inflicted that is a matter for the courts, and it is no part of a police officer's business to anticipate judgment and sentence. Criminals who have been convicted and have suffered imprisonment through our efforts have often, after their release, come to see us and have thanked us for the way we treated them and have promised to go straight in future. (That attitude, by the way, contrasts favourably with the manners of certain parties who have recovered stolen property thanks to us and who take good care not to know us the next time we meet them in the street!) Besides, the accused person who is—well, not exactly ill-treated but, shall we say—unfairly dealt with, becomes a man with a grievance, then a man whose hand is against society, and in the end just another "old lag."

There can, of course, be no question of really ill-treating a prisoner. No police officer worthy of the name would extort confessions from an arrested person by means of threats or actual bodily harm. We know of course it often happens that

after a prisoner has confessed to the Police he will justify his "weakness" to his legal adviser by saying that the confession was extorted from him by threats or even blows. We are not going to say that counsel encourage such statements. But there is no doubt that certain defending solicitors lend too ready an ear to accusations against the Police, either because they do not know much about criminals and their ways or because this sort of thing bolsters up their case. But the truth of the matter is this: police officers of senior rank throughout the world—and we discussed the matter with many of them at the International Congress in Antwerp in 1930—have given the strictest of standing orders that their subordinates shall not practise the extortion of evidence, and we are quite sure they know how to make their orders respected. If an isolated case were ever proved, the defaulting policeman would be dealt with very severely indeed.

Before beginning the examination of a prisoner the officer in charge should, if he has the opportunity, study the prisoner's record as shown in the official files as well as his own notes on the case in hand. If the accused should lie, that is his own look-out and it is no use getting excited about it; but the police officer is entitled, after cautioning him, to try to get a true statement out of him by asking shrewd questions and showing that he, the police officer, knows when a lie is being told. All that the accused says should, of course, be taken down at the time, with special attention to those parts of the statement which are obviously untrue.

Often the accused will start off by asserting an alibi. Such an assertion will at once be suspect because it is probably prepared beforehand. Sometimes an alibi is put up a day or more after the first statement was taken, the accused having had in the meantime an opportunity of talking to other detained persons who have since been released, or, if he has been in detention all the time, has somehow corresponded, through go-betweens, with persons outside. For these reasons all the possibilities of an alibi should be investigated with the very greatest care.

When questioning an accused—and remember that it is quite within his right not to tell you the truth—be self-possessed

whatever he may say, and talk in a quiet, direct way. Don't have lying about on your desk anything that an excited man could pick up and use as a weapon. Rulers and heavy marble inkpots are out of place on a police officer's desk. Make the accused sit down before you, his face towards the light, and on a seat a little lower than your own (this is the advice given to police officers by Sir Basil Thomson, one-time Director of Intelligence). Don't be afraid of the accused; if he is handcuffed, have the handcuffs removed and make him feel that you don't regard him as a wild beast. Naturally you will take every precaution against escape; have the door well guarded and make sure that the prisoner cannot jump out of the window; desperation has impelled a man before now to commit a desperate act. Speak in his own language if you can, and in a way he is accustomed to. Try to overcome his resistance to confessing the whole or part of his story, which resistance may arise either out of fear of punishment or from mistaken ideas of loyalty (such as are often strongly developed in criminals) towards a woman, an accomplice or a receiver of stolen goods. It is only persuasion and reasonable argument that will induce a criminal to make a full and *complete* confession. It would be wrong to promise him an immunity that you cannot grant or which would be illegal or against regulations. But you can tell him that the court is always, as a mere matter of justice, more merciful towards those who confess their guilt than to criminals who stubbornly deny it; that full credit will be given for the return of objects which may be retrieved through the efforts of the accused; and that only by making a clean breast of things can he begin to rehabilitate himself and show his earnest intention to turn over a new leaf and make amends to the victim for the damage done.

It has happened before now, and doubtless will happen again, that an accused person arouses feelings of pity in the police officer's breast. Although it is quite lawful for the latter to soften to some extent the prisoner's lot by his own courtesy and good feeling, he would be failing in his duty as a policeman if he in any way helped the accused (who may quite well be a highly skilled "wangler") to gloss over his crime by

not insisting on all the details connected with the fact. Prevention of crime, as prescribed by law, should be observed in every sense of the word and in the light of all the circumstances.

Questions which in themselves prejudice the prisoner should never be used. For instance, it is quite wrong to say, "Did you steal . . .? Did you embezzle . . .? Did you murder So-and-so?" Speak rather in a detached manner, saying, "Well, so you took away such and such a thing, did you? . . . So you obtained this money by saying so-and so? . . . You hit the man, didn't you, and he fell down?"

Many an accused person, even an "old lag," who has refused to tell the truth at first will succumb at last to calm, patient, reasoned argument by a police officer who understands the accused's mentality and the limits of his intelligence and who makes him feel at home by perhaps talking sympathetically of his old parents or his wife and children.

If an accused person is ill, or even if you are certain that he is pretending to be ill or in some pathological condition, send for a doctor at once and in the meantime give him first-aid treatment yourself. When you are dealing with an apparently deaf person get two people to stand behind him and shout a different word in each ear, or make one stand behind him and shout something into one ear, at the same time dropping a heavy article on the ground at his other side. If you watch his face carefully when this is done you will probably be able to form a shrewd idea as to the degree of his deafness.

When an accused has given a false name and his identity cannot be ascertained from the files it is often possible to show that the name given is his mother's maiden name, or perhaps a Christian name or a version of his surname. Some adopt the name of a noble family, but that is soon checked by reference to the pages of Burke's *Peerage* or *Debrett*—or, if the name does figure there, it is a simple matter to ask them to describe their coat of arms—heraldry is not a strong suit with criminals.

When an examination lasts for some hours and the accused asks for food or a glass of water this should at once be given him. Apart from the humanity of doing so an accused will often talk more freely and sincerely after a meal.

Statements, and particularly confessions, made by an accused person should be checked as soon as possible to make sure that they are correct both in principle and in detail.

Not infrequently an accused person will accuse a partner or accessory to the crime, falsely or exaggeratedly, because the latter has cheated him over his share of the plunder, or out of jealousy, or because he suspects that his associate has double-crossed him.

When making his report upon the examination of an accused person it is important that the police officer should include the maximum number of facts that could have been known to the prisoner alone, in case later on the latter should go back on his statement or declare that the material parts of the statement were suggested to him by the police.

It is a good plan to attach to the report a small sketch or diagram (all the more convincing if drawn by the accused or agreed to by him) upon which the accused himself marks the positions of certain objects and persons at the time of the crime and after it. Sketches and diagrams are not sufficiently used, in our opinion, for even if they are quite rudimentary they may prove very useful indeed.

Sometimes one has to deal with a man who accuses himself, one of those individuals who confess to a crime or misdemeanour which they have merely read about in the papers. A few questions will as a rule dispose of such persons. Self-accusers are almost always abnormal, though it is not unknown for an innocent person to accuse himself or herself of a crime in order to shield a near relation or someone for whom they have a great affection.

When the police officer in charge of an enquiry is unable to obtain a confession from an accused person whom he knows to be guilty he should not get cold feet or acquire an inferiority complex. At the same time a police officer who has been successful in obtaining a confession when a colleague has questioned a prisoner for a long time without success ought not to think that *ipso facto* he is the better man. In the course of our career we have come across some interesting results in this connection. One day we had been questioning an old lag for four hours, trying in every way we could think of to

make him confess to having broken open a safe. Having occasion to leave the office for a moment, we left him in the hands of a young and inexperienced police officer, and when we came back this youngster announced, not without legitimate pride, that he had been successful in getting a confession out of the ex-convict. In another case we were dealing with a band of safe-breakers, all of whom, with one exception, an ex-convict too, had confessed to the crime. All the confederates of this man had implicated him in the crime and had even, when confronted with him, reminded him of the part he had played. But nothing we could do would shake him. He was as obstinate as the very devil. At the first hearing in court a very efficient magistrate did his level best to get the fellow to confess, but without any success, and he was remanded in custody. At the second hearing the gang appeared before a magistrate who was sitting for the first time in a police court. As soon as this magistrate asked his first question the old lag gave in and made a clean breast.

It will be seen therefore that it is difficult to lay down any rules for obtaining confessions: so much depends upon certain indefinable qualities both in the accused and in his questioner. But there is no doubt that calmness, reasonableness, good treatment, appeals to good feeling, and complete honesty are the most successful methods. It is hardly necessary to add that the examining officer should never for a moment depart from the truth even to the most hardened criminal. For one thing it is not "fair play"; moreover, if the officer once obtains a confession by telling an accused person untruthfully, "Well, the witness So-and-so has just said . . ." the subterfuge will soon get round, for nothing travels faster in the underworld than the ruses and stratagems of their enemy the Police.

REPORTS AND THE PRESS

Police officers should never lose sight of the basic idea behind official reports—that these documents are fundamental to the prevention and punishment of crime. All such reports should therefore be prepared with scrupulous care and contain nothing more nor less than the exact facts established.

The style should be clear, precise, succinct, but sufficiently explicit to give the reader the exact shade of meaning intended. High-flown language and vague statements should be avoided. It is only the bad writer who cannot use short sentences containing the pith of the matter. When it is a question of writing down the statements of witnesses—and particularly of accused persons—the choice of words must depend upon the culture of the person interrogated. For instance, we have seen an accused person refuse to sign a statement which asserted that he had said he had "removed certain packages of great substance and weight," when what he actually said was that he had "pinched one or two lumping great bales."

Handwriting should be good, but it is better to use a typewriter: the latter will allow carbon copies to be taken for file and reference during the enquiry and during the later police court proceedings.

In all important enquiries, and particularly in those concerned with accidents, a plan or sketch should always be attached showing the place where the action described took place. As Napoleon said, a sketch tells a thousand times more than a long report. Such plans and sketches should not only be drawn to a clearly indicated scale but all the objects indicated thereon should be drawn to the same scale. Sometimes in the files of an accident case one comes across a sketch-plan on which the roads are strictly drawn to scale but on which a motor-cycle is made to look like a tank, and a light car, if drawn to scale, the size of the Coronation Scot locomotive. That is why little miniature figures, nicely drawn, representing pedestrians, motor-cars, etc., sometimes put in plans to illustrate the circumstances of a traffic accident, should not be employed unless the plan is on a large scale. Otherwise those trying to form a true picture of the accident either get a totally false idea or can make neither head nor tail of it.

That precision which is fundamental to all police technique should be observed in every detail of criminal investigation. Reports are no exception. All details concerning searches, places where objects have been discovered, the position of these, the presence of other objects or substances, the spontaneous statements made by the persons concerned

when objects are discovered and seized, the enforced attendance of persons in whose houses searches are made, in short everything which has or which may have any bearing on the enquiry should be scrupulously, carefully, and exactly put down in the report.

When articles are taken possession of it is as well to note how they were transported and where they have been placed (*e.g.* laboratories, police stations, public prosecutor's office, courts, etc.). The copy of the receipt and the inventory should of course be attached to the report.

It is also essential to mark in the report all the incidents directly arising out of the enquiry itself, particularly in connection with witnesses and accused.

When a mistake has been made in the course of an enquiry or in the execution of an official duty this should be noted in the report, so that later on it may not be said by the defence, if it comes to light, that some dark perversion of the law was intended by the Police.

In his report the police officer should avoid drawing conclusions from his enquiries, for various reasons. Such conclusions may be wrong, and may weaken the weight of his accumulated proofs. Only a court has the right to draw conclusions from the facts given.

When an officer in charge of a case finds that his duties will involve interviewing persons who are his own friends or relations or has to carry out an enquiry among them, he should immediately inform his superior officers of this fact, so that he may retire from the case and leave it to a colleague. Private feelings should never be allowed to affect a police officer in the execution of his duty.

Similarly, confidences made to the Police by any member of the public should never be divulged, not only because of the mischief such a betrayal might cause but because in all police forces there are such things as severe penalties for breaches of professional secrecy. For this reason be circumspect with the press, which in any big town should be dealt with by a special officer responsible to his superiors for anything he may say. In these days it is indispensable for the press to receive police information, and the problem for the

Police is to reconcile the demands of the newspapers, which are obliged to give their public the latest and fullest news, with the legitimate interests of police work—and justice. If the Police do not keep the press informed, newspapers put their own "crime reporters" on the track who, at the risk of ruining the official enquiry, make their own enquiries at the scene of the crime, interview witnesses, and raise up all sorts of stupid suspicions, often with a rapidity beyond anything possible to the Police. For the press is not handicapped by the scrupulousness and legal formalities which the Police must observe, and newspapers have means (in more senses than one) at their disposal which are not available to police officers. Nevertheless, it is well to bear in mind that the press is useful to the Police in certain circumstances, such as when the help of the public is required. We ourselves are in favour of a continual and honourable contact between Police and press, a connection founded on the principle that neither can do without the other and that both must be mutually helpful.

But in all this it is obvious that there can be no question of giving away to any unauthorised person whatsoever the contents, or extracts from the contents, of reports, statements, details of proofs, etc. Press communications must be organised in such a way that the various officers in charge of cases furnish a résumé of the information in their possession to their chief constable, who in turn may hand this, after verification and editing, to the officer dealing directly with the press.

IDENTIFICATIONS

Particular care is required when confronting an accused person with witnesses for the purpose of identification. We will illustrate this by the following story. At the beginning of 1920 we dealt successfully with a case of robbery with violence that had been committed during the occupation of Brabant by German troops. No enquiry had been made at the time of the crime, owing to the non-functioning of the Belgian civil courts; and the army of occupation had had other fish to fry. In spite of the time that had elapsed since the commission of the crime we managed to arrest the gang of ruffians

responsible for it, who, after confessing their guilt, were duly convicted. As soon as this case had been successfully disposed of the Public Prosecutor instructed us to investigate a similar but particularly vile case of lawlessness. In the spring of 1918 a number of gunmen—all either masked or with blacked faces (with one exception)—broke into a lonely farmhouse occupied by a farmer, his wife and their daughter of fifteen, who were all in bed. When the farmer tried to jump out of bed the unmasked gunman shot him in the thigh. The young girl, who had left her bed and run crying into her parents' room, was forced to stay with her father, while the mother was dragged out of bed and pushed into the kitchen. The unmasked man remained behind in the bedroom, threatening the father and daughter with his pistol, while in the neighbouring kitchen, the communicating door of which had been left open, a scene of frightful brutality was enacted. Threatening her with their revolvers the robbers tried to force the woman to tell them where the farmer's money was hidden. When she refused they put a running noose round her neck and repeatedly pulled her up to the top of the door and left her hanging there until she was almost strangled, then let her fall and pulled her up again a few moments later. Finally, as she could hold out no longer, she agreed to tell them where the farmer had hidden the money he had received the day before from the sale of some cattle.

The first step in our investigation was to go to the farm and there interview its three occupants. When we came out one of our subordinates remarked that he believed the description of the unmasked bandit agreed with that of a certain individual, a known thief and ex-convict, who was living in a village about seven or eight miles from the farm. Enquiry was promptly made and we learned that this individual was known to have committed robberies during the war. The following day we returned to the farm with twenty-five photographs of men of the same age and general description as the suspect, his own photograph being of course among them. We asked the three occupants of the farm to go outside for a moment, and then laid out our photographs on the table. That of the suspected person was number sixteen. The father

was the first to be asked to come in and examine the collection. In a few seconds, as soon as his eyes fell on the photograph of the person suspected by our assistant, he exclaimed, "That's the fellow who shot me!" He was asked to go into an adjoining room in order to avoid coming into contact with the other two witnesses, who in succession were also shown the photographs. Mother and daughter in turn made similar statements about No. 16, quite spontaneously. This quick recognition, in spite of all our precautions to avoid suggesting the photograph of the suspect to the witnesses, made us decide to ask for both a search-warrant and a warrant of arrest.

Next day the suspected man X was arrested; but as two years had elapsed since the commission of the crime it was almost a foregone conclusion that a search of his premises would not yield anything of value to us, and in fact we drew blank. An identification parade was held and X was placed among a dozen men of roughly the same appearance. The three witnesses were brought in in turn. The father at once sprang at X, shouting that this was the man who had wounded him, and was with difficulty prevented from assaulting him; the mother pointed out X immediately and clinched her testimony by very nearly fainting; and the young girl also pointed out X as the man who had threatened her father and herself with a pistol.

Could there be any further doubt about X's guilt? He was questioned about the crime and denied complicity, but in the unemphatic indifferent way of the ex-convict who lies against the facts and does not expect to be believed. Just as he was being taken away for interrogation by the examining magistrate, X asked to be allowed to make a further statement. Was he going to confess? No, he asked merely to be told once more the date when the crime had been committed. He was told it was on the night of April 3rd-4th, 1918. "Oh," he said, "I think I was in prison in Brussels then." A telephone call was at once put through to the prison authorities in Brussels, and his statement was found to be correct.

We are not particularly proud of this failure, but it serves to emphasise to all police officers how important it is that every

precaution should be taken when suspects are being identified by witnesses.

When it is a question of an accused person identifying his partner in crime the police should be more careful still, for accused persons will often incriminate a completely innocent person, either to muddle the case or out of a desire for revenge.

Many years ago we arrived on the scene of a crime where the door of a flat had been opened with a false key. We were accompanied by a couple of old and experienced police officers who formed the opinion that the theft had been "arranged," on the ground that the lock was of too complicated a pattern for the average lock-picker to manipulate. We came to the conclusion, however, based on various indications, that it was a genuine breaking-in. Some time later a suspected man was arrested and made a partial confession. He described a certain person who, he said, had given him information which had helped him in the job. The two police officers we have mentioned, still convinced that the crime was an "inside" job, concluded that the description fitted the victim's son. They made the mistake of parading this young man in front of the accused without first advising us they were going to do so. The crook at once "admitted" that the young man was his accessory. But after a few days it was shown that the accusation was a false one and that the thief had made it to get himself a lighter sentence. He finally made a full confession.

This example shows that identifications and accusations by accused persons may be false and should be rigorously checked; also that the details of an identification should be in the hands of the officer in charge of the enquiry and never left to the initiative of subordinates.

When photographs are shown to witnesses, those of the individual or individuals to be identified should be slipped among a large number of others agreeing roughly with the suspect's general description. The very general character of most descriptions gives a wide choice among the collection of photographs in the possession of the Police. This precaution is absolutely necessary if the whole procedure is not to look like a put-up job on the part of the Police. Thus, if the witness

says that the wanted person is bald, and the only picture of a bald man shown to him among the other photographs is that of the suspect, it is a hundred to one that the witness will choose that picture, partly out of a wish to please and partly because he wants to fix the guilt on someone. There are witnesses or prosecutors with so little regard for scrupulousness that as soon as they set eyes on the photograph of a man who looks like a criminal they will point him out as the man. One day, being suspicious about the genuineness of a certain identification, made by a woman jeweller who claimed to have recognised the thief who had taken her stock, we finally got her to confess. "Oh, well, it's him or somebody else. After all, he's a crook anyway, so what does it matter if he goes back to prison now or later? . . ."

In this matter of identification the police officer should avoid the least suspicion of giving a lead to the witness, so that recognition may be fair, absolutely definite, and *impartial*. Up-to-date police forces have albums or files of photographs, of which we shall speak again later. If search is made among these collections, the witness must be allowed to go through the photographs without guidance, hints or suggestions of any kind, particularly as to the classification of the photograph. Usually it is best to classify photographs for this purpose alphabetically.

It is best to show witnesses "three-quarter face" photographs. Profile and full-face photographs are excellent, and essential to the police, especially in connection with "portrait parlé," but are less satisfactory for identification purposes. Most criminal record departments now have one each of these three types of photograph for each entry. This system should be universal for the reasons given above. It often happens that a witness, pointing to the three-quarter face photograph, will exclaim, "That's him, but not the two others," although all three pictures on the page are of one and the same man. Everyone knows, by the way, that the "three-quarter face" position shows the head of the person photographed turned slightly towards the right and, preferably, with a hat on.

When it is necessary to show a person to witnesses in order that they may indicate whether or not he is the person

they have previously described, the following alternatives are always present : either the Police suspect this individual owing to his resemblance to the description given them and other facts, or the person, although he does not in the least correspond to the description furnished by the witnesses, has aroused the suspicion of the police in the course of their enquiries.

In the first case, precautions must be taken so that the witnesses shall not see the accused brought in alone, especially if he is handcuffed, whether the men who bring him in are in uniform or not ; for if this were done the attention of the witnesses would be drawn to him at once. He should be placed among a number of people roughly corresponding to the description given ; and finally the witness should be instructed not to indicate his choice in a loud voice or by bold gestures, but to make a note of the exact position of the man he has picked out in the rank or file and whether right or left, before or behind, so that he can pass on the information later to the Police. Actually witnesses often make mistakes at identification parades : in spite of the fact that they may be right in front of the true criminal they will choose someone else, perhaps a police officer, particularly when the charge is in connection with a moral offence. The officer in charge of the case should be able to prevent such mistakes from being seen by the accused, who would not hesitate to turn them to account and probably go back on a previous confession.

In the second of the alternatives mentioned above, where the suspect does not correspond to the description given by the witness, it is a good plan to make up the group for the identification parade from people of different appearances, including one or two more or less agreeing with the given description.

The circumstances in which this procedure is carried out should be minutely described in the report to be later submitted, and should include the preparations made, the precautions taken, the evidence of the witness, and his reaction and that of the accused.

REVIEWS

THE PELMAN SYSTEM FOR THE TRAINING OF MIND, MEMORY AND PERSONALITY.

THIS system has been so much advertised that one has come to look upon it much as one looks upon Player's Navy Cut, Pears' Soap and Beecham's Pills—commodities established in the public favour which go on selling of their own accord so long as they are continually brought to the notice of the public. If ever we gave a thought to the advertisements which so frequently caught the eye it was : " Probably there's something in it ; we are a nation of shopkeepers, and all the advertising in the world won't sell a dud ; you can't fool all the people all the time," and so on. But a course of mind training does not appeal to everyone—certainly it did not appeal to us—so, like most of our fellow men, we refrained from " buying one."

It was therefore with considerable interest that we found on our desk, one morning recently, a parcel containing the fifteen booklets comprising the Pelman course, together with a letter from the Pelman Institute inviting us to study their system of mind training and to criticise it in *THE POLICE JOURNAL*. Accompanying each booklet was a form that had to be filled in by the pupil, and these forms attracted our attention on account of the unusual questions asked in them.

Now, the editor of a magazine has other things to do than devote his evenings for fifteen days to studying the paraphernalia of a system of mind training. But the Pelman Institute has asserted that its system is of value to policemen, so we decided to take up the challenge and see for ourselves just how substantial that claim was and whether in actual fact this much-advertised system was likely to be of any use at all to police officers. We therefore got down to it, sceptically and not too readily, as being in the nature of a duty to our readers.

The first of the booklets attracted us and held our attention for two reasons : it was written with a minimum of verbiage and it contained a maximum of common sense. A critical analysis showed that every terse sentence in it had been drafted with care and with skill, and with due attention to its place in the argument. The result of this careful drafting was that not only was the booklet exceedingly easy to read but that the attention was held and—what was more—kept at concert pitch. This criticism holds good for all the fifteen booklets—one cannot help reading them with interest and attention.

The first booklet starts off with a little auto-suggestion, in order to put the pupil into the right frame of mind, which is *confidence*—confidence in himself and confidence in the truth of what he is reading. Then come six simple exercises in memory and observation. When he has done these exercises to his own satisfaction the pupil fills up Form No. 1, which is partly in the nature of an analysis of his reactions to the booklet and partly a confession of his mental shortcomings. This form he posts to the examiners at the Institute, receiving in return guidance and advice.

The second booklet gets down to brass tacks, so to speak, and deals with your purpose in life, the enormous importance of self-confidence, and the even greater importance of a good memory. The succeeding booklets carry the pupil right through the list of the mental qualifications required to succeed in that organised state of society which we call our civilisation. And it tells the pupil how to acquire these qualifications—more, it enables him (provided always that he takes the course as seriously as it should be taken) to acquire them in the surest and most expeditious way.

We do not think it would be possible for any intelligent man to fail to derive benefit from this course of *mind training*—provided (and this is important) that he sticks to it and goes through the course conscientiously and thoroughly, obeying the Pelman instructions to the letter and doing all the exercises prescribed. (By the way, there are physical jerks also to be done when you get up in the morning; for the propounders of this system believe in the motto *mens sana in corpore sano*—a healthy mind in a healthy body. These exercises seem excellent.) Unless therefore a man is determined to go through with it to the very best of his ability he had better keep his guineas in his pocket. It is not for the “old sweat.” It is not for the man who makes the rank of sergeant the summit of his ambition. But we are convinced that any progressive policeman who aims at the higher ranks and who takes this course in the way we have indicated cannot fail to benefit by it. It is not too easy, but not too hard, and there is nothing in it which is beyond the powers of any ordinary intelligent man who has continued his education after leaving school and who has sufficient ambition to want to get on in the world.

The time taken to complete the course varies from three to six months, and it costs seven guineas if prepayment is made, or eight guineas if paid by monthly instalments. The address of the Institute is Pelman House, Bloomsbury Street, London, W.C.1.

JARROLD'S DICTIONARY OF DIFFICULT WORDS. Compiled by ROBERT H. HILL. (Jarrolds, London. No date.) Price 3s. 6d. net.

THIS is a useful book, size 7½ by 4½, of 452 pages, which the publishers allege to contain “all the difficult words you are likely to meet.” It defines 15,000 words, most of them pertaining to the sciences. A good many common words have crept in—we should not have called *annihilate*, *oakum*, or *prodigy* “difficult.” On the other hand *eucaïne*, a local anæsthetic, finds a place but not the commoner *stovaine*. But these are small matters and we cordially recommend the book (which is remarkably cheap) as a useful reference volume for policemen of all ranks. A simple key to the correct pronunciation of every word is provided. Paper and print could not be bettered.

ILLUSTRATIONS OF BANDAGING AND FIRST-AID. Compiled by LOIS OAKES. (Livingstone, Edinburgh. 1940.) Price 6s. net.

THIS is another excellent book by the Editor of *Nursing Illustrated* (we reviewed her *Pocket Medical Dictionary* in 1938—vol. xi, no. 2). It is entirely a picture book, consisting of 290 photographs of triangular and roller bandaging, the arrest of hæmorrhage, and first aid in fractures, with explanatory text. The illustrations are good, and the text is lucid and adequate. It will be useful to first aid workers and classes and should be in every policeman's library. Incidentally it should be of value to the county policeman's wife in remote districts.

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War Commentary

WAR AIMS

IN the earlier months of the war it was inevitable that from various quarters the Prime Minister should be urged to define the war aims of the Government, and not merely the war aims but the aims of the peace when victory has been won. Mr. Chamberlain wisely declined to enter into any attempt to indicate, in precise terms, the Government's war aims, and with regard to peace aims, which some urged upon him as of equal importance, in definition, as the war aims, he pointed out that victory must first be won before consideration can be given to the terms of reconstruction which will follow.

Events are proving the wisdom of the Government's policy in this respect. Our sole war aim is victory for the Allied cause and, victory gained, the aim of the peace will be the maintenance of law and order in Europe. For the present, the events of the first nine months have served to impress upon all the cold fact that the whole weight of the country's resources and power, in men, machinery, and money, must be brought into use for the successful and complete defeat of Germany. The strength of the German war machine has not been minimised, and it is well to repeat that the whole of our resources are necessary to defeat Hitler, and all that he stands for.

CIVIL DEFENCE

There is evidence that the long period of waiting, almost for many a period of boredom, which was the outstanding feature of Civil Defence operations in the first winter of the war, has now ended. Experience has proved that such a

period, wisely used, can be used to the tactical advantage of the service, and the intense instructional activity and improvement of plans for the protection of life and property in the event of air-raids have made the Fourth Arm a skilled, if untried, part of National Defence.

"Courage; energy; confidence." The stirring words of the French Generalissimo's inspiring Order to his armies on the invasion by Germany of the Low Countries on May 10th may be used as a valuable maxim for all branches of Civil Defence. Courage is a quality about which Dr. Johnson, with his gift for getting at the heart of a subject, said that it was the essential virtue in man, since without it there was no certainty that he would hold on to any other. Without courage, a man will not retain either justice or loyalty, if he can be scared out of them at the first sign of danger. The history of the world shows the same thing—that the essence of manhood and keystone of all the virtues is courage. The pages of literature are studded with glowing passages in praise of valour, and who in his heart does not wish to emulate them, particularly the physical courage and conspicuous bravery in the field, on the sea, and in the air which merits, and receives, public recognition and honour from the King? But the policeman, and every citizen now standing with him in the ranks of Civil Defence, needs not merely physical courage, necessary as this is to his task. That elusive quality which never fails at the moment when decision must be made, when timidity of conscience urges delay, must be cultivated to provide both *physical* and *moral* courage in equal degree.

Energy: the tempo of events makes it necessary that both thought and action shall be accelerated. The dissemination of orders, and particularly their revision and amendment in the light of events and experience, demands energy and a skilful organisation of the administrative machinery of every department. The selection of men, their training and the provision of substitutes to replace them when necessity arises, are matters of high importance, equalling the need for the rank and file to be led and organised for the special tasks of their particular branch of the service. Now that the men and women of England are alive to the grim realities of war with Germany there is

evident a resolution to serve, and a readiness to work, in the task for which each is most eligible and qualified. It remains for those in authority, high and low, to use man-power and material to the best advantage.

Confidence: war is always a period dominated by the unexpected, and recently our days have been permeated by the spirit of surprise. Destinies are reshaped, as it were, overnight. Every day, sometimes every hour, has its fresh surprise, pleasant or unpleasant, encouraging or discouraging, as the case may be. The apparently unchangeable is shown to be mutable, and as for the impossible, a study of newspaper headlines is sufficient to banish the word from our language. In these days, therefore, a calm mind, a balanced judgment, a sense of humour are invaluable. Sober reflection on the events of the war to date have proved that those in command of our destinies merit our confidence. The many bitter lessons which the war of 1914-18 had to teach have been learned, and are being profitably applied.

A.R.P. TRAINING

Recent developments in the organisation of the training of personnel in air raid precautions are likely to secure more consistent standards of proficiency in the several branches of service, and enable the individual volunteer to reach proficiency through a balanced programme. No longer is the course of lectures on anti-gas training, with its rather formidable definitions and theoretical formulæ, the Volunteer's initial task. The basic course, as now prescribed in *A.R.P. Training Manual No. 1*, enables the Volunteer, and the ordinary citizen who is interested and willing to attend the course, to receive a short course of instruction in which a comprehensive, though compressed, word picture is presented to him. Beginning with a description of the machinery and organisation of Civil Defence, as it applies to the immediate locality, the course proceeds with lectures on the measures to be taken to deal with each of the three weapons used when bombs are dropped from the air—incendiary bombs, high explosive bombs, and war gases—and ends with a talk on the elements of first-aid to the injured. The Manual, which every trainee should be asked to

obtain for reference (its cost is the modest sum of 6d.), is itself a valuable guide for the beginner, and with the course should prove to be the stimulus to further interest and a desire to know more of the subject.

Manual No. 2 A.R.P. Training prescribes the further instructional courses for the several branches of Civil Defence, including the individual training necessary for the particular branch on completion of the initial basic course, and the team and combined training when the Volunteer is ready to take his place in the team.

REGIONAL POLICE SERVICES

The necessity for all measures for improvement in organisation and machinery to be subordinated to the major need for prosecuting the war effort will inevitably delay a number of reforms and good works. It is a matter for satisfaction to find that, despite the difficulties of the times, the Home Office are going forward with the regionalisation of those services which have proved their value. The Forensic Science laboratories at Hendon, Birmingham, Nottingham, Cardiff, Preston and Wakefield, with the special facilities approved by the Home Office for similar services in the South-Western counties, now provide every police force in England and Wales with a service of experts, and laboratory aids, which have greatly helped and will further help the examination and solution of serious crime problems. The experts now located in the several regional laboratories include pathologist, biologist, chemist, and reach out to cover every field of science and medicine.

Not the least encouraging feature of the scheme is the support which the Secretary of State received from the representatives of the County Councils Association and the Association of Municipal Corporations in making the financial adjustment. The seeds sown by the Committee on Detective Work and Procedure are growing on fertile soil, and in due course we may expect to see further developments, on a regional basis, in relation to records, finger-prints, and communications.

Recent Judicial Decisions

PROOF OF FAILURE TO OBSERVE TRAFFIC SIGN

Swift v. Barrett

THE decision of the Divisional Court (Hawke, Charles and Hilbery, JJ.) on the 9th April last in the above case requires to be carefully noted by all who are responsible for the due enforcement of the Road Traffic Acts. For this decision has shown that what had generally been thought to be adequate evidence of non-compliance with the provisions of the law relating to traffic signs, did not in law constitute evidence of any offence at all.

The material facts of the case fall within a very short compass. A Mr. Swift, the appellant, was driving his motor car along the Amesbury road when on approaching the junction of that road and the Salisbury-Warminster road he came to a sign bearing the words "Halt at major road ahead." He did not halt at the major road ahead and he was stopped by a police officer who pointed this out to him. Thereafter information was preferred against the appellant for having contravened sec. 49 of the Road Traffic Act, 1930. The above facts were adduced in support of this charge at the hearing of the information by the Warminster (Wilts) magistrates who upon this evidence convicted the appellant and fined him 10s. Against this conviction the appellant appealed to the Divisional Court by way of case stated.

The relevant provisions of sec. 49 of the Road Traffic Act, 1930, as amended by the Third Schedule of the Road Traffic Act, 1934, are as follows:

"Where . . . any traffic sign, being a sign for regulating the movement of traffic . . . and being of the

prescribed size, colour and type or of another character authorised by the Minister [of Transport] under the last preceding section [sec. 48], has been lawfully placed on or near any road, any person driving . . . any vehicle who—
(b) fails to conform to the indication given by the sign shall be guilty of an offence.”

By subsec. (2) of sec. 48 of the 1930 Act as amended by the above Schedule—

“ traffic signs shall be of the prescribed size, colour and type except where the Minister authorises the erection or retention of a sign of another character.”

By sec. 121 of the Road Traffic Act, 1930 “ prescribed ” means “ prescribed by Regulations.”

For the appellant it was contended that in order to prove a contravention of sec. 49 it was necessary to show not only that the appellant had failed to conform to the “ Halt ” sign but that the sign was of the size, colour and type prescribed by Regulations or authorised by the Minister and had been lawfully placed in the position in which it was situate. In support of this contention it was pointed out that section 36 of the Road Traffic Act, 1934, which made provision for the placing of traffic lights expressly stated that all such lights should be deemed to be of the prescribed size, colour and type, and to have been lawfully placed until the contrary was proved, whereas sec. 49 of the Road Traffic Act, 1930, contained no such provision. It was therefore a reasonable inference from the absence of such a provision that the offence was only proved if and when evidence was forthcoming that the sign was of the prescribed (or authorised) size, colour and type and had been lawfully placed on or near the road in question.

For the respondent it was contended the evidence of the police officer was sufficient to make out a *prima facie* case and that in any event evidence had been given to the same Court in another case on the 5th August, 1937, that the sign had been lawfully placed and was correct in size, colour and type.

The Divisional Court accepted the contention of the appellant and allowed the appeal. The judgments of their

Lordships were very brief, their Lordships considering that from the wording of the section the legislature had required that it should be proved that the traffic sign which had not been obeyed had been lawfully placed “ on or near a road.”

For guidance of those engaged in the prosecution of such offences Hilbery, J., pointed out in the course of his judgment that the requisite evidence in that case would have been the production of the Regulation under which the “ Halt ” sign had been placed in the Amesbury Road at its junction with the Salisbury-Warminster Road, coupled with the evidence of a police officer that the sign complied with the terms of the Regulation as to colour, size and type.

It may be added that the fact that the magistrates had on a previous occasion had the legality and correctness of the sign proved to them was irrelevant. It would at least have been necessary to produce to the magistrates the previous records of the Court containing this finding and to give evidence that the sign which the appellant was alleged to have disobeyed was exactly the same sign as that which the magistrates had already found to have been lawfully erected. In practice therefore the simplest course is in each case to produce the regulation and prove that the sign complies with it.

Criminal Law and Practice in Scotland

WHAT IS UNLADEN WEIGHT?

Mackie v. Waugh

THE effect of the recent decision of the High Court of Justiciary in *Mackie v. Waugh* (March 8th, 1940) is to set up, in Scotland, a double standard of unladen weight. For revenue purposes a vehicle's weight may be over, and for Road Traffic purposes under, two and a half tons. Chaotic as the result of this may be, there is no escape from it. Until fresh legislation has set matters right, Traffic Officers must make the best of a bad job.

The facts in Mackie's case were in no sense abnormal. Having, in 1937, acquired a platform motor lorry weighing 2 tons 9 cwts., he registered it and paid the duty (£30 per annum). Later in the same year, in order to convey livestock, he had fitted to the lorry a container of a familiar type with built-in wooden floor, held on the lorry's platform by its own weight and by projections fitting over the platform. The vehicle was used on three days a week with the container for livestock and on other days with the container removed for general goods conveyance. The container was lifted off by block and tackle at Mackie's premises. This was always done when the container was empty and could not safely have been done otherwise. For nearly two years the authorities accepted this position, treating the vehicle's unladen weight, for all purposes, as under 2½ tons. In February 1939, however, following upon the High Court decision in *Paterson v. Burnet*, 1939 J.C. 12, the Taxation Authority called for a re-declaration of unladen weight. The weight of the vehicle *plus* the container being 2 tons 19 cwts., the Authority insisted upon payment of

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extra duty—a further £5 per annum. A new licence was issued showing *ex facie* the vehicle's unladen weight as 2 tons 19 cwts.

In this state of affairs, Mackie, on July 3rd, 1939, drove the vehicle, with container fitted, along a public road at 29 m.p.h. According to the Road Licence exhibited, the unladen weight was 2 tons 19 cwts., while the unladen weight figures painted on the left side of the vehicle were 2 tons 9 cwts. There was no disc showing the figure "20" exhibited on the rear of the vehicle. Mackie was convicted, in the Sheriff Court at Kinross, of (1) exceeding the speed limit, (2) failing to have the weight unladen painted on the vehicle, and (3) failing to exhibit a "20" disc. Against this conviction, he successfully appealed to the High Court of Justiciary.

In allowing the appeal, quashing the conviction, the judges of the High Court held that for the purposes of the Road Traffic Acts and Regulations the unladen weight of the vehicle in question must, in view of the terms of Section 26 of the Road Traffic Act, 1930, be computed without reference to the container, i.e. at 2 tons 9 cwts. This followed from the decision of a Full Bench of seven judges in *McCowan v. Stewart*, 1936 J.C. 36. True, in the meantime an extended definition of unladen weight had appeared in Section 7 (1) of the Finance Act, 1937; but that definition applied, in the Court's opinion, only to the question of the duty chargeable. It did not affect the speed or markings of the vehicle, which were regulated by the Road Traffic Code and not by the Finance Acts.

"GOOD REASON" FOR POSSESSING FIREARMS

Todd v. Neilans. *Anderson v. Neilans*

Section 2 of the Firearms Act, 1937, after directing that the chief officer of police *shall* grant a certificate if he is satisfied that the applicant has a "good reason" for purchasing, acquiring or having in his possession the firearm or ammunition in respect of which the application is made and can be permitted to have it without danger to the public safety or to

the peace, concludes with the proviso that "a certificate shall not be granted to a person whom the chief officer of police has reason to believe to be prohibited by the Act from possessing a firearm to which Part I of the Act applies or to be of intemperate habits or unsound mind or to be for any reason unfitted to be entrusted with such a firearm." Any person aggrieved by the refusal of the chief of police to grant or renew a certificate has a right of appeal to the Sheriff. This right of appeal has rarely been exercised; but, by a fortunate chance, two such appeals were recently made, within a few weeks of each other, to the same Sheriff—Sheriff Malcolm at Dundee. In the first, the appeal failed; in the second, it succeeded. In course of his extremely careful judgments, the Sheriff made certain pertinent observations which may serve as a guide to the police in disposing of future applications.

In the first of these cases (*Todd v. Neilans*, 1940 S.L.T. (Sh. Ct.) 12), the Chief Constable of Dundee had refused an application for renewal of a certificate for a revolver. The only reason given in the application form was "target practice"; but, at the hearing on appeal, the applicant was allowed by the Sheriff to state and argue two additional reasons to justify his possession of a revolver—that he had to travel abroad on business and that he required the revolver for signalling from a small sailing boat. In the Sheriff's opinion, none of these was a "good reason." "If," he said, "a certificate were to be granted to every person who said he wanted it for target practice, the country might bristle with revolvers, very much to the detriment of public safety; and further that reason, if it were to be accepted, might easily be given by any person as a cloak for the possession of a revolver for some other and even less legitimate reason." As for travelling abroad, that was, in the Sheriff's view, a good reason for refusing the certificate. "This country," he commented, "does not wish its nationals to cross the channel and land in a foreign country and on landing be found in possession of a revolver. Arrest or detention would probably follow and all sorts of awkward questions might arise. One has only to visualise the converse case to see the force of the objection. An alien landing in this country and found to be in possession of a revolver would certainly be

regarded as a suspicious or dangerous person and would be detained pending enquiry. Whatever the result of the enquiry, the revolver would be forfeited. A British subject landing in a foreign country is an alien there, and we do not wish similar troubles to arise. And, in any event, the countries of Europe are not barbarian countries; any respectable visitor is as safe in them as in this country, and the tens of thousands of tourists and others who travel abroad do not ordinarily find it necessary to carry revolvers." The third reason—signalling from a boat—the Sheriff found himself unable to take seriously. Further, he refused to accept the argument that a certificate *must* be granted to an applicant who did not fall into one or other of the categories enumerated in the proviso quoted above (intemperate habits, unsound mind, etc.), holding that there was conferred upon a Chief Constable an "unfettered discretion—subject, of course, to appeal—to grant or refuse a certificate in all cases not covered by the proviso." The Sheriff's judgment concluded with the general observation that an appeal court would be slow to interfere with the decision of the police authority, for the police had "specially good opportunity of being well informed on the facts, circumstances and merits of the question."

Notwithstanding this expressed reluctance to overrule the police, Sheriff Malcolm some three months later (*Anderson v. Neilans*, 1940 S.L.T. (Sh. Ct.) 13) allowed an appeal against the Chief Constable of Dundee by an applicant who had been refused renewal of a certificate in respect of four revolvers owned by him, holding that, in this case, the reason advanced for possession was "good." Applicant was an ex-army officer. The revolvers were part of a collection of firearms, numbering about twenty-seven in all, which he had had in his possession for a period of from twenty-eight to forty years. This collection was kept in the applicant's house, in a cabinet with a glass front, with no special protection against thieves or housebreakers.

In these circumstances, the Sheriff found that the grounds given for retention of the revolvers were such as to constitute, in the sense of Section 2 of the Firearms Act, 1937, a strong *prima facie* case of "good reason" and that, in the absence of

any countervailing reason to the contrary, the certificate should have been granted. In course of a long and careful judgment, the Sheriff expressed the view that "in considering every case, the chief of police should keep in mind that the duty which the Act puts upon him is the judicial or *quasi*-judicial one of deciding whether the reason given for possession of the firearm is in itself a good one, not whether objections can be raised against it, and accordingly he should endeavour to view the matter, in the first place, from the standpoint of the applicant rather than from that of a possible objector." In the hands of a person beyond suspicion, the making of a collection of firearms was an innocent and innocuous hobby. It was not enough to say that there was a risk of theft by intruders, nor that the collection was not under lock and key. Moreover, the application was one to which special favour should be extended in view of the applicant's status as an ex-officer. Such a view derived support from the Scottish Office Memorandum of 1937—especially paragraph 79. "It is the individual—his position, character, loyalty, training and presumed ability to look after revolvers safely—that counts."

POLICE OR SHERIFF COURT?

A police officer in Scotland may sometimes be at a loss as to the appropriate court for the trial of the charge which he is investigating. To whom should he apply for a warrant or submit his summoning report—to the Procurator-Fiscal or the Burgh Prosecutor? The suggestion has been made to the writer that he might set out simply the rules by which the destination of a case is to be determined.

First, then, as to common law crimes. Here no great difficulty presents itself, so long as the officer keeps well in mind the catalogue of crimes excluded from police court jurisdiction (except for purposes of remand or remit) by Section 8 of the Summary Jurisdiction (Scotland) Act, 1908, viz. murder, culpable homicide, robbery, rape, wilful fire-raising; theft by housebreaking, housebreaking with intent to steal; theft, reset, fraud or embezzlement to an amount exceeding ten pounds or when aggravated by two previous

convictions of dishonesty; theft by opening lockfast place; assault whereby a limb has been fractured, assault with intent to ravish, assault to the danger of life, assault by stabbing; uttering and coinage offences. Two comments may be of service. (1) In determining what is to rank as a previous conviction, it must be remembered (a) that an admonition is, for the purposes of this section, to be ignored, as is a probation order; (b) that if the accused is still a juvenile, the ordinary rules apply to all intents as if he were an adult—e.g. a lad of 16 with two appearances for theft, on one of which he was whipped and on the other fined, must, if again charged with theft, go to the Sheriff Court, although the term "conviction" is not now used in reference to juveniles; and (c) that once the accused has reached 17 years of age, his juvenile appearances are to be disregarded for purposes of jurisdiction; he makes a fresh start. (2) The catalogue of crimes quoted above is not necessarily exhaustive—e.g. it would be quite inappropriate to deal in a police court with a serious case of perjury or threats.

What of statutory contraventions? Here the answer is provided once one has realised the distinctive nature of the Sheriff Court. "It is the King's Court in the Sheriffdom, and the King's Court has jurisdiction at common law to take cognizance of any offence against the King's peace within the Sheriffdom, unless its jurisdiction to do so is *expressly excluded* by statute." (*McMillan v. Grant*, 1924 J.C. 13 at pp. 22, 23.) A further extension of this "universal jurisdiction," as it has been called, was conferred recently by the Criminal Procedure (Scotland) Act, 1938, Section 10, which enacted that even where, as in certain coinage offences, a person guilty of a statutory contravention is liable to a sentence of penal servitude (which sentence is, of course, the prerogative of the High Court of Justiciary), it is competent to try the case before the Sheriff—the penalty being restricted, in that event, to one of imprisonment for two years. Moreover, the Sheriff has a concurrent jurisdiction with every other court of summary jurisdiction within his sheriffdom in regard to all offences competent for trial in such courts (Summary Jurisdiction (Scotland) Act, 1908, Section 11); so that if a case is triable in a police or J.P. court, it may equally be heard before the Sheriff. It

follows that the golden rule should be—when in doubt, try the Sheriff Court.

Conversely, a Police Court, not being a court of “universal” jurisdiction, may be called on to justify its trial of a case and can, if the offence be statutory, do so only by pointing to some clause in an Act of Parliament which, expressly or by the clearest implication, gives jurisdiction to a magistrate. The phrase “on summary conviction” is not enough (*McPherson v. Boyd*, 1907, 5 Adam, 247); but where a statute imposes penalties on persons convicted “before a court of summary jurisdiction,” that phrase operates to enable a Police Court to try the offence (*Hall v. Macpherson*, 7 Adam, 173). The importance of the distinction between these two phrases appears if one compares Part 2 of the Children and Young Persons (Scotland) Act, 1937 (Sections 12 to 27) with the immediately following sections, particularly Section 31. The offences in Part 2 are punishable “on summary conviction” and must be tried in the Sheriff Court. The offences created by Sections 28 to 31, on the other hand, bear to be punishable “by a court of summary jurisdiction” and are therefore appropriate either to a Sheriff Court or a Police Court. A similar splitting of offences under the same Act is to be found in the Road Traffic Act, 1930, which permits of proceedings in a Police Court where the maximum penalty does not exceed £20, but reserves the more serious contraventions (e.g. reckless driving, “drunk in charge”) for trial by a Sheriff. It remains to be noted (1) that the statutory direction as to the destination of charges may be found elsewhere than in the act creating the offence; e.g. power to try contraventions of the Criminal Law Amendment Act, 1885, in a Police Court is conferred by Section 431 of the Burgh Police (Scotland) Act, 1892; and (2) that Police Courts do not always exercise the full powers open to them; e.g. in Edinburgh, very few Road Traffic cases are dealt with in the Burgh Court. Police officers should make themselves familiar with, and should give effect to, such local arrangements between the Burgh or City Prosecutor and the County Procurator-Fiscal. It will, of course, be appreciated that even where a Police Court does not possess, or does not choose to exercise, power to try a charge to its conclusion,

hearing evidence and pronouncing sentence, it still may take cognizance of the case to the extent of remanding the accused for enquiry or remitting him to a higher court.

By applying the rules above elaborated, it is possible to compile a list of statutory contraventions triable before a magistrate in a Police Court. For convenient reference, we append such a list, followed by a list of offences triable only in a Sheriff Court. It must be clearly understood that neither list is by any means exhaustive, but the lists contain most of the statutory offences commonly encountered by the Police.

CONTRAVENTIONS TRIABLE IN A POLICE COURT

It is competent to try in a Police Court contraventions of the following enactments, viz. the Vagrancy Act, 1824, Section 4; the Prisons (Scotland) Act, 1860; the Trespass (Scotland) Act, 1865; the Prevention of Gaming (Scotland) Act, 1869; the Prevention of Crimes Act, 1871; the Tramways Act, 1870; the Pedlars Act, 1871; the Dogs Acts; the Pawnbrokers Act, 1872; the Criminal Law Amendment Act, 1885; the Burgh Police (Scotland) Acts; the Diseases of Animals Acts; the False Alarm of Fire Act, 1895; the Immoral Traffic (Scotland) Act, 1902; the Licensing (Scotland) Acts; the Street Betting Act, 1906; the Gaming Machines (Scotland) Act, 1917; the Ready Money Football Betting Act, 1920; the Road Transport Lighting Act, 1927; the Betting (Juvenile Messengers) (Scotland) Act, 1928; the Slaughter of Animals (Scotland) Act, 1928; the Petroleum (Consolidation) Act, 1928; the Children and Young Persons (Scotland) Act, 1937 (in part, as above explained); the House to House Collections Act, 1939, but only where the maximum penalty is not over £10.

CONTRAVENTIONS TRIABLE IN THE SHERIFF COURT

On the other hand, contraventions of the following enactments *must* be tried in the Sheriff Court—the Explosive Substances Act, 1875; the Indecent Advertisements Act, 1889; the Post Office Acts; the Protection of Animals (Scotland)

Act, 1912; the Official Secrets Acts; the Shops Acts; the Aliens Order, 1920; the Dangerous Drugs Acts; the False Oaths (Scotland) Act, 1933; the Betting and Lotteries Act, 1934; the Coinage Offences Act, 1936; the Public Order Act, 1936; the Methylated Spirits (Sale by Retail) (Scotland) Act, 1937; certain offences under the Children and Young Persons (Scotland) Act, 1937, as explained above; the Firearms Act, 1937; the Prevention of Violence Act, 1939; the Trading with the Enemy Act, 1939; the Prices of Goods Act, 1939; the House to House Collections Act, 1939, where the penalty is over £10; the Defence Regulations.

Studies in Identification and Reconstruction. No. 7

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IN previous articles I have indicated the importance of the meticulous examination of every detail in connection with identification, and have shown that in pursuing any investigation for the purpose of identification facts necessarily emerge which carry the case further. After solving the problem of who the unknown individual is, questions concerning the manner, time, and place of death inevitably arise, and information on these questions may be expected from the medical and laboratory investigation. An essential part of such enquiry is usually an attempt at reconstruction of the crime.

I propose in this article to deal with the use which may be made of the laboratory in this connection, and to indicate the importance of identification of the most minute objects associated with a crime.

It may be taken as an axiom that scientists and laboratories are of little value unless they are given a specific problem to solve, and it is unlikely that they will be of any particular help unless those who first appear on the scene of a crime know what to look for, and what to keep for investigation by specialists. In this article I shall deal with a case of child murder, which illustrates the use which may be made of laboratory workers in solving the problems which I have outlined above.

The main facts of the case are comparatively simple. On the afternoon of April 20th, 1934, Helen Priestley, a girl aged 8 years, left the house of her parents at 61 Urquhart Road, Aberdeen, to go to the Co-operative Stores for a loaf of bread. She was not seen again by her parents until her dead

body was found enclosed in a sack in the lobby on the ground floor of the common stair leading to their house, at 5 o'clock the following morning. Before leaving the house, just before one o'clock, the child had had a mid-day meal, consisting of beef and potatoes. She arrived at the Co-operative Store at about 1.30, was given a plain loaf with a voucher slip, No. 21567, and left for home. She was seen to pass No. 59 Urquhart Road, next door to her home, but though there were many people standing about further along the street, she was not seen to pass in that direction, and there appears no reason to doubt that she went into her own stair at No. 61 somewhere about 1.45 p.m. Her mother was waiting for her on the first floor and would have seen her if she had come up the stair. There are eight houses in this stair, disposed on four floors (Fig. 1); on the right-hand side going in lived the Donalds; on the left-hand side, the Topps; on the first floor above the Donalds were the Priestleys, the home of the victim; the others are of no importance. Mrs. Priestley was waiting at her door for her daughter at about 1.45 p.m., but as she did not return the mother became anxious and soon thereafter raised a hue and cry. Search was made for the child continuously from that time until midnight, without result. It was a wet night, raining continuously from about 8 p.m. The search was abandoned after midnight and was to be resumed at 5 o'clock the next morning, but during the night and early hours of the morning people were about in the street and passing in and out of the tenement.

On the ground floor there is a passage running to a back door which leads to a yard common to all eight houses of the tenement. Near this back door there is a water-closet common to the two houses on the ground floor, the Topps and the Donalds. Mr. Topp went to the water-closet at 1.30 a.m. and there was nothing there at that time. At 4.30 he got up to take part in a renewed search, and if there had been anything in the recess then he was of opinion that he would have seen it, but he saw nothing. At 5 o'clock in the morning the body was found in a sack in the recess leading to the water-closet. The sack must have been placed there between 1.30 and 5 a.m., and probably between 4.30 and 5 a.m. The sack and the



FIG. 1. PART OF URQUHART ROAD



FIG. 2. THE BODY AS REMOVED FROM THE SACK

clothing of the child were dry. There were no footprints in the passage, on the doorstep, or on the concrete outside the back door. The ground was soft and wet in the backyard, but no foot marks could be found in it. The sack showed no signs of any crinkling such as it would have if it were carried any distance, but it had a depression at the level of the child's abdomen, which it would have if it were carried over the arm.

These facts should have been sufficient to indicate that the crime had taken place within the tenement. The condition of the clothing, however, suggested that rape had taken place, and detailed evidence of a boy (entirely fabricated), that he had seen Helen being dragged into a car by a rough-looking man, put the Police on a wrong scent and lost a considerable amount of time in the investigation.

The body when examined by Dr. Richards at 5.30 a.m. was completely rigid. He and Professor Shennan made a post-mortem examination later in the morning. Their report gave the following information:

The body was that of a well-developed girl, 4 ft. 3 in. in height. It was clothed in a blue serge overdress, cotton combinations, shoes and stockings. Her hat and knickers which she had been wearing were missing. The skirt of the blue serge overdress was drawn up exposing the buttocks (Fig. 2). Some vomited material had dried on the overdress over the left shoulder, left side of breast and right upper arm.

Post-mortem rigidity was fully established. Post-mortem staining was well marked and from the distribution of the stains on the exposed parts of the skin, the body appeared to have been lying on the left side for some hours after death.

There was a general congestion of the skin over the whole of the head, especially evident over the face. There was an oval bruise, measuring half an inch by one-quarter of an inch, just above the outer end of the left eyebrow. Over the left cheek there was some dried vomit, and a cinder with a little vomit on it was fixed between the upper incisor teeth and the lower lip. The lips were livid. The teeth were not loosened. The tongue was pressed forwards against the teeth in the lower jaw. There was some coke dust over the chin, and in

the middle line below the lower lip a small old scar. The nostrils contained some vomited material.

On removing the clothing, the right leg of the combination was found to be torn, and the part covering the lower abdomen and external genitals soaked with blood and urine (Fig. 3). Thin streaks of dried blood extended from the genitals over the buttocks and upper parts of the thighs. There was lividity of the thighs above the line of pressure of the garters.

Over the front and sides of the upper part of the neck there were several small hæmorrhages about the size of a hemp-seed. In addition there was a small bruise on the right side of the area about one inch from the middle line. The skin over the lower half of the front of the neck, and over the front of the chest down as far as the third ribs, was congested and stippled with minute hæmorrhages.

The finger-nails on the right hand were only slightly livid, but those on the left hand were distinctly livid, and the fingers were half clenched. The nails were not broken. On the right palm the figures 21567 had been written with blue pencil. (This was Mrs. Priestley's number at the Co-operative Store, and the figures had been imprinted on the palm from the ticket which the child had held in her hand.)

On examining the genitals, the vagina was found to be dilated, and its back wall torn, involving the whole thickness of the perineum for half an inch. Internally, the back wall was torn away from the vulva, and a ragged cavity with blood-infiltrated wall passed upwards behind the vagina, penetrating into the bowel a short distance above the anus.

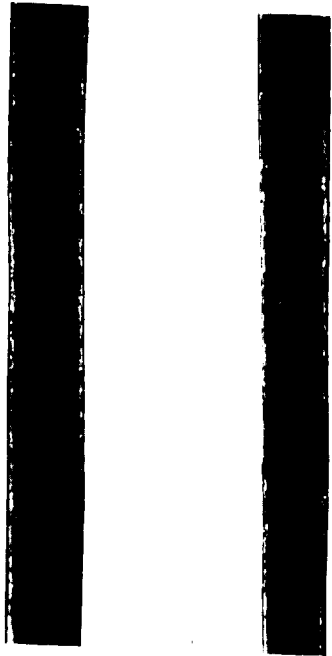
The anus also was dilated and the surfaces bruised and hæmorrhagic. In the front wall of the rectum there was a ragged opening, rounded when stretched, and half an inch in diameter, but when relaxed one-third of an inch vertically by one-sixth of an inch transversely. Above this opening, and one-and-a-half inches from the anal margin, there was a small laceration of the mucous membrane, measuring half an inch by one-quarter of an inch. On the lateral walls there was some bruising. For two inches from the anus there were no faecal contents, only blood-stained mucus covering the walls.



FIG. 3. DECEASED, WITH OUTER CLOTHING REMOVED

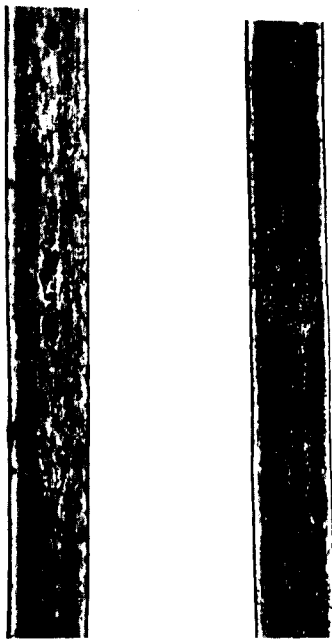
FIG. 4

HAIRS FROM SACK
(Magnification $\times 125$)



Hair 15a

Hair 41a



Hair 15a

Hair 41a

HAIRS FROM MRS. DONALD'S BRUSH
(Magnification $\times 125$)



On opening the body, vomited matter was found in the gullet and windpipe and inhaled deeply into the small bronchi. The soft palate, the throat, and glands in the neighbourhood were deeply congested, and some of the last contained small hæmorrhage. There were bruises in the small muscles in front of the voice-box and windpipe, and in the left sternomastoid muscle.

The thymus gland was larger than normal, and its substance beset with small hæmorrhages. Similar small hæmorrhages were found on the outer surface of both lungs, and over the front and apex of the heart. The lungs were congested; the heart was practically normal.

The stomach was full of a mixture of undigested meat and potatoes; very little had passed into the bowel, and the lacteals showed only commencing absorption of chyle.

The lymphatic glands in the mesentery were enlarged and calcified, from old healed tuberculosis.

The liver, kidneys and pancreas were congested, and the lymphoid tissue in the spleen was prominent.

The urinary bladder was contracted and empty.

Head.—On reflecting the scalp numerous hæmorrhages were found in its under surface. There was no fracture of the skull. The veins in the membranes of the brain were engorged, and the grey matter of the brain congested. There was no gross hæmorrhage within the skull.

The medical examiners concluded from the above examination that death was due to asphyxiation, apparently caused by compression of the neck, and that death took place about one to two hours after a meal; that extreme violence had been applied to the genitals so that the vagina, perineum, and wall of the rectum had been torn; no trace of spermatozoa was found.

One of the important points brought out by the examination was that the injuries to the parts of the child were not the result of rape, but that they had been produced by forcing an instrument into the vagina and anus. This instrument had passed under the membrane of the back wall of the vagina for some little distance before it perforated the front wall of the rectum. It then passed up the rectum for a few inches and

caused a laceration and bruise of the mucosa. This excluded the possibility of it having been caused by the male organ. This fact alone altered the whole trend of the investigation, for whereas previously the crime was considered to be a case of rape, and therefore the act of a man, it then became obvious that it could have been caused by a female.

Now as to the manner, time and place of death.

The cause of death could definitely be assigned to asphyxia due to manual strangulation or inhalation of vomited matter, or both, while the state of the thymus and lymphatic tissues raised a suggestion that the child might be liable to die more readily than usual. Microscopic examination of the injuries found on the neck and on the private parts showed that they had all been inflicted before death. It could, therefore, be assumed that the child had been subjected to two assaults, the relationship of which to one another will be discussed later on.

The time of death could be assessed with some degree of precision. Apart from the observation of rigidity, loss of temperature, fixation of post-mortem stains, etc., the state of the stomach contents was of importance. The food in the stomach was identified as that taken at 12.30 o'clock, and since it showed only the early changes of digestion and the lacteals just beginning to fill, it indicated that death had taken place within a very short time after the ingestion of the meal and probably within an hour or an hour and a half. This would place the time of death at somewhere in the vicinity of 2 o'clock. The child was seen near her house at five minutes to two, therefore she must have been killed a very short time after she was seen next door to her own home. A scream was heard by a slater working in the backyard at 2 o'clock. He said it sounded like the scream of a frightened child and appeared to come from No. 61.

From these considerations we may reasonably assume that death took place about 2 o'clock. The time is of considerable importance, for if the child was killed at 2 o'clock Mr. Donald and his daughter had a good alibi, as well as several other persons.

The place of death. The dead body of the child was found at 5 o'clock the following morning in a recess in the common

lobby of No. 61. It must either have been brought in from outside, or had remained somewhere in the tenement the whole time. If it was brought in from outside it must have been brought in by the front or by the back door. If it was brought in by the front door we have to assume that the murderer carried the body of his victim in a sack with the legs sticking out through a main street where quite a number of people were passing backwards and forwards. If it had been brought in through the back door he would have required to pursue a circuitous route across backyards, climb over a stone wall, and tramp over a muddy back green. Apart from the obvious absurdity of the suggestion that a murderer would go to so much trouble to get himself into difficulties, there is the fact that no trace of footmarks was found in the lobby where the body was found, nor were there any fresh footmarks in the mud in the backyard. Furthermore, the sack was dry, although it had been raining heavily the greater part of the night, and it did not have the appearance of a sack which had been carried any distance. The possibility therefore of the body being brought in either from the front or the back can be excluded, and we must assume that the body was in the tenement the whole time and that the murder had been committed there.

As I have previously stated, the tenement consists of four storeys with two flats on each floor, and houses eight families: the Priestleys, the Donalds, and six others. All the occupants of the latter six houses had a complete alibi. In the seventh, there lived Mr. and Mrs. Donald and their daughter. The father and child could account for their movements at the material time. The mother, Mrs. Donald, gave a statement about her movements between 1.30 and 3, which could not be corroborated, and one of her statements, that she returned home at 2.10-2.15, was proved to be false, a most suspicious circumstance. By a process of exclusion, therefore, she appeared to be the only person who could have committed the crime; but such exclusion, though suspicious, is not to be regarded as proof of guilt, and it remained to connect, by such evidence as could be obtained, the accused with those things that were found with the body of the child. Mrs. Donald was, however, arrested and charged with the crime.

The only means by which the place where the crime was committed could be traced lay in an investigation of the things found with the child, namely, the sack, in which there was found a handful of cinders and debris, and anything which might be attached to the clothes of the child from the locus. In addition, since the child had vomited, there was a possibility that some of the vomit might be present at the scene of the crime; and since hæmorrhage had occurred from its injuries, that blood stains might also be observed, and that such blood stains might be contaminated with materials from the alimentary canal or the vagina. Since the bladder was entirely empty, there was the further possibility that urine had been passed at or about the time of the injury. A pair of woollen knickers and a beret which the child had been wearing when she left home were not found with the body, and presumably might be at the scene of the crime; also the store ticket which she had had in her hand, and the bread which she had been carrying, might possibly be found there.

The instrument used, which might have been the handle of a brush or a porridge stick, might be expected to be found.

The sack should, of course, have proved the best connecting link, and no effort was spared to trace it. It was an ordinary jute sack with the letters B. O. S. S. painted in red. It had originally been sent with a shipment of cereals from Canada two years before. It had passed to London, thence to agents in Glasgow, who in turn shipped a quantity of the cereal to Aberdeen. After the contents had been used, however, the empty sacks had passed into the hands of sack dealers and could not be thereafter traced, though there was some ground for believing that a sack of that kind, with others, had been sold to a farmer in the vicinity of the place where Mrs. Donald's brother worked.

The cinders, dust, debris and other material were carefully removed from the sack and subjected to a minute examination.

Certain stains on the sack, on examination by ultra violet light, yielded a fluorescence such as is observed with urine, and chemical examination showed the presence of uric acid, urea, and phosphates, in the proportions found in urine. From the

disposition of these stains it appeared that the child had been in the sack feet first at some time or other.

On the sack were found other marks indicating that it had been in use in a kitchen and had black stains from the bottoms of pots and slight traces of food matters. There was a hole in one corner where it had apparently been hung up on a hook.

The only house in the stair where sacks were found was the Donalds', and in their house there were seven sacks. Five of these had a hole in the corner similar in position and appearance to the hole in the sack in which the child's body was found. In three of them there were pot marks similar to those on the seized sack.

Inside the sack, as I have mentioned, there was about a handful of washed cinders. The only person in the tenement who was in the habit of washing her cinders was Mrs. Donald, and traces of washed cinders were found in the trap of her sink. The cinders found in the sack were compared with cinders taken from each of the eight houses by naked eye and microscopic examination, and subjected to different forms of light, and though there were certain resemblances, closer in the case of cinders from the Donalds' house, it was not sufficiently definite to warrant it being used as evidence. The cinders were submitted to the Department of Mines where they were X-rayed. They were ashed and examined by the spectrograph and by micro-chemical methods in order to ascertain whether any particular thing peculiar to the Donalds' house was in them, without result.

Amongst the cinders there was a small quantity of fluff and dust, such as one finds in ordinary household debris, and a few hairs. The hairs at first were thought to be the hair from the head of the child, but on microscopic examination they were found to be of a different colour and of a much coarser nature than those on the head of the child. They showed, in addition, a remarkable irregularity of contour, the lumen appearing to bulge and then again to become small. There were also many definite twists in the hair. This peculiarity was due apparently to artificial waving which had been done rather carelessly. A large number of samples of artificial hair were examined for comparison, and, in general, the same type of irregularity was

observed. Hair from the Donalds' house and hair from Mrs. Donald's brush showed exactly similar characters and a similar waving and distortion. As far as one could judge by examining these things side by side in the comparison microscope, the two hairs, those from the sack, and those from Mrs. Donald's brush, were identical in every detail, but this could not be regarded as proof that it was Mrs. Donald's hair. In any one individual it is possible to get hairs of different diameters, different colour, and different length; and further, one may obtain greater differences in the hair of one individual than between the hairs of two different individuals. So, unless there is something very characteristic about a hair, one cannot place a great deal of reliance upon it for purposes of identification. In this particular instance there was no doubt that the hair was not the hair of the child, but that it was hair which had been artificially waved and it bore a striking similarity in all respects to Mrs. Donald's hair. Standing by itself, therefore, it was of a definite significance but would require further support before it could be of value as proof of identity.

The fluff was then examined microscopically. Household fluff is more or less characteristic. In all fluff there are likely to be common fibres, such as wool, cotton, silk, hair, and so on, and fibres more or less characteristic from clothing, carpets, etc. In this fluff we separated and prepared for examination about 200 different types of fibre. For such examination, a comparison microscope is essential. Fibres must be compared with reference to their origin, form, and structure, their width and length; the type, size, and form of the cuticular scales, cortex and medulla; the presence of damage to the fibre or frilling of the ends; the presence and distribution of colour; the nature of the dye may have to be ascertained by microchemical and spectroscopic tests and the behaviour under ultra violet light. In the sample in the sack there were numbers of fibres of wool, cotton, linen, silk and jute dyed different colours, red, brown, pink, green, yellow and purple; fragments of undyed wool and cotton, fragments of cat and rabbit hair, and bits of human hair. Some fluff was found amongst the cinders in the fireplace of the Donalds' house. This fluff was compared with that from the sack, and

no less than twenty-five different fibres of different colours were matched. These agreed in all the details mentioned above, but in addition in more than one instance a fibre which showed alternate patches of bright red and faded pink was found in both. In addition, there were in both, numerous fine fibres of wool, rabbit and human hair, which were identical.

Household debris from several houses was investigated for comparison, but in no case was there any series of resemblances. The absolute matching of such a number of diverse fibres was in my experience proof that the fluff in the sack was derived from the Donalds' house.

Amongst the debris from the fireplace was a fragment of paper which had the same structure and microscopical appearance as the store voucher which the child had held in her hand, and there was, moreover, on one side of it a green line identical with the green line on the store voucher. This bit of material evidence was not used in the case.

A very careful examination of the Donalds' house was made to see whether any stains could be found, and in various parts of the house were found spots of what appeared to be vomited matter, but on comparing these with the vomited matter from the child, no definite resemblance could be found.

In the house there were a number of blood stains. Certain of these were due to blood of menstrual origin and need not be further discussed. There were, however, other stains which could not thus be disposed of.

There were two newspapers of April 19th (the day before the crime) showing spots of human blood. There were marks of human blood on a packet of lux and on a piece of linoleum from the cupboard underneath the sink. With reference to this it may be said that this linoleum showed the rectangular mark where a cinder-box had been in the habit of resting, but the cinder-box had disappeared. In view of the fact that a cinder was found between the lips of the child, it is possible that the body of the child had been placed in this recess for some time, and that the cinder-box had become contaminated either with blood or other matter and had been destroyed on that account. A benzidine test was obtained from the door handle of the

sink cupboard and from the linoleum on the floor of certain parts of the kitchen.

Blood stains were found on certain articles of clothing, such as stockings, shoes, handkerchiefs, gloves, etc., and on two washing cloths and a scrubbing brush. These stains were found to be due to human blood. The child's blood was found to be in Group O, and though the Defence refused permission to group the blood of the accused, her group was obtained from certain diapers stained with menstrual blood. It differed from that of the child. The only Group O blood found was that contaminating the washing cloth, scrubbing brush, newspaper, lux packet and linoleum.

Since the injury to the child had ruptured into the intestinal canal it was assumed that blood stains derived from the injury might be contaminated with intestinal bacteria and it was thought that a bacteriological investigation of stains found in the house of the accused might afford additional evidence of the source of the blood. The blood-stained combinations of the child were found to be grossly contaminated with coliform bacilli and other bacteria of intestinal origin, including the entero-coccus. These stains were sent to the Department of Bacteriology together with the series of blood-stained articles found in the house of the accused for investigation of their bacteriological contents. The articles included two washing cloths, two women's dresses, stockings, newspapers, nail brush, scrubbing brush, and certain diapers that were found in the house. Strains derived from single colonies in plate culture representing the predominant type of coliform bacillus found in the stained combinations of the child were investigated as regards their detailed biological characters, that is, motility, fermentation of various sugars, such as glucose, lactose, dulcitol, saccharose, adonitol, inulin, inositol, raffinose, salicin, indol production, methyl red reaction, utilisation of citrate, gelatin liquefaction, hæmolysis, etc., etc.

The organisms found in the child's combinations differed from the common types of coliform bacilli in many respects. Cultures taken in the same way from the materials found in the house of the accused showed the presence of coliform bacilli in several specimens. The bacilli found in the dresses, diapers,

and stockings were quite different from those found in the child's clothing. The strains from one of the washing cloths, however, were identical in detailed biological characters, fermentation tests, indol reaction, utilisation of citrate, gelatin liquefaction and hæmolysis with the strains found in the child's combinations. This similarity in general biological characters in the bacteria from the house of the accused and the bacteria from the body of the child was most significant.

Strains of coliform bacilli are highly restricted in their serological specificity when tested with agglutinating antisera and they are also subject to antigenic variation. An attempt was made to ascertain whether the strains from the washing cloth were serologically related to those from the child. An agglutinating serum for one of the two child's strains was prepared and tested against bacteria from the cloth. These tests had not definite serological similarity though some single colony cultures from one of the cloth strains was partially agglutinated by the serum. This serum was tested with the other strain from the child, which, by plating and sub-culturing single colonies, was dissociated into two serological entities, only one of which reacted with this serum though both were identical in biological characters. A serum was prepared from one of the washing-cloth strains and this yielded complete agglutination with a derivative from the child's dress. The serological relationship was confirmed by an agglutinin absorption test. This showed a close antigenic relationship between a strain of bacteria from the cloth and a strain from the child.

This does not in itself supply positive proof that the cloth and the combinations had been contaminated from the same source, as it might be mere coincidence. It is, however, highly suggestive and is an additional point in the identification.

The examination of the clothing of the child and the sack has a certain interest. The combinations of the child had been split across the right leg and the front of the combinations was soiled with urine and blood, but whereas a stain of the urine as seen by ultra violet light, passed across the tear in the leg, the blood stains stopped short at the torn margin. This indicated that two events had occurred with an appreciable interval of time between. Firstly, the child had passed its

urine probably while still in a living state, for the bladder was entirely empty. Then some time after, the combinations were torn and the injury with effusion of blood took place. From the distribution of the stain on the front of the garment it could be assumed that the child was lying on its face, probably in an unconscious state, for a certain time before the damage to the private parts took place. There was a pink stain on the combinations shown to be from the lettering on the sack. The body was therefore presumably in or on the sack before the urine had time to dry.

In the sack, ultra violet light showed the presence of urine stains running down in an irregular manner towards the base on the inside of the sack, and appeared to have collected to a certain extent at the bottom. On the outside of the sack there were several spots of blood near the open end. These were distinct droplets which had coagulated on the material and therefore could not be due to a gradual oozing of blood after death, but must have dripped on to the bag in a fresh state and coagulated there. These most likely had dripped from the instrument that was used for the assault.

In reconstructing the crime, if we take all these things into consideration, we may assume that in the first place the child was gripped by the throat, which rendered her unconscious, and, as frequently happens in a child in the lymphatic state, the loss of consciousness may have been very rapid. The assailant probably thought that death had taken place and left the body for a certain time, wondering what she would do with it. It is probable that a decision was then made to simulate a rape and an instrument was forced into the vagina and anus of the child. The pain may have caused the return of consciousness and the victim screamed, this being the scream which was heard by the slater at 2 o'clock. Vomiting may have occurred at this time or shortly afterwards, causing death from its inhalation, but the bruising of the tissues of the neck rather suggests that when the accused discovered that the child was not yet dead she strangled her with her hands in a fit of panic. Thereafter the body was hidden until the early hours of the morning when it was deposited in the recess in the lobby where it was found. The disposition of the post-mortem stains

suggests that the body was lying on its left side for some hours after death. With reference to this it is to be noted that a light was seen in the Donalds' kitchen at 3 in the morning.

It is difficult to understand why a double handful of cinders was taken out of the box and put in with the child, but possibly it was done with the idea of absorbing any vomit or other matter which was emitted from its mouth. With the cinders a quantity of household fluff found its way into the sack. A certain amount of blood and vomited matter was no doubt left on the floor and this was cleaned up by means of the washing cloths which were not thereafter properly washed. The floor and various other things, such as the knob of the door of the kitchen and the knob of the door of the sink cupboard, gave a benzidine reaction but no other tests for blood, due to the fact that the blood which had been there had been carefully washed away.

The case for the prosecution rested to a very great extent on the laboratory findings, and although any one of these in itself was far from conclusive, the combination of the various points, the condition of the sack, the large number of fibres of similar nature in it and in the household debris, the presence of hairs which were identical in all respects including the peculiarities of Mrs. Donald's hairs, the presence of blood of human origin of the same group as the child in a washing cloth in the kitchen, and the presence of intestinal bacteria of an uncommon type identical in both, together with the evidence proving that the murder took place in the tenement and exclusive of all others except the accused, built up a case of which the proof became obvious.

The jury considered the case for eighteen minutes only, and brought in a verdict of guilty of murder.

Scientific Evidence in Cases of Motor Accident

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IN motor accidents damage may be done to persons or objects or to the car itself. The number of such accidents must tend to increase with the development of motor traffic, and, although the diminished number of cars on the road in war-time conditions may cause a decline in the number of accidents, this must to some extent be set off by the difficulties of night-driving under black-out conditions. The restriction of expenditure on road upkeep will probably act as an accident-promoting factor when motor traffic increases again after the war.

In those cases in which the vehicle involved is sufficiently damaged to be unable to be removed from the scene under its own power, no difficulty arises in the matter of its identification; but when the car suffers slight or no damage and is driven away by its driver in an endeavour to escape the consequences of the accident the problem of identification may present difficulties. Eye-witnesses' descriptions of a moving vehicle are often hazy and inadequate, especially if their attention has been focussed on the damage to persons or property caused by the accident. Dirty number-plates may result in such an eye-witness being unable to give even a single letter or number of the registration mark, and a vague description of a "long black car" or an "oldish saloon" may be all the information that is available.

The officer attempting to trace the car has then to rely on enquiries at garages over possibly a wide area or on such inferences as may be made from an examination of the scene of the accident or of injured persons. It is often through garage enquiries or reports that success in the search occurs;

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alternatively, accounts of witnesses of the escaping car at some distance from the scene of the accident may serve to narrow the search. In either case, if the information obtained leads to the tracing of the car, the problem often still remains of connecting the vehicle with the accident. It is here that scientific evidence, based on a careful examination of the scene of the accident, of persons injured or objects damaged, and of the vehicle itself, may be able to provide valuable connecting links between the vehicle and the accident. It may perhaps be emphasised here that the "exchange principle" (THE POLICE JOURNAL, April 1936) serves most frequently in suggesting traces which may be found in these investigations. A variety of contacts will have occurred between the car and its immediate surroundings at the moment of the accident and such contacts have been found by experience to be particularly fruitful in "one way" or "two-way" transfers: a meticulous search for such transfers may provide several links between a vehicle and the effects of an accident.

TRACES TO BE FOUND AT THE SCENE OF THE ACCIDENT

(a) *Tyre marks.* With the spread of tar-macadamised and of concrete roads the chances of finding tyre impressions at the scene of an accident tend to diminish.

On a hot day impressions may be visible on the surface of a tarred road: on a showery day surface prints of tyres may be evident on a concrete road if the examination is made soon after the occurrence of the accident: if the car has run on to a gravel or grass verge tracks may be visible in the gravel or soil. From such traces three types of information may in general be drawn: firstly, conclusions as to the make of the tyre; secondly, inferences as to the condition of the tyre; and thirdly, the size of the track of the car. Söderman and O'Connell (*Modern Criminal Investigation*, Ch. ix) have discussed the classification of the tyre marks of American tyres, and give an account of Heindl's method of classifying tyre-patterns. The variety of treads in use in this country seems considerably less than in America. In consequence the make of tyre with which a car is equipped becomes less valuable as a characteristic of a

particular car. Nevertheless, the proof that tyre marks found at the scene of an accident correspond in pattern with the tyres found on a traced vehicle must be taken as a possible but not exclusive link between the car and the accident. The link becomes much stronger if the tyre mark shows evidence of unusual wear, defects or cuts, which correspond with the condition of the tyres on the traced vehicle. Unfortunately, it is seldom that on modern roads prints can be found sufficiently sharp to show such details: such sharpness of detail is most likely to be found when the impressions are on sand, clay, soft soils or snow.

If it is merely a matter of establishing the dimension of the track of the car sharpness of detail of the tyre marks is less important. The track of English cars is not standardised as is the track of most American cars, and in different makes the tracks may vary by as much as 18 inches.

In addition to the search for tyre marks careful examination of the scene of the accident should be made for fragments of broken glass. Even in quite minor accidents the glasses of head-lamps may be smashed; if fracture of head-lamp glasses the windscreen has occurred care should be taken to collect fragments found at the scene of the accident: most windcreens and lamp-glasses bear identification marks, either moulded, etched or sand-blasted: if fracture has occurred possess such characteristic markings, and fragments found at the scene of an accident can be fitted against portions remaining on a traced car an incontrovertible link between the car and the accident is obtained. Reference may be made to THE POLICE JOURNAL (July 1939) for details of the type of evidence obtainable from the examination of broken glass.

THINGS TO BE FOUND ON THE VEHICLE, OR PERSONS INJURED OR OBJECTS DAMAGED

(i) *Hairs*. When a car, in knocking down a person, inflicts injuries, hairs may be found adhering to the vehicle: they may be expected on the body or chassis of the car accordingly as the injured person is knocked free of the vehicle, or the car passes over the victim. An examination of

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the under-side of a chassis generally reveals many hairs of different kinds, both animal and human. Whenever possible evidence should be obtained from eye-witnesses as to whether the car passed over the victim: if it can be satisfactorily established that the car did *not* pass over the victim a search of the under-side of the chassis, which is sure to yield much in the way of hairs and fibres, may be eliminated. Where such a search cannot be ruled out all hairs and fibres on projecting parts of the chassis should be collected for comparison with material obtained from the victim and his clothes.

(ii) *Blood*. Previous articles (THE POLICE JOURNAL, July 1938) have described the type of evidence that may be obtained from the examination of bloodstains. In cases of motor accident, a reasonably strong but not exclusive link between the suspect car and the victim is obtained if bloodstains on the car prove to be of the same group as the victim's blood.

(iii) *Fibres*. When any projecting part of a vehicle causes tears or rents in the garments of the victim of an accident, fibres from the material of the garments may be discovered on the vehicle. The ends of the shackle bolts and the nuts at the lower ends of the stirrups holding the spring-leaves together are the most likely places to find such fibres when a person has been actually run over by a car: brake rods and the lowest portions of the back axle and of the track rods are other likely places. It should not be overlooked that certain of these projecting portions may be covered with grease or dirt in which the fibres may become embedded and therefore not easily noticed. As a rule the under-part of a car chassis yields on search numerous fibres which have worked their way through crevices in the floor boards from upholstery or carpets, or have been accidentally picked up during travel. Here again time in searching the vehicle can be saved if the possibility of the car having passed over the victim can be conclusively eliminated by enquiry or from the accounts of eye-witnesses.

(iv) *Paint or enamel*. A vehicle colliding with a painted object generally picks up more or less definite traces of paint from the object. At the same time traces of the paint or enamel of the car are likely to be left on the object: these traces may be either in the form of a smear rubbed into the surface of the

object, or in the form of minute fragments scattered near the object. The cellulose finish on cars, when new, has a certain amount of plasticity, but on ageing tends to become brittle. In this condition any bending or bruising of the painted metal causes the lacquer along the bend to splinter into tiny fragments. It has several times been found that such fragments can be extracted from the clothing of people who have been knocked down by cars. If extraction of such dust from garments is made portion by portion it is sometimes possible to determine which part of the victim's body received the impact.

It may also be pointed out that friction such as occurs when paint or lacquer is rubbed off a vehicle by collision sometimes alters the colour of the paint, so that the colour of a paint smear on an object hit by a car may not appear to match exactly in colour the paint on the car. Chemical analysis will, however, enable the identity of constitution to be established in such cases. A useful preliminary test in these circumstances is to grind up a fragment of the paint or enamel from the car in a pestle and mortar, or between two stones: a smear can then be made with the powder so produced on material similar to that on which the "trace" occurs, and a comparison of the colours made. The colour of such smears is, of course, affected also by the presence of one or more undercoatings beneath the final finish of the vehicle. In better-class cars there may be two distinct undercoatings beneath the finish, and these can often be observed in both fragments taken from clothes and even in smears on rough surfaces.

(v) *Oil and grease.* Although oil and grease stains are often found on the clothes of victims of motor accidents, little evidence is likely to be obtained from their examination: this is due chiefly to the slight nature of the difference between most grades of oil and grease, and to the fact that such stains are made usually of dirty material and the amount is, as a rule, too small to permit of purification and analysis. It may, however, be pointed out that such stains may hide other traces, such as paint stains, and it is frequently advisable to remove heavy grease or oil marks from garments by a solvent, such as

petrol, in order to determine whether more informative traces lie beneath them.

(vi) *Metal marks.* These are occasionally encountered when metal parts of a car have come into vigorous contact with hard materials, such as stone or brick. The steel of bodywork or bumpers is generally too hard to leave metallic traces, but hub-caps, which often are made of non-ferrous alloys, are sufficiently soft to leave detectable traces on hard surfaces. Where it is thought that traces of a metal mark are present on stone or brick it is preferable that the object should be removed bodily: if this is impossible scrapings of the stone surface may be made and preserved for analysis after a photograph of the original mark has been taken. These scrapings must not, of course, be made with any metallic tool. A piece of stout glass, such as a fragment of a broken windscreen, is the most suitable implement for the purpose.

(vii) *Impressions.* Impressions made on the body work of a vehicle as a result of a collision often yield valuable evidence in linking up the vehicle with an accident. Such impressions occur most often on the wings or dumb-irons of a car. The speed of the vehicle, its weight, and the weight of the object struck are important factors in the making of impressions in collisions. In cases in which cyclists have been run down by cars impressions of different parts of the bicycle on the wings of the car are often well defined. It may be taken in general that the sharper the impression the faster must have been the speed of the car. The critical factors are the momentum of the car and the inertia of the object struck.

The former is directly proportional to the speed of the car, and the latter to the weight of the object: the inertia is proportional also to the friction between the object and the ground. Thus the inertia of a cyclist on a bicycle is not very great. A slowly moving car hitting such a cyclist would tend to throw both cyclist and cycle forward: the duration of the impact would be relatively long, and any damage the car received would be relatively slowly produced and would probably be of the nature of a crumpled wing. But if the car is moving rapidly the time of impact between it and the object would be relatively short and during this short interval the

inertia of the object would cause it to behave as if it had great weight: the consequence would be that instead of a relatively slow crumpling of a wing it would receive a more or less sharp impression of the object. This point is well illustrated by a few experiments in swinging a heavyish lump of plasticine against a fairly light object such as a small coin suspended from a string. With a moderately slow swing of the plasticine the coin is merely moved out of position without causing any clear imprint on the plastic material; but with a sufficiently vigorous swing, the coin will be set in violent motion, and a clear impression of it left on the plasticine.

Difficulty is sometimes experienced in photographing impressions on the bodywork of a car through the reflections occurring on the curved portions of a wing or bonnet: such reflections can be eliminated by the use of a Pola photographic screen, or, alternatively, a plaster replica of the impression can be made: in this case it is necessary first to prepare a mould by applying dental plastic (Stent, or Paribar) to the impression. If the impression is on a wing it is a relatively simple matter to remove the wing for production in court: but even then matching of the imprinted object with the impression is often best demonstrated by the use of a plaster replica of the impression.

(viii) *Glass fragments.* Glass particles may be found in the clothing of the victim of a motor accident: these may have come from a windscreen or lamp glasses: methods of examining such fragments have been dealt with in a previous article (*THE POLICE JOURNAL*, July 1939).

(ix) *Vegetation and soil.* A car striking a grassy verge in an accident is likely to pick up grass or other vegetation, and soil: portions of these are likely to be retained for a considerable time, especially in the crevices between the running-boards and other parts of the bodywork of the car. It is not often that very conclusive evidence can be obtained from the examination of traces of these types. But similarity between, for example, grass and soil taken from a suspect vehicle, and grass and soil found at the scene of an accident, may be taken as confirmatory evidence when stronger and more conclusive links have already been found.

RECONSTRUCTION OF THE NATURE OF THE ACCIDENT

It is not often that reliable inferences can be made as to the exact course of events in the production of damage in a motor accident. The duration of the impact is usually exceedingly short, and the actual damage is produced in an instant of time. Suggestions as to the manner in which, for example, a bicycle behaved after being struck, are, in the absence of eye-witnesses, usually of little value. As a rule, scientific evidence is able only to deal with such traces as arise from the application of the exchange principle: and, although it is sometimes possible to show beyond doubt what part of a vehicle hit a given part of an object, any reconstruction of the *motion* of the object after being hit must be open to strong criticism. In a recent case strong comment was made by a judge on attempts to make such a reconstruction. It was quite rightly emphasised that as a rule neither eye-witnesses nor expert motor engineers are in a position to describe movements that occupied perhaps only the twentieth part of a second. After all, in such cases the point essentially to be established is generally whether a given vehicle hit a given object. If this has been established it becomes of lesser importance whether injuries to the victim were caused by direct impact with the vehicle or were a secondary effect of impacts caused by the primary one.

ILLUSTRATIVE CASES

The following brief accounts of a few cases are appended in order to show more concretely how evidence of the types discussed above is applicable in cases of motor accident.

1. A motorist called at a police station in the West Riding and stated that he had been held up by bandits and his car smashed on the Great North Road.

Police suspicions were aroused, and after repeated interrogations the man admitted that his story was false: he refused, however, to admit that he had damaged the car himself. About 100 yds. from the place where the hold-up was alleged to have occurred a large stone and fragments of windscreen glass were found. The stone was a softish sandstone, and when brushed yielded a quantity of dust: in this a number

of glass fragments were found. Further microscopical examination of the stone revealed several glass splinters embedded in its surface. Confronted with this evidence the man admitted the offence and was convicted of causing a public mischief.

2. A cyclist was knocked from his bicycle near York by a car which failed to stop. Witnesses some considerable distance from the accident reported a car of which a bumper was bent, and from which a smell of scorching rubber was noticed: part of the registration number of the car was noted.

These observations led to the tracing of a suspect car at Leeds. On the nearside wing, the bonnet, and the front edge of the roof indentations were found. The owner attributed these to a beam which, he said, had fallen on his car in the garage: he left this beam in position over night and pointed it out to one of his employees next morning. Experiments with this beam showed that it was physically impossible for it to have caused all three marks; the weight of the beam, moreover, was such that, at the most, it would have caused only scratches in falling on the car.

The mark on the wing was clearly the imprint of the back forks and saddle lug of a bicycle. A plastic mould was taken of the indentations, and from that a plaster replica. Careful measurements of the dimensions of this replica showed that in every respect it corresponded with the damaged back forks of the bicycle.

On the bonnet was a shallow depression about twice the size of a man's hand: the depressed part was free from scratches, but the enamel round the rim of the depression was pulverised. The absence of scratches suggested that the depression had been caused by the impact of some heavy but soft body. That this was indubitably the victim of the accident was shown by the finding in the dust from his jacket numerous tiny fragments of black enamel, similar in microscopical and chemical properties to the enamel on the car. Further, these fragments were only found in that portion of the jacket which covered a part of the victim's body that received major injuries.

The smell of scorching rubber was accounted for by the fact that in the collision the bumper had been forced back

against a tyre, and caused a deep burning and scoring of the rubber.

3. A cyclist at Wallsend was knocked down and seriously injured by a car which did not stop. The car was eventually traced and on examination was found to have a broken windscreen, broken nearside head-lamp: portions of skin with hair attached were found in the front of the vehicle. Examination showed that fragments of toughened glass found at the scene of the accident were physically and chemically of exactly the same type as the broken remains of the windscreen. Portions of broken head-lamp glass found at the scene were similarly shown to be of the same type as the glass of the broken head-lamp. The hairs on the fragment of flesh found on the vehicle were found to resemble in all respects the hair of the victim.

4. Two men riding on one bicycle were run down in Skegness by a car which failed to stop. Both were severely injured, and later one died. A car believed to be concerned in the accident was traced to a hangar near the town.

Examination showed that the lamps, bumper and under parts of the car had been painted with aluminium paint. Traces of this paint were found on the mudguard and back stays of the damaged bicycle. Smears of this paint were also found under layers of grease and road dirt on the butcher's coat belonging to the man who was killed.

The defence set up was that although the car in question might have knocked the men off the bicycle, the serious injuries were caused by an omnibus, which, closely following the car, admittedly pushed the fatally injured man for a foot or two along the road. Examination of the omnibus showed that nowhere on the front or chassis was there any aluminium paint. Further, the places on the coat where the smears of aluminium paint were found, namely, the small of the back, the back of the neck, and the lower part which would cover the hip, corresponded exactly with those parts of the victim's body which received major injuries.

Further links between this car and the accident were provided by the discovery of white paint from the rear mudguard of the bicycle on the bumper of the car, and by the discovery at the scene of the accident and in the hangar where

Smuggling in the Interior

By EL LEWA SIR THOMAS W. RUSSELL PASHA

Commandant, Cairo City Police

THE annual report for 1939 of the Central Narcotic Intelligence Bureau of the Egyptian Government contains an interesting account of the latest method of smuggling narcotics into Egypt from Syria and Palestine. There is a very large annual import of camels into Egypt from neighbouring camel-producing countries, such as the Sudan, Syria and Palestine, the majority being destined for the slaughterhouses of the big cities for conversion into beef. Camels coming from Palestine have to pass the Customs and go through Quarantine at Kantara on the Suez Canal, and some 30,000 camels a year pass through this station alone.

The Frontiers Administration, who police the Sinai Peninsula, are always on the look-out for the smuggling into Egypt of hashish and opium, the first of which is grown surreptitiously in large quantities in Syria and the latter in Eastern Anatolia. With an efficient intelligence system and a natural keenness on the part of their Sudanese Arab troopers, the Frontiers Administration are able to reduce to a minimum any attempts at wholesale running of contraband by car or camel across the Sinai deserts, and the smugglers of Palestine have to exercise the greatest ingenuity in disguising their goods if they wish to evade the eagle eyes and keen noses of the patrols.

Until recently the first prize for tricks (actually it took the form of five years imprisonment) was unanimously awarded to some Arabs who thought out the following ruse:

RECIPE

"Take one camel with a thick woolly coat, shave away an oblong patch of hair on the flank, just below the



1A) Extracting tins of narcotics from stomach of slaughtered camel. Frontiers Administration police and Egyptian officials in background (face p. 300)



(a) Zinc cylinder containing hashish or opium. Actual size 6 inches long by 1 1/4 inches wide.

SMUGGLING IN THE INTERIOR

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hump: take a slab of hashish 10 × 5 × 1 inches and glue it on to the bare skin: take the hair previously shaven off and glue it on to the top side of the hashish slab: comb the hair together again. Repeat three times on each side of each camel: do not saddle the camels, and proceed with an innocent look."

Twenty-five camels were thus prepared with 150 slabs of hashish worth £1,200, but were detected by the curiosity of a police corporal while running his fingers through the unusually thick wool of these innocent-looking camels.

This last summer enormous quantities of hashish were grown in Syria in defiance of the Law, but the larger part was detected and destroyed, thanks to the vigilance of the French Sûreté authorities. No doubt, however, considerable quantities of the new crop escaped detection, and the Frontiers patrols redoubled their precautions to prevent its entry into Egypt.

One day in September "a little bird" whispered to the Frontiers that the smugglers at Khan Younes in Palestine had discovered a new trick for passing stuff over the frontier and were going to make their first experiment with twelve camels that would shortly arrive at Kantara Quarantine among forty others.

The camels duly arrived at Kantara and the Frontiers officer requested judicial authority to arrest and slaughter the twelve camels belonging to the Arabs named in the denouncement. This authority was refused for lack of more definite proof, and nine of the camels were allowed to proceed on their journey into Egypt. Three of the suspected camels still remained behind, and with a little juggling and "pressure" the Frontiers officer managed to buy one of the camels and slaughter it for meat.

What was the butcher's surprise and the officer's satisfaction when twenty-five zinc cylinders were found in the camel's stomach. A fast motor patrol quickly overtook the nine camels that had hardly cleared Kantara and brought them back to the slaughterhouse, where a further supply of tins of dope were recovered from their bellies. Altogether the twelve camels

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contained some seventy tins which between them contained 38 pounds of hashish and 140 pounds of opium to a total value to the smugglers of some £2,000, which they would have recovered by slaughtering these seven or eight pound camels at some convenient spot on the desert road to Cairo.

Considerable thought and veterinary knowledge had been used in devising this trick. In the first place the cylinders were zinc instead of tin, which is more corrosive: secondly they were made with conical ends to help them on their downward passage: thirdly, they were made sufficiently thick to prevent their passing from the first stomach, or rumen, into the second and third stomachs in which the digestive action takes place: and fourthly, they were weighted with lead to prevent them being regurgitated with the ruminant's cud.

Each cylinder measured 6 inches long by $1\frac{1}{2}$ inches thick. Camel and veterinary authorities state that camels so laden internally could carry on and travel for days or even weeks without showing signs of inconvenience or falling off in condition.

Various experiments are now being made to overcome the impossibility of cross-examining suspected camels, and it will not be long before the smugglers will have to study emetics, magnetics, and radiology if they are to find some safer way of getting their narcotics into Egypt.

Suicide

By FRANK W. MARTIN, M.D.

Late Divisional Casualty Surgeon, City of Glasgow Police

WE hear and read much about suicide to-day, and as a result we are inclined to think that cases of suicide are on the increase. Suicide, however, is not just a present-day fashion: it has existed from time immemorial. To-day it is brought prominently to the notice of the public through the medium of the sensational press; for this section of the press lives by providing the public with sensations; cases of suicide are therefore as manna to it.

Suicide is defined by legal textbooks as "self murder." At one time it was an offence against the Church and was punishable by ecclesiastical law; indeed it continued to come under the jurisdiction of the Church until cleric and judge no longer sat together in the civil courts.

The criminal law records of the thirteenth century show that a person who committed suicide in order to evade a conviction for a criminal offence had all his lands confiscated. In other instances, however, he only forfeited his goods and chattels. That law prevailed right through the centuries until 1870, when an Act of Parliament was passed abolishing all such forfeitures.

Christianity has always looked askance at suicide, and practically all Christian nations make the act of *felo de se* a crime. No sympathy was shown to the person who took his or her own life. In the "good old days" which we so often hear about, when a verdict of *felo de se* was returned, the victim had to be interred at four crossroads, with a stake driven through the body. Nobody seems to know how or when this custom arose and certainly no Act of Parliament was ever passed to legalise the procedure.

It was not until 1883 that an Act of Parliament was passed forbidding interment in any public highway. This Act laid down that the victim must be interred in a proper burial place, the interment to take place only between the hours of 9 p.m. and midnight, all religious rights being forbidden. In due course this Act was repealed and to-day the body of a suicide may be interred in any way authorised by the Burial Acts, with or without such religious services as the relatives may desire.

Why was suicide such a crime in the eyes of the Church? Why was no Christian sympathy extended to the victim? Perhaps some such thought as this was in Shakespeare's mind when he made Shylock exclaim "How these Christians love one another!" But the Christian attitude to suicide is founded upon the ecclesiastical view that in the act of procreation a soul is born into the world by the will of the Creator and must remain in this world attached to the body until the Creator decides to set it free. Such a view permits of no distinction between self murder and the murder of another person.

Not only was suicide considered by the Church to be a crime and no different from homicide but the punishment in the next world for both crimes was the same. Hamlet shows this when he exclaims:

"Who would fardels* bear,
To grunt and sweat under a weary life,
But that the dread of something after death—
The undiscovered country, from whose bourn
No traveller returns—puzzles the will,
And makes us rather bear those ills we have
Than fly to others that we know not of?"

It is difficult to explain how this Christian view arose; for there is no word in the Bible against suicide. Why, then, did the Church consider suicide a crime and not a symptom of a disordered mind? True, in the middle ages a man with a disordered mind was looked upon as being possessed by a devil; so it is possible that less stigma attached to the relations

* Burdens.

of a suicide if he were regarded as a criminal rather than as one who had harboured an evil spirit.

Why should a person take his own life? The human mind works in strange and diverse ways, and strange and diverse may be the reasons adduced to explain an act of suicide. The act may be the result of the thwarted egotist who must have what he wants, no matter if he destroys himself in the getting of it. Despair, a black-out as regards all future aspirations, is another frequent cause. Take the case of the young unmarried mother, cast off by her seducer, abandoned by her friends, never to speak of her relatives. She has nothing to look forward to but disgrace and social ostracism. There is no silver lining to her cloud. In desperation she ends it all.

"When honour's lost, 'tis a relief to die;
Death's but a sure retreat from infamy."

Is not her case one for an expression of sympathy at least as much as for condemnation? Despair plays an important part in the ethics of suicide wherever poverty reigns. Here the hope of release acts as an alluring alternative to helplessness and penury.

An afternoon's reading of the Sunday newspapers will show the part which romance plays in suicide. It is a true saying that life without romance would be a vacuum and that while

"Tradition wears a snowy beard,
Romance is always young."

When the passion of love is over-dominant in either sex there is a tendency for the normal scale of values to be altered, and the life of the one without the other is reckoned valueless and must be ended. The unpassionate law, however, terms this "temporary insanity," probably because of that sympathy which is so innate in mankind. It must be a sad case indeed where there is no room for sympathy.

But few tears need be shed over the suicide who has put an end to himself through ennui or boredom, the person who has not only drained the cup of pleasure many times but has tasted of every cup. Life to such a person has become so devoid of

interest that it is not worth living. In this category may be placed most of the notorious Roman suicides and a fair number of modern ones, especially among film stars and actors. It has been said that over the wall of the garden of Life is ever a cluster of the grapes of Death, of which a man may pluck and eat when he has had enough of this world. This class of suicide is not one likely to excite much sympathy; such people live for themselves and for themselves alone: they recognise no obligations to others, even to those nearest and dearest to them.

To the lawyer suicide connotes a crime; to the physician an emotional disorder. By law suicide is a crime with this proviso—that the person must have reached years of discretion and be in possession of his senses.

Not only does the law consider suicide a crime but it also classifies attempted suicide in the same category. In English law attempted suicide is a misdemeanour, an indictable offence triable at the assizes and punishable by a maximum sentence of two years' imprisonment with or without hard labour. In England, however, most cases are not sent for trial, and any which may be are seldom punished with imprisonment. In Scotland attempted suicide is looked upon simply as a breach of the peace.

Is suicide a symptom of insanity? Would any person in his or her sound senses commit suicide? Is the act of suicide the act of a sane person?

Unfortunately there is no legal definition of sanity, nor is there any medical definition of insanity. But the law has a very specific definition of insanity. It arose out of the famous McNaghten case, a case which gave rise to many arguments among the legal profession. Legally, insanity is now defined as a disorder of the mind to the extent that the afflicted person cannot manage himself or his affairs and does not know the nature or quality of his act, and if he does he does not know that it is wrong—"wrong" here meaning "against the law."

No mention of the body or of the brain is made in this definition; the disorder is a disease of the mind. Disease or disorder may be defined as an upsetting of the balance existing between the various processes in the body which, acting in unison, produce the condition known as health.

No clean-cut definition can be given of the mind, and the various views as to what the mind is are but excursions into speculation. Curiously enough the *Concise Oxford Dictionary* defines the mind as "remembrance," which is only one of its many functions. Another definition is "soul" as distinguished from the body. Cabanis held that the brain "secreted" the mind just as the liver secretes bile. In the days of Plato and Aristotle the mind was considered a spiritual *something* more powerful than matter but nevertheless making use of matter—the central nervous system—for its manifestations. According to others the mind is no *thing* at all, being merely a process, that it is in fact the sum total of cerebral activity. Sir James FitzJames Stephens states that the mind is a general term or name for the combined operations of sensation, intellect, emotion, and volition. To this statement there can be no opposition.

Any aberration of the mind must be indicated in one or other, or more than one, of these functions. Careful inquiry into the history of the average suicide usually shows some kink somewhere, some lack of balance, some aberration from the normal; perhaps some phobia, obsession, or delusion. It is difficult to define a "phobia" otherwise than as a condition of psycho-neurosis in which mental symptoms predominate. Carrier states that the true test of the existence of such states as phobias and obsessions may be summed up in the word "degeneracy" and that this degenerate condition is characterised by neurotic antecedents in the progenitors and by the psychical condition of the individual.

As regards delusions, a delusion is a perversion of judgment in which an erroneous belief has become fixed in the person's mind in spite of plain evidence to the contrary. The phobia or obsession may be in the nature of an impulse, a simple voluntary action as distinguished from a complex or true voluntary action. In impulse there is action upon a strongly emotional single idea, which may be suicidal or homicidal. Very often it is quite innocuous. Whatever form, however, it takes, it is always a sign of unbalanced mental action.

Suicide is a very common symptom of insanity, though many experts do not agree with this. Yet it is because suicide

from sudden impulse is so common among lunatics that the inmates of asylums are so closely guarded, each one being looked upon as a potential suicide.

Yet whatever medico-legists, psychologists and alienists may think on the subject the man in the street, John Citizen, has very definite views. Whenever he sits on a jury he takes the common-sense view that when suicide is committed it should be attributed to temporary insanity, being an act contrary to the act of a normal person. The jury consider the victim to have suffered from mental illness and that he took his life while the balance of his mind was disturbed. Self-preservation is the first law of nature and if a person renounces self-preservation and reaches the conclusion that it is better for all that he should end his life, his judgment must surely be warped. Such judgment could not be that of a sound mind.

Is suicide ever justifiable? The supporters of justifiable suicide maintain that since man came into this world through no fault or act of his own—as Omar Khayyam puts it “Into this Universe and why not knowing”—he is therefore at perfect liberty to leave it when he so decides.

Like all other questions dealing with the subject the answer is very difficult. An unfortunate person suffers from cancer. He knows that he is doomed and he knows what the end will be like. He also knows that the little money he has is just sufficient for the family needs and that it is being eaten up by his illness all to no purpose. He commits suicide. Has he committed a crime? Or was he justified?

It is indeed a difficult question to answer. Yet if a man claims the right to live, that right must carry with it certain obligations. One of those obligations is to conform to the ethical standards of the civilisation in which he has lived and of which he has enjoyed the benefits. Such a man might well reflect upon the Christian martyrs of ancient Rome to whom suicide would have been an “easy way out.” Yet they preferred to be thrown to wild beasts in the arena in order that their fortitude might encourage all who came after. It is upon integrity such as this that the noblest standards of human life are founded.

Suicide Pacts.—If one person aids, abets or advises another to commit suicide and the act is done, the adviser is guilty of murder. After trial only one verdict can be returned, namely guilty of murder. The charge cannot be reduced to manslaughter.

Attempted Suicide.—Should not this be considered rather an exhibition of a disordered mind than a crime? And if this be so, is it not a mistake to punish attempted suicide? But in law a man is held responsible for his actions consciously and deliberately carried out. Yet if he does something under mental distress then that action is not real, for it is not his normal action and therefore he should not be held responsible for it. There are of course exceptional cases, but these only go to prove the rule.

Sometimes, owing to the circumstances of the offender and his relatives, the only assistance that can readily be given is by invoking the aid of the law. In the prison sanatorium the patient has a chance of regaining his normal emotional balance, with quiet, good feeding and medical supervision. There are of course instances of attempted suicide where it would be a mistake in the culprit's interest not to penalise him. For example where drunkenness is the causative factor or where the attempt is a pseudo one to gain notoriety. Each case must be treated on its merits and few will withhold sympathy for the very destitute—foodless and without lodging, and with little or no hope of obtaining these.

Many attempted suicides appear to be the result of a sudden impulse. Others are premeditated, and in these cases if one means of attaining the object is foiled another is adopted, often from knowledge acquired through the Press.

“The means to do ill deeds makes ill deeds done.”

Should not our judges stress the great and multiple advantages of treatment? As things are at present people avoid treatment for fear that they may be designated insane. It should not be difficult for a benignant Home Secretary, with the aid of his advisers, to overcome this impediment.

Suicide is often called “the act of a coward.” Some hold that since all people have certain duties and obligations to their

fellow beings, to fly from these obligations by committing suicide is a manifestation of cowardice. Man, they say, is on this earth for a purpose. But if he thinks that he has failed in his purpose, is he not entitled to commit suicide? Is he entitled to will his own death?

The psychologists, particularly those of the Freudian school, maintain that there is no freedom of will. They assert that when a man is born he has no will, he simply inherits certain tendencies. If tendencies are inherited, then let the individual improve those tendencies, and regard the will as the means of doing so. Will should only be exercised for the purpose of doing good, since man should choose the soul of goodness, not the evil. Thus his will comes into play. He who wills his own death is therefore not normal, and the same may be said of the person who has a desire to do so.

The verdict "temporary insanity" supports the opinion that suicide, actual or attempted, is more akin to a disorder of the mind than to crime. Such a verdict removes suicide from the criminal calendar because in a strictly legal sense there is no insane criminal. Concede insanity, therefore, and the act is not criminal.

Cumberland County Police Houses

By P. T. B. BROWNE

Chief Constable, Cumberland and Westmorland Constabulary

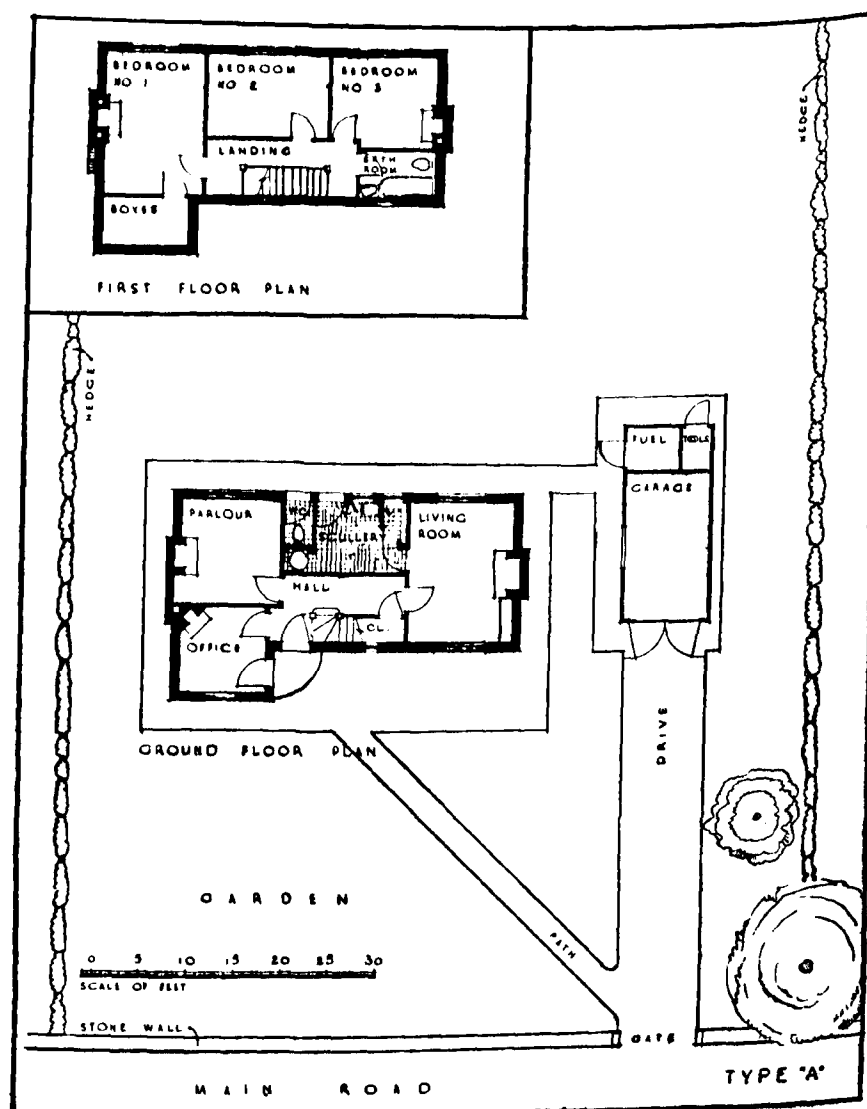
DURING the past few years the Standing Joint Committee of the County of Cumberland has adopted a policy of providing constables in rural areas with new houses specifically planned to meet the demands of their work, and to accommodate their families in comfort and decency. These houses, whilst being of such a design and finish as to harmonise with village surroundings, serve to emphasise the standing and responsibility of the constable, and provide a centre, obvious to the public, for contacts with his administrative work. But for the War, the policy would have been pursued to such a degree that, within a short time, few of the force would have been occupying houses which fall short of modern standards of hygiene, comfort, and administrative convenience.

The Committee, on the advice of their Architect, J. H. Haughan, Esq., A.R.I.B.A., have standardised two types of house, known respectively as an "A" Type, and a "B" Type. The accommodation is the same in each case, the difference being in the position of the larder, whose aspect decides the type for the situation. The plan shown here is of the "A" Type house. In the "B" Type the larder is situated under the stairs, the small cloakroom for uniforms being provided elsewhere in the hall.

The accommodation provided on the ground floor consists of a large well-lit Living-Room, 15' 0" × 11' 0", a Scullery with washing copper, a Parlour 11' 0" × 11' 0", a Cloakroom, Larder, and a W.C. entered from outside.

There is a small office measuring 9' 0" × 9' 0" which is entered from the hall and has also an external public entrance. This external entrance is a feature of real value, as the privacy

of the constable's residence is not disturbed, and visitors with boots muddled from wet country roads do not soil the cleanliness of the house. The office is provided with a small fireplace.



At the moment, the experiment of providing a small built-in electric fire in place of the coal fireplace is being tried. The office is furnished by the Committee with certain standard

furnishings consisting of a small oak desk, chairs, linoleum and footmat.

Upstairs are three very good bedrooms, a roomy box-room and a bathroom with panel bath, lavatory basin and W.C.

The houses are provided with a sound and attractive timber outhouse structure which includes a garage, a fuel store, and a garden tool shed. The sites, which are usually about a quarter of an acre in extent, are fenced round with oak post and galvanised wire fencing.

Being in rural districts the majority of the houses have to be drained to a small sewage-disposal plant, with precipitation tank and treatment bed, the effluent being taken in field drains to the nearest suitable watercourse.

The building is in 11" cavity walling, cement rendered and finished with brush stipple cream Cullamix above the black tarred base. The windows are metal casements in wood frames. The roof is covered with Cumberland Slate, the cost of which adds usually about £17 to the contract figure. Happily, the County Council and the Standing Joint Committee care so much for the preservation of the rural loveliness of their county that they seek habitually to use the beautiful native slate of the district, rather than a cheaper "foreign" slate or tiles.

The paths are formed with hardcore bottoming finished with two inches of granite or whinstone chippings.

The houses are electrically lit, the supply to the office and the lantern at the front door being taken through a separate meter and covered by the County Council.

The average contract figure for these houses complete, including all site work, fencing, drainage and sewage disposal plant, is £760.

(NOTE:—A photograph of one of these houses will be found over page.)

Fingerprints in Criminal Investigation

By M. EDWIN O'NEILL

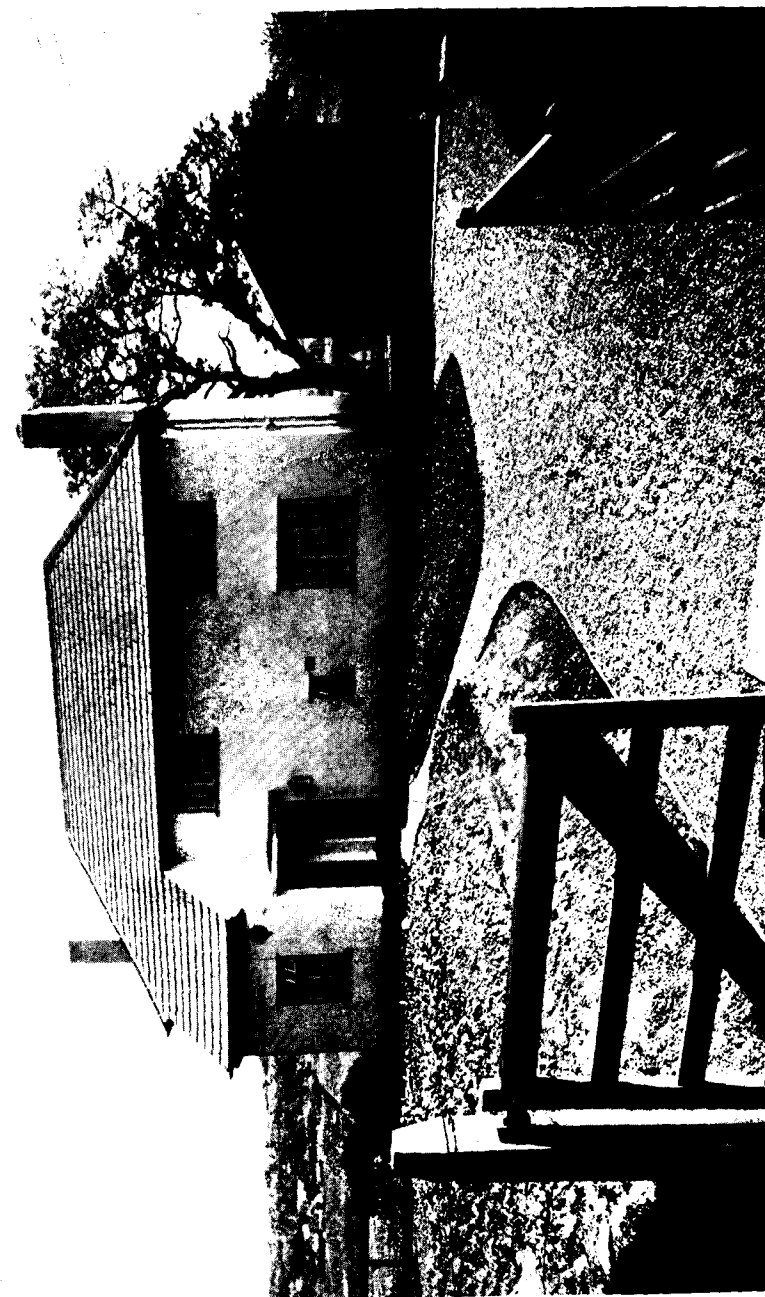
Chicago Police Scientific Crime Detection Laboratory

THIS brief article has been prepared primarily for the benefit of criminal investigators who are not already familiar with the elementary principles of fingerprint identification. It is also intended to be of use to investigators who may have some knowledge of fingerprint evidence but who are, nevertheless, unaware of many of the possibilities and limitations involved in the examination of chance impressions left at the scene of a crime.

WHAT IS A FINGERPRINT ?

The skin covering the palms of the hands and the soles of the feet, unlike the skin on other parts of the body, is elevated into minute ridges which tend to follow patterns of definite design. (See Figure 1.) Such skin is called "friction skin" and the ridges are commonly referred to as *papillary ridges*. On the tips of the fingers the papillary ridges form definite *patterns* which may be of the same general form on all of the fingers of the two hands or may differ from one finger to the next, with several or all of the recognised patterns represented in the same individual. These patterns may be described and classified in various ways, depending upon the system used for the recording and filing of inked impressions. In the Henry system of fingerprint classification, all fingerprint patterns are divisible into four main types: Arches, Loops, Whorls, and Composites.

These types may be simply described as follows: *Arch patterns* are those in which the ridges run across the finger tip from one side to the other without recurving, and are usually slightly raised near the centre, presenting an arch-like



ONE OF THE NEW CUMBERLAND POLICE HOUSES

(face p. 314)



Fig. 3: Development of latent impressions with fingerprint powders. (Black paper placed inside glass jar to give contrast to developed prints.)

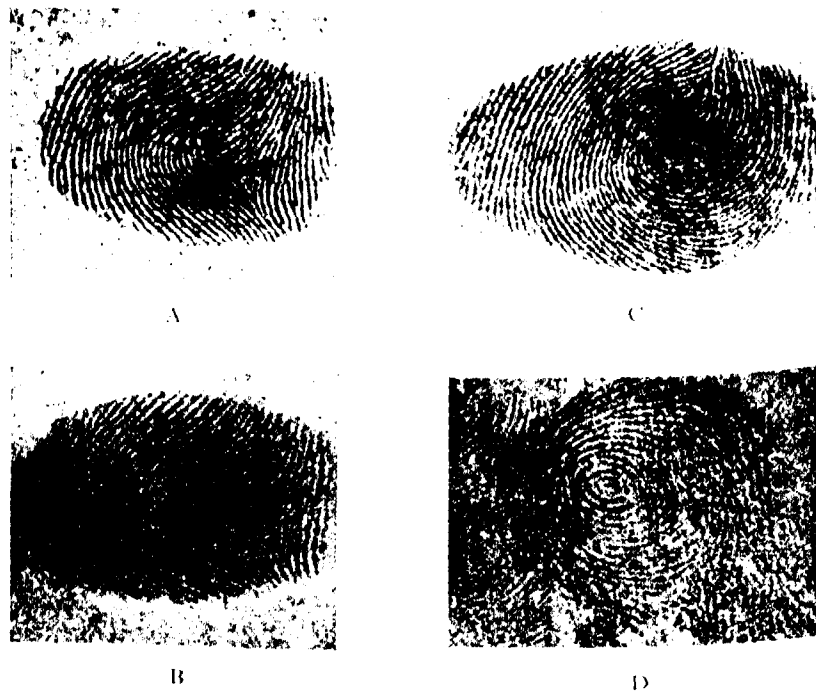


Fig. 4: Latent Fingerprints on Paper Developed by means of (A) Powder, (B) Iodine, (C) Osmic Acid, and (D) Silver Nitrate



Fig. 1: Inked Impression of the Papillary Ridge Surface of the Hand
The single print at the lower left is that of the thumb, the complete surface of which does not show in the entire hand print when the hand is placed flat upon an uncurved object

appearance; *Loop patterns* are those in which one or more of the ridges, entering from the side of the finger recurves and, after doubling back, ends on the same side as it entered; *Whorls* are patterns in which some of the ridges make a complete circuit around a central core, forming a ring or spiral; *Composite patterns* are those composed of two or more types of patterns in combination, such as two distinct loops, a loop enclosing a whorl, etc.

Each of these may be subdivided into two or more types so that at least nine patterns may be recognised: Arch, tented arch, exceptional arch, loop, whorl, central pocket loop, twin loop, lateral pocket loop, and accidental. Two classes of plain loops are recognised, *ulnar* and *radial*, the former with the loop opening toward the little finger side of the hand and the latter with the loop opening toward the thumb side.

Since all fingerprints are classified into only a few pattern types, for the purpose of identification it is necessary to examine the detailed characteristics of the fingerprint; in other words, those features of the individual ridges of which the pattern as a whole is composed. Careful observation of the ridges discloses that they are not simply a series of similar parallel lines but tend to differ from each other in various ways. For example, some ridges may run through the pattern without interruption, while others may be discontinuous, or interrupted, forming *ending ridges*, or, as they are sometimes called, *ends*. A ridge may also appear to become divided into two ridges, forming what is known as a *fork* or *bifurcation*. Again, the two branches of a divided ridge may be re-united to form a single ridge, the characteristic thus constituted being referred to as an *enclosure*. Very short ridges, containing only one or two pores, are called *islands*. In one fingerprint there may be found a score or more of these fingerprint *details*, as well as other ridge characteristics of a more unusual nature. (See Figure 2.)

In the comparison of two or more fingerprint impressions as, for example, a latent fingerprint from a crime scene and inked prints of a suspect, the identification is dependent upon the presence of these *ridge characteristics*. If the fingerprint in question is smudged, or for any other reason does not show

the ridge details, an identification is impossible. Many investigators are not familiar with this fact and submit smudges or finger marks to the expert with the expectation that such marks can be identified, and possibly at the same



Fig. 2: Diagrammatic Representation of Ridge Characteristics of Fingerprints
 (A) and (3)—Islands
 (B) and (5)—Ending Ridges
 (C) and (4)—Hooks or Spurs
 (D) and (2)—Enclosures
 (E) and (1)—Bifurcation or Fork
 (F) and (7)—Trifurcation
 (G) and (6)—Anastomosis
 (8) and (9)—Delta; Core

time they may ignore the presence of identifiable fingerprints which are invisible or are less obvious because they are not seen during the process of a casual examination. Even inked impressions taken by persons unfamiliar with the procedure of fingerprint identification often lack the structural features necessary for purposes of comparison.

It is generally agreed among fingerprint experts that for a positive identification there must be at least twelve corresponding ridge details in the same relative positions. However, some experts hold that six to eight identical points are sufficient proof of identity if consideration is given to their grouping, angular values, presence of a core or centre of exceptional form, etc.* On the basis of nine details it has been estimated that the mathematical probability of two different individuals making exactly the same print is about one in two quadrillion, a

* If the impression is sufficiently clear for comparison purposes ordinarily it will contain many more than six, eight, or even twelve details.

sum representing more than one million times the estimated population of the earth. Moreover, no two fingerprints have ever been found which were identical in all respects, and this is true even among the ten prints found on any one person's hands.

Palm prints and sole prints can be identified with the same degree of certainty as fingerprints but are of less frequent occurrence in criminal investigations.

TYPES OF FINGERPRINT TRACES

Fingerprint traces left at the scene of a crime are of three kinds, depending upon the nature and condition of the object touched and also upon the material coating the fingerprint ridges at the time of contact. These three types are the following:

(a) *Moulded impressions*, formed by the pressure of the fingers upon a relatively soft, plastic material, thereby producing an actual mould of the fingerprint pattern. Fingerprints of this kind are found in such materials as wax, tar, soap, putty, and various articles of food. They usually require no special treatment preparatory to analytical study, but are photographed with the lighting arranged in such a manner that the impressions show most clearly.

(b) *Visible impressions*, made by contact of fingers which are coated with some foreign colouring material. Visible fingerprints may be made by fingers smeared with blood, grease, dirt, paint and the like, and when clear and sharp, are photographed in their original state. Fingerprints in this category, however, are often blurred or smeared and do not contain the requisite ridge structure to permit an identification.

(c) *Latent impressions*, those produced principally by the natural secretions of the skin which coat the fingerprint ridges, and are invisible, or nearly so, unless illuminated or viewed at a critical angle.

Of the three types of impressions the most frequently encountered, and usually the one more satisfactory than any of the others, is the latent fingerprint. The following discussion will therefore be limited to impressions of this class.

FORMATION OF LATENT FINGERPRINTS

The skin covering the tips of the fingers contains thousands of sweat glands, each opening by means of a duct on to the outer surface of the papillary ridge through a small funnel-shaped opening or pore on its summit. Because of the activity of these glands there is a discharge of sweat deposited upon the ridge surfaces. This excretion is about 99 per cent. water, but in addition it contains various inorganic salts, as well as organic matter in the form of fatty acids, urea, etc. Besides the secretion of sweat, the ridges also become coated with oily matter secreted by the sebaceous glands of the hair-producing parts of the skin. When, for example, the fingers are run through the hair of the head or touch the face, a small amount of sebum is transferred to the papillary ridges. Since the deposit of sweat and sebum is practically always present, when the fingers come into contact with a smooth, dry surface, some of the material is transferred from the ridges to the object touched and remains as a material, though perhaps invisible, reproduction of the skin design of the finger tips themselves.

The fidelity of the latent fingerprint so formed is influenced by a number of factors: the cleanliness of the fingers; amount of secretion; degree of pressure exerted when the object is touched; whether the fingers made firm, even contact or whether they slipped or twisted, etc.

The nature of the object touched also plays a part in the formation of latent fingerprints. Deposits of bodily secretion on rough surfaces, such as stones, unfinished wood, pebbled leather, etc., are not sharp and clear. Porous surfaces, such as newsprint or blotting paper, produce spreading and absorption of the moist deposit. Dusty, dirty or oily surfaces also affect the formation of the fingerprint traces. However, clear latent fingerprints may be expected on most hard, smooth surfaces which are relatively clean. Identifiable latent fingerprints are frequently encountered on glass, china, polished wood, porcelain, polished metals, patent leather, writing papers, and similar surfaces.

The length of time that a latent fingerprint will remain upon an object also varies, being influenced by a number of

factors. The amount of secretion deposited, the porosity of the surface, and various climatic and atmospheric conditions, as well as other factors, affect the duration of the latent print, and, because of their variability, it is not possible to state categorically the interval during which a fingerprint is susceptible of development. On absorbent surfaces this may be a matter of a few hours, whereas on relatively non-absorbent materials the life of a print may extend to several weeks or even months. However, in any case there is a progressive weakening of the print with the elapse of time, and it is therefore important that an examination of the traces be made as soon after their discovery as possible.

Since the sweat and oily material which constitute the latent fingerprint are nearly always colourless, the impressions are frequently invisible or not sufficiently clear for photographing directly, and therefore they must be intensified in some way to give them contrast with the object upon which they are located. The intensification process is referred to as the *development* of latent fingerprints, and although the procedure is usually a simple one, considerable skill and experience are necessary if the best results are to be obtained.

DEVELOPMENT OF LATENT FINGERPRINTS

The processes of development used by fingerprint experts are numerous, and many different materials are employed to "bring out" invisible impressions. Various finely divided coloured powders are generally used for fingerprints on hard, smooth surfaces, such as glass, painted or varnished wood, metals, etc., whereas certain vapours and liquid reagents are utilised on relatively absorbent materials such as paper, cardboard and unpainted wood.

Many different powders can be used as developers, and specially prepared fingerprint powders are available as commercial products. However, the developers commonly used are of two "colours"—one of light colour, such as aluminium for fingerprints on dark surfaces, and the other black, as, for example, lampblack or charcoal powders, for latent prints on light surfaces. The need for both light and dark powders is

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readily apparent, of course, since it is important that the developed fingerprint presents a maximum contrast with its background.

Powders are sometimes sprinkled or blown on to the object being examined, but are more frequently applied with a soft brush. A small quantity of powder is taken on the end of the bristles and applied to the object by short, light strokes of the brush. (See Figure 3.) Sometimes a second or third application is necessary for complete development of the latent print, but care must always be observed in applying the powder in order that the impression is not smeared or obliterated by the use of too much powder or by too heavy brushing. After the fingerprint has been intensified the excess powder is removed with a few light strokes of the brush.

This method of developing fingerprints is based upon the principle that the sweat residue constituting the latent fingerprint is slightly adhesive and will therefore cause some of the powder to adhere, whereas portions of the object not covered by the deposit—including the spaces between the sweat ridges—will not retain the particles of powder to the same extent. In the development of fingerprints with powders it necessarily follows that the surface must be free of grease or moisture, for a surface coating of such materials would destroy the difference in adhesive power of a fingerprint and the object upon which it is located.

Following the development of the latent impression a photograph may be taken as a permanent record and also for subsequent comparison with inked fingerprints. If the photograph is to be made at the crime scene a specially designed portable camera is ordinarily employed. One type of camera in common use has a self-contained lighting system and is easily operated. Photographs are made in natural size and from the negatives suitable enlargements can be prepared, or the examination may be made from contact prints with the aid of a magnifier.

Although a photographic reproduction is used whenever possible, in some instances this is not feasible and the developed latent print must then be preserved by "lifting" it from the object with an adhesive material of some kind. A "lifter"

commonly used for this purpose is transparent cellulose tape. A piece of tape of sufficient size to cover the print is placed over the powdered print and pressed against it by stroking with the tip of the finger to ensure even contact. The tape is then peeled off, and the fingerprint is thus transferred to the adhesive surface of the tape. It is then protected by placing it on a piece of cellophane or other backing material to form a permanent mount. Considerable care is required for accomplishing a successful "lift," and for this reason photography should be used whenever possible.

Although powders are most frequently used for the development of latent fingerprints, there are certain surfaces (e.g., paper and cardboard) on which vapours or liquid reagents can be utilised to greater advantage. Among the agents of this type in common usage are iodine fumes, osmic acid vapour and silver nitrate solution. The selection of any one of these three depends upon such factors as the age (or probable age) of the prints, type of surface, etc. Not all of the methods can be used in combination, the application of one sometimes precluding the use of others. The action of such agents is either one of absorption (as in the case of iodine fumes taken up by the fingerprint deposit), or of chemical reaction with one or more of the components of the latent fingerprint, which results in a colouration of the print. Silver nitrate reacts with the ordinary salt which is present in the trace, and the osmic acid vapours react with the fatty substances secreted by the skin. (For illustrations of the results obtainable by using these reagents see Figure 4—B, C, D.)

CARE AND PRESERVATION OF FINGERPRINTS

From the foregoing discussion of the formation and development of fingerprints, it can be readily understood that considerable caution should be exercised in the handling of any object which might contain identifying traces. Careless handling not only may introduce "foreign" prints, but may also eradicate or smear the original impressions on the object and thereby render them useless for identification purposes. In many investigations it is unnecessary to touch or handle

such objects before an examination is made by the fingerprint expert; but whenever an immediate examination is considered necessary or desirable the object should be handled in such a manner that any possible fingerprint traces are not destroyed.

For example, the examination of an anonymous letter can be carried out with the aid of tweezers or forceps, or even with two small pieces of wood and, while possibly not so convenient as using the fingers, this method of handling at least prevents the addition of many extraneous fingerprints and palm prints.

If the object to be handled happens to be a container such as a drinking glass, cup, or bottle, the fingers may be placed inside (as shown in Figure 6), or it may be lifted and removed by placing the fingers on the rim of the opening and on the bottom edge. In the case of a pistol or revolver, it should be picked up by means of a pencil or a small piece of wood inserted in the barrel or through the trigger guard, or it may be handled by the grip if the stock happens to have a rough surface.

Careless transport of articles bearing latent fingerprints may also result in partial or complete obliteration. *The widespread practice of wrapping exhibits in newspapers or in pieces of cloth, such as a handkerchief, is responsible for the destruction or alteration of many identifiable traces.* The moist deposit of sweat or oil constituting a fingerprint impression is extremely delicate, and only slight friction from wrapping material is sufficient to smear it or remove it completely. In the larger police forces, the problem of transporting exhibits bearing fingerprints is seldom encountered because such exhibits are investigated at the scene of the crime by the fingerprint experts themselves. However, when an object must be carried some distance for a fingerprint examination, it should be supported in such a manner that the surfaces to be examined for fingerprints will not be touched or rubbed. Some experts suggest enclosing the article in a wooden frame, or, in the case of some objects, lashing them to a board with string to prevent movement and friction. In the absence of special packing materials a substitute method consists of placing the article in a cardboard or wooden box in such a position that it is

supported by its edges or corners or rough surfaces (where fingerprints would not be found anyhow), or in carrying it in such a manner that the smooth, relatively broad surfaces are not subjected to friction.

The value of fingerprints as a method for identifying and convicting criminals depends to a considerable extent upon the consideration given to this type of evidence by investigating officers. An uninformed, disinterested, or careless officer may in the course of his investigation ignore or destroy identifiable impressions on objects which may have been touched by the perpetrator of a crime. And once a fingerprint has been rubbed off or obliterated there is nothing an expert can do to rectify the investigator's mistake or to restore the fingerprint. This loss of valuable evidence can be prevented, of course, by cautious handling on the part of an investigator who has a knowledge of the elementary principles of fingerprint identification.

Treasure Trove

AMONG the unusual incidents of duty which a policeman may be called upon to attend is the finding by some person of objects which may be liable to be dealt with as "treasure trove." Treasure trove is where any gold or silver coin, plate or bullion is found hidden in the earth or in any other secret place. If the person who hid it is known, or is afterwards discovered, it is not treasure trove; but, when proved, treasure trove belongs to the Crown by prerogative right. There are some rare exceptions to this right, such as in localities where in ancient charters there is expressly included a "Franchise of Treasure Trove" with the right to treasure trove within the locality transferred from the Crown to the city.

Blackstone described treasure trove as including "money or coin, gold, silver, plate or bullion." The Crown gains no title unless the treasure is actually hidden in the earth with the *animus revocandi*. That is to say, it must have been hidden in the soil or in buildings. Where it is scattered in the sea, or on the surface of the earth, or lost, or abandoned, and the true owner cannot be traced, it belongs to the finder. But where the circumstances under which the treasure is found raise a *prima facie* presumption that it was hidden, and the original owner cannot be traced, it will belong to the Crown.

It is the duty of a person who finds objects of gold or silver which may be found hidden to report the finding to the coroner for the district. This report is most conveniently usually made through the local Police. The coroner's duty is to inquire "of treasure that is found" and who is the finder (Coroners Act, 1887, Section 36).

In practice, objects which are held to be treasure trove are submitted to the Director of the British Museum, to whom certain of the functions of the Treasury in relation to treasure trove have been delegated. If the finder of the objects reports

the finding promptly, he may receive the full market value if it is retained for the Crown or is handed over to the custody of a museum. If the object is not retained, he will receive back the objects themselves, with full liberty to do what he likes with them, or the British Museum will sell them for him at the best price obtainable. Coins and other ancient objects of copper, bronze or any metal other than gold or silver are not treasure trove, and these articles do not require to be reported as a matter of law. Articles of this description which appear to be of antiquarian interest should, however, be brought to the notice of the Director of the British Museum, or the director or secretary of a local museum. In *Bridges v. Hawkesworth* (1851) 21 L.J.Q.B.75, it was held that the finder of lost goods has, in the absence of any *de facto* control over the *locus in quo* at the moment of finding, a good title to them, except as against the true owner.

The absence of evidence to show that treasure had been concealed in secrecy led to a verdict that the finding of gold and silver articles in the grave of an early seventh century Saxon chief was not treasure trove (*The Times*, 15 August, 1938). At the inquest Mrs. E. M. Pretty, owner of the East Suffolk estate of Sutton Hoo, explained that previously three mounds on her estate had been opened, and objects of interest were found. Further excavations revealed the presence of a tumulus, or grave of a Saxon king, of a kind known to have been common from 2,000 B.C. till as late as the seventh century A.D. The fact that the construction of a mound of earth required a considerable physical effort and some degree of organisation, especially among primitive people with inefficient digging tools, made it impossible that an act of burying a person in a barrow could have been carried out with any real secrecy. Further, everything known about the custom of barrow burial showed that ceremonies took place which must have been generally known in the neighbourhood. In the present case, it was added, the burial ship must have been hauled up from the River Deben, 100 feet below, and was then drawn into a large trench not less than 100 feet long, 20 feet wide, and 10 feet deep. The digging of the trench must have employed a large labour force, as well as the hauling of the

ship into it. For the actual burial a full-sized wooden structure was put amidships, which must have employed a large number of woodcutters and carpenters. After the body had been covered a large mound was erected containing at least 1,000 tons of turf, cut from a neighbouring heath. In the tumulus were found many rich and valuable objects, the true value and magnificence of which have not yet been estimated.

The attention of the jury having been directed by the coroner to the law on the subject, a verdict was returned that the objects were not treasure trove but that ownership was vested in the owner of the soil in which they were found. It should be added that Mrs. Pretty subsequently, with great public spirit, made a gift of all the Sutton Hoo treasures to the British Museum.

An inquest on treasure trove in which the claim of franchise of treasure trove was mentioned took place at Exeter in 1937, when a coroner's jury, drawn from representative business and professional men in the city, inquired into the finding of forty gold coins which had been found by a workman employed on slum demolition. The court opened with the formal declaration read by the coroner's officer: "If anyone can give evidence on behalf of our Sovereign lord the King when, where, how and by what means and by whom the said treasure was found, let him come forth and he shall be heard." It was stated that the last inquest on treasure trove held in the city took place in 1767. Charters granted to Exeter during the reigns of Charles I and Charles II were produced, and decree that treasure trove found within the city shall belong to the city. The coins which were subject of the inquiry proved to consist of eleven shield George III guineas, five spade guineas minted in the reign of George III between 1772 and 1798, all of 23 carat gold, and thirteen large and eleven smaller silver coins, the latter minted in the reign of William III and much defaced.

The evidence of the workman who discovered the coins showed that they were secreted beneath the floor of a kitchen. A daughter of a former occupier of the house testified that about twenty-five years previously the kitchen floor had been converted from wood to concrete. There being sufficient

evidence of secrecy and no knowledge of the true owner of the hoard, a verdict was returned that the coins were treasure trove. After consulting the authorities of the British Museum the City Council decided that the coins were not of sufficient antiquarian value or interest for them to be retained, and the honest finder became the richer by 40 gold and silver coins of the reign of George III.

THE COLONIAL POLICE

The following appointments are announced by the Colonial Office:

DOXAT, E. J. (Assistant Superintendent of Police, British Honduras)	Superintendent of Police, Gilbert and Ellice Islands Colony, Western Pacific.
McGOUN, D. D. M. (Assistant Superintendent of Police)	Superintendent of Police, Kenya.

Women and Police Work

THE Report of the Departmental Committee on Detective Work and Procedure has disappointingly little to say on the question of the employment of women as detectives. One paragraph only is devoted to this important, not to say controversial, subject, paragraph 109 of chapter IV, vol. 2.

A fairly definite pronouncement might have been expected in view of the clarity of most of the recommendations, but in this case we are left with the following somewhat unsatisfactory conclusion. "... but we have not found sufficient evidence of any special need for the employment of police women as detective officers, or of their special aptitude for this work, to justify us in recommending any departure from the principle which has been consistently followed hitherto, namely, that the employment of women on police work should be a matter for the discretion of the individual Chief Officers of Police and Police Authorities."

A close reading of this recommendation suggests that here is a bitter pill for the advocates of more policewomen, coated with politely chivalrous language; but surely here was lost an opportunity for an authoritative pronouncement on the employment of women on police work. This vexed question could perhaps have been more thoroughly examined from a national point of view instead of allowing it to be maintained as a subject for continual local skirmishes between police authorities on the one hand and the combined forces of the various feminist movements on the other.

It is unfortunate indeed, although possibly it is unavoidable, that the infiltration of women into such a hitherto purely masculine occupation as the Police Service should have developed into a kind of running fight; unfortunate because there is room for women in the Service if both the men and women can be made to appreciate the advantages and limitations respectively.

Policemen as a whole, and certainly many Chief Constables, are against the employment of women. Of that there can be no doubt and, although a large proportion of this antagonism is purely masculine prejudice of the kind that refused the vote to women for so many years, it has nevertheless a basis of reason.

The case of the male is based on the following premises, more or less elaborated according to particular viewpoints :

1. Police work has been carried out successfully for years without any recourse to feminine assistance.
2. The uses to which women can be put are severely limited by reason of their, comparatively speaking, frail physique, and by the fact of their sex itself.
3. The advantages claimed for the use of women in, for example, interviewing women and girls in connection with sexual offences are more apparent than real. Women medical practitioners, it is argued, are by no means invariably welcomed and acclaimed by other members of their sex. There is no rush by women to become the patient of a woman and thus avoid the odium of being treated by a member of the opposite sex. On the contrary, most women cling stubbornly to the male doctor, and so, say many policemen, is it the case with women involved in sexual offences. They prefer in many cases to recount their story to a man rather than a woman; or even in cases where they do not actually prefer it, it is extremely rare to meet with a positive objection. Why, then, employ women to do work which a man can do as well or better?

When it comes to female sexual offenders, particularly when the more hardened type such as habitual prostitutes are concerned, it is almost useless to expect them to talk freely with a policewoman. There is a psychological barrier between the fallen woman and the "good" woman which effectually prevents a communication of ideas in most cases which is fatal to police work. Curiously enough this barrier does not

arise with a man even though he be actually a strictly moral person.

4. Pressure is brought to bear on police authorities by various women's organisations which are concerned more to secure feminist victories through the appointment of more policewomen than to obtain police efficiency. In any case the approach to the problem is mainly from a moral welfare point of view and not from a purely police standpoint.

That, roughly, is the masculine case and it takes rather more answering than some of the feminist supporters would have us believe. Police work, purely for physical reasons, is and always will be preponderantly a masculine occupation. In detective work in particular almost all cases must necessarily be left to men for that one reason alone.

Common ground seems to be reached only where sexual offences are concerned. It is generally conceded that, if there is to be a realm for women in police work, it is to be found in sexual offences against women and girls.

Moral welfare organisations lay a great deal of emphasis on the need for women in this particular sphere; but their inclination to exaggerate helps in part to defeat their own purpose. A Chief of Police knows quite well that offences of the type described with such horror-stricken fervour are only about 1 per cent. of his total crimes. Detections are always good because of the very nature of the offences and they present no real crime problem at all. There is thus a clash between the criminal importance of this facet of police work and the moral aspect.

Claims are made on behalf of moral welfare organisations that women can do much preventive work, and that this preventive work can best be done by women "having all the powers of the police." Exactly what this last phrase means is rather doubtful, but the implication is that a band of women moral welfare workers should be attached to the Police.

Resistance is bound to be forthcoming to such a project, as every policeman is aware of the difficulties of combining moral welfare work with police duties. At any time there

might be a clash of interests which would react unfavourably on police work proper. A prostitute who is committing no offence is, from a police point of view, best left alone, and what the approach of the policewoman is to be to other cases where no offence is committed but where there appears to be moral danger to somebody is hard to envisage. Policemen do sometimes "tip off" a man that a woman he is with is an undesirable, but even that requires courage and may be fraught with complications. Yet presumably this is the kind of thing some people expect policewomen to do with impunity.

Probably the "moral welfare" push to secure more and more policewomen is acting as the heaviest brake on what should be a natural development. Frequently the cases put forward in support of arguments are misrepresented, and the writer has actually seen in one moral welfare report a statement, or rather a mis-statement, on a case which was then *sub judice*, the report having been made between the committal and the hearing at the assizes. Further, the statement was libellous as far as the woman victim was concerned, and its falsity was proved at the assizes by the male offender pleading guilty. It is things of this sort which are damaging the cause of the policewoman.

Policewomen themselves are sometimes apt to contribute to their official unpopularity by maintaining a rather foolish attitude of defence. Criticisms or corrections received from male officers are not taken as impartial. They are received as being part of the anti-feminist campaign and not as a contribution to police efficiency, so that instead of achieving the desired results, the direct opposite occurs, the criticisms only evoking a kind of passive resistance very exasperating to those whose only object is to help the Service.

For these and other reasons it is very desirable that the work of women in the police sphere should be examined and regularised. At present, bias one way or the other is affecting to a very great extent the amount of good work women can do; yet there must by now have been ample experience of women's work to allow of a considered judgment being given.

One would suggest that a compulsory proportion of women to the total personnel of the Forces should be fixed.

The proportion might be in the region of 2 per cent. It would thus be compulsory for Forces of fifty men and upwards to employ at least one policewoman, and the continual jockeying and canvassing in this connection would at once cease.

The duties of policewomen and their position in relation to investigations should be clearly defined. Statement-taking from women and girls involved in sexual offences would form an important part of their detective duty, and all policewomen should receive special training in this aspect of the work, including the medico-legal side. It is doubtful if women should be used as the "officer in charge" of these cases owing to the difficulty which immediately arises if and when a male suspect has to be interviewed, so that it seems that the duty of women in these cases should cease after the officer in charge has been assisted in taking the statements from the women and girls involved.

There is obviously a field for women detectives in offences where observation is called for. All kinds of situations could be cited where a woman would be less likely to attract attention than a man. The success of women store detectives can be instanced as an example.

There is no doubt that the present position of women in relation to police work is unsatisfactory; unsatisfactory to the women and to the men. What is badly needed is a lead from the central authority which will serve to dispel the suspicion which now exists between the two sexes by making it clear what the duties of each should be and how they should be dovetailed.

The Police Federation has always regarded women as an "auxiliary service" and that is how they have been regarded by many Chiefs of Police and police authorities. It is time that the whole question of women and police work was clarified.

COUNTY C.I.D.

Botanical Evidence in a Motor Accident Case

By INSPECTOR F. J. BETTERIDGE

Wiltshire Constabulary

AT 3.40 p.m. on the 14th October, 1938, at Stapleford, Wiltshire, a maroon 20 h.p. "Standard" saloon, driven from the direction of Salisbury towards Warminster, turned off the main road by taking a fork to the right. In negotiating the slight right-hand bend, the near side of the car mounted the grass verge, brushed along the hedge and crashed into a telegraph pole at the side of the road.

The two occupants of the car, a woman driver and her sister, received head injuries, and whilst they were being treated at the scene of the accident the body of a third woman was found in the garden adjoining the point where the car first struck the hedge. No statement could be taken from the occupants at the time owing to the nature of their injuries—concussion and abrasions—but both the constable and the doctor declared that the driver smelt of drink, though the latter was not prepared to say whether she showed signs of intoxication. Somewhat later, when the contents of the car were being removed to a place of safety, two bottles containing whisky, a glass tumbler and a broken soda-water syphon, were found in the rear compartment. Neither woman made any mention of the dead woman at the time.

A careful examination of the scene of the accident revealed two brake marks, 42 feet and 62 feet long, obviously made by the two nearside wheels of the car and ending at the grass verge at a point where a collection of dry sticks were lying. Facing this spot was a gap in the hedge beyond which the body of the woman was found. From this point the car travelled a further 28½ feet into the telegraph pole, which was cracked

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and thrown 20 inches out of alignment. All this suggested excessive speed, but was somewhat offset by the fact that the car was a heavy one and travelling down a slight gradient. That it was actually travelling at a high speed was somewhat supported by two women who had seen it as it passed them on the main road about 60 yards from the scene of the accident. Beyond the fact that a car was travelling fast and had turned down the bend, there was little value in the evidence as they had barely noticed the car.

There were no independent witnesses of the accident though two other women had seen the deceased gathering sticks in a lane practically opposite the spot where the sticks were found. To return from this lane to her cottage, which was near-by, she would have had to cross the road. The entrance to this lane would have been entirely obscured from view, on the driver's offside. In the absence of evidence as to how and when the deceased crossed the road, it at first seemed probable that she crossed right in front of the car, forcing the driver to brake hard and thus lose control. This explanation was in fact put forward by the defence.

Controverting this view, however, was the fact that the sticks, which she undoubtedly was carrying, were all found on the grass verge, which was just of sufficient width to allow a person to stand off the road. Also, the front of the car revealed no signs of having struck the woman. A projecting hinge on the nearside door, 4 feet 7 inches from the ground, bore particles of skin and flesh, corresponding to major injuries on the lower part of the face of the deceased, who was approximately 5 feet 2 inches in height. This strongly suggested that she was struck whilst standing back to allow the car to pass.

At this stage the Police concluded that the immediate cause of the accident was the excessive speed of the car and they had reason to suspect that the driver was under the influence of drink. Moreover, in their opinion the weight of the evidence indicated that the victim had already crossed the road to the verge prior to the car reaching the bend and was prevented from getting further out of its path by the hedge. It was appreciated, however, that evidence to substantiate a charge was meagre and incomplete.

No further evidence could be deduced from the scene of the accident, but whilst the police officers were still there, they were approached by two men. These stated that at about 3.30 p.m., while they had been walking along the main road towards Salisbury and near Stoford, at a point approximately $1\frac{1}{4}$ miles from the scene of the accident, they had seen a red car coming towards them round a slight bend at a terrific speed. The car had failed to negotiate the curve and its offside wheels had mounted the bank on the right-hand side of the road. It had travelled along the bank for some distance and on coming back on to the road had continued on its way without diminution of speed. They had been alarmed at the manner in which the car had been driven and had fully expected it to overturn. They could only describe the car as a red saloon with two persons in it, but were certain that it must bear scratches on its offside, where it had brushed against bushes as it careered along the bank. On examining the car at Stapleford, they both declared that it was exactly similar in shape, size and colour to the car they had seen mount the bank at Stoford.

It was realised that provided that it could be proved that the car involved in the incidents at Stoford and at Stapleford were one and the same car, this evidence would be of greatest importance in assessing the responsibility of the driver for the fatality.

The two men took the Police to Stoford and pointed out the track on the bank, a portion of which had been ploughed up by some part of the offside of a car.

Before the car was moved from the scene of the accident it was again carefully examined and was found to bear numerous scratches along the whole length of its offside. Between the front offside wing and the bonnet was the greater portion of a green leaf. There was no tree or shrub with similar leaves in the vicinity of the accident, though such a shrub was found overhanging the wheel track on the bank at Stoford, where it must have been brushed by the passing vehicle. When the leaf was shown to a local botanist, he identified it as a leaf of *Viburnum Lantana* (Wayfaring-tree). He said that the leaf was not in a condition to fall of its own accord. Furthermore,



(2) Scene of the accident showing marks on road made by car (chalked over after measurements were taken). The white square in the hedge indicates where the body of the woman was forced through the hedge

he was unable to find any such shrub at the scene of the accident, though the bush at Stoford was of that species. He said that although not uncommon it was rarely found by the roadside.

The car was removed to a garage, raised on a lift, and its underportion thoroughly examined. Underneath the offside running board, at its lowest point, were found tightly wedged, between the board and the cross-bar supporting it, a quantity of earth, leaves, ivy and grass.

Accordingly, six samples of soil, containing ivy, grass and other vegetable debris, were taken at distances along the 164 feet track on the bank at Stoford, and an equal number from the grass verge at the scene of the accident. These, together with the leaf and soil from the car and leaves from the Stoford shrub, were submitted to Mr. E. B. Parkes, M.Sc., F.I.C., of the Forensic Science Laboratory of the Bristol Constabulary. His report was to the effect that the soil from the Stoford site contained numerous fragments of *Viburnum* leaves and moss, and in this respect differed markedly from that at the Stapleford site, in which they were entirely absent. The soil from the car agreed with the samples from Stoford in having both *Viburnum* leaf and moss fragments in considerable quantity. The ivy and grasses were without evidential value as they were common to all three sources.

Before the receipt of this report, the driver of the car had been interviewed in the presence of her solicitor and had volunteered the statement that as she approached the bend she applied her brakes violently, was thrown against the wind-screen and remembered no more. She did not see the woman who was killed, and was unaware that a third person had been involved until told four days after the accident.

In view of the scientific report, process was issued.

The defendant chose to be dealt with summarily at Salisbury County petty sessional court, where evidence was adduced to substantiate all the points the investigations had revealed. The defence attempted to raise the theory that the earth could have been collected by the car in the New Forest, where they drew off the road for a picnic lunch. In cross-examination, however, Mr. Parkes said that to expect to find



(b) View of the *Viburnum* shrub with wheel tracks beneath it marked by white cards. This clearly shows that the off side of the car *must* have brushed against the shrub.

all the ingredients of the soil at this spot identical with those from the bank at Stoford was "stretching coincidence rather too far." The defendant stated that she now remembered seeing the old lady running across the road right in front of the car and that she was forced to apply her brakes very hard in order to avoid running her down.

The magistrates found her guilty of driving in a manner dangerous to the public, fined her £30 with £20 12s. 6d. costs, and disqualified her from driving for five years. In announcing their decision the Chairman said that they were completely satisfied that the defendant's car was the one involved in both incidents.

NOTE BY MR. PARKES

The Wayfaring-tree or Cottoner (*Viburnum Lantana*) is a woodland species, specially common on chalk or limestone tracks. It also grows in hedges, particularly in open light positions with access to the sun. The tree is usually 8 to 10 feet high and is not uncommon. The botanist was doubtless speaking locally when he said it rarely occurred by the roadside.

There were two mosses present in the samples from the Stoford site as also in that from the car—*Euthynchium E. Swartzii* (Hob:) and a variety of *Hyloconium*, probably *Squarrosus*.

The improbability of the soil coming from a third site naturally did not depend on *Viburnum* fragments and mosses alone, but also on the grasses, flint chips, box leaves, ground ivy and fragments of snail shells common to both the soil from the car and the samples from the Stoford site.

Observation

AS we are all aware, one of the very first things a policeman has drilled into him is the importance of developing his powers of observation. Far too many of us regard this as quite unnecessary; we are content to let other people do the thinking and observing for us; consequently we get left behind, missing all the plums and half the fun of life.

Promotion in any walk of life depends on the individual's ability to develop his senses plus a little extra. In the Police Service that little extra is observation; and whether a man is stationed in the largest city or the smallest village matters not at all: he can develop his powers of observation *anywhere* if he is determined to climb.

Here is a true story that points the moral; it happened several years ago and fortunately I was only a listener. It was a Chief Constable's inspection, and I was standing next in the ranks to the unlucky constable to whom the C.C.'s remarks were addressed. The examination ran something like this:

"What time were you on traffic control this morning?"
(*Smartly*) "Nine a.m. to ten a.m., sir."

"What was the weather like during that hour: was it dull? sunny? raining? cloudy?"

(*A pause. Then*) "It was fine, sir—that is all I remember."

"The lady who came over to you, how was she dressed?"

(*Long pause*) "Well, sir—(*pause*)—I don't know, sir. Probably I was too busy with the traffic to notice."

Said the C.C. very quietly, "You had no traffic on your hands just then. I was sitting in my car at the time. Don't you think it would be a wise plan to develop your powers of observation?"

The C.C. passed on, leaving a very uncomfortable constable.

This incident has always stuck in my memory, and it gave

me the incentive to do something about developing my own powers of observation; for I might well have been that unfortunate constable.

It is not an easy task if one is not naturally observant; but anyone with normal intelligence can achieve it if fully determined to do so.

First and foremost an interest in one's job is essential, or a wrong perspective is obtained: it is vital to bear in mind that when on duty one must always observe things from the *policeman's* point of view.

The initial step is to cultivate the memory. You cannot record in a notebook everything you observe; but you *can* make mental notes and pigeon-hole them in your mind. However, the mind will not go on storing things indefinitely; if you try to remember too much you will defeat the object and will finally end up with remembering nothing at all. Your object should be to record some mental picture which brings back the whole scene in a flash. Therefore memorise only the details which are relative and important, and forget all that is definitely unimportant, so that you will not overburden your mind.

To begin training the memory read a short paragraph from a book or newspaper, or a few lines of poetry. Go over it three or four times, get the gist of it properly, then try to write it down. Do this daily for a few days. Then take longer passages, and increase their length daily for another week. Now stand at your window, look outside for two minutes, turn your back to the scene, and write down everything you have observed. When you have done this, look out of the window again and check up the list you have written. Carry on taking mental pictures twice daily for a few days, allowing more time to elapse between observing a new scene and writing down what you have seen. Remember always to check up.

By now you should be ready for a real test. Go out into one of your streets, observe it well, record in your mind what kind of shops or houses it contains, what kind of traffic there was, the class of pedestrians, the weather conditions, remembering to look at it all *from the policeman's point of view*. Then

go home—but do not write down your observations *until the next day*. Once more, go out and check up.

After a few weeks of these simple exercises your memory will have developed to the stage where mental pictures record themselves without effort. Once the mind has loosened up with a little work, and the dust has been removed from the corners, you will find that the power of observation is there. Interest in your job, a clear mind, and a developed memory unite to give this much-desired power.

Observe *accurately* and without imagination. Your job demands *facts*. Try to fix the *sequence* of events in their proper order, recording cleanly and neatly, with a full understanding of the significance of each fact. Always *write down* numbers, dates, times or figures of any kind: it is a mistake to overburden the mind with details which *can* be written down, and it is wiser never to trust to one's memory where figures are concerned.

Finally, do not hesitate to call in the aid of your other senses besides sight as aids to memory. Hearing, smelling, and touching may all come in useful at times in composing your picture of "things seen."

A. H.

Police Work in Palestine

By HENRY H. MARSH

Late of the Palestine Police

A FORCE more military than civil upholds the law in the Holy Land and rules these areas of the country where lawlessness abides. From the Arab owners of much decrepit property and more congenial orange groves to the roaming Bedouin who daily flits with his sacking tent, law, as it is recognised in a country of so many nationalities, is enforced by the Palestine Police.

It is by the native section of the Force, however, that much of the work of discovering and tracking down criminals is undertaken. Palestinians, Jews, Arabs, with a sprinkling of Greeks, these are officers of proved ability who are retained solely for investigation work—work which in many of its phases is almost on a par with that of Scotland Yard. Many of them speak the three official languages, Arabic, Hebrew and English—a considerable advantage over the British Section who as a rule can but speak one besides their own, Arabic, and then only after a considerable time spent either in study, or, better still, mixing among the actual natives of the country.

I am writing in March, a month when anything might happen in this part of the world. The raiding tribes of the hills, who occasionally come in contact with the Police; the Druzes, the Wakfs of Nowhere, are ready, when the signal is given, to wipe out their felonies and misdemeanours in one glorious burst of heroism, defending their country from the ravages of either the Nazis or the Russian Red army. As I write, the Near East—as everybody knows—is a huge soldiers' camp, with as many police as can possibly be recruited from England. But on this point I must say no more.

In order to fully understand the workings of the Force

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one must remember that up to 1925 there was nothing like an efficient force in the country. In 1921 a gendarmerie was constituted under the Mandate, a force consisting of a few British officers and 500 other ranks. Many of the constables were recruited from the disbanded R.I.C. who were in receipt of pensions. Crime at that time was considerably on the increase, drunken fights between the public and the native ranks of the gendarmerie not uncommon. In 1926 the gendarmerie was disbanded and a more organised system of Police—the Palestine Police—was formed.

But crime still flourished as a weed will flourish when undisturbed, and it was the task of the native section of police officers, from the rank of Inspector upwards, to check this evil at the direction of the British senior officers.

From a force of a mere 200 men (in the Police training camp at Mount Scopus) it was increased, before I left the country (1932), to 700-odd British Police.

The Force had of necessity to be trained in the concrete square at Mount Scopus, which echoed to hundreds of marching feet; more huts and tents were hastily erected to accommodate the extra recruits, until, at the present time, the Force is efficient to deal with all who offend against the law of the land.

Few really "brainy" criminals existed in the early days of the Force. Nowadays there are "specialists" in all branches of crime; but it is still only a question of time before they are apprehended. The mentality of the Arab as a rule is low. More from a spirit of bravado than anything else he meets a few of his pals who decide, say, to hold up a car containing white people which is returning from a trip to Jericho. The would-be bandits "do their stuff" after robbing the passengers, and perhaps wounding the Arab driver who has resisted. The car is then allowed to proceed to Jerusalem. The hold-up is reported; descriptions of the men and stolen property are issued. Two dozen stalwart constables in tenders rush around the countryside in search of the bandits, whom they do not find. Jerusalem's "flying squad" of patrol cars is out; native inspectors who know almost every nook and cranny of that particular road move into action. "Kilo 43" post, half-way

to Jericho, is informed; they also have trained trackers out for the men. Hiding for days, perhaps, in the Judean Hills until forced by hunters from their caves, the bandits are captured and flung into prison. And that is that; another job of work done.

Crimes of violence are commoner than is generally supposed; in fact in 1931 we had a spate of murders, robberies, house-breakings and rape every week-end. Some unlucky Jew would be found in an abandoned car with his throat slit and his pockets picked clean. The C.I.D. would get busy and, if the wanted man had a record, the murderer, who was usually "clever" enough to leave his finger or foot prints strewn about the scene, was rounded up.

Out-of-the-ordinary offences, such as the smuggling of arms or hashish—crimes which could have been more easily committed on the coast—seldom occurred. True, there was a round-up and search of all cars leaving and entering Jerusalem, for rifles, etc., at the famous Bab El Wad (Gate of the Valley) which is half-way to Jaffa, but little came of it; so cunningly had the Arabs concealed their caches of weapons that all the searching in the world could not locate them.

The mentality of the Jew is on a slightly higher plane than that of the Arab, when he decides to leave the home of his fathers and adopt a life of crime. Here backing, education and money play their part. The criminal with a bank balance is infinitely more dangerous than one without means, so the experts in Palestine checked up on this in all cases of cleverly conceived offences, such as larceny by a trick from some unsuspecting Arab shopkeeper, or being concerned, behind the scenes of course, in cases of violent disorder by Communists at Tel Aviv, sister town of Jaffa.

By acts of propaganda, rivalling that of the rascally Dr. Goebbels, these pests harangue the mob, cause offensive literature to be distributed (just like Doctor G.) and, like the rats they are, do a disappearing act when we rush in tenders down to the spot to arrest the ringleaders of the crowd.

The murder of a Mrs. Tweedie Millar and the attempted murder of her husband happened on the night of June 30th-July 1st, 1932. It was the sole topic of conversation for weeks

in Jerusalem, the most talked-of murder the country had had for years. It appeared that an armed desperado entered the Millar house that night to steal what he could find, and was met with resistance from Mrs. Millar. The Arab drew a knife and stabbed her fatally. Mr. Millar sprang to the rescue, when he also was stabbed, though the wound was not a mortal one. The murderer fled and Mr. Millar was rushed to hospital where he eventually recovered.

The Police Commissioner issued a notice with a reward of £500 for the apprehension of the criminal or criminals, as it was not known how many took part in the actual entering and killing.

The description of one of the men—I remember it well—was "dressed as a fellah, aged about 30 years, very short and thin, clean shaven, wearing a striped kombaz [sort of long gown favoured by the Arab]." The picture of the young mother battling with an armed man captured the imagination of public and Press, who did it full justice. The whole mystery of the thing lay in the fact that no one heard anything, not even the screams of the poor woman that night, and the anger of the people and their demands for the capture of the men reached fever pitch.

Police were demanded to make an early arrest. We, as constables, knew practically nothing of how the case was going until the fourth day, when a number of arrests were made, fourteen suspects being brought before Mr. Cressall, the British magistrate, who remanded them for seven days. The only information I managed to obtain (and the only part I played in the drama) was that offered by a down-at-heel Arab peasant who visited the Mustashpha Police Station where I was on duty.

This man stated that the man described upon the police station board was a man who "tried to stab me three years ago and I think he works for the P.W.D. in the German Colony."

All this was vital information, of course, a link that would probably track down the man who committed this crime. I passed on the information to Shawki Saad Bey (investigation officer of the case) and that, so far as I was concerned, was that.

Whether the clue I obtained was instrumental in bringing a murderer to justice I do not know to this day. Two men were eventually hanged for this murder, which proved to be a nine days' wonder.

But no help for the Police was forthcoming from the people. Instead, captious criticism of every move. The following paragraph from a local newspaper shows clearly the attitude of the public towards the Police at this time:

"A total of a hundred arrests are not made within 48 hours when an Arab is found dead in his car on the open road; when a Jew is shot dead in Balfouria; when death creeps up into Kfar Ezekial; or when murder is done in Kfar Hassidan. A sum of £50 is given for the discovery of a Jew's murderer; Mr. Spicer [the Commissioner] offers £500 for a Britisher, and he does not have to wait long before offering this unheard-of sum. Nor, to quote Arab and Jewish critics, is he called to the scene immediately after an Arab or Jew is killed in the Haifa district, nor are all the roads leading from the scene of the crime patrolled by the Police. The thoroughness with which the present affair is being investigated does not, to the layman, appear to be present when a native is murdered."

A system of board-signing was inaugurated by the Commissioner of Police, but it was not altogether successful. It was meant, logically enough, to enable an officer going night rounds to determine where each and every man was to be located in his area, noting times of arrivals and departures on the boards, which were placed usually under porches of buildings. It was a plan that really defeated its own ends; as persons deciding to commit any offence at night would merely send one of their number to find out where the boards were placed. A glance at the board after 10 p.m. would inform him whether Police had been or not, and the gang would be able to lay their plans accordingly!

The years 1931-2 were peak periods in Palestine for banditry, murder, rape, smuggling and hold-ups—almost the whole caboodle of offences in the crime calendar. Search parties of British Police (now increased to about 1,000 strong) scoured the hills and valleys for hold-up men and thugs. Never a single Arab, always a gang of them, would strike in

the dead of night, leaving behind them the rifled bodies of their victims. It may have read like a tale from the Arabian Nights, but I can assure you it was no fairy-tale to us, working throughout the night in cold, rain and darkness. Two of our party one night fainted with exhaustion, and I narrowly escaped injury when a rock I was climbing suddenly broke from its moorings, nearly striking some of the following party.

After a hold-up in Ramallah, for instance, our party were fired on by a gang of six robbers, whilst climbing the mountains at Erag el Waer. Luckily no one was hit. We arrested two, the other four scrambling like lightning to their holes somewhere in the hills. No trace of rifles, however, could be found. In another case, while searching some tents at Wadi Fawar, some smuggled tobacco was discovered, and a man who was arrested there with ammunition in his possession was sentenced to seven days' imprisonment. That ammunition was intended for us. I should have given him seven years!

In many cases of hold-ups, Jews were the victims, showing the hatred which existed between the two races. The usual run of petty offences such as occur in the best-conducted areas were more numerous than in any other country of that size. The Holy Land is only about the size of Wales, but contains such an assortment of races that it is a wonder crime is not more prevalent than it is. Arab, Greek, Jew, Abyssinian, Latin, French, American, German, almost every nationality is represented, except, I think, the yellow races and the negro.

One can stand at the Allenby Square, near the post office in Jerusalem, and view the world passing and repassing, rubbing shoulders with Italians and Egyptians, Touaregs from the desert wastes, and Bedouin Arabs, who have come with the dishonest purpose of mixing with the tourists during feast days. A curse, the flash of a knife, and another victim is left dying on the cobbled, twisting ways in semi-darkness.

Arched alleys, dens, dug-outs, hovels of stone and mud may hide an army corps; small wonder that every crime committed in these squalid spots does not see the light of day. That the policeman's job is a difficult one in such a country can readily be understood. There are no hard and fast rules for the successful investigation of any particular crime;

"sleuthing" entails a lot of real hard physical, more than mental, work to get on the track of the offenders.

The finger-print bureau is second to none in a country so small, but in my time we had no scientific laboratory. However, science was not needed overmuch, since few criminals were so clever as to escape for long the wide net that was spread for them. Moreover the Trans-Jordan Frontier Force had to be reckoned with on the east side, should an attempt be made to reach the desert areas.

A few figures will give the reader a rough idea how the place is populated. I take the official ones for the year 1932:

Population of the Old City—25,183, of these 12,192 are females. New City of Jerusalem, 65,320, with females 32,632, making a total of 90,503. Add to these the immigration figures of the Jewish population, and we get, roughly, a quarter of a million people living, breathing, packed together in the hovels of the "Golden City."

Criminals I Have Met

By EX-CHIEF INSPECTOR R. MORRISH

POLICE officers who for many years deal almost daily with criminals of various types inevitably become students of psychology and criminology. In fact these subjects form part of the training in the arts and crafts of criminal investigation. Detectives may not be scientists as generally understood, but, whether unconsciously or by design, they do classify and analyse the minds of those criminals who come under their notice. It is quite obvious that many criminals possess some peculiar kink which seems to impel their activities toward certain criminal acts.

A perusal of the long lists of convictions to the discredit of both men and women of the criminal classes is sufficient to convince the most sceptical that many criminals are not able to help themselves either to reform their characters, or even to divert their attention to aspects of crime other than those which they have previously committed.

If a motor driver or mechanic becomes a criminal, the chances are that he will steal motor-cars and accessories to the end of his life. A housebreaker who has earned "distinction" by his special method of breaking and entering dwellings will continue to use that method, and no other. Many criminals have great faith in their ability, and are proud of their systems. They are cranks and monomaniacs in their own sphere. A fraud man who victimises women will, by sheer "crime personality," continue to find fresh victims. Convictions and imprisonments will not deter him. A fraud man who obtains goods and money by bogus advertisements and begging letters must, judging by his audacity, convince himself that what he says is true, and so he convinces his dupes.

At the same time, and although generally speaking criminals

are content in their subconscious minds to view crime as their profession, they develop a subtlety in their conversations, their habits, and in their ability to travel quietly and secretly from town to town, so that they frequently outwit for long periods the counteractive measures adopted by the crime investigator.

It is interesting too to observe the interests and characteristics of criminals outside their "profession." They may pretend in private life to be devoted church workers, or they may join a choir. Of course such duplicity assists them in their method of gaining a livelihood. One type will openly confess his past life, detailing with accuracy his convictions, profess reformation, and at the same time live at the expense of those who are willing to help him.

Very few criminals with a bad history really reform for any length of time. If reformation is achieved it is generally amongst those under thirty. Certainly a very large number of youthful criminals, some of them with convictions of a serious nature, have been known to regain their lost characters, and to continue to do well. Such results have been largely due to the efforts of probation officers and officials of Borstal Institutions.

It has been said that an experienced C.I.D. officer is able to judge a criminal by his face, even though he has no previous knowledge of him. This is not always true. Whilst some criminals, especially those who commit crimes of violence, acquire a face contour which expresses their true character; others, for example those of the fraud class, may retain to the end of their career a youthful, debonair, and innocent appearance.

Amongst the former class I have experienced a few remarkable examples. A murder was committed when I was a young C.I.D. officer, in North East London. The victim was a woman of the unfortunate class. I viewed the body. The woman's head had been almost severed by a razor. Experienced detectives were busy bringing into the police station many men from whom statements were taken. Some of these men were under suspicion. On seeing one of them enter the office, I turned to the clerk and whispered, "If anyone swings

for this job it is that man." The clerk looked at him, and quietly replied, "I believe you are right." Half an hour later we found evidence of bloodstains on that man's clothing, and at the trial he was found guilty of the murder.

In later years I had an even more remarkable experience of "spotting" a murderer. I shall omit the details, but the circumstances strengthened my conviction that those who commit cold-blooded murder are stamped with the mark of Cain.

It certainly requires a considerable amount of training to recognise a confidence trickster. Many of them present a very good appearance. Travelling the world, as they do in normal times, they are bronzed and well preserved. Their real identity may be kept secret for years. They may join a golf club or a social club. They appear to be, and often are, in affluent circumstances. One part of their life is spent in a "hiding up" process; another part in preparing for a really big scoop; and a third—in prison. But it would be most difficult for the uninitiated to identify them as being engaged in the first or second occupations.

I was having tea with my wife in a London restaurant some years ago. Happening to look through the entrance door my attention was attracted to a tall, well-dressed man, who was entering. I knew him, and what was more important, I wanted him for travelling to the Continent with a forged passport. His audacity, when I walked quietly to the corner where he was sitting to tell him I should arrest him, was typical of the attitude of his class. "That's a pity," he said; "I was hoping to pull off a good job to-night."

With colleagues I arrested two other confidence men in Kensington. They had defrauded a colonial of over £10,000. One had represented himself to be a cattle rancher, and the other a dealer. A thousand officers, unless they knew them, would have passed them in the street without a second glance. I have taken part in the arrest of many such men. They have pretended so long to be what they are not—tourists visiting the Old Country, home after a long absence in the colonies, etc.—that it becomes part of the not too miserable existence of these high-grade criminals.

Duplicity can be carried to almost any length, and certainly it is only "by their fruits" that many criminals are known. One I knew was so whole-heartedly engaged in religious work that he could obtain whatever he desired from local tradesmen, who by the way believed him to be a man of means. Another was baptised, joined a church, and was able to introduce himself to one minister after another to obtain "assistance."

A sentence of five years' penal servitude was thoroughly deserved by a heartless rogue whom I arrested soon after the Great War. He actually addressed his begging letters to *deceased* army officers—"My dear Geoffrey. Not having seen you since we were serving together in France," etc. In his letters he pleaded poverty, family illness, etc., and asked for funds. He obtained substantial sums of money and clothing from the relatives of the deceased officers. This criminal had searched obituary notices in the newspapers. He wrote to suitable places at long distances from London, and the relatives of the deceased officers opened the letters and took pity on him. The truth was that this scoundrel's servitude during the war was of the penal variety.

It is not wise to send money or goods to unknown persons who use accommodation addresses. I have arrested at least four rogues using such methods, and they all had numerous convictions against them. This type obtains lodgings in good-class houses, and live like gentlemen. They change their name with every move they make, indeed it must be difficult for them to know who they really are! I was surprised to find in one of these prosecutions that one of my witnesses was a police officer, and imagine my amazement when he remarked to me at the court, "This is the second time I have been caught by this man; on the other occasion he used a different name."

In another case five women had been victimised under promise of marriage. The criminal possessed a remarkable personality. In two instances the banns of marriage had been published, but in both cases the rascal absconded before the wedding days. Another who got away with the light sentence of three years had committed bigamy twice, and was courting another woman when I arrested him.

It is really amazing what large sums of money are obtained by rogues who set "their affections" on women. Several thousand pounds were paid to one man of about thirty-five by a woman much older than he. In another case a woman in the Provinces answered the cunningly devised advertisements of a man of about 60. He was supposed to be engaged in business in a large way. The lady met him in various places with a view to marriage, which fortunately for her never took place. She lost about £600.

A curious coincidence occurred in connection with a fraud man who advertised extensively. He was supposed to be dealing in property abroad, and was successful in obtaining considerable sums of money by his fraudulent statements. On examining his correspondence after his arrest I found that one of his "clients" was at first rather suspicious of him, then, having trusted him, offered him commission if he would recover a sum of money "lent" (evidently obtained by fraud) to someone else.

Many house and shop breakers specialise in the property they steal. An instance of this stands out in my memory. Dick was a specialist in false teeth and dentures. He selected good-class dentists' shops, made a mark on gold and platinum, and actually carried a bottle of acid to make tests on the spot. We were fortunate to get both Dick and the receiver of his property. When the judge was summing up, Dick turned to me from the dock, indicating seven with his fingers. I don't think the judge saw him, but the sentence was seven years. This man lived in an East End slum. He made no pretence. He would always be judged by what he was—a hardened criminal.

Ralph was the cleverest housebreaker I have known. He "worked" alone and at night. He was a curious mixture, and had a remarkable career both before and after I met him. He has been described as "the gentleman cracksman." In his earlier days Ralph escaped from Dartmoor with two other convicts. One of his pals was shot down, and another captured, but Ralph was at large for four days, during which he committed several burglaries. When he was rearrested he found many sympathisers, no doubt because it was Christmas time. On his release friends sent him to Africa, where he did

very well for some years, and fought in the Boer War. Crime attracted him again and he returned to England. He then showed himself most difficult to catch, and when I arrested him in the street early one morning with a suit-case of stolen property he had been wanted for a very long time. To do him justice he assisted us to clear up many crimes and to recover a large quantity of valuable property. Ralph was clever again by pretending he wanted to reform. The judge was lenient.

On his release Ralph was assisted by police officers. He attended a place of worship, and showed signs of a changed life. Nemesis overtook him on his first relapse into crime. He had called at a police station to see a C.I.D. officer who was helping him. The officer was out and a constable in uniform spoke to him. A few nights later that same constable saw a man jump over a garden wall with a suit-case. The man escaped, leaving the case behind. A house had been broken into and the case contained the stolen property. The constable reported the matter like this: "I don't know the thief, but it was that man who called the other day to see you." Ralph was again arrested. A book by him would prove fascinating reading.

There is no doubt that motor thieves and bandits are generally influenced by an overwhelming desire to drive cars, and by the adventures connected with smash and grab and other crimes. Many of these criminals are quite young, and they love the excitement of a chase. It is true that some of them are unscrupulous regarding police officers who jump on the running boards of their cars, but others are by no means hardened criminals.

Four young bandits brought about their own downfall quite close to the station to which I was attached. They stole a car in the West End of London, drove in the night well into Surrey, smashed a jeweller's shop window, and got away with the spoil. Vain attempts were made by police officers to stop them *en route* to London, but as they rounded a sharp bend at high speed near Streatham their car hit the kerb, bursting a tyre. The car turned over, pinning four prisoners underneath. They were extricated and found to be injured. The jewellery in their pockets was smashed to atoms.

A good subject for the psychologist was a young man we arrested for stealing a car. His sentence was one of many for similar offences. Inquiries showed that he was not so much concerned with making money from the sale of stolen cars as he was with a mad desire to drive vehicles of every type and price. Within a few days of each release from prison he would again fall a victim to his fascination. A much older criminal whom I arrested twice within two or three years was of a similar temperament. He could not leave cars alone, and openly boasted of his ability to drive at high speed and to evade capture.

The handling of money belonging to employers is a source of temptation to many. And the more successful they are in escaping detection, the stronger becomes the desire to acquire more. Embezzlers may succeed for long periods in covering their defalcations, particularly where their customers are in the habit of paying their accounts irregularly. A tradesman is never anxious to harass his customers, and therefore he trusts his roundsmen and clerks until he has good reason to suspect them. He may then find that the more inquiries he makes, the larger the amount of the deficiencies.

A good example of this was a case in which the dishonesty of the servant was not discovered until he had robbed his employer of £90. The roundsman was forgiven on agreeing to repay the money at £1 per week. The master compounded a felony by drawing up an agreement to this effect. A few months later the employer discovered that although £1 per week was being repaid, a further 25s. per week had been embezzled!

Another embezzler tried to be clever after being caught. He was a married man and had spent a large sum of money in taking away another woman for a holiday. After being granted bail whilst on remand, he wrote a letter to the court saying he had decided to commit suicide. I searched for him but failed to find him. I did not drag any rivers as I was convinced he did not possess sufficient courage to end his life. I obtained a warrant for his rearrest, and some weeks later found him in hiding in the East End.

Attempted suicides of criminals are not unknown. A

young woman I arrested for larceny had many convictions for similar offences. It was her habit on arrest to become hysterical and to threaten suicide. She swallowed pins of various sizes, but she was never, so far as I was aware, after treatment, any the worse for her experiences.

I have met some clever women. One was a domestic servant in an hotel. The proprietress reported time after time the loss of valuable jewellery from a locked cupboard. I interviewed all the servants, but all my efforts seemed fruitless. No one suspected the servant in question, and she looked the picture of innocence. After some weeks she gave herself away by sending to the laundry with her own property a garment belonging to the hotel. Further inquiries revealed that she had stolen jewellery valued at £400, most of which we recovered.

Most officers will agree that small thefts lead to bigger ones. A man in my district was left in charge of a house and furniture by a gentleman who went abroad. The latter did not revisit this country for a very long time. Perhaps the thief thought he never would come back. When he did return he soon came to me. The servant had practically cleared the house of the furniture. I ascertained that one thing after another had been sold or pawned by him, until at last the piano went.

It is seldom that police officers have to arrest a family of criminals at the same time. This fell to our lot in connection with a shopbreaking case. The family were all costermongers, father, mother and two sons. Practically all the stolen property was found in the house, which appeared to be ruled by the wife. What an example of training!

In conclusion I will mention an incident which impressed me greatly. I had dealt with a prosecution against a self-confessed atheist for blasphemy and obscene libel. On the day of his release from prison I happened to pass an Underground station from which he emerged. He recognised me, stopped, and we had quite a friendly conversation. He was obviously very worried, and I gathered from him that he expected to die very shortly. Within a few months he was dead.

Towards Promotion

No. 1. THE EDUCATIONAL BACKGROUND

IN his authoritative book, "Police Procedure and Administration," without which no police bookshelf is complete, Mr. Moriarty marshals into one chapter the provisions of the Police Acts and Regulations which govern the grant of special increments of pay for constables, promotion, and the awards of decorations, under the attractive title of "The rewards of a Constable." It is natural, and desirable, that every member of the Police Service should aspire to the status, and the responsibilities, of a rank higher than the one in which he is serving, and it may be claimed that in no profession or calling is advancement more dependent upon personal fitness and individual merit than in the Police.

In the Police Service promotion is by selection. It is indeed the law, as enacted in the Police Regulations, made under the Police Act, 1919, that in the case of promotions up to the rank of inspector, selection is subject to qualifying examinations in educational subjects and in police duties; and save in exceptional cases, where there is present the possession of special qualifications for the performance of the particular duties on which he is to be employed, the examination must be taken after the constable has completed not less than four years' service.

Among the qualifications necessary to be held by the candidate for appointment to the office of constable is the requirement that he must satisfy the chief officer of police that he is sufficiently educated, by passing a written or oral examination in reading, writing and arithmetic (addition, subtraction, multiplication and division), or by producing evidence that he has passed another examination which, in the opinion of the chief officer of police, is of an equivalent or higher standard. Thus the Regulation which prescribes the

initial test makes but a reasonable demand upon the young man who seeks to wear the uniform of a police constable. The candidate who received his education in an elementary school is not excluded from the preliminary selection and test. But unless the ex-elementary schoolboy has followed up his schooldays by attendance at continuation classes, or by private study, or has taken up a reading course, or has been engaged in some occupation involving clerical work, improving his mental as well as his physical powers, he is unlikely to pass even the comparatively elementary tests set for the candidate seeking entry to the Force. In most cases, the preliminary educational tests are designed to reveal the ability of the candidate to show mental aptitude, and above all to indicate the standard of his intelligence. In other words, to show whether he can think, read and write.

Let us pause to reflect upon the limited number of people, young and old alike, who can do these three things well. With all the progress made in our educational systems since the great reforms were introduced soon after the beginning of the present century, soon to be two generations ago, which brought about compulsory education for all, the people whose educational training has taught them to think logically, and to maintain a judicial balance in outlook, remain a minority. Maybe these qualities are not to be acquired by academic instruction; they must rather be inherent, instinctive. The judicial mind is rare; equally rare is the person who can commit his thoughts, and what has been said and done within his hearing and vision, into the written words of our English language, using just those words and phrases which correctly, concisely, and aptly describe what happened, what was said, and who said it. As for speech, while it is true that in recent years the broadcast voice has served to remind us of the need for care of the consonants, and better pronunciation of the vowels and diphthongs, it is rare that teachers of elocution award full marks to those who attempt to qualify for the prizes of competitive oratory.

Yet in the police force there is much effort to fashion the recruit in the scheme of things which are peculiar to the policeman's job. And having satisfied the chief officer of police

that he is sufficiently educated in reading, writing and arithmetic, the course of training which prefaces his service on probation enables the young constable to acquire that technique, that personality and that sense of public duty which are the hallmarks of the English policeman. In the early months of probation, accompanied as they are by the problem of adapting himself to the life, the changing tours of duty, the uniform, and of knowing his comrades as well as his superiors, the perspective is apt to get out of focus. Those ambitions which prompted the application to join the Force now seem to merge into a mist, through which there is no clear direction; unless some friendly voice breaks through to offer the cure for those errors and omissions with which the novice at every craft begins his trade.

The value of the educational background becomes increasingly clear as probation lengthens into policemen'ship, and time passes rapidly to the stage when, after completing four years' service, the constable is eligible to sit for the qualifying examinations for promotion to the rank of sergeant. He does well to remind himself that the examinations are qualifying only, and that, having passed this stage, the possession of qualities beyond those of educational ability, important as they are, are necessary to successful advancement in his career.

In the acquisition of his educational foundation, upon which to base a successful police career, the student can turn to various aids. They need to be consulted and used by all, the products of the secondary and public schools as well as the boy from the elementary school. The normal facilities for continuation classes, as generally organised by most education authorities, may not readily adapt themselves to the varying tours of duty which policemen perform, and unless special facilities can be arranged by the Police, on the one side or the other, it is unlikely that continuation classes can be attended with any degree of regularity. On the other hand, education authorities exist to make facilities for public education, and, if a demand is present and can be brought to notice, it is not unlikely that it will be satisfied, either by special classes organised for a particular craft or service, or by adaptation of

timetable and syllabus which will enable police trainees to be present.

In other directions the constable-student need not be idle, for the means are many by which, without help from outside, the educational background can be consolidated and strengthened. The essential needs are self-discipline, zeal and a determination to acquire the degree of knowledge which will fit him for advancement in the service.

Given these qualities, there are various aids which are readily to hand. The public library service now extends to the most remote of rural areas, and the smallest of urban centres boasts not only of facilities for free lending of books for general reading, but in nearly every case there is also a reference library which is an invaluable asset to the student who is pursuing some research or otherwise extending his knowledge of a particular subject. In the case of the policeman, his local reference library will be found to include a number of legal text books which are beyond the capacity of his own bookshelf. Apart from the ubiquitous Stone, he will probably find Archbold's *Criminal Pleading* (a most useful consultant when framing a charge, or seeking to know the distinctions between lawful and unlawful acts in various directs, and between various unlawful acts, *e.g.* between false pretences and larceny by trick); Russell on Crimes; and the various Digests.

Books of a legal character may occupy only a small part of the reference library shelves, but they will also include many works of practical interest to our student-constable. A host of guide books, directories, an extensive collection of works of local historical and antiquarian value, and a variety of dictionaries will be there. It is, of course, a mistake to suggest that such works are the only books to be consulted. "For a man to write well," wrote Ben Jonson, "there are required three necessities—to read the best authors, observe the best speakers, and much exercise of his own style." There may be policemen who feel that the limitations of police forms and reports make it unnecessary to extend the vocabulary beyond that form of words and phrases which not infrequently invoke the jibe of the police court journalist. But the expression of ideas, the recording of facts, and the repetition of the spoken

word, can be so much more accurate, and understandable, and assimilated by the reader, if the correct and the apt words and phrases be employed.

Hence the advice to cultivate the habit, during leisure hours, of reading. Reading what? The writer of this article may be unorthodox, but his advice is: "Read what you like, that is, what gives you pleasure. If it also gives you inspiration, or new ideas, or a better range of words, well and good." Reading what you like can hardly fail to bring you at least one of these benefits. Reading widens the range of one's knowledge, stimulates thought, and even if the reader's taste be limited to one class of book, such as the detective story, evokes an inquiring mind. For the policeman not a little pleasure is added, when reading the popular detective novel, in detecting for himself the curious errors made by most writers when they attempt to reproduce, or create, a crime and the means for the detection of its perpetrator in some part of our English police jurisdiction. The police student who has not yet received his introduction to the C.I.D. of his force will do well to remember that here he is reading fiction, not fact; if he has passed that stage, and maybe is a detective himself, let him retain his sense of humour and toleration for the amateur, and he may still get his enjoyment from the Hornleighs, the Clewths, and the Sherlock Holmes.

But in practising the art of reading, both for pleasure and profit, particularly the art of describing men and things, we do well to select our authors. The point is usefully illustrated by examples:

I

The introduction of the reader of *Oliver Twist* to John Dawkins, otherwise and more commonly known as "The Artful Dodger":

"Oliver raised his head, and the boy, crossing over and walking close up to him, said, 'Hullo, my covey! What's the row?'"

"The boy who addressed this inquiry to the young wayfarer, was about his own age; but one of the queerest looking boys that Oliver had ever seen. He was a snub-nosed, flat browed, common faced boy

enough: and as dirty a juvenile as one could wish to see; but he had about him all the airs and manners of a man. He was short for his age: with rather bow legs, and little, sharp, ugly eyes. His hat was stuck on the top of his head so lightly, that it threatened to fall off every moment—and would have done so, very often, if the wearer had not had the knack of every now and then giving his head a sudden twitch, which brought it back to its old place again. He wore a man's coat, which reached nearly to his heels. He had turned the cuffs back, half way up his arm, to get his hands out of the sleeves: apparently with the ultimate view of thrusting them into the pockets of his corduroy trousers: for there he kept them. He was, altogether, as roystering and swaggering a young gentleman as ever stood four feet six, of something else, in his bluchers."

Charles Dickens.

II

The appearance in *The Legend of Montrose* of Captain Dugald Dalgetty:

"The solitary horseman was mounted upon an able horse, fit for military service, and for the great weight which he had to carry, and his rider occupied his demipique, or war-saddle, with an air that showed it was his familiar seat. He had a bright burnished head-piece, with a plume of feathers, together with a cuirass, thick enough to resist a musket-ball, and a back piece of lighter materials. These defensive arms he wore over a buff jerkin, along with a pair of gauntlets, or steel gloves, the tops of which reached up to his elbow, and which, like the rest of his armour, were of bright steel. At the front of his military saddle hung a case of pistols, far beyond the ordinary size, nearly two feet in length, and carrying bullets of twenty to the pound. A buff belt, with a broad silver buckle, sustained on one side a long straight double-edged broadsword, with a strong guard, and a blade calculated either to strike or push. On the right side hung a dagger of about eighteen inches in length; a shoulder belt sustained at his back a musketoon or blunderbuss, and was crossed by a bandolier containing his charges of ammunition. Thigh pieces of steel, then termed taslets, met the tops of his huge jackboots, and completed the equipage of a well-armed trooper of the period.

"The appearance of the horseman himself corresponded well with his military equipage, to which he had the air of having been long inured. He was above the middle size, and of strength sufficient to bear with ease the weight of his weapons, offensive and defensive. His

age might be forty and upwards, and his countenance was that of a resolute weather-beaten veteran, who had seen many fields, and brought away in token more than one scar."

Sir Walter Scott.

III

The description of the Valley in *The Mill on the Floss*:

"A wide plain, where the broadening Floss hurries on between its green banks to the sea, and the loving tide, rushing to meet it, checks its passage with an impetuous embrace. On this mighty tide the black ships, laden with the fresh-scented fir-planks, with rounded sacks of oil-bearing seed, or with the dark glitter of coal, are borne along to the town of St. Ogg's, which shows its aged, fluted red roofs and the broad gables of its wharves between the low, wooded hill and the brink, tingeing the water with a soft, purple hue under the transient glance of this February sun.

"Far away on each hand stretch the rich pastures and the patches of dark earth, made ready for the seed of broad-leaved green crops, or touched already with the tint of the tender-bladed autumn-sown corn. There is a remnant still of the last year's golden clusters of beehive ricks rising at intervals beyond the hedgerows; and everywhere the hedgerows are studded with trees: the distant ships seem to be lifting their masts and stretching their red-brown sails close among the branches of the spreading ash. Just by the red-roofed town the tributary Ripple flows with a lively current into the Floss. How lovely the little river is, with its dark, changing wavelets!"

George Eliot.

IV

The description of the "old sea dog" in *Treasure Island*:

"I remember him as if it were yesterday, as he came plodding to the inn door, his sea chest following behind him in a hand-barrow; a tall, strong, heavy, nut-brown man; his tarry pigtail falling over the shoulders of his soiled blue coat; his hands ragged and scarred, with black, broken nails; and the sabre cut across one cheek, a dirty, livid white. I remember him looking round the cove and whistling to himself as he did so, and then breaking out in that old sea-song that he sang so often afterwards."

R. L. Stevenson.

We see here how the masters so paint the word-picture that the reader is introduced to the character, or the scene, in words and phrases which aptly and concisely describe what the writer wishes to convey. Applying the lesson to police technique, let us take two examples of the range of words and phrases, and their use and misuse, more commonly arising in police usage. There is the ubiquitous: "I proceeded . . ." Of course it may be apt, and accurate, to say that I just "proceeded," but I may also have advanced; pressed on; made my way; walked; rode; cycled; motored; flew; journeyed; swam; sailed; followed; pursued; hung on the skirts of; marched; or, even more probably, that simply "I went there."

So often, too, do policemen "convey" a prisoner or a message from place to place. It is apt, expressive, and comprehensive, but may there not also be occasions when the prisoner or message is transferred; transmitted; passed; forwarded; shipped; sent; transported; consigned; delivered; assigned; carried; borne; fetched; posted; turned over to; thrown; moved, or brought?

Sometimes, in criminal cases for instance, the words to be employed in evidence are limited by the necessities of the language of the Statute. In cases of drunkenness we have judicial authority for saying that "drunk" means "drunk," and in the majority of cases of drunkenness, when giving evidence, it is necessary and desirable that the witness should say that the accused was "drunk," amplifying his testimony by such words as best describe the condition of drunkenness in which the accused was found, *i.e.*, incapably drunk, insensibly drunk, fighting drunk, mad drunk.

In the recording of descriptions of persons, animals and things, two ends should be served. The reader should be furnished with as accurate and complete a description as is available, and it should be presented to him in such a way that essentials can be memorised. That is to say, the word-picture should implant itself on the mind of the reader, as if it were a picture or portrait there for him to see. The Committee on Detective Work and Organisation doubtless had this need in mind when recommending, in Part VI of the Report presented

to the Home Secretary in 1938, a series of uniform descriptions for various standard subjects, thus:

(a) *Personal description:*

1. Place of birth.
2. Date of birth (if known) or age (apparent).
3. Occupation (any known previous occupation to be included).
4. Height.
5. Build (stout, medium, broad, thin, erect, stoops, etc.).
6. Face (long, round, broad, smiling, scowling, wrinkled).
7. Complexion (fair, dark, pale, sallow, fresh, made up).
8. Hair on face (colour, quantity, style, clean shaven).
9. Hair (colour, quantity, parting, bobbed, shingled, waved, cut).
10. Forehead (high, low, bulging, vertical, receding).
11. Eyebrows (colour, thick, thin, shape, pencilled, plucked).
12. Eyes (colour, large, small, squint, peculiarities, glasses).
13. Nose (large, small, hook, straight, flat, broken, turned up).
14. Mouth (large, small, open, close shut, droops at corners).
15. Lips (thick, thin, upper or lower protruding, rouged, pale, cracked, etc.).
16. Teeth (white, discoloured, prominent, gaps, false).
17. Chin (receding, projecting, dimpled, double).
18. Ears (large, small, close to head, protruding, pierced, long or short lobe).
19. Marks (scars, warts, birth-marks, pimples, tattoo).
20. Peculiarities (stammer, accent, gait, deformities).
21. Habits (fond of women, racing, games, smoking, drinking, women, speaks of —).

On this sequence the following word-picture describes A. B., a man with a criminal record:

A. B., b. Redford 1908, racing tipster, 5 feet 10 inches, stout build, very erect, round smiling face, c. sallow, small line moustache, h. grey, parting on left side, going bald, e. blue, large mouth, thick lips, lower protrudes, false teeth, small ears close to head, scar left side of forehead, tattooed heart on back of left hand, stammers slightly when first starts to speak, generally in company of prostitutes, talks of adventures in Australia and India.

The Committee similarly recommended the following sequences for describing the wearing apparel of men and women respectively:

- | (i) Males | (ii) Females |
|------------------------------|------------------------------|
| 1. Suit | 1. Dress |
| 2. Coat | 2. Coat |
| 3. Headwear | 3. Headwear |
| 4. Neckwear | 4. Neckwear |
| 5. Hose | 5. Hose |
| 6. Footwear | 6. Footwear |
| 7. Special features (if any) | 7. Special features (if any) |

Books are the tools of the writer. And since not a little of the policeman's work is bound up with the writing and recording of facts, his bookshelf is incomplete without a standard dictionary, handy for reference and consultation on any and every occasion when some word or phrase is met in which, as is often the case in the type of journalese which fills many of the columns of the daily newspapers, the aptness is questioned or the syntax doubtful. Spelling is notoriously a weak subject with the majority of candidates for the Police Service, and although allowances may be made for spelling mistakes in the initial examination, other qualities being present to outweigh that deficiency, their repetition cannot be tolerated in the examination which precedes the passing out of probation after two years' service.

In drafting any document it is wise to pay attention to style, conciseness, accuracy, and, if written by hand, legible. Good style is hard to acquire, and many people persist in the use of hackneyed phrases. Phrases like "first and foremost," "last but not least," "fast and furious," should never appear in police reports, and equally the unnecessary adjective should be omitted. "He is a lazy, indolent, gossiping, shiftless, idle, intemperate, untidy, careless, ragged, annoying, thoughtless, useless fellow." Thus, in *Rip Van Winkle*, Mrs. Rip Van Winkle described her husband.

If adjectives must be used, we should be careful to use the correct one, for there are three degrees of comparison. If we write: "The route is long, that route is longer, but this is the longest route," we have compared three routes and have placed them in order. The *long* route is the use of the adjective in the *positive* degree; the *longer* route is the adjective in the *comparative* degree, and the *longest* route is the adjective in the

superlative degree. Robert Browning, in *The Pied Piper of Hamelin*, provides us with an interesting test in his employment of the three kinds of comparative adjectives in the following:

"Come in!"—the Mayor cried, looking bigger;
And in did come the strangest figure!
His queer long coat from heel to head
Was half of yellow and half of red;
And he himself was tall and thin,
With sharp blue eyes, each like a pin,
And loose light hair, yet swarthy skin,
No tuft on cheek nor beard on chin,
But lips where smiles went out and in—
There was no guessing his kith and kin!
And nobody could enough admire
The tall man and his quaint attire.

The adjectives of *quality*, telling us "what kind," *e.g.*, good, bad, red; and of *quantity*, telling us "how much," *e.g.*, any, some, half, quarter, are also important in the class, but may easily be used to excess. It is a good plan, on completing a draft, carefully to examine its phrases to see if an improvement can be effected by the erasure of unnecessary adjectives, particularly words like "very," "considerably," "largely," "most."

As with the written, so with the spoken word. The witness-box is among the worst of all settings for the display of one's skill in elocution, and the nervousness of the average witness frequently reduces his audibility to a standard which confounds the court and exasperates counsel. Good speech must be acquired as a habit, and be well practised. Deportment and confidence are essential to clarity of speech.

In the witness-box the constable should stand erect, but not stiffly, facing the judge or the magistrates, and speak calmly, slowly, clearly. The lungs should be kept full, and modulation ordered. Know what you are about to say, and say it, with suitable pauses between sentences. Avoid words which you do not understand. Observe speech faults in others, and listen to good speakers; learn how they succeed in making you listen to what they say. Form the habit of correct enunciation in every-day talk and conversation. Do not introduce

affectations. Take care of the consonants, the t's, k's, d's, the th's, the st's, and neither drop nor overstate the aspirates. Be clear and specific, so as to gain the attention of those to whom you are speaking.

The value of good speech when dealing with the public is seen in routine enquiries, when it is the policeman's task to search for the truth. In making enquiries, ask questions which will elicit direct and truthful answers. Use specific words with which to frame a question, and do not be satisfied with the general answer. Be brief but explicit.

In giving information first state an important point, then group other information round it, ending with a short summary.

When talking to superiors, preserve self-respect, but show respect for authority. Be a man, don't cringe; be honourable, don't flatter; be a gentleman, pleasant but not frivolous; be human, be interested.

When talking to inferiors, avoid being over-bearing in manner; don't be haughty; speak quietly, helpfully, without harshness; be courteous, helpful, instructive.

When contradicted, remember that the conversation or cross-examination is designed to establish the truth. Don't contradict in return, and don't become angry. If it is appropriate to do so, ask for the authority for the contradiction, and then produce yours.

In speaking to strangers, be interested, clear, and remember the difficulties of accent.

The Police Service is open to all who are distinguished by a standard of physical fitness and by an unblemished character. Educational attainments are demanded of the policeman *after* rather than *at* the date of his entry to the Service, and there is evidence that most constables seek to profit by any facilities which may be offered to help them in this respect. The subsequent articles in this series will be designed to assist men who seek to qualify for promotion and who desire to widen their educational abilities and knowledge of police law and practice in a way which will also improve their value to the Service and the public.

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War Commentary

"D. R."

DEFENCE REGULATIONS continue to issue, in volume and variety, without sign of abatement. Many of the orders, regulations, directions and authorisations are the concern of the Police, in some direction or another, necessitating careful study by those officers to whom is delegated the administration or enforcement of particular branches of the war law, enacted as being "necessary or expedient for securing the public safety, the defence of the realm, the maintenance of public order and the efficient prosecution of any war in which His Majesty may be engaged" (as the language of the Emergency Powers (Defence) Act, 1939, expresses it) "or for maintaining supplies and services essential to the life of the community." The skill and precision with which regulations and orders are made and acted upon is perhaps the most striking tribute which can be paid to the dominance and flexibility of British parliamentary government. Although practically every enactment of the present Parliament is now, in war-time legislation, merely the parent of Orders-in-Council, or of regulations issued by or under the authority of appropriate ministers of the Crown, Parliament still shows its sovereignty in such diverse ways as in the effective control of public spending, and in safeguarding the interests, particularly the liberty of, the individual citizen. While ministerial powers are delegated in widespread fashion to various competent military and other authorities, there is also a jealous determination to keep the administration of justice within the framework of the judicial system and the magistracy.

Despite some well-founded criticism with regard to the inconsistencies of the courts in the award of penalties for the more common form of war-time offence, as in the case of infringements of the Lighting (Restriction) Order, there is good reason to assert that no better form of summary tribunal than the petty sessional court is likely to be found. Parliament's insistence that the War Zone courts, if it becomes necessary to set up any of these tribunals, shall adopt the traditional magisterial principles and follow the rules of criminal evidence and procedure is a sign of faith in magisterial law and administration. It may indeed be possible to point to apparent anomalies in magisterial decisions, but the critics should not seek to draw comparisons merely from compressed newspaper reports. Closer knowledge of the facts of a case will usually show that, broadly and humanly, justice was done and that, if error was made, then error was on the side of leniency and tolerance. In the courts it is well known that in no two cases are the facts precisely alike, for though the nature of the evidence and the circumstances of the case be similar, the means and circumstances of the respective defendants will differ widely.

By way of contrast to the criticism that penalties awarded by magistrates err on the side of leniency, the severity of sentences imposed on a number of persons, whose misdeeds were the result of conceit and folly rather than evil or subversive intent, convicted of the novel crime of "publishing a report or statement relating to a matter connected with the war which was likely to cause alarm or despondency," led the Home Secretary to review and modify their punishment. Generally, the maximum penalties under the Defence (General) Regulations, on conviction *summarily*, are imprisonment for a term not exceeding three months or to a fine not exceeding £100, or both, and on conviction on *indictment*, imprisonment for a term not exceeding two years, or to a fine not exceeding £500, or both imprisonment and fine. The penalty fixed by Regulation 39BA is limited, on summary conviction, to one month's imprisonment, or a fine not exceeding £50, or to both such imprisonment and fine. Somewhat unexpectedly, however, the justices in petty sessions before whom these cases

were brought took a serious view of the offence and imposed sentences and penalties which were generally regarded as being unduly severe. The explanation of this curious situation may lie in the unexampled conditions prevailing at the time, when the Home Secretary was being urged on all sides to drastic action to secure that "fifth column" activities were immediately uprooted, and to deprive aliens, and many British subjects, of their liberty. But perhaps the severe sentences on persons who caused "alarm and despondency" were due, not so much to public opinion, as to sub-paragraph (3) of Defence Regulation 39BA, which requires that "a prosecution . . . shall not . . . be instituted by a constable." The effect of this sub-paragraph is that proceedings may be instituted only by or on behalf of the Director of Public Prosecutions. It is well known that the appearance of the representative of the Director in police court proceedings is limited to indictable and other offences of a serious nature. He appears but rarely in summary offences, and this may well have misled many Benchmen into thinking that proceedings under Regulation 39BA, being brought by order of the Director of Public Prosecutions, were to be treated as serious crimes, and punished appropriately.

MILITARY NECESSITY

It was inevitable that in the confusion of the days which followed the collapse of France there should be difficulties and errors in various places in arranging at high speed for the defence of the country against invasion by air or by sea. But with a speed and efficiency which are typical of the Englishman when he is in dire difficulties, barriers were erected and manned, defence works were erected, and every sphere of commercial, business, civic and civilian life was subordinated, with a cheerful and willing loyalty, to the military needs of the situation. Mistakes were made. But when these were brought to notice of the appropriate higher authority they were invariably rectified. There has been a surprisingly small degree of interference with the property of the citizen, save in those areas which are most vulnerable to attack by air-borne or sea-borne troops. Military liaison has improved. And the

Home Guards have the local knowledge, and the local contacts, which should help further to ensure that liaison between police and military authorities is complete. There is evidence that, bitter though the experience was in the campaign of the B.E.F., the lessons of that campaign have been learned and put to useful effect.

ROAD ACCIDENTS

The decision of the Government to intensify the campaign during the autumn to prevent a repetition of the casualties which occurred in road accidents in the first four months of the war is timely, and will be welcomed in the police service. The public have shown a readiness to observe many regulations necessary for the defence of the realm and the public safety in relation to war conditions, and there is ground for supporting the view that during war time the pedestrian should be protected against himself. Casualties and damage on the road are unnecessary war casualties, which by care and oversight can and must be reduced.

POLICE AUXILIARIES

The expansion of police forces to deal with war-time conditions has proved the wisdom of the plans laid in the months before September 1939. The recently published annual reports of His Majesty's Inspectors of Constabulary show that 162,490 special constables were serving in England and Wales on September 30th, 1939. A year before the number was 130,286. The office of special constable is one which every stout-hearted citizen may well be proud to fill in these days, when the duties are arduous, exacting and entailing no small risk to personal safety. The time and energy which so many of them gave in pre-war days to training and in getting to know the work of a policeman's beat in the only way in which it can be known, by doing it, has in no small measure helped the good record of police duty which will be written down in the history of the first year of the war.

The Police and the Law

THE POWER OF SUMMARY ARREST

IN addition to the common law power of any member of the public to arrest a felon or a person breaking the peace, and the further power of a police officer to arrest on reasonable suspicion of felony, Parliament has from time to time found it desirable to give powers of summary arrest in respect of numerous offences. This right of interference has, as is well known, been conferred somewhat capriciously, or at least not in accordance with any clearly ascertainable principle. Such absence of system may be deplored by those who like their law to possess at least a formal perfection, and although the absence of principle renders a knowledge of the law more difficult for those who are charged with its execution, it could not seriously be maintained that this has itself been productive of any serious practical difficulties. The same cannot, however, be said of the unfortunate practice of using different words to express what may (or may not) be the same thing. Thus whereas in some statutes it is expressly stated that the power of arrest can be exercised on reasonable suspicion, in others expressions such as "seen committing," "found offending," the "offender," are used which, in spite of their literal meaning, would appear to have been intended to convey that an arrest could be effected where there was only reasonable suspicion that an offence had actually been committed.

This slovenliness of the legislature has had as its inevitable consequence a diversity of judicial rulings, where uniformity is eminently desirable. For although in many cases the right of arrest is conferred on any member of the public, in practice in most cases it will be a police officer who has to exercise it, and it cannot be in the public interest that the police should either give the impression of being chary of exercising rights of arrest conferred for the benefit of law-abiding citizens, or

should appear to be usurping powers not conferred upon them by the law.

Of recent years a number of cases have come before the courts where it has been necessary to try to elucidate the not very obvious intentions of the Legislature. Thus by section 12 of the Licensing Act, 1872:

"Every person . . . who is drunk in the highway in charge of a carriage . . . may be apprehended."

It should be added that "carriage" includes modern means of motor transport. In *Trebreck v. Croudace* (1918), 1 K.B. 158, the Court of Appeal had to consider whether a police officer who arrested a taxi-cab driver who appeared to be drunk whilst in charge of his vehicle was liable to pay damages for false imprisonment if the driver was acquitted: that is, because for some reason or other the prosecution failed to prove the guilt of the accused beyond reasonable doubt. Undoubtedly, upon the literal wording of the section, the only person who can be arrested is one who *is* drunk, etc. Fortunately the Court of Appeal found itself able to take a common-sense view of the matter and said that where swift action is imperative (as in the case of the driver of a vehicle who gives the appearance of being drunk), Parliament must have intended the power of arrest to be exercised upon suspicion on reasonable grounds.

An even wider principle was laid down by the Court of Appeal a few years later in *Isaacs v. Keech* (1925), 2 K.B. 354. That case arose out of the arrest of a person for importuning under the Town Police Clauses Act, 1847. The relevant words were that a policeman was given the power to arrest a person "who within his view commits any such offence." The Court held that an arrest could be justified upon proof of reasonable suspicion, and Bankes, L.J., said (at p. 360):

"I think, however, that the whole trend of authority has been to put a uniform construction upon enactments giving power to arrest without warrant a person found committing an offence, and to hold that what the legislature has in mind is not a mere power to arrest the person

ultimately found guilty of the offence, but is a power to be exercised by the proper authority acting at once on an honest and reasonable belief that the person is committing the particular offence."

Unfortunately, however, the Court of Appeal has recently gone back upon this broad way of looking at the question. Thus in *Ledwith v. Roberts* (1937), 1 K.B. 232, both Greene, L.J. (as he then was), and Scott, L.J., expressed the opinion that both *Trebreck v. Croudace* (*supra*) and *Isaacs v. Keech* (*supra*) had been wrongly decided. These expressions of opinion, however, are not binding as they were not necessary to the decision of the case, that before a person can be arrested as an offender under the Vagrancy Act, 1824, it must be shown that he comes within the category of a "suspected person" or "reputed thief," and that there cannot be such a status as being suspected of being a suspected person, etc.

More recently an arrest without warrant under the Customs Consolidation Act, 1876, has given rise to similar problems. In this case (*Gorman v. Barnard* (1940), 3 All E.R. 453) the plaintiff was found in possession of a box of cigars which he had not declared. By section 186 of the Customs Consolidation Act it is an offence knowingly to harbour uncustomed goods with intent to evade payment of duty. The section, after referring to a number of similar offences, proceeds as follows:

"shall for each such offence forfeit either treble the value of the goods, including the duty payable thereon, or £100 at the election of the Commissioners of Customs; and the offender may either be detained or proceeded against by summons."

The defendant, a customs officer, suspecting that the plaintiff had not declared the cigars in order to evade payment of duty, took him to a police station under the power to "detain" conferred by the section. Thereafter the plaintiff was tried before the Liverpool stipendiary magistrate, who, after hearing the evidence, said that he must give the plaintiff the benefit of the doubt. Thereupon the plaintiff instituted proceedings

against the customs officer, claiming damages for malicious prosecution and false imprisonment.

The action, which was tried in the Liverpool Court of Passage, was unsuccessful, as the Judge held that the defendant had acted without malice and had reasonable cause for making the arrest. From this decision the plaintiff appealed to the Court of Appeal (Scott, MacKinnon and Clauson, L.JJ.), who, whilst agreeing that the claim for malicious prosecution failed, held by a majority (MacKinnon, L.J., dissenting) that "offender" meant a person actually guilty of an offence. The principal ground for this decision was the use of the words "offence" shortly before in the same section, and as Scott, L.J., pointed out, it was odd that the words should have been juxtaposed in this way if "offender" meant someone who might (or might not) have committed an offence. Moreover, powers to arrest on "reasonable suspicion" were expressly conferred in other sections of the same Act (sections 203, 205). In not conferring such power expressly in this section, Parliament must, the majority of the Court considered, have intended to exclude it.

The vigorous dissenting judgment of MacKinnon, L.J., in the course of which he affirms his approval of *Trebreck v. Croudace* (*supra*) and *Isaacs v. Keech*, will prove of interest to the reader, though as it is a minority opinion it cannot be treated as authoritative.

Whatever else the case may show, it at least reveals the unfortunate result of the lax use of expressions by Parliament in a matter touching the liberty of the subject, and in which therefore clear and unambiguous language is so eminently desirable. Perhaps some day, when Parliament has less pressing problems to consider, time will be found to revise the various statutory powers of arrest without warrant, so that where Parliament considers that such power is proper, the police officer who effects an arrest shall not do so at the peril of being sued for false imprisonment, if the person arrested manages to get the "benefit of the doubt."

Criminal Law and Practice in Scotland

"UNDER THE INFLUENCE"—CORROBORATIVE EVIDENCE

IT may sometimes happen that a police officer is unaccompanied when he encounters a motorist in circumstances which justify arrest for a contravention of Section 15 of the Road Traffic Act, 1930. How, then, is he to satisfy a court (1) that the suspect was driving, or attempting to drive, or in charge of a motor vehicle on a road and (2) that he was, at that time, "under the influence"? Clearly, the officer's statement, standing alone, is insufficient in law to justify conviction; and, indeed, if no corroboration is available on either point, the officer may be taking a considerable risk in arresting without warrant. A way out of the difficulty is suggested, so far as the question of proof of insobriety is concerned, by the case of *Macdonald v. Duguid*, heard on appeal by the High Court of Justiciary on July 3rd. As appears from the Stated Case, the leading facts proved at the trial were as follows:

On March 21st, 1940, the appellant was attending a funeral by road from Fortrose to Roybridge. On the journey to Roybridge, a halt was made at Invermoriston between 11 a.m. and noon. The appellant had a bottle of beer, and two bottles of whisky were bought for refreshment of the mourners. (It does not appear to have been proved whether appellant consumed any of the whisky either then or later in the day.) On the return journey, appellant, after having tea at Spean Bridge, stopped at Fort Augustus Inn and had a bottle of beer and, fifty minutes later, at Invermoriston Hotel, where he had a half pint. A further stop was made at Drumnadrochit Hotel, where he had another bottle of beer. He left Drumnadrochit, driving his car, at 7.10 p.m. Ten minutes later, Chief Constable

Fraser passed the appellant, considered his driving faulty, and turned back to caution him. While in conversation, he formed the opinion that the appellant was under the influence of drink from the general appearance of his eyes and face and because he smelt of drink and was thick in his speech, although steady on his feet and in his gait. Mr. Fraser asked appellant for his licence, which he at first refused to produce, but which he tendered immediately on the Chief Constable being identified by the driver of the hearse. The Chief Constable arrested the appellant and took him to Inverness, handing him over to two constables there at 8 p.m. with instructions to charge him. These constables, a third who saw the appellant at 8.10 and an inspector who saw him at 8.15, all considered the appellant to be "under the influence." They were all aware of the charge to be made. At the appellant's request, the police made every effort to get a doctor, but were unable to do so before 11 p.m. The doctor put the appellant through the usual tests, found him to be sober and fit to drive, and expressed the opinion that at 8 p.m. he had not been drunk and would have been capable of driving. While detained, the appellant spoke intelligently and intelligibly and gave instructions regarding his car and as to his wife being informed. Certain defence witnesses all expressed the opinion that the appellant was, immediately prior to his arrest, sober and capable of being in charge of a car.

Upon the evidence of which a summary is given above, the Sheriff at Inverness found proved a charge of contravening Section 15 of the Road Traffic Act, 1930. The accused appealed, arguing that there was no corroboration of Mr. Fraser's evidence as to his condition at the time of arrest and that the evidence was therefore insufficient in law to warrant conviction. In refusing the appeal and affirming the conviction, the judges of the High Court held that corroboration of Mr. Fraser's evidence was provided by the testimony of the officers who saw the accused, and formed independent opinions as to his condition, some forty minutes after his arrest. (Although it does not quite clearly appear from the Case as stated, we assume that certain other members of the funeral party were examined as prosecution witnesses, so as

to corroborate Mr. Fraser's evidence that accused was driving his car on a public road.)

It is worthy of mention that, in course of the hearing of the case on appeal, the judges stressed the importance of Mr. Fraser's evidence to the effect that what first attracted his attention to the motorist was his faulty driving, the implication being that a case of this sort is necessarily weaker when, say, the police come upon a man sitting in, or standing beside, his car and do not see him driving. The test is always fitness to drive and the best proof of unfitness is evidence of actual faulty driving of the car along a road. The judges, particularly Lord Carmont, also expressed concern at the delay in procuring the services of a medical man, but accepted as sufficient explanation an assurance by the Advocate-Depute that, between 8 p.m. and 11 p.m., the police had endeavoured to make contact with no fewer than sixteen doctors in the city, some of whom were unwilling, and others unable, to attend.

" SPEEDING "—ENDORSATON

On May 16th, a resident in Dalmeny, West Lothian, appeared in Edinburgh Sheriff Court to answer a complaint charging him with driving a motor tricycle on Queensferry Road, Edinburgh, being a road in a built-up area, at a speed exceeding 30 m.p.h., *viz.* at a speed ranging from 42 to 48 m.p.h., in contravention of Section 1 (1) of the Road Traffic Act, 1934. A previous conviction for a similar offence on January 26th, 1940, was libelled in the complaint. The accused tendered a plea of guilty and admitted the conviction libelled. He was fined £1, a repetition of the penalty imposed on his previous appearance. In his explanation to the court, he stated that the road on which he was driving was wide and had little traffic on it; that he did not mean to exceed the legal limit of speed and at the time was convinced that he was not travelling fast, but, having no evidence, was forced to plead guilty. The Sheriff, taking into account that the accused had been driving a motor vehicle since 1912 without any endorsement, did not order particulars of the conviction to be endorsed on his licence. Against this decision, the Procurator-Fiscal

appealed to the High Court of Justiciary, which held that the Sheriff was bound, in view of the terms of Section 5 (1) of the Road Traffic Act, 1934, to endorse the licence in the circumstances narrated above, there being no "special reason" for not doing so. The judges of the High Court unanimously expressed the view that the question of what amounted to a "special reason" within the meaning of the section referred to was a question of law—on which, therefore, the Sheriff's decision could be reviewed by a higher court—and not just a matter of discretion. They were clear that the fact of driving for many years without endorsement was not a "special reason" for failing to obey the statutory direction to endorse. (*Muir v. Sutherland*, decided on July 19th.)

"DRUNK IN CHARGE"—DISQUALIFICATION

A similar point was raised, on the construction of Section 15 (2) of the Road Traffic Act, 1930, in the cases of *Adair v. Munn* and *Adair v. Brash*. Both appeals raised the same general question, *viz.* the nature of the "special reason" which would justify a court, before which an accused had pled guilty, or been found guilty, of a contravention of Section 15 of the Road Traffic Act, 1930, in either refusing altogether to disqualify the accused from driving a motor vehicle or deciding to restrict the period of disqualification to a lesser period than twelve months. So difficult did the High Court find this question that, after a preliminary hearing before three judges, it was remitted to a fuller hearing before a Full Bench of seven judges. Even then the judges disagreed among themselves.

The question turned upon the construction to be given to the statutory direction found in Section 15 (2) of the Act of 1930, which is in the following terms: "A person convicted of an offence under this section shall, unless the court for special reasons thinks fit to order otherwise and without prejudice to the power of the court to order a longer period of disqualification, be disqualified for a period of twelve months from the date of conviction for holding or obtaining a licence."

In *Munn's* case, the Sheriff imposed a penalty of £7, but

reduced to three months the period of disqualification, a step which he sought to justify on the ground that the licence was essential to the carrying on of *Munn's* business of insurance broker, which would be dissipated if he were deprived of his licence for a lengthy period and that he was dependent on his business for a livelihood. In *Brash's* case the fine was £10. No disqualification at all was ordered in respect that his licence was essential for the conduct of his business of builder's foreman and that he was engaged on work of national importance. In both cases appeal was taken by the Crown, avowedly as "test cases" to obtain an authoritative ruling on a point which has given concern to sheriffs since 1930 and on which practice has greatly varied.

In both cases the High Court, by a majority of five to two, decided that the Sheriff had erred in accepting as "special reasons" the circumstances of the accused's employment. The leading opinion was delivered by the Lord Justice-General (Lord Normand) who expressed the view that considerations of hardship and similar mitigating circumstances personal to the convicted person were not "special reasons." Lord Normand was, however, careful not to accept the argument of Crown Counsel that the only possible "special reason" was to be found in facts which made it clear that refusal to disqualify, or restriction of the period of disqualification, would not prejudice the safety of the public on the roads. The question must still be considered as an open question whether some other form of public interest might not suffice—*e.g.* if, in *Brash's* case, the Sheriff had been satisfied that the national war effort would be hampered by depriving him of his licence. The findings in *Brash's* case did not, however, come up to this. It was not clear that no one else was available to undertake his work. With this opinion Lords Mackay, Wark, Jamieson and Moncrieff concurred. Lord Moncrieff, indeed, went even further, regarding as irrelevant even the hampering of the war effort.

The Lord Justice-Clerk (Lord Aitchison) and Lord Robertson, in course of dissenting judgments, said they could not see why considerations of hardship should not be, either by themselves or in conjunction with other circumstances,

"special reasons" upon which a sheriff might proceed. If a relaxation could be granted consistently with the public safety, what could be more relevant than that disqualification would destroy a man's business?

The majority opinion, of course, overrules that of the two dissentients. Sheriffs will find it extremely difficult in future to avoid ordering disqualification for the full period in every case of "drunk in charge," however reluctant they may be to do so.

WHEN IS AN INTERVIEW "PRIVATE"?

Section 15 of the Summary Jurisdiction (Scotland) Act, 1908, read along with Section 17 of the Criminal Procedure (Scotland) Act, 1887, confers upon every person who has been apprehended a right, if he so desires, to have intimation sent to any law agent immediately on apprehension and to have a private interview with such law agent prior to being brought before the court. In what circumstances can such interview be regarded as "private"? Must the cell door be shut, so that the accused is closeted with his adviser, with no possibility of the conversation being overheard even by the officer responsible for the prisoner's safe custody; or may the officer remain at the cell door, keeping his prisoner in view? These questions were pointedly raised in course of a trial for theft in Stirling Sheriff Court on July 15th.

At the calling of the case, accused's agent tabled a plea in bar of trial to the effect that his client had been deprived by the police of his statutory right to a private interview and argued that both he and his co-accused (who, we assume, had made no request for an agent) should be discharged. In support of this plea the agent was allowed to lead evidence, which was met by prosecution evidence in rebuttal. The evidence, as between the accused and his agent on the one hand, and the responsible officer on the other, was extremely conflicting. The solicitor deposed that he was told, by the officer in charge of the police station, that he could have an interview with his client, but not alone; that the officer insisted, throughout the interview, in standing at the cell

door and that he was thus in a position to overhear what was said; that the solicitor therefore informed his client that he could not discuss the matter with him under such conditions, but would represent him in court. This version of the occurrence was, in substance, corroborated by the accused. On the other hand, the officer whose conduct had been challenged gave evidence to the effect that he had remained out of ear-shot, moving up and down the passage outside the cell, keeping an eye, at the same time, on the outer office. He said that he had heard nothing of the conversation in the cell and was not trying to hear, his only interest being the prisoner's safe custody.

It would appear that the Sheriff accepted the evidence of the agent and his client, rejecting that of the police officer in so far as it differed from theirs. Giving judgment, he said that he could not understand why the officer had not shut the cell door and returned to the outer office until the interview had been completed. It was, he contended, absurd to call an interview private where a police officer remained within possible hearing. The Sheriff, therefore, in face of an argument by Crown Counsel that no prejudice had been sustained by the refusal of a private interview, allowed the plea in bar of trial and ordered the liberation of both accused. We understand that the matter is not to be allowed to rest there, but that an appeal will be taken by the Crown to the High Court of Justiciary. Meanwhile, police officers in Scotland would be well advised to accept the Sheriff's ruling as a guide in their dealings with an accused in custody who has summoned a law agent.

CYCLISTS AND THE LAW

From queries put to him from time to time, the present writer has formed an impression that many police officers in Scotland are uncertain as to how far cyclists, as such, come within the scope of the criminal law. They are, of course, familiar with the requirements of the Road Transport Lighting Act in its application to bicycles, with the provisions of the Road Traffic Act, 1934, as to carrying more than one person

on a cycle, and with the penalty imposed by the Burgh Police (Scotland) Act on cyclists who insist upon riding on footpaths; but, particularly on two points—must a cyclist have a bell? and can he be prosecuted if he rides improperly along a public road?—they are uncertain. It may be of service to set out the position shortly.

First, as to bells. In Scotland, as distinct from England, cyclists must have, and use, either a bell or its equivalent. This follows from Section 58 (1) (b) of the Local Government (Scotland) Act, 1889, which is still unrepealed and which is in the following terms—"upon overtaking any foot passenger or cart or carriage, or any horse, mule or other beast of burden, being on or proceeding along the carriage way, every such person [*i.e.* the rider of any bicycle, tricycle, velocipede or similar machine] shall within a reasonable distance from and before passing such foot passenger, etc., by sounding a bell or whistle or otherwise, give audible and sufficient warning of the approach of the vehicle." It is, of course, arguable that the words "or otherwise" would be satisfied by a shout or by a whistle produced with the lips; but we think that, to be sure of complying with the law, a cyclist in Scotland should have a bell or siren attached to his machine and should make a point of using it as occasion demands. As regards burghs to which the Burgh Police (Scotland) Act, 1892, applies, a similar requirement is found in Section 394 (2) of that Act.

As to improper driving of a cycle, one is thrown back upon the common law, for neither Section 11 nor Section 12 of the Road Traffic Act, 1930, applies to cyclists. It is still a common law crime to drive a cycle recklessly to the danger of other road users. Such charge should run in the following terms—"You did ride a cycle culpably and recklessly to the danger of the lieges and particularly of A. B. and C. D." If possible, the charge should further specify the elements of recklessness on which the Prosecutor intends to found (speed, failing to keep a look-out, or as the case may be) and the nature of any injuries sustained by a person with whom the cyclist has collided. From the judgment of the High Court in *McAllister v. Abercrombie*, 1907, 5 *Adam*, 366, it would appear that actual danger to members of the public is an

essential ingredient of this crime, and that no charge will lie (1) if all that has happened is that property has been damaged or (2) if, the stretch of road being empty of other traffic, no human being except the cyclist himself was in peril. It may be useful to add that tramcars are in the same position. Further, it must be realised that a charge of recklessness at common law is extremely difficult to prove and demands a high standard of evidence. A mere error of judgment is not enough. There must be criminal recklessness, *i.e.* an utter disregard for the safety of others, as where a cyclist puts his head down and careers along a busy thoroughfare, or emerges from a side road on to a busy main road at a high speed across the bows of main-road traffic. Where the evidence does not come up to this standard, the matter is better left for settlement in an action of damages in the civil courts.

Studies in Identification and Reconstruction. No. 8

By SYDNEY SMITH, M.D.

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IN my previous articles I have drawn attention to the importance of reconstruction as an aid in directing the line of investigation of a crime. The case which I am now about to describe, in which an attempt was made to simulate an accident, brings out many interesting points in connection with the time and manner of death, the relationship of injuries to one another, and in reconstruction generally.

The actors in the drama were a man, John Thomson, and his wife, who lived in a farmhouse situated a few miles from a small town. The only other person about the farm was a boy, Miller, aged 15, who lived in a bothy close to the house. The farmer, 49 years of age, was addicted to drink, and was undoubtedly a difficult person to live with. On May 26th, 1939, he went into the town where he remained until after the public houses had closed, then proceeded by bus to the road that led to his own house. When he left the bus, at about 11 o'clock, he was definitely under the influence of drink but was able to walk. The next morning his dead body was found lying in a field a short distance from his house. The farm lad who found the body informed the wife, who without examining the deceased sent word to the Police. The story given by the boy was to the effect that Thomson came home drunk and shouting as usual, came to him in the bothy and said, "Sammy, are you no coming oot with me to shoot some cushies [pigeons]," but the boy was frightened and hid his head under the clothes. Thomson then went away and the boy knew nothing more till he saw the body in the morning.

Mrs. Thomson said that she went to bed at 10.25 and heard nothing until the boy informed her about finding the body.

The deceased was in the habit of shooting pigeons at night; the gun was ordinarily kept in the kitchen and could be taken out without her being any the wiser. The suggestion was that Thomson in his drunken state had gone out to shoot pigeons and had shot himself by accident.

The body was found lying in long grass about seventy-five yards to the west of the bothy. It was on its face with both arms stretched out in front. A double-barrelled gun was lying at right angles to the body with the outstretched left hand of the deceased touching the stock. Figure 1 shows the locus before anything was disturbed and gives a general idea of the position. Figure 2 shows details of the clothing, gun, etc. The gun was a double-barrelled breech-loader 12-bore, belonging to Thomson. The left chamber held a discharged cartridge, the right was empty, and the hammer on that side was at full cock.

There were smears of blood on the backs of the hands of the deceased and embedded in this blood there were many bits of dry and green vegetable matter. There was a cap on the back of the head. On removing this cap the scalp was found to be covered with blood, and showed severe injuries on the crown and left side of the head. There was a considerable amount of vegetable matter embedded in and adherent to the blood-stain. There was very little blood-staining inside the cap.

About the middle of the back of the jacket there was a patch of blood nine inches in diameter, which was not connected with the hæmorrhage from the head. Sticking to this blood was a considerable number of fine hairs which were afterwards identified as horse hairs. On raising the tail of the jacket it was found that the inside of the lining was badly stained with earth and showed bits of vegetable matter adhering to it (Figure 3). The jacket, waistcoat and shirt were rucked up towards the shoulders and in amongst the wrinkles there were earthy stains and fragments of straw and vegetable matter.

The braces were smeared with earth, and under the loops and buttons were wedged earth, bits of grass and a fragment of plant. This plant, by the way, was not growing where the

body was lying but there was a clump of it about half-way between the body and the bothy.

When the jacket was turned up the patch of blood which I have spoken about came under the bleeding area of the head.

As the body was lying it could be seen that there was a shot-gun wound on the left sleeve, the shots having passed through the outer side of the arm and some of them through the left back panel of the coat. On turning the body over it was found that the face was extensively blood-stained and showed an extensive wound on the left side. This wound had been drawn upwards towards the eye and was ingrained with dirt. The waistcoat, shirt, cardigan and singlet were all rucked up towards the head and there was considerable contamination with earth and loose vegetable matter. The palms of the hands and tips of the fingers were rubbed. These points are all well shown in Figure 4.

A close examination of the locus showed a trace of blood on the grass running in a fairly straight line from the body towards the house, and from the distribution it could be deduced that a blood-stained object had been dragged over the grass for a distance of about forty-six feet towards where the body lay. This line terminated at the other end in an area about two feet six inches in diameter, which was contaminated with blood. In this area the earth was smoothed down and showed little blood on the surface. On digging under it with a penknife, clotted blood was found about one and a half to two inches underneath, suggesting that earth had been placed over the heavy blood-stains and had been patted down. Along this line, ragged particles of cloth were found, which, on subsequent examination, proved to be cloth blown from the jacket and shirt sleeve by the discharge from the gun.

Along this line, also, there were found three cartridge wads which were all identical with wads of cartridges found in the cottage and which were the same brand as the discharged cartridge in the gun.

The body was then removed to the mortuary for examination.

The body was that of a man about fifty years of age, five feet eight inches long, and weighing about ten and a half



FIG. 1: The locus of the crime. The bothy is seen immediately on this side of the cottage. The black cross at the foot of the post in the middle of the picture marks the position of heavy bloodstains



FIG. 2: A close-up of the victim. Note the shot wound on the left sleeve and the position of the stain on the back of the coat



FIG. 3: The coat turned up, showing evidence of dragging on the back



FIG. 4: Showing gunshot wound of face and evidence of dragging on the face after the wound had been inflicted

stones. Rigor mortis was complete. Post-mortem staining was slightly developed on the front of the body and shoulders. The abdominal temperature was 81 degrees Fahrenheit, the temperature in the mortuary at that period being 68 degrees Fahrenheit.

The face and scalp were extensively but irregularly stained with blood, but there was no clear indication of the flow of blood in any particular direction. There was certainly no marked flow of blood on to the neck. In the blood on the face and scalp there were numerous particles of vegetable matter firmly embedded. There was heavy smearing of blood on the knuckles and fingers of the left hand. On the front of the left hand there was some staining, but the eminences of the hand and the tips of the fingers were rubbed fairly clean. The eminences of the palm and the tips of the fingers of the right hand showed the same evidence of rubbing as the left hand.

The following injuries were found on the body :

(1) On the scalp—

(a) Four parallel abrasions over the right temple and a fifth immediately above these. They were all about one inch long and showed bruising down into the deeper tissues. They were linear in shape and vertical in direction.

(b) On the forehead, slightly to the right of the middle line and two and a half inches above the eyebrow, there was a laceration two inches long, parallel to the middle line, with a torn limb half an inch in length running from its middle forwards and to the left. This penetrated to the skull.

(c) On the left side of the forehead, two inches from the middle and three and a half inches above the left eyebrow, there was a triradial laceration, each limb about half an inch long, extending to the bone.

(d) About the middle of the crown there was a contused wound, with fairly sharp edges, two inches long, almost parallel to the middle line, inclined to the left in front, surrounded by a bruised area and reaching to the bone.

body showed signs of two separate gunshot injuries, one of which was fired through the left side of the cheek, the other through the left arm, and a series of injuries inflicted upon the head.

The immediate cause of death was the gunshot injury to the mouth and neck which caused not only a considerable degree of shock and hæmorrhage but also asphyxia by inhalation of blood into the lungs.

The gunshot wound of the mouth was caused by the discharge of a 12-bore shotgun fired from a distance of somewhere about two yards in a more or less horizontal direction.

The wound of the left arm was caused by a shot fired from a distance of somewhere about three yards with a direction from before backwards, from above downwards, and from left to right.

The wounds of the head were caused by a number of blows from a blunt instrument which probably had one straight edge and also a square or triangular base; they could all be caused by the butt end of an axe.

An examination showed that all the wounds, gunshot and axe, were caused before death.

The examination of the clothing brought out some points of interest. I have already spoken about the blood-stain in the middle of the back of the jacket which could have been produced only by dragging the tail upwards behind the head. This, together with the drag marks and earth staining, showed that the body had been dragged for some distance on its back *after the head injury*. The blood in this stain was clotted, and embedded in it were many fine horse hairs. These were also found in the stack yard in the vicinity of the large patch of blood on the ground, and were derived from the farm horse. Their presence in the blood, however, indicated that the jacket of the deceased had fallen into its normal position after the body had been dragged on its back. The absence of staining about the neck showed that at that time *the wound in the face had not been inflicted*.

The gunshot mark on the outer side of the left sleeve showed in front as a circular hole of entrance about one and a quarter inches in diameter free from blackening or burning.

The exit behind showed a large irregular tear with several individual shot marks. Just above the left pocket and back, covering an area of eight inches, there were several shot holes. Taking all these into consideration it could be shown that the charge of shot had passed through the sleeve and jacket at a fairly acute angle from above downwards, and must have been caused when the deceased was in a reclining position (Figure 7). The shirt showed marks in the sleeve similar to the coat, but in addition there were a number of shot holes in the tail, the whole of the upper part being free, and attached to some of the holes there were fragments of fibres belonging to the coat sleeve. The disposition and appearance of the holes in the shirt and jacket proved that the shot had been fired *after the shirt had been rucked up* behind by dragging on the back, and also *after the tail of the jacket had fallen back* into its normal position.

The other stains on the garments showed the evidence of dragging on the front and on the back, which the reader has already observed for himself in Figures 3 and 4.

An examination of the articles found at the locus showed that the wads were identical with wads found in a sample cartridge seized in the house of the deceased and identical with wads found in the wound. The fragments of cloth found at the locus were identical with fragments of the jacket, cardigan and shirt of the deceased. These were distributed in a line connecting the body with the large patch of blood previously described.

As a next step let us try to deduce the probable time of the injuries and death.

The time of death may be assessed from certain observations, namely from the presence and extent of rigor mortis, from the temperature of the body, and from the relationship between the alcohol content of the blood and urine.

When the body was examined at 2 p.m., rigor was complete. The length of time required for the whole of the muscles of the body to pass into rigor varies very considerably, and it is impossible to fix the time of death with any degree of certainty from this condition. In the ordinary way when an adult has died without great muscular activity, rigor should be

complete in about twelve hours. It may of course be complete much earlier, but we might assume for the moment that it would take an average time—from ten to twelve hours—which would fix the time of death at somewhere between 2 and 4 o'clock in the morning of May 27th, or at any period anterior to that.

The temperature of the body, when taken at 4 p.m., was 81 degrees Fahrenheit, that is to say, the body had lost about 17 degrees of temperature. The atmospheric temperature at the time was 68 degrees Fahrenheit. We might assume that in the first four hours it would lose about 8 degrees and approximately one degree an hour afterwards, which would place the time of death at about 3 o'clock in the morning.

Alcohol

The amount of alcohol in the blood was approximately 80 milligrams per 100 c.c., and the amount in the urine 240 milligrams, or three times as much. Ordinarily the amount of alcohol in blood and urine is approximately the same. With an alcoholic concentration of the blood of 80 milligrams per cent., a person accustomed to taking alcohol might be considered to be sober, and if there is evidence to the fact that the deceased was drunk at or about 11 o'clock in the evening, then he certainly lived a definite length of time after that in order to reduce the alcoholic content of his blood.

With an alcoholic concentration of 240 milligrams per cent. in the urine, we should expect the person to be distinctly under the influence of alcohol, for this quantity would represent a blood concentration at the time the urine was excreted of something in the vicinity of 200 milligrams per cent. The difference in alcoholic concentration in the blood and urine is no doubt due to the fact that urine was not voided for several hours, and as no oxidation of alcohol to any extent takes place in the bladder, it remains fairly constant, reduced of course by the secretion of urine of less and less concentration as time goes on. The fact that the bladder was distended with urine having a concentration three times that in the blood suggests that urination did not take place after 11 p.m. This would allow the higher concentration of alcohol to remain. Had he

urinated at any period subsequent to 11 p.m., it is highly doubtful whether such a concentration could be obtained. Assuming, therefore, that the alcoholic concentration in the urine represents an approximate concentration in the blood of 200 milligrams per cent. at or about 10 to 12 p.m. on May 26th, and knowing that the alcoholic concentration in the blood at the time of death was 80 milligrams per cent., the time taken to produce this reduction in content is of considerable importance in fixing the hour of death.

The weight of the body of the deceased was 10 stones 8 pounds, that is about 67 kilos. If we reduce this weight by the amount occupied by fat and bone, taking as a factor 0.7, we arrive at an effective body weight of 47 kilos.

Assuming a concentration of alcohol in the body of 200 milligrams per 100 c.c., this would represent 2 grams of alcohol per kilo of body weight, or a total of 94 grams of alcohol in the body of the deceased at about 11 p.m.

At the time of death there were 0.8 grams of alcohol per kilo of body weight, or a total of 37.6 grams of alcohol; 56.4 grams of alcohol was therefore metabolised between 11 p.m. and the moment of death.

If we take the ordinary rate of metabolism to be about 10 grams per hour, we arrive at the conclusion that the deceased lived about 5½ hours after the time when he was known to be drunk. We have placed this period at 11 p.m., but as we have no knowledge that he obtained any alcohol after the closing of the public houses at 10 p.m., it might be safer to assume that the concentration of alcohol to which we have alluded may have occurred about 10 p.m., and 5½ hours from that period would place the time of death at about 3.30 a.m.

From the extent of rigor mortis we may place the time of death between 2 and 4 a.m. on May 27th, or at any earlier hour.

From the retention of heat in the body we may place the time of death at somewhere in the vicinity of 3 a.m.

From the relationship of alcohol in the blood and urine, we might assume the death to have occurred about 3.30 a.m.

No one of these calculations may be considered anything but tentative, and it would be unwise to be dogmatic; but

taking the whole of the circumstances into consideration, we may assume that the deceased died about 3 a.m.

If death did not take place till 3 o'clock in the morning, what happened in the meantime, when was he injured and what is the relationship of the injuries to one another? He must have died quite shortly after the gunshot wound of the face, for the blood from that wound was inhaled into the lung and therefore he must have died within a few minutes of that. A microscopic examination of the head wounds showed the presence of a few leucocytes amongst the hæmorrhagic areas, not a great many but sufficient to show that life remained for an hour or two after the head injuries. These head injuries were no doubt severe and likely to cause unconsciousness of some duration, but were in themselves not likely to lead to death.

Having now a fairly clear idea of the observable facts, let us attempt to reconstruct the crime.

The deceased probably arrived at the farm a little after eleven o'clock, roaring tight. He was attacked and struck several times on the head by a fairly heavy weapon such as the butt end of an axe. From the shape and position of these injuries we may assume that he was sitting when attacked, or that the assailant was at a higher level. He fell backwards unconscious, bleeding freely from his wounds, and was immediately grasped by the legs and dragged feet first on his back for a considerable distance towards the stack yard. As he was dragged his coat was pulled up behind his head and prevented blood-staining of the track. The presence of marks of whitewash on the clothes suggested that the spot of attack may have been in the vicinity of the bothy or cottage. Thomson was left lying in the stack yard believed to be dead.

The assailant, or assailants, then decided to fake a shooting accident and took the gun from the kitchen and proceeded to the stack yard, to place it beside the body. This was probably some hours after the original assault. The victim was found sitting up, or in a kneeling position, trying to scramble up. The assailant then decided to finish him off by shooting and shot from a distance of a few yards, the shot passing obliquely from above downwards through the left arm. The assailant no doubt considered that he had missed,



FIG. 5: Gunshot wound of the left arm



FIG. 6: Skull cap, showing two depressed fractures

(face p. 396)



FIG. 7: Reconstruction to show the probable position of the victim when he was shot through the arm, and, assuming this to be true the probable distribution of shot on the ground behind him. Note the entrance hole in front, the exit hole behind, and the individual shot marks in the back of the coat above the pocket. (The shot were afterwards found in the position suggested.)

advanced to a much closer range and discharged the second barrel, which entered the face. The victim then fell on his face, bleeding profusely, on the spot where the large mass of blood was found in the stack yard. The body was then dragged on its face, feet first, leaving a trail of blood, towards the grass paddock, the weapon placed in a position adjacent to the outstretched hands, and the cap, which had fallen off previously, placed loosely on the back of the head over the already dried blood.

Assuming that the crime had occurred as reconstructed, the pellets of shot should have been present on the ground in the stack yard over an area extending from a few yards from where the large patch of blood was found along a line connecting that with the place where the body was found, and from the direction of fire we suggested that this area would extend over two or three yards. Sergeant Meldrum proceeded to the locus, and on digging obtained twenty-three pellets in an area between 4 feet 8 inches and 9 feet 8 inches, from the stained area—almost exactly where they should have been according to the reconstruction.

This reconstruction indicated, without doubt, that a murder had been committed by one or more persons in or about the farm, and since the only two persons in the locality were Mrs. Thomson and the boy, they were both arrested. The boy thereupon made a full confession, in which he stated that Mrs. Thomson had arranged with him to lie in wait for the husband on his return, that Mrs. Thomson had attacked the husband with an axe, and that she had given Miller the gun to shoot him. After the shooting the body was pulled to the paddock, the cap replaced and the gun placed in position after Mrs. Thomson had carefully cleaned it of finger-prints. The fired cartridge in the right barrel was removed and burnt. The blood-stained mass at the scene of the crime was then cleaned up. She then cleaned the axe and black-leaded round about it, burned certain blood-stained clothing as well as the cartridge case mentioned.

A search of the premises revealed the presence of blood-staining on some clothing and a towel which belonged to Miller. No trace of any blood-stained clothing belonging to

Mrs. Thomson could be found. Two axes were found, one of which showed the presence of human blood on the butt-end of the head, and also a few hairs. The blood was of the same group as Thomson's and the hair was similar to his. Around the axe's head and handle there were marks of black-leading as described by Miller. The blood-stains on Miller's clothes were in the same group as Thomson's but different from Miller's. The butt-end of a cartridge was found in some burnt débris in the spot indicated by Miller. This cartridge had been fired from the right barrel of the gun.

Various other bits of information were obtained and the boy's story was more or less corroborated. One weak point about it, however, was the fact that if he had carried out the whole of the proceedings himself, the corroboration would have been equally good. In other words, except for the boy's story, which was very circumstantial and gave the appearance of truth, there was nothing which implicated Mrs. Thomson.

The Crown decided to cite Miller as the principal witness on his confession and charged Mrs. Thomson with murder.

At the trial the Defence objected to the boy's evidence being given, on the grounds that he was mentally deficient, and experts for the Crown gave evidence to the effect that although the boy was mentally retarded, he should be able to tell a coherent story of certain incidents, and that he could answer questions provided they were simple and direct. Professor Henderson admitted in cross-examination that such boys were imaginative and inventive, and that in a matter of life and death he was of opinion that no grave reliance could be placed on what he said. In his evidence in court, Miller adhered to his confession and certainly gave a very detailed and clear story of the events of the tragic night, but as might be expected the absence of definite corroboration led to a verdict of not guilty.

A point of some interest came out in the boy's cross-examination when he said that Thomson was in the habit of getting into bed with him and "playing" with him. Miller didn't like this, and this led to a suggestion that it may have caused the boy to consider revenge.

In this case I have to acknowledge the careful and painstaking work of the Alloa Police, which would have been a credit to a much larger force. The photographs were taken by Mr. G. J. P. Cummings, Alloa.

Police Pensions and War Injuries

By R. GRAHAM PAGE, LL.B.

"TAKE one consideration with another—with another," wrote Gilbert, "a policeman's lot is not a happy one—happy one." Nor has it been made any happier by the doubtful position, as regards pension, of the "war injured" constable. The legislature in 1921 endeavoured to compensate the policeman for his unhappy lot by providing (with the utmost care and complication) that when he has trodden his last beat he may have the necessary financial support to enable him to "lie a-basking in the sun—in the sun." The Police Pensions Act, 1921, contains a codification of the law relating to pensions for policemen. The Act embodied an admirable scheme of pensions upon scales varying with the length of service and the cause of retirement. With careful study it was possible to obtain from the Act the definite figure for pension in any given set of circumstances. With a peaceful mind the policeman could listen to "the little brook a-gurgling" and "the merry village chime," knowing that in due course such and such a pension would be payable to him or to his widow.

But now, the emergency legislation of the past twelve months has spoilt the completeness of the 1921 code. The Police and Firemen (War Service) Act, 1939, has made certain amendments which raise doubts and queries. One such doubt and query arises in deciding what pension should be granted to constables (or their widows) injured (or killed) during an air raid. If the injury or death is caused by an enemy bomb the position is clear. The result is a special pension. But when the injury is the result of some less direct war action, the position is obscure.

Here are two sets of facts with which the writer has recently had to deal in practice, both relating to reserve constables recalled to service as a result of the war.

In the first case, the constable was standing at the junction of two one-way streets while an air raid warning was in operation. He called to the driver of a motor-car to extinguish his headlights. The driver stopped the car and the constable crossed the road to explain. As the constable was returning to the pavement, an army car driven at a fast pace by an officer returning to his unit (an anti-aircraft battery) came along the wrong way of the one-way traffic, collided with the constable and severely injured him, causing incapacity for further service.

The facts of the second case were that the constable was cycling to his post immediately after an air raid warning had been sounded. There was a collision between the constable and an A.F.S. motor-car (with trailer-pump attached) being driven at a fast speed to its action station. The constable received fatal injuries.

The question for consideration is whether or not the constable in the first case and the constable's widow in the second case are respectively entitled to a special pension. It is not proposed in this article to solve that question, because there is no definite authority upon the point; but it may be of interest to draw attention to the relevant statutory provisions.

The first relevant section of the Act of 1921 is section 27, which provides that a member of the first class of the police reserve who is called up for active service is (or his widow is) entitled to the same special pension as other members of the police force if he is incapacitated by an injury received in the execution of his duty without his own default or dies as the result of such injury. Also, he is entitled to that special pension in addition to any ordinary pension to which he may be entitled.

The interpretation section (section 33) sets out what injuries "shall be deemed to have been suffered in the execution of his duty," *viz.* (a) whilst on duty or whilst on a journey necessary to enable him to report for duty or to return home after duty; or (b) whilst not on duty in the performance of some act which is within the scope of a constable's ordinary duties; or (c) in consequence of some act performed in the execution of his duty; or (d) whilst acting as a fireman or

assisting in the extinguishment of fire, or in protecting life or property from fire.

Therefore both the injured constable and the deceased constable suffered injury "in the execution of their duty" within the meaning given to that phrase in the Act.

So far as the injured constable is concerned, section 2 (c) of the Act states that a member of the police force is entitled to a special pension for life if he is incapacitated for the performance of his duty by infirmity of mind or body occasioned by an injury received in the execution of his duty without his own default.

The pecuniary difference between an ordinary and a special pension for the member himself is substantial. The scales of pensions are set out in Part I of the First Schedule of the Act, and, to give an example, ordinary retirement before completion of twenty-five years' service results in no pension at all, and after twenty-five years' service results in only an ordinary pension of only one-half of the pay which was being received at the date of retirement; whereas total disablement after service for a year or less results in a special pension of three-quarters or one-half (*dependent upon whether the injury was non-accidental or accidental*), and after twenty-five years' service results in a special pension of nine-tenths or three-fifths respectively. Other scales are laid down for cases of partial incapacity.

That distinction between accidental and non-accidental injury is important and is the basis of the problem raised by the amendment contained in the Police and Firemen (War Service) Act, 1939. But before dealing with it consideration should be given to the legal consequences of the facts of the second case—the deceased constable—as it also affects that case.

It is section 3 of the Act which deals with widows' pensions. Sub-section (b) provides that if a member of the police force dies whilst serving in the force from the effects of an injury received in the execution of his duty without his own default, his widow shall be entitled, *where the injury was accidental, to a widow's ordinary pension, and where the injury was non-accidental, to a widow's special pension.*

Again, one must turn to the First Schedule of the Act to discover the difference between widows' ordinary pensions and widows' special pensions. Part II of the Schedule gives alternative scales for widows' ordinary pensions, and the widow is entitled to payment under the scale which provides in her particular case the higher figure. One scale mentions fixed amounts, such as £30 a year for the widow of a constable; the other scale mentions percentage of pay, such as 10 per cent. of annual pay for twenty-five to thirty years' service. As compared with these scales for widows' ordinary pensions, the widow's special pension is to be equal to one-third of her husband's annual pay at the time of his death or retirement.

Therefore, for both the incapacitated constable and the widow of the deceased constable, the question of whether the injury was accidental or non-accidental is of considerable financial interest. In the case of the incapacitated constable he is entitled to a special pension whether the injury was accidental or non-accidental; but the "accidental" special pension is only two-thirds of the "non-accidental" special pension. In the case of the widow she is only entitled to a widow's special pension (*i.e.* to one-third of deceased's pay instead of, say, £30) if the death was non-accidental.

Section 33 (3) defines non-accidental injury as any injury intentionally inflicted, or incurred in the performance of a duty involving special risks. Thus, if "the enterprising burglar" is disturbed while he is "a-burgling" and brings his jemmy down on the unfortunate constable's head that will be "a non-accidental injury," but if a careless motorist while driving negligently runs down a policeman on point duty that will be "an accidental injury."

On that principle it would seem that both sets of facts stated above give rise to accidental and not non-accidental injury. But there is the second part of the definition—"incurred in the performance of a duty involving special risks." Might it not be argued that to be out in the street during the period of air raid warning is the performance of a duty involving special risks? If so, both sets of facts stated would give substance for a claim for a special and non-accidental pension.

However, the legislature has seen fit to recognise the fact that in war time the constable is, indeed, involved in special risks and has included "war injury" in the definition of "non-accidental injury." It may be that the specific provision of the 1939 Act to that effect precludes one from taking the broad view suggested above of "a duty involving special risks." It is section 11 of the Police and Firemen (War Service) Act, 1939, which provides that for the purpose of the Police Pensions Act, 1921, a war injury within the meaning of the Personal Injuries (Emergency Provisions) Act, 1939, shall be deemed to be a non-accidental injury. Therefore, if in the two cases postulated the injuries can be said to be "war injuries," then the non-accidental special pension and the widow's special pension will be payable respectively.

Here, then, is the definition contained in section 8 of the Personal Injuries (Emergency Provisions) Act, 1939: "'War injuries' means physical injuries

(a) caused by—

- (i) the discharge of any missile (including liquids and gas); or
- (ii) the use of any weapon, explosive or other noxious thing; or
- (iii) *the doing of any other injurious act*
either by the enemy or *in combating the enemy or in repelling an imagined attack by the enemy*; or

(b) caused by the impact on any person or property of any enemy aircraft, or any aircraft belonging to, or held by any person on behalf of or for the benefit of, His Majesty or any allied power, or any part of, or anything dropped from, any such aircraft."

Can the driving of the army officer returning to his unit during an air raid, or the driving of the auxiliary fireman hastening to get his fire-fighting equipment to his action station for an anticipated air raid, be "the doing of [an] injurious act . . . in combating the enemy or in repelling an imagined attack by the enemy"?

If the driving of the army officer or the fireman amounted to negligent driving it is "an injurious act." The phrase "in combating the enemy" seems to imply the actual presence of the enemy and something done in the course of combat with a present and actual enemy; but the phrase "in repelling an imagined attack by the enemy" might at least cover the activities of the A.F.S. men on their way to their action stations.

One wonders whether there is for this purpose any line of demarcation between offensive forces such as anti-aircraft batteries, searchlight units, home guards, etc., on the one hand and defensive forces such as air raid wardens, auxiliary firemen, etc., on the other hand. If so, then it would seem to follow that the action of the "defensive forces" would not be "combating the enemy" or "repelling an imagined attack."

Arguments on either side can be multiplied and one can only wait until some judicial interpretation of section 8 of the Personal Injuries (Emergency Provisions) Act, 1939, has been given to guide those who have to decide whether or not a claim to a special pension should be allowed upon facts similar to those set out above.

THE COLONIAL POLICE

The following appointments are announced by the Colonial Office :

CLIFTON, F. T. (formerly Chief Inspector of Police)	General duties, Straits Settlements.
HOWE, R. A. (formerly Chief Inspector of Police)	Clerk to District Commissioner or Magistrate, Northern Rhodesia.
POPPY, A. J. (Chief Inspector of Police)	Assistant Superintendent of Police, Kenya.
PURKIS, L. G. (Sub-Inspector, Port Police, Ceylon)	Assistant Superintendent of Police, Nigeria.
TURNER, D. N.	Cadet, Malaya.

About Maps

IF you buy a one-inch Ordnance map at the local bookstall you will get an example of one of the following editions: the Popular, the Tourist, the Fifth Edition. Closer study will show considerable differences in these maps. This is a reminder that the map-maker's object is to present you with as real and complete a picture of the countryside as possible, and that as new ideas of presentation develop he is prepared to abandon earlier methods. He is beset by many problems, and a study of some of them should give us a greater understanding of the map itself.

PROBLEMS FOR THE MAP-MAKER

The earth is round, or since it is very slightly flattened at the poles, nearly round. If you want to show off, you call it a geoid, which simply means earth-shaped. The only true way of showing the world accurately to scale is on a globe of the same shape, but a globe is an awkward piece of furniture. Yet the map you buy is flat, and claims to show a piece of country with great accuracy. Here is an apparent contradiction which must be explained. One day when you have finished your half grapefruit, take the peel and try to lay it flat on a board. You will have to cut it in several places to do this, and even then there will be gaps between the pieces. To join the pieces together you will have to tear and stretch them. In so tearing and stretching them they lose their original shape, direction and size.

This experiment shows in exaggerated form one of the map-maker's problems. The roundness of the earth is not so great as to matter much over an area of 700 square miles, which is roughly the area shown on a one-inch Ordnance sheet. But if the whole of the British Isles is plotted as if the earth were flat, in sections each of 700 square miles, these maps would not

join at the edges; there would be gaps between the individual sections. The problem is most acute when an attempt is made to show a large area such as a continent on a scale sufficiently small to accommodate the map in a school atlas, but it is present when a small country, such as Britain, is being represented on maps on the much larger scale of one inch to one mile. By various devices, some mathematical, some merely ingenious and "conventional," it is possible to construct a series of crossed lines, representing lines of latitude and longitude and known as a grid or network or projection. By plotting details of the earth's surface on a well-chosen grid it is possible to retain almost completely one of the desirable qualities of a map, true direction, scale or shape, usually at the expense of the other virtues. Alternatively it is possible, in plotting a narrow piece of country such as Great Britain, to retain almost unimpaired more than one of these virtues. On the southern margin of the Fifth Edition maps we are told that the maps are drawn on the Transverse Mercator Projection. Let us take it for granted that the surveyors are satisfied that by using this device the faults inherent in plotting the rounded surface of Britain on a flat plan are minimised.

The next problem is that of fixing points on this grid by measurement. Surveyors always work in triangles. If working by chain* alone they must measure the three sides of the triangle, but the usual method now is to measure by chain the distance between two points and then by means of a theodolite measure the angles from the two ends of this base line to the third point, when the triangle is completely measured. At frequent intervals, especially on higher land, the sign Δ appears on the map and is usually marked on the ground. Such a sign represents a triangulation or trigonometrical point, of which over 150,000 have been established by measurement in Britain.

These points established, it is comparatively simple for surveyors to put in the rest of the details of the land, rivers, roads and other features. For this purpose the ground is regarded as projected on a horizontal plane, and as having only length and breadth. But land has height as well, and the repre-

* A surveyor's chain is usually 100' long and consists of one hundred metal links.

sentation of this third dimension presents a problem. An examination of Diagram 1 will explain both this technical jargon and the problems.

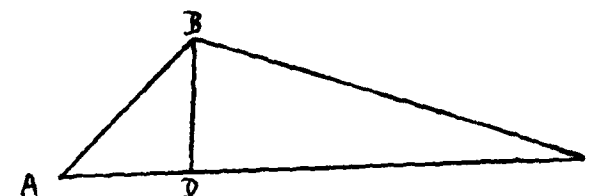


DIAGRAM 1

The walking or measured distance along the sloping ground BC is longer than the distance DC, which is obtained by dropping a perpendicular from B to the horizontal plane AC. On a map the distance BC, because it is projected on a horizontal plane, must be shown as DC, which is known as the horizontal equivalent of BC. You would get the same result on an aerial photograph taken vertically above B.

CONTOURS

It is now simple to grasp the principle of representing heights. This is usually done by contours, which are lines joining points of equal height above some established base-level. On earlier maps this base-level or Ordnance datum was a point on a dock wall in Liverpool. Recently the datum has been changed and is known as the Newlyn datum. For our purpose, this base-level can be regarded as mean sea level. On the modern one-inch map these contours are shown at intervals of 50', known as the vertical interval. The principle is illustrated in Diagram 2 (see page 408), which represents a piece of country of varying slope.

It is clear from this sketch that contours which are close together indicate steeper slopes than occur when contours are farther apart. In country with high vertical cliffs or overhanging edges these contours run together (see Diagram 3, page 409) and usually a conventional "cliff" sign is shown.

It should be realised that not all contours are actually determined on the ground by instrumental measurement. On British maps the contours so surveyed are the 50', 100', and then every 100' up to 1,000', after which the surveyed lines are every 250'. The others are "interpolated"—put in by trained sketchers working in the field. Additional information about elevation is found in the form of numbers, known as spot heights, marked on the map along roads and particularly in mountain passes and on the culminating peaks of uplands. If the last contour on a mountain is that of 2,000', and the peak rises 30' above that, the measured height 2,030' will be marked. That is a spot height.

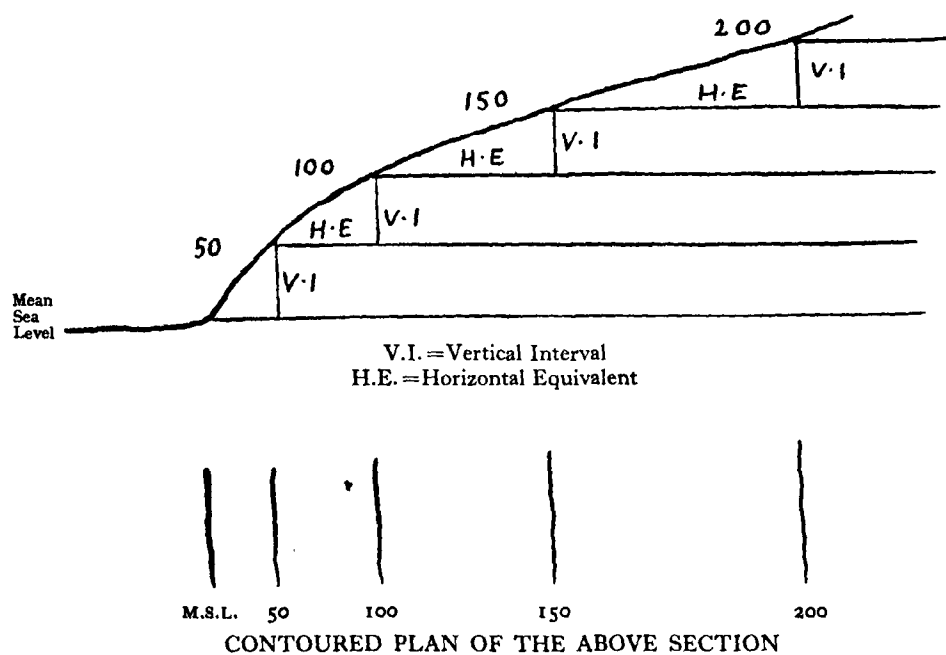
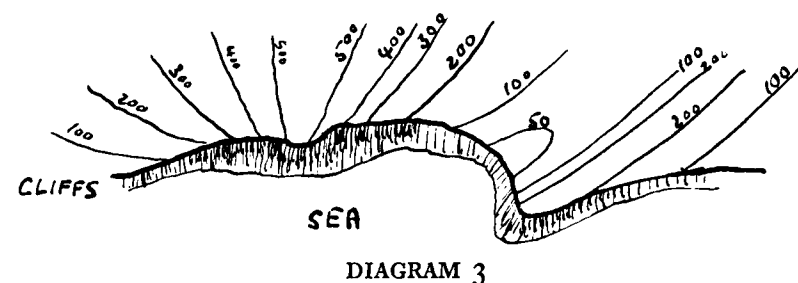


DIAGRAM 2

An earlier method of showing height was by hachures, or very short lines of varying thickness drawn vertically down a slope. On steep slopes these lines are thicker and closer together; on gentler slopes thinner and wider apart. The

method is expensive in labour and demands a very high degree of draughtsmanship. Used alone hachures do not give an accurate idea of the total or absolute height of a piece of country; they just portray the degree of slope wherever it occurs. A slope of 1 in 5, rising from 1,500' to 2,000', would be shown in exactly the same way as a similar slope occurring between 100' and 600'. Nevertheless, since the system shows slope so well, it has been used on some British maps to supplement contours—to indicate the kind of slope that occurs between the contours. It was not used on the one-inch Popular Edition, on which for the first time a uniform 50' instead of a 100' contour interval was introduced. It was re-introduced in some of the earlier maps of the Fifth (Relief) Edition, but was once again abandoned in the more recent maps of the Fifth Edition—now known as the Fifth (Contoured) Edition. One misses the additional guide which hachures give, especially in rolling country of low relief.



COLOURED CONTOURS

Certain half-inch maps adopt a scheme of layer-colouring to indicate height. Messrs. Bartholomew were the pioneers of this system, which was later adopted by the Ordnance Survey. The land from datum to 500' or 600' is usually coloured in varying shades of green, when there is a change to brown which becomes deeper in shade with increasing altitude. The device certainly helps those unused to interpreting a contoured map to get quickly a general idea of the nature of the country, but to the more skilful it is likely to prove irritating. The layering must be based on contours, which are also shown, but as there is not a gradation of shade for every normal contour

a much greater interval between contours must be tolerated. An extreme case is Bartholomew's half-inch map of the Ben Nevis district, on which there is a range of altitude from Ordnance datum to 4,406'. The map adopts a vertical interval of 250' and the colours range through two shades of green and fifteen shades of brown, the actual peak being shown in still another colour—white. The best examples of layered maps published by Bartholomew and by the Ordnance Survey are delightful to look at. The choice of shades succeeds in avoiding sharp contrasts which would impart a step-like appearance to the map. They are as vivid as a relief model of the country, and merely to look at them is an aesthetic joy. Nevertheless the adoption of as wide a vertical interval as 250' involves the loss of much of those minor relief features which so often give a piece of country its real character.

On some of the early maps of the Fifth Edition new experiments were made with the use of shades of colour to bring into prominence varying heights of land, while avoiding the step-like appearance of the less successful layer-coloured maps. This was achieved by using colour tinting—hypsometric tints—one tint gradually merging into the next. This tinting has apparently been abandoned on later maps issued in this current edition.

Sometimes one sees half-inch maps that have been shaded on the assumption of a light placed at the north-west corner of the map. Such a light would illuminate slopes facing it, but cast shadows on the south-eastern side of hills. Running down the centre of England from Yorkshire to the Cotswolds is a line of hills with a high steep western or north-western edge and a gentle slope eastwards or south-eastwards. The light would cast no shadow on this high edge, and the system would therefore fail to indicate a very important physical feature. In consequence the application of this principle, common in foreign maps, results in a poor map unless used with some other method of representing heights.

The mathematical, or contour, method seems to be the best for showing heights, and even this is improved by the additional use of well-drawn hachures to show minor details of relief.

SCALE

Scale is very important, but there seems to be no need to discuss it in detail here. We are all familiar with snapshots of the family in which our six-foot friend measures say one inch. He is shown on a scale of 1" to 6', or to 72", and the scale is $\frac{1}{72}$ or 1 : 72. On a one-inch map, one inch measured on the map represents one mile, or 63,360 inches measured on the ground, and the scale or Representative Fraction (R.F.) is $\frac{1}{63360}$ or 1 : 63,360. The advantage of putting the scale in this form is that 1 unit of any map measurement, English or foreign, represents 63,360 such units on the ground.

NATURAL FEATURES

When the natural features—hills, valleys and rivers—have been plotted on a map there are limits to which completeness of representation of other details of the landscape can be pushed. As it would clearly be uneconomical to produce special maps for every purpose a general purpose map must be evolved. The walker demands footpaths and bridle paths; local authorities parish boundaries; the motorist a classification of roads, preferably with the road numbers adopted by the Ministry of Transport; the archæologist likes to know where remains of different cultures are to be seen, and others want to know where post offices, telephone kiosks, inns and other amenities are to be found. Names of villages must be shown, and above all the completed map must please the eye, or, if you prefer it, satisfy the aesthetic sense. The map-maker tries to satisfy everybody's whim. What is not fully appreciated by map-users is the extreme care exercised in the inclusion or exclusion of detail, in the exact placing of printed matter and the types of lettering adopted. Without such care a map could be both illegible and unsightly.

SYMBOLS USED

Conventional symbols are used for most of the details, but as a list of the more important symbols is given on the southern margin of the maps, especially on the Fifth Edition, there is no need to elaborate them here. Three points are worthy of mention:

1. Some people find difficulty in deciding whether a road passes under or over a railway. Looking down from the air on a road carried on a bridge over a river or railway you would see a continuous stretch of road, while your view of the river or railway would be blotted out for a distance equal to the width of the bridge. That is how it appears on the map.
2. Seen from high in the air directly above, a wireless mast, a lighthouse and a windmill would appear much the same; you would see them in plan. For ease of reading they are shown on a map, not in plan, but in elevation—very much as a child would draw them. This conventional way of showing them enables a child to recognise the symbols for what they are, but the system prevents the map-maker from showing their exact position on the ground. He could do that only if he showed them in plan and not in elevation.
3. The motorist likes the roads to show up clearly, while the fisherman likes to recognise his favourite stream.

Conventionally on a map a stream less than 15' wide is shown as a single line; if over 15' as a double line. Roads are seldom over 50' wide, and in 1 mile there are 5,280'. The scale therefore would be 50 : 5,280 or 1 : 105, approximately. Call it 1 : 100, and try to draw two parallel lines $\frac{1}{100}$ of an inch apart. You might do it successfully, but would you recognise the result as a road? The same applies to canals and railway tracks. To show them on a one-inch map so that they are easily recognisable for what they are their scale must be much exaggerated. There is no serious objection to this except in narrow valleys, such as the Pennine valleys, where road, rail and canal all follow the valleys. If the narrow valley lies just below 200' above Ordnance datum the 200' contours will limit the valley bottom, and these contours must be exactly placed; they are measured contours. Since they are true to scale and the map-maker must show a railway, a canal and a road on an exaggerated scale between them, a casual reader might assume that there is no further room for houses, mills or agricultural

land. Actually there may be quite a lot of room left. That is a weakness of the conventional symbol, but the advantages of the system outweigh the disadvantages. Once the difficulty is appreciated, mistakes in reading the map cease to be made.

The point to remember is that in order to compress as much information as possible into a minimum of space on the map and to ensure legibility or ease of reading, it is necessary to adopt a carefully considered scheme of conventional symbols. Every letter, line and marking on the map must convey a definite meaning to the map-reader. In other words, map symbols are a kind of shorthand script, and to understand the map one must know the shorthand used, *i.e.* the symbols.

THE IMPORTANCE OF SIZE

It will now be clear that the amount of information which can be compressed into a map depends on:

1. The perfection of the system of symbols employed.
2. The size of the map in comparison with the ground which it represents, *i.e.* the scale of the map. For example, the larger the scale, the more detailed is the information which can be represented on the map.

Look at it this way. A portion of a one-inch map measuring 10" each way represents 10 by 10 miles, *i.e.* 100 square miles of land. A half-inch map of the same dimensions represents 20 by 20 miles, *i.e.* 400 square miles, and a quarter-inch map would show 1,600 square miles of land. It will be clear that the map-maker cannot show as much local detail on the smaller-scale maps as on the larger.

You will also realise that the larger the scale, the greater is the number of sheets required to cover a given area, and therefore the more cumbersome in use.

Map purchases will be controlled in part by the depth of your pocket and in part by the kind of information you expect to find on the maps. For the walker the one-inch map is almost ideal. Maps, or rather plans, on a larger scale are cumbersome; those on a smaller scale inadequate. Each sheet represents a region 30 miles by 20 miles, and therefore a "hiker" does not

walk across many such areas in one day. He may find it expensive if his route cuts across the margins of three or four sheets—but that is just bad luck. Maps on this scale are produced only by the Ordnance Survey, and specially large sheets are issued as Tourist Maps for many regions of Britain, *e.g.* the Lake District and Snowdonia.

At the other extreme, the main-road motorist needs something on a smaller scale. Some prefer the half-inch, others the quarter-inch. Even then, in planning a long run, he needs a supplementary map on a scale of 10 or 16 miles to the inch to show his position in the country as a whole, or to tell him which road is actually the shortest route to a town 200 miles away.

Street plans in cities and field boundaries in the country cannot be shown on one-inch maps. These are shown on productions of larger scale—6 inches to 1 mile (1 : 10,560), and approximately 25 inches to 1 mile (1 : 2,500). These can be bought, but are technically known as plans. We have left the realm of maps.

H. KING.

F. J. FOWLER.

University College,
Hull.

The Oath

By FRANK W. MARTIN, M.D.

Late Divisional Surgeon, Glasgow Police

THE oath to be dealt with in this article is not

“The smoke of flame and blood; the blister of the spirit, which riseth from the steam of rage, the bubble that shoots up to the tongue and scolds the voice”

but the solemn declaration to a superior or divine being, or in the name of something held sacred, by which the declarant undertakes either to speak the truth, or promises to do something in the future, on the pain of calling down on his head divine or preternatural wrath.

Where the declarant undertakes to speak the truth, either by affidavit or as a witness in a court of law, then his oath is described as *assertory*, in contradistinction to a *promissory* oath, an example of the latter being the oath of allegiance which a foreigner takes when he becomes naturalised as a British subject.

It is an established fact that in law, whatever form the evidence may assume it must be given on oath, except (1) under the Criminal Law Amendment Act in the case of a child of tender years, who does not comprehend the nature of an oath, and (2) under the Oaths Act, 1888, which Act allows people, who object to be sworn, because they have no religious beliefs, or hold that the taking of an oath is contrary to their religious belief, to make a solemn affirmation. The passing of the Oaths Act, 1888, was the result of the agitation of the famous Bradlaugh, Member of Parliament for Northampton, who, objecting to the taking of an oath, was allowed to affirm.

The Oaths Act, 1888, effected the removal of the last of the tests for Members of Parliament, the others being the Oath of Supremacy, the Oath of Abjuration, the Oath of

Allegiance, and the Declaration against Transubstantiation. Prior to this Act there were other Acts making provision for the taking of oaths by Quakers, Roman Catholics, and Jews; but the Act of 1888 abolished the necessity for any religious belief in taking an oath, whether by a Member of Parliament or anyone else.

The affirmers shelter themselves under the Biblical invocation "Swear not at all"; yet the laws of Christendom from early times have only been directed against swearing that was profane or otherwise objectionable, and against perjury.

Constantine's laws required every witness in a cause to take oath, while Justinian's code required the parties and advocates to be sworn.

Bishops and clergy were called upon to take oath in ordination, monastic vows, and other ecclesiastical matters.

The practice of kissing the Book goes back to the middle ages. The Book was laid on the altar, or the swearer laid his hand on the altar, or looked towards it, or touched relics of saints on the altar. Such objects as the bishop's crosier and the Cross were often sworn by. An oath ratified by contact, or by inspection of a sacred object, was called a *corporal* or bodily oath, as distinguished from the spoken or written oath.

Many oath formulæ were used in early times. Under Justinian the oath taken by provincial governors was as follows:

"I swear by God Almighty, and His only begotten Son our Lord Jesus Christ, and the Holy Ghost, and the most holy glorious Mother of God and ever Virgin Mary, and by the Four Gospels which I hold in my hand, and by the holy Archangels Michael and Gabriel."

The famous oath of Louis and Charles at Strassburg was in the following terms:

"By God's love and the Christian people and our common salvation, as God shall give me knowledge and power, etc."

William the Conqueror swore "by the splendour of

God"; Richard I "by God's legs"; John "by God's teeth." "God's Body" is said to have been a favourite oath of Queen Elizabeth.

To-day in England witnesses must give their evidence under the sanction of an oath or its equivalent. The ordinary form adapted to Christians is as follows. The declarant, standing bareheaded, the right hand, also bare, raised above the head, repeats:

"I swear by Almighty God that the evidence I shall give to the court and jury, touching the matters in question, shall be the truth, the whole truth, and nothing but the truth."

While swearing he holds the New Testament in his hand. Prior to 1909 he kissed the Book on completing the oath.

Those who object to taking the oath may make an affirmation. In such cases it is usual to ascertain:

- (1) if there be an absence of religious belief;
- (2) if the oath is contrary to their religious belief;
- (3) if the witness is or has been a Quaker, Moravian, Member of the United Brethren, Separatist, etc.

The objection to the oath is usually based on St. Matthew's Gospel, chapter 5, verses 34 and 35:

"But I say unto you, Swear not at all; neither by heaven, for it is God's throne; neither by the earth, for it is his footstool; neither by Jerusalem, for it is the city of the great King."

Such people affirm in the following manner:

"I, X, Y, being one of the people called the Quakers (or whichever sect he may belong to), do solemnly, sincerely, and truly declare and affirm that the evidence I shall give to the Court shall be the truth, etc."

No word of imprecation is uttered.

In Scotland the judge administering the oath calls on the declarant to stand bareheaded, and with right hand uplifted, to repeat after him:

E

"I swear by Almighty God, as I shall answer to God on the great day of judgment, that I will tell the truth, the whole truth, and nothing but the truth."

Under Section 5 of the 1888 Act any person may take the oath in the Scottish fashion without question as to the reason for so doing.

In the case of Roman Catholics, they are sworn on the Douai Bible.

Jews use the same wording as Christians when taking the oath; but they usually wear a hat, and of course swear on the Old Testament or Pentateuch. Some, however, swear bareheaded, and they are allowed to do so provided the oath so taken is binding on their conscience.

In ancient days the use of the oath among Jews was very common. Judicial oaths were demanded by the Mosaic Law on four occasions:

- (1) From a person with whom goods had been deposited and lost;
- (2) from one suspected of having lost property in his possession;
- (3) from a wife suspected of adultery;
- (4) from a whole community for the discovery of a theft.

The form of oath was usually an imprecation by God or Jehovah, or by heaven, the earth, the sun, Jerusalem, the Temple, the angels, or some distinguished person. These oaths were associated with certain ceremonies, such as sacrificing seven animals, calling to seven witnesses, pointing to heaven, putting the hand under the thigh, which is a euphemism for taking hold of the genital organs, a part of the body held sacred, as appears from phallic worship and circumcision.

A very binding and solemn rite where two parties were concerned was the cutting of one or more animals in halves. The halves were laid out, and the parties walked between them, the implication being that the person breaking the agreement should suffer the fate of the animals.

A similar ceremony is performed in certain parts of Assam, a dog or fowl being used.

In Siberia frequently the head of a bear is brought into Court, and a pretence of eating the head is gone through, at the same time calling on the bear to devour the witness should he not tell the truth.

In some parts of India a similar ritual is gone through on the head of a tiger. It appears that among these people death by a tiger destroys any hope of reincarnation.

Customs in India vary according to the caste. Sikhs are sworn upon the Adi Granth, their sacred book; Parsees on the Zend Avesta, the Hindus upon the Vedas, or by touching the Brahmin's foot. But frequently Indian witnesses just affirm.

In Africa the chief of the kraal swears by our own King, while his subjects swear by the chief himself.

A Mohammedan swears on the Koran by placing his right hand firmly on the holy book, while the other rests upon his brow. He then touches the book with his brow.

The following is the oath administered to Buddhists:

"I declare, in the presence of Buddha, that I am unprejudiced. If what I shall now speak shall prove false, or if by colouring truth others shall be led astray, then may the three Holy Existences, Buddha, Dhamma, and Pro Sangha, in whose sight I now stand, together with the Devotees of the Twenty-two Firmaments, punish me and also my migrating soul."

Chinese witnesses require a saucer to be broken before their conscience will permit them to speak the truth. They swear by kneeling down and breaking a saucer on the rail of the witness-box, exclaiming:

"I tell the truth, and the whole truth; if not, as that saucer is broken, may my soul be broken like it."

From time immemorial, oaths sworn upon water were of the most sacred. The Greek gods swore by the Stygian Lake, though the Greeks themselves were alleged to swear by Jupiter, who specially presided over oaths. The rivers Styx

and Tiber had their supporters. And nothing can be more legal and binding to the devout Hindu than an oath on the water of the Ganges. Perjury after such an oath brings vengeance on the falsifier's children.

The ancients certainly had a variety of deities to call upon to keep them on the straight and narrow path—the sun, the moon, the earth, thunder, and lightning. Many believed in earthly retribution for those who broke their oath.

There is a story told of three blackguards who conspired to accuse falsely Narcissus, Bishop of Jerusalem. They swore to the accuracy of their accusation before the Church. One swore that if his evidence was untrue he hoped to be burned to death; another that he might die of the plague, and a third that he might be blinded. They all got their wish, for Number One perished by fire, Number Two died of the pestilence, while the third weakened so badly as a result of what befell his friends that he confessed the falsity of the accusation, shedding such tears (crocodile or otherwise) that he lost his sight.

In Great Britain when a new king is crowned the coronation oath is administered by the Archbishop of Canterbury in the presence of the King's subjects. The prelate asks: "Will you solemnly promise and swear to govern the people of this United Kingdom of Great Britain and Ireland and the Dominions thereto belonging according to the statutes in parliament agreed on, and the respective laws and customs of the same?" The King replies: "I solemnly promise so to do." The archbishop proceeds: "Will you to the utmost of your power, cause law and justice, in mercy, to be executed in all your judgments?" To this the King answers "I will." Finally the King, laying his hand upon the holy Gospels, says: "The things which I have herebefore promised I will perform and keep; so help me God," after which he kisses the book.

The chief officers of state take an official oath, while privy councillors, archbishops, bishops, peers, baronets, knights, recruits, all have their special oaths.

At one time a Member of Parliament had to take oaths of allegiance, supremacy and abjuration. To-day a single oath suffices. Roman Catholics can take this as can Jews, the latter omitting the words "on the true faith of a Christian."

Law lords and justices of the peace take an oath to "do right to all manner of people after the laws and usages of this realm without fear or favour, affection or ill will."

Jurors in the criminal court take an oath to the effect that they shall well and truly try and true deliverance make between the sovereign lord the King and the prisoner at the bar whom they have in charge, and a true verdict give according to the evidence. In the criminal courts of Scotland the oath of the jurors is "you swear in the name of Almighty God and as you shall answer to God at the great day of judgment that you will truth say and no truth conceal in so far as you are to pass upon this assize."

In olden days, in certain parts of Europe, when compurgation was in vogue, the genuineness of the accused's oath had to be upheld by some of his friends.

No article on oaths by a medical man would be complete without some reference to the Medical Oath. From the time of Hippocrates medical men have sworn to keep inviolate their professional secrets. The following is a translation of the Hippocratic Oath:

"I swear by Apollo, the physician, and Æsculapius and Health, and All Heal, and all the gods and goddesses, that according to my ability and judgment I will keep this oath and this stipulation—to reckon on him who taught me this art equally dear to me as my parents, to share my substance with him, and relieve his necessities if required. To look upon his offspring in the same footing as my own brothers, and to teach them this art, if they shall wish to learn it, without fee or stipulation; and by precept, lecture, and every other mode of instruction I will impart a knowledge of the art to my own sons and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to none others. I will follow that system of regimen, which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to anyone if asked, nor suggest any such counsel; and in like manner I will not give a woman a pessary to produce abortion.

With purity and with holiness I will pass my life and practise my art. I will not cut persons labouring under the stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses I enter I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption; and further from the seduction of females and slaves. Whatever, in connection with my professional practice, or not in connection with it, I see or hear in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret. While I continue to keep this oath unviolated, may it be granted to me to enjoy life and the practice of the art respected by all men in all times. But, should I trespass and violate this oath, may the reverse be my lot."

In Scottish Universities, since the passing in 1868 of the Promissory Oaths Act, a declaration in English has been substituted for the old Latin oath, and it is in the following terms:

"I do solemnly and sincerely declare, that, as a Graduate in Medicine of the University of . . ., I will exercise the several parts of my profession to the best of my knowledge and abilities, for the good, safety, and welfare of all persons committing themselves, or committed, to my care and direction, and I shall not knowingly or intentionally do anything or administer anything to them to their hurt or prejudice, for any consideration, or from any motive whatever. And I further declare that I will keep silence as to anything I have seen or heard while visiting the sick which it would be improper to divulge. And I make this solemn declaration in virtue of the provisions of the Promissory Oaths Act, 1868, substituting a declaration for oaths in certain cases."

Similarly the medical and surgical corporations exact a declaration from their licentiates, each one of whom promises to maintain and defend the rights and privileges of the corporations of which he is about to become a member, to obey all the laws of the said corporations; and he further promises, under pain of forfeiture of his diploma, that he shall not

advertise nor employ any other unbecoming method of obtaining practice, nor allow his name to be connected with anyone who so acts or who is engaged in any discreditable kind of medical work.

The administration of an oath is a search for truth, which Dryden called the foundation of all knowledge, and the cement of all societies. Like reason, truth is common to everyone. It is the most powerful thing in the world, since fiction can only please by its resemblance to it. Byron described truth as "stranger than fiction," while Cowper held:

"Truths shine by the side of every path we tread;
With such a lustre he who runs may read."

Shakespeare, however, had but a poor opinion of an oath. "Trust none," he makes Pistol say in *Henry the Fifth*,

"For oaths are straws, men's faiths are wafer-cakes,
And hold-fast is the only dog."

As to the justness—or otherwise—of this dictum I will leave my readers to decide.

Scientific Evidence as a Sequel to a Black-out Accident

By CHIEF INSPECTOR W. R. JONES
Birkenhead Police

AN interesting case occurred in Birkenhead where the evidence of the Director of the North-Western Forensic Science Laboratory was probably the deciding factor in securing a conviction against a motorist who had knocked down and injured three pedestrians in the black-out, and failed to stop after the accident.

At about ten minutes past midnight on the 2nd March, 1940, a fireman and two girl friends were going home from a dance and were crossing a road from right to left in diagonal fashion, when a car ran into them from behind and injured all three, two of them seriously. The car drove on and did not stop despite a flash signal and a shout by another fireman who was walking about 80 yards ahead.

The injured people were conveyed to hospital and a few minutes later a constable arrived on the scene of the accident. It was a particularly black night and he made a search of the vicinity with the aid of his torch. He found a motor-car number-plate. That was all, but it seemed like a veritable visiting card. The only disturbing feature was that the plate was rather old and decrepit, the broken part of the metal attachment was rusty, and obviously the break from the original fixed position on the car had occurred a long time previously. The plate showed no sign of recent damage. The road is a very busy one and the plate might quite possibly have come from a vehicle which was not involved in the accident. Nevertheless such a clue was, of course, pursued with diligence.

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The only description of the car was that it was thought to be lightish blue or green in colour and was a saloon.

It was found that the car to which the number-plate belonged was registered in Cheshire, and that the owner lived in Heswall, Cheshire. Enquiries at his home next morning revealed that he was a Post Office employee and was at work. He was traced and came to the Central Police Office about noon. The number-plate was shown to him and he stated that it was his and he had missed it when he arrived home the previous night. He made a formal statement in which he said that he had travelled along the road in question on his way to Aintree the previous evening and on his way home later. He had passed that particular spot on his way home at about 11.15 p.m., having left Aintree at about 10.45 p.m. He was at home in Heswall at about 11.45 p.m. He was positive he had not been involved in an accident and that his times were approximately correct. He was accompanied by his wife and son.

The Lancashire Police were requested to make enquiries from the house in Aintree which he had visited, and Cheshire Police were similarly asked to make enquiries from his home to check times. There was confirmation in each case, but before enquiries could be made at his house he had arrived home and was there when the police called. There was no telephone in the house at Aintree.

The car was carefully examined before he left Birkenhead. It was a 1935 "Ford" model, medium blue in colour, and in poor condition. There were "brush" marks on the offside front wing, and the glass of the offside side lamp which was fixed on the wing was cracked. The owner explained the crack by saying that the light had failed to function two days previously and he had struck the lamp with his fist, cracking the glass. It was impossible to say whether the "brush" marks were of recent origin as they were not very pronounced and the car was in rather a dirty condition generally. The number-plate, he explained, had been broken from its original attachment months previously and he had jammed it in a suitable position in front of the car. It was only fairly secure and in fact had, to the knowledge of the police, come off on a previous occasion.

He demonstrated the manner of fixing and this confirmed what he said.

The constable examining the car scrutinised the front very carefully, and noticed a very small fibre about three-quarters of an inch long and not easily visible to the naked eye, attached to a small nut on the bumper bar. He pointed this out to the owner of the car and took possession of it.

The road where the accident occurred is in close proximity to the Mersey Traffic Tunnel. In case this car was not the one involved, enquiries were made at the tunnel regarding any car of a "lightish green or blue" colour which might have passed through the tunnel at about midnight. No such car was remembered nor was it likely to be. The great majority of vehicles pass through the tunnel without any scrutiny whatever. The toll is paid in an instant and the vehicle passes on. A minority are contract holders and the registered number of the vehicle is taken in these cases. There is only one other category in which particulars are taken, and that is pass holders. The registered numbers of all cars of contract holders who passed through the tunnel between 11.45 p.m. and 12.45 a.m. were obtained, and the record also showed that one pass holder used the tunnel at a time estimated by the tunnel toll collector at shortly after midnight. Enquiries revealed that this pass was held by our suspect at Heswall. He was accordingly sent for and closely interrogated. He produced the pass and admitted merely that he must have been mistaken in his times, but stuck to it that he had not been involved in an accident.

The evidence was getting better and better but was still probably insufficient to secure a conviction in the face of a skilled defence.

In the meantime the clothing of the injured people was obtained, and a scraping of white paint taken from the front bumper bar of the car. All these articles, together with the small fibre, were then despatched, with an account of the circumstances, to the Director of the North-Western Forensic Science Laboratory, Preston.

It was soon disclosed what an important part the discovery of the minute fibre was to play in sealing the fate of the motorist.

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The Director reported that the fibre, or shred of fabric, was a certain variety of artificial viscose silk fibre identical in colour and texture with part of the net fabric on the skirt of a dress worn by one of the victims of the accident.

Of rather less significance and importance, but helpful to a certain degree, was the fact that the scraping of white paint from the bumper bar was the same composition as the white substance which had caused white smudges on the clothing of two of the victims.

When the case first came before the Court, and the nature of the evidence on which they based their prosecution was revealed by the police, counsel for the defence asked for an adjournment to enable them to procure the opinion of a scientific expert, and in particular to examine the fibre found on the car, and to make a comparison with the dress worn by one of the victims.

The application was granted, and during the period of adjournment the defendant produced a sample of cotton waste of a type frequently used by him in cleaning his car. This "cotton" was of an unusual type and contained about 20 per cent. artificial silk fibres. It was intimated that the defence would say that the fibre on the car originated from this cotton waste.

A sample of this waste and artificial silk fibres selected therefrom by the scientific expert appearing for the defence were sent to the Director of the Laboratory. A detailed comparison between artificial silk fibres from the waste, the fibre from the car, and fibre from the dress worn by an injured person was made. The conclusion was that the fibre *could not* have originated from the cotton waste, but could have been derived from the dress worn by the injured person.

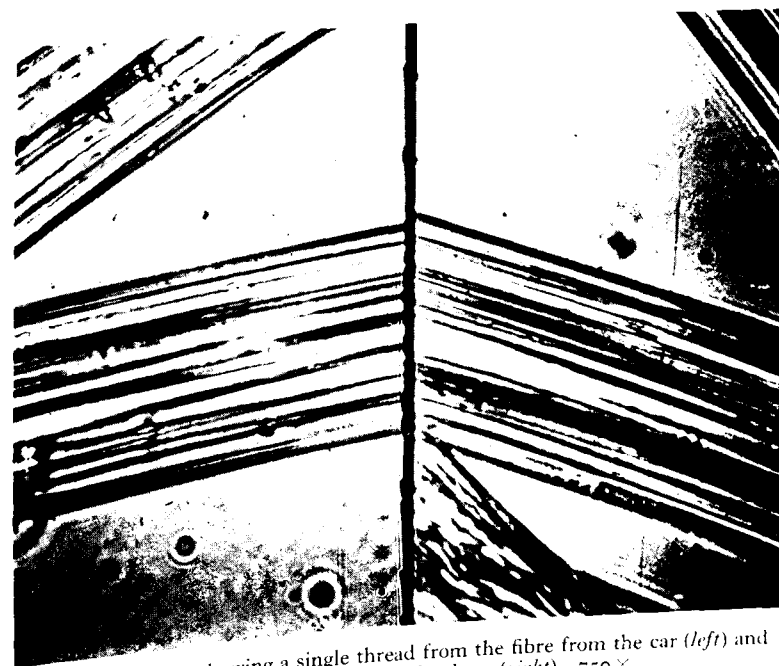
At the adjourned hearing of the prosecution for dangerous driving and failing to stop after an accident, Dr. J. B. Firth, the Laboratory Director, gave convincing and detailed reasons for his conclusions, and despite the evidence of a Professor for the defence that the fibre could have come from the cotton waste, heavy fines were inflicted, and the defendant was ordered to pay considerable costs. The costs included expenses for the attendance of the Director at Court on two days.

It may be interesting to note that in cases where there is an acquittal, no charge is made on local funds for the attendance of an expert from the Forensic Science Laboratory.

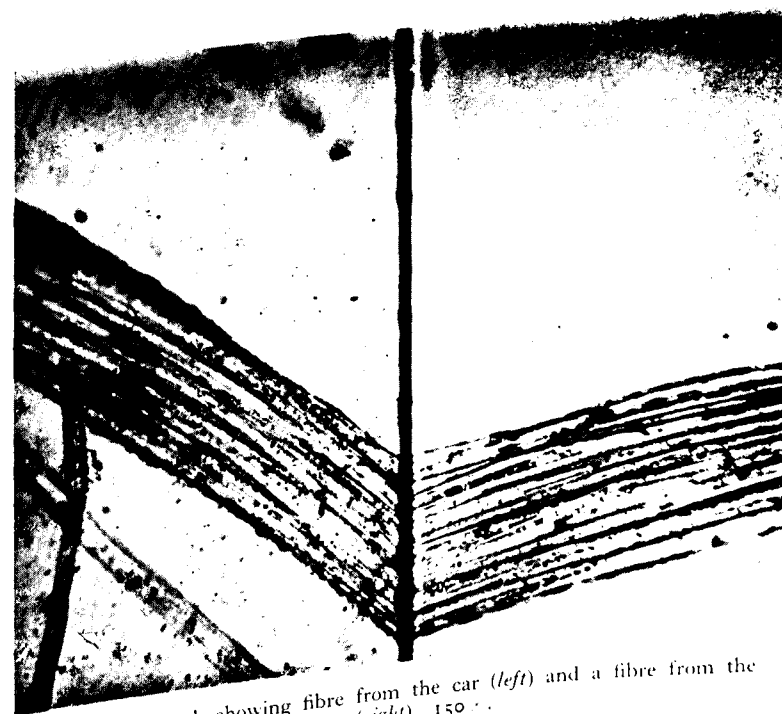
Photographs produced by Dr. Firth to illustrate some of the points in his evidence were:

1. Photomicrograph of a *single strand* from fibre from car, and single strand of fibre from dress.
2. Photomicrographs showing comparison of the fibre from the dress with artificial silk fibres from the waste used by the defendant, and fibre from the car.

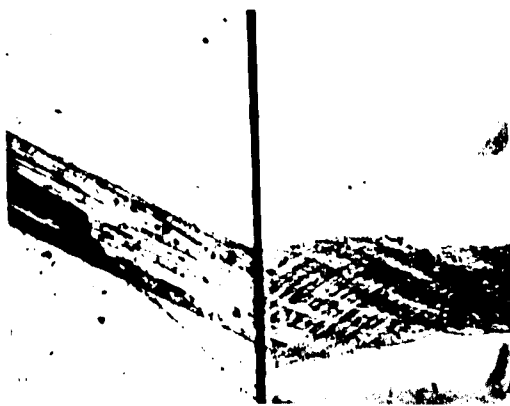
It will be observed that there is a pronounced difference between the texture of the fibres from the waste and that from the dress, whilst that from the car shows very close agreement.



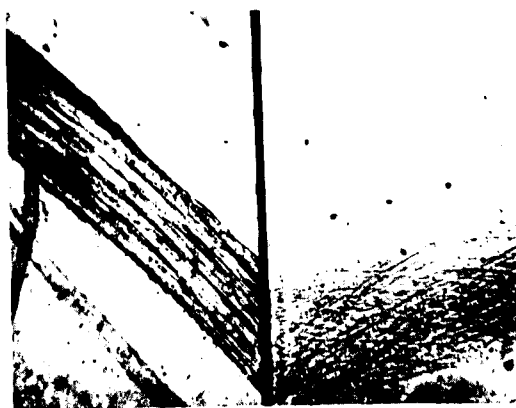
Photomicrograph showing a single thread from the fibre from the car (*left*) and single strand of fibre from the dress (*right*). 750 X.



Photomicrograph showing fibre from the car (*left*) and a fibre from the dress (*right*). 150 X.



Photomicrograph showing a fibre from the car (left) and a fibre from the waste (right). 150 $\times$



Photomicrograph showing a fibre from the car (left) and a fibre from the waste (right). 150 $\times$



Photomicrograph showing a fibre from the car (left) and a fibre from the waste (right). 150 $\times$

Loan Clubs—A Perplexing Problem

By CHIEF INSPECTOR L. RUNDLE
C.I.D., New Scotland Yard

WITH the approach of Christmas, the usual kinds of perennial frauds and other acts of dishonesty which are common to that season will reappear in their same form, and some of them will present the same problems to police. One of the most troublesome cases is the loan club secretary or treasurer who misappropriates *part* of the subscriptions handed to him by members of the club, and who accounts for the balance.

Generally, no difficulty is experienced in dealing with a man who misappropriates *the whole* of the money handed to him; he can, if necessary, be charged with the fraudulent conversion of the gross amount received by him in different sums on different dates and which it was his duty to pay over on a certain day. Evidence of the different sums received on different days may be admitted to show how the gross amount is made up. (*R. v. Balls*, L.R. 1 C.C.R. 328.) Nor is there any difficulty in deciding upon the charge to be preferred when it is known that specific sums have been fraudulently converted; indeed, it is usual to charge three recent specific amounts handed to a defendant on specific dates by specific persons, and to introduce in evidence, or by way of antecedent history, the total defalcations; but the following example of a defaulting loan club secretary will serve to show some of the difficulties which arise when only a *part* of the subscriptions is converted.

Let it be imagined that X was the secretary and treasurer of Y loan club, whose members met at the same public house. He was in no way connected with the management of the public house and he received no salary for his services. It was

customary for the members of the club to pay their subscriptions every Friday evening at the public house, but *X* was willing to receive subscriptions or repayment of loans at any time.

Forty members belonged to the club, each held two shares and paid a subscription of sixpence per share per week for fifty weeks. Fines were also levied for borrowing or non-borrowing, and a small subscription was paid by each member to a house club fund run in conjunction with the loan club for the purpose of accumulating funds to be spent in the public house on the evening of the "share-out," fixed for December 12th.

On December 11th *X* walked into a police station and confessed to squandering about £70 belonging to the members of the *Y* club. He brought £50 with him, which he handed to police. The amount which he had converted represented part of the subscriptions, fines and house fund. In a statement made by him, and which did not prove very helpful, he said that for months past he had been taking unspecified sums of money from the club funds. He had not kept any proper books or banked the subscriptions regularly, but the cards of the members were properly marked up and from them it could be confirmed that the total deficiency was approximately £70. *X* could not remember any particular day when he used the club money or any specific amount he had taken. He just helped himself when he wanted money and he had hoped to be in a position to repay it before "share-out" day. Police handed the £50 to the club and its members were paid £1 5s. each, half the amount paid in by them as subscriptions, but less than half the amount to which each was entitled.

In deciding upon a possible charge in such a case, consideration is given to larceny-servant or embezzlement, larceny-bailee or fraudulent conversion. Larceny-simple must be ruled out and larceny-servant or embezzlement could not be sustained. The fact that *X* did not receive any wages and was not regularly employed would not necessarily prevent him from being a servant, but he was at liberty to go away and amuse himself as he pleased.

In delivering judgment in the case of *R. v. Bowers*, *L.R.* 1 *C.C.R.* 41; 35 *L.J.M.C.* 206, and 10 *Cox* 250; Erle, C.J.,

said: "The cases have established that a clerk or servant must be under the orders of his master, or employed to receive the moneys of his employer, to be within the Statute; but if a man be entrusted to get orders and to receive money where and when he chooses, he is not a clerk or servant within the Statute."

In some circumstances a club secretary might be regarded as a servant if he is employed solely on club business and receiving a regular wage. He could then be charged with stealing—on the day he confessed—the amount involved.

A charge of larceny as a bailee is one which is much favoured by police officers, if only for the reason that the accused can be dealt with summarily. This saves much time of the Courts and the police and it is a good way of disposing of the case. Some magistrates are willing to accept this charge, but it is bad law. The definition of stealing in the Larceny Act, 1916, provides: "A person steals who . . . provided that a person may be guilty of stealing any such thing, notwithstanding that he has the lawful possession thereof if, being a bailee or part owner thereof, he fraudulently converts the same to his own use or to the use of any person other than the owner." This seems to be applicable to the case of *X*, who might be regarded as a bailee, but there is an obstacle which cannot be overcome. It is well-established law that the word "bailee" applies only to a person who is bound to return the specific coins or chattels. In *R. v. Hassall*, 30 *L.J.M.C.* 175, and *R. v. Garrett*, 2 *F. & F.* 14, "the word 'bailee' applies only to those bailments under which it is the bailee's duty to deliver up the specific coin or chattel, and not to a person such as the treasurer of a money club who holds money under an obligation to return the amount, but not the identical coins deposited." *X* was not expected to return the actual coins to the shareholders. It was his duty to pay the money into a bank or make loans. It is possible, in certain circumstances, for a club official to be charged with such an offence, e.g. if he were given a subscription to hand to the treasurer, or to pay into a bank at some specific time. Larceny-bailee, therefore, cannot be applied to the case under review, or for that matter to most cases where club officials misappropriate funds.

What, then, is the proper charge? Section 20 (iv) (a) Larceny Act, 1916, seems to be appropriate. The section reads: "Being entrusted, either solely or jointly with any other person with any property in order that he may retain in safe custody, or apply, pay or deliver for any purpose or to any person, the property or any part thereof, or any proceeds thereof, fraudulently converts to his own use or benefit, or the use or benefit of any other person, the property or any part thereof or the proceeds thereof."

This charge will fit nearly all cases of fraudulent loan club secretaries, but it is not viewed with much favour as it entails committal of a defendant who has hitherto borne a good character, and one who is prepared to plead guilty. For these reasons it can be assumed that some magistrates manifest a willingness to deal with the case as one of larceny-bailee, and although it may be bad law, it is, to say the least of it, a good practical way of disposing of the matter; but neither that charge nor one of fraudulent conversion is appropriate to *X's* case. It has already been explained that there is no difficulty in deciding what charges to prefer when it is known that certain specific sums have been fraudulently converted, but such is not the case here. What it amounts to is that there is a general deficiency. It cannot be said what he has converted; it might be the members' subscriptions or the fines, or part of both. Nor can it be ascertained on what date either was converted, but that is immaterial. In *R. v. Boseley*, (1937) 26 *Cr. App. R.* 99, in which the question of the date to be charged as the date of the offence in an indictment for fraudulent conversion was discussed, it was held to be immaterial whether the date specified was the one on which the defendant actually converted the money or the day that he was found to be insolvent. It is not known on what dates *X* converted the various sums making up the £70, but it is known that on the day before the "share-out" he could not meet his liabilities.

The next point to be decided is the amount with which he is to be charged. There is a total and general deficiency of £70, and if the various reported cases are accepted, as they must be, it would be bad in law to charge *X* with the fraudulent conversion of the sum of £70. In *R. v. Lloyd Jones*,

8 *C. & P.* 288, where a shopman was charged with misappropriation, but it could only be proved that there was a deficiency in the prisoner's accounts, with no proof of the embezzlement of any particular sum, Alderson B. said: "It is not sufficient to prove at the trial a general deficiency in account. Some specific sum must be proved to be embezzled, in like manner as in larceny some particular article must be proved to have been stolen." This judgment refers to a case of embezzlement; but what is said of that offence can be justly applied to fraudulent conversion; in the former it is misappropriation by a servant, in the latter by an agent; and, in *R. v. Sheaf*, (1925) 42 *T.L.R.* 57; 89 *J.P.* 207, which relates to the misappropriation of clothing club funds, it was held that counts charging the fraudulent conversion on a certain date of a general deficiency are bad unless it is the duty of the defendant on the date specified to hand over the lump sum in his hands to the person who is entitled to it. This ruling would seem to be an authority to assume that as it was the duty of *X* to hand over all the money in his possession on December 12th, he could be charged with a general deficiency; but if it is read in conjunction with *R. v. Balls*, it is plain that this should not be done. In any case, what *X* had to hand over was not a "lump sum" but a "general balance" after allowing for loans, etc.

This view is further confirmed in *R. v. Morris*, 24 *Cr. App. R.* 105, where an insurance agent converted £63 out of £78 15s. received by him for and on account of an insurance company. It was held: "It is not proper to charge the accused person with the fraudulent conversion of a general balance."

It is, therefore, improper to charge *X* with fraudulent conversion of the general deficiency of £70 unless it can be proved how that sum is made up and how it was received, *i.e.* prove that he received specific sums—no matter how small—from specific persons on specific dates.

X had to account on December 12th for all the moneys received by him. There are two good reasons why he cannot be charged with converting £70; it would be cumbersome to call the forty shareholders of the club to allege that he had converted part of their subscriptions, and even though this

course were adopted, it could not be proved that he had converted part of each member's subscriptions, plus the fines and the house fund. It might be said in defence that he had only converted part of the subscriptions of some of the shareholders; but which shareholders? This would prevent police charging him with fraudulent conversion of the last subscriptions of, say, *A*, *B* and *C*, as it could be argued with justification that it was no more their subscriptions than those belonging to *D*, *E* and *F*, or any other of the members.

What, then, is the solution to this perplexing problem? There does not appear to be one. That being so, can police take the responsibility of allowing a self-confessed thief who wants to be prosecuted to go free?

It has been shown that a charge of larceny-bailee is bad law and a mere artifice in the majority of cases, but if magistrates are prepared to take the risk of convicting on that charge, it lightens the burden of the prosecution and saves the time of the courts. It does not, however, solve the riddle of the case of *X*.

Each case must depend upon its own facts. In general, the only proper charge is fraudulent conversion, and in most cases, at least one specific sum can be established; but where a stupid *X* cannot remember dates or amounts—and they cannot be ascertained—then his faulty memory and the manner in which he helped himself to the club funds will make it difficult for the prosecution to prove any offence against him.

Metallurgical Examinations in Criminal Cases*

By GUSTAV W. PIRK

Consulting Metallurgist, Scientific Crime Detection Laboratory, Bureau of Police, New York

PIECES of metal frequently play an important part in the solution of a crime. At times a physical examination or a chemical analysis will suffice, but very often a study of the fine internal structure of the metal is also of considerable importance. Although in a given sample a chemical analysis will disclose the percentage of each element present, it tells nothing about the way these elements are combined or arranged within the specimen. It is the form, size, and arrangement of the various microstructural constituents which are of particular significance to the forensic metallurgist.

By way of illustration suppose that two pieces of ordinary brass are presented for laboratory examination to determine whether or not they are identical. The results of a physical examination and a chemical analysis reveal that they are similar in external form and appearance, and that both contain 70 per cent. copper and 30 per cent. zinc. The tendency at this point would be to declare the two pieces of metal identical. However, until a microscopic examination has been made the question of identity cannot be considered completely answered. Therefore, a sample is taken, polished, etched, and studied under the microscope. Observation is made of such features as the size and shape of the grains composing the sample, and also of such abnormalities as non-uniformity in grain size, impurities (which may be present as separate constituents), porosity, and mechanical defects (*e.g.*, cracks of microscopic

* Reprinted from *The Journal of Criminal Law and Criminology* by courtesy of the author and of Mr. Fred E. Inbau, Editor.

Obviously, then, these two samples of brass are different, because the arrangement of the grains which form their microstructure differ. If they were from the same piece of metal both would be similar in their microstructural details. To the metallographer the well-formed grains which are uniform as to size, geometrical outline, and distribution, indicate soft or annealed brass; while on the other hand, the grains which are elongated into fibres indicate that the metal has been cold-worked, that is, it has had its shape altered by hammering, rolling, or drawing at room temperature—low compared to annealing temperatures (850° F. to $1,000^{\circ}$ F.), which would cause the well-formed grains observed in the first sample. (For a rather simple example of how grain structure characteristics may serve as the basis for a comparison between two pieces of metal see Figure 1.)

Microscopic examinations are especially valuable when the available pieces are small, for then the physical properties such as tensile strength, ductility, etc., cannot be determined. In addition, the tensile test is destructive, as it is necessary to pull the test piece apart in order to measure this property, whereas in a microscopic examination the sample is not destroyed but is carefully prepared and studied in its normal and unaltered condition. This statement, however, should not be interpreted as meaning that the tensile or other similar destructive tests have no place in criminal investigation; it merely is intended to indicate the greater advantages of a microscopic examination, especially when only a limited amount of material is available or when other tests prove inadequate.

VALUE OF THE SPECTROGRAPH

Although this paper is primarily concerned with the

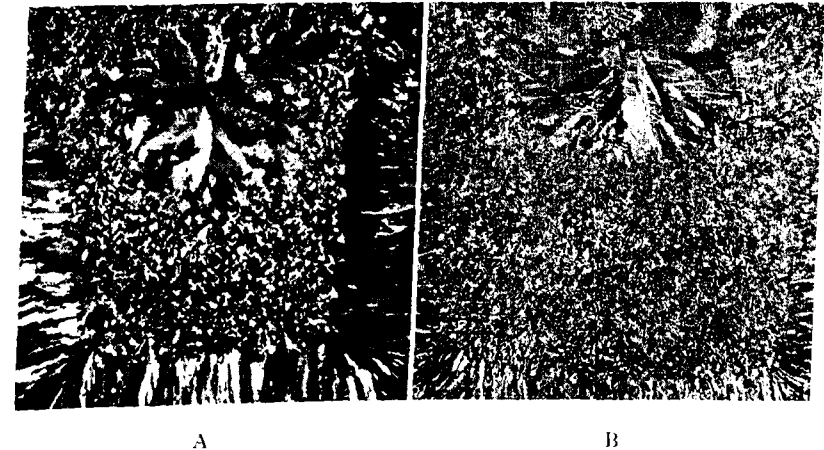


FIGURE 1

Cross-sections of copper bars, illustrating the effects produced by different rates of cooling during the solidification process. In general, the more rapid the rate of cooling, the finer the grain sizes will become. In A observe the effect of rapid cooling of the centre portion of the bar as compared with the moderately slow cooling rate of the outer portions. In B there was a rapid cooling of the centre but a moderately rapid cooling of the surrounding area.

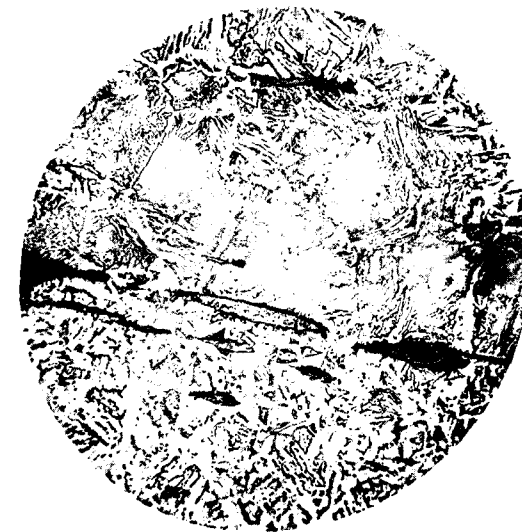


FIGURE 2

In the case in which the above illustration was used one of the parties contended that failure of the machine part was due to defective steel. The other party contended it was attributable to faulty design. The relatively large dark areas across the photomicrograph represent slag inclusions, possibly manganese sulphide; and the structural non-uniformity is indicative of segregation. The mechanism of the failure was probably something on the following order: the inclusions acted as notches and caused concentration of stress in these areas, resulting in the formation of a fatigue crack. (Note the crack at the left starting from one of these inclusions; and also observe the several cracks appearing at the right.) During operation of the machine the cracks gradually increased in size, reducing the effective cross-section of the metal and thus increasing the stress on the remaining sound metal. When the cracks became sufficiently extensive so that the sound metal could no longer bear the load, it snapped suddenly. The accompanying structural non-uniformity referred to establishes the cause of failure.

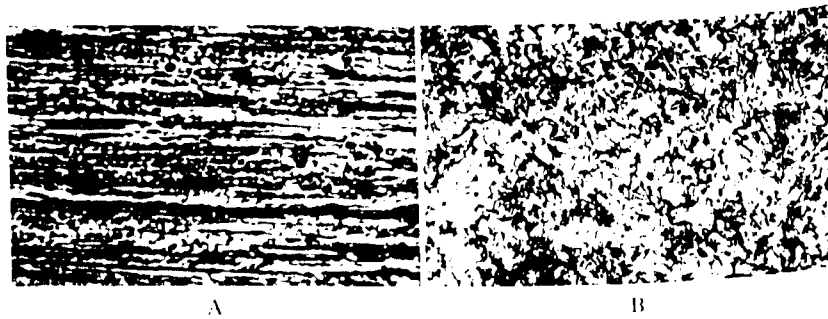


FIGURE 3

(A) Longitudinal section of a hard (drawn) copper wire, .049 in. in diameter. Note how the grains have been elongated into thin fibres.
 (B) Transverse section of same wire. Note the indefinite structure and the marked difference in appearance when compared with A.

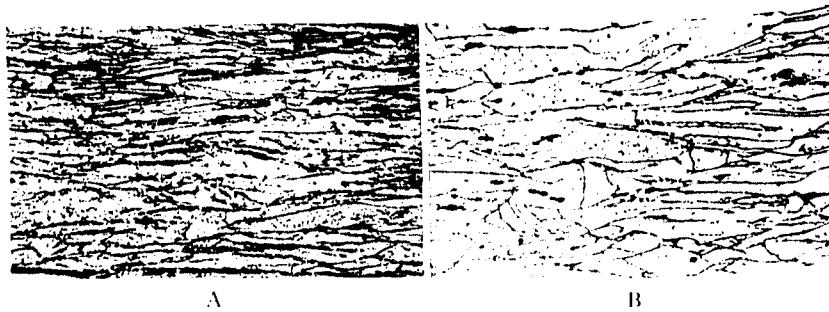


FIGURE 4

Longitudinal sections of two copper strips. Although the cross-sectional areas of both specimens were reduced the same amount by the rolling process, the initial grain sizes differed, and this fact, which is apparent in the illustration, indicates conclusively that the two pieces are not of identical origin.

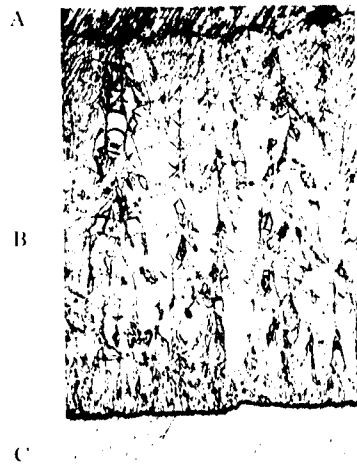


FIGURE 5

Transverse section of copperplated stainless steel. The portion below the lower heavy black line is the stainless steel base (C) while the area (B) above is the copper deposit and area (A) represents the cast on mounting material. The fine irregular traverse lines in the copper deposit indicate the number of interruptions in the electro-plating process.

microscopic examination of the constituents of metallic samples, it should be mentioned that the application of the spectrograph* is particularly well suited to problems which involve the question of the probable identity of two or more specimens of metal. This method of comparison in most instances exceeds the sensitivity of chemical methods for qualitative analysis. Therefore, in the determination of small quantities of admixtures foreign to the principal components of the metal, a spectrographic analysis may be of assistance when other methods of comparison would fail. Another advantage of the spectrographic comparison is that extremely small metallic specimens will usually suffice for a qualitative comparison.

The preparation of the sample and the correct interpretation of the details which are observed in the subsequent microscopic examination form very important and necessary steps before the results of the examination can be presented as court evidence. It is this phase of the problem which must now be considered.

A. SELECTING THE SAMPLE SPECIMEN

The metallographic sample, like any other sample, must be truly representative of the material which is being studied. If not, the most exacting polishing technique and the most expert microscopic examination will be wasted effort. In most instances the purpose of the examination will determine the location from which one or more specimens are to be cut. A few general rules, however, may be laid down which will aid in the proper selection of the sample.

In investigating the characteristics of a piece of metal, the examiner must be careful to collect an adequate number of samples. For instance, when studying a bar or strip of metal, or a piece of wire, sections should be taken not only from both ends but at several points between the ends, for even within the same piece of metal there will be some differences in grain structure. But, by taking a sufficient number of specimens from

* See also "The Use of the Spectrograph in Criminal Investigation" by Prof. F. H. Newman, D.Sc., in *THE POLICE JOURNAL*, Vol. XI (1938), pp. 343-9.

various parts of the metal object, its particular characteristics can be established.

Whenever two metal objects are to be examined with a view to determining whether or not they had been one piece originally, it is highly desirable, of course, to make the comparison examinations as near as possible to the fractured or cut ends.

Sometimes legal questions arise as to liability or responsibility for the cause of a failure in a metal part. In such cases the technician may be asked to determine whether or not the failure resulted from defects resident in the metal, from faulty design, or from some other cause. When such is the question at hand the specimen to be examined should be taken as close as possible to the point of fracture or initiation of failure. It is also advisable to obtain one or more specimens at a point in the sound part of the metal considerably removed from the failure, in order to compare the structures of the sound and the defective portions. Comparisons of this kind generally yield valuable information. (Figure 2 is a typical example of the grain structure found at a point of fracture.)

Notches are of particular significance in diagnosing failures since they cause stress localisation and consequently act as stress raisers, thus leading to what is known as a fatigue failure.* This is especially true where the parts involved are subjected to vibration or cyclic applications of a load. Sharp corners, tool marks and deep scratches can also act as stress raisers. In legal cases which involve the question of failure these should be looked for near the point of failure. For example, an insignificant-looking scratch or nick may start a crack which will propagate itself under load, gradually weakening the structure through the reduction of the load-sustaining area until sudden and complete fracture finally occurs.

Such a fatigue fracture has a characteristic appearance. A portion of the fractured surface appears silky or velvety, due to the polishing effects resulting from adjacent walls of the crack rubbing together during the period in which the crack has been propagating itself; while the remainder of the surface which

* Fatigue failure is the phenomenon of progressive fracture of a metal by means of a crack which spreads under repeated cycles of stress.

failed suddenly after the remaining effective cross-sectional area was insufficient to carry the load appears as a bright, shiny, crystalline surface. This phenomenon is somewhat inaccurately described by the popular expression "the metal crystallised," for in truth the metal was crystalline to begin with, and the failure is not due to the formation of crystals as might be inferred from this phrase, but to the breaking down or failure of the original crystalline aggregate.

In all cases, before destroying a fracture for metallographic examination it should be photographed and carefully examined for any typical or special features. For example, in tensile fracture, which is a fracture due to excessive tension, there will generally be a "necking down" or reduction of the cross-sectional area at the point of separation. Of course, microstructural defects, such as those already discussed, may be responsible for tensile failure at loads which the metal should normally sustain, and under such circumstances these defects should be carefully sought for.

Having decided upon the location of the particular sample, the type of section to be cut and examined must then be decided upon. The two most usual types of sections are transverse and longitudinal. A transverse section (*i.e.*, one cut perpendicular to the outer surfaces) shows the variations in microstructure which exist from the outside to the centre, while a longitudinal section (*i.e.*, one cut parallel to the outer surface) shows the characteristics and variations found at a given distance below the surface. In either hot-worked or cold-worked metals both longitudinal and transverse sections should be examined.

A study of Figure 3 will show the basis for recommending both types of sections in cold-worked products. The grain structures illustrated in this figure are from the same piece of hard-drawn copper wire. A longitudinal section (Fig. 3A) shows the grains of copper elongated into fibres as a result of the normal wire-drawing process. This elongation of the fibres indicates the direction of cold working (the direction in which the wire was drawn). A transverse section of the same piece of hard-drawn copper wire (Fig. 3B) shows none of the directional indications present in the metal but rather only a

cross-section through the many thin fibres present in the specimen. If a comparison is made of two pieces of cold-worked wire the probability of arriving at a dependable answer is much greater by a comparison of longitudinal sections than by comparison of transverse sections. (See Figure 4 for a comparison of longitudinal sections from two copper strips.)

The information obtained from transverse sections can be summarised as follows: (1) Variation in structure from the centre to the outside surface of the specimen; (2) Distribution and size of non-metallic impurities throughout the section, such as oxides, sulphides, etc.; (3) Surface alterations in general, such as decarburization* as the result of heating of ferrous material and the presence of sulphur penetration in copper; (4) Depth of surface imperfections, such as cracks, pits, and fabricating defects; (5) Depth and penetration of corrosion as well as any alteration in structure thereby produced; (6) Thickness of a protective coating, such as an electro deposit of nickel, copper, chromium, cadmium, or zinc; or of hot-dipped coatings, such as galvanised zinc coatings on steel; (7) Structure of the protective coating. (If the applied protective coating forms an alloy with the base metal as in the case of zinc with iron and tin with copper, then the structure and thickness of this intermediate layer can be determined provided the coating has been applied by the hot dip process, *i.e.*, in a molten state.)

In the case of electro deposits the number and types of deposit can also be determined, since every time the plating process is interrupted and re-started, a line of demarcation appears even though the same metal is used. For example, if there are ten layers of copper deposits on a steel rod, then nine lines of demarcation will occur within the copper plate. (Figure 5.)

Longitudinal sections reveal in general the following information: (1) Extent of deformation of non-metallic impurities and the arrangement of the non-metallic inclusions and oxides; (2) Degree of plastic deformation as is shown by the

* The removal of carbon (usually in reference to the surface of solid steel) by the action of a medium (normally oxidising) which reacts with carbon is known as "decarburization."

amount of grain distortion due to such treatment as wire drawing; (3) Presence or absence of banding, that is, layers of different composition in the structure; (4) The perfection and uniformity of any heat treatment, as, for example, uniformity of grain size in copper and brass and the uniformity of structure in heat-treated steel and alloys in general.

In reporting the results of a microscopic examination the location of the samples should be accurately stated, especially in describing the structure as shown by photomicrographs.

B. CUTTING THE SPECIMEN

Having decided upon the location and type of section, the next step in the preparation of metallographic specimens is that of cutting the sample.

During the cutting of the sample from the object submitted, care must be exercised to avoid changing the structure in any way. Heat-treated alloys, such as steel, are very susceptible to heating effects, and even careful grinding on an uncooled grinding wheel may generate sufficient heat to induce structural changes. Therefore, to minimise the heating effect, a copious supply of cooling water should be used. During cutting, the cutting tool must be sharp and should be well lubricated to minimise dragging of the metal by the edge of the cutting tool.

Whenever possible the specimens for metallographic examination should be not more than $\frac{1}{2}$ to 1 inch square and from $\frac{3}{8}$ to $\frac{3}{4}$ inch thick, for if the height of the specimen is greater than its width, it becomes difficult to maintain a flat surface during polishing. On the other hand, if the specimen is cut smaller, it is almost impossible to polish the surface without producing excessive rounding of the edges. Of course, it is not always possible to obtain samples of the most convenient size, and at times wire, sheets, strips, fragments of metal, and other small objects must be mounted either in clamps, fusible alloys, or in mounting plastics. In cases in which it is not necessary to study the structure to the extreme edge of the specimen, the edges may be bevelled so as to prevent tearing of the polishing cloth by the sharp corners.

When it is necessary to cut specimens from very large sections, flame cutting must occasionally be resorted to but with the following strict precaution. The section thus removed must be sufficiently large so that it can be re-cut to the proper size by some other method. During oxy-acetylene cutting the intense heat generated completely obliterates any of the distinctive original structural peculiarities along the flame-cut edge and its vicinity, and thus makes the results of any microscopic examination of these areas worthless. This method is recommended only as an extraordinary procedure, to be used under expert supervision and with the greatest care.

The following rules should be observed in connection with all cutting procedures. Hard and brittle materials may be notched and then fractured by means of a sharp blow. That part of the section held in the jaws of a vice or clamp during the cutting process is strained and deformed and should not be used for a metallographic examination. Furthermore, before proceeding with the polishing procedure all traces of oil and grease must be removed by washing the specimen with lead-free petrol, carbon tetrachloride, or some other solvent. Rusty fractures may be cleaned with a dilute solution of ammonium citrate or phosphoric acid. (Table I lists methods for cutting various metals.)

C. MOUNTING TEST SPECIMENS

When mounting test specimens, the purpose of the particular micro-examination will in most cases determine the type and method of mounting. Among the more important factors which determine the type of mount selected are the size and shape of the specimen and the maximum temperature to which it may be subjected without bringing about changes in its microstructure. Of course, in many cases the equipment available for mounting will be influential in determining the procedure adopted. The methods of mounting test specimens can be conveniently divided into the following four groups: (1) Mechanical mountings; (2) Electroplated mountings; (3) Cast and cement-like compositions; (4) Thermo-plastic and thermo-setting materials.

(1) *Mechanical Mountings.* Various types of clamps are available for mechanical mountings. For specimens having straight sides, parallel steel clamps are quite satisfactory. Round specimens, which are sectioned transversely, may be held in certain circular type clamps, but longitudinal sections of round wire are usually best mounted in parallel steel clamps. When the extreme edges of the specimen are to be examined at either medium or high power, clamps are practically indispensable. In most cases it is possible to mount only one section in each clamp, which often requires handling an inconvenient number of specimens, but occasionally two or more specimens can be mounted together and the number of mounts thus reduced.

TYPES OF CLAMPS

The laboratory technician will find the following considerations of importance when called upon to select clamps for mechanical mountings. The most satisfactory type of clamp to prevent rounding of the edges is one which has the same degree of hardness as the specimen being examined, and the degree to which the edges are rounded during polishing is proportional to the difference between the clamp and the specimen.

There are, however, other factors which must be considered apart from the relative hardness of the clamp material. In the first place, if the sides of the specimen are irregular, it will be difficult to obtain close and uniform contact, with the result that a trace of the etching reagent will be held in the crevices between the specimen and the clamp and will be held in the crevices between the specimen and the clamp and may later gradually exude out, thus staining the etched surface. Fortunately, with steel this difficulty can be overcome by placing thin sheets of a softer filler material, such as copper, between the specimen and the clamp and, when several units, such as sheets, are placed in a single mount, this filler can be placed between these units as well. This process will not only increase close contact but will help to preserve any surface irregularities of the specimen.

Sheets which are to be mounted should first be tightly bound into a pack in order to prevent excessive occlusion of the etching reagent and the polishing abrasives. Pores and voids may be filled by immersing the pack in molten paraffin or separating them with a thick piece of blotting paper. The last procedure, however, has the disadvantage that the paper may hold abrasive which will gradually become dislodged, thus making subsequent polishing difficult.

Another factor which must be considered is the composition of the clamp. At times, clamps of a dissimilar composition interfere with the etching process, as, for example, stainless steel specimens mounted in

ordinary carbon steel clamps, but in most cases the use of two kinds of metals will not affect the etching process. With the usual types of steel the interposition of copper sheets will not interfere with the etching process since the usual etching reagents, such as picric and nitric acid in alcohol, scarcely attack copper. Similarly, copper may be mounted in steel clamps, since ammonia plus hydrogen peroxide used to etch copper only attacks the steel to a slight extent. When acidic or other reagents are used, which attack the steel clamps, it may be necessary to remove the specimen from the clamp during the etching process.

(2) *Electroplated Mountings.* Strictly speaking, electroplating is not a mounting process, but an intermediate step practised to prevent tearing off or rounding of the edges of small wires, fractures, or specimens of irregular contour which must be examined out to the extreme edge. Iron, steel, and the ferrous materials are generally copperplated, whereas the precious metals are frequently plated with silver, gold, or nickel, depending on the nature and the hardness of the metal or alloy being prepared for microscopic examination. The fractures and surfaces of non-ferrous materials such as copper, brass, bronze, and nickel are often plated with silver. A frequent and satisfactory procedure with copper and its alloys is either to copperplate or first to nickel-plate and then to copperplate.

The important fact to keep in mind in selecting the proper plating material is that it should be somewhat softer than the specimen which is to be studied in order that differential polishing of the material may not take place, thus obscuring the edge of the specimen. An equally important restriction is that the electroplate should not react electrolytically with the metal of the specimen.

(3) *Cast and Cement-like Compositions.* Low melting point alloys, sulphur, and cement-like compositions, such as sealing wax, litharge and glycerine, plaster of Paris, DeKhotinsky cement, and iron-ammonium-chloride cements, are used to mount certain types of specimens.

The specimen which is to be mounted is placed in a mounting ring and the mounting medium cast round it. A piece of brass or iron pipe $\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter and $\frac{1}{2}$ to $\frac{3}{8}$ inch high forms a convenient mounting ring. In selecting the mounting material some thought should be given to its

resistance to attack by the etching reagent which is subsequently to be used on the specimen, as well as to the effect of any electrolytic action between the mounting material and the specimen at the point of contact. Furthermore, any heat effect or tempering action on the specimen that may result from the molten mounting material constitutes an equally important consideration in this selection. This consideration is especially important in the case of hardened steel and some heat treatable alloys. Copper, brass, nickel, soft steel, iron, Monel metal and electroplated objects can all be mounted in fusible metal alloys which are cast round the specimen.

FUSIBLE METAL ALLOYS

When cast or cement-like mounts are employed, experience has shown that the following materials are the most advantageous. Ferrous metals and alloys can be mounted in solder composed of 50 per cent. tin and 50 per cent. lead (melting point approximately 425° F.). A more fusible alloy, known as Wood's metal, is frequently used because its lower melting point (154·4° F.) has less tendency to produce a tempering action. (The composition of Wood's metal is bismuth 50 per cent., cadmium 10 per cent., antimony 25 per cent., tin 12·5 per cent.) Yet another alloy (melting point 203° F.) used by some is composed of bismuth 52·5 per cent., lead 31·5 per cent., and tin 16 per cent. Zinc castings have been successfully mounted in cadmium-zinc *eutectic* (melting point 508° F.) which contains cadmium 82·5 per cent., zinc 17·5 per cent. It has about the same etching and polishing characteristics as zinc base castings. This alloy should never be heated over 572° F. as at that point very poisonous fumes are liberated. Brasses have been successfully mounted in lead-tin alloys when the etching reagent which is to be employed consists of ammonia plus hydrogen peroxide.

When the fusible alloys are not available, sulphur may be used as a mounting material since it melts at 264° F. and is not attacked by most cold etching reagents. For this reason it forms a good mounting material for aluminium, magnesium, and their alloys. Sulphur has, however, one disadvantage which may be objectionable at times: that is, it may cause pitting of steel samples or tarnish copper base alloys. But by using the following procedure these effects may be overcome. A brass ring of convenient size is placed on a smooth steel plate and enough mercury poured in to form a pool about $\frac{1}{4}$ and not exceeding $\frac{1}{2}$ inch deep. The specimen is pushed through the mercury with the surface which is to be polished down and held in this position. Molten sulphur, which solidifies rapidly, is then poured in the ring. After solidification the ring is slid to the edge of the steel plate, and the mercury collected in a glass or porcelain dish. The use of this method

prevents the sulphur from coming into contact with the grinding and polishing surfaces and consequently prevents smearing. On the other hand, the specimen is not in contact with the brass ring, but the surface which is to be polished is level with the edge of the ring.

The fusible alloys in general, and especially Wood's metal, are desirable because of: (a) Their adaptability to a great variety of specimen sizes and shapes; (b) Their close contact between the specimen and mounting material, which prevents occlusion of the etching reagent with subsequent exudation and staining; (c) Their relatively low melting temperature, which permits use even for specimens subject to tempering; (d) Their inertness to etching reagents, such as picric acid in alcohol and some others; and (e) Their moderately good preservation of the flatness of the edges of the specimen.

(4) *Thermo-Setting and Thermo-Plastic Materials.* The fusible alloys have one disadvantage which at times is quite troublesome: namely, that materials, such as Wood's metal, have a tendency to smear on to the specimen surface during the polishing process. This difficulty has, perhaps more than anything else, led to the use of the synthetic plastics as metallographic mounting materials.

The synthetics may be divided into two groups: thermo-setting resins (*i.e.*, those that "set up" into a more or less permanent and rigid state under the influence of pressure and heat), and thermo-plastic resins (*i.e.*, those that do not "set up" permanently under the application of heat and pressure, but will flow each time that the proper combination of heat and pressure are re-applied). The thermo-setting materials are characterised by the bakelites (the phenol-formaldehyde and the aniline-formaldehyde groups) while the thermo-plastic materials are characterised by the poly-styrenes and the methacrylates or Lucite groups. Both types may be readily moulded, but the thermo-setting resins are somewhat harder. The only difference in handling the two types is that, because of their tendency to flow, the thermo-plastic resins must be cooled to 70°-80° C. before being removed from the mould, whereas the thermo-setting resins may be taken out just as soon as the proper moulding cycle has been applied and the resin has "set up." The thermo-plastic resins are for the most



FIGURE 6
Typical Illustration of Transparent Synthetic Resin Mounting
(Illustration and half-tone kindly lent by Mr. Adolph I. Buehler, Chicago, Illinois.)



FIGURE 7
An illustration of the value of making a microscopic examination both before and after etching.
(A) An unetched (though polished) longitudinal section of a piece of flat copper strip containing a surface defect known as a sliver. The black particles represent copper oxide which was present in the metal in an excessive amount.
(B) The same longitudinal section after being etched with ammonia plus hydrogen peroxide. Although the defect in the metal is still visible, and although the etching reagent developed the small, uniform grain size of the specimen, it practically obliterated the oxide particles. Nevertheless, this characteristic appearance of the surface after etching is significant and valuable as an indication that the metal had been properly processed during fabrication and that it had been softened or annealed after rolling.

(face p. 446)



FIGURE 8

Copper-coated steel wire cross-sections examined as part of the evidence in the Valier Coal Mine Bombing case. 1 and 2 are cross-sections from opposite ends of a small piece of wire (.486 in. in length) cut from a specimen of wire found in the workshop of the suspects in this case. 3 is cross-section of wire on the bomb timing mechanism adjacent to a cut and fracture end which in its physical appearance matched the ending of the wire in the suspects' workshop. 4 is composite tracing of copper-steel junctions 1, 2, and 3, revealing that the junctions of all three specimens are identical in their lower portions and very similar throughout the remainder. (The average diameter of 1 was consistently smaller than 2; and 2 consistently smaller than 3.) See Wilson, C. M., *op. cit. supra* note 3 at p. 3.

part transparent, which makes it possible to polish down to a predetermined point on the specimen, a possible advantage in certain criminal cases. (See Figure 6.) However, because of their tendency to flow and because of their relative softness, polishing should not be pushed to the point where the sample gets hot or excessive rounding of the edges may occur.*

As far as the resistance to etching reagents of the two types of resins is concerned the thermo-setting resins are resistant to most materials, with the exception of strong oxidising acids and strong alkalis. The thermo-plastic resins on the other hand may be only somewhat attacked by strong alkalis and strong oxidising acids, but are generally quite soluble in organic solvents.

The equipment needed for processing the synthetic resin mounting materials may be obtained from the regular scientific supply houses. In using these types of mounting material the temperature and pressure should be controlled. The thermo-setting resins are generally heated to 140° C. for 8-12 minutes under a pressure of 2,500 lb. per square inch. The thermo-plastic resins are usually subjected to the same pressure as the thermo-setting resins, but somewhat higher temperatures (145°-160° C.) are applied for a shorter time (6-7 minutes) and, as mentioned previously, must be cooled to a temperature of about 70°-80° C. before they are removed from the mould.

(To be continued)

* In the use of thermo-plastic and thermo-setting materials, the following table showing the comparative properties of some synthetic resins may prove of value:

Thermo-Plastic Type	Brinell Hardness*	Hardness Comparable to
Poly-styrene I	19	Annealed aluminium
Poly-styrene II	22	
Methyl Methacrylate (soft)	17-20	Annealed copper
Methyl Methacrylate (hard)	27	
Thermo-Setting Type		
Aniline Formaldehyde	30	Semi-hard copper
Pheno Formaldehyde Plus Wood Flour	42	

(* Brinell hardness is obtained by using 10 mm. ball and a 500 Kg. load.)

Also see Wymann, L. L., "The Plastics for Mounting of Metallographic Samples," *Proc. A. S. T. M.* 38, Part I: 511 (1938).

Towards Promotion

No. II. THE QUALIFYING EXAMINATIONS

IN recent years some criticism has been focussed on the system adopted by all professional bodies, and in the public services, by which examinations in educational and professional subjects are imposed on candidates for entry to the particular profession or branch of the public service, and for advancement within its ranks. The critics urge that selection and advancement by examination rules out from consideration that large number of people who, in their school or student life, failed to reach average, or were below average, in the academic standards, but who nevertheless showed, and still show, those qualities of judgment, resourcefulness and courage which are so necessary in the leadership and direction of the common life and work of the nation. There is much to be said for this, and other, forms of criticism of what has been termed the examination fetish. But the criticism is not convincing, and if to selection by examination be added a process of further selection by scrutiny of personal and non-academic qualifications, a compromise is possible and a true selection made. This is the aim of that section of the Police Regulations which governs the selection of candidates for the police service, and their subsequent advancement in rank. Before proceeding to analyse the subjects upon which Police Examinations are based, we will quote the Regulations which are pertinent to our discussion in this article:

27. Promotion up to the rank of inspector shall, subject to qualifying examinations in police duties and educational subjects, be by selection.

28. (1) No member of a police force shall be promoted to the rank of sergeant or inspector, unless

(a) if a constable, he has completed five years' service

TOWARDS PROMOTION

and has for the last two years been free from punishment other than reprimand or caution, and if a sergeant, he has completed two years in that rank free from punishment other than reprimand or caution;

(b) he has passed, after having completed not less than four years' service, an examination in educational subjects and an examination in police duties;

(c) he has had not less than one year's service in the performance of ordinary outside police duty:

Provided that a member of a police force may be promoted before he has completed 5 years' service, or may be permitted to take the qualifying examination before he has completed 4 years' service if the Chief Officer of Police, or, in the case of a Borough police force, the Watch Committee, is satisfied that he possesses special qualifications for the performance of the particular duties on which he is to be employed.

(2) The requirement of paragraph (c) of this Regulation may be dispensed with in the case of a man who was serving on August 20th, 1920: and the expression "outside police duty" shall include detective duty.

(3) For the purposes of this Regulation, the expression "years' service" means years of approved service as defined by Section 7 of the Police Pensions Act, 1921.

29. The examinations shall be conducted by means of written papers and/or oral examinations upon the following subjects:

(1) Examination in educational subjects, including

(a) Reading aloud,

(b) Writing, including handwriting, spelling, punctuation, and the writing and composition of reports,

(c) Arithmetic, for promotion to sergeant, first four rules, simple and compound, including imperial weights and measures, and simple fractions; for promotion to inspector, first four rules, simple and compound, including imperial weights and measures, reduction, vulgar fractions and decimals (excluding recurring decimals), ratio and proportion, averages and percentages,

(d) geography, especially the geography of the British Isles,

(e) general knowledge and intelligence,

(f) any special subject or subjects which may be required in the circumstances of a particular force or forces;

- (2) Examination in police duties, including
- (a) Criminal law,
 - (b) Evidence and procedure,
 - (c) general statutes, regulations and orders,
 - (d) local regulations and byelaws,
 - (e) extra duties performed by the particular force concerned,
 - (f) principles of local government.

(3) The papers on the educational subjects (b), (c), (d) and (e) shall be set and marked by a central examining authority approved by the Secretary of State, or such other competent examining body as the Police Authority of the force may adopt. The examinations in police duties, and, where necessary, the educational subjects (a) and (f), shall be conducted by the Chief Officer of Police, or, where the size of the force permits, a Board of officers acting under his directions.

(4) The examinations shall be held in large forces periodically, at least once in each year, and in smaller forces as often as may be required, and, subject to the provisions of Regulation 32, any sergeant or constable who has completed 4 years' service and has given due notice to the Chief Officer of Police, shall be entitled to sit for the respective examinations for these ranks.

30. The object of the required examinations is to test the educational and theoretical knowledge of the candidate, and the fact that he has passed them shall not entitle him to promotion, or to promotion before another member of the force who has passed the examination at a later date.

31. After each examination a list giving the names of the candidates who have passed shall be published to the force or forces concerned. The result of each examination shall be marked on the record of each candidate so as to show that, on the date in question, he passed or failed to pass, and a list shall be kept of all members of the force who have passed the respective examinations.

32. A candidate who fails to pass the examination in educational subjects or police duties shall be informed of the subject or subjects in which he has failed to pass, and failure to pass shall not disqualify a candidate from presenting himself at a future examination after an interval of not less than a year.

Regulation 29 prescribes two examinations, one in educational subjects and one in police duties. Paragraph (3) of this Regulation indicates the appointment of a "central

examining authority," but this body has not yet been appointed. The explanation lies largely in the reluctance of police authorities to hand over any more of their diminishing powers to the central government, but equally to the fact that Chief Constables and, in the case of the larger forces, the promotion examination boards, have succeeded in conducting the examinations in a manner which has been mutually satisfactory to service efficiency and to the general body of sergeants and constables within the forces.

Success in examinations depends not so much on educational attainment, and mental alertness in the examination room, as on the degree of study and research which precede the date of the examination. A student who aspires to a University degree or other academic distinction must spend a period of years at some university institution or college, devoting his whole time to study and research, storing up the knowledge by which alone he can hope to show, in the subsequent examinations, that he merits the award. In Regulation 29 the field of subjects is comprehensive. But provided the educational background is sound, and his learning of law and police duties, and his development in outlook on human affairs, planned on sound lines, the prospect of passing the examinations is within the compass of every constable.

THE EDUCATIONAL EXAMINATIONS

An analysis of the subjects in the educational examination can best be made by reference to a typical set of question papers, adding model answers to the questions, and appending such comments as are necessary for the guidance of the student. As the regulation indicates, the question-papers will be divided into six sets, dealing separately with (a) reading; (b) writing, which will probably take the form of dictation and a précis or essay; (c) arithmetic; (d) geography; (e) general knowledge, and (f) special (local) subjects. The educational examination will probably be spread over a day, three subjects being taken in the forenoon and two after the midday interval. This gives time for candidates to do justice to papers which contain eight or nine questions, of which six must be answered to qualify for marks.

(a) *Reading aloud:*

For this subject each candidate may be required to read a short passage, on which marks will be awarded by the adjudicator for poise, modulation, diction, expression and accuracy, with a maximum of 50. Here are specimen tests which enable the candidate to show his ability to speak in a way which impels others to listen to what he has to say, and also enables the examiner to detect those flaws and errors in the spoken word of which so many of us are capable:

"A constable's eyes must be ever at work. The faces that pass him should always be scanned, though never stared at. He must learn to photograph the characteristic movements and appearance of people, so that he may learn to recognise a man at one glance from a description. This is important in a score of ways. A criminal, for whom a warrant is out, may have come to live in a house on his beat, and, though likely to be disguised, may possess peculiarities of gait which a quick eye will recognise. There are so many things which a policeman must see. A vehicle drawn by an over-loaded, over-driven horse. A motor vehicle which fails to conform to one or more of the numerous requirements of the Construction and Use regulations. Persons carrying bundles at suspicious hours. These bundles may contain stolen goods or even dead bodies. His eye must always be on the alert. If he sees furniture or other goods removed from a house, say, in the middle of the night or the small hours of the morning, he may have to interfere and question people on these matters. This must be done firmly, even masterfully—but always tactfully and with extreme caution.

Alternatively the examiner may select for the test an extract from Shakespeare, or from the poets, as in the following specimens:

I

"Tell the Constable,

We are but warriors for the working-day;
Our gayness, and our gilt, are all besmirch'd
With rainy marching in the painful field;
There's not a piece of feather in our host,
(Good argument, I hope, we will not fly)
And time hath worn us into slovenry:
But, by the mass, our hearts are in the trim:

And, my poor soldiers tell me, yet ere night
They'll be in fresher robes, or they will pluck
The gay new coats o'er the French soldiers' heads,
And turn them out of service. If they do this,
(As if, please God, they shall), my ransom then
Will soon be levied. Herald, save thou thy labour,
Come thou no more for ransom, gentle herald;
They shall have none, I swear, but these my joints:
Which if they have as I will leave 'em them,
Shall yield them little, tell the Constable."
(Henry) "Henry V."

II

Roll on, thou deep and dark blue Ocean—roll!
Ten thousand fleets sweep over thee in vain;
Man marks the earth with ruin—his control
Stops with the shore—upon the watery plain
The wrecks are all thy deed, nor doth remain
A shadow of man's ravage, save his own,
When, for a moment, like a drop of rain,
He sinks into thy depths with bubbling groan,
Without a grave, unknelt, uncoffin'd, and unknown.
"The Ocean." Byron.

In each test of this character the candidate is enabled to demonstrate his ability to impress, attract, and make his hearers know what he is saying to them. In mastering the art of speaking he has the advantage to-day of listening to experienced voices on the radio. Much can also be learned by using opportunities which arise in the courts, listening to speeches and arguments by learned Counsel, and to the examination and cross-examination of witnesses.

Skill in speaking and reading aloud is acquired only by practice, and by attention to those defects which arise through inexperience, nervousness and ignorance. In voice-production breathing must be managed, the breaths taken as easily as possible, silently, not in gasps, and the quantity inhaled and exhaled should be under control. Posture is important: stand quite erect, let the arms hang down at the sides of the body, with knees and feet close together. The sound of the individual consonants should be practised. In reading, the punctuation is the pointer to the pause. Pause

between adjectives, except the one nearest the noun. Pause before who, which, what, and that. Pose and gesture, while not being overdone, should be such as will be noticed by the audience, and command respect. The body should be well-balanced and erect, the face well-poised.

(b) *Writing*

Under this head come a number of subjects, in each of which a high standard of proficiency should be the aim. The marks awarded will take into account the legibility of the handwriting, spelling, punctuation, and the style, lay-out and composition used. *Command of the English language* is the overriding necessity in every subject. Legibility must be perfect, otherwise no preference is demanded on other grounds to any particular style of writing. In police duties many official forms, notes and memoranda, must be written out by reporting and investigation officers under great difficulties, and read in a poor light by others whose vision is already strained or tired after a long day's work. If police communications are to be accurate in those circumstances, it is essential that under the conditions of the examination room the handwriting should be absolutely legible. Tests are most usually brought within the compass of the dictation test and a paper on some appropriate subject necessitating an essay or a précis.

Deductions must be expected for bad English *spelling* in this and in every other subject, but usually a spelling of a word which is recognised by any standard English dictionary is accepted as correct. Errors in spelling can be avoided, outside the examination room, by frequent consultation of a dictionary whenever a word arises about which a doubt exists, and the pocket dictionary is available for those who are weak in the subject. Such a habit, combined with careful reading, is likely to prevent errors inside the examination room.

As regards *dictation*, to gain full marks there must be accuracy in spelling, legibility in handwriting, and neat style. The following may be regarded as a specimen test:

"The list of ordinary official duties expected of a constable, if enumerated in detail, would fill the greater part of this JOURNAL. Some of them are worth noting here. Take the very common one in certain neighbourhoods—interference in a row outside a public

house. How simple it looks to us—the ordinary citizens—for the burly, powerful man in uniform to separate the combatants; arrest the aggressor, if necessary, question the more intelligent of the crowd, and triumphantly carry off the poor wretch he has taken—a man not more than half his size, perhaps—to the station. The policeman, however, takes a different view of the matter. In the first place, he knows that he will be required to give a succinct but complete report in writing of the whole incident and that, if he does arrest, or if any proceedings are taken at the police court in consequence of the affray, he will have to relate, on oath, the true and correct account of the occurrence in every detail. And all this "evidence" he must collect while a crowd of excited people surges about him, many of whom do their best to direct his attention to the wrong point and aid the escape of the man who should be detained, not to mention the possibility that an assault may be committed from behind, if the crowd is violent. Of course, he may call for assistance, and in rough neighbourhoods it would soon appear; but it is a rule of the Police Service that this is to be done only in a real emergency. The roughs are aware of that, and in many obvious ways can prevent help from arriving until their enemy has been severely mauled.

In the composition of the essay the candidate should seek to satisfy the examiners that he can describe things and persons and facts in such a way that the word-picture presented to the reader is concise yet comprehensive, stylish but not stiff. In producing a good essay a good English style and a good vocabulary are necessary, as well as an appreciation of the construction of phrases, sentences, paragraphs and passages. In acquiring style in the composition of reports, it is well to avoid wasting words. If an adjective is essential, and in many cases it is not, do not add a second one which is superfluous. Avoid such words as "I think that," or "it is in my opinion that," or "personally I think that," or "from the point of view of," or "nobody can deny that," or "we felt wretched and miserable," or "the book is dull and uninteresting," or "of course." The absence of a good vocabulary is the cause of the use of unnecessary words: "When the doctor came he gave mother something to counteract the effect of the poison" has more point and style when it is recorded thus: "When the doctor came he gave mother an antidote."

"The Traffic Problem" is a frequent subject for the essay in police examinations, sharing in popularity with "The Detection of Crime," "The growth of aviation," "The development of wireless" and "My favourite sport." In framing sentences and paragraphs for an essay on the traffic problem it is first necessary to plan the layout, and the marshalling of ideas to be drawn upon, in the following way:

- (i) the roads, their origin and modern development.
- (ii) the vehicles on the roads, and their relation to the roads.
- (iii) the people who use the roads, on foot or in vehicles.
- (iv) traffic signs and pedestrian crossings.
- (v) the direction, control and supervision of traffic.
- (vi) reconciling speed with safety by day and night.

From these ideas it is possible to frame sentences which, put into a logical sequence, make a composition earning the marks to secure a pass.

(c) Arithmetic

In the case of constables, the subjects prescribed are the first four rules, simple and compound, including imperial weights and measures and simple fractions. The following test paper embodies them, with 50 possible marks for the paper (10 for each answer, correctly worked, five questions only to be attempted):

1. How many times is £156 14s. od. contained in £11,439 2s. od.?

2. Add—

£	s.	d.
2,407	19	8
246	3	2½
76	13	2½
9	3	2½
451	17	0
2,415	9	1½
729	10	4
4,306	9	6½

3. Add—

Tons	cwts.	qrs.	lbs.	oz.
24	19	3	20	15
	3	0	25	14
3	3	2	6	9
47	16	1	11	4
16	15	1	21	10
2	7	3	20	1
1	1	0	5	3

4. The eighth part of a certain number exceeds the ninth part by 5. What is the number?

5. A farmer sells 25 calves at £2 6s. each, 33 pigs at 16s. each, 80 sheep at £2 2s. each, and 3 horses at £15 15s. each. What does he receive for the whole?

6. If 32 horses consume a certain amount of corn in 36 days, for how many days would the same amount be sufficient for 96 horses?

Tests on these standards should not present serious difficulties to any candidate who has "brushed up" his arithmetic in the months preceding the examination. In the examination room, however, it is important that the apparently trivial should be given serious attention, and before working the paper it is well to go through the mental processes of correct methods of working simple problems, and avoid careless errors. Credit will be given for clearness and aptness of the language of the answer; deductions may be made for slovenly work. The use of symbols, e.g. lb., oz., is permitted, but values should always be stated. Tabular form, where possible, should be employed. Let us examine and work these problems in a way which should satisfy the examiner.

Q. 1. This is known as "compound division" of money, and it is first necessary to reduce each amount (known respectively as the *divisor* and the *dividend*) to a common denomination or level. In the present case that common denomination can be shillings, since no pence are shown in either the divisor or the dividend, but a keen student will also observe that the shillings are even numbers, i.e., 14s. and 2s. Hence it is possible to reduce to florins, instead of shillings, to get the common denomination, and reach the answer more easily.

Thus: Q. How many times is £156 14s. od. contained in £11,439 2s. od.?

Reduce to florins:

(a) £156 14s. od.

$$\begin{array}{r} \times 10 \\ 1560 \\ 7 \text{ florins} \\ \hline 1567 \end{array}$$

(b) £11,439 2s. od.

$$\begin{array}{r} \times 10 \\ 114,390 \\ 1 \\ \hline 114,391 \end{array}$$

The rest of the problem is dealt with by *long division*, as follows:

$$\begin{array}{r} 73 \\ 1567 \overline{) 114,391} \\ \underline{109,69} \\ 4,701 \\ \underline{4,701} \\ \dots \end{array}$$

Answer: 73 times.

Q. 2. This is known as "compound addition" of money, and the answer will be found to be £10,643 5s. 2½d.

Q. 3. This is known as "compound addition" of avoirdupois weight, and the answer will be found to be 96 tons, 7 cwt., 1 qr., 27 lb., 8 oz.

Q. 4. This is a simple test in "proportion," and can be expressed in simple terms thus:

The difference between $\frac{1}{8}$ and $\frac{1}{9}$ of the number = 5

$$\therefore \frac{9-8}{72} = \frac{1}{72} = 5$$

$$72 \times 5 = 360. \text{ Answer: The number is 360.}$$

N.B.—The answer can be proved by dividing 360 by 8, which is 45, and by 9, which is 40, thus showing that the eighth part of 360 exceeds the ninth part by 5.

Q. 5. This is known as compound multiplication and addition of money, expressed in the form of an ordinary bill, thus:

	£	s.	d.
25 calves @ £2 6s. each	57	10	0
33 pigs @ 16s. each	26	8	0
80 sheep @ £2 2s. each	168	0	0
3 horses @ £15 15s. each	47	5	0
	<u>£299</u>	<u>3</u>	<u>0</u>

Answer: £299 3s. od.

Q. 6. This is a test in "proportion," and it is important to see first the terms in which the answer must be expressed. Here it is in "days." Work out the problem on the following lines:

If 32 horses consume a certain amount of corn in 36 days, for how many days would the same amount of corn be sufficient for 96 horses?

32 horses will consume the corn in 36 days.

∴ 1 horse will consume it in 36×32 days.

∴ 96 horses will consume it in $\frac{36 \times 32}{96}$ days

$$\frac{36 \times 32}{96} = 12 \text{ days.}$$

Answer: 12 days.

(d) Geography

Questions in the geography paper in police examinations are not infrequently topical in character, consideration being given by the examiners to the value of a sound knowledge of the region of England and Wales in which the candidate's force lies, and in test of his capacity to answer those innumerable queries which the foreign tourist and the visitor to the district delight in posing to policemen on their points and patrols, in the certain knowledge that a helpful answer will result. Here is a typical geography paper for constables, with model answers:

Q. 1. Where and what are the following:

(N.B.—Questions of this character are best answered in semi-tabular form, briefly, and avoiding the use of adjectives or descriptive language called for in a composition.)

(a) Q. The Solent. A. The stretch of water between the South coast of England (Hampshire) and the Isle of Wight.

(b) Q. The Mint. A. The offices of the Government, on Tower Hill, London, where money is coined or "minted."

(c) Q. Wall Street. A. The centre of the American Stock Exchange in New York City.

(d) Q. The Pennines. A. A chain of mountains extending from Cumberland to Cheshire, and separating Yorkshire from Lancashire. The Pennines have been aptly named "the backbone of England."

(e) Q. Scapa Flow. A. A sea base and harbour in the south of the Orkney Islands, north of Scotland. Scapa Flow is almost entirely enclosed, and contains a number of small islands. This natural harbourage was the principal base of the British Grand Fleet in the Great War, 1914-18.

Q. 2. What is meant by the following terms:

(a) Q. A plateau A. A portion of land which is high above sea-level, but flat; sometimes known as a table-land.

(b) Q. A promontory A. A point of land, or a high cape, on the mainland, jutting out into the sea.

(c) Q. An isthmus A. A neck of land joining two larger portions of land.

(d) Q. A peak A. The summit of a mountain or range of hills.

(e) Q. A delta A. Alluvial deposits formed at the mouths of large non-tidal rivers, creating islands in the triangular form of the Greek letter Δ (delta).

Q. 3. State the location of the following rivers, and name an important town on the banks of each:

(a) Q. Severn A. The R. Severn rises in North Wales on the east side of Mt. Plinlimmon (Montgomeryshire) and flows in a wide curve through Wales and the western English counties to its estuary in the Bristol Channel. City of Gloucester

(b) Q. Tweed A. Rises in Peebleshire and flows through southern Scotland to form part of the boundary between England and Scotland, emptying into the North Sea. The border town of Berwick.

(c) Q. Rhine A. The river Rhine rises in Switzerland, flows between France and Germany, and through Germany and Holland over a course of 800 miles. The German city of Cologne.

(d) Q. Mersey A. A comparatively short river, but with the Manchester Ship Canal it is one of the busiest and most important rivers in the world. Liverpool and Manchester

(e) Q. Tamar A. The Tamar rises in the north of Cornwall and forms the boundary between Devon and Cornwall, entering the English Channel through Plymouth Sound. The estuary of the Tamar is called the Hamoaze. Launceston

Q. 4. Name the English counties which form the east coastline of England, and give the town which is the centre of county administration.

A. From north to south the counties, and their respective centres of county administration, are:

(a) Northumberland	...	...	(Newcastle-upon-Tyne)
(b) Durham	...	...	(Durham)
(c) Yorkshire (East Riding)	...	...	(Beverley)
(d) Yorkshire (North Riding)	...	...	(Northallerton)
(e) Lincolnshire	...	...	(Lincoln)
(f) Cambridge	...	...	(Cambridge)
(g) Norfolk	...	...	(Norwich)
(h) Suffolk	...	...	(Ipswich)
(i) Essex	...	...	(Colchester)
(j) Kent	...	...	(Maidstone)

Q. 5. Name the important ports in England and Wales and state the counties and the police districts in which they are situated:

- | | | |
|----------------------------------|--------------------------------|--|
| (a) Port of London | London, Essex, Surrey and Kent | Metropolitan Police, Port of London Authority's Police |
| (b) Liverpool | Lancs | Liverpool City Police |
| (c) Southampton | Hampshire | Southampton Borough |
| (d) Hull | Yorkshire | Hull City Police |
| (e) Bristol, including Avonmouth | Gloucestershire | Bristol City Police |
| (f) Falmouth | Cornwall | Cornwall Constabulary |
| (g) Plymouth | Devon | Plymouth City Police |
| (h) Newhaven | Sussex | East Sussex Constabulary |
| (i) Shoreham | Sussex | West Sussex Constabulary |
| (j) Tynemouth | Northumberland | Tynemouth Borough Police and R. Tyne Commissioners |
| (k) Swansea | Glamorgan | Swansea Borough Police |
| (l) Cardiff | Glamorgan | Cardiff City Police |
| (m) Grimsby | Lincoln | Grimsby Borough Police |
| (n) Gravesend | Kent | Gravesend Borough Police |
| (o) Fleetwood | Lancs | Lancashire Constabulary |
| (p) Fishguard | Pembrokeshire | Pembrokeshire Constabulary |
| (q) Dover | Kent | Dover Borough Police |
| (r) Middlesbro' | Yorkshire | Middlesbrough Borough Police |
| (s) Folkestone | Kent | Folkestone Borough Police |

Q. 6. State the counties in England and Wales which are nearest to the following, naming one county only in each case:

- | | |
|----------------------|-----------------|
| (a) Isle of Anglesey | Caernarvonshire |
| (b) Isle of Sheppey | Kent |
| (c) Lundy Island | Devon |
| (d) Isle of Man | Lancashire |
| (e) Isle of Wight | Hampshire |

(e) *General Knowledge and Intelligence*

In this paper a wide range of tests may be included, and

every examiner has his own theories and his own method of assessing the student's mental alertness and his intelligence. Much has been written of mental tests, and of the system of awarding marks by way of "scores" for rapidity in solving mental problems. The writer prefers to use this section of the examination to test the constable's knowledge of current affairs, the why and wherefore of events of current interest, and his ability to take part in any intelligent discussion. Hence the following test, used in a constables' examination in the spring of 1940.

1. Q. Describe briefly and state the objects of a balloon barrage?
A. The Air Defence of Great Britain, the Air Officer commanding which is responsible for defeating the attacks of enemy aircraft on this country, consist of a number of measures of defence against attack from the air. One of these is the barrage balloon, part of the ground defences, consisting of large envelopes filled with hydrogen and suspended by cable at great heights and in large numbers over important areas. The balloons thus ensure that the enemy is kept at a great height, and impede him from scoring direct hits.
2. Q. State the location in your Division of the Air-raid Wardens' posts, the First Aid Post, Decontamination station, Rescue Party depot, and the Report Centre.
A. —
3. Q. What is the meaning of the following symbols on road signs?

(a) Flaming torch	A. School warning sign.
(b) Gate	A. Level crossing, with gates.
(c) Engine	A. Level crossing, without gates.
(d) St. Andrew's Cross	A. Cross-roads warning sign.
(e) Chequered portion of road direction sign	A. The road on which the sign is placed is <i>en route</i> to the classified road the number of which the sign bears.
4. Q. What are the following in connection with aircraft?

(a) Amphibian	A. Aircraft which can alight or take off on land or water.
(b) Helicopter	A. Aircraft which can rise or alight perpendicularly, or hover over an object.
(c) Glider	A. Aircraft which relies for its motive power on the wind and air currents.

- (d) Fuselage A. The undercarriage of an aircraft.
 (e) Hangar A. Building in which aircraft are housed.
 (f) Drogue A. Otherwise known as a hydroplane's Sea Anchor, this is an open conical bag for towing through the water to create resistance to forward motion.
 (g) Altimeter A. The barometer which is carried on aircraft to indicate its height.
 (h) Joystick A. This is the control column, the lever by which the aircraft is controlled.
 (i) Monoplane A. An aircraft with one pair of wings.
 (j) Aileron A. These are fitted to aircraft to enable balance and turning to be maintained, and are usually found on the trailing edges of the wings and situated towards the wing-tips.
5. Q. State briefly why the following names are famous or infamous?
 (a) Ajax A. The name of one of the three light cruisers (H.M.S.S. *Ajax*, *Exeter* and *Achilles*) which engaged and defeated the *Graf Spee* off Montevideo in December 1939.
 (b) Helsinki A. The capital of Finland, which was among the first of the world capitals to be heavily bombed by the Russian air force following the outbreak of war in September 1939.
 (c) Gamelin A. Generalissimo of the French Army, in command of the Allied forces in France from the outbreak of war until the successful break through by the Germans in the spring of 1940.
 (d) Raeder A. German Admiral, commanding the German naval forces.
 (e) Sylt A. A fortified island at the entrance to the Kiel Canal, belonging to Germany.
 (f) River Plate A. River in Uruguay, South America, at the mouth of which was fought the famous battle, in December 1939, in which three British light cruisers defeated the German battleship *Graf Spee*, the latter taking refuge in the

- Plate and emerging only to be scuttled by her crew.
 (g) Himmler A. Notorious head of the Gestapo, secret police of the German state.
 (h) Stalin A. Head of the Soviet régime in Russia.

(f) *Special (local) subjects*

This paper may be used for local and topical tests which are indicated in the following specimens:

1. Q. What advice would you give to a person who asked how to store his civilian respirator?
 A. The respirator should be kept in the box provided, the face-piece being placed downwards, and the transparent eyepiece laid flat on the top. The box should be kept in a cool, dry place, but ready for immediate use at all times, and with periodical inspections.
2. Q. What are the duties of an Air-raid Warden?
 A. The Air-raid Warden is defined as being the "good neighbour," who undertakes, without pay or reward, to act for the benefit of his fellow citizens in the sector in which he resides or works for the instruction, guidance and protection of his fellow citizens. Air-raid Wardens receive special instruction in A.R.P. duties and the measures by which help can be obtained should air-raid damage incidents arise.
 The Warden keeps a "household register" of all persons in his sector, and makes himself acquainted with all the important facts, the people, buildings, and places on his sector. On the air-raid warning being received, he may reinforce the siren by blowing short blasts on his whistle, and advises people to take cover. In the event of air-raid damage on his sector, it is the Warden's primary duty to report the facts, on a prescribed form, so that appropriate aid may be sent by Control Centre to deal with it. Pending the arrival of such aid, the Warden is expected to render first-aid, and to take such steps for the protection of life and property as the circumstances demand. The Wardens work in close association with the police, and (in most areas) are organised under the control of the Chief Constable.
3. Q. What are the "permitted hours" in your licensing district and what premises have been granted a "supper hour" extension?
 A. The hours fixed by the Licensing Justices should be stated, and

the "supper hour" extension applies to premises which have been granted a "certificate" under Section 3 of the Licensing Act, 1921, authorising the sale and consumption of intoxicating liquor on licensed premises with a meal for one hour after the end of the last permitted hour.

4. Q. What do the following letters displayed on a motor vehicle indicate, and where must the letters be carried: ARP; W; A; RP/R; RP/E; and P?

ARP	Signifies vehicle is engaged on A.R.P. duties, and entitled to priority during air-raid warning periods	Carried in head lamp with special screening
W	Signifies "Warden"	Ditto
A	Signifies "Ambulance" services	Ditto
RP/R	Signifies "Road Repair Party"	Ditto
RP/E	Signifies "Electricity Repair Party"	Ditto
P	Signifies "Police" vehicle	Ditto

5. Q. Name the banks in X, and their situation?
- A. The several branches of the well-known banks, and any branches of local banking houses, should be noted here.
6. Q. Prepare a list of the parking places on your Division, and give brief particulars of their capacity, and fees (where payable) at each?
- A. The necessary particulars should be entered, and a complete list shows good local knowledge on the subject of traffic problems and their solution.

THE EXAMINATION IN POLICE DUTIES

On the second day of the examination the subjects are again divided into six papers, dealing separately with the following as indicated in Regulation 29(2) of the Police Regulations:

- Criminal law.
- Evidence and procedure.
- General statutes, regulations and orders.
- Local regulations and byelaws.
- Extra duties performed by the particular force concerned.
- Principles of local government.

For the purposes of our test examination, spread over three hours for the morning and three hours for the afternoon session, with 90 minutes interval for midday, six questions are included in each test, five only to be attempted in order to earn a maximum of ten marks for each attempt, thus making 50 marks possible in each subject and an aggregate of 300.

(a) Criminal law

1. Q. What are the provisions of Section 28 of the Road Traffic Act, 1930 (taking motor vehicle without owner's consent)? Show the special power of arrest given by the Section.

A. Any person who takes and drives away a motor vehicle without the consent of the owner or other lawful authority is liable, on summary conviction, to three months imprisonment, or to a fine not exceeding £50; or on indictment to imprisonment not exceeding 12 months, or to a fine not exceeding £100, or to both imprisonment and fine. If the Court, or the jury, are satisfied that the accused acted in the reasonable belief that he had lawful authority, or in the reasonable belief that the owner would, in the circumstances of the case, have given his consent, if he had been asked therefor, the accused will be acquitted.

A jury may find the accused not guilty of stealing a motor car, but guilty under this Section of taking and driving away without the owner's consent.

A constable may arrest without warrant any person reasonably suspected by him of having committed or of attempting to commit this offence.

2. Q. What are the meanings of the following terms when used in connection with the offence of housebreaking: Breaks; enters; dwelling house; night?

A. (a) "Breaks" may include the unlocking of an outer door, picking a lock, taking the glass out of a window, raising a trap-door kept down by its own weight, opening a window by pulling up the sash, or getting down the chimney. Entering by an open window or door is not "breaking," unless there also be breaking into or unlocking of an inner door.

(b) "Enters" means the entrance into the house of any part of the body of the offender, or of any instrument held in his hand for the purpose of intimidating any person in the house or of removing any goods.

(c) "Dwelling house" does not include an out-building unless there is communication between the building and the

dwelling house, either direct or by a covered and enclosed passage-way. If no person is in the habit of residing in a house it is outside the Section, but is in the same category as other buildings.

(d) "Night" means the interval between nine o'clock in the evening and six o'clock in the morning of the next succeeding day.

3. Q. What constitutes the offence of larceny from a dwelling house?
A. By Section 13 of the Larceny Act, 1916, any person who steals in any dwelling house any chattel, money or valuable security,
(a) if the value of the property stolen amounts to five pounds; or
(b) if he by any menace or threat puts any person being in such house in bodily fear, may be tried on indictment and if found guilty punished for "larceny in dwelling house."
In other circumstances of larceny from dwelling houses, the charge is laid under Section 2, simple larceny, or otherwise as the circumstances justify.
4. Q. What has to be proved to sustain a charge of obtaining goods by false pretences?
A. The goods must be capable of being stolen; there must be a false statement of an existing fact; the owner of the goods must have believed the false statement, and parted with his goods in acting on that belief; he parted with possession and ownership of the goods; and the false statement must be proved to have been made with intent to steal.
5. Q. Give details of "Night Offences" created by Section 28 of the Larceny Act, 1916?
A. Any person who is found by night (1) armed with a dangerous or offensive weapon or instrument, with intent to break and enter into any building and to commit felony there; or (2) having in his possession without lawful excuse (the proof whereon shall lie on him) any key, picklock, crow, jack, bit, or other instrument of housebreaking; or (c) having his face blackened or disguised with intent to commit felony; or (d) in any building with intent to commit felony there, is liable to conviction for misdemeanour, on indictment.
6. Q. Define the offence "Embezzlement," and show how it differs from "larceny by servant"?
A. The offence of embezzlement is where a servant or clerk converts to his own use any chattel, money or valuable security received by him in the name of or on the account of his master. Larceny by a servant is where a clerk or servant steals any

chattel, money or valuable security belonging to or in the possession or power of his master. The distinction between the two offences lies in the fact that embezzlement is where the stealing takes place before the money is handed to the employer.

(b) *Evidence and Procedure*

1. Q. Trace the progress of a case, dealt with on indictment, through the Courts?

A. If we assume that A. is arrested, without warrant, on a charge of housebreaking, he will appear within 24 hours before a justice charged with "breaking and entering a dwelling house at Z, and therein stealing (the articles will be named) to the value of £—, the property of B, contrary to Section 26 (1) of the Larceny Act, 1916." On the application of the police a remand may be ordered, the accused being remanded in custody or on bail. At the next hearing the court will sit as Examining Justices, to take depositions from witnesses, who may be cross-examined by or on behalf of the accused. On the completion of the deposition each witness will be bound over to appear if required at the court of trial.

Immediately the last witness for the prosecution has been bound over to appear at the trial, the presiding justice will read the charge to the accused, and administer the caution. The accused may elect to give evidence on his own behalf and to call witnesses. His advocate may also be heard.

The depositions are forwarded by the Justices' Clerk to the clerk of Assize (in the case of Assizes), the clerk of the Central Criminal Court, or the clerk of the peace (in the case of quarter sessions trials), copies being supplied to the solicitors instructed to act respectively for the prosecution and defence. Counsel is instructed for the prosecution, and in most cases for the defence. If the means of the accused show his inability to pay for his own defence, a certificate may be issued by the justices or the court of trial for the cost of the defence to be borne from public funds.

At the trial, the calendar will contain the name of the accused, the offence charged, and the accused will be asked to plead, guilty or not guilty. If a plea of guilty is entered, the witnesses may not be called, but the facts be related by Counsel to the Court as may be necessary. Witnesses to character may be called, and will be liable to be cross-examined. The court will be addressed by or on behalf of the accused, and sentence given.

If a plea of not guilty be entered, a jury will be sworn, counsel for the prosecution will open the case to the jury, and call witnesses. On completing the evidence for the prosecution, counsel for the defence will address the jury, and call witnesses and/or the accused. Where the only witness for the defence is the accused, he is called immediately after the case for the prosecution is closed.

The jury will then be addressed by Counsel for the prosecution and for the defence, and the Judge will sum up. The jury will then consider and deliver their verdict which, if one of not guilty, will result in the accused being discharged by the Court. If a verdict of guilty is returned, the history of the accused will be given, on oath, by the police officer in charge of the case, and the accused may cross-examine and call witnesses as to character or in mitigation. Sentence will then be pronounced.

2. Q. How may a summons to a defendant be served?

A. A summons to appear before a court of summary jurisdiction may be served

- (a) personally, by its being handed by a constable to the defendant;
- (b) by leaving it at his last or most usual place of abode with some responsible person; or
- (c) by registered post, but this last form of service will not be effective unless the defendant appears personally, or by his advocate, or acknowledges in some other way satisfactory to the court that he has received the summons.

Certain summonses, i.e., for non-payment of rates, may be served by ordinary post. A summons to a witness cannot be served by registered post, and service may be held to be bad unless sufficient "conduct" money is paid to enable the witness to travel to the court.

3. Q. State what you know of the law of evidence respecting "hearsay," paying particular attention to any exceptions there may be?

A. "Hearsay" is what was said not in the presence and hearing of an accused person, and is not admissible in evidence. The reason for this rule lies in the fact that evidence must be on oath, and the person giving evidence must be liable to cross-examination. There are some exceptions to the general rule that "hearsay" is inadmissible, as follows:

- (i) In cases of indecent assault and rape, evidence of a

complaint made voluntarily by the injured person to another person, as soon as possible after the alleged offence was committed, may be given as evidence of the conduct of the injured party and of the fact that there was no consent.

- (ii) Dying declarations, in cases of murder or manslaughter in which the person making the declaration died and is the subject of the charge, and at the time the declaration was made was in actual danger of death and to have given up all hope of recovery.
 - (iii) Statements made by deceased persons indicating the cause of injuries, if the statement is relevant to the matter in issue.
 - (iv) Written records or statements made by deceased persons in the ordinary way.
4. Q. Does a constable's power of arrest, without warrant, for crime, differ by day or by night? If so, in what manner?
- A. Generally, where the Statute or Common law confers the power to arrest without warrant the arrest may be made either by day or night. In a small number of cases there is additional power to arrest, where the offence is committed at night, between 9 p.m. and 6 a.m. on the day following, for being armed with a dangerous or offensive weapon with intent to break and enter any premises to commit felony therein; or having in his possession without lawful excuse (the proof of which lies on the accused) any implements of housebreaking; or having his face blackened or disguised with intent to commit felony; or is found in any building with intent to commit felony therein. Under the Prevention of Offences Act, 1851, there is also power to arrest anyone committing any indictable offence at night (9-6). Power is also conferred on constables to arrest without warrant for certain night offences against the Game Acts.
5. Q. Your power of arrest without warrant is different in cases of misdemeanour and felony. Summarise the difference, and state which of the following are misdemeanours and which are felonies: (a) embezzlement; (b) incest; (c) rape; (d) infanticide; (e) malicious damage; (f) receiving stolen property; (g) taking motor car without owner's consent; (h) dog stealing?
- A. In felony, there is power to arrest without warrant at any time of the day or night, upon reasonable suspicion of a felony having been committed, and of the person being guilty of it. In misdemeanours, arrest without warrant cannot be made unless express power to do so is conferred by the Statute creating the offence. The offences above mentioned are classified as follows:

<i>Felonies</i>	<i>Misdemeanours</i>
Embezzlement	Incest
Rape	Malicious damage
Infanticide	Taking motor car without owner's consent
Receiving stolen property when the "stealing" is felony.	Dog stealing

6. Q. What points would you consider before effecting an arrest without warrant?
- A. The circumstances leading to the arrest, without warrant, of any person may differ widely in character, and the alleged unlawful acts may either be seen by the constable to be committed by the accused, or he may be told what has happened, or he may see what has happened and have reasonable grounds to suspect that the accused person was responsible for the unlawful acts. Before effecting an arrest, it is necessary to decide that power exists to arrest, without warrant. It is next necessary to consider whether the gravity of the offence, the age, condition and immediate circumstances of the case and the circumstances of the accused, and whether proceedings can be initiated better by way of summons. If the name and address and the history of the accused are known to the constable, and the nature of the offence merits that course, it is more usual to proceed by way of summons.

(c) *General Statutes, Regulations and Orders*

1. Q. What are the ages governing the sale of intoxicating liquors?
- A. Intoxicating liquor must not be sold for consumption on the premises to any person under the age of 18 years. Persons under 18 must not purchase or attempt to purchase liquor in licensed premises. Beer, porter, cider or perry may be sold in licensed premises to persons aged above 16 if supplied for and consumed with a meal not in a bar. Licence-holders may not allow any person under 18 to consume any intoxicating liquor in licensed premises. No child under 14 years of age may be at any time in the bar of licensed premises. A child under 14 years must not be sold any intoxicating liquor for off-consumption except in a corked and sealed vessel of not less than one reputed pint. It is an offence for any person to give, or cause to be given, to

any child under 5 any intoxicating liquor, except on the orders of a doctor or in case of sickness.

2. Q. State briefly the law relating to pedlars?
- A. By the Pedlars Act, 1871, a pedlar is any hawker, pedlar, petty chapman, tinker, caster of metals, mender of chairs or other person who, without any horse or other beast bearing or drawing burden, travels and trades on foot and goes from town to town or to other men's houses, carrying to sell or exposing for sale any goods, wares or merchandise immediately to be delivered, or offering for sale his skill in handicraft. Certificates are issued under the Act and must be taken out annually by every pedlar. Certificates are granted by the Chief Constable at a fee of 5s. on being satisfied that the applicant has resided in the police district during the preceding month, is over 17, is of good character, and in good faith intends to carry on the trade of a pedlar. The Act contains the names of several persons who do not require a pedlar's certificate, namely: commercial travellers, book agents if authorised in writing by publishers; fish, fruit and vegetable vendors, or stall holders in markets. Persons acting as pedlars without certificates are liable to penalty.
3. Q. Under the Road Traffic Act, 1930, certain offenders have to be warned of an impending prosecution. To what offences does the rule apply and how can the warning be given?
- A. By Section 21 of the Road Traffic Act, 1930, persons reported for offences against Sections 10, 11 and 12 of that Act, relating to reckless or dangerous driving, exceeding the speed limits, or careless driving, or the similar offences under Section 1 of the Road Traffic Act, 1934, may not be convicted of the offence unless either
- (a) he was warned at the time the offence was committed that the question of prosecution would be considered;
 - (b) or within 14 days of the commission of the offence a summons was served on him; or
 - (c) within the said 14 days a notice of intended prosecution was served on him or the registered owner.
- Failure to comply with these requirements is not a bar to conviction where the court is satisfied (a) that the police have acted with reasonable diligence in the matter, or (b) that the accused by his own conduct contributed to the failure.

- Q. Describe in detail the lights which must be carried on a pedal cycle during the hours of darkness?
- A. Under the Lighting (Restrictions) Order, made under the Defence (General) Regulations, 1939, a pedal cycle must carry a light showing to the front, but screened by having the top half of the glass front blackened, and the lower half of the reflector blackened. No light must be allowed to escape from any other part of the lamp. In addition to a white patch exhibited on the rear mudguard, a red light must also be shown to the rear.
- Q. What points have to be proved to sustain a charge under Section 15 of the Road Traffic Act, 1930 (driving motor vehicle whilst under the influence of drink)?
- A. The points to be proved when making a charge under this Section are that the accused was (a) driving or in charge of the motor vehicle; (b) that the vehicle was on a road to which the public has access; (c) that he was under the influence of drink to such an extent that he was incapable of having proper control of the vehicle. The first of these points is proved by establishing identity, and the second by proving that the vehicle was driven by the accused on a road, which may include any occupational road, if the public had access to it. In proving the influence of liquor, it is desirable to arrange for a medical examination at the earliest moment, but the manner of driving, the behaviour of the accused, his gait, speech, smell of breath and other abnormalities are all material factors in proving a case of driving whilst under the influence of drink *to such an extent* as to make him incapable of having *proper* control of the vehicle.
- Q. Section 28 of the Town Police Clauses Act, 1847, creates a number of offences, principally street nuisances. State what words govern the Section and what power of arrest is given?
- A. Each of the offences named in this Section is contingent upon the actions of the defendant having taken place (a) in a street, and (b) being to the obstruction, annoyance or danger of the residents or passengers in that street. Offenders may be arrested if the actions take place within the view of a constable.

Local Regulations and Bye-laws

- Q. How would you deal with a grounded barrage balloon?
- A. N.B.—This question will test the knowledge of the candidate of the local instructions issued to carry out various war duties.
- Q. What instructions have been issued respecting prisoners in the

- police cells who are ill, and who have been sentenced to imprisonment?
- A. Prisoners are visited in their cells at frequent intervals, all such visits being recorded in the register provided. Where it appears that a prisoner is ill the police surgeon is sent for. On commitment to prison a full report of the illness is compiled by the station officer and a copy transmitted to the Governor of H.M. Prison.
3. Q. What are the provisions of the City of Z (High Street) Traffic Regulations, 1937?
- A. This is a one-way traffic order made by the City Council and approved by the Minister of Transport under the Road Traffic Acts, 1930 to 1934, and the prescribed signs erected in the appropriate streets require drivers of vehicles to pass between the Market and the Town Hall only by way of Market Street, and from the Town Hall to the Market only by way of South Street. The Order operates between 8 a.m. and 8 p.m. on Fridays and Saturdays only, and the sign for operating is illuminated only when the Order is operative. The key of the signs is kept on the key-board at Central Police Station.
4. Q. Outline the Sickness Regulations in this Force?
- A. When a member of the Force wishes to report sick, he reports to the station officer who issues the appropriate form for completion by the police surgeon. The completed form is returned to the station officer after visit to the surgery, and if the surgeon orders rest and excusal from duty the number of days is noted in duty records. Where a member of the force is too ill to report to the station officer the police surgeon is instructed to visit, and the sickness form will be transmitted by him to the station officer.
- In cases of injury sustained whilst on duty no deductions from pay are made, but otherwise a deduction from pay of 1s. per day is made during sickness, for the first three months, and thereafter 2s. per day.
5. Q. If you were in charge of a station when a person who had been arrested without warrant for attempted suicide was brought in, what action would you take?
- A. If medical attention had not already been given the police surgeon would be summoned and instructed to give the necessary treatment and submit a report for use in the preparation of the case for the prosecution if proceedings are ordered.

The antecedent circumstances would be examined, and provided there is no reason to think that the act would be repeated, that a responsible relative or friend is willing to take charge of the patient, and that the patient's mental condition justifies release, no charge would be preferred.

6. Q. What are the provisions of the Z Borough bye-laws respecting the nuisance of persons offering their services for looking after parked vehicles?

A. Under this bye-law, an offence is committed if any person other than an attendant authorised by the Z Council, offers his services or loiters in the vicinity of parking places with the object of obtaining remuneration (by touting). The bye-law is designed to suppress a nuisance, and offenders are dealt with on proceedings instituted by the town clerk of the borough. Police reports on the subject are transmitted to the town clerk.

(e) *Extra duties relating to the Z Force*

1. Q. If you discovered a fire in a terrace house at night, what immediate steps would you take, and how would you search a room in the house in an attempt to rescue a child believed to be there?

A. On discovering a fire in a terrace house I should immediately arouse the occupants and send one of them to telephone the alarm to the fire brigade. If I required him to give the alarm from a fire alarm post, I should tell him to remain at the post to direct the fire brigade to the scene. I should then arouse the people in the adjoining houses, and get them moved up the street so as not to obstruct the fire appliances on arrival. On entering the burning house, I should instruct all concerned to keep the doors and windows shut, and on hearing that a child remained upstairs I should crawl upstairs, begin the search at the top of the house, keeping close to the wall, and if the rooms were full of smoke, crawl on hands and knees, with head close to the floor, and with a wet towel or handkerchief over my nose and mouth. In opening doors I should place my foot against the door and open it slowly, to prevent creating a draught. After making sure that no persons remained in the house I should organise the neighbours in passing buckets of water to throw on to the seat of the fire, pending the arrival of the fire brigade. If the outbreak showed signs of spreading I would instruct the adjacent householders to remove their belongings, and to store them in such a way that no obstruction would be caused to the fire brigade.

- Q. How would you treat a child suffering from infantile convulsions?

A. If my attention was drawn to a child which appeared to be suffering from infantile convulsions, I should immediately advise the parent or person in charge of the child to send for a doctor, and pending medical or skilled nursing attention, instruct the mother to fill a bath with hot water, and support the child in the bath so that the water covers the whole of the body up to the neck, keeping it there until the convulsions have ceased or the doctor arrives. Keep a sponge frequently dipped in cold water on the top of the head as long as the child is in the bath. On removal from the bath, wrap the child in a warm blanket but still keep the head cool.

The signs of "infantile convulsions" usually present are twitching of the muscles and trunk; extreme pallor and later blueness of the face; occasional squinting; holding the breath, and froth at the mouth.

- Q. To whom would you refer persons who require expert advice on the following matters?

Storage of petrol
Storage of gunpowder
Assessment of rates
Infectious diseases
Treatment of venereal diseases

NOTE.—These are matters on which every member of the force in the locality should be informed, and in any case of doubt refer the inquirer to the local municipal or council offices.

4. Q. What instructions would you give to a police war reservist constable on taking up special duty at a football match?

A. I should remind him that the main duty of the police in connection with crowds is the maintenance of order and the prevention of a breach of the peace. This duty can best be done by keeping the crowd in good humour. He should prevent anyone from entering the ground by unauthorised means, keep a watch for pickpockets, and be prepared to deal promptly with any case of assault, or obscene language, which may arise. In dealing with crowds a knowledge of the first-aid stations on the football ground is useful, and he himself should be prepared to recognise and deal with any case of illness, particularly epilepsy, sprains, strains, fractures, fainting, apoplexy, and burst varicose veins.

If on duty outside the ground, I should instruct the

constable to pay attention to the parking of vehicles, to regulate any street musicians and vendors, touts, in the vicinity, and to watch for persons loitering with intent to commit felony.

5. Q. What instructions have been issued respecting the duties of the police at public meetings ?
 A. The powers of the police at public meetings are limited, and the duties should be restricted to dealing with any breach of the peace which may occur. Persons who organise meetings must maintain order and provide their own stewards. The police do not act as stewards. The police have the right to attend any meeting at which there is reason to think that a breach of the peace may occur. In the case of large and crowded meetings care must be taken to see that the exits are clear. The power of arrest for the offence of breaking up a meeting is very limited, and unless offensive weapons are used, or there is a breach of the peace, arrest should not be resorted to. If the chairman of a meeting asks a constable to obtain the name and address of a person who is acting in a disorderly manner for the purpose of preventing the transaction of the business for which the meeting was called, and the name and address is refused, or a false name is given, arrest without warrant may be effected. If this offence occurs during a parliamentary election the penalty may be higher.
6. Q. What are the local instructions regarding routine visits to persons in police custody ?
 A. When persons are in custody in police station cells a visit must be made at least once each hour of the day or night, and recorded in the prisoners' visit book. The station officer is responsible for compliance with this instruction. Any complaints from the prisoner will be reported. Station officers will inspect the meals supplied to prisoners. Female prisoners are attended to by the police matron.

(f) *Principles of Local Government*

1. Q. Explain the distinction between a Councillor and an Alderman ?
 A. Local authority areas are divided into "wards," three councillors being elected by the ratepayers for each ward, one retiring annually in rotation, being eligible for re-election. Each ward also has an "alderman," who is elected by the councillors assembled in council, and he remains in office for six years. The aldermen are usually councillors who are elevated to the

aldermanic bench. The council is formed of the mayor (or chairman), aldermen and councillors together assembled.

2. Q. Name the chairman, deputy chairman and members of the Watch Committee ?
3. Q. State the ward in which you reside and name the persons who represent it on the council of your local authority ?
4. Q. Give three examples of local municipal trading, and name the official at the head of each ?
 A. N.B.—Most local authorities engage in municipal trading, in the form of gas, electricity, water or transport public utility undertakings, under powers derived from special Acts of Parliament enacted for that purpose.
5. Q. State briefly the duties of the following officials in a county borough ?
 (a) Medical Officer of Health; (b) City Surveyor; (c) City Architect; (d) Secretary for Education.
 A. (a) Supervision of health services of the city, including school medical inspection, ante-natal clinics, maternity and child welfare, slum clearance, purity of water, infectious diseases, registration of nursing homes, mental deficiency, and public health administration.
 (b) Maintenance of roads and bridges, town-planning schemes, approval of plans for new buildings, maintenance of sewers, parks, cemeteries, public cleansing.
 (c) Supervision of property and buildings owned by the local authority; control and management of council housing estates.
 (d) Administration of duties of local education authority in relation to elementary, special, technical and secondary schools.
6. Q. Who hold the following positions in the Borough of Z ?
 (a) Medical Officer of Health
 (b) City Surveyor
 (c) City Architect
 (d) Public Assistance Officer
 (e) Registration Officer
 (f) Inspector of Weights and Measures
 (g) Valuation Officer
 (h) Clerk to the Assessment Committee.

REVIEW.

INFRA-RED FOR EVERYONE. By H. W. GREENWOOD. (London. The Fountain Press.) No date, but 1940. Size 10 x 7½. 94 pages. Illustrated. Price 12s. 6d. net.

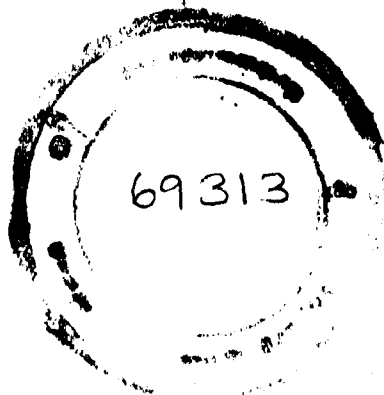
LET it be said at once that this is a good book. It is lucid, concise, very interesting, and well illustrated. It tells the amateur who has not yet taken up this latest branch of photography all that he needs to know about it. The book is essentially practical, and just sufficiently theoretical to enable the reader to grasp the why and the wherefore.

Yet even when one has grasped the why and the wherefore—the invisible light which extends far beyond the infra-red end of the solar spectrum, the range of wave-lengths (which have been explored photographically from 7,600 Angstrom units—which is the beginning of the infra-red—to 20,000), the discovery of sensitising dyes which have enabled the men of science to achieve these wonders—infra-red photography remains a mysterious thing. By its means you can photograph the inside of a horny-cased beetle, the writing beneath the censor's ink, the oil-painting covered by blackened varnish, the cathedral shrouded in mist and smoke.

It is a very simple—and inexpensive—matter. You use an ordinary metal camera; you buy specially sensitised plates or films; you put a filter over your lens. But you must take extra precautions against daylight reaching your plates. Wood and ebonite are both more or less transparent to infra-red; so—if you use plates—your dark-slides must be made of metal.

The illustrations in this book are sufficient and striking. Mr. Greenwood addresses himself to the amateur, and for those who wish to become experts on the subject his volume is an admirable stepping-stone to Dr. Clark's big book on the subject, published a few months ago. For policemen, Mr. Greenwood's book is sufficient by itself. There is an interesting chapter on "Infra-red in Criminology."

The book is very nicely produced, and we cordially recommend it.



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