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THE POLICE JOURNAL

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

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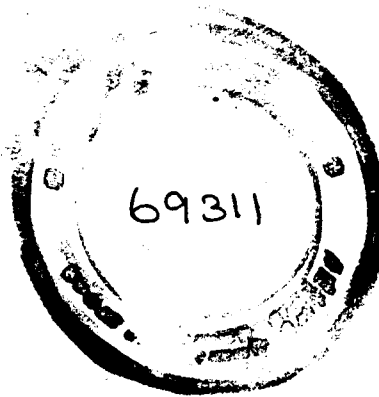
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POLICE JOURNAL



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THE POLICE JOURNAL

The Police and the Law

MOTORISTS AND THEIR DRIVING LICENCES

IN view of the large number of motorists now upon the roads and the various requirements imposed by statute and regulation with regard to driving licences, the subject is becoming one of increasing importance. The principal statutory provisions relating to the matter will be found in sections 4 to 8 of the Road Traffic Act, 1930—which, for the sake of brevity, it is proposed to refer to as "the 1930 Act"—but in the present article it is proposed to deal only with the production of licences and their endorsement.

Section 4 (1) of the 1930 Act provides that a person shall not drive a motor vehicle on a road unless he is the holder of a licence (*i.e.* a licence to drive a motor vehicle granted under Part I of the 1930 Act), and if any person acts in contravention of this provision he shall be guilty of an offence.

By sub-section (5), a duty to produce the licence for examination on being so required by a police constable is cast upon any person driving a motor vehicle on a road. The examination may take place so as to enable the constable to ascertain the name and address of the holder of the licence, the date of issue, and the authority by which it was issued. If the driver fails so to produce his licence, he is liable to a fine not exceeding £5. There is, however, a proviso which protects the driver who does not carry his licence with him. If within five days after the production was required the

licensee produces the licence in person at such police station as may be specified by him at the time its production was required, he is not to be convicted of an offence under the sub-section. It is the usual practice of the police after stopping a driver who cannot produce his licence at the time, to serve him with a Memorandum known as "HO/RT/I", in which the police officer fills up the various details, including the specified police station, and then signs the form before handing it to the driver.

If a driver fails (i) to produce his licence at the time he is stopped and (ii) to produce it at the specified police station within five days, and is consequently summoned under section 4 (5) of the 1930 Act, it appears that the prosecution merely has to prove (i) *supra* and the onus of proving that he did produce the licence at the specified police station is cast upon the defendant. (See the cases collected on page 276 of *Stone's Justices' Manual*, 68th edition.)

Similarly, if a driver is asked to produce his licence on the road, fails to do so, and subsequently produces at the police station an expired licence or one which has been taken out after he was stopped, it appears to be unnecessary on a summons under section 4 (1) for driving a motor vehicle without being licensed, for the police officer to whom the expired or subsequent licence was produced, to give evidence to this effect.

As is stated on page 276 of *Stone*: . . . "therefore, where a defendant was charged with doing an act without a prescribed qualification or without a licence where a licence is required, the prosecution need not prove the negative averment, but the onus of proving the possession of the necessary qualification or licence rests with the defendant." Attention may also be called to section 14 of the Summary Jurisdiction Act, 1848, and section 39 (2) of the Summary Jurisdiction Act, 1879.

It may be remarked, incidentally, that the onus of proof is the same where a driver is summoned under section 40 of the 1930 Act for failing to produce his certificate of insurance

on demand to a constable (section 40 (1)) or to some person having reasonable grounds for requiring its production (section 40 (2)).

Now that licences are so frequently endorsed for various motoring offences (as to which see section 6 (1) of the 1930 Act), the question of the production of the licence becomes of added importance.

By section 33 (3) of the Road Traffic Act, 1934, where a person is prosecuted for exceeding a speed limit, reckless or dangerous driving, careless driving, or driving when under the influence of drink or drugs, he must, if the holder of a licence, deliver or post it to the clerk of the Court or have it with him at the hearing. If he is convicted of the offence, the Court may require the licence to be produced to it, and if default is made in such production, the holder is guilty of an offence and the licence is suspended from the time of the requirement until it is produced to the Court. Sub-section (2) of the same section provides that particulars of a conviction endorsed on a licence may be produced as *prima facie* evidence of the conviction.

By section 4 (3) of the 1930 Act, licences shall be in the prescribed form and by Regulation 16 (1) of the Motor Vehicles (Driving Licences) Regulations, 1935, the Minister of Transport has prescribed that a licence granted under section 4 of the 1930 Act shall be in the form set out in the Third Schedule to those Regulations. This form is that usually made with an adhesive back and affixed by the licensing authority to a holder endorsed "Driver's Licence", issued by the authority.

Section 6 (1) (b) of the 1930 Act provides (*inter alia*) that the Court may or shall order that particulars of a conviction and of any disqualification "shall be endorsed on any licence held by the offender". As it is impracticable to endorse the particulars on the licence as defined above, the endorsement is made, in practice, on one of the sheets bound in the holder issued by the licensing authority.

It has been found that some offenders tear out these

endorsed pages from the licence-holder, or remove the adhesive licence and affix it to another non-endorsed holder of which they have, in some way, obtained possession.

This, of course, considerably affects the efficacy of the endorsing system, but it appears to be doubtful whether in the present state of the law any offence has been thereby committed. It would seem that in such cases the person concerned has altered the licence-holder but not the licence, as above defined. It is true that if, with intent to deceive, any person (*inter alia*) alters a licence under any part of the 1930 Act, he is guilty of a misdemeanour (section 112 (1) (a)), but it is felt that it is open to question whether, under the existing law, an offence would be committed in the circumstances above mentioned.

THE CHARACTER AND ANTECEDENTS OF THE ACCUSED

There are many indictable offences which can, under certain conditions, be dealt with summarily by Justices in Petty Sessions. These offences are set out in the Second Schedule to the Criminal Justice Act, 1925, and include the somewhat common crimes of simple larceny and false pretences.

Where an adult is charged with one of these offences the Court may, if it thinks it expedient to do so, and if the accused consents, deal summarily with the case, but before doing so the Justices must have regard to certain matters set out in section 24 of the 1925 Act. These are: Any representation made in presence of the accused by or on behalf of the prosecutor, the character and antecedents of the accused, the nature of the offence, the absence of circumstances which would render the offence one of a grave or serious character and all the other circumstances of the case (including the adequacy of the punishment which a Court of Summary Jurisdiction has power to inflict).

If a Court of Summary Jurisdiction at any time during the hearing of such a charge against an adult becomes satisfied that it is expedient to deal with the case summarily,

it is to cause the charge to be read to the accused and is then to ask him whether he desires to be tried by a jury or whether he consents to the case being dealt with summarily.

This means that, contrary to the usual procedure, the Justices when dealing with such a case can, "at any time during the hearing," have regard to the character and antecedents of the accused, for the purpose of deciding whether they should deal with the charge or whether he should be committed for trial in the event of a *prima facie* case being made out. This casts a very difficult task on the Justices and it is thought that in many Petty Sessional Courts the Justices when dealing with such cases have, out of consideration for the accused, refrained from inquiring as to his character and antecedents until after he has elected to be tried summarily, and has pleaded guilty or has been found guilty on the evidence. This procedure has no doubt been adopted in reliance on the opinion expressed by Avory J. in *Rex v. Hertfordshire Justices* (1911), 1 K.B. 612, but in view of the recent decision of the Court of Criminal Appeal in *Rex v. Sheridan* (1936), 52 T.L.R., 626, it is clear that Justices are now required as a preliminary to dealing summarily with an indictable offence to hear and to take into consideration the character and antecedents of the accused to enable them to decide whether they ought to deal with the case themselves.

It has been an elementary principle of British justice that, as a general rule and subject to certain well-known exceptions, evidence cannot be given for the prosecution to prove that the defendant is of bad character or has a propensity to commit criminal acts of the same nature as the offence charged. This rule, which was recently described by Mr. Justice Talbot as "one of the most cardinal principles of the criminal law", still remains in force, but as the result of the decision in *Rex v. Sheridan*, Justices will often learn of the previous character of an accused person before they have come to a decision on the evidence.

It is to be observed that in delivering their judgment

the learned Judges did not mention the case where the record of the accused person appeared to the Justices not to be bad, but at the same time not free from previous convictions.

This decision is, of course, binding on Courts of Summary Jurisdiction and will give cause for anxious thought to all those concerned in the administration of such Courts. That the matter is an important one there can be no doubt. The latest figures available reveal that in 1934 Courts of Summary Jurisdiction disposed of 88 per cent of the persons tried for indictable offences.

It means that when dealing with those offences mentioned in the Second Schedule to the Criminal Justice Act, 1925, the Justices before they make up their minds on the case in question, will have to ask the police as to what is known about the accused. The police will therefore have to have this information available at an early stage of the proceedings. If the defendant's record appears to be a bad one, it seems that the Justices will now have to commit him for trial, if a *prima facie* case is made out, although the indictable offence with which he is now charged is not of a serious nature or the amount involved is small. If his record is good, they may in the event of a case being made out, deal with him themselves if he consents, or they may commit him for trial. If his record is between these two stages, as is often the case, the Justices are placed in a dilemma. Either they must commit him for trial, if there is a *prima facie* case, or with his consent they can deal with him summarily, but in coming to a decision as to whether the offence is proved on the evidence they must utterly exclude from their minds the previous convictions which have been read out to them a few minutes before.

Many may ask whether it can be expected that a Bench of Justices will accomplish this successfully. It is a difficult task for a trained lawyer. Again, will not the result be that many cases which the accused desire to be dealt with summarily and which, apart from the recent decision, would be dealt with, will be committed for trial with the consequent

expense and delay and expenditure of the time of the police at Quarter Sessions or Assizes? If this is so, the object of section 24 of the Criminal Justice Act, 1925, will to a large extent be defeated.

What will be the effect on the public and the accused when previous convictions are read out before the Justices have made a decision on the case then before them? Will either the accused or the public think that he has had a fair trial? How often will he think that such knowledge has weighed the scales against him when there was a doubt in the minds of the Justices, up to the disclosure of his past misdeeds? One way of minimizing the feeling of misgiving is for the Court when asking for the record of the accused at an early stage to make clear to him the reason for its disclosure then, and to assure him that if it is not a good one the Justices will pay no attention to it when making up their minds as to his guilt if the case is dealt with by them.

Another factor which causes some disquiet is that the preliminary hearing is usually reported in the local press. If this report includes, as no doubt it will in appropriate cases, the fact that the defendant has been previously convicted, it is probable that this information will have been read by, or come to the knowledge of, the members of the jury at his trial. Such a procedure is bound to shake the confidence of the public in the administration of criminal justice in this country.

Recent Judicial Decisions

Ledwith v. Roberts

(*Times Law Reports*, Vol. 53, No. 1, October, 1936)

FROM time to time, for many years, His Majesty's Judges and others have thrown out opinions to the effect that a thorough overhaul of the Vagrancy Laws, and particularly the Vagrancy Act of 1824, is long overdue.

Nothing has been done. Perhaps something may now be done following on the judgment of the Court of Appeal in the case of *Ledwith v. Roberts*, which is reported in Vol. 53 of *The Times Law Reports* on page 21.

It is interesting that a most important judgment on the troublesome question of 'suspected persons' should have been decided in the Court of Appeal following on a civil action, the result of which depended upon whether constables, in certain circumstances, had the right of arrest.

The appeal was from a judgment of the presiding Judge of the Liverpool Court of Passage awarding two plaintiffs £15 damages each for false imprisonment. No evidence was called, the case being argued on agreed facts, the defendants contending that the particulars which they had given amounted to a justification in law of the arrest and detention of the plaintiffs.

The particulars were as follows :—

" . . . (1) The plaintiff Crothers was seen standing in the said telephone kiosk in which there was no light. He was not telephoning, and the plaintiff Ledwith was loitering outside apparently keeping watch and screening the plaintiff Crothers in the said kiosk from passers-by. (2) The plaintiff Crothers remained inside the said kiosk for a period of about 25 minutes

during which time, although he handled the receiver, he did not make use of the telephone. (3) From time to time during the said 25 minutes the plaintiff Crothers was seen to bend down and apparently examine the coin container in the said kiosk. (4) During the whole of the said 25 minutes the plaintiff Ledwith remained outside the said kiosk in the manner hereinbefore indicated. (5) At the end of the said 25 minutes the defendants approached the said kiosk, whereupon the plaintiff Ledwith kicked the door of the same and shouted and the plaintiff Crothers at the same time picked up the telephone receiver. (6) The plaintiff Ledwith in answer to questions by the defendants as to what the man inside had been doing during the previous 25 minutes and as to whom he was then talking to said he did not know, and on being asked if he had been keeping a look out outside the kiosk he did not reply. (7) The plaintiff Crothers stated that he had been speaking to his mate on the telephone, but on being asked by the defendants who his mate was and from where his mate had been speaking he said he did not know. (8) The telephone operator and supervisor on an inquiry then and there made over the telephone by the defendant Pearce stated no calls had been received to or from the said kiosk within the previous half-hour. (9) The plaintiffs were again asked by the defendants to explain what they had been doing during the previous 25 minutes but neither gave any reply." . . .

Since 1917 the Police 'Bible' on that part of Section 4 of the Vagrancy Act which relates to 'suspected persons', viz. :—

" every suspected person or reputed thief, loitering in or about any street or highway with intent to commit a felony . . . shall be deemed to be an idle and disorderly person,"

has been Mr. Justice Avory's judgment in the case of *Hartley v. Ellnor* which is reported in 1917, 177 *Times Law Reports*, page 304. In that case the alleged suspected person had been followed about for forty minutes and some Magistrates ever since have insisted upon at least 40 minutes' observation in

such cases as a result. This is not nearly so stupid as at first sight it appears; it does at least reduce very much the risk of mistake.

Mr. Justice Avory held that, whilst this part of the statute created no offence unless the loiterer was a 'suspected person or reputed thief', it was not necessary for the acts causing such person to become a 'suspected person' to have been done at some different time and place. As a result, ever since that judgment, it has been a common police practice to charge as a suspected person a man loitering for a reasonable length of time whose actions have given rise to reasonable suspicion that he intended to commit a crime.

In their judgments in the case of *Ledwith v. Roberts* Lord Justice Greene and Lord Justice Scott both said definitely that they did not agree with the judgment in *Hartley v. Ellnor*. Lord Justice Greer did not go so far but he did say that the "mere fact that a police constable suspected a person of loitering with the intention of committing a felony did not make that person a suspected person". There must, in his view, be antecedent circumstances, not necessarily on another occasion, which had brought the individual concerned within the fatal category.

The following extracts from the judgment are well worth careful consideration:—

Lord Justice Greer said: "... In my judgment, apart from the authorities, with which I will deal presently, the special powers given to constables are confined to a class of persons described as 'suspected persons' or 'reputed thieves'. They can only be apprehended without warrant if they already are at the time of their arrest and imprisonment suspected persons or reputed thieves. I do not think this means that if the constable suspects the person whom he apprehends he is entitled to arrest and imprison him without warrant. The person so apprehended must be some person who has become suspect, that is to say, some person who belongs to the class of suspected persons by reason of his antecedent conduct. I think 'suspected person' means a person who has acquired

the character of a suspect and does not mean every person whom the apprehending constable suspects to be loitering with intent to commit a felony. It appears to me very difficult to think that the Legislature intended to leave it to a constable to arrest without a warrant any citizen whom he found loitering in a street if he, on what he deemed to be reasonable grounds, suspected that the citizen was loitering for the purpose of committing a crime. In my judgment, the powers of a constable to arrest without warrant are confined to cases in which he finds frequenting or loitering, etc., *a person who has, by his previous conduct, become a suspected person.*" . . .

Dealing with the case of *Hartley v. Ellnor* he said:—"This case was concerned with a charge before the magistrates made under the Vagrancy Act, 1824, as amended by the Prevention of Crimes Act, 1871. The facts and the decision of the justices are stated in the second paragraph of the headnote as follows:—

"E. was kept under observation by the police in a certain part of the city of B." [that is Birmingham] "on a certain day for a period of about 40 minutes. During that time he was seen to mix with various crowds of people who were in the act of boarding tramcars, and he was noticed to tap the pockets of various individuals in the crowds. He was then arrested by the police as a suspected person and charged before the justices of B. with being a rogue and a vagabond within the meaning of section 4 of the Vagrancy Act, 1824. There was no evidence of any previous offence against E. The justices were of opinion that, by reason of section 15 of the Prevention of Crimes Act, 1871, E. could not be convicted as a rogue and vagabond on a charge of frequenting a public place for the purpose of committing a felony without it being shown that he had been previously convicted or that he was a suspected person or a reputed thief, or that he was a person of known bad character prior to the date on which the act or acts took place on account of which he was arrested as a suspected person, and dismissed the charge."

It was held by a Divisional Court consisting of Lord

Reading, C.J., Mr. Justice Ridley, and Mr. Justice Avory that the justices were wrong. It is to be observed that the case does not directly raise the question whether the police were entitled to take the respondent into custody without a warrant. It only deals with the question whether the justices were right in refusing to convict on the ground that it had not been shown that the respondent had been previously convicted, or that he was a suspected person or reputed thief. But I think that the case necessarily involves a decision of the question whether the appellant was entitled to arrest the respondent without a warrant, because his power to do so depended on the same considerations as those which affected the correctness or otherwise of the decision of the justices. In stating the question Mr. Justice Avory, who delivered the judgment of the Court said (*117 Times Law Reports* at p. 305): "The only question which we are called upon to decide is whether they"—that is, the magistrates—"were right in coming to the conclusion that there must be evidence of a previous conviction or of previous bad character in order to render an individual a suspected person within the meaning of the section of the statute under which these proceedings were taken." The learned Judge went on to say: "A person may be a suspected person even though he is not a reputed thief, and a person may be a suspected person on a particular day even though he has not been previously convicted, or even though he has not had a reputation for bad character in the past. When one examines the facts of the present case there can be no doubt whatever that the respondent was a suspected person on the day in question. For a period of about 40 minutes he had been kept under observation by police officers, and during the whole of that time he was engaged on and off in doing acts which, to say the least, gave rise to a reasonable suspicion that he was attempting to pick the pockets of various passengers who were boarding tram-cars. He was seen to be acting in a suspicious manner on no less than seven separate occasions in different parts of the city of Birmingham during the 40 minutes that he was being

watched by the police." The Court then came to the conclusion that when he was arrested the respondent was a suspected person. It seems to me obvious that the magistrates (in that case) were wrong in refusing to regard him as a suspected person when he was arrested inasmuch as he had been acting in a manner which would have satisfied anybody that he was a person whom it was reasonable to suspect. In my view, this decision was plainly right because the evidence showed that at the time of the arrest he had brought himself within the description of a suspected person—that is to say, a person who had been acting in such a way as to make it proper to describe him as a suspected person—meaning thereby a person who had by his acts shown that he was a person of whom it was right to say that he had been acting in a manner which raised a suspicion that he was acting in furtherance of an unlawful and criminal purpose." . . .

He later said:—

"As above indicated, I think that under the Vagrancy Act, 1824, in order to justify an arrest without warrant the authority to apprehend is confined to persons who come within the description stated in the relevant section of the statute. The power of arrest is confined to persons of that class, though I think it follows from the decisions that once it is established that the person arrested belongs to the class of persons with respect to whom the special power to arrest is given to the constables, then if the constable honestly and on reasonable grounds believes that the person apprehended has been committing or attempting to commit a felony or misdemeanour he has power to arrest even though it should be established later that the person arrested was not, in fact, attempting to commit a felony or misdemeanour. I do not think that the statutes mean that any person whom a constable thinks has been acting in a suspicious manner may be arrested without warrant, or that any person whom he suspects to be an idle or disorderly person can be so arrested. I think that the power of a constable to arrest any person whom he honestly and reasonably suspects to have committed or be about to

commit a felony or misdemeanour is confined to the class of persons who have been acting suspiciously or have been behaving as idle or disorderly persons. To read these statutes as giving the police power to arrest without warrant any person whatsoever (though not belonging to the class of suspected persons or the class of idle or disorderly persons) would be holding that they had been given a power extremely dangerous to any well-behaved person who may have good reason for frequenting or loitering in the places mentioned in the statutes." . . .

Lord Justice Greene said :—" . . . The phrase ' a suspected person ' in this context, particularly when it is placed in juxtaposition to the words ' reputed thief ', is, in my judgment, apt to describe and describe only a person who, quite apart from the particular occasion and antecedently thereto, has become the object of suspicion, just as a ' reputed thief ' is a person who already has the reputation of a thief. In the case of *Hartley v. Ellnor* (*supra*) it was held that a person was a ' suspected person ' within the meaning of the statute on the ground that two police constables had seen him tap on the pockets of various persons at different places during a period of 40 minutes. With all respect, I cannot agree with the reasoning of the Court in that case on this point." . . .

Lord Justice Scott said :—" . . . By section 15 of the Prevention of Crimes Act, 1871, the local limits of this particular provision were widened so as to include any street or highway or any place adjacent thereto. (This was to meet the decision in *In re Timson* (L.R. 5, Ex. 257.) By the same section it was also enacted that ' in proving the intent to commit a felony it shall not be necessary to show that the person suspected was guilty of any particular act or acts tending to show his purpose or intent, and he may be convicted if from the circumstances of the case, and from his known character as proved to the justice of the peace or Court before whom or which he is brought, it appears to such justice or Court that his intent was to commit a felony.' The result of the first amendment is no doubt to bring the

two young plaintiffs at the telephone kiosk within the local ambit of the section ; but the second amendment leaves felonious intent in fact an essential of the offence and, therefore, does not help the defendants since it was not contended that the plaintiffs had any intent in fact to commit a felony. There was some discussion before us on the meaning of the phrase ' suspected person ' in section 4, it being contended, as I understood, that it covered not only the case of a person who had already become on his previous record reasonably suspected by the police so as to bring him into a definite and quasi-objective category—on the analogy of the phrase ' reputed thief '—but also a case where on the very occasion of arrest the arresting constable observes the person doing something which arouses his suspicion—a subjective instead of the quasi-objective criterion. I disagree with this construction both on the mere meaning of the English words standing alone and also by reason of the long history of the phrase in the Vagrancy Acts on which I shall have more to say later. The contention for the appellants was put forward largely on the strength of *Hartley v. Ellnor* (117 *Times Law Reports*, p. 304), it being submitted that that decision supports the proposition that, if it is proved that a constable has reasonable ground for suspecting and does suspect, the person thus suspected is brought within the statute. In my view, this decision establishes no such proposition. Indeed it rather assumes the contrary, that the person must have already, before the occasion of arrest, passed into the category of suspected persons ; for the Court in that case based its conclusion on the evidence that the person had for 40 minutes previously in various incidents been behaving rather like a pickpocket and thought this antecedent record sufficient. I find it difficult to understand the Court reaching that conclusion on the facts of that case and on the whole I agree with Lord Justice Greene that it was wrongly decided." . . .

" If the view of the Court of Appeal in the case of *Trebeck and Croudace* (34 *Times Law Reports*, p. 57 ; (1918) 1 K.B. 158) was that where the offence, for which a constable

has it in mind to arrest a person, is one of immediate importance to public order, he is empowered to act on a reasonable belief that the crime has in fact been committed or that the intent to commit it is in fact present, even although the statute does not contain any express words to that effect—if that is the law of this country (and until revised by the House of Lords it is) a very difficult discretion is entrusted to the police and one, as I think, fraught with considerable danger to the liberty of the subject. I should like respectfully, but earnestly, to express the opinion that powers of arrest without warrant should be expressed in quite unambiguous and simple language which anyone can understand and that the occasion for reliance on the constable's discretion should be defined with care in any statutory provision conferring such a power." . . . " . . . I cannot part with the case, however, without making two observations. It seems to me wrong that these old phrases should still be made the occasion of arrest and prosecution, when in their historical meaning they are so utterly out of keeping with modern life in England. The class against which the legislation was directed has ceased to exist. The poor law legislation and the increased industrial and commercial employment of the nineteenth century together reduced it to much narrower proportions. The legislation of the twentieth century, unemployment insurance, public assistance, national health insurance, and all the other social reforms of recent years have abolished it altogether. The old phrases have to-day lost their meaning, but they remain on the statute book as vague and indefinite words of reproach. Is it not time that our relevant statutes should be revised and that punishment and arrest should no longer depend on words which to-day have an uncertain sense and which nobody can truly apply to modern conditions? To retain such laws seems to me inconsistent with our national sense of personal liberty or our respect for the rule of law. Clear and definite language is essential in penal laws.

"Finally, I would make one more suggestion. If the Liverpool Act of 1921, section 513, and the old London Act

of 1839, section 18 (which is, I believe, still in force), create different offences and confer different powers of arrest to those of the general law of the land contained in the public statutes, it is surely time to abandon the system of such local variations, whatever may have been their justification in earlier times. To-day crime and personal liberty ought not to vary from town to town as must be the case if they are to depend on municipal variations in 'local and personal' Acts of Parliament. They ought to be the same throughout the length and breadth of the land. Why should such provisions be inserted in local Acts at all?" . . .

In the result it would appear that, in Lord Justice Greer's view at any rate, an arrest would be justified if there was reasonable suspicion against a "suspected person or reputed thief".

It is very important to remember that in all their judgments the Lords Justices are dealing with power of arrest. Recently Magistrates have taken to asking police officers in such cases: "Do you know this man?" This question is entirely appropriate if a 'suspected person' is concerned having regard to the fact that the officer must have seen him on some antecedent occasion, but it is liable to be misleading in the case of a 'reputed thief' because the officer arresting him may not know the man, but, at the same time, must or ought to have found out that he has been previously convicted before the case comes on in Court. A better question in either case would be "What is known?"

In such circumstances it would appear to be the duty of the prosecution to tender evidence of the previous criminal history. It is a fact that many Magistrates in the past have objected to this form of procedure in face of the specific terms of section 15 of the Prevention of Crimes Act, 1871, which says that a person dealt with under section 4 of the Vagrancy Act, 1824, "may be convicted if, from the circumstances of the case and *from his known character as proved to the Justice of the Peace or Court* before whom he is tried, it appears to such Justice that his intent was to commit a felony."

If an officer is asked whether he knows personally a 'reputed thief' before he has had time to tender evidence of previous history, his answer will often have to be "I do not know him personally but I know his record".

It is submitted that if evidence of acts which make a constable think an individual a 'suspected person' is followed by evidence of some act which shows 'intent' then the onus on the prosecution has been discharged, e.g. an unknown man seen '*working*' bus stopping places with two known pick-pockets becomes a 'suspected person' from the company he is keeping and, as soon as there is evidence of 'intent', ought to be arrested. In other words the decision in *Ledwith's* case does *not* mean that nobody unknown to the arresting officer beforehand can be arrested, but it does mean that there must be an appreciable interval between the act or acts which lead the officer to form the conclusion that the person being watched is a 'suspected person' and the act or acts which are put forward to prove his intention to commit a felony. Acts which all form part of the same transaction, it would appear, are not enough.

Scientific Aids in Criminal Investigation

By F. G. TRYHORN, D.Sc.(Liv.), A.I.C.

Professor of Chemistry, University College, Hull

PART V

MARKS AND IMPRESSIONS

MANY of the traces that may be found at the scene of a crime, or on objects that are connected with the commission of some offence, come under the heading of 'marks and impressions'. They may be personal marks such as finger- or palm-prints, or the impressions made by wearing apparel such as foot- or cloth-prints: they may be marks left by instruments, or faint impressions of objects left on dust-films. Their importance lies in their individuality or uniqueness, which may help to connect persons or objects with a given locality or thing: it is only when this individuality is recognized and brought to light that these marks acquire value as evidence. In the search for this individuality different methods of examination must be used, which vary according to the nature of the mark or impression and with the kind of surface or medium on which it occurs. These methods vary also with the place in which the trace occurs; as, for example, whether it occurs on a movable or immovable object.

The simplest classification of marks and impressions is obtained by regarding them as 'coarse' or 'fine' respectively. The terms 'coarse' and 'fine' then refer to the type of detail which has to be examined in the search for individuality in the traces. A footprint is an impression in which the detail is essentially 'coarse', whereas the very fine lines that occur in a cut freshly made by an instrument such

as a knife typify the 'fine' kind of mark in which individuality is found in an examination of very fine detail. In the former case the examination of the coarse detail deals largely with *measurement*, because the magnitude of this detail is such that it lends itself to simple and accurate measurement: in the latter, *measurement* of the details of the structure would have to be very precise, and, as will be shown later, the individuality of such marks may best be found on another basis.

Accordingly, in this treatment, marks will be considered under the above headings.

SECTION I. COARSE MARKS AND IMPRESSIONS

If we arbitrarily define coarse marks as those in which any detail which may require measurement involves lengths greater than $\frac{1}{25}$ in. (or 1 millimetre) we shall have included such things as footprints, tyre-prints, cloth-impressions, the primary marks made by coarse, blunt instruments such as jemmies, and the impressions left by the majority of tools other than edged ones. We may then make the further distinction between impressions of measurable depth or thickness, and thin prints or marks of no appreciable thickness. This distinction is justified by the difference in the methods of examination in the two cases.

1a. Coarse Marks in Thin Films.—The two chief types of these which will be encountered are marks left by the deposition of a thin film, *e.g.* mud from a boot; and faint impressions left in a thin loose layer of material, *e.g.* a finger-print in a film of dust. If in either case a clear and permanent record of the mark can be obtained by photographic methods the methods described below are unnecessary. Often, however, a footprint left on a surface with a vari-coloured or mottled background is difficult to photograph even if it is in a place where adequate lighting can be obtained; it is often equally difficult to photograph, and usually impossible to develop by powdering, a finger-print on a dust film. The

method, briefly referred to in a previous article, which has been found suitable for dealing with such marks will be described in more detail.

The method consists in spraying the mark with a solution of cellulose acetate of such a kind that, on drying, it leaves a translucent film which envelopes and embodies the material comprising the footprint, or bearing the impression. The simplest solution for this purpose contains four parts by weight of cellulose acetate¹ dissolved in 100 parts by weight of acetone. A more complex solution which has the merit of giving tougher and more pliable films contains:—

Cellulose acetate	4 grams
Acetone	50 cubic centimetres
Benzene	24 " "
Rectified spirit	24 " "
Benzyl alcohol	3 " "
Triphenyl phosphate	1.5 grams

Certain commercial preparations (aeroplane 'dope') are based on formulae similar to the above and would serve the same purpose.

In making up either solution the use of heat must be avoided, and the cellulose acetate must be allowed to dissolve slowly, with occasional shaking, over a period of two or three days. Both solutions are highly inflammable and must not be used near naked lights; both are extremely volatile and must be preserved in tightly stoppered bottles, preferably with narrow mouths.

The solution is applied to the print or impression by means of a spray: the cheap garden-sprays with glass containers sold at sixpence by multiple stores have been found suitable. Since the solution tends quickly to clog the jet except when the spray is in use, a piece of wire should be kept handy to insert in the jet as soon as spraying is finished. In the case of a dry footprint it is usually safe to direct the spray horizontally across the print. The spray dries almost as quickly

¹ Obtainable from British Drug Houses Ltd., London.

as it falls on the print : the print should be covered systematically in the spraying, working over the whole print three times in order to obtain a satisfactory thickness. This figure, of course, will vary according to the kind of spray used, but has been found to apply to the cheap sprays mentioned above. A margin of about one inch round the print should be included in the sprayed area. In dealing with dust impressions the spray must be directed upwards during the first coating so that the dust is not disturbed and the spray falls vertically on to it : after this first coat is dry, the spray may be directed towards the print.

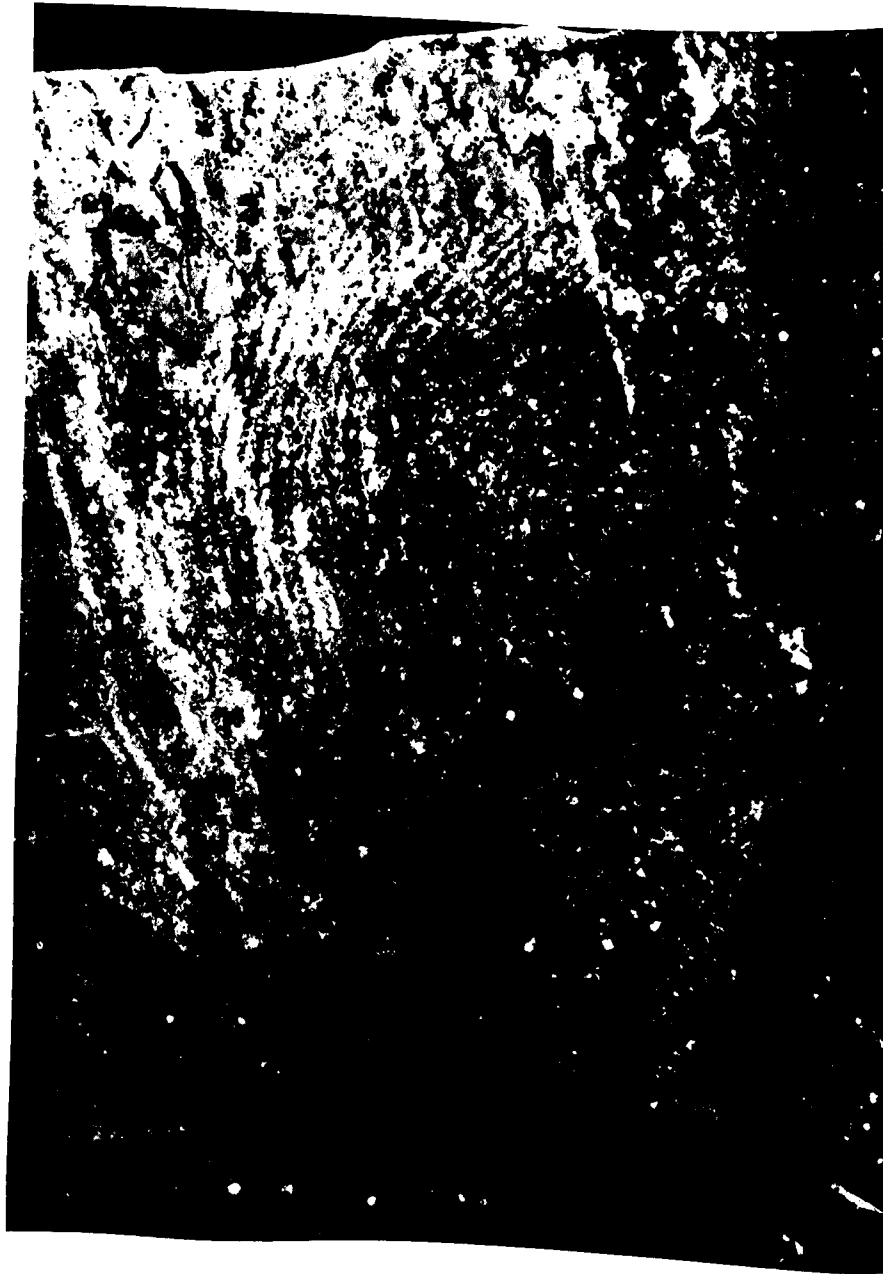
When the sprayed area is dry a cut is made round the print with a sharp knife. With the point of the knife the film may then be detached from the surface at one point, giving a sufficient grip for the fingers to remove the whole print by slow steady tension. As soon as it is removed the print must be placed between two pieces of glass or glazed card to keep it flat. The film so obtained is about $\frac{1}{1000} - \frac{5}{1000}$ in. in thickness, whitish or translucent ; there may be no pattern or imprint on it visible to the eye, if the original print was very thin or light coloured. The film is then used as a photographic negative. If the film is a large one, *e.g.* of a footprint, a contact print on bromide paper may be made from it : if it is a small one, *e.g.* of a finger-print, it should be used in an enlarger to project an enlarged image on to bromide paper. Fig. 1 shows a contact print made from a film taken from a faint footprint in chalky dust. Fig. 2 is an enlargement of a film taken of a finger-print impression in a thin dust layer.

Certain limitations must be noted in the use of these cellulose acetate solutions. They have been found satisfactory for prints on stone, slate, glass, metal, linoleum, and painted or polished wood. They must not be used on soft, unpainted or unpolished wood, on unglazed cardboard, on leather substitutes, or on certain types of 'American cloth' : on these surfaces, which are themselves akin to cellulose acetate, the film adheres so strongly that it cannot be removed without damage to the surface. Successful prints have been obtained



FIG. 1

(face p. 22)



of finger-prints and cloth-impressions in dust films on such diverse surfaces as a brick wall, garden-frames and seats, enamelled surfaces, and glazed cardboard. So long as the cellulose acetate film is kept between glass or cardboard sheets it is permanent, may be safely handled, and used to make repeated bromide prints. If it is not kept flat the film tends to shrink and crease, making reproduction difficult.

An alternative method of removing footprints, but one which is useless for dealing with impressions in dust layers, consists in thoroughly moistening photographic paper until the gelatine film is softened, and applying it to the print: the dirt forming the print then adheres to the tacky paper, and is removed with the paper. The paper, after drying, may be rendered translucent by treatment with oil, and used as a photographic negative. Great care must be used in this method, both in applying and removing the paper, to avoid smudging the impression. The use as evidence of records of prints obtained by these methods will be considered later.

1b. Coarse Marks and Impressions on Deformable Surfaces.—As a rule it is difficult to make precise measurements of the detail of coarse impressions *in situ*. Sometimes this is due to inaccessibility or bad lighting, and at others to the nature of the marks. In these cases the simplest plan is to use the impression as a mould and to obtain, by the use of a suitable casting material, what is, in effect, a replica of the instrument or object making the mark. The methods to be adopted in these cases differ essentially only in the type of casting material used. Certain conditions must be satisfied by any substance used as a casting medium: these are chiefly (*a*) cheapness; (*b*) ease of preparation; (*c*) lack of undue shrinkage or expansion; (*d*) ease of removal; (*e*) permanence of the finished cast. Condition (*a*) is less important if the material is one which can be used again when a cast made of it is no longer required.

Plaster of Paris Casts.—For large casts, *e.g.* footprints, a variety of casting media have been suggested. Stearic acid,

joiner's glue, resin and wax mixtures, plaster of paris, colloid plastics, and others have been successfully used.

Experience shows, from a comparison of these, that plaster of paris is perhaps the best all-round medium when the criteria suggested above are applied. Any medium involving the use of heat in its preparation is apt to be inconvenient when it has to be used in a place remote from normal facilities for heating. It is proposed, therefore, to confine these notes principally to the use of plaster of paris so far as large casts are concerned.

An appreciation of the nature of plaster of paris and of what happens when it sets is of help in understanding the technique of casting with this medium.

Plaster of paris consists of the chemical unit of calcium sulphate firmly united with half a unit of water: it is prepared by carefully heating at 130° centigrade the mineral gypsum, which contains the unit of calcium sulphate combined with two units of water: in the heating process, therefore, water is lost. If the temperature of 130° C. is much exceeded in the heating of gypsum, all the water which it contains is driven off and a product described as 'dead burnt' plaster results. This no longer has the property of setting to a hard mass when mixed with water. When, however, plaster has been made by heating at the correct temperature, it possesses the property of returning to the gypsum form by combination with water.

From what has been said about the relationship of gypsum to plaster of paris it will be evident that the return of plaster to gypsum will involve the addition of a definite quantity of water. Investigation has revealed that when plaster of paris is mixed with the correct amount of water a fairly rapid process occurs in which the plaster dissolves in the water and is immediately redeposited as a confused, compact mass of minute interlocking lath-shaped crystals of gypsum. It is the interlocking of these tiny crystals which gives rigidity to the cast.

The correct proportions for this change to occur are

obtained when 25 oz. of plaster of paris are mixed with one pint of water. To avoid the need of weighing the plaster, and at the same time to eliminate guess-work in mixing, it is useful to remember that $6\frac{1}{2}$ –7 volumes of plaster of paris require 4 volumes of water. For instance, to make a cast of an average-sized footprint an ordinary tea-cup will serve as a measure, and a mixture of $6\frac{1}{2}$ –7 cupfuls of plaster with 4 cupfuls of water will give a quantity suitable for the purpose.

Several types of plaster of paris are prepared for commercial purposes, but for casting only the best qualities, described as 'sculptor's', or 'dental' plaster, should be used. The ruling price for these is about 8s. a cwt. No advantage is gained in making large casts by using certain proprietary brands of plaster, sometimes tinted, and always much more expensive.

Since plaster has a slight tendency to pick up moisture from the air, care should be taken to store it in air-tight containers. Deterioration in setting power occurs if plaster has absorbed moisture: suspect plaster can be dried, with beneficial results, provided it is not overheated: *e.g.* it should be placed on an oven-top for this purpose rather than inside an oven.

In mixing the plaster the best results are obtained if the measured amount of dry plaster is passed through a sieve, with meshes about $\frac{1}{16}$ in. square, into the correct quantity of water: by the time all the plaster is added it will have absorbed the whole of the water, and the mixing may be completed by gentle stirring: care must be taken to avoid stirring air into the mixture.

Criticism is sometimes directed against the use of plaster for casting on account of an apparent expansion on setting, with the result that the cast obtained is not exactly the same size as the mould. The expansion of plaster accounts for the ability of this medium to fill the mould accurately and to take a sharp impression on its surface. The expansion of the setting plaster is, however, only apparent: careful measurements have shown that during the first half-hour of

setting a relatively large contraction takes place, which is followed by a smaller expansion spread over several hours: the net result is that the final difference in size between the cast and the mould is negligibly small except in the case of very large casts.

The rate at which plaster sets is dependent on the degree of fineness to which it has been ground; normal samples set in five to fifteen minutes after mixing with water. This rate of setting makes it imperative, of course, to make any necessary preparations of the mould before mixing the plaster and water. At the same time it is occasionally useful to slow down the rate of setting if an intricate cast is to be made, lest the mix begin to set before the first layer has been applied to the mould. Numerous substances are able to retard the rate of setting: common salt is one of these; but its use is attended with difficulty because unless the correct quantity is used the rate of setting may be accelerated instead of retarded. For practical purposes control of setting is best obtained by mixing urine with the water before adding the plaster. A sample of plaster which, when mixed with water alone, showed first signs of setting after four minutes and was thoroughly set in fifteen minutes gave, when mixed with water containing $12\frac{1}{2}$ per cent urine, figures of 8 and 21 minutes, and, with 25 per cent urine in the water, figures of 40 and 90 minutes respectively.

If a cast is to be made of a footprint the impression must be prepared before the plaster is mixed. Any loose particles which have fallen from the walls of the impression should be picked out carefully with a spatula or forceps: loose water standing in the print may be sucked out through a rubber tube, or soaked up by blotting paper. If the soil is wet, plaster will adhere to it tenaciously unless the print is first lubricated: spraying with linseed oil gives satisfactory results. If the print is in sandy or dusty soil some preparation is necessary to bind together the surface of the print. This is especially important if a casting medium is used, such as wax, which has to be applied hot.

The method of preparation generally advised is to spray the print with a solution of shellac in methylated spirits. Casts from prints so prepared need careful cleaning to remove traces of the dried shellac. It has recently been found that both the oil and shellac spraying may with advantage be replaced by spraying with the cellulose acetate solution mentioned above. On wet soils the solution immediately forms a very thin opaque skin, which adheres to the soil when the cast is removed: in such cases the cast requires practically no cleaning. On dry, powdery soils the solution leaves a thin skin which binds together loose particles and preserves the impression: in this case the cellulose acetate skin usually comes away with the cast, from which it can easily be stripped leaving the cast quite clean. This method is found to give casts much cleaner than the older method, and to economize time, since the cellulose acetate solution dries far more quickly than the shellac.

To economize plaster some form of containing rampart should be built round the impression: soil can be used, but must be an inch or two from the print if the danger of loosening particles of soil is to be avoided. The use of plasticine, which has been recommended, proves wasteful in practice. More convenient are strips of lead or copper sheet, about 30 in. by 4 in., which can be bent to encircle the print, and whose ends can be held together by a clip. Less satisfactory, but better than earth or plasticine, are L-shaped wooden formers, made from three-ply wood, about 4 inches wide, the arms of the L's being 8 inches and 15 inches respectively: a pair of these, placed together , can be arranged to give a cast 15 inches long by any width up to 8 inches.

In filling the mould with the plaster mixture small portions should first be added from a spoon or scoop to cover the finer details: the whole area should then be covered to a depth of about $\frac{3}{8}$ in. At this stage some form of strengthening material should be incorporated in the cast; this may take the form of pieces of wood, about $\frac{3}{8}$ in. by $\frac{1}{16}$ in., placed lengthwise and

crosswise on the plaster : green twigs may be used, but dead, dry wood must be avoided, or there is a risk of the wood swelling and cracking the cast after it has set. Small-meshed wire gauze, or 'expanded metal net', may with advantage replace the wood strengtheners. Further plaster is then added until the total cast is about 1 inch in thickness.

The cast should not be removed from the mould until at least half an hour after pouring the plaster. On removal, loose, adhering dirt should be removed. If shellac or oil has been used the cast generally needs scrubbing in running water, a process that must be done gently if the destruction of fine detail is to be avoided. A major advantage of the cellulose acetate spraying is that it usually makes scrubbing of the cast unnecessary.

Even after it has set hard the cast still contains uncombined water, and will 'sweat' if it is packed in a closed container without thorough drying. Casts should be kept in a warm room or near a radiator for a day or two before being packed. It is an advantage, if the cast is likely to be handled much, to harden its surface by immersion for about fifteen minutes in waterglass solution : the strength recommended for egg-preserving is satisfactory.

Dental Plastics.—For the reproduction of details of small impressions such as those made by jemmies or chisels the media which have proved most satisfactory are plastic materials sold for dental purposes. These are generally mixtures of different types of wax, with or without the addition of rubber-like substances. They are solid at ordinary temperatures, but become plastic about 60° centigrade. The type which does not contain rubber-like ingredients sets sharply to a rigid solid on cooling : the best known variety of this type is 'Stent's composition'. The other type remain slightly elastic after they have undergone a first setting, and are therefore useful in making casts of marks in which there is a slight degree of undercutting. They may be removed, with care, from such a mould without suffering permanent deformation. Two varieties of this type are 'Paribar' and 'Nadrag'.

The general method of application is the same for all these plastics : the material is soaked for a few minutes in water as hot as the hand can bear and then kneaded until it is free from lumps. It is then withdrawn from the water, allowed a few moments to dry, and then firmly pressed into the mark of which a cast is to be made. Five or ten minutes should be allowed for the cast to harden before attempting to remove it. As a rule the mark or mould needs no preparation : if it is on soft, raw wood it is sometimes an advantage, but not a necessity, to oil the mark before applying the plastic. If very fine detail is to be reproduced, or if the cast is to be photographed later, it is a good plan first to dust over the mark with fine aluminium powder, blowing away any surplus. No loss of detail occurs when this is done, and the examination of fine detail on the cast is greatly facilitated. Unless the cast is treated in this way it does not photograph well.

An alternative method of preparing casts for photographing is to hold them above a piece of burning magnesium ribbon so that the fumes given off by this material coat the cast with a fine film of white magnesium oxide. Care must be taken in this method to avoid the obvious danger of softening the cast by the heat of the flame, thus producing distortion and loss of detail.

(To be continued.)

All About Finger-prints

By SUPT. H. BATTLE

Officer-in-Charge, Finger-print Branch and Criminal Record Office,
New Scotland Yard

V

IN my previous articles I have discussed that branch of finger-print work which deals with scenes of crime, etc. In this article I shall deal with the 'Henry' or Main Finger-print Collection work.

I do not propose to describe a great deal of the classification system, but will explain only that part of it which I think would be likely to be of use to officers in the course of their general duties.

In the first of these articles a few references were made to the formation and significance of the papillary ridges on the skin surface, so that my subsequent writings on scenes of crime, etc., would readily be understood. For this article on the Main Finger-print Collection, however, I am going to describe more fully the events and researches which preceded the adoption of finger-prints alone as a means of identification.

The following is an outline of what happened before the finger-print system of identification was introduced in 1901.

Although the value of finger-prints as a means of personal identification was not realized until comparatively recent years, the wonderful arrangement of the papillary ridges which traverse the whole of the palmar surface and the soles of the feet in all directions was noticed many centuries ago.

A carving of a man's hand on the smooth surface of a cliff in Nova Scotia, showing at the finger ends arrangements of loops and spirals is, however, so far as is at present known, the first recorded observation of the existence of these ridges. The carving appears to be older than the time of the first

visit of any white man to this territory, and is, therefore, presumed to be the work of an Indian.

In China for many years Chinese bankers had been in the habit of impressing their thumbs on the notes they issued. They were imprinted partly on the counterfoil and partly on the note itself, so that when the note was presented its genuineness could be tested at once, but there is nothing to indicate that the impressions themselves were used to determine identity.

The first efforts with a view to establishing a satisfactory method of classification of finger-prints were made early in the last century but, although the data accumulated was of vast interest and greatly assisted in the subsequent researches which finally led to the evolution of such a system, no practical method was then discovered.

Sir William Herschel was extremely interested in the subject, and was one of the first to put his ideas into practical use. When he was in charge of the Hooghly District of Bengal in 1877 he insisted on executants of documents authenticating them by affixing their finger impressions to the documents. This system he found to work so well that he communicated his idea to the heads of other Government Departments, with a view to having the system adopted throughout India. Sufficient interest had not, however, at that time been directed to finger-prints, so Sir William's suggestion was not acted upon and, when he relinquished command of the Hooghly District, the system he had introduced was allowed to lapse.

His efforts were not unfruitful, however, for he collected a wealth of valuable data, which proved to be of great use to Sir Francis Galton, who was noted for his researches in biology, especially in the study of heredity, and who later went very deeply into the subject of finger-prints. As a matter of fact, Sir William Herschel gave to Sir Francis Galton his collection of finger-prints which he had accumulated over a period of thirty years.

It is also interesting to record that Mr. Gilbert Thompson, an American geologist, was also among the pioneers who

recognized the value of finger-prints in guarding against forgery. When paying the members of his party whilst on Government duty in 1882 in the wild regions of Mexico, he signed his name across the impression made by his finger on the orders used for this purpose, after first impressing his digit on the office rubber stamp pad.

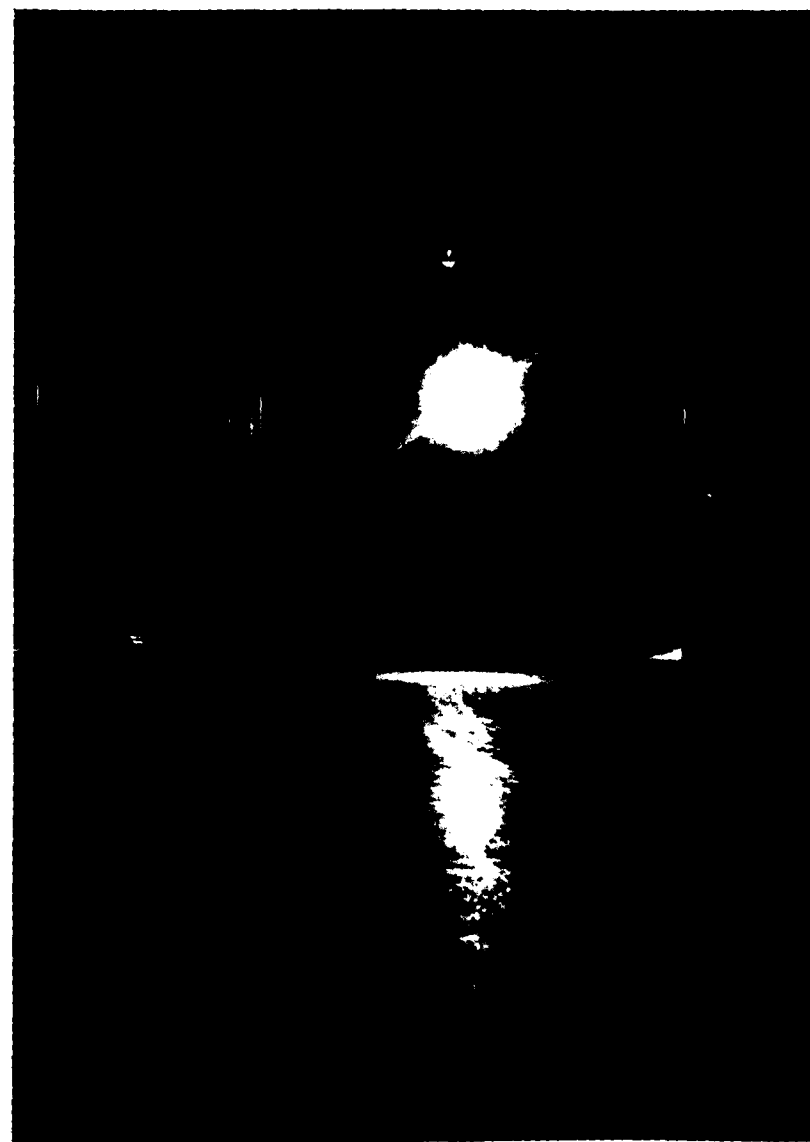
Sir Francis Galton took up the subject in the year 1888, and found that the significance attached to the employment of finger-prints amongst various nations during past times to have been partly superstitious and partly ceremonial.

For instance, illiterate natives in India signed documents by wetting the tip of one finger with ink and then touching the document, this mark being called a 'tep-sai'. These 'tep-sai' marks were as a rule so roughly taken as to be quite useless for comparison and either those in authority did not realize the possibilities of certain identification if a proper mark was taken, or thought that the mere fact that any mark had been taken was good enough to bluff an illiterate native.

Sir Francis also dealt with the possibility of finding impressions taken from different fingers to be identical, and his writings were accepted as the authority on these branches of the system.

It is frequently stated in the Press and elsewhere that Bertillon invented the system of identification by means of finger-prints, but this is quite incorrect. He devised the system of identification called 'Anthropometry', by which system classification was made by means of measurements, but he at first regarded the process of identification by means of finger-prints as unworkable, and it was only after a very long time that he recognized the value of the idea and adopted it as an adjunct to his system of body measurements. Bertillon's Anthropometric System was first put into operation in France and was later adopted by most of the civilized countries of the world, including Great Britain, but in 1894 it was found that the system was inadequate to cope with the extensive records which had by then accumulated in this country.

The unreliability of the Anthropometric System is



A PHOTOGRAPH, BY NIGHT, OF THE ROAD SHOWN IN THE ILLUSTRATION FACING PAGE 50.

(face p. 32)

THE FOX TWINS.

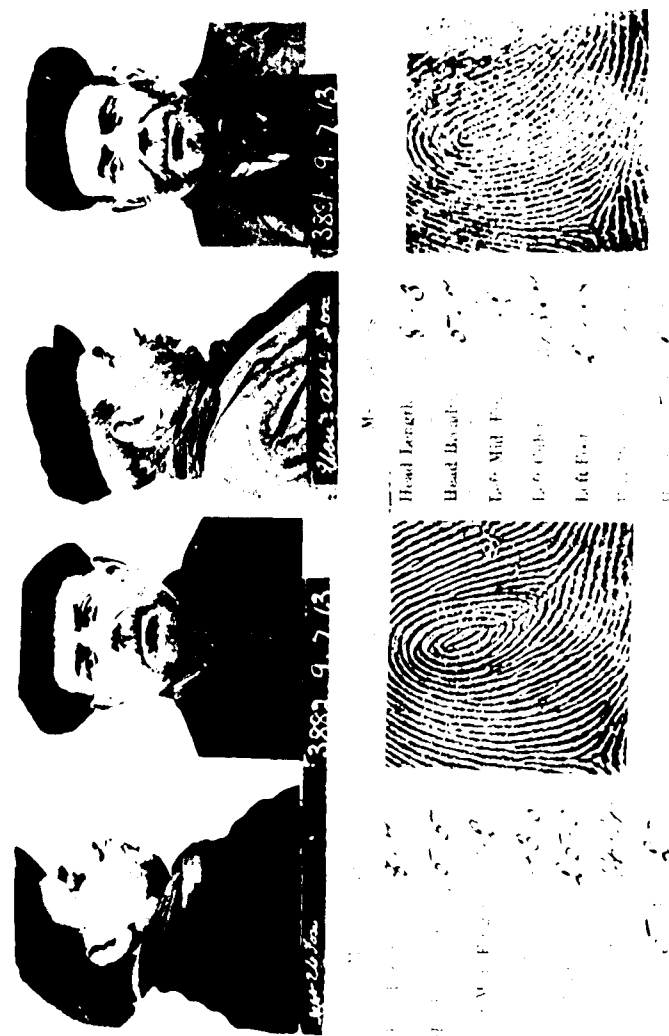


FIG. 1

strikingly illustrated by the photographs and Bertillon measurements of twin brothers, who were notorious poachers in Hertfordshire (see Fig. 1).

I think you will agree that there is a remarkable similarity in these portraits, and the greatest difference in their Bertillon measurements is that of two-fifths in the head length. As you are probably aware, the measurements were taken by means of callipers, and this difference could easily be accounted for by one officer working with a slack pair of calipers and another with a tight pair. Consequently, these men were identified by the Bertillon system every time, but it could never be established which of the twins was the one actually in custody—even the local police could not tell them apart. When one of the brothers was in custody he always accused his brother of committing the offence, and vice versa, and one can well imagine the confusion that arose. No such confusion arose, however, when their finger-prints were taken. In the illustration, the right ring finger impressions of these men are shown, and it needs but a superficial glance to see the difference in them.

A Committee, which was appointed in 1894 to inquire into the merits of the Finger-print and Bertillon Systems, found that the Finger-print System failed to deal with primary classification as effectively as the Bertillon method, but as the value of finger-prints was beginning to be realized, it was decided to use the two systems in conjunction—the Anthropometric System being retained for purposes of primary classification.

The late Sir Edward Henry, who was for many years Commissioner of the Metropolitan Police, found, during his term of office as Inspector-General of Police in India, that all finger-prints were divisible into four standard types of pattern, and eventually solved the problem of primary classification, so far as finger impressions were concerned, by placing the types of pattern upon a numerical basis, thereby doing away with certain suffixes referred to in the works of Sir Francis Galton.

The discovery of a satisfactory and reliable method of primary classification removed the final obstacle which had rendered it impracticable to utilize finger-prints alone for purposes of identification.

A Committee, presided over by Lord Belper, which was appointed to inquire into the best method of effecting criminal identification, recommended the adoption of the finger-print system alone as the best means of effecting criminal identification, and under the orders of the Secretary of State, the system was introduced into England and Wales in July, 1901. By directions of the Home Secretary the record of finger-prints for England and Wales is maintained at New Scotland Yard.

From July, 1901, up to the 31st July, 1936, 439,053 identifications have been effected as a result of search in the Main Finger-print Collection at New Scotland Yard, whilst approximately 56,000 searches are now received annually, of which approximately 22,000 are identified. At the end of July, 1936, the Main Finger-print Collection at New Scotland Yard contained nearly 580,000 finger-print forms. (The Main Finger-print Collection, of course, actually consists of two collections—one for males and one for females.)

What happens with a set of finger-prints when received at the Finger-print Branch?

All the finger-print forms are first of all stamped with particulars of the date of receipt and carefully scrutinized to see whether there is anything special concerning them which should be noted, *e.g.* a reference to a *Police Gazette* circulation, etc. They are then divided into two groups:—

(a) Those relating to prisoners who are appearing at Court that day, and

(b) Those relating to prisoners who are not appearing at Court that day.

Those referred to in (a) are then taken and are dealt with on the Nominal Index. This Index consists of cards containing the names and aliases of every person registered at New Scotland Yard, and shows the finger-print classification, C.R.O. number, etc., of these persons. The cards are filed

in alphabetical order of names, and, if there is more than one card of the same name, in finger-print classification order.

Search is first made in the Nominal Index with the name and aliases (if shown) of the prisoner and, if a card of that name is located with a classification similar to that of the finger-prints then received for search, a slip, giving the classification and Criminal Record Office number on the card in the Index, is attached to the finger-print form and is passed to the Main Search Room.

Here a searcher extracts from the Main Finger-print Collection the finger-print form of the person whose classification and Criminal Record Office number have been quoted by the Indexing Officer on the slip attached to the finger-prints. The searcher then compares the finger-prints on the form he has taken from the Collection with the prints received for search. If the prints are not identical, the form received for search is then sent to the Classifying Room to be dealt with in the same way as those searches concerning which it has not been possible from the name or aliases alone to suggest a possible C.R.O. number.

If the finger-prints are identical the Collection copy and the form received for search are then submitted to a senior officer who checks the identification. After checking the identification an identification report is made out in the Finger-print Branch, and the identification is again checked by another senior officer. An entry is made in a register kept for the purpose, and the identification report is then taken, without delay, to the Criminal Record Office who supply the Force concerned with particulars of the identity of the person in custody.

The necessity of classifying and searching with a set of finger-prints is thus obviated in those cases where, by means of the Nominal Index, the Collection copy can be obtained and can be compared forthwith with the finger-prints then received for search. This results in a great saving of time.

If a possible previous record cannot be located as a result of search in the Nominal Index, the form is then passed to the

classifiers for checking, classification, etc. The most important check is to see that the right forefinger impression on the back of the form below the prisoner's signature agrees with the corresponding impression on the front of the form, and also, by reference to the "plain" impressions, to ensure that the "rolled" impressions have been taken in the correct spaces on the form.

After it has been classified the form is taken to the Search Room. Here a searcher again checks the form, the classification formula, and makes an exhaustive search in the Main Finger-print Collection. If he locates a duplicate set of prints, the duplicate form in the Collection and the finger-prints then received for search are submitted to a senior officer for the purpose of checking the identification. An identification report is then compiled, the identification is again checked by another senior officer, and, after an entry has been made in the special register, the identification report is taken, without delay, to the Criminal Record Office, who inform the Force concerned of the identity of the person in question.

As soon as the identification report has been submitted the finger-print form which has been taken from the Main Collection is passed to the Scenes of Crime Section of the Branch, together with a slip giving particulars of the offence and place where the prisoner is in custody. The Collection copy is used in this instance because the finger-print form received for search is at that moment required for another purpose. Search is carried out in the Scenes of Crime Collection with the finger-prints of every person charged with offences similar to those to which copies of imprints in that Collection relate.

Should the prisoner not be identified as a result of search with his finger-prints in the Main Finger-print Collection, an entry is made in the register referred to overleaf, and a temporary office number is allotted that person. (The person retains that temporary number until a C.R.O. number is allotted.) The finger-print form is then taken to the Criminal Record Office where search is carried out in the Wanted Index

with the name, description, etc., as persons, although believed to be local criminals, may be wanted for committing offences elsewhere. On receipt of their finger-prints, search would be made in the Wanted Index of the office for that purpose.

After having been dealt with by the Criminal Record Office the form is then taken to the Scenes of Crime Section of the Finger-print Branch for search to be made in the Scenes of Crime Collection.

After having been dealt with in the Scenes of Crime Section a form is compiled notifying the Force concerned of the negative result of search, and requesting particulars of the result of the case, etc. You are no doubt well acquainted with the forms which are sent—a Form "D" is used for the Metropolitan Police and a Form 3 for Provincial and Foreign Forces.

When the finger-prints of all persons appearing at Court that day have been disposed of, those relating to persons who have been convicted for the offence in connection with which their finger-prints were taken are dealt with in exactly the same manner, except that in those cases where no previous record is traced upon receipt of the finger-prints from the Scenes of Crime Section, if the offence for which the person has been dealt with is one which can be registered, the finger-print form is checked, the person is registered, and allotted a C.R.O. number forthwith, and the finger-prints are filed in the Main Finger-print Collection on the day they are received for search. The usual Form 3 or Form "D", as the case may be, is also sent to the Force concerned.

The finger-prints of all persons who are on remand and who are not appearing at Court that day are dealt with finally in the same way as those relating to persons who are appearing at Court that day. After the Form 3 or Form "D" has been compiled, a special card showing the name of the prisoner, finger-print classification, temporary number allotted, Force concerned, and the date the finger-prints are received for search is filed in the Nominal Index. The finger-prints are filed in what is known as the "Temporary Collection" until

the result of the case is received. The finger-print forms and other papers in this Collection are filed in numerical order of temporary numbers allotted. Search is *not* made in this Collection with finger-prints received for usual search.

Immediately the case against the prisoner has been disposed of at Court the "Reply" portion of the Form 3 should be completed accurately, or, in the case of a Form "D" a Form 129 should be compiled accurately, and should be forwarded to the Finger-print Branch, so that according to whether the person has been convicted or acquitted the case can be registered or the finger-prints, etc., destroyed.

A great deal of laxity exists with regard to the reporting of results of cases. A large amount of correspondence is involved needlessly in ascertaining from the Force concerned the correct particulars of conviction, etc. This waste of time and labour could be obviated if officers responsible for reporting the results of cases exercised a little more care. A very common error is for persons to be reported as having been convicted at Petty Sessions or Police Court for offences for which they cannot be dealt with at Courts of Summary Jurisdiction.

You will appreciate the importance of reporting without delay those results of cases where no previous conviction has been traced and the prisoner has been "Bound Over", fined, discharged under the Probation of Offenders Act, or sentenced to very short terms of imprisonment. It is essential that the finger-prints of these persons should be registered and filed in the Main Finger-print Collection as soon as possible, so that in the event of that person being apprehended elsewhere, particulars of any previous record can be communicated to the Force concerned.

Many instances have arisen where Forces have delayed reporting the results of cases against prisoners concerning whom no previous conviction has been traced. In some instances a person has been arrested, has been dealt with at one place, and, shortly afterwards, has been arrested and dealt with at another place in a different name. Particulars

of the result of the second case against the person have been received at the Finger-print Branch before particulars of the result of the first case. Consequently, when the person's finger impressions were received for search on the second occasion, the Force concerned were informed that search had been made with the finger-prints then received of that person, but that no record of a previous conviction had been traced, as the finger impressions received of that person relative to the first offence were not filed in the Main Finger-print Collection, but were in the Temporary Collection awaiting particulars of the result of that case.

"Discharged under the Probation of Offenders Act" (which is regarded as a conviction) should not be confused with "Discharged—Indictable Offences Act" or "Discharged—Summary Jurisdiction Act". (The latter two are regarded as complete discharges and are not registered.) Many cases arise in which the wrong Act has been quoted, *i.e.* "Probation of Offenders Act" when it should have been "Summary Jurisdiction Act" and vice versa.

There is one other point which I must mention before leaving this question of reporting results of cases, and that is when the prisoner is a serving member of the Royal Navy, Army, or Royal Air Force. It is useless returning a Form 3 or Form 129 to this office with the result of the case entered thus, "Handed over to Military Escort to be dealt with by the Military Authorities". This is *not* the result of the case. The result of the case is the disposition by the Military, Naval, or Royal Air Force authorities. In all these cases the forms are returned to the Forces concerned with the request to obtain full particulars of the result of the proceedings by the Service authorities. The result of the case, *i.e.* date, court (or if he was dealt with by his Commanding Officer), sentence, offence, place at which dealt with, etc., should be supplied automatically by the Force concerned. Home Office Circular No. 240,087/19, dated 18.1.33, and Home Office Letter No. 240,087/27, dated 9.6.33, copies of which were sent to all Chief Constables, refer to this matter.

If a prisoner, against whom no previous record has been traced, is remanded *on bail* for any period over fourteen days the fact should be reported at once to the Finger-print Branch. The necessity for reporting this is so that the person's finger impressions can be filed in the Main Finger-print Collection forthwith. If this were not done the person might be apprehended at a different place in a different name, and it would be impossible for the Force arresting to be informed that the prisoner had been in custody elsewhere, but up to that time had not been finally dealt with, as the finger-prints, etc., would be filed in the temporary collection, awaiting particulars of the result of the case.

Although a period of fourteen days has been laid down in these cases, each case must be judged separately. The preceding paragraph might apply just as much when a person, against whom no previous conviction is traced, is remanded *on bail* for for seven days, or perhaps less, if it is known to the Force concerned that such person travels about a good deal and there is reason to believe that he might be arrested for another offence in a different name at some other place.

When particulars of the result of the case against a person are received at the Finger-print Branch, on Form 3 (in Provincial cases) and Form 129 (in Metropolitan Police cases), the finger-prints of that person are extracted from the Temporary Collection and are attached to the Form giving particulars of the result of the case, and all the documents are submitted to a senior officer who, after consideration of the facts reported, minutes the documents accordingly. If the disposition of the case is one in which record forms are supplied by the Prison Governor, the person is not registered until such record forms are received. The record forms may consist of a set of finger-prints alone, or a set of finger-prints and a Descriptive Form (with or without a photograph(s) of the prisoner).

Should, however, the person be at liberty after having been "Discharged under the Probation of Offenders Act" or fined, etc., and the case be one which can be registered, all

the information contained on documents, etc., which are filed in the Temporary Collection relative to that person are carefully checked by the Officer deputed to that duty, are again checked by the Registration Officer, and the person is registered and allotted a C.R.O. number forthwith, his finger-prints being filed in the Main Finger-print Collection on the same day that the particulars of the result of the case are received.

From the foregoing it will be seen that, apart from the ordinary work of searching with and identifying finger-prints received for search, the Finger-print Branch is a veritable hive of industry. The system of checking which is in operation makes all duties in connection with the identification of persons by means of finger-prints absolutely foolproof, for you will no doubt realize that for a mistake to be made would be disastrous.

Finger-prints have been used on occasions to establish the innocence of a person. The following is an interesting example of this.

A person who was the prosecutrix in a criminal case was alleged by the defence to be the subject of a Criminal Record Office file. During the trial she strenuously protested that she had never been convicted, and maintained that the criminal record referred to did not relate to her. The Judge directed that a finger-print expert from New Scotland Yard be summoned to attend the Court, and that the finger-prints of the prosecutrix be taken and compared with the finger-prints on record at New Scotland Yard relative to the subject of the Criminal Record Office file which, the defence claimed, referred to the prosecutrix. The finger-print expert attended, and it was found that the finger-prints of the prosecutrix were *not* identical with those of the subject of the C.R.O. file in question.

My next article will deal with instructions in the method of taking finger-prints.

Plans and Photographs

By W. J. HUTCHINSON

Chief Constable of Brighton

IT is invariably the practice of the prosecution to arrange for a plan of the scene of a crime to be prepared. The advantage of this is that a scale drawing gives to the Judge and Jury a true representation of a particular object or the scene of a crime. Positions can be recognized, distances can be measured, and visibility ascertained without going to the locality. An instance of this occurred in a noted murder case. The suggestion of the defence was that, knowing where the arsenic was kept, the victim, who was so ill that she had to be assisted to her room and put to bed, had managed to purloin some of the arsenic kept in the study, and had concealed it probably in the medicine cupboard in the bedroom, which it would be possible for anyone standing on the foot of the bed and holding on to the end of it, to reach. The opinion of the prosecution, however, was that in view of the woman's weak condition, it was impossible for her to get out of bed, and that it was impossible for a person to reach this particular cupboard without getting out of bed. It was decided then to have a plan prepared to show the position of the articles of furniture in the room and clear up the question of distance between the corner of the bedstead to the knob of the cupboard which was 3 ft. 9 in.

Use of a Plan

The use of a plan in connection with court proceedings is usually as a means of reference. It also enables the Judge and Jury or Magistrates as the case may be to follow the evidence in regard to any particular point; it enables measurements to be obtained and an impression as to layout

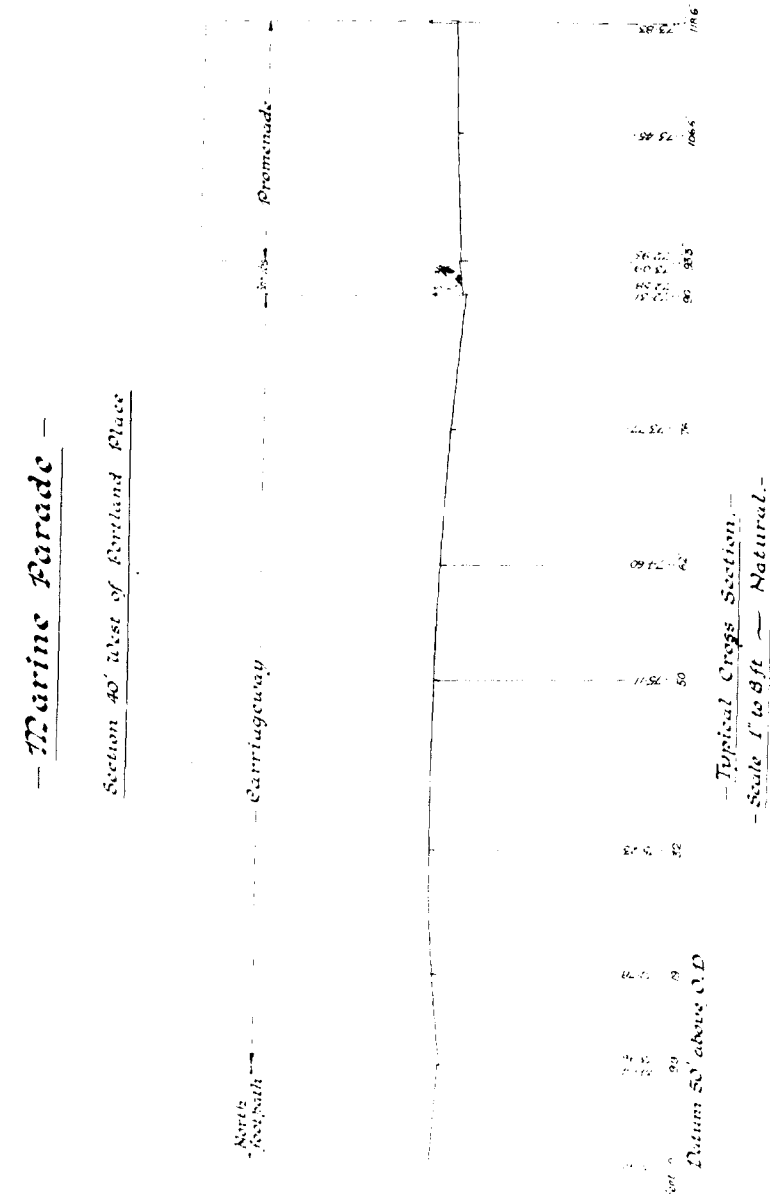


FIG. 1

and size of a building to be gained. When a plan is placed in the hands of anyone who is not familiar with reading one it is at first rather difficult. A witness, for instance, will appear to answer intelligently questions in regard to it, but when he is asked to mark a particular place, it may be quite evident that he has not understood the drawing at all. The best method of dealing with the plan of a building or room is to set it so that the entrance or doorway is facing you and this will usually be found at the bottom. From a brief perusal of a plan it will be readily seen where windows are situated; how doors open; where fireplaces and staircases are placed, and much other useful information.

It should be remembered that the reason for producing a plan is to give a *true* drawing which can be easily read and followed by an inexperienced person, who thus readily obtains a correct impression of the object represented.

It is also difficult to explain verbally certain details in some cases, and the use of a drawing, prepared to scale, considerably helps in this direction.

Some witnesses, indeed good witnesses, whilst they are quite certain of the facts, are unable to explain clearly what they mean, and very often through the absence of perhaps a simple drawing, an important point is lost.

In one case the main evidence entirely depended on certain marks, which, by the way, were noted and measured in the presence of the defendant in the case, but they were of such a degree that the use of a plan was imperative for the guidance of the Justices. Defending Counsel, however, alive to the weak points, saw his chance, and successfully pleaded against the use of the plan, on the grounds that the marks should not have been shown on it.

There cannot be much doubt that a drawing to scale is still the most useful for Court work.

Perhaps a novel use of a scale drawing was made in an inquiry following an accident between a tramcar, a large motor lorry, and a hand truck. In this case exact details of measurements concerning the tram track and the relative

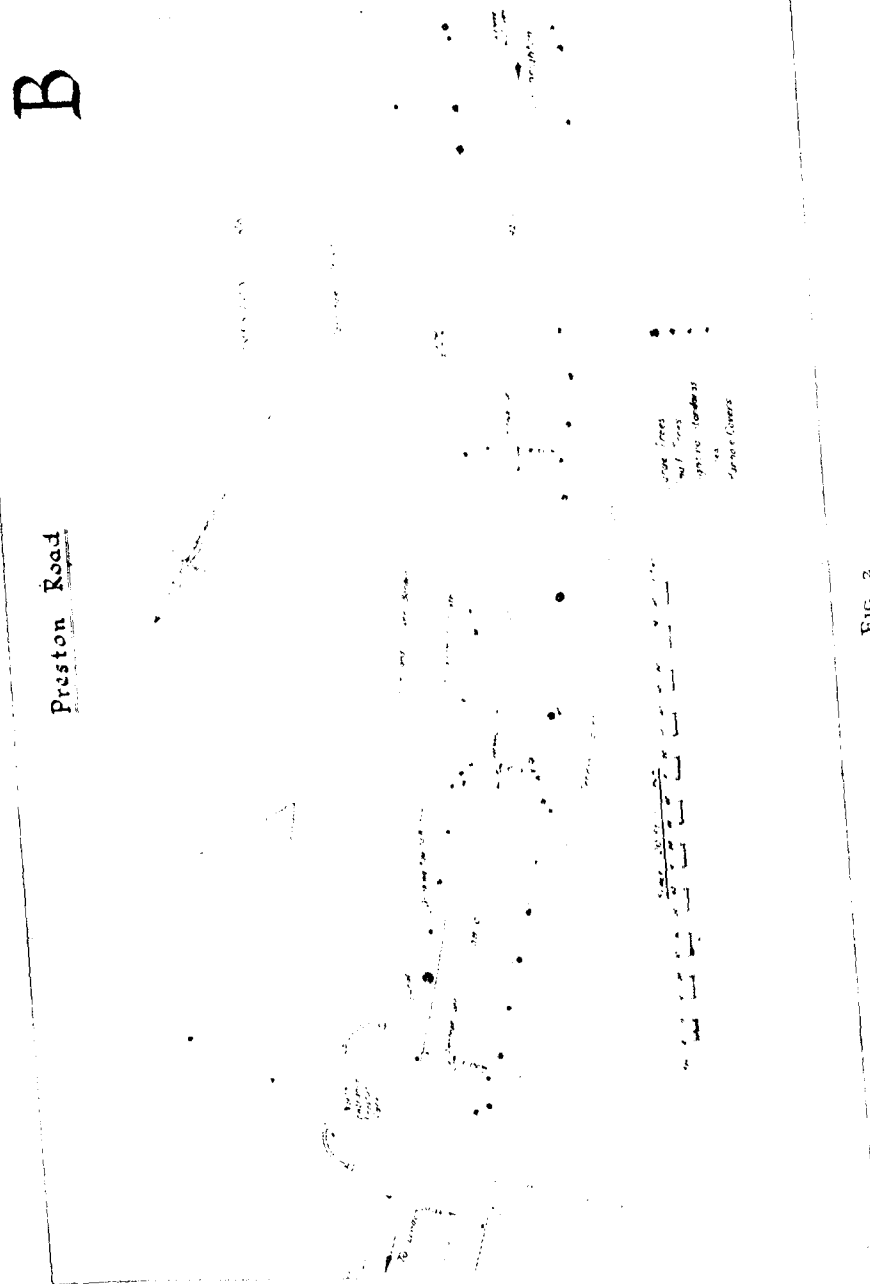


FIG. 2

position of the pavement kerb, on a bend of the road, played an important factor, and the usefulness of the plan was demonstrated by the introduction of scale plan drawings of the vehicles involved, and these were manœuvred according to the witnesses' stories of the facts leading up to the accident. In this connection it may be of interest to mention the Magnetic Blackboard which was recently placed on the market and which is designed for the rapid and simple demonstration of traffic accidents.

Reports and Sketches

A sketch is a most useful addition to a report. Such a drawing saves a complicated description of the place, together with particulars of the vehicles and measurements, and the outlines can be readily followed by a superior officer.

Many events and common occurrences can be easily described by a rough sketch with particular points marked for reference. A plan of a room with the articles of furniture; of a house and its surroundings; a sketch of the part of a road where a crime has been committed, or where a fatal accident has occurred, are perhaps the most common subjects.

A plain simple effort is all that is generally needed for Police purposes, but if something more elaborate is required an architect is usually employed.

Drawings

These may be usefully classed as (a) rough sketches and (b) plans which are drawn to scale. Let us consider the method of preparing these drawings in order that their usefulness may be appreciated.

Very often a rough sketch can be readily made to give more information than a plan drawn to scale, by conveying the real intention of the sketch without it being overlooked by taking measurements and committing them to scale. A highly developed sense of proportion is found to be very valuable as the drawer, if so gifted, will unconsciously make a fairly correct representation. There is no doubt that any

normal person who is interested in drawing can train his faculties in this direction. On the other hand, while a sketch might answer the purpose for defining certain positions, it will be found better for general purposes, if time and circumstances permit, to make the drawing to scale in order that there may be no confusion in regard to the relative size and position of articles, a drawback which it is otherwise difficult to overcome. For instance, if a rough sketch of a room were drawn regardless of scale, it would be difficult to show correctly the relative size of the walls and furniture, but, regardless of this, such a drawing is on occasions found most useful as an illustration to a superior, or as a means of reference for the officer in the case.

Before commencing such a sketch the attending circumstances, general situation and purpose of the drawing should be well considered, and then a decision made as to the objects or points which are of particular importance. If a room be the subject, the situation of the front of the house, whether facing north or south, and the position of the particular room in relation to the others should be noted. It is a sound method first to outline the walls, work from left to right, and in doing so the position of the windows, fireplace, and doors should be carefully noted. The room and principal articles should be produced as nearly as possible in proportion. Do not make the sketch too small, and do not overcrowd it. Such work should be marked "Not drawn to scale", but if any measurements are taken they should be marked in.

Sketch of a Road

It is always rather difficult to decide how much of a road to put in a sketch. There is no need to show more of a road than is necessary and, generally speaking, fifty yards each side of the spot will be found sufficient. As a rule only a drawing of a road, to scale, with nothing on it, is acceptable in a Court, but a superior officer will find a sketch of the scene of an accident extremely useful when he has to visualize the occurrence from the particulars given in a report. Written

details of descriptions of vehicles, directions, speeds, distances, and damage are difficult to sort out and follow. Simple drawings are most helpful with a report. In one instance when the driver of a car was seen he said, "How could the witnesses see if they were in the bus?" In order to provide the prosecution with an answer the Police Sergeant very thoughtfully took observations from a bus and made a second drawing which showed the vision from inside the vehicle.

Drawing to Scale

If one can draw to scale do so by all means, but what has been indicated is that other drawings are useful.

With practice anyone interested would soon be able to draw to scale. A *scale* is the ratio which a certain distance on the sketch bears to that distance on the ground, *viz.* one inch to five yards means one inch on the plan represents five yards on the ground. A scale of this nature can usually be employed. It is the general practice in one Force for the officer submitting a report for intended prosecution in a case of dangerous or careless driving to submit a plan drawn to scale, with vehicles after impact, skid marks, etc., shown on it. If process is granted, the constable prepares another one for the Court but does not show anything on the road. These drawings are welcomed because one can readily imagine how even an experienced magistrate can get a wrong impression from a Police witness when he is giving his evidence as to vehicles, their relative positions, measurements, damage, and other relevant and necessary particulars. In preparing scale drawings, however, apart from the evidence they are intended to convey, importance should be attached to the size and scale of the drawings.

One should always bear in mind, particularly in Court work, that anything cumbersome is annoying and irritating, and causes a certain amount of inconvenience. In one instance, following a fatal motor accident plans were prepared by the Police giving all the details of positions of vehicles,

skid marks, etc., actually taken a few minutes after the occurrence. These plans were put in and extensively used at the Coroner's Inquiry and accepted as evidence. In the interim following the Coroner's verdict, elaborate plans of the site of the accident were prepared by an architect and subsequently produced at the Court of Assize. They were so large and inconvenient to the learned Judge that he discarded them and the original plan prepared by the Police was produced and used. This drawing was prepared on an "Imperial" sheet (30 in. by 22 in.). A foolscap sheet, however, is a most convenient size for ordinary Police purposes.

It is also thought that in the preparation of any such drawings uniformity of the scales used would considerably help in the reading of any such drawings by inexperienced witnesses, and for this the following are put forward as suggestions.

Plans and drawings of buildings— $\frac{1}{8}$ or $\frac{1}{4}$ scale, according to the size of the building.

Surveys, or Ordnance preparations—20 feet to 1 inch.

It is desirable that every drawing, except those drawn full size, should have the scale to which they are made drawn upon them, and not merely described in words. This enables any dimensions to be read off.

The method of serving several copies from a single tracing of the original plans is a great economy of time and labour, but unless such copies are fully marked with measurements, the finished copies could not be submitted as being accurate as the process undergone renders a slight but noticeable shrinkage.

Gradients

On one occasion a fatal accident occurred through a runaway vehicle on a steep gradient.

In addition to the plans of the thoroughfare being produced, a "Section" of the gradient, giving details of the various "falls", was prepared.

It is sometimes desirable for the gradient of a road to

lie the shortcomings of photography, the width is shown correctly, but there is no relation between width and depth.

However beautiful a picture may be, embodying almost every detail of any scene, the fact remains that the essential point, accuracy, is lacking.

To illustrate this attention is drawn to a photograph (Fig. 3) and a plan (Fig. 2) which were prepared by the prosecution in a recent manslaughter charge. The plan shows a long length of roadway with a very slight bend, the photograph gives a view of it. The defence tried to establish that there was an appreciable bend in the road, and produced a photograph (Fig. 4) in support of this. Now the difference between Fig. 3 and Fig. 4 is very noticeable and this is due to the position from which Fig. 4 was taken in order to give a more acute effect. The Learned Judge of Assize noticed this and remarked upon it in the following terms: "If you compare the photographs submitted by the prosecution and the defence, you will find that there is a marked difference in the appearance and perspective given to the prints. On the one hand you have the road in question shown as having a modest curve to the right. On the other the curve is most distinct and is almost in a half circle. Photographs are very useful in many respects and helpful where the scene is not known to the persons investigating a happening which has taken place, but too much notice should not be paid to them. They can be deceptive, and should be treated as an accessory to the plans which we have before us."

Probably the best point from which to take a photograph under such circumstances is a position which a motor-car would occupy when approaching the place, that is if visibility is the point in question.

A photograph of a section of a road gives a wrong impression quite apart from anything referred to in the previous paragraphs. This is due to the fact that while the width of the road may be correctly represented, the length cannot be shown in the same scale. For instance, the road width of 30 feet may occupy 3 inches of the photograph



FIG. 3

(face p. 50)

while the length which may be 100 yards occupies only a depth of half an inch. This will be readily understood when one compares photograph Fig. 3 with plan Fig. 2. A wealth of important detail and measurements can be included in a plan as compared with a pictorial effect.

When a photograph is produced by the defence in such circumstances the witness who took it should be asked : (1) With what object was it taken ? (2) From what point was it taken ? (3) Why was that point selected ? (4) What distance was it from the bend ?

Fig. 1 is a typical cross-section of an 80-foot highway which gives a good impression of the camber at this point. A photograph, however, reveals an entirely different impression ; from it one might think that the left-hand side of the street was on a level with the post on the right-hand side, but a glance at the plan will show that this impression is entirely wrong. While there is a distinct camber on the road and a definite drop to the right, it is not nearly so acute as the photograph would lead one to believe. This is another instance where a photograph would serve only as an adjunct to a plan.



FIG. 4

Scientific Evidence in a Case of Arson

By J. W. Warburton, F.C.S., F.R.M.S., and
L. L. Lloyd, Ph.D. (Berne), F.I.C.

A CHARGE of arson against a man in Bradford some little time ago was proved and a conviction obtained by the almost exclusive use of scientific evidence, there being little else in the way of corroboration available. The charge was concerned with an attempt to burn down the premises of a firm of scenic artists on the outskirts of the city.

The building—a tall, rather narrow structure of three floors—was left secure as usual in the evening. The office was part of the top floor, which was used as a painting room and contained large quantities of paint and painting materials. There was a window on the second floor 18 inches above the roof of a lean-to shed and giving access to a lavatory.

Early the following morning workmen arriving in the course of their normal duties found the premises full of smoke and a strong smell of burning material. An immediate search was made, resulting in the discovery that fires were smouldering in three different parts of the building. Having extinguished the fires with little difficulty, the workmen communicated with their employer, who made an examination of the premises and concluded that a deliberate attempt had been made to set fire to them. He called the police, and a detective-sergeant attended along with a senior officer of the Fire Brigade, who confirmed the owner's impression that the fires had been deliberately started.

The detective's examination revealed that access to the

SCIENTIFIC EVIDENCE IN A CASE OF ARSON 53

premises had been gained by way of the lean-to shed and lavatory window described, that the office had been ransacked, and that the single office window had been painted over in the inside in an apparent attempt to hide the activities of the intruder. The tin of paint used for this purpose had been taken from the painting room on the same floor and had been left on the window-sill. Little care had been used in painting over the window, the paint being liberally splashed on the floor and window-sill, and on the office desk the detective found a small envelope similar to a wage-packet, which had been opened and part of the contents, which consisted of flat purple crystals used in the course of the business, strewn on the desk and on the floor.

The detective's suspicions were directed towards a man who had previously been employed by this firm, and he decided to visit this man's home a short distance away. The suspect was out at work and a female member of the household could give no information as to his movements during the previous evening, but at the request of the detective produced the clothing which he had been wearing. The detective meticulously examined each garment with the following results :—

In the "turn-ups" of the trousers was a quantity of glittering, flat, purple crystals and a number of tufts of brick-coloured fibre.

There were several spots of paint on the legs of the trousers.

One of the shoes bore a blue stain on the sole near the toe.

There were tufts of brick-coloured fibre adhering to the socks and inside one of the shoes.

As the crystals and paint bore a strong resemblance to those which he had seen in the premises concerned, the detective took charge of the clothing and returned to the premises, where he found on a chair at the entrance to the office a cushion covered with tufts of brick-coloured fibre apparently identical with those found on the suspect's clothing.

The officer took possession of the packet of crystals, the

tin of paint and the cushion, and these were sent along with the suspect's clothing to the laboratory, where a series of preliminary tests on the various substances indicated that they were identical with those adhering to the clothing.

The detective returned to the suspect's home, awaited his return, and arrested him on a charge of arson. When formally charged at headquarters and cautioned, he gave as an explanation of the presence of the various substances on his clothing that the crystals consisted of stone dust acquired in the quarry where he was in fact employed. Samples of this stone dust were subsequently procured.

The analysis of the crystals and paint was undertaken by L. L. Lloyd, Ph.D., F.I.C., head of the dyeing department of the Bradford Technical College, and of the tufts of fibre by Mr. J. W. Warburton, F.C.S., F.R.M.S., Research Medallist of the Worshipful Company of Woolmen.

Dr. Lloyd's analysis revealed that the glittering crystals consisted of mica which had been coloured with a water insoluble dyestuff. The colouring had been obtained by means of an alcoholic solution of Cyanosine A., which is manufactured only in Germany, along with a siccative agent to produce a thin purple coating on the mica. The particular property of Cyanosine A. is that it is fluorescent, showing purple with an orange fluorescence when illuminated, and these purple crystals, it was later ascertained, known as "Flickers" or "Fritters", were procurable from only one firm in Britain, the agents of the German manufacturers. The purple crystals from the envelope and those from the suspect's clothing were identical. The paint was of a peculiar composition, the principal constituents being Prussian blue and Assyrian red, together with size and chalk.

Analysis of the tufts of fibre from the cushion and those from the suspect's clothing showed them to be identical. They were composed of cotton fibre, of uniform size, and had been dyed with the same combination of dyestuffs and fire-proofed with the same fire-proofing agents.

The technical aspect in these proceedings is interesting, as

the case stood or fell on the merits of the technical evidence adduced at the trial. Dealing first with the purple crystals, which, as already stated, were shown to be composed of mica coloured with an alcoholic solution of Cyanosine A., the prisoner alleged that the crystals which were found on his clothing, and which, of course, glittered, had been acquired in the course of his employment. Samples of the coloured crystals from his clothing, of those from the premises and of the stone dust from the quarry were placed in separate glass tubes containing alcohol. In the first two cases the alcohol developed a purple colour due to the dissolving of the coating of Cyanosine A. on the mica. In the last case, the alcohol remained quite colourless. It is true, of course, that glittering particles are frequently acquired by the clothing of quarry-workers, and that this glittering matter is actually mica which is contained in many sandstones. This fact, however, had no significance in the prisoner's favour as the glittering substance on the clothing which he had been wearing at the time of the offence was mica coloured with a dyestuff.

With regard to the spots of paint on the clothing, these were, as already stated, of a peculiar composition, the principal constituents being Prussian blue, Assyrian red, chalk, and size, and this analysis corresponded exactly with the analysis of the paint which had been used to paint the office window and which had been manufactured in the premises from a special formula used by the firm. Some of the spots of paint which had fallen on the prisoner's trousers had dried, and as there was insufficient size firmly to bind the paint to the clothing, had been partly rubbed off. Where this had occurred a distinct blue spot had been left on the clothing, the reason being that the Prussian blue constituent has an affinity for wool, a property not possessed by any of the other constituents of the mixture, these having been brushed from the surface of the fabric on drying. Among the many spots found on the trousers it was found that only three contained all the constituents of the paint mixture. It is interesting to note that Prussian blue is not generally used in the paint trade for the

production of water paints or distempers, the constituents of which frequently have alkaline properties. Alkali slowly reacts with Prussian blue to form ferric oxide, which is reddish brown in colour, with the result that the blue colour, by reaction with alkali, is changed to reddish brown, or to a mixture of reddish brown and blue, which would appear grey, through brown to reddish brown. Furthermore, Prussian blue has the peculiar property of flowing from a water paint mixture so that an even painting cannot be satisfactorily obtained—a property which the scenic artist utilizes to procure desired cloudy effects which would be unpleasant for ordinary purposes.

As regards the tufts of fibre on the cushion and on the prisoner's clothing, these were found to have come from material rendered non-inflammable and to have been dyed with a certain combination of dyestuffs to obtain the required shade. Careful chemical and microscopical examination demonstrated that the tufts from the clothing and from the cushion were absolutely identical in every detail. Through a study of the processing effects on the fibres, the experts formed the opinion that the tufts of fibre from both sources had come from the same batch of cloth, subsequent inquiry of the manufacturers proving the accuracy of this opinion. It transpired that the manufacturers had made during the previous five years only two pieces of this cloth dyed to the particular shade and fire-proofed, both of these pieces having been made for and delivered to this firm of scenic artists only a short time before the attempt to burn down their premises was made.

In passing sentence of nine months' imprisonment with hard labour on the prisoner, the Judge said: "The jury have found you guilty on what I conceive to be conclusive evidence. I think it right in this case to say that the investigations of the detective-sergeant have been conducted with great skill, the result of which led to the detection of this offence."

Team Work in Crime Detection

By DETECTIVE-INSPECTOR J. WESTLAND

Aberdeen City Police

NO. 6 Holburn Street, Aberdeen, is a one-roomed, ground-floor shop, situated near a busy junction in the City. It is occupied by David Campbell, who carries on business as a draper and also has charge of a Sub-Post Office, situated within the shop. The doorway of the shop is recessed about 3½ feet from the outside line of the building, and the door (the only one) is fitted with a common box lock. The south side of the shop caters for the drapery business, the Sub-Post Office being on the north side. There are two assistants in the drapery business, and three in the Post Office.

About 7.15 p.m. on Thursday, 15th August, 1935, Mr. Campbell and his senior assistant counted and balanced the Post Office money, stamps, postal orders, money orders, and other postal securities, locked them in the steel safe under the Post Office counter near the front window, and left for the night about 7.30 p.m., locking the door after them.

At 8.30 a.m. on Friday, 16th August, Mr. Campbell arrived at his premises to commence business for the day. He found the shop door locked as he had left it. On entering the shop he saw that several of the drawers in the Post Office counter had been ransacked. Fortunately Mr. Campbell, in spite of his alarm, had the presence of mind to 'phone immediately to Police Headquarters leaving everything untouched. In response to this call a Detective-Sergeant and an officer from the Finger-print Department arrived at the premises about 8.35 a.m.

It was manifest from an examination of the door that

there had been no violation there. On entering the shop the officers saw marks of a whitish-grey powder on the rubber floor-mats placed at intervals from the end of the Post Office counter to the shop door. A glance behind this counter revealed the steel safe lying face downwards on the floor, with the back torn off. Every window of the shop was intact and it was therefore obvious that access had been gained by means of a key. The door, safe, and interior of the premises were carefully examined for finger-prints, but unfortunately no useful impressions were found.

In the course of their examination the officers found, lying on the floor near the safe, a new hacksaw with two spare blades, and two steel jemmys—one also new. It was evident that these tools had been used to force open the safe—the hacksaw to commence the operation and the jemmys to complete it. No finger-print impressions were found on the tools. The outer lining at the back of the safe had been completely torn off, whilst the inner lining had been ripped half-way up from the bottom. The safe was empty. Postal orders, money orders, and other traceable postal securities had been cunningly left behind by the thieves.

An initial check of the property revealed that cash and stamps to the value of approximately £1,000 had been stolen. The cash consisted of bank notes, 10s. Treasury notes, silver, and copper. Details of the theft were at once telephoned to Headquarters. On receipt of this information an organized search for trace of the thieves was instituted at all boarding houses, hotels, railway stations, 'bus termini, and other likely places.

In the meantime officers continued investigations at the scene of the crime. It was found that the cavity between the inner and outer walls of the safe was packed with a whitish-grey, fire-resisting powder. A heap of this powder was lying on the floor around the safe, and it was evident that the thieves had trampled in it thus leaving the footmarks on the rubber floor-mats. Some of the powder had also spilled inside the safe whilst the thieves had been engaged in forcing it. Inquiries

made in and around the shop threw no light on the identity of the thieves. The safe, hacksaw, blades, and jemmys were taken to Police Headquarters, and an officer was detailed to visit every ironmonger and tool merchant in the City with the tools in an effort to trace their source.

By midday the local Press had published a paragraph on the burglary, with a request to citizens, who might have seen anyone loitering near the shop, to come forward with information.

On reading this paragraph in his newspaper at home a night duty Constable reported that at 2.55 a.m. that day he had seen a man step into the doorway of the shop 6 Holburn Street, immediately come out again, and continue along the street. The Constable also stated that at 3.30 a.m. he stopped the same man in a street about 50 yards from 6 Holburn Street, and that on questioning him received the reply that he was waiting for a friend. In describing the man the Constable referred to him as a "Cockney".

About 4 p.m. that day (16th) an officer engaged in visiting boarding houses reported that he had learned of three London men who had stayed at a boarding house in Schoolhill, Aberdeen, on Monday, Tuesday, and Wednesday, 12th, 13th, and 14th August. They had arrived about 11.40 p.m. on Monday, and left in a blue "Ford" saloon motor-car (number unknown) about 10.30 p.m. on Wednesday, intimating that they were travelling all night on their way back to London. With a view to tracing these men an intensive search was instituted at all garages.

About midday on Saturday, 17th August, a Detective-Sergeant found trace of three London men who had garaged a blue 'Ford' saloon motor-car, registration number TR 9047, in one of the City garages on the nights of Monday, Tuesday, and Wednesday. It appeared from the descriptions of these men that they were the persons who had stayed at the Schoolhill boarding house. Possessed of this information the Sergeant immediately communicated with Southampton (TR), requesting the Police there to trace the owner of the

motor-car and question him regarding the three men who had garaged it in Aberdeen.

At 6 p.m. that day the Press paragraph evoked a response. A young lady called at the Central Police Office with the information that about 5.50 a.m. on Friday, 16th August, when passing Campbell's shop on her way to work, with a companion, she saw three men in the shop doorway, one of whom was locking the door as she passed. Her descriptions of the three men tallied more or less with the description of the three London men who had stayed at the Schoolhill boarding house.

About an hour later a 'phone message was received from New Scotland Yard intimating that Southampton had passed on the communication regarding the motor-car TR 9047 as the vehicle was now registered in the Metropolitan Area. The message stated that they had located the owner of the car (a garage proprietor) and learned from him that the vehicle had been hired on Sunday, 11th August, 1935, by a man giving the name and address "E. Ballard, 6 Delverton Road, Walworth, London", against whom convictions for dishonesty were recorded at Criminal Record Office. As the garage proprietor expected the car to be returned next day (Sunday, 18th August) the 'Yard' was requested to endeavour to stop the vehicle before its arrival in London, to apprehend all persons found in it, keeping in mind the property stolen, and to examine the vehicle and the clothing of the occupants for traces of a whitish-grey powder. Nothing further developed that day, but the officers engaged in the investigation retired with a feeling that progress had been made.

On the following day, Sunday, 18th August, information was received by 'phone from New Scotland Yard that Edward Ballard and a man named Tommy Jones *alias* Brown (both previously convicted) were in custody. Brown had been apprehended whilst taking the motor-car back to the garage, and Ballard when about to enter his home, both in the early hours of Sunday morning. Brown had admitted being in

Aberdeen with the car along with Ballard, who, however, denied knowing Brown or having been with him. Both, of course, strenuously denied all knowledge of the crime. Apart from fourteen 10s. notes, silver, and copper found on Ballard, and two 10s. notes and 9s. of silver on Brown, there was nothing significant in the prisoners' property. Brown, however, volunteered the information that there was a pocket wallet containing approximately £9 of silver in a chest of drawers at his home. The London officers also took possession of this money. Brown's plausible explanation was that he had saved it up week by week.

It is interesting to note the extent of and explanation for Brown's admissions to the Police at this juncture :—

(1) 'That he was in Aberdeen with the car'—because he was found returning it.

(2) 'That Ballard had been along with him'—because the vehicle was hired in Ballard's name and address.

(3) 'That there was a wallet containing silver at his home'—because he knew the Police would search his house in any case.

There was, however, no mention of a third man from either of the prisoners. In view of this information from the 'Yard' it was arranged that an escort would be sent for the prisoners, leaving Aberdeen by the night train and in addition two officers would travel to London to assist in making any necessary inquiries there.

During the course of the investigations it was borne in mind that traces of the whitish-grey, fire-resisting powder from the safe might be found on the clothing and shoes of the thieves, and perhaps even in the motor-car. Before leaving for London an officer, prompted by idle curiosity and because of some speculation as to the nature and ingredients of the powder, lifted a small quantity from the safe with a penny. Later, while playing halfpenny nap in the train on the journey south, it was noticed that one of the many coppers in the

"kitty" was different in colour from the others. The colour cannot be better described than by applying to it the old Scotch word "blae", which means that it was of a shade somewhere between blue, grey, and white. It seemed quite possible that this discoloration might be due to the fact that this was the penny which had been used to lift some of the powder from the safe, and, assuming this theory to be correct, it was realized that if the money found on Brown and Ballard was part of the proceeds of the burglary it also must be affected by contamination with the powder. "Would the evidence of contamination still be there?" This was a question for the chemist to answer.

On arriving in London next morning the Aberdeen officers signed for the prisoners' money, but were careful to leave it untouched and uncounted in the envelopes in which it was contained.

By this time Ballard had made a written statement to the effect that he did not know Brown and had not been out of London during the previous week, but later he had expressed a desire to cancel this statement as it was "all lies". When the warrant was read over to the prisoners they expressed surprise that they should be suspected of the crime. There was still no mention of a third man from either of them.

On Tuesday morning (20th August) the prisoners were sent back to Aberdeen, and following their departure a second search was made at Brown's house. During this search the officers found a pair of brown suede shoes which, even to the naked eye, had slight traces of a whitish-grey powder about the insteps and welts. They took possession of the shoes and some clothing, and on the following day these articles, together with the money found on the prisoners, were, with the consent of Mr. Kendal, Assistant Commissioner of Police, taken to the Metropolitan Police Laboratories, Hendon, where they were handed to Mr. L. C. Nickolls, M.Sc., A.R.C.S., F.I.C., for examination. In the meantime a sample of the powder from the safe had been sent from Aberdeen by registered post. It also was handed to Mr. Nickolls.

In the interval persistent inquiries at Aberdeen had furthered the investigation considerably. It was established by the officer in charge of the inquiry relating to the source of the tools that, on Monday or Tuesday, 12th or 13th August, a steel case-opener, identical with one of the jemmys found beside the safe, had been sold to a man with a 'Cockney' accent by an ironmonger in Schoolhill, near the boarding house. This officer later established the fact that no other ironmonger or tool merchant in the City of Aberdeen stocked this particular brand of steel case-opener. Other members of the staff brought to light that a hacksaw and two spare blades were on Thursday, 15th August, sold by an ironmonger in Stonehaven (a town about 15 miles south of Aberdeen) to a man with a 'Cockney' accent. It was later proved that no other trader in either Aberdeen or Stonehaven stocked this particular make of hacksaw. From the descriptions given it seemed probable that the same man had made both purchases—case-opener and hacksaw—and that neither Brown nor Ballard was that person. Witnesses were found who testified to having seen the car and three men between Aberdeen and Stonehaven, and in the latter town on Thursday and Friday, 15th and 16th August. Moreover, the movements of the car and men were traced from 8th to 18th August, as the following itinerary reveals.

Thursday, 8th August.

A man (later identified as Jones *alias* Brown) arranged at Moore Park Garage, London, for the hire of a motor-car from Sunday, 11th, until Sunday, 18th August, filling in the Hire Form and signing it "E. Ballard, 6 Delverton Road".

Sunday, 11th August.

10 a.m.—Brown called at the garage for the car and left with TR 9047 (blue Ford saloon).

11 a.m.—Two men (not identified), in blue saloon motor-car with three suitcases strapped on grid at rear, called for Ballard at his home.

Monday, 12th August.

11.40 p.m.—Brown and Ballard (both identified) and a companion arrive at boarding house in Schoolhill, Aberdeen, each carrying a suitcase. Blue 'Ford' saloon motor-car garaged in the City.

Monday or Tuesday, 12th or 13th August.

Steel case-opener purchased from ironmonger in Schoolhill by a man with 'Cockney' accent.

Wednesday, 14th August.

10.30 p.m.—Brown, Ballard, and companion leave the boarding house in a blue 'Ford' saloon motor-car, taking suitcases with them, and intimating that they intend travelling overnight to London.

11 p.m.—Three men (not identified) in motor-car TR 9047 fill up with petrol at a garage in the City.

Thursday, 15th August.

5.30 a.m.—Three men (Brown identified as one) seen travelling south in motor-car TR 9047 with three suitcases on grid at rear, about 5 miles north of Stonehaven.

8.30 a.m.—Three men, each carrying a suitcase, seen entering a saloon motor-car parked at roadside about 2½ miles north of Stonehaven.

11 a.m.—Hacksaw and two spare blades purchased from an ironmonger in Stonehaven by a man with 'Cockney' accent.

11.45 a.m.—Brown and Ballard (both identified) and a companion served with breakfast at a café in Stonehaven.

6.30 p.m. to 8 p.m.—Brown, Ballard, and companion served with tea at same café.

11.45 p.m.—Saloon motor-car seen being reversed into a dark recess in a side-street about 150 yards from Campbell's shop.

Friday, 16th August.

2.55 a.m.—Ballard (identified) seen by Constable to enter and leave doorway of Campbell's shop.

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3.30 a.m.—Ballard stopped and questioned by Constable about 50 yards from Campbell's shop.

4 a.m.—Saloon motor-car driven away from dark recess last mentioned.

5.15 a.m.—Saloon motor-car seen standing in another recess about 50 yards from one first mentioned.

5.50 a.m.—Brown (identified by one witness only) and two companions seen in doorway of Campbell's shop. Brown locking the door.

5.55 a.m.—Three men seen travelling south in City in a saloon motor-car with suitcases on grid at rear.

6.20 a.m.—Three men seen travelling south near Stonehaven in motor-car TR 9047 with suitcases on grid at rear.

Sunday, 18th August.

2.45 a.m.—Brown apprehended whilst taking motor-car TR 9047 back to Moore Park Garage.

4.30 a.m.—Ballard apprehended when about to enter his home.

The missing link in the chain of evidence was the third man, who had evidently purchased the jemmy and hacksaw, and it was manifest that, in spite of the obvious difficulty of the task, the officers in London must spare no effort to trace him. With the ungrudging and valuable assistance of members of the Flying Squad at New Scotland Yard, they searched the files at Criminal Record Office for associates of Brown and Ballard who might fit the description of No. 3 as given by the witnesses. By a process of elimination some fifteen or twenty possibles were eventually selected and their photographs sent to Aberdeen. The witnesses rejected them all. The search was intensified and inquiries continued in London for a fortnight, but without success.

By this time Mr. Nickolls had finished his examination of the articles submitted to him. He found that the sample of powder from the safe contained carbon calcium (chalk) mixed with iron compounds. On the shoes and coins he found carbon calcium mixed with the same proportion of iron

compounds. He also found carbon calcium on the clothing, but the 10s. notes yielded nothing. Mr. Nickolls stated that he was unable to subject the 10s. notes to the same thorough treatment as the coins because of the danger of ruining them. He placed very little reliance on what he had found on the clothing but stated that the sample and what he found on the shoes and coins might have a common origin.

Before passing on, it may be observed that so far as evidence from the motor-car was concerned there were two possible lines of inquiry—(1) To allow the finger-print experts to examine it with a view to tracing the third man, and (2) To allow the chemist to examine it for traces of the powder from the safe. The question of precedence in examination was seriously considered, but eventually the officers decided in favour of the first alternative, although it was realized that the possibility of discovering finger-print impressions of the third man were very slight, in view of the fact that the motor-car had travelled over 1,000 miles, during which journey it must have been handled by many people. No helpful evidence was gained from the finger-print examination and the motor-car was taken to Mr. Nickolls on Wednesday, 21st August. A sample of the powder used in the finger-print examination was also submitted to Mr. Nickolls who (as was feared might be the case) found that the ingredients of this powder and the powder from the safe were so much alike as to render futile any examination of the motor-car.

On Sunday, 1st September, the Aberdeen officers returned from London and about a fortnight later Sergeant Veasey of the Flying Squad, who was continuing inquiry in London, sent to Aberdeen a photograph of one—Syd Pulley. This photograph along with eight others was shown to various witnesses, several of whom, including the two ironmongers, stated that the photograph was a fairly good likeness of the third man. On 22nd September Pulley was apprehended and at an identification parade in Aberdeen he was identified by all the witnesses to whom he was shown.

The three men were duly committed for trial, and on

17th December, 1935, they appeared before the Lord Justice Clerk (Lord Aitchison) and a Jury at a sitting of the High Court of Justiciary in Aberdeen. The evidence for the prosecution lasted a day and a half. Brown, Pulley, and Ballard entered the witness-box in that order, but no other evidence was called for the defence. In an effort to explain the presence of the powder on the coins Brown stated that he kept a bookstall in a market-place in London; that he used chalk for marking the prices of the books on a small black-board; that he kept the chalk in a small tin into which he placed all cash paid for books; and that the cash found in the wallet and on his person was the proceeds of his bookstall business. The explanation was rather ingenious, but it fell rather flat when Lord Aitchison asked Brown if he also kept his shoes in the small tin. Ballard, who appeared to be more or less a handy 'tool' for watching during the commission of the crime, had great difficulty in explaining why he made a false statement to the Police, after his apprehension, denying knowing Brown or being in Aberdeen.

After an absence of about 15 minutes the Jury brought in a verdict of guilty against all three. Brown and Pulley were each sentenced to 5 years' penal servitude, and Ballard to 12 months' imprisonment.

Towards a Co-ordinated Constabulary

By SUPT. P. McA. STEWART

Indian Police

[This is the Winning Essay of the King's Gold Medal Essay Competition of 1935]

"While he disclaimed any sympathy with a policy for unifying police administration in this country, Sir John Simon called attention to the fact that there were 180 separate police forces in England and Wales, 41 of which had establishments of fewer than 50 men. It was important in the interests of efficiency that there should be co-operation for many purposes."

THE TIMES, 17th July, 1935.

I. The 231 Local Units

THE "various police forces in the United Kingdom" at the present time are, briefly :—

	Authorized Establishment
The Metropolitan District Police	19,568
The City of London Police	1,162
Sixty English and Welsh County Forces	18,572
One hundred and twenty-one English and Welsh Borough Forces	19,001
Twenty-nine Scottish County Forces	2,305
Nineteen Scottish Burgh Forces	4,207

making a total of 231 forces with authorized establishments amounting to 64,815.

The Reports of His Majesty's Inspectors of Constabulary for England and Wales for the year ended 29th September,

1934, give the net expenditure (Scotland excluded) as over twenty million pounds, of which the Central Grant contribution is over ten million pounds per annum.

With the notable exception of the Metropolitan District Police (of which the cost is over seven millions a year) the English forces are administered locally by local bodies and centrally by the Home Office, with the assistance and on the advice of two Inspectors of Constabulary. The Metropolitan Police is administered for all purposes direct by the Home Office; and in Criminal Record and Finger-print work, as well as in the supply of detectives to other forces, performs certain quasi-national police functions for the other English and Welsh forces which are not directly administered, but only inspected, by the Home Office.

The Scottish forces are administered locally by county and burgh committees, and centrally by the Secretary of State for Scotland (or the Scottish Office), with the assistance and on the advice of His Majesty's Inspector of Constabulary for Scotland. Recently, as we shall see presently, the City of Glasgow Police Force has begun to perform certain quasi-national police functions for the Scottish police forces, somewhat as the Metropolitan Police do for the English police forces.

There are separate Police Federations (officially recognized representative bodies of the rank and file) for England and Wales, and for Scotland respectively: there are also separate (though largely identical) Police Regulations for the Scottish and for the English and Welsh forces.

Modifications in the respective sets of Police Regulations are promulgated by the Scottish Office, and by the Home Office.

II. The Two Central Offices

The initial point for consideration, in thinking of a common administration for the 231 Police units of the United Kingdom, is therefore the unification of the two central authorities, namely the Scottish Office and the Home Office.

Sir Edwin Troup in his book on the Home Office¹ states that, after the Union of the Parliaments of England and Scotland in 1707, a Secretary of State was appointed for Scottish affairs, but discontinued in 1746; and that, from 1746 to 1885, when the Scottish Office was reconstituted by Mr. Gladstone, the Home Office dealt with Scottish affairs, being assisted therein by the Lord Advocate.

"The difficulties," observes Sir Edwin, "which might have arisen from the separation of the domestic affairs of the two countries have been overcome by the close co-operation which has always been maintained between the Home and Scottish Offices. . . . On all matters relating to police, the two departments keep closely in touch and consult each other when any administrative improvement is contemplated."

Scottish Police and English Police are governed by different but similar sets of Police Acts—thus the English County Police Act was passed in 1856 and the Scottish County Police Act in 1857.

It might therefore be thought that in its dealings with the subject of Police the Scottish Office pursues a policy of saying ditto, ditto to all that is done with regard to English Police by the Home Office; and that there would be no difficulty in reverting to the pre-1885 arrangement whereby the Home Office administered Scottish Police with the advice of the Lord Advocate. Such facile conclusions would, however, not be drawn by anyone conversant with the profound and far-reaching divergencies of English and of Scottish Criminal Law. The Union of the Parliaments in 1707 left Scotland its national and separate systems of religion and of law; and the Scottish system of criminal law, which is dominated by the Lord Advocate and his department of Procurators Fiscal, involves different methods of police working from those obtaining in England and Wales. The Procurators Fiscal (or public prosecutors) of Scotland not only prosecute crimes in court, but exercise a close supervision over the progress of police

¹ Whitehall Series.

investigations into serious crimes even before it is known that court proceedings are likely to result.

It was no doubt for this reason that, even when the Home Office administered Scottish police affairs, it could not dispense with the assistance of the Lord Advocate, the head of the national system of public prosecution.

We may therefore *prima facie* conclude that the placing of the English and Scottish Police under a common administration would, apart from being repugnant to the Act of Union of 1707, not succeed in establishing uniformity of police working on account of the different systems of criminal law (and consequent police procedure) in the two countries.

III. *The Regulations*

Such assimilation of police working conditions in England, Wales, and Scotland as was possible at the end of the Great War ensued promptly on the presentation of the First Desborough Report.

The Desborough Committee attributed police discontent partly to heterogeneity of pay and conditions of service: and legislation was hurriedly passed introducing homogeneity in these respects from Land's End to John o'Groats. The method adopted was similar to that of President Roosevelt's National Recovery Codes.

The Police industries of the United Kingdom were left with their existing units of masters and men untouched: but national codes of standardized wages, allowances, hours of duty, refreshment periods, pensions, and the like, were set up. It became the law of England and of Scotland that police authorities everywhere in the United Kingdom should administer their forces uniformly in the above-mentioned matters, according to rules and rates announced respectively by the Home and the Scottish Offices.

Thus, while there are to-day, apart from the Home Office, 230 Police authorities in the United Kingdom, all are bound by the Police Regulations.

The Desborough Report contained an argument, classic in the literature of police administration, stating that police duty everywhere in the United Kingdom was fundamentally of equal importance. The following passages are quoted as being relevant to our present purpose :—

“The general policy of the Home Office until last year was to treat the several Forces as independent of each other and little has been done to assimilate the scales of pay. . . . These differences have very materially contributed to the unrest and dissatisfaction that have prevailed of late in the Police. . . . It might appear at first sight that the duties of the Police differ in some respects in different parts of the country. But even though the work of a constable or sergeant on beat or point duty in the City of London or in the clerical branch of any large city force is very different from, say, beat duty in the Highlands of Scotland or any rural county, what we have to consider is whether such differences are fundamental or render the work in one force more exacting than it is in another to such a degree as to justify separate treatment of the forces in regard to pay, pensions, etc.

“ . . . The matters with which the typical town policeman has to deal cover a wide field ; but the country policeman's duties appear to be no less varied ; and, apart from occasional visits of a sergeant or superior officer, he has to act in all matters on his own individual responsibility and without any possibility of summoning assistance. The country policeman requires to be essentially an ‘all round’ man to a greater degree than the average policeman in a large City force. . . . Having carefully considered the evidence we have come definitely to the conclusion that the duties of a policeman are fundamentally the same in character throughout the forces ; that such differences as exist do not justify wide differences in pay, pension, and housing conditions ; and that the Police Service of Great Britain should be considered as a whole for pay, pensions, allowances, and conditions of service generally.”

On these contentions the Codes of Police Recovery in 1919 were evolved. They continue at the present time and are likely long to continue to standardize police pay, pensions, and conditions of service throughout the United Kingdom, however various the forces may be.

IV. *Mutual Aid in Scotland*

We have seen that the Union of the Parliaments of England and Scotland in 1707 left each country its separate system of criminal law and hence of police legal procedure. The centralization of public prosecution in the Lord Advocate in Scotland may have been one of the causes that prevented the emergence north of the border, of any kind of police leadership and co-ordinating agency of criminal record and intelligence analogous to that of Scotland Yard in England. However that may be, certainly there were issued by the Scottish Office, as recently as 1934, addenda to the Police Regulations (Scotland) which suggest the non-existence hitherto of any form of detective or criminal intelligence sharing of experience among the 48 separate forces of that country.

Hitherto it would seem finger-print references have been made from Scottish forces, to the Commissioner of the Metropolitan Police in London, and Scotland has had no regional finger-print bureau of its own.

A new Regulation (No. 86) now provides that “On each occasion when an impression or a photograph . . . is sent to New Scotland Yard for registration or search, a copy . . . shall be sent at the same time to the Chief Constable of Glasgow”. And another new Regulation (No. 87) provides that, from July, 1934, “Every Chief Constable shall make use of the Scottish *Police Gazette* for the purpose of the rapid circulation to all police forces in Scotland of information regarding persons wanted or property stolen in his police district. . . .”

From the Annual Report of the Chief Constable of Glasgow, it appears that the Scottish *Police Gazette*, as well as the Scottish Finger-print Bureau, is conducted by the City of Glasgow and in a recent investigation in a Scottish County, Glasgow detectives were sent down to assist the local force in a manner similar to that in which Scotland Yard men have long been dispatched to the aid of local English forces.

Interesting in their restricted significance, these developments appear to have implications of more general importance

beyond the borders of Scotland. They appear to show that concentration of criminal records and criminal intelligence should not be from an area so wide nor populations so numerous as those of the United Kingdom as a whole ; and that in these matters regional rather than national co-ordination is of practical value.

V. *The Scottish Consolidation Report*

Before we conclude this preliminary consideration of the possibility of bringing Scotland into a common scheme of Police administration with the more populous and prosperous portions of the United Kingdom, it is necessary to refer to the somewhat remarkable Police Consolidation Report submitted to the Secretary for Scotland in 1933 in which a bold policy of reduction in the number of Scottish police units from 48 to 14 was advocated.

The storm of indignation and protest that followed on the publication of these proposals not only makes it unlikely that they can be carried into effect ; but it shows that in Scotland it would not be practical politics to aim at police nationalization even within the borders of the country itself. *A fortiori*, the possibility of police merger with the rest of the United Kingdom would be out of the question.

With characteristic attention to the question of cost and economy the Scottish Consolidation Committee ascertained that certain compulsory mergers effected by the Local Government (Scotland) Act of 1929 had resulted in savings, namely :—

The Burghs of Renfrew and Johnstone with the County of Renfrew in a saving of 11 men ; and

The Burgh of Alloa with the County of Clackmannan in an annual reduction of £1,000 a year in police cost.

The same Act, Local Government (Scotland), 1929, had supplied other precedents for compulsory statutory amalgamations of small adjacent county forces, namely Kinross with Perth, and Nairn with Moray.

Thirty-four of the 48 Scottish Forces were ascertained to be below 100 in strength and 22 of these below 50 (the figure recently mentioned by Sir John Simon in the House of Commons as the *reductio ad absurdum* of separate police administration). The Scottish Consolidation Committee thus had ready to its hand enough examples of the need for consolidation, as well as four examples of actually beneficial statutory consolidation within recent years.

Its scheme of consolidation, however, was *prima facie* suspect as it did not propose to introduce any modulus of uniformity in the size of police units.

One of the 14 units was to be of 41 police, another of 81, a third of 2,803.

On general principles, outside the large cities, a uniform proportion of superintendence and leadership is desirable with units of administration neither so large as to be unwieldy and uncontrolled, nor so small as to be wasteful in separate administrative effort.

On such principles the Scottish Consolidation Committee Report fails to commend itself as a useful solution of Scotland's national police problem.

Concluding our review of the position of Scotland with reference to the possibility of a common police administration for the United Kingdom, we find that owing to divergencies of criminal law and procedure, and especially to the measure of police control vested in the Lord Advocate and the Procurators Fiscal, it is not practicable to assimilate police working methods in the two countries.

Even after the Desborough Reports, Scotland received separate Police Regulations and a separate Police Federation, and only last year Scotland through a modification of its Police Regulations, ceased to look to London alone for finger-print references and for current criminal intelligence, and set up a Scottish finger-print bureau and a Scottish *Police Gazette*.

On all these considerations we may safely conclude that in the police administration of the United Kingdom it is

necessary to treat Scotland as a separate regional entity under the Scottish Office; and that such assimilation of police working as is possible can best be arranged in the future as in the past by close co-operation in this subject between the Home and the Scottish Offices.

VI. *The Desborough View of Nationalization*

The notable standardization of police pay, allowances, hours of working, etc., achieved throughout the United Kingdom by the Desborough Committee makes it clear that the said Committee was not inclined to be restrained from bold projects of integration by doctrinaire views of the sanctity of local police autonomy. Their views, therefore, on the objections to police nationalization are entitled to be given great weight, as indicating a residuum of advantage in local control.

Their general conclusions may be summarized as follows:—

(a) "We have considered the subject of nationalization, that is to say, bringing all the police under the direct control of a Central Authority: the adoption of Central Control would be foreign to the constitutional principle by which the preservation of law and order in this country is primarily the function of the proper local authorities."

(b) "However local in character police work may have been in its earliest developments, the work of the separate police forces is necessarily interdependent under modern conditions. . . . It is obvious that the existence of numerous small forces greatly complicates police administration, it increases the difficulty of standardization of conditions of service, training, and working methods of the police to which we attach the greatest possible importance. . . . we strongly recommend that the small borough forces should be merged in the county forces; . . . we are strongly in favour of the enlargement of the units of police administration wherever possible; and we consider it desirable where practicable, that small county forces should be grouped with one another, or with an adjoining large force, and that there should be not only a single Chief Constable but also a single Joint Police Authority consisting of representatives from all the counties or boroughs in the group."

The Desborough Committee, whose Reports have constituted in many respects a manual of police administration throughout the United Kingdom from 1919 onwards, thus pronounced (a) against nationalization and (b) in favour of mergers both of boroughs and of counties, to secure the enlargement of police units.

At the time of the issue of the Report there were 60 police units in Scotland, and these have now been reduced to 48; while in England and Wales the figures have dropped in the interval of fifteen years from 186 to 181 only. The local opposition to merger of small forces as commended by the Desborough Committee has thus been even more pertinacious in England and Wales than in Scotland.

VII. *The For and Against of Local Autonomy*

There may be, in these days, when centralization appears to be the tendency of the times, some who are not prepared to accept as a good argument against police centralization "the constitutional principle by which the preservation of law and order in this country is primarily the function of the proper local authorities". This, as we have seen, was enough for the Desborough Committee. To those for whom a mere constitutional principle has no particular validity the following passage from Mr. Edward Jenks' *Outline of English Local Government*, may be commended as a danger signal against racing down the facile slopes to dictatorship:—

"In countries where the organs of local government are under the thumb of the central authority, although the efficiency of administration may be great, the political character of the people will be unsatisfactory; it will be apathetic for long periods, and then dangerously excited, with the result of instability and corruption in the central government. On the other hand, a country of strong local government may be slow to move and blundering in its methods; but it will be a country of steady progress and of political stability and honesty."

To those who, on the contrary, champion the cause of vested local interests in the administration of police, and are deaf to arguments of the changed circumstances brought

about by the vast development of motor transport and wireless during the past quarter of a century, the following passage from the work of another authority on Local Government (Mr. H. Lloyd Parry in his *Local Government*, P. S. King and Son, 1934) should be administered as a wholesome corrective :—

“ In the middle of last century our system of local administration was chaotic. There was a chaos of authorities, a chaos of areas, and a chaos of rates. It was a jungle of jurisdictions. . . . Central control was divided among various government departments. Much of the history of local government ever since has been the restoring of order out of this chaos. A selfish obstinacy has, throughout the history of local government, thwarted proposals most desirable in the public interest. Any proposal to absorb a small authority in a larger meets with the most vigorous opposition.”

In the same work, a reprint of lectures delivered by him at Exeter, Mr. Lloyd Parry points out that many of the counties of England and Wales are unsuitable in area and in boundaries as units of present day local administration : and he points out further the tendency to overstep these areas and artificial boundaries by *ad hoc* authorities specially constituted to rationalize the distribution of Education, Electric Power, Land Drainage, and Water on suitable bases of “ regional planning ”.

We have already noted, as an instance of Police regional planning, certain recent amendments in the Police Regulations of Scotland : and we shall presently comment on the West Riding criminal intelligence operations as a similar development.

VIII. Regional Planning

Regional Planning is in fact the logical outcome partly of the extended control over space and distance which has been achieved in recent times by the engineering sciences ; and partly of the recently recognized principle in Local Government that dwellers in the country have as much right to the modern conveniences of water supply, sanitation, electric power, libraries, etc., as dwellers in cities and boroughs.

In the past century, wealthy city corporations were able to raise loans, buy catchment areas remote from their city walls, and lead the captured water within those walls for the exclusive use of its citizens, regardless of outlying villages and towns that might historically and geographically have an ancient and natural claim to the water thus diverted from them.

Similarly, when electric power was being introduced into the service of man, the earliest plants were set up for the use of the people of towns and cities within their own boundaries—a wasteful arrangement that is now being replaced by regional supply from central power houses supplying the needs of country as well as of town dwellers.

We are constantly told that the local nature of police control especially in boroughs is the result of history, of the fact that in 1835, when borough local government was purified and reorganized, boroughs were given the power and the duty of raising local forces for local policing and law enforcement ; and that because boroughs have for 100 years exercised that power and carried out that duty, they have earned the right for all time, in a country like England with an immense respect for tradition, to continue to appropriate the protective services of their police forces solely to the use of the inhabitants of their own boundaries.

There would, however, taking a broad and impartial outlook, appear to be little if any difference in principle between the equal sharing of such services as water and power by rural and urban populations and the equal sharing of the important service of police in a similar manner.

The time is past when the criminal depredations of those enemies of society who predominantly flourish within the boundaries of large boroughs and cities (and whom to circumvent is the first of all police duties) were limited in range to the city or borough walls. The boroughs and cities which harbour these pests have a duty not only to their own urban electors, but to the whole region within which their criminals operate, to extend the effort of their police forces in defeating them.

(14) County police would be unfamiliar with borough by-laws.

(15) County police acting in a merged borough would not enjoy cordial support from borough officials.

X. *The Canker of Excessive Localism*

These and other arguments which were given so much weight by the Amalgamation Committee of 1932 as to render its Report practically valueless, are in fact a demonstration and unveiling of the existing rottenness of the state of Police in England and Wales and equally in Scotland. What is rotten is not the men or their officers, or even the police authorities that administer them. It is the lack of co-ordination, the non-existence of organization to link up the efforts of the various police bodies and groups for regional and national purposes. Every police administrative body is thinking of its own boundaries and its own force; every chief constable is concerned to safeguard his own position of independence from outside control; every superintendent, inspector, sergeant, and constable is controlled, directed, trained, and utilized to the service of local and not of regional or national police work. Such a state of affairs would poison the relations of any neighbours; and in the organization of British Police at the present time there is, apart from the Inspectors of Constabulary and the Home Office and Scottish Office, no machinery to link up the forces, to moderate their excessive devotion to local claims and local causes, to check the canker of jealousy between rival forces, or to insist on concerted effort to detect serious crimes committed by outside agency in particular jurisdictions.

It is thus to the extension and development of the inspectorial machinery of the Home and Scottish Offices that one must turn for the means of co-ordination now so deplorably deficient.

XI. *The Home and Scottish Office Inspectorates*

The institution of Inspectors of Constabulary is not so ancient as that of borough police, for while the latter date

from 1835 the former were created in England and Wales in 1856 and in Scotland in 1857. In the English Act there is provision for three Inspectors in England and Wales, and it is obvious that if the forty-eight forces and 6,500 Police of Scotland need one Inspector the 180 forces and 38,000 Police of English and Welsh cities and boroughs require at least three, and probably four.

It is therefore an indication of the atrophy which has attacked this side of Police effort in England and Wales that not even the three Inspectors whom the Act of 1856 provides for have been employed, a mistake that the Desborough Committee of 1919 pointed out, but a mistake that has not yet been rectified.

The Inspectors would seem, in fact, to be ground to powder between the upper and the nether millstones. Between the high national authority of the Home Office and the Scottish, and the fierce local patriotism of borough and county authorities entrenched in statutory and traditional power, the Inspectors have had to tread warily and to withhold the words of reprimand or exposure that would have revealed (what is after all their business to bring out) important defects of the existing system of police.

If two Inspectors have to inspect 180 forces of England and Wales in 365 days, it appears to be arithmetically certain that the average time which each Inspector can devote to the inspection of each unit per annum is four days. Assuming that of these four days two are devoted to receiving impressions and two either to travelling to and from the units inspected or to writing up reports of it for the Home Office or for the Police authority, then it would follow that, even if the Inspectors had no other work whatsoever but inspection of Police units, they could not spend more than an average of two days with each.

It is, however, well known that the Inspectors have multifarious other matters to engage their attention, such as Home Office conferences, inquiries and appeals, and the study of the topics which they refer to in their annual reports, as for

instance: Increases in authorized establishments; Recruiting; Training; Reserves; Co-operation between Forces; Traffic; Sport and Athletics; Prevention of Crime.

Further, it is well known that though the three Inspectors of Constabulary in the United Kingdom annually pass on their personal responsibility certificates enabling over £7,000,000 to be drawn from the national exchequer for the maintenance of over 44,000 policemen up and down the country, they have no executive or clerical staffs of any kind, but work as individual private gentlemen and use their private residences for the performance of their almost unaided clerical labours.

XII. *Increased Central Control Justified*

The Home and Scottish Offices have hitherto preferred to seek co-ordination and standardization by the method of model circulars and codes for the guidance of the various forces of the United Kingdom, rather than by the creation of co-ordinating agencies working under the Inspectors of Constabulary.

In 1856, when Inspectors of Constabulary were first brought into existence, the contribution of the Central Government to the maintenance of local police forces was fixed at 25 per cent of the two items of pay and clothing.

In 1875 the contribution was tentatively raised to 50 per cent of these items. But neither then nor in 1918, when the Government contribution was increased once more to cover 50 per cent of *all* items of local police expenditure, was the supervisory machinery of the Home Office Inspectorate in any way strengthened.

If we ask what extra power of regulating the police forces of the United Kingdom the Central Government secured in exchange for enormously increasing burdens of financial support to the local authorities whose duty it is to maintain such forces, the only answer is that the standards prescribed in the Police Regulations have had to be maintained. But the Police Regulations can be perfectly observed, and in spite of this a local authority and a local force may fail to co-operate

with adjacent police for the general benefit of the region. General Atcherley has mentioned in his Report for 1934 (para. 18) that while much has been done by conferences of officers and "by the force of circumstances" to get over territorial boundaries, yet little is still known about the crime of a neighbouring district.

There is no solution to this problem but the creation, by the Central Government, of regional co-ordinating centres of police work. The nucleus of such machinery exists in the Home Office and Scottish Office Inspectorates of Constabulary. H.M. Inspectors after a few years of experience are well able to assess the qualities and defects of the various forces; but they should be enabled to develop a regional team spirit.

We would therefore advance the following propositions:—

- (1) The Inspectors of Constabulary are the only agency suited to develop co-ordination and co-operation.
- (2) The Inspectorate in its present form is entirely inadequate to perform the functions thus required of it.
- (3) The progressive increases in the Central financial contribution to the maintenance of local forces in every part of the United Kingdom make increases in the Central Inspecting Agency long overdue.

XIII. *Recruit Training*

Having arrived at these conclusions, we may proceed to inquire into the aspects of police administration which specially lend themselves to the co-ordinating control of strengthened and regionalized Inspectorates of Constabulary.

We may appropriately take the Training of Police Recruits for a start. The largest Police unit in the United Kingdom, already under Central control, is the Metropolitan Police, and its figures of wastage are instructive as affording a measure of the numbers of constables requiring to be trained annually in the United Kingdom.

Totalling in round figures 20,000, the Metropolitan Police are said to recruit 1,000 new policemen every year and to start off a new class of twenty every week at Peel House.

The training of 1,000 new policemen per annum necessitates the maintenance by the Metropolitan Police of a permanent instructional establishment at Peel House, and the instructors there in the various kinds of professional accomplishments, physical, mental, and moral, required for police service are employed full time on this and on no other work.

In a force of 1,000 police it is probable that the average annual intake of recruits would be 50; and it is conceivable that the training of 50 new recruits as well as the conducting of refresher courses for men in the running for promotion to sergeant, might in a force of 1,000 police require the whole-time employment of a small staff of instructors.

But in the most usual kind of police force in the United Kingdom with strength between 100 and 500 it would clearly be impossible fully to employ any recruit training staff regularly all the year round for the instruction of the annual intake of 5 to 25 new recruits.

It is thus obvious that in such forces either the recruit must be sent away to another and larger force, with an all the year round training establishment, or he must be trained intermittently by men who from time to time throughout the year have to be drafted away to other duties.

The case of the Bristol Police may be taken to illustrate the incidence of recruit training in a force of 650 officers and men (apart from 85 employed in the Fire Brigade). A writer in the first issue of the *Metropolitan Police College Journal* mentions that in 1934 the number of new recruits in Bristol was 21, and that their courses of instruction lasted ten weeks. Assuming that classes of at least ten were formed for instructional purposes—individual instruction is not a probable conjecture—then it follows that the Bristol instructional staff was employed as such in 1934 for twenty weeks, or rather less than half the year.

It follows that no force under 1,000 can maintain a permanent training establishment.

(To be continued.)

Public Co-operation with the Police in South India

By D. CROSSLEY

District Superintendent of Police, South India

DURING the last three years there has been an astonishing development in the matter of public co-operation with the police in the Madras Presidency, entailing an almost revolutionary change in police work. Formerly the attitude of the public towards the police of South India was one of derision, apathy, and even hostility. One of the greatest difficulties the police had to contend with was lack of co-operation on the part of the general public. In many respects there were strong local feelings, but any suggestion of a public spirit in putting down abuses or combining for the common welfare was conspicuous by its absence. The people considered that the police were paid to do their job, and it was for them to do it. The police were never looked on as friends and the public had a rooted objection to having any dealings with them on account of their great fear of being dragged to courts to give evidence, etc. It was commonly remarked that police work was none of their business. They entirely failed to realize the cordial co-operation necessary, especially in a country of great distances and indifferent facilities for communication. The police were well aware that the confidence of the public in them was essential, but the problem was how to get the public to take the police into confidence, and regard it as their duty to help. There was no suggestion of that good-humoured co-operation with the police which is proverbial in England. While the epithet "good-humoured" would be out of place when alluding to the public attitude here,

nevertheless it is extremely gratifying to the Madras Police to be in a position to claim that public co-operation has within the last three years manifested itself to a remarkable degree, and that there is every indication that it will continue to grow.

It is the creation of what have come to be known as Village Vigilance Committees that has been largely responsible for this great change. These Village Vigilance Committees originated in certain obscure villages in the Madras Presidency where the local police had for a number of years been outwitted by criminals who were able to commit housebreakings and similar crimes with impunity without being caught. The Sub-Inspectors in charge of the police stations concerned had, along with a staff of merely one head constable and about ten police constables, to police as many as thirty or forty villages. Although with efficient working even this small local staff should have been in a position to get at the root of the crime by tracing and properly interrogating suspicious strangers, or by organizing an effective intelligence system, the fact remained that this had not been done, and the crime still continued. It was noticeable that the crime was occurring over a limited area embracing villages and hamlets separated by a few miles, but yet too scattered for the limited police force with their multifarious duties to efficiently patrol. Under these circumstances the idea of getting together a party of selected villagers headed by an influential man to patrol the area, and to keep a sharp look out for night prowlers was conceived. Accordingly the necessary instructions were issued to the local police, and results were awaited. In a remarkably short time the special party of villagers justified its existence, and two or three batches of notorious housebreakers (some from distant parts) were apprehended.

Following this the idea of vigilance parties or committees was extended to other localities where undetected crimes had been occurring for long periods with equally successful results. Simultaneously the functions of the committees were greatly increased. The beneficial results of the system

soon made themselves apparent, and it became clear not only that such a committee could be formed to useful purpose in every village of any size but that it was very desirable to so form them. The formation of these committees has progressed to such an extent that every district in the Madras Presidency is well on the way to having an efficient vigilance committee in every village of note.

As a rule the committees consist of from five to eight members including a president. In towns or large villages there are two or more vigilance committees working independently, each with its own particular area to attend to. As far as possible the committee members selected are active young men who are willing to do such voluntary work, and help others. The majority are men of status having an interest in the village welfare. It is not the intention that vigilance committees should do away with the necessity for having police informants. Though the committees are often in a position to ascertain and communicate useful information to the police, the necessity for having confidential informants still exists. Each president and committee member is given an order of appointment signed by the District Superintendent of Police.

The main functions of the committees are—

- (a) to aid the village headman and the village watchman in carrying out their duties in regard to crime and criminals ;
- (b) to help the police in the investigation, prevention, and detection of crime generally and in tracing and apprehending persons wanted ;
- (c) to take such immediate steps in regard to crime and criminals as the law empowers them to ;
- (d) to keep a look out for suspicious strangers, night prowlers, gangs and their supernumeraries, and members of criminal tribes, and to report any information regarding such persons ;
- (e) to report any movements or suspicious activities of known bad characters, and any information regarding stolen property ;

(f) to report promptly to the village headman (i) information which under section 45, Criminal Procedure Code, the latter and others mentioned in that section should report to the Magistrate or the police station, and (ii) information in respect of cognizable offences ;

(g) to report promptly any other information regarding the occurrence of crime ;

(h) to communicate to the Village Vigilance Committees of neighbouring villages information regarding crime and criminals that may affect such villages ;

(i) to see that the village or parts of it are patrolled by night when circumstances require it ;

(j) to take such steps as are feasible to prevent rowdyism, gambling, and street offences ;

(k) to encourage, by personal example and by precept, all members of the village community to give individually and collectively, to the Village Vigilance Committee and to the village authorities, such assistance as will ensure that necessary co-operation between the village community and the police is secured.

In order to co-ordinate the work of the committees, and to stimulate the interest of the members, what is known as a Vernacular News Sheet is being prepared, and distributed to all vigilance committees in their circles, and bordering vigilance committees by every Circle Inspector of Police on the first of every month. This News Sheet is made up of four parts : Part 1, New cases. Part 2, Old cases. Part 3, Persons wanted, and Part 4, General. Only cases in which identifiable property is lost with as full a description as possible are published in Part 1. Old cases since detected are listed in Part 2, while in Part 3 exhaustive particulars of wanted persons are given. Circular instructions are issued on general lines regarding particular subjects in Part 4, *e.g.* warning the committees to keep a look out for stolen cycles, requesting them to advise all cycle owners to procure locks and chains for their cycles, etc. Good work by committee members is also brought out in para 4.

Of recent months the vigilance committees have turned out some very valuable work indeed in different directions, and it is noticeable that it is in those districts where vigilance committee work is most advanced that there has been an equally noticeable drop in crime, and what is equally important, an appreciable improvement in detection.

A contributory cause of the increase of public co-operation within recent years has been the policy of freely distributing in public rewards in the shape of cash, certificates, silver mounted walking sticks, etc., for good work done by private individuals. It has been found possible to devote larger sums each year for the purpose, and this has undoubtedly stimulated the public interest and had its effect in inducing the public to help the police to a growing extent. Simultaneously the local intelligence system has been completely reorganized. Efforts have been made to secure secret informants in every village ready to report at the police stations when useful information regarding crime and criminals is to hand and by dint of much freer appropriations for this purpose the aim has been achieved to a great measure. Due to this, information regarding the movements of bad characters, the disposal of stolen property, etc., has begun to come in as it never did before—leading to a much more efficient control of crime.

The unprecedented improvement in public co-operation has therefore been due to the introduction of the vigilance committee system backed up by the payment of liberal rewards to private individuals, and the organization of an efficient intelligence system. I will conclude with an account of an outstanding piece of good work turned out by a vigilance committee and its president.

On 15th November, 1935, a Police Inspector of South Arcot district had been to a local Magistrate's court in connection with a case and returned to his house at about 8 p.m. While he was removing his overcoat, his cook informed him that two strangers were waiting outside to see him. The Inspector immediately went out on to the verandah to find out what they wanted, when without any warning a man

mounted the steps and fired a revolver shot at him. The bullet hit the Inspector on the right side of the body. He, however, rushed forward to capture the assailant when another shot was fired which hit him on the elbow. The Inspector raised an alarm and fell down. The assailants, along with another man who was waiting near the steps, ran away. The unfortunate Inspector was not able to recollect at that time any one who bore a grudge against him.

The following morning the President of a neighbouring Village Vigilance Committee saw a stranger in a khaki shirt with police buttons, and as he was a stranger he interrogated him in detail. The stranger first told him that he was a Criminal Investigation Department constable, deputed to arrest some gang and then began to give evasive replies. The President grew extremely suspicious, and he cross-examined him at great length, and the answers given by the stranger made him more suspicious. The stranger also exhibited a revolver to show that he was a policeman. Undaunted by this, the President with the help of another Village Vigilance Committee member, caught hold of the stranger, and produced him before the local village Magistrate. This village Magistrate was inclined to believe the story of the stranger, but he kept him in his house. The President, not being satisfied with the attitude of the village Magistrate, immediately cycled to the police station, and informed the Sub-Inspector that a stranger with a revolver was detained in the village Magistrate's house. The Sub-Inspector having by this time come to know of the dastardly attempt on the Inspector the previous night, informed the President about it, and asked him to proceed on his bicycle in advance and keep guard over the stranger with the help of the other members of the Village Vigilance Committee and villagers, and he followed the President with a posse of armed constables. The President went and informed the village Magistrate and other villagers of the whole affair. The stranger smelt a rat, reloaded his empty revolver, and warning the villagers not to approach him, got away and climbed a hillock near by.

The villagers by this time had gathered in large numbers, and surrounded the hillock as directed by the President and other members of the Village Vigilance Committee. The police arrived at this juncture and kept guard over the stranger, who had taken shelter in a cave and was threatening to shoot any one who approached.

Meanwhile the local Deputy Superintendent of Police, who had arrived in the locality by this time, proceeded to the spot with a large party of policemen in buses. After some exchange of words the stranger surrendered before the Deputy Superintendent of Police, discarding the revolver. The stranger stated that he was a constable of Madura South District under suspension, having been involved in an extortion case; that the Inspector, when he was in that district, was mainly responsible for launching this case against him, and that he came all the way from Madura to wreak his vengeance against him. He was searched, and seventeen live cartridges beside a fully loaded six-chambered revolver were recovered from him. He had a pouch for the revolver hung round his neck and concealed within his shirt.

The public spirit and resolution shown by this Vigilance Committee was very deservedly officially appreciated by the Government of Madras shortly afterwards.

Carpet Frauds

By DETECTIVE-SERGEANT DAVID MAY

Metropolitan Police

FROM time to time we pick up our newspapers and read that a conviction has been recorded for carpet fraud. In some cases the amounts involved are considerable and we wonder what on earth could have induced the victim to part with so much money to strangers in exchange for goods of which he has no real understanding. Some account of the methods adopted by these swindlers may therefore be of interest.

Man's expression of beauty takes many forms, varying with the taste of the artist and the materials at his disposal. For many centuries the craftsmen of the Orient have expressed their love of beauty and order in the carpets they produce on primitive hand-loom. These may be of silk or wool and are wonderful examples of patience and skill, fourteen to eighteen hundred silk knots to the square inch going to make up the finest specimens. A skilled craftsman is able to complete about two thousand knots a day, and it will thus be seen that a fair-sized carpet of good quality may easily represent the work of many years. Naturally the best specimens are of great value, and reproductions are made to bring these beautiful designs within the reach of people who love beauty but cannot afford to purchase the originals. These reproductions are produced in great quantities in Germany, Italy, Belgium, and Czechoslovakia. They are machine-made of mercerized cotton and may be bought at surprisingly low prices. For many years these reproductions have been purchased by carpet hawkers from importers and wholesalers in London and provincial cities and sold legitimately throughout the country.

CARPET FRAUDS

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The hawkers are to a large extent of the caravan-dweller type whom the lure of easily acquired money—a profit of many pounds instead of a few shillings—has led to fraudulent practices. In the past this has mainly been accomplished by misrepresenting the quality and value of the goods offered; but during the last few years they have carried on, with astonishing success, clever schemes by which they induce their victims to purchase large quantities of carpets for which the purchasers have no use. It must be said that in practically all cases the success of the dealers is in direct ratio with the cupidity of the purchasers.

The fact that so many of these hawkers have no fixed abode is one factor which makes their detection difficult. They usually have a motor-car which serves the dual purpose of providing motive power for a caravan and an easy method of travelling to and from whatever place has been selected for a base. The regulations require a motor-car owner to register his address with the licensing authority, and usually knowledge of a motor-car index number enables Police to trace the owner; but the travelling hawker, having no address, frequently uses the address of a wholesaler from whom he purchases goods. The wholesaler may or may not give permission for this to be done; but, as he seldom knows where his customer can be found, the knowledge that motor-car index number XYZ 1234 was used in connexion with a carpet offence very seldom assists the officer in charge of the inquiry.

It must be borne in mind that the story told by the carpet fraudsmen cannot be strictly defined. Like the confidence tricksters they vary the story according to their own experience of carpets and knowledge of human nature, and put it into whatever form seems most likely to attract the intended victim. Naturally, the disposition of the victim varies with the individual, and the carpet fraudsman is quick to sum up his man and proceed along the lines which promise the best results. As stated above, in the earlier days of carpet frauds the seller was content with representing a modern

reproduction rug or carpet as an antique original, taking care to disappear as soon as a sale was effected; but as time went on the scheme became more elaborate and now the victim is usually induced to buy on at least two occasions.

The following may be accepted as typical of the method used when carpet frauds first came to notice. A good-class country house was selected, and a man, on securing an interview with the householder, introduced himself as a connoisseur and collector of antique Persian rugs and carpets. He said he had been told the householder was also a connoisseur and asked permission to see his collection. It will readily be appreciated that collecting antique rugs is not an everyday hobby or one which can be indulged in by any other than a rich man, and in most cases the householder was pleasantly flattered. He told the caller he knew little about Persian antiques—few people are willing to admit they know nothing of any given subject—but showed him every carpet, rug, or runner which he had in the house. If one of these in any way approached Oriental design it was extravagantly praised by the caller, who then explained that he was really the representative of Messrs. Blank and Company, a London firm of Antique and Carpet Dealers, in search of good-class articles. He offered a price far beyond its value for one carpet or rug and, as an added inducement, declared that his firm was prepared to pay high prices for almost anything the householder cared to offer for sale. When a price had been agreed upon, the caller explained that he must consult his principals who would write to the householder confirming the offer and making arrangements for the articles to be collected and paid for.

The caller then took his leave and at no stage in the proceedings was he seen again. The following day a letter would be received from Messrs. Blank and Company. If examined, the postmark was usually found to be a local one although the letter purported to be from London. It referred to their valuer's call on the householder; stated that the writer had been instructed to confirm the offer made, and

continued with the information that their Mr. — would call on a given date (usually about four days ahead) to collect the articles and pay cash for them. The letter closed with a paragraph to the effect that Messrs. Blank and Company were always anxious to purchase good-class hand-made Oriental carpets and rugs, and a list, showing the prices they were prepared to pay for carpets and rugs of various sizes and qualities, was enclosed.

The ground was thus prepared for the second part of the scheme; the mind of the householder was well impressed with the idea that Messrs. Blank and Company would pay extravagant prices for Oriental carpets. A day or two after the letter was received and before the date fixed for payment and collection of his goods, other members of the gang called on the householder. They offered for sale what they described as antique hand-made Persian rugs and carpets. Sometimes they said these had been smuggled into the country; sometimes the seller said he was forced to sell the goods at a loss in order to raise capital to release other goods from bond; there have been instances where touching reference is made to an invalid wife, a sick child, and bad trade. No matter what reason was given for the forced sale, the householder remembered that he was shortly to make a huge profit on his own carpets and imagined that if he bought more he could either (a) use them to replace those he expected to sell, or (more usually) (b) sell them to the firm which had undertaken to purchase from him and whose price list he had so carefully studied. The price asked was always much lower than that offered by Messrs. Blank and Company, and the householder, believing the goods to be as described by the sellers and scenting big profits, fell a ready victim. Nothing more would be heard of these sellers and subsequent inquiry showed Messrs. Blank and Company to be non-existent.

If the householder's purchases were confined to obtaining sufficient carpets to replace those which he thought he had sold, his loss was not heavy: true it was that he had paid for the goods a price far above their value, and he did not really

want them, for his original ones remained in his possession; but he had only bought a few pieces. But where the tricksters succeeded in arousing in the householder's mind the thought that here was a golden opportunity to make money quickly by buying carpets to sell to Messrs. Blank and Company, he would make heavy purchases, spending far more money than he could afford, sometimes even borrowing to make up the amount required. In a case which happened about four years ago a lady paid £80 for two rugs which subsequent valuation showed to be worth not more than £2 12s. 6d.

Another method which has brought considerable success to the operators of this trick is started by a different approach to the householder. They show him what are said to be extremely valuable hand-made Persian carpets and ask permission to lay them in his house for a few days. The reason given is that the caller has a purchaser in view and the carpets show to much better advantage in a private house than they would in a stockroom. The caller offers to pay well and usually receives permission to do as he asks. A buyer, previously described as a wealthy connoisseur, is introduced, inspects the carpets and expresses such high opinion of them that for a time the sale appears to be going through. Then, for one reason or another, he changes his mind and declines to buy. The owner, pleading unexpected business or private expenses, borrows large sums of money from the householder on the security of the carpets, repeating this on subsequent visits. Ultimately, when he realizes that the householder has lent as much as he will, he disappears and the householder is left with a collection of attractive looking rubbish.

There have been instances in which an attacked householder, who on being pressed to buy has shown signs of hesitation, is asked to retain the articles on approval for a few days. Before this period has expired the seller, accompanied by another man, calls on him. The third party is introduced as a collector of Oriental rugs who is very anxious to purchase, for a large sum, one or more of the pieces held

by the victim, the seller stressing that the householder has an option to purchase and therefore he must first be given an opportunity to close the deal. As the price offered by the would-be buyer is always far in excess of that at which the householder can buy the articles, he usually completes the purchase without delay. Needless to say the sale to the third party does not mature and the victim is left in undisturbed possession of the rubbish for which he has paid so dearly.

An ingenious combination of these tricks was successfully played on a retired army colonel about three years ago. Two men called at his residence in Kent and offered for sale what they described as Oriental rugs. He selected four, one of which they said was a 'Kashan' of high value, and asked whether they would take one of his own carpets in part exchange. They agreed, allowing £12 for this, and were paid £100. Six months later "A" arrived in a motor-car driven by "B" and produced carpets which they wanted to sell. When the Colonel asked why he was selected as a likely customer they told him they had heard of him from dealers who had sold carpets to him. He replied that he had spent so much on them that he could not afford to buy any more, and, in speaking of his purchases, mentioned the Kashan. "A" asked if he might see it. When it was shown to him he said it was a very fine specimen and asked permission to sell it for the Colonel, declaring that he could get at least £150 for it and probably a great deal more. In fact he suggested that they should divide all he could get in excess of £250. He then showed the Colonel three carpets which he said were hand-made Persian articles, each worth over £100; spoke of his little girl who was ill and asked for the loan of £50 to pay for an operation on the child. He offered to leave the three carpets as security. The Colonel, being touched by "A's" apparent devotion to his sick child, and believing his story as to the worth of the three carpets and his own Kashan rug, handed him the money, and at "A's" suggestion the three carpets were laid in the various rooms of the Colonel's

house. The men then left but did not take the Kashan with them.

A fortnight later they returned and "A" told the Colonel he had the opportunity to buy another very fine silk Kashan which he was confident he could sell, together with the Colonel's, to a Roumanian millionaire who would arrive in England within the next few days; explained that he had only sufficient cash to pay the import duty on the rug and was anxious to complete the purchase at once, for if the owner got to know of the millionaire's intended visit he would endeavour to sell to the latter direct. In the conversation which followed, "A" asked the Colonel to advance £150 towards the purchase price of the second Kashan, for if only he could have the two to offer he was assured he could sell the Colonel's and the other for £300 and £1,500 respectively. He said he would then have spent about £800 on the rug and entertainment, but promised to divide the £1,000 profit equally with the Colonel. The latter, believing what he was told and scenting a quick profit, advanced the money.

A few days later "A" informed the Colonel by telephone that he had rather bad news. He had heard from the millionaire that his wife was ill at Torquay, and having visited her there, was too worried to do any business, consequently "A" had not been able to effect the expected sale. Shortly after that "A" called on the Colonel and told him he had at last succeeded in getting in touch with the biggest buyer of Persian rugs in the country; further, that after considerable difficulty he had got three very fine carpets on approval for £800. One of these was described as a "museum piece", and "A" said this was so rare and valuable that the rug buyer would purchase the other two carpets and the Kashan rugs to secure the "museum piece". He persuaded the Colonel to have the three carpets laid in his house and pose as the owner, suggesting he would introduce the buyer and the Colonel should ask £4,000 for the five pieces. He was told that on no account must he reduce the price by more than £200.

By this time the Colonel was becoming worried as to the security of his money, and told "A" that, having no knowledge of carpets, he was not in a position to haggle with a dealer over values. "A" said the dealer would be so anxious to secure the "museum piece" that he would be very easy to handle, and eventually the Colonel agreed. Within a few days "A" and "B" returned with "C", to whom the Colonel was introduced as the owner of the pieces they had been discussing. "C" carefully examined the rugs and carpets, particularly the "museum piece". He told the Colonel that this was one of twelve known pieces and was one he had been searching for. He said he did not want the other articles but would buy all in order to secure the one he wanted. He added that £4,000 was too much money to carry about with him but paid the Colonel a deposit of £50 in notes and arranged to pay the balance and collect his purchases within eight days. He then left with "B" and the Colonel told "A" what arrangements had been made. "A" said that this was disappointing, he had hoped for spot cash as he only had the carpets on approval. The Colonel said he was sorry but "A" must make arrangements with the owner to extend the time.

Three days later "A" returned with "D", whom he introduced as the son of the owner of the three carpets. "A" said the father insisted on the immediate return of the carpets or the £800 and had sent "D" to collect either the goods or the money. He said that unless the Colonel could satisfy the owner the matter was to be reported to the police who would seize the carpets. "D" confirmed what "A" had said, adding that his father was a hard man. Naturally the Colonel was very distressed to find himself in such a position, and told "D" that, having accepted a deposit for the carpets, he was not able to surrender them. After talking the matter over for nearly two hours, "D" promised to inform his father of the position of affairs and ask him to wait a few more days for his money. He arranged to meet the Colonel and "A" in London the following day and tell

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them his father's decision. The appointment was kept and "D" said his father still insisted on an immediate settlement. "A" said he could, with great difficulty, raise £300. He handed "D" his cheque for this amount and the Colonel gave "D" his cheque for £500.

The Colonel did not then realize that he had been defrauded in any way and tried to comfort "A", telling him that when "C" paid them the £3,950 everything would be in order and they would have made a good profit. Needless to say, "C" did not complete his purchase and the Colonel was left with the seven rugs and carpets for which he had paid £700, which, after deducting the £50 deposit so cunningly made by "C", left him poorer by £650, even though he was richer in experience. He did see three of these men again, but not until he was called as a witness at a Police Court, where they appeared to answer a conspiracy charge. Expert evidence then showed the carpets and rugs to be of low value, the vaunted "museum piece" being worth £20 at the very most.

In a recent case two men, dressed as merchant seamen and carrying kitbags, called on an elderly lady who keeps a small general shop in the north of England. They produced what they claimed to be hand-made Persian rugs and a carpet. They said they had brought these from the Persian Gulf on the oil-tanker on which they were serving. They stated that these were of great value, but as they only wanted a little money to "go on the spree" they were prepared to accept a low price. £12 was asked for the carpet and one rug, but the men eventually accepted £6 10s. and left.

Three days later another stranger called on the shopkeeper, handed her a business card which described him as the representative of a firm of Antique Dealers in London, and asked whether she had anything to sell. On being told she had not, he turned the conversation to carpets and said he had recently purchased from a friend of the shopkeeper. She then showed him the carpet and rug she had recently bought. The man praised her good judgment in securing

such treasures and offered to purchase them for £70. When she agreed, the man said the offer would be confirmed in writing by his firm and arrangements made for the goods to be collected and cash paid.

The following day the letter of confirmation was received. Although it purported to come from London it bore a Carlisle postmark, but this was not noticed. The letter stated that the representative would call in two days' time and complete the purchase. Later that day the two "sailors" returned with a collection of carpets. They said these belonged to the ship's engineer, who wanted £250 for them. These carpets were also described as valuable antique hand-made Persian articles, and again the shopkeeper believed what she was told about them. In fact she was so impressed that she told the "sailors" they were not getting full value for their carpets. She told them that what she had bought from them a few days previously for £6 10s. she had already agreed to sell for £70 and she offered to give the name and address of her purchaser. The "sailors" expressed their thanks, but said they had no time to seek another purchaser as their ship was due to sail, but in appreciation of her kindness they reduced the price to £100.

Naturally the men wanted cash, but as this was not available they accompanied the shopkeeper to her bank. Here the manager tried hard to dissuade his client, but without success.

He did persuade her to pay by a crossed cheque, which was post-dated. The supposed purchaser did not arrive and the lady consulted her solicitor, on whose advice she stopped the cheque. Inquiries were then set on foot and the rug and carpet were valued at £2 19s. 6d. and the collection of carpets at £12. All these articles were modern machine-made cotton goods of Belgian manufacture. The firm of antique dealers was found to be non-existent.

In due course the shopkeeper was sued by a firm of carpet wholesalers into whose hands the cheque had passed. She successfully defended the action on the grounds that the plaintiffs were not *bona fide* holders for value.

This civil action resulting from a criminal offence is by no means an isolated one. The writer has had personal interest in two others, and in each case the defendant, basing his defence on Section 30 (2) of the Bills of Exchange Act, 1882, successfully pleaded that the negotiation of the bill had been affected with fraud, the holder failing to show that he had given value for it in good faith.

The tendency of carpet fraud victims who have paid by cheque to stop payment and defend actions brought against them on the grounds that the cheque was obtained by fraud will do much to lessen this menace. Usually the person who sues is a carpet dealer of not too good a reputation, and whilst he may successfully plead ignorance of this type of fraud on the first occasion he goes into Court he cannot hope to mislead the Judge in his subsequent actions. This being so, he will not accept cheques from the hawkers, but, as their legitimate sales only represent small sums such as the householder would have in his pocket, they will not suffer whilst doing honest business. Some wholesalers now refuse to handle any cheque for more than £10 which is brought in by a hawker.

In many cases the wholesaler, knowing the harm done to the legitimate trade by the misrepresentation of reproduction goods, is only too anxious to assist Police; but he is often in a difficulty. He has received orders by post, frequently from people unknown to him, for items in his catalogue to be sent to a railway station. Cash is sent with the order, and in many cases the wholesaler has never seen his customer.

In order to stamp out this class of offence Press publicity might be considered, although this may have a boomerang effect, as, in addition to warning likely victims, it may also initiate those carpet hawkers who are not yet familiar with this method of making easy money.

From a Police point of view this type of fraud presents unusual difficulties. The problem of getting from the victim a good description of the people who have swindled him is a considerable one. If it were possible to obtain evidence

connecting the sellers and supposed purchasers, a clear case of conspiracy would be revealed, *e.g.* in the case of the shop-keeper the "sailors" obviously obtained money and a valuable security by false pretences; but they and the supposed antique buyer might well have been prosecuted for conspiracy to defraud if it had been possible to prove association. The care taken by the operators of the trick to ensure that their two parties are never seen together and that there is an interval of a few days between their visits has, in nearly all cases, rendered a charge of conspiracy impossible, and all that has been accomplished has been the prosecution of the sellers for obtaining money or valuable securities by false pretences, these consisting of representing that the carpets were of a quality and origin to which they had no title.

Footprints

By CONSTABLE F. ELMES

Dorsetshire Constabulary

THE Lord Chief Justice, in dismissing the appeal by Mrs. Bryant against her conviction for murder, said that the Court of Criminal Appeal had set its face against the efforts of those gentlemen who brought their minds controversially to bear on scientific evidence given at a trial. No doubt this was merely the legal way of saying "It is easy to be wise after the event" but, whatever the way of it, I should like to make it clear that in referring to the article on footprints by F. W. Martin, M.D. (*THE POLICE JOURNAL*, Vol. IX, No. 4) it is not intended that a controversy should be raised or that it should be thought that criticisms are being levelled at the method of taking casts of footprints described by the Doctor.

Readers will recall that Dr. Martin suggested the use of modelling wax for taking casts of footprints in dry earth or sand and, judging from the photographs of casts taken, the method is highly successful. As the method was described as "most accurate in its results" it is to be presumed that the wax neither contracts nor expands to any appreciable extent on cooling, but one is not informed whether the wax cast is reasonably strong or whether exposure to heat of any appreciable degree is likely to bring about warping or melting.

Interest in the article was aroused because it happens that a fair amount of experiment was carried out by the Officer in charge of the training of recruits in the Dorset Constabulary. Many methods and mediums were used, including wax although not of the type suggested by Dr. Martin, and it was eventually decided that plaster of paris,

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as used by dental mechanics, is far and away the best medium for taking casts in practically all circumstances. In coming to this decision due weight was given to the degree of simplicity of the various methods, the amount of apparatus required, and the degree of skill needed to operate them. It was found that recruits could take very satisfactory casts by means of the plaster after the method had been demonstrated to them once, and the plaster seems unquestionably the easiest for "scene of crime" operations, a point of considerable importance.

For some unknown reason it seems to be generally accepted that footprints in sand present more difficulties than the average footprint, yet curiously enough our recruits by no means unanimously share this opinion. Footprints in sand are naturally very susceptible to weather conditions; a strong wind, for instance, will very quickly destroy them; and it may be this fact which gives rise to their reputation for being difficult. The experience in this Force is that, given favourable conditions, very good casts of footprints in sand can be taken by means of plaster.

I have said that plaster can be used in practically all circumstances and an exception I had in mind is where the footprint is found in builder's plaster or cement as might obtain in a builder's yard or at a building in the course of erection. In cases of this nature it is very probable that the modeller's wax method could scarcely be excelled.

However, it may be of interest briefly to run through the methods of taking plaster casts under the varying conditions where it is possible to use plaster.

Plaster as used by dental mechanics has been mentioned and this is a tip really worth knowing. It makes the work easier, produces very fine results, and is generally much superior to ordinary plaster. Detail is very clearly shown on the casts obtained and, in passing, I might mention that it has been used for taking casts of indentations and marks on doors where ordinarily Wood's Metal would have been used. If I say that casts of mere scratches on wood have been

taken in this way and that a "positive" cast has afterwards been taken from the "negative", it will be realized that the detail obtained is very accurate indeed.

The method of mixing is important. Sufficient water is placed in a bowl or basin to make the quantity of plaster required for the job in hand. The plaster is then slaked on to the water with a large spoon, each spoonful being allowed to sink before the next is thrown on. Movement should be rapid and does not take the amount of time the explanation suggests.

When it is thought that sufficient plaster has been added, and this is indicated by the plaster sinking more and more slowly, the mixture is given a short, rapid stir and is ready for use. No fixed proportion of plaster to water is advised, as the best results are obtained after a little experience by using the "feel" of the mixture when stirred as a guide. The mixture should be about the consistency of ordinary cream.

The proportion of plaster to water used by this method of mixing is rather higher than that given in the various books to which reference was made during the course of our experiments, but it was found that a slightly thicker mixture, whilst adequately recording all the detail of the print, did not sink into the earth through the floor of the print, even in cases where the earth was loosely packed and therefore porous.

When taking footprints under any conditions the first task is to remove any loose stones or earth which may have fallen on to the print and great care must be used or the sides and floor of the print will be damaged. If pieces of wood are to be used to strengthen the cast they should be soaked in water before use or the cast may crack after it has set.

For taking casts in ordinary garden earth the bottom or floor of the print should be carefully but quickly covered with plaster ladled in with a spoon. When this has been done the rest of the plaster can be poured on and the whole

left to set. If the print is shallow, a surround of plasticine, wood, cardboard, or tin can be built up so that a good, thick cast can be obtained. It is hardly necessary, I suppose, to add that the operator should inscribe some identifying mark and the date on the top of the cast just before it finally sets.

In dry sand or very dry, powdery earth it may be necessary to "fix" the print before taking the cast and this is best done by means of a fine spray of water projected on to the print from above. One of the sprays used in connection with a well known brand of insecticide is very good for this purpose. The spray of water must be fine and must be allowed to descend on the print of its own weight and not projected directly at it from a short distance. It is quite unnecessary to soak the print, indeed this is inadvisable, and a guide to the quantity of water to be used is that the detail of the print appears in bold relief when sufficiently damp. Once this fixing has been carried out it is quite safe to carry on with taking the cast, as in the case of ordinary garden earth. Wet sand will, of course, yield a very fine cast without preliminary treatment.

Stiff mud presents no difficulty at all. There is usually a clear, deep print which should produce an ideal cast, but soft mud, containing a large percentage of water, is probably the most troublesome condition that can be experienced. It is possible to take a cast in soft mud which will be useful, but it is very unlikely indeed that the most successful cast in these circumstances would be good enough to ornament a collection.

First of all it is necessary to remove all the surplus water on the print, and this is best done by means of a fountain-pen filler and blotting-paper. Patience and care are needed or the print will be spoilt at this early stage. When the plaster is being applied even greater care is necessary, as if it is poured or ladled on too quickly the weight of the plaster will distort the print and the cast will be quite useless. A very thin layer should be gently spooned on to the print and allowed to

stiffen before more plaster is applied. Even then great care must be taken.

Snow is very similar to mud, inasmuch as snow which is stiff through frost will produce an excellent cast whilst melting snow is much more difficult. Naturally if the melting has progressed sufficiently there will be no prints worth taking, but where the print remains clear though the snow is beginning to melt, there need be no occasion for despair. A very fine sprinkling of dry plaster, sprinkled from a pepper pot, or better still through a piece of sacking or gauze, will form a sufficiently hard case to allow a highly successful cast to be taken in the same way as with soft mud.

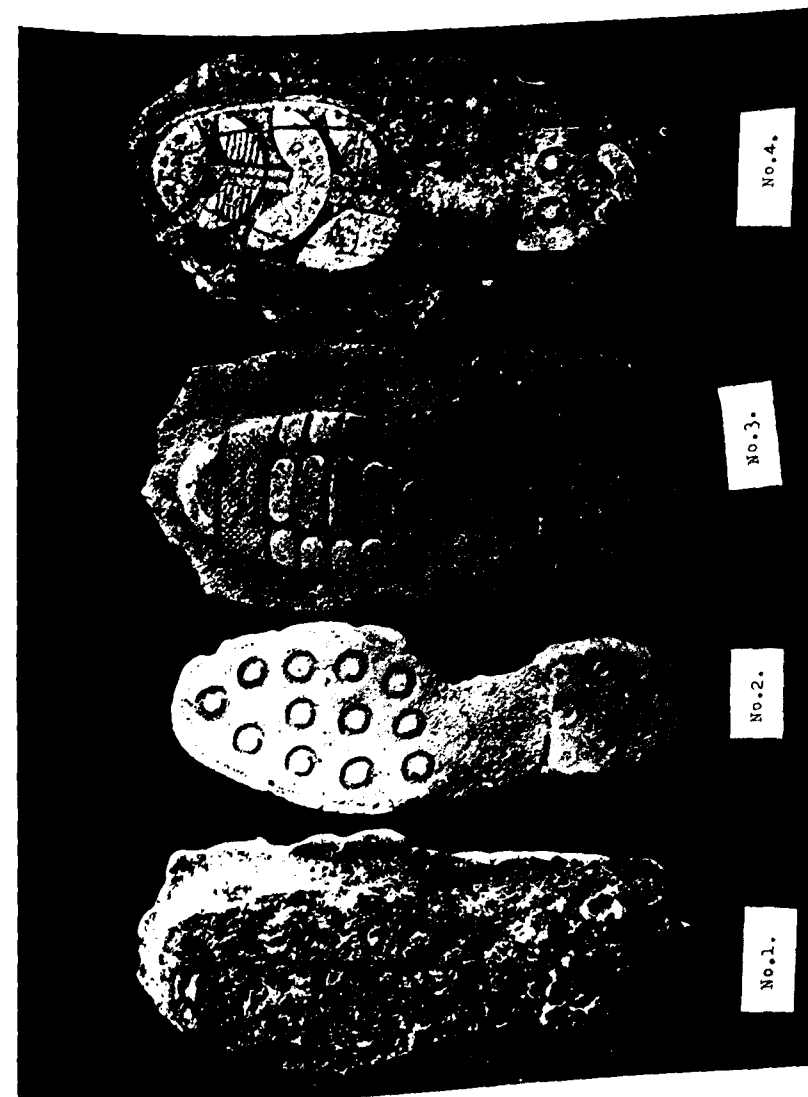
Dr. Martin described some of the more elaborate methods of taking casts of footprints which have been devised from time to time. Some of them appear to have been the result of very much misplaced ingenuity! The plaster method has the merit of being simple whilst it can be made efficient under all normal circumstances, and simplicity, after all, is of paramount importance in practical police work.

For the benefit of readers who may wish to experiment with dental plaster as a substitute for Wood's Metal I would add that when taking a "positive" from a "negative" cast the negative should be lightly rubbed over with thin lubricating oil to facilitate parting the casts after the positive has set. The oil film must be very thin or pitting of the positive cast will result.

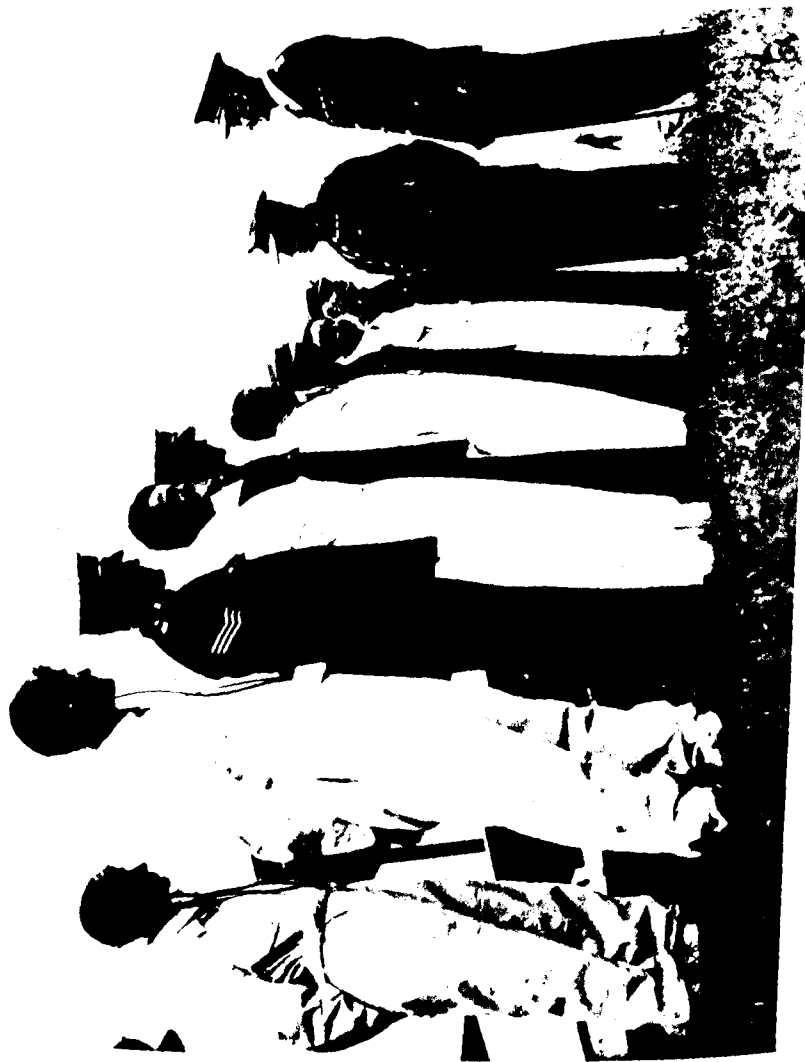
EXPLANATION OF THE PHOTOGRAPH OPPOSITE

Casts taken during the course of recruits' training.

- No. 1. Plaster cast of footprint in very soft mud.
- No. 2. Plaster cast of footprint in melting snow.
- No. 3. Plaster cast of footprint in dry sand.
- No. 4. Plaster cast of footprint in dry garden earth.



(face p. 110)



A POLICE FLYING SQUAD
Chief Constable Beacher inspecting the Flying Squad of the Reigate Police.

An Early Police Instruction Book

THERE recently came into the writer's hands a slim book of 107 pages entitled *Regulations for the Police of the City of London* drawn up by that curious character, Daniel Whittle Harvey, the founder and first Commissioner of that Force, and published in 1843. On the fly-leaf is the name "John T. Young", while on the inside of the cover, in the same handwriting "20 June '37-19 June '38-1, 20 June '38-19 June '39-2, 20 June '39-19 June '40-3". Perhaps Young spent this period in the Metropolitan, and transferred to the City of London Force shortly after its raising. One wonders what eventually became of him, but it is to be feared that he never attained much eminence in his profession, for he never read his Instruction Book through, the last twenty pages being still uncut.

After a few introductory remarks which are practically identical with those issued in 1829 for the Metropolitan Police, the book starts with the establishment of the Force: 1 Superintendent, 13 Inspectors, 12 Station Sergeants, 47 Sergeants, and 470 Constables. The pay is given: Inspectors, £2 5s. 6d., Station Sergeants, £1 5s. 6d., Sergeants, £1 4s. 6d., Constables from £1 2s. 6d. for those of the first class (defined as those against whom no report had been received for 12 months) down to 17s. 6d. for the fifth class, all per week. These rates may be compared with those of the Metropolitan Police in 1830: Inspectors, £100 per annum, Sergeants, £1 2s. 6d. per week, Constables, 19s. per week. A fairly generous issue of clothing was made, even including such a thing as a button stick.

The next heading is "Outline of General Duty". First the organization of the Force is briefly sketched. The Superintendent was to be the Commissioner's deputy. The City,

a map of which is given, was then divided into six divisions, each occupied by a company with two Inspectors and two Station Sergeants apiece. Below them were Sergeants in charge of sections, and Constables on the beats. A seventh, or reserve, company, with the remaining Inspector was to be kept at Headquarters, from which men were to be supplied for all special duties, and also for filling any temporary vacancies in the ranks of the other companies. Other orders of a general nature follow; no Constable was to vote at any election in the Home Counties; all ranks were to live in the City, and were always to appear in uniform. Lastly, they are assured that they will "be efficiently protected, by every legal means, in cases that require protection".

Then the duties of each rank are briefly outlined. The Superintendent's duties are scarcely touched; then, as now, "much must be done by himself, and under his immediate inspection."

Those of the Inspector are more fully edscribed. One of the two attached to each Division was to be ways on duty, the change-over occurring each day at 9 p.m. His time was to be spent partly in the Station and partly patrolling. They were thus to supervise their respective districts, being accountable to the Commissioner for every happening therein. Each Inspector had a Station Sergeant as his deputy, who was responsible to him for the order of the Station, and who took charge of it during his officer's absence on patrol.

The Section was the Sergeant's responsibility. He was to see that every man thoroughly understood his duties, was clean and sober. The party was then to be marched round the Section, each man being posted to his beat and the previous man relieved like sentries in the Army. The Sergeant was then to patrol his Section constantly, reporting to the Inspector at a fixed time and place.

The lion's share is given to a description of the duties of a Constable. He is informed that "he who has been accustomed to submit to discipline will be considered best qualified to command"; and after this inspiring introduction

come his particular opportunities for submission. Everything is provided for, from his behaviour to his comrades, which was to be "civil and obliging", to his knowledge of his duties—to the thorough understanding of which he was to read "carefully and frequently" the City Police Act. The manner of working beats is minutely laid down, and a rigid time-table was to be followed. A curious provision is that any householder, on application to the station, might be informed of the period of time within which a Constable should pass his house. An order that Constables were not to call the hours is a reminder of the then recently superseded watchmen. A striking omission, from the modern point of view, is that no mention is made of saluting.

There follow a few pages on elementary law such as the distinctions between felonies and misdemeanours, powers of arrest, and the like; together with orders dealing with prostitutes, beggars, and other nuisances. Particularly full are the instructions for duties at fires, both for the Constables and superior ranks. It will be remembered that at this time, while the danger of fire was no smaller than at present, there was no public Fire Brigade, there being only a few private brigades, kept by the insurance companies, in existence, whose responsibility was to their employers alone.

The rest of the book is taken up by an Appendix in which are to be found the Acts of Parliament defining the Force and its powers. These have been too much for Young. In spite of orders to the contrary he has been unable to read them once, let alone frequently, and the pages are uncut to this day.

W. H. G.

"Tremendous Trifles"

By EDWARD A. DIECKMANN

THE whole scheme of things, the laws of nature, destiny, providence, or whatever else you may call it, plus intelligent investigation, have made it utterly impossible for a criminal to get away with murder. We all remember how Mr. Sherlock Holmes could recognize the importance of some tiny clue in a mysterious murder case. How often have we read how he would extract from a bit of physical evidence a mass of information that in many of his famous cases amounted to a complete description of the guilty man. In real life such tremendous trifles are present in all murder cases ready to be picked up by an investigator who is capable of applying the arithmetic of analysis and who can maintain a cool head in the face of the wave of hysterical frenzy that follows in the wake of every sensational murder case.

It was about half-past two o'clock in the afternoon of 27th December, 1922, when the rural postman drove up to the home of James A. Chapman, Chairman of the County Board of Supervisors of Wood County, State of Wisconsin, in the little town of Auburndale. Chapman was reading, while his wife was busy with her household duties, so the elderly couple's grandson ran out to get the mail from the post-box in front of the house.

There was a number of letters, a belated Christmas card or two, and a package about two feet square wrapped in brown wrapping paper. The package was addressed to Mr. Chapman and bore the usual season's admonition, "Don't open before Xmas."

Chapman laughed when he read the printed words.

"The Christmas mail rush makes the warning rather out of date," he remarked to his wife as he put his hand into his pocket and pulled out a knife. As her husband cut the twine, Mrs. Chapman was standing in front of him, leaning over to obtain a glimpse of the package's contents.

Chapman's knife sliced through the first bit of string, but he had some slight difficulty with the second one. It was pasted down and the man had to slide his knife-blade under the twine and turn his knife and cut upward.

As he did so there was a terrific explosion, and the peaceful little home became a shambles.

Mrs. Chapman, because of her position, caught the full force of the explosion. She was hurled across the room, a terrible wound in her abdomen, but staggered to her feet and lurched into the bedroom, where she fell on to the bed. Chapman was blown from his chair, his left hand blown completely off, and the upper portion of his body a mass of wounds. He crawled to the side of his dying wife and collapsed.

The grandson was uninjured. Because of his position behind his grandfather's chair the force of the blast missed him. He was stunned, however, and it was several minutes before he could rush to a neighbour's house and give the alarm.

Mrs. Chapman died the following morning, and but little hope was held out for her husband in view of his advanced age and the nature of his injuries. The package had contained a bomb made up of powerful explosive and filled with bits of ragged metal. These dreadful projectiles had torn through the frail body of the man.

The Sheriff of Wood County, Walter Mueller, was an efficient officer. When he arrived at the Chapmans' home half an hour after the explosion he carefully gathered every tiny bit of physical evidence he could find. He found bits of twine, fragments of elm wood, iron pipe, brass tubing, and a section of metal that had the appearance of a trigger. He also found an old wagon bolt and a piece of spring.

A large piece of the paper wrapping of the death package remained intact. This bore the address, and the postmark showed that the parcel had been mailed through the post office at Marshfield, 7 miles away. A check-up proved that the postman had obtained the parcel from the Marshfield post-office that very morning, and that it had been placed in the post-office on 26th December.

The first problem confronting the sheriff was that of motive. Who would want to murder the popular County official?

Bootleggers, was the officer's first thought. Chapman had waged war on the sellers of illicit liquor, using the influence of his official position to further the prosecution of the clan. After conferring with other officials Mueller discarded this theory, basing his opinion on a remarkable series of events that had to do with the construction of a drainage canal which had met with bitter opposition from some of the farmers who owned the land through which the contemplated canal was to pass. In spite of the protests of these men the drainage area was confirmed by the court, and Mr. Chapman was appointed as chairman in charge of the project. He made his plans to begin the work.

Then began terrorism. An obviously incendiary fire destroyed the property of one of the staunchest supporters of the project. The dredger belonging to the construction company engaged in the work was blown to atoms by tri-nitro-toluol, commonly known as T.N.T. Chapman, in spite of repeated threats, was not to be scared off, and pushed the work forward. Rewards were offered for the arrest of the terrorists, and guards were stationed at vulnerable points to prevent a repetition of the attacks.

There were suspects of course—men who had been the loudest in their protests against the canal. These men were closely watched, but nothing definite was ever discovered. Now it was murder, and, because the United States mail service was concerned, Post Office inspectors came into the case.

The first tremendous trifle was found on the wrapper of the bomb. The address had been written in capital letters, to disguise the handwriting probably; but the sender in his care to leave no trace of his identity had made a grave mistake. He had misspelt the word Marshfield, printing it 'Marsfilld'. This was the first clue.

Then there was the construction of the bomb itself. From the pieces of the infernal machine found in the Chapmans' house it was possible to make a complete reconstruction of the death-dealing Christmas present.

The explosive used was T.N.T. Through a sturdy piece of white elm wood a hole had been bored through which a section of brass tubing had been forced. Within the bit of tubing had been placed a wagon bolt inside a length of strong spring. The spring could be compressed by pulling the bolt backward. This was held in compression by a cleverly designed trigger which was, in turn, held by a piece of string. On the end of the bolt-head was fitted a firing-pin. When the string was cut the bolt flew forward, striking against the cap of a twelve-bore shot-gun cartridge, the paper portion of which had been cut away. The explosion of the shot-gun cartridge set off a detonating cap which was buried in the T.N.T., igniting the terrible explosive that had proved so efficient during the World War.

Who in the district, asked Mueller, was ingenious enough to construct such a thing? A list of all the inhabitants of the county who were antagonistic to the drainage project was compiled, and by a process of elimination this list of suspects was narrowed down to five men.

Investigators who are worth their salt know full well their own limitations and have the moral courage to call upon experts rather than take a chance of messing up a case by stumbling about, just for the sake of personal glory. Mueller and the Post Office inspectors did not hesitate. They called upon the staff of the University of Wisconsin for assistance.

One of the first things that struck the experts was the peculiar spelling of the word 'Marsfilld'. From the form

of the capital letters it looked as though it had been 'printed' by a person of Scandinavian extraction, probably a Swede. The officers then concentrated on the search for a Swede who was known to have a streak of mechanical ingenuity.

One of the men on the suspected list was John Magnuson, who owned a farm near Auburndale and who was one of the most bitter opponents of the drainage canal. He had been born in Sweden, coming to the United States when he was 12 years of age. He had had a varied career, having served in the British Army during the war against the Boers in South Africa, where he was reported to have been engaged in some branch of secret service work and also to have been a deep-water sailor. He was married and the father of several children, and was the only Swede in the vicinity.

There was no question regarding his mechanical ability. He had built a gas engine and constructed an electric lighting plant for his home from the wreckage of an old motor-car. He had built a barn that was the wonder of the neighbourhood, being circular in shape, thus permitting one man to feed and care for a large herd of cattle, since the heads of the stalls all faced the centre of the circle. He had a fully equipped machine-shop in one section of the barn. The majority of the inhabitants of Wood County suspected this man, and there were rumours that 'Judge Lynch' intended to take matters in hand as the authorities appeared to be holding back.

Matters reached a climax on the 30th December, 1922, when the funeral of Mrs. Chapman was held in Marshfield. A warrant was issued, charging Magnuson with the murder.

Mueller himself arrested the man. Magnuson merely shrugged his shoulders and remarked that he knew nothing about the matter but hoped that the officers would find the guilty man. When the Sheriff told Magnuson that he intended to search his workshop the prisoner smiled and told the officer to "help himself".

At the first glance, little enough was found to connect the prisoner with the murder beyond his well-known hatred

for Chapman because of the drainage ditch. A plank was found in his shop, but this proved to be of oak. T.N.T. and shot-gun cartridges were also found; but these articles, in themselves, meant but little unless they could be connected with the crime. Magnuson was questioned for hours by the Sheriff and the District Attorney of Wood County; but he remained steadfast in his denials and had ready explanations for everything. By the time the interrogation was over he was the least perturbed of all.

When the time arrived for his preliminary hearing only sufficient evidence was produced to hold Magnuson on the theory that there were reasonable grounds to believe that he had committed the crime. In all criminal cases the guilt of a defendant must be proved beyond a reasonable doubt. No such attempt was made to do this at the preliminary hearing. The main evidence were the facts that the prisoner had a machine-shop; his mechanical ability to construct the bomb; the materials he possessed with which to do this; and the well-established fact that he had made threats, indirectly, against Chapman.

He was committed for trial before the Superior Court of Wood County; but the wise men shook their heads. "They'll never convict him in this world. He's far too clever!"

When the trial opened on 16th March, 1923, Magnuson was confident of acquittal. He was the most cheerful person in the overcrowded court room.

On the first day of the trial the evidence for the Prosecution consisted of routine testimony; proof that the prisoner had made threats against Chapman, and a general rehashing of the evidence produced at the preliminary hearing. The defence countered, in its cross-examination of these witnesses, by eliciting from them that there were many other inhabitants of the county as bitter against the chairman of the canal project as Magnuson. Mr. Chapman, one arm gone and a wreck of his former self, sat by the prosecutor's desk and aided that official in every way he could. When the court

adjourned at the end of the first day the honours were with the defence.

But there were still the tremendous trifles.

The District Attorney of Wood County was a good tactician. His first witnesses were employed like a cavalry screen thrown out on a battlefield in order to draw out the enemy and hide the massing of the shock-troops held in reserve. On the second day of the trial these shock-troops swung into action.

Three of America's most eminent handwriting experts, among whom was Mr. Albert S. Osborn, of New York, the author of *Questioned Documents*, were the vanguard. These men testified that they had compared examples of Magnuson's writing and 'printing' with that on the wrapper of the bomb, and they all declared that no one but the prisoner could have addressed the package. They proved that the ink used was exactly the same as that found in a fountain-pen belonging to one of the defendant's children. This was possible because, as the Prosecution's chemist disclosed, the ink in the pen was a mixture of blue and black, and this mixture showed the same peculiar reaction when tested as did the ink with which the address was written. A University professor of languages testified that the spelling of the word 'Marsfilld' was typically Swedish.

Then came the report of a State forestry expert, who testified that he had examined a quantity of wood shavings and sawdust and had found that they had consisted of ash, hemlock, and *white elm*. This sawdust had been gathered in Magnuson's workshop, and the prisoner had always denied that he ever had a piece of white elm wood in his possession!

But it was with the evidence of two experts from the University of Wisconsin that the State clinched its case against the slayer of Mrs. Chapman. When the officers made their search in Magnuson's machine-shop they found, among other things, a patent trigger on the home-made gas engine constructed by the Swedish farmer. Struck by the great similarity of this trigger to the one used on the bomb, the

officers turned it over to the experts, together with a section of gas pipe also found in the shop. And when the two experts were called to the witness-box they proved, with the aid of demonstrable evidence in the form of microphotographs, that the two pieces of steel were identical and that such a thing could not be unless the two triggers had been cut from the same piece of steel!

Even that was not all. When the section of gas pipe found on the scene of the murder was compared with the length found in the defendant's shop the metallographic analysis proved that they had originally been one piece.

Metallographic analysis is a system by which the crystal structure of a piece of metal is revealed and studied under a microscope. The technique involved consists of careful polishing of the specimen. This removes all scratches and clearly shows whether the specimen of metal contains slag. So, if one specimen shows marked slag addition while the other shows none, it may be safely assumed that the two pieces are dissimilar. But if both pieces show the same appearance, further examination is required. Steel is an alloy and is made up of minute crystals of different chemical composition. Because of this difference in composition the various types of crystals will react in distinctive fashion to any particular reagent. The reagent is poured upon the polished surface of the metal and permitted to remain for a given length of time, and is then washed away. The crystal formation is then examined under a powerful microscope.

To quote Professor J. H. Mathews, who was engaged in this case: "The two specimens submitted for test were carefully ground and polished. Examination under the compound microscope showed no scratches, but did disclose copious inclusions of slag in each. The presence of such large quantities of slag indicated a poor, cheap grade of steel. Both were then etched with the same reagent for the same period of time and re-examined under the microscope. This examination disclosed not only the same kind of crystal structure, but a most unique structure consisting of types

of crystals which had not hitherto appeared in the examination of thousands of specimens of steel studied in the metallographic laboratory at the university. The identity of the two surfaces was most striking and conclusive."

It was the same story with the two sections of gas pipe. The metallographic analysis again revealed complete identity.

The pieces of metal used to construct the bomb had come from the prisoner's workshop. This was quite good enough for the jury. Magnuson was convicted of murder in the first degree, and on the 4th April, 1923, after the hearing of his appeal, which was dismissed, the murderer was sentenced to life imprisonment.

The 'tremendous trifles' found by the investigators had enabled Science once again to prove itself a faithful ally of the police.

NOTES FROM THE FORCES

SKIDS

ONE often hears the expression, "Due to a skid," but how often is the truth of the statement tested, and the reason for the skid sought? A skid is dreaded by the novice and regarded as inevitable by many experienced drivers. The effects of a skid are numerous and once commenced it is usually difficult to foresee where the vehicle will ultimately come to rest. Opinion varies as to the correct procedure to adopt to return the vehicle to its course, but most drivers concentrate only on avoiding other road users. The expression can be and is sometimes used as an excuse to detract attention from some fact detrimental to the driver. This occasionally happens when particulars of an avoidable collision are being taken by a police officer.

The causes of skids come under three headings. They can be due to the driver, the vehicle, or the road surface, and are usually avoidable. The duty of the police officer is most difficult when the driver is at fault. Marks on the road surface are rarely seen unless a violent skid has taken place, and soon blend with the tracks of passing traffic. An immediate examination is necessary for obtaining signs, if any. Skids often result from the vehicle being driven too fast for the prevailing circumstances, and a common occurrence is the inability to stop on a greasy road, or on a road with a loose surface in an emergency. If the mishap is on a road with important side turnings the speed must have been regulated without regard to the possibility of having to stop, as it follows that a vehicle on a faulty surface must travel slower in order to be able to stop in the distance usually allowed by the driver. A similar type of skid, usually blameworthy, is that caused by driving at excessive speed round a corner of the blind or visible type. In this case the tyres will leave oblique lines corresponding with the tread pattern, due to excessive centrifugal force. If one side of the vehicle became raised the track of the other side will be found to be reduced in width. Tram rails are liable to guide the vehicle contrary to the will of the driver, and later allow it to dart to one side, unexpectedly, when the wheel is able to climb out of the groove. A mark on the road surface due to the course of the vehicle being suddenly changed indicates a skid of this type. The brakes have little effect on the speed of a vehicle running in tramcar rails, as a result of the polished surface allowing the wheels to become stationary and slide; the effect on a vehicle with fewer than four wheels is more marked. A more rare case of skidding is due to wheel spin following violent acceleration. This occurs with vehicles having a high power to weight ratio, especially if the tyres of the driving wheels are smooth. If the surface is wet dry patches will be seen, due to friction between the tyres and the surface. An unladen goods vehicle is prone to this type of skid. Another type of skid is due to the driver's inexperience of wet conditions. The applying of a front brake only on a two-wheeled machine will cause the machine to revolve round the front

wheel; likewise, the failure to apply, firstly, the rear axle brake of a six-wheeled articulated vehicle, will result in the rear portion skidding sideways. The nervous anticipation of a skid may prompt a driver to make erratic movements of steering wheel or brake controls, with unfortunate results.

Skids due to the vehicle are inexcusable, except when caused by sudden failure, as it follows that a vehicle liable to skid is in dangerous or illegal condition. A cause, sometimes not very apparent, is uneven load distribution. This has the effect of preventing adhesion of all the wheels, and side slip results when accelerating or braking. A similar result is caused by a high centre of gravity following faulty design or loading. Modern design, in the case of passenger vehicles, aims to have low seating accommodation between the axles, and goods vehicles are designed to have the load more forward than in the past, when the rear overhang caused sideslip. Uneven braking is unsuspected on dry surfaces. Many drivers feel resistance when operating brake controls, see the vehicle stop, and are satisfied. On a good surface the brakes appear to be in order, and trouble is only experienced when a greasy road is encountered. The vehicle pivots on the wheel that is most braked, and if a front wheel, the vehicle may eventually face the opposite direction. The wheel in question will most probably leave a mark on the road surface as a result of its excessive load. Such a mark made by an undamaged vehicle is proof of uneven brake adjustment. The uneven adjustment may be caused by damp, but more likely by neglect to adjust when required. A vehicle that maintains a straight course on a greasy road with brakes applied may be said to be evenly braked. Tyres, often neglected while they contain a reasonable amount of air, contribute two causes. A tyre containing too high a pressure makes insufficient contact with the road surface. A smooth tyre is a disadvantage except on a rough, dry surface, but cannot be said to be in illegal condition unless the canvas, which provides the strength, is weakened. This occurs rapidly when the canvas is visible, due to excessive wear, and a burst is liable to occur, unexpectedly.

The third cause, road conditions, is often avoidable, as most adverse conditions can be seen before experienced. A person driving a vehicle on a road which offers a greasy surface knows that he does not possess full control. On a road where obstruction is liable to be found the speed should be regulated so that the vehicle will be able to stop where the obstruction is liable to be. A collision under these circumstances is usually avoidable. Among unavoidable causes of skids is excessive road camber, especially at a corner. On the straight the skid may be limited to a slight swaying of the rear of the vehicle, but at a corner the result is more serious. A driver on a strange road, obliged to travel on the outer edge of a curve, may find his vehicle commencing to revolve bodily, with alarming suddenness, and if speed is present together with a greasy surface, a complete revolution may result. A broad mark will be seen at the point where the wheels skid sideways, and elsewhere if the brakes were violently applied by the driver, when appreciating his danger.

In conclusion, and reviewing the many causes and results of skids due to the driver, vehicle, or road surface, it is evident that a police officer seeing a skid mark and informed that, "It was due to a skid," should know that there is more in a skid than meets the eye.

N. G. SPEIGHT.

A BURMESE POLICE MUSEUM

IN the year 1927, when the new buildings at Insein were occupied by certain branches of the Criminal Investigation Department, it was decided to inaugurate a Museum of interesting and instructive police exhibits, and with the assistance of district officers, the Museum has grown to its present proportions.

The exhibits are a varied collection received from all parts of Burma.

In the fire-arms section are to be seen various types of locally manufactured weapons and the skill and ingenuity displayed in the manufacture of these is remarkable. Most of these exhibits are of the 12-bore single barrel type, breech-loading, and some even fitted with safety catches! The butt, modelled on the imported pattern, is cut from wood—usually teak—and the barrel from a length of iron piping of the right dimensions to take a 12-bore cartridge. Springs and other accessories are easily obtained from the nearest bazaar or cycle repairing shop and the finished article—usually the work of the village blacksmith—is a sound and serviceable fire-arm which finds a ready sale to members of dacoit gangs which unfortunately abound in Burma. Exhibits of special interest in this section are a cannon (Hanthawaddy District, 1936), a complete gun-manufacturing outfit including the bellows, anvil, lengths of piping, partly prepared stocks, etc., seized in the Amherst District in the year 1935, and a pair of trip guns that were used for illicit shooting of game in the Magwe District and were extremely deadly when placed on a game path in the jungle.

The note-forgery and coining sections contain numerous exhibits, as these are arts in which the Burman excels. New patterns and designs of Government of India currency notes are issued at more or less regular intervals, but before they have been in circulation for any length of time, remarkably good imitation is certain to make its appearance in Burma. While the forgery will probably be detected as such upon arrival at the District Treasury, Bank, or Currency Office, it is sufficiently good to deceive the ordinary villagers amongst whom it circulates. Proof of this is evident from the fact that exhibit notes are frequently received by the expert at headquarters for opinion as to whether they are genuine or not. It is an interesting fact that forged notes are frequently used in smuggled opium transactions on the Frontier. Seizures of note-forging apparatus are occasionally made, but it is difficult to keep pace with the ingenious forgers who operate this form of crime usually in isolated Pongyi Kyaungs or other unlikely places far away from interference. While note-forgery requires skilled labour, coining on the other hand is comparatively simple and is a widespread vice. In the villages, the manufacture of counterfeit two and four anna bits from simple moulds is a fairly common form of amusement, but from Rangoon and other large centres we get excellent imitations—struck counterfeits—of the silver rupee with a fairly high silver content, so that the "ring" is deceptive and easily passes muster. There are numerous specimens of the note-forgers' and coiner's handicraft on view.

Contraband and smuggling exhibits form an interesting section and here we see samples of contraband and the ingenious methods employed by smugglers in Burma. One of the latter is a motor-car petrol tank divided into two sections. One (the smaller) contained the petrol, and the other quite

had, no doubt, been hanging its head over the fence and dreaming of better days!

Cats too—there must be myriads of cat stories. Only at night does the cat reveal himself in his true colours, his drowings and purrings in front of the fire during the day being nothing but a miserable sham.

One constable of my acquaintance—no names, no pack drill—was making a very early morning conference point and, at the same time, taking advantage of a roadside seat very kindly provided by the local council. Whether he dozed or not I can't say (he says not) but, in any case, two cats intent upon their quarrelling or love-making ran up over his body and actually used his slightly upturned face as a jumping-off place for the wall above. He had some very nasty scratches on his face to prove that he had made his "point".

Well, well, these things are pleasantly amusing to talk over but in actuality are amongst the drops which wear away a policeman's life. When we say "happy days" we sometimes mean "trying days"; but the work goes on.

DORSET.

THE COLONIAL POLICE

BURNS, J. R. H.	Police Probationer, Malaya.
HOCKENHULL, A. J. W.	Police Probationer, Malaya.
PALMER, D. S.	Police Probationer, Malaya.
SEARLE, L. A.	Police Probationer, Hong Kong.
STEWART, D. ST. G.	Police Probationer, Malaya.
GODDARD, T. A. (Inspector of Police)	Deputy Commissioner of Police, Barbados.
HARRAGIN, Major A. E. A., D.S.O., V.D. (Senior Inspector of Constabulary)	Deputy Inspector-General of Constabulary, Trinidad.
READ, R. D.	Detective Assistant Inspector, Northern Rhodesia Police.
HORDERN, S. S.	Assistant Commissioner of Police, Gold Coast.
KING, H. M. (Deputy Commissioner of Police, Tanganyika)	Commissioner of Police and Prisons, Uganda.
HALLIER, M. C. (Assistant Inspector of Police)	Inspector of Police, Tanganyika.

THE POLICE JOURNAL

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THE POLICE JOURNAL

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APRIL-JUNE, 1937

Recent Judicial Decisions

Chandarasekera alias Alisandiri v. The King

(Reported on page 137 of The Times Law Reports, vol. 53,
No. 6)

THIS case came before the Judicial Committee of the Privy Council on the 25th November, 1936. It was an appeal from a judgment of the Supreme Court of Ceylon against a conviction for a murder committed on 15th May, 1934. The appellant had been sentenced to death. The facts appear sufficiently from the following extracts from the judgment of the Board delivered by Lord Roche:—

... "The main point raised in the appeal was whether information given by the deceased woman before her death was a statement within the meaning of section 32 of the Ceylon Evidence Ordinance No. 14 of 1895, and as such was admissible in evidence by virtue of that section. This information was admitted in evidence and directly implicated the appellant. The material part of the section is as follows:—

"STATEMENTS BY PERSONS WHO CANNOT BE CALLED AS WITNESSES

"32. Statements, written or verbal, of relevant facts made by a person who is dead, or who cannot be found, or who has become incapable of giving evidence, or whose attendance cannot be procured without an amount of delay or expense which, under the circumstances of the case, appears to the Court unreasonable, are themselves relevant facts in the following cases:—

"(1) When the statement is made by a person as to the cause of his death, or as to any of the circumstances

of the transaction which resulted in his death, in cases in which the cause of that person's death comes into question.'

"The facts of the case, as proved by evidence not the subject of objection, were as follows: The deceased was a widow living alone in a two-roomed one-storyed house on a plot of land lying between the estates of one Stanley Jayawardene and one Collin Silva. The deceased's house was about 150 yards from the estate bungalow of Collin Silva where a witness named Rengam Arumugam, watcher of the estate, lived with his wife. The accused man had worked as a carter for Stanley Jayawardene's estate and lived in the neighbourhood, but recently and until shortly before 15th May, 1934, he had been in the employment of two brothers, Mohamadu, a few miles away. He had been discharged from this employment some days before 15th May and was then unemployed. On the day in question he had been to the place of business of the brothers Mohamadu, had borrowed a bicycle from one of them, and had gone home on it to dinner at his house, which he left after dinner about 2 p.m. Between 2 and 3 p.m. he was seen near the house of the deceased woman in conversation with her. Between 3 and 4 p.m. he was seen riding the bicycle away from that locality and was described by a witness (Charles) as dismounting and as going into a thicket and lurking there and behaving in a suspicious and excited manner. He then, after bathing in a stream, went back on the bicycle to the place of business of the brothers Mohamadu where he was later arrested.

"Meanwhile about 4 p.m. the deceased had come in a terribly wounded condition to the bungalow of Collin Silva occupied by Arumugam. The principal wound was about four inches in length extending from the right side of her neck across the throat to about half an inch on the left side of the middle line. There were minor wounds on the face and head, and her ears were severed and torn. She had evidently made her way unaided from her own house and was found on the verandah of Collin Silva's bungalow. There the interrogation took place from which the evidence in dispute

was derived, and in consequence the accused was arrested the same afternoon at the Mohamadus' place of business. The statement of the accused, made on 16th May, was of the nature of an alibi and in particular was to the effect that from 12.30 p.m. onwards he was at the boutique. This was proved at the trial to be untrue as appears from the evidence summarized above. At the trial the accused did not elect to give evidence nor was evidence called on his behalf.

"At the house of the deceased woman the main features of the attack on her were plainly to be seen. There was blood on a camp cot in the outer room on which the deceased must have been sitting or lying when attacked. The room was disturbed and jewelry which she possessed was missing. The door from this room to the outside was locked and the wounded woman, as was indicated by blood marks, made her way into the inner room and then out of a window and thence by a path to Collin Silva's bungalow. There she was bandaged and propped up against a wall with cushions. The throat wound rendered her unable to speak, but she was fully conscious and able to understand what was said to her and to make signs and to nod her head, though slightly. She was asked questions both by the police and by neighbours and in particular by one Martin Perera, a carter, who had worked with the accused for Mr. Stanley Jayawardene and who also knew the deceased woman. Mr. Stanley Jayawardene was present at the material time and there was no ground for suggesting that the evidence to which objection was taken was derived solely or mainly from police sources, or that Perera or Mr. Jayawardene, who gave evidence of what took place, were witnesses with ill-will to the appellant. The greater part of the interrogation was conducted by Martin Perera, who spoke to the wounded woman in Sinhalese. The course and result of it was as follows: Asked who cut her neck, the deceased indicated by signs the height of the person and later pointed to Mr. Jayawardene and also made signs as of goading a bull. The accused had worked for Mr. Jayawardene as a carter. She also pointed to a constable and then patted

or slapped her cheek two or three times. The accused had some time previously assaulted a constable by slapping his face and this was a matter of common knowledge. Probably at this stage—though the witnesses were not entirely in agreement as to the order of events—Martin Perera put the direct question: 'Was it Alisandiri?'—the name by which the accused was ordinarily known. The wounded woman nodded her head in answer to this question. As to this fact and that it was a nod of assent no witness seemed in any doubt. The wounded woman was removed to hospital and died there and, as has already been stated, the appellant was arrested and charged.

"At the trial the admissibility of the evidence in question seems to have been raised by counsel for the defence as soon as the jury was empanelled and sworn. The jury was quite properly ordered to retire and the question of admissibility was argued and decided in their absence. An authority, *Queen-Empress v. Abdullah* (1885), *I.L.R.* 7 All. 385, which will be referred to later in this judgment, was cited to the learned Commissioner, and in accordance with that authority he ruled that evidence as to signs made in answer to questions put to the deceased was admissible, but that statements of witnesses as to what interpretation they put on the signs were not admissible. It was said on the argument of this appeal that the latter part of the ruling was not observed, and that evidence ruled inadmissible was in fact given. It is difficult to adhere to a clear line of division between the description of signs and the interpretation of signs, and it may be that in some respects witnesses trespassed beyond the line and so usurped what obviously is the function of the jury, but their Lordships observe that in some instances the matter complained of was elicited by cross-examination on behalf of the accused. Their Lordships are of opinion that no substantial grievance can be made out in this regard, still less any real or serious miscarriage of justice.

"The main question is whether any part of the evidence as to what passed between the deceased and Perera should

have been admitted. In their Lordships' opinion, the ruling of the learned Commissioner was correct. It is to be observed that in the section the word used is 'verbal' and not 'oral' which is used elsewhere in the ordinance, as for example in section 3 and section 119 in reference to evidence given in Court. It is unnecessary to decide whether the question put 'Was it Alisandiri?' and the nod of assent would have constituted an oral statement made by the deceased, but their Lordships are clearly of opinion that it constituted a verbal statement made by her. The case under consideration closely resembles the case of a person who is dumb and is able to converse by means of a finger alphabet. On proper evidence proving the words used in a conversation so held, their Lordships think that a statement so made would be a verbal statement within the meaning of the section. So here their Lordships think that there was proper and sufficient evidence of a verbal statement by the deceased to the effect that it was the accused who cut her neck. As to the remainder of the evidence as to signs made by the deceased it was necessarily given in order that it might be understood in what circumstances and context the vital question came to be asked and answered. Mention has already been made of the decision in Allahabad on which the learned Commissioner relied to support his ruling. This was a decision of the Full Court and was pronounced in the year 1885. Since that time it has been followed in Bengal in the case of *Emperor v. Sadhu Charan Das* (1921), *I.L.R.* 49 Cal. 600, and in Patna in *Chandrika Ram Kahar v. King-Emperor* (1922), *I.L.R.* 1 Pat. 401. The material provisions of the Evidence Act in India are identical with the provisions of the Ceylon Ordinance. For the reasons already given their Lordships think that those decisions were correct and that the learned Commissioner was right in following them.

"Observations were properly and forcibly made by counsel for the appellant as to the caution required in the reception of evidence of this character and in the use to be made of it. It is, of course, true that evidence of signs of an

ambiguous or uncertain character ought not to be admitted at all, and that in many cases the evidence, though admissible, might be of little weight. It is no doubt also true that answers to questions of a leading character may be of little weight, but in the circumstances of this case Martin Perera's question was in its context other than a mere leading question. At any rate all such matters are matters for the jury, going to the weight and not to the admissibility of the evidence, and there is nothing here to show that anything took place in this connection calling for or justifying the interference of this Board. . . . The result seems to their Lordships to be this: Apart from the evidence proceeding from the deceased woman, the other evidence was not sufficient to warrant a conviction, but at the same time that other evidence was not merely consistent with the deceased's statement but pointed in the same direction. It was a case in which, if the deceased's statement was received, and was believed, as it evidently was by the jury, to be clear and unmistakable in its effect, then a conviction was abundantly justified and indeed inevitable."

The fact that evidence as to signs made in answer to questions put to a person since deceased was held to be admissible is interesting and important.

"In the Execution of his Duty"

By A. J. CHISLETT, B.Sc.

Westminster Police Court

A POLICE OFFICER acting "in the execution of his duty" possesses powers and privileges not accorded to the ordinary man. In the execution of his duty he may with impunity snap his fingers at speed limits; consume intoxicating liquors during non-permitted hours; place pennies in "fruit-machines" and do many other things which render lesser mortals liable to fines or imprisonment. Stripped of his special authority the officer reverts to the status of an ordinary citizen, and the purpose of this article is to draw attention to cases where the higher Courts have decided that an officer was not acting "in the execution of his duty". It must be borne in mind that that phrase is used throughout with the special significance that the Statutes and Courts have attached to it. If an officer has an honest belief, based on reasonable grounds, that he is acting in the execution of his duty, he may be sure that no Court will find it necessary to censure him. The Courts and the public are usually found to be anxious to help the police in every way, but it sometimes happens that discretion is clouded by enthusiasm, and it may then be necessary to remind officers of the limitations of their powers.

Cases of practical importance are those concerned with police powers of arrest. The leading case of *Punshon v. Leslie*, decided in 1879, arose from the arrest of a man following a complaint of indecent exposure. The man violently resisted arrest and was convicted of assaulting a police officer in the execution of his duty. On appeal it was

held by the Queen's Bench Division that no power of arrest without a warrant existed under the Vagrancy Act, 1824, unless the officer witnessed the offence; that in this case he acted on information received and therefore had no power to arrest the offender. Hence, he was not acting in the execution of his duty and the appellant was wrongly convicted.

The facts in the case of *R. v. Marsden*, 1868, were that the man Marsden came out of his house and used threatening language in the street towards another man. A police officer in plain clothes intervened, and Marsden struck him a blow with his fist. The officer went away, and half an hour later, having changed into uniform, he returned to the house with three other constables. Marsden was asked to open the door, but he refused; whereupon, after some delay, the officers burst open the door and entered the house. They found the man at the top of the stairs with a bill-hook in his hand. There ensued a struggle in which one officer was injured with the bill-hook. Marsden was charged with, and convicted of, feloniously wounding a constable with intent to resist his lawful apprehension. The Court of Criminal Appeal held that there was no evidence that the original affray would be continued, that there was no evidence of anything to require fresh pursuit, and that the constables were not justified in arresting the defendant, whose conviction was accordingly quashed.

In the case of *R. v. Crompton*, 1860, two police officers executed a warrant of commitment in default of payment of a fine, the warrant not being backed for execution in the jurisdiction in which the arrest was effected. The man resisted arrest and was convicted on a charge of assaulting the officers in the execution of their duty. It was held that since the warrant was not backed it was not properly executed and the officers were not acting in the execution of their duty. In this connection it should be recalled that Section 31 (3) of the Criminal Justice Act, 1925, dispenses with the backing of warrants issued in England and Wales for execution in those countries, but that warrants issued in Scotland or Northern

Ireland for execution in England and Wales and vice versa are still required to be backed.

The case of *Codd v. Cabe*, decided in 1876, held that a police officer making an arrest without having the warrant in his possession could not charge the prisoner with assaulting him in the execution of his duty; but the value of this case is now rendered nugatory by the Criminal Justice Act, 1925, section 44, which permits an officer to execute a warrant notwithstanding it is not in his possession at the time.

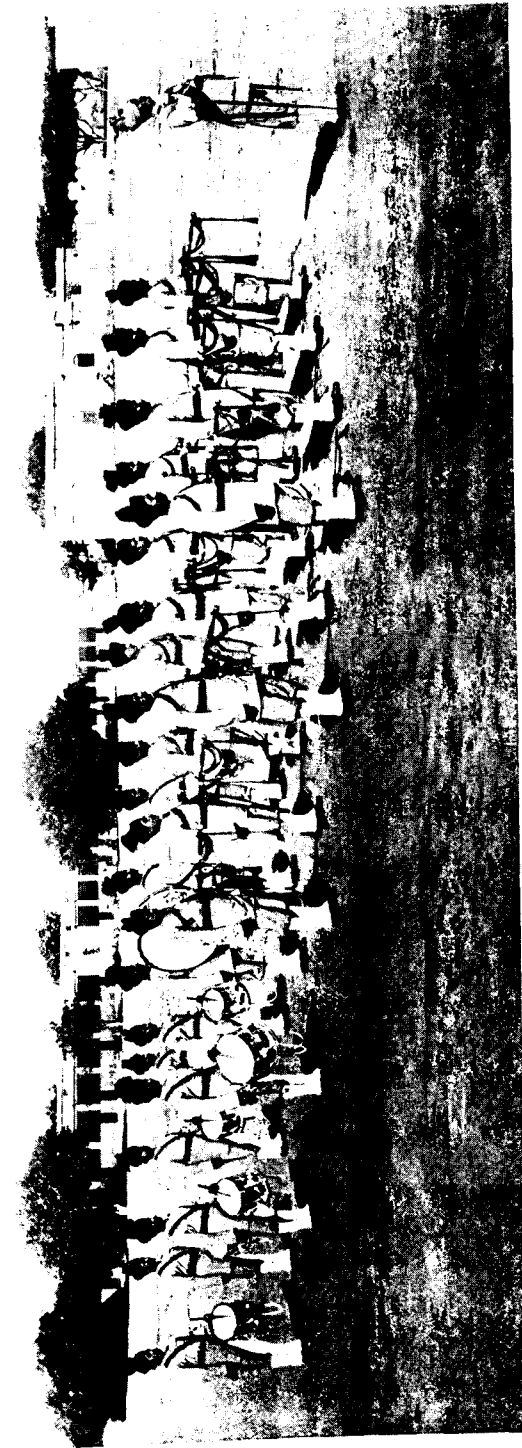
In *R. v. Roxburgh*, 1871, it was held that although a police officer is not bound, in the execution of his duty, to assist the occupier of a house in putting out an intruder yet he may lawfully do so, and if he sustains violence in so doing, the party inflicting such violence, although he may not be convicted of assaulting a police officer in the execution of his duty, will be liable to a conviction for common assault.

A case fresh in the minds of readers is that of *Davis v. Lisle*, decided in March, 1936. In this case two officers, believing that two men in charge of a lorry that was causing obstruction were in a garage, entered the garage to make inquiries. Neither had permission to enter the garage and neither held a search warrant. They were asked to leave, and one, being in plain clothes, was about to produce his warrant card when the appellant struck him. It was held that after they had been told to leave the premises the police officers became trespassers and were not thereafter acting in the execution of their duty. The appellant could not therefore be liable for assaulting or obstructing a police officer in the execution of his duty.

Finally, an important case of a different nature is that of the *Great Central Railway Company v. Bates*, 1921. A properly appointed constable in the employ of the Railway Company, whilst on patrol around the area assigned to him, noticed that the doors of a warehouse were partly open and that on the other side of the shed was a bicycle. With the intention of removing the bicycle to a place of safety on police premises, he entered the building and fell into a sawpit and was injured.

His employers claimed compensation from the owner of the warehouse on the ground that the constable was lawfully on the premises, acting in the execution of his duty. It was held, however, that he had no legal right to enter, being neither an invitee nor a licensee, and even if he had the right to enter, the warehouse-owner was under no duty to make the place safe for him or warn him of the danger.

It must not be concluded from the cases cited here which concern violence done to police officers that because the constables in those special circumstances were not protected by the statutes relating to acts done in the execution of their duty they were unprotected by law. They were still, as ordinary citizens, entitled to full protection; but the appropriate charge would be the less serious one of common assault, unless the circumstances were sufficiently serious to justify charging unlawful wounding or causing grievous bodily harm.



"SCOTLAND IN INDIA"
The Pipe Band of the Karachi Police

Scientific Aids in Criminal Investigation

By F. G. TRYHORN, D.Sc.(Liv.), A.I.C.

Professor of Chemistry, University College, Hull

PART VI

MARKS AND IMPRESSIONS (*continued*)

Section II. *Fine Marks and Impressions*

As was suggested in the preceding article, marks may be classed as 'fine' if the detail distinguishable in them is of linear dimensions less than $\frac{1}{16}$ th in. (1.0 millimetre). Such marks include those made by the majority of tools and instruments when used on materials softer than that of which they themselves are made. These marks usually contain much more detail than the type of impression considered in the last article, and the general basis of investigation has to be the comparison of photomicrographs of the marks, in which the matching of series of narrow lines has to be considered rather than a mere comparison of measured lengths as in the case of the coarse detail that is found, for example, in footprints.

A further subdivision is possible between tools, such as knives, and instruments such as jemmies: the detail in the marks left by the former is, as a rule, not only much finer and more complex than that left by the latter, but different in character and origin. It will therefore be convenient to consider the investigation of 'fine' marks in several categories in spite of a considerable overlapping of methods. It must be emphasized that the value of a close examination of marks left in breakings and safe robberies, etc., lies in the fact that in the majority of cases an instrument of almost any type is

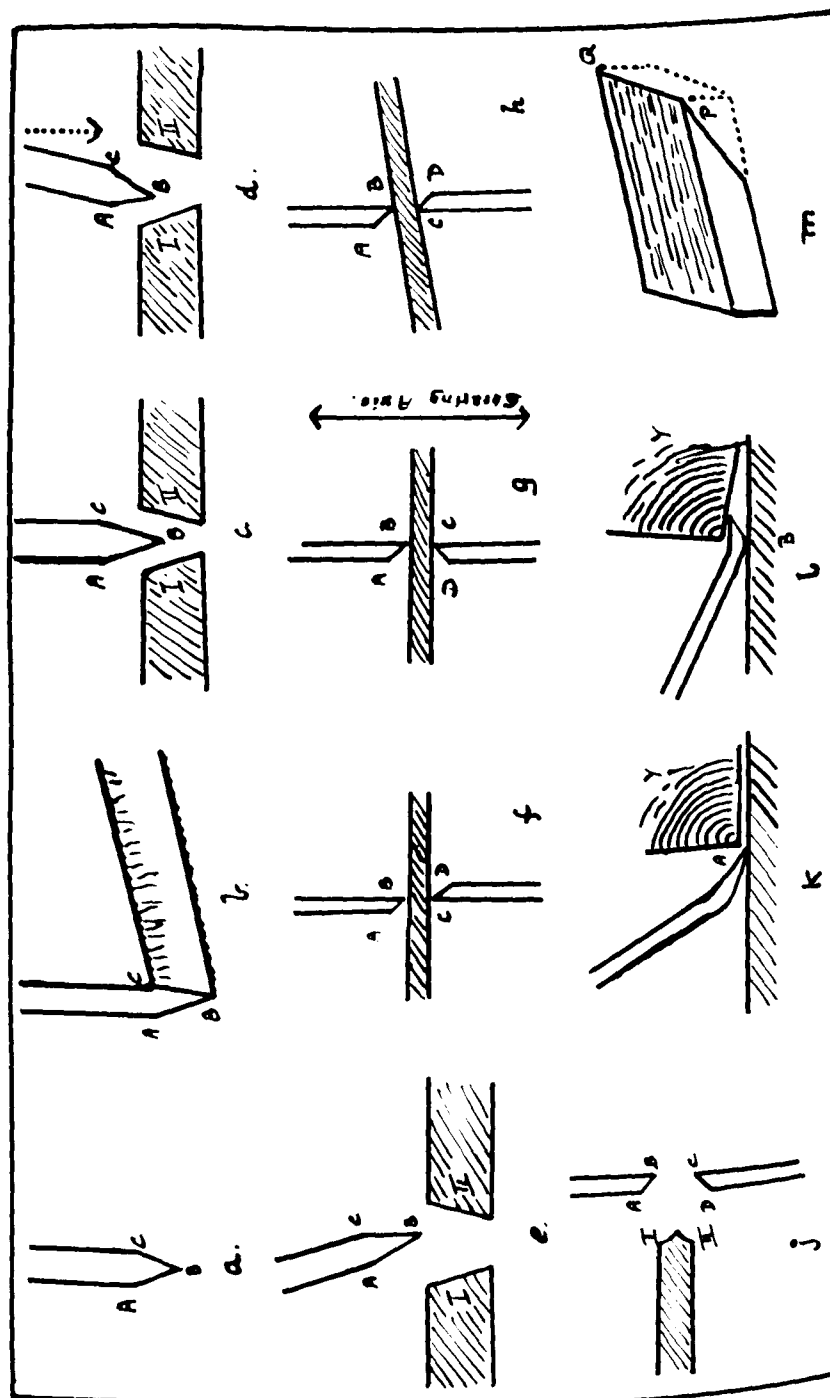


FIG. 1

liable to leave marks in which the details are as characteristic of that particular instrument as a finger-print is of a given person. For this reason it is always worth while making a special search at a scene of crime for such marks, and, if they are found, taking steps to secure them as exhibits so that they are available should a suspect instrument be obtained later in the investigation. For the same reason any material such as wires, cables, sheet metal, etc., which has been cut during the commission of an offence should be collected. The following classification of tools and instruments is based primarily on their mode of action, which in turn determines the character of the marks they make.

(a) *Edged Tools*.—Instruments which may be classed as 'edged tools' vary from those with relatively coarse, blunt edges, such as hatchets and axes, through those with much sharper edges (chisels, table- and pocket-knives), to those with very keen edges, such as razors. Although in each of these classes we are accustomed to think of the cleaving action they produce as being caused by a single edge, more or less of a 'line' type, actually this is never the case. In sharpening any instrument of the cutting type the main cutting edge produced is the result of a comparatively sharp taper (Fig. 1a) in which three edges are formed. This is the case with a razor just as much as with an axe or a chisel.

Here the main cutting-edge is B, but the subsidiary edges A and C play important parts in producing detail in cuts, especially in the use of the sharper instruments. The mode of action of such a tool may be considered in some detail to indicate some of the problems that have to be considered in the investigation of marks possessing much detail. In the first place, none of the three edges A, B, and C is actually a line-edge, even in the case of a carefully sharpened razor: indeed, the opinion has been expressed that a true line-edge, if it could be produced, would have little cutting value. Sufficient magnification of the main edge of a cutting tool will reveal a number of fine notches or serrations which are the finer and more numerous the greater the apparent

sharpness of the main edge. Further, similar but unrelated notches occur on both of the edges A and C (Fig. 1b). These serrations, of course, are produced in part by roughnesses on whatever abrasive or finishing material is used in producing the edge, and in part, by wear. If such a blade is held vertically while a cut is being made (Fig. 1c) the main edge B comes first, during the cut, into contact with both of the cut faces I and II which are produced: as the blade passes through the material edge A then comes into contact with face I, and edge C with face II. The result of these second contacts is that the primary irregularities on the cut faces, produced by the serrations of edge B, are to a greater or less extent overlaid by the serrations of edge A (on face I) and of edge C (on face II). Thus, although the fine lines observable on the cut faces are characteristic of the particular blade, the detailed structures on the two faces produced in a given cut are not necessarily identical: certainly, however, in a cut such as that described the structures will be predominantly those caused by edge B. In practice it is the exception rather than the rule for a cut to be made with the blade vertical. In general a tilt is given to the knife which varies in slant and direction accordingly as the cut is made by a right- or left-handed person, and by an upward or downward motion. In a downward cut by a right-handed person the resultant angle of the blade is usually that of Fig. 1d. In this case, after edge B has left its characteristic irregularities on both faces I and II, edge C bears rather heavily on face II whilst edge A bears much less heavily on face I: the result is that whereas the characteristics left by edge B on face II are strongly altered by the super position on them of the characteristics of edge C, those of edge B on face I are but little changed. Similarly in a left-handed cut (Fig. 1e) face I bears the characteristics of edges A and B, whilst face II carries chiefly those of edge C.

It will thus be seen that not only will the detailed structure of the two faces produced in a single cut vary, but that it is possible from a careful study of the variations to gain

information as to the nature of the cutting stroke. Moreover it is evident that, if the blade is not only held vertically but descends vertically in making the cut, the lines produced on the cut faces will be straight vertical lines. In natural cuts there is always a tendency for both downward and upward strokes to curve towards the operator's body, and therefore the lines on the cut faces are usually slightly curved. A further factor tends to complicate the detail of the cut faces. In the course of even a short stroke (*e.g.* $\frac{1}{4}$ in.) some of the serrations of an edge may become clogged with particles of the cut material: such cloggings, alternating with clearings, may occur several times in a single short stroke: this action gives rise to variations in the detail produced by a given notch during a particular stroke and adds greatly to the difficulty of comparing cuts made by sharp tools.

The actual investigation of such cuts involves chiefly low power microscopy, a magnification of about 60 diameters being the maximum used. Photographs must be made of the magnified image, and particular attention has to be given to illumination. The irregularities on the cut face are usually exceedingly shallow, and must be illuminated by oblique light before they become visible in most cases: it is then the shadows cast by the higher points on the surface that are photographed, and the relative position of these will depend on the angle of incidence of the light. It is therefore of paramount importance that the angle of incidence of the illuminating light should be kept constant during the photography in a given investigation. As a step preliminary to photography, especially when the suspect tool has a long edge, and the object cut is small, cuts may be made with the full length of the edge on a soft material such as plasticene. This cut may then be examined visually, with a magnification of about 10-20 times, in comparison with the 'exhibit' cut.

Often, in this way, it is possible to determine from the matching of irregularities on the plasticene face with others on the 'exhibit' the approximate portion of the blade used in making the exhibit cut.

It may at this point be emphasized that 'test cuts' should not be made until a preliminary microscopical and chemical examination of the blade has been undertaken. When a blade has cut a soft metal such as copper or lead traces of those metals may be left in the serrations of the edges. By microchemical or spectroscopic methods the identity of the material which has been cut by the blade may be determined. If 'test cuts' are made with the instrument before the chemical examination is undertaken, the chance of obtaining this sort of link between the instrument and the material cut may have been destroyed.

For making 'test cuts' for the purpose of photographic comparison with the 'exhibit' cut lead has been found to be the most suitable material. It is well first to soften the lead by heating it nearly to melting point: the cut then made on the cooled lead will contain the maximum of detail producible by that tool. Photomicrographs are then made, with equal magnifications, and if necessary in several sections, of the 'test' and 'exhibit' faces: a 2 in. objective is the most useful in this work, and enables about $\frac{3}{8}$ in. portions of the cuts to be photographed at a time: the sectional photographs are then joined up and compared. Considerable judgment has to be exercised in the matching process: the photographs consist of a multitude of closely spaced lines, of varying width and intensity. In two totally unrelated photographs it is usually possible to find quite a large number of lines which appear to match. This, of course, on a probability basis, is to be expected when any two series of unevenly spaced lines are placed end to end. From what has been stated above it will be realized that *absolute* identity between the structures of cuts made by a given edge is unlikely: real matching, however, must be *general* between the photographs of the 'test' and 'exhibit' cuts: individual lines may be missing in one or other of the faces, but there must be no considerable stretches in which close correspondence is absent, and there must be, over the greater part of the photographs, 'line by line' matching (Fig. 2).

(b) *Shearing Tools*.—Shearing tools are of two types: in scissors, and hand or power shears, the two edges which produce the cut pass over each other producing a shearing, as opposed to a cleaving, action (Fig. 1f): in pincers and cutting pliers the two edges which produce the cut do not pass over each other, but produce a shearing effect at the end of which they rest edge to edge (Fig. 1g). From the diagrams it will be noted that in both these classes of instruments there are four edges, A, B, C, D, concerned in making the cut: of these it is chiefly the edges B and C which, by reason of their serrations, give rise to the characteristics of the cut faces. If the material cut is held at right angles to the shearing axis, as in Fig. 1f, g, on each face appears a median line dividing the face horizontally more or less equally: above the line the characteristics produced are those of edge B, and below it those of edge C. In the case of instruments of the scissors type this dividing line on the cut face is displaced if the material is not held at right angles to the shearing axis (Fig. 1h): the characteristics of the cut face may be then almost entirely due to one or other of the shearing edges, according to the direction of tilt of the material that is being cut. Further, the shearing action usually forces the material away from the crossing-point of the shearing edges, so that the actual lines produced on the cut faces are curved. Conditions are simpler in tools of the pincer type: with these, the angle of the material cut to the shearing axis has much less effect on the nature of the cut faces than in the use of the scissor-type tools: a similar displacement of the cut material occurs during the stroke, producing two curved surfaces (Fig. 1j): edge B leaves its characteristics on face I and edge C on face II. Cuts by such tools may be distinguished by the fact that the lines on the cut faces are practically without curvature, although the faces themselves are curved.

The investigation of such cuts is made on lines similar to those used in the case of knife cuts, namely by comparing photomicrographs of 'test cuts' made by a suspected tool on lead, with those of the 'exhibit' cut. Two examples of such

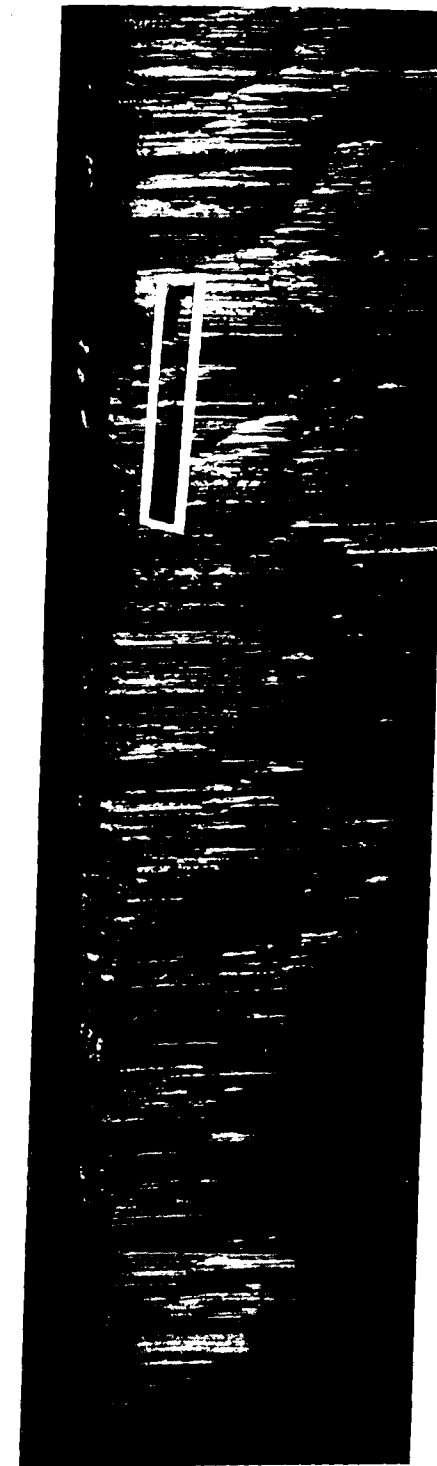


FIG. 2.—PHOTOGRAPH OF FACE OF LEAD BLOCK CUT BY PLIERS,
with insertion of photograph of cut end of wire, diameter $\frac{1}{8}$ in.



FIG. 3

A = photograph of portion of "test cut" on lead with pliers.
 B = photograph of end of wire (diam. .073 in.) cut by same pliers.

investigations are shown in Figs. 2 and 3. Fig. 2 represents a photomicrograph of one face of a piece of lead cut by the jaws of a small pair of cutting pliers. The jaws of these were approximately $\frac{1}{8}$ in. wide. A piece of lead $\frac{1}{2}$ in. $\times$ $\frac{3}{16}$ in. was cut by the full width of the jaws and one face of one of the cuts was photographed in six sections; these have been joined together to give a composite photograph. A piece of copper wire $\frac{1}{16}$ in. was then cut with the same pliers: a photograph of a portion of one face of an end of this cut wire has been superposed on the larger photograph to indicate by the matching the identity of the tool producing the two cuts.

In Fig. 3 a photograph of the cut end of a wire $\frac{1}{16}$ in. in diameter is shown in juxtaposition to a photograph of a portion of a face of a 'test' cut on lead made by the same tool in each case: in these larger photographs the detail in the matching is evident. These photographs serve also to show how the characteristics on the faces vary by reason of the alternate clogging and clearings of the serrations on the shearing edges.

(c) *Coarse Edged Tools*.—The term 'coarse-edged tools' is used to include instruments such as axes and blunted chisels, in which the serrations on the cutting edges may be visible to the eye or discernible by the finger. The marks left by such tools are frequently coarse, and, although they may contain much fine detail which is brought to light only by photomicrography, it is frequently possible to relate the mark to the suspected tool by other means. One of these is by making a profile photograph of the notches in the cutting edge, and then comparing the silhouette of the cutting edge, carefully cut out from a print, with the mark under examination. A better method is to make a positive slide from the original negative of the profile and to use this in making the comparison. Such a method should be used only when there are numerous and obvious notches on the edge of the tool. If there are only one or two prominent notches the *fine* structure of the marks, determined by the photomicrographic method, should be made the basis of the comparison.

(d) *Instruments with a Working Surface.*—The marks produced by instruments used with a levering action differ markedly in their origin from those made by cutting tools. If a lever is inserted into a crack (Fig. 1k) the first marks made on the lower surface will be caused by the irregularities on the edge A of the lever: but by the time the lever attains the position shown in Fig. 1l all the irregularities on the surface of the tool between the parts A and B will have come consecutively into contact with the surface operated on, and will have left their characteristic marks more or less faithfully upon it. It is in this sense that the instrument may be said to possess a working surface. At the same time the marks left on the upper surface Y will be predominantly those caused by the irregularities on the actual edge A of the lever. With this class of tool it is found that the marks left vary greatly with the manner in which the tool is handled. A slight change in tilt of the lever during insertion, or a variation of pressure during the levering action may cause surprising differences in the marks made. The investigation of such marks therefore falls into two stages: firstly, the linking of the mark with the suspected instrument, and secondly, the determination of the manner in which the instrument was held in making the actual 'exhibit' mark. For the first purpose it is necessary to make a careful mark with the instrument on softened lead sheet, holding the instrument square with the surface, and, with a slow, levering stroke, bringing all parts of its working surface into contact with the lead. In this way, a mark bearing the maximum detail producible by the instrument will be obtained: this is then compared photomicrographically with the 'exhibit' mark: it will usually be found to contain so much more detail than the 'exhibit' mark that it is likely to prove unconvincing to a jury even though it convinces the investigator: for Court purposes it is desirable to determine how to use the instrument so as to produce marks as nearly identical as possible with the 'exhibit' mark. In order to do this the simplest method is to make numerous marks, with the instrument held and used in different ways, on some soft material,

so that marks of different widths and depths can be made. The most suitable medium that has been found for this purpose is paraffin wax. The wax is melted in a shallow tin, to a depth of about $\frac{1}{4}$ in., and whilst the wax is molten, a little very fine aluminium powder is sprinkled on the surface: this spreads immediately, and as the wax sets, forms a bright metallic surface. The marks are made on this surface before the wax gets really hard. After the wax has hardened, small blocks, bearing the marks, are cut out, and the under edge chamfered, as shown in Fig. 1m. The edge P Q can then be brought in contact, for comparison purposes, with the 'exhibit' mark. This method has been found most useful in relating suspected instruments, such as case openers, jemmyes, and screwdrivers, to marks on safes, window-frames, drawers, wardrobes, doors, etc. Needless to say, it should not be applied until after a careful examination of the instrument has been made for traces of paint, varnish, or foreign metals.

(e) *Miscellaneous Instruments.*—The possibility should be borne in mind that any instrument with which pressure is exerted on a deformable surface is likely to leave marks which are characteristic of that particular instrument. Two examples of instruments not included in the previous categories may be cited. In a case of the theft of stop-valves from an oil-refinery it was noticed that both valves found in possession of the accused prisoner and valves found at the refinery bore the marks of large spanners on the faces of the nuts holding the parts of the valves together.

By taking photomicrographs of spanner marks on pairs of valves from these two sources it was possible to show, by comparing the details of the marks, that the same spanner had been used on the members of the various pairs. These observations provided a link between the sets of valves much stronger than that provided by the analysis of traces of oil left in them.

In the second case it was possible to show that a can opener used to cut open the cash container of a prepayment gas-meter left marks of the same character as marks made

by the suspect can-opener on aluminium sheet: here advantage was taken of the fact that the irregularities in the blade of the opener leave characteristic marks in the short scratch which the blade makes before it actually pierces the metal on which it is used.

In conclusion it must be pointed out that the methods of investigation described here apply principally to the examination of the structures of marks on large exhibits. Where the marks to be compared occur on small exhibits (e.g. cartridge cases), or where the marks can be cut out of the larger exhibits, investigation by means of a comparison microscope is much more rapid and expeditious than by the photomicrographic method. The latter method, however, is usually compulsory in the case of large exhibits.

The next article will deal with problems arising in the examination of blood-stains.

Juvenile Crime: Facts and Fallacies

By F. T. TARRY

Chief Constable, Exeter City Police

AMONG all the divergent opinions expressed on the question of juvenile crime, two thoughts emerge on which, in police circles, there is unanimity of expression, namely (1) that recent increases in forms of juvenile crime are an unhappy concomitant of an age in which advances in elementary education and improvements in the social services combine to raise the common standards of life; and (2) that the measures for dealing with juvenile offenders are proving to be inadequate to deal with the needs of the case. Juvenile crime to-day, it is generally agreed, is to be ascribed to dishonesty, greed, defective moral or mental equipment, lack of parental control, mischief, and very largely the misuse of leisure hours. Terms like "adventure", and "the films", while less generally acknowledged as causes of juvenile crime, undoubtedly require to be added to the list. Rarely, to-day, is a crime found to have been committed through hunger, stark poverty, fear, or the misery of the slum. Even more rarely are these causes held to be responsible for the depredations of the juvenile offender.

As to the increased numbers of offenders brought before the juvenile courts, either on the allegation of the commission of offences, or as being in need of care and protection, the statisticians point to corresponding increases in the numbers in the age groups of the population. The parallel is also made with the years immediately following the enactment of kindred measures, as when the Probation of Offenders Act was passed in 1907, the Children Act in 1908, the Road

and other machinery affecting the penal code of traffic law) in 1934. On each of these occasions the enactment was followed by increased numbers of persons dealt with by the magisterial courts under the powers conferred by the new Statute.

Yet the fact is that, in the police service, there is growing a sense of inadequacy, even of inefficiency, in the measures taken to prevent juvenile offenders from re-engaging in criminal activities, and to deter others from developing criminal propensities.

Why this feeling should develop, and what measures can be framed to remove it, forms the subject of the present analysis. Examination of the Children and Young Persons Act, 1933, with the rules and orders issued under its provisions, together with Home Office memoranda and circulars addressed to juvenile courts and local authorities during the past four years, show an intention to deal with erring children in a way which fulfils the highest ethics of the administration of the criminal law. Thus section 44: "Every court, in dealing with a child or young person who is brought before it . . . shall have regard to the welfare of the child or young person, and shall in a proper case take steps for removing him from undesirable surroundings, and for securing that proper provision is made for his education and training."

Nor was the Act framed as a transitory expedient. Its enactment was preceded by the exhaustive examination of the problem by the Departmental Committee on the Treatment of Young Offenders, and from another angle by the Departmental Committee on Sexual Offences against Young Persons. The reports of these two committees, issued in 1927 and 1926 respectively, became in turn the subject of conference and experiment before the proposals were passed into law. A quarter of a century's experience of probation, and of the operation of the Children Act, 1908, had shown plainly the lines on which the machinery for dealing with juvenile crime should proceed. Yet, in the event, the assertion is made, and it is confirmed by the bare figures, that juvenile crime is

increasing, both in gravity and frequency. This, too, in an age when, but for the special problem of enforcing the code of law relating to safety on the roads, all other forms of adult crime and offences are steadily diminishing to proportions which cause no serious national alarm.

The following comparative table, extracted from the Criminal Statistics for England and Wales (Cmd. 5185), 1934, is of particular interest in this connection:—

TABLE SHOWING THE NUMBER OF PERSONS OVER AND UNDER THE AGE OF 16 CHARGED WITH INDICTABLE OFFENCES AND THE PROPORTION OF SUCH PERSONS TO THE POPULATION UNDER AND OVER THE AGE OF 16

Year	INDICTABLE OFFENCES Persons charged in Juvenile Courts, i.e. persons under 16			Persons charged in Adult Courts, i.e. persons who are mostly of the age of 16 and over		
	Number charged	Estimated population aged 10-16	Proportion of offenders per 100,000 of population	Number charged	Estimated population aged 16 and over	Proportion of offenders per 100,000 of population
1911	12,017	4,169,659	288	56,558	24,349,654	232
1921	11,688	4,378,400	267	52,588	26,666,500	197
1922	11,937	4,360,800	274	48,830	26,966,200	181
1923	12,170	4,342,100	280	47,086	27,280,900	173
1924	12,884	4,322,600	298	46,862	27,713,800	169
1925	12,666	4,267,300	297	47,327	27,991,800	169
*1926	13,115	4,181,000	314	66,476	28,293,300	235
1927	12,254	4,068,700	301	52,909	28,584,000	185
1928	11,247	3,888,400	289	51,947	28,901,900	180
1929	11,361	3,702,600	307	50,362	29,183,650	173
1930	12,198	3,804,680	321	53,851	29,514,850	182
1931	12,895	3,868,500	333	55,852	29,808,900	187
1932	13,978	3,950,600	354	60,435	30,083,400	201
1933	14,848	4,017,700	370	57,358	30,286,300	189
1934	18,162	4,135,000	439	57,605	30,410,500	189

* The year of the General Strike.

But the purpose of this article is not to explain the causes of increased numbers of children and young persons appearing before the juvenile courts. The student in search of them should go direct to the introductions to the annual volumes of the Criminal Statistics, the annual reports of chief constables, and commentaries from day to day in the public press. The present purpose will be served by directing some observations to the status of the police in the juvenile court, and the need

for satisfying constables who detect children and young persons in the commission of crime which results in their appearance before juvenile courts, that the intention of Parliament, quoted from the words of section 44, is being given proper and adequate effect.

Those who function in the juvenile court from the angle of the Bench, the educationist, or from the probation seats may feel disposed to question the need for the police to require satisfying in this respect, since it is the function of the police to lay the facts before the court and there leave the case for the court to adjudicate upon the evidence placed before it. This is true. It is, however, no less true to say that upon the support which their actions receive from the courts depends the energy and efficiency of the police in detecting and preventing particular forms of crime and particular classes of offenders.

The maintenance of this traditional liaison between magistracy and police has always been recognized as fundamental to the crime-fighting machine. Peel's Police were originally under the executive control of the magistracy, two "justices" being appointed the first joint commissioners of the Metropolitan force. The county police forces remained under the control of the justices assembled in quarter sessions until 1888, and even now half the membership of the standing joint committees is drawn from the same source. The borough police forces alone were placed under the executive control of the local authority, and then under a special and extra-judicial body, the watch committee. Although to-day the executive administration of police forces is not in the hands of the magistracy, the police act as the executive of justices in all criminal, and some non-criminal, proceedings. Arrests, with and without warrant, and summonses against individuals issued at the instance of the police depend ultimately upon the determination of the justices. Ineffective functioning by the one branch therefore affects the efficiency of both, but in spite of criticism, much of it ill-informed, it is plain that the cohesive functioning

of Bench and Police secures an enforcement of the criminal law and maintenance of public order with degrees of restraint and judgment which are in the best interests of the community.

The juvenile court is no new tribunal. The "children's court" existed from 1908, in some districts before that year, and much of the machinery prescribed in the Act of 1933 existed long before it received the sanction of the Statute. The new Act consolidated and extended the powers of the Juvenile Court, and inserted "shall" instead of "may" in much of the existing discretionary machinery and procedure. Statutory effect was also given to measures for the "education" and "training" of those found guilty of offences or in need of care and protection. "Conviction" and "sentence" were abolished, and the Law henceforth regarded the juvenile offender as in need of an understanding friend rather than the discipline and punishment of the official.

The real difficulty has arisen, as is usual with most attempts at social progress, in securing that the wishes of the legislature are acted upon by those entrusted with the administration of the Statute. And more is heard of the isolated examples of maladministration than of the steady and conscientious interpretation of Parliament's wishes and the selection of the officials to carry them into effect. The case of the fifteen-year-old boy who fails to respond to probationary efforts and again lapses into crime provides material for the headlines of the evening papers, with the comments of elderly justices on the efficacy of the birch. The quiet but thorough investigation by a police constable into the facts of an offence committed by a young offender, the suitability of the home surroundings and its substitution by another home in the occupation of a "fit person" lack all the stuff of which headlines are made.

It is here necessary to examine the change in the status of the police in relation to the juvenile court. In the summary and higher courts, in those cases the preparation of which he is primarily responsible for the collection of the evidence, it is the function of the constable or the detective officer concerned,

not only to take the proofs of the witnesses, and arrange for their attendance, but to prepare, for use by the Court, should the guilt of the accused be established, a statement of the antecedent character and other details which will help the court to determine what sentence or order should be made.

In courts of Quarter Sessions and Assize this report is given on oath, and the officer is liable to be cross-examined on behalf of the defence. In the summary courts it is customary for the statement of the character and antecedents to be made, unsworn, by the officer in charge of the case, any statement to which objection is taken being supported by sworn testimony. In practice, the officer collects much of the material for this report when pursuing his original investigation into the crime, gathering the evidence on which the guilt or innocence of the accused person will depend. Police practice also requires that every statement affecting character, as well as of evidence, shall be carefully authenticated.

In the juvenile courts, however, there appears to be an impression, unexpressed in the Statute, but no less evident, that this well-established practice should cease. Why is not clear, but it may be due to the omission of any specific reference to the police in section 47 of the Act of 1933 in which juvenile court procedure is prescribed. The rules made by the Lord Chancellor under section 47 (Summary Jurisdiction (Children and Young Persons) Rules, 1933), which also omit any reference to the police, prescribe the machinery to be used by the Juvenile Court to obtain information as to the general conduct, home surroundings, school record, and medical history. The agencies contemplated for the supply of this information are the probation officer, the school attendance officer or the head teacher, and the school medical officer, and reports from these sources may be received and considered by the court without being read aloud.

It is interesting to observe how this works out in practice. The police officer has possibly had contact with the offender, his surroundings and associates, since the time when the injured person complained of the theft, or the damage, or

other subject of the charge ; perhaps before. But he is not necessarily consulted by the court in the important task of deciding what provision is necessary for " education " and " training ". Instead, the probation officer is employed, an official whose training is not always primarily directed, like the policeman's, to the task of the investigation, sifting, and verification of statements made by or on behalf of persons accused of criminal offences. At the conclusion of the case the accused, having been " bound over " or placed on " probation ", which in many quarters of the community is still popularly regarded as an acquittal, the constable or detective may learn that statements were made in the written reports which, from his previous knowledge of the case, he knows to be fallacious if not misleading.

It is even more important that the confidence of the public in the administration of criminal justice should not suffer from a lack of publicity for the proceedings of juvenile courts. The householder who has returned home to find his rooms in disorder, the jewellery and cash gone, and furniture wantonly damaged, is amazed when in due course the police inform him that they have detained two or more young persons who have confessed to the crime, and will later appear before the juvenile court. His amazement turns to disgust when, in due course, he attends at the juvenile court, is kept waiting in an inhospitable room at great personal inconvenience, and finally informed that, the offenders having pleaded guilty, his attendance is no longer required, and that probation orders have been made. When in due course he finds that their habits or demeanour are unchanged by this " treatment " he loses confidence not only in the efficacy of the administration of justice, but on the ability of the police to protect him and his home. The two, to him at any rate, mean one and the same thing.

This criticism is not intended to underrate the value of reports presented to the juvenile court by the school authorities and the probation staff. The introduction of the procedure outlined in the Lord Chancellor's Rules provides the juvenile

court with valuable information without which the provision for further "education" and "training" could not be made. But the risk of that information being fallacious, or insufficient, could be minimized by a greater measure of liaison between the police and the departments concerned.

The policeman's interview with the offender comes at the early stage, when stubbornness, guile, and audacity urge the boy to refute all allegations, to decline to answer inquiries made to trace his complicity or non-participation in the criminal acts complained of. These features are completely reversed when in due course he appears in the juvenile court, showing a degree of contriteness, reticence, and meekness which may easily mislead even trained psychologists. Rarely are the members of the court, the education authorities, and the probation officers aware of the opposite complex.

It is a curious paradox that in relation to road safety among school children the child is taught to regard the policeman as his best friend. "Safety first" propaganda, lessons and road safety instruction by teachers all emphasize how the child should look to the police for guidance and help in using the roads. Yet in cases of theft, wilful damage to property, and similar serious lapses of conduct serious resistance is sometimes offered to the efforts of the police to trace the perpetrators. In some juvenile courts the policeman's uniform has even been abolished, as if to make the policeman feel that the King's uniform which he wears is not suitable to be seen by children. This view, of course, goes beyond the conclusion reached on the point by the Departmental Committee on the Treatment of Young Offenders, who, at p. 37 of their report, observed that: "The question was raised whether policemen should wear their uniform in court. It seems to us unimportant, because children are familiar with the uniform in the streets. *It is a matter which may safely be left to the discretion of the court.* The number of policemen present is in our view more important than the question of uniform. Only those officers should be allowed to appear in court whose presence is essential for

the proper hearing of the case." The words italicized do not appear as such in the Report, and may best be regarded as *obiter dicta*, since the question when and where a policeman should wear uniform or plain clothes must be one solely for the chief officer of the force to decide.

The feeling may be engendered in some quarters that it is desirable that the police should be relieved from the duty of collecting information for the guidance of the court in determining the treatment to be ordered for a juvenile offender, and even that liaison between the police and the probation, educational, and medical agencies of the court is unnecessary. But in spite of the pressure of police work it must be remembered that if one arm of the governmental machine is weak the whole will suffer.

The remedy appears to lie in the direction of implementing more effectively the proposals of the Departmental Committee, and to provide that the function of the police in deterring the commission of crime, including juvenile crime, is more wisely applied by the police and not abandoned to be undertaken by other branches of the public service. The immediate need is to fill the gap between probation, which in the minds of most uninformed people means simply a "letting off", and committal to an approved school, which in turn persists in the minds of many people as equivalent to imprisonment. Between these adjudications lie schemes for remand homes, still in a weak state of progress in spite of the transfer of the responsibility for their maintenance from police authorities to the local authorities; the selection and appointment of "fit persons" capable of taking selected young offenders from miserable home surroundings into a respectable family life; and in the psychological treatment of any nervous diseases revealed by the circumstances and condition of the offender.

As to Remand Homes, the question arises whether the distinction is appreciated between the objects of keeping a boy in custody for fourteen days and remanding an adult to prison. The Departmental Committee envisaged the

setting up of regional remand homes, where arrangements could be made for psychological examination and observations with a view to recommending the court as to treatment for any nervous disorder or mental disease revealed by the examination. Finance, and the inability of many local authorities to collaborate in joint schemes of this character have prevented this development. The wisdom of collecting boys in large numbers in an institution of this character may be doubted, since the deterrent effect of a short stay in a remand home would be small, and the time available for individual treatment would be severely limited. Would it not be more practicable to arrange for cottage remand homes where, in addition to medical and psychological examination, the boy can receive the individual discipline, lessons in family life and the art of living which would be more valuable as a precedent to a period of probation than any institutional treatment mixed with the company of young thieves of his own age and class? The small remand home, therefore, in or near the jurisdiction of the court, with facilities for individual attention by selected visitors, the local specialist in mental diseases, and the mental deficiency officer, merits consideration. Practically every dispensary now has its own clinic for nervous diseases, and every county and county borough council its arrangements for mental treatment of out-patients. The person selected to be in charge of the remand home, moreover, must be in friendly contact with the police to secure that any resentment by his charges towards the police is turned to respect and confidence.

"Fit Persons." In spite of the economy of the machinery set up by the Children and Young Persons Act (sections 84-5) for the boarding out of children with fit persons, little is heard of the measures taken by local authorities to find the foster-parents competent and willing to take charge of an individual boy whose lapse into crime is due solely to the lack of parental devotion and experience which is evident so frequently in the juvenile court. In 1934, while there were 2,723 committals to approved schools, only 151 orders were made for committal

to the care of fit persons. The cases, included in these figures, in which the children or young persons concerned were charged with offences, numbered 2,261 committals to approved schools, and 69 to fit persons. Boarding out expenditure, which ranks likewise for Government grant, is considerably less than the cost of maintenance in approved schools, and having regard to the individual needs of many young offenders there is merit in the suggestion that this form of probationary treatment should be further extended. Personal contact with individual young offenders after they have been under the care of a motherly woman and her husband, shows the value of individual treatment, rather than resorting to the more expensive institutional treatment of the approved school.

The third need, that of linking up the agencies for providing the court with reliable and informative material on which the decision of the court is to be based, is bound to vary according to the degrees of personal interest and liaison which the officials concerned are willing to devote to the work. But machinery can be framed to ease this task. In the writer's police district it is the practice to arrange for a gap of two weeks between the completion of the police inquiries, pending the issue of a summons against the offender, and the date of the hearing by the juvenile court. It is rare that the offender is arrested, since even in cases of breaking the offender, when traced, is seldom likely to abscond.

In the intervening period, in addition to the notices transmitted to the probation officer and the local authority, the case is also reported to the honorary physician in charge of the Child Guidance Clinic maintained at the local dispensary. The parent is then invited to attend with the child or young person at the clinic, or more usually an appointment is arranged at the consulting rooms of the physician. In this way the police are furnished before the hearing of the case with a report on the medical and psychiatric aspects of the case, and suggestions for treatment. When, at the hearing, the charge is proved or a plea of guilty is entered, this report is handed to the Justices together with the school and probation

officer's reports. Any probation order would contain a condition requiring attendance at the Child Guidance Clinic. The clinic is under the personal direction of one of the honorary physicians. The procedure followed is for the physician to be furnished by the police with the facts of the case and the known history of the offender.

The following are specimen reports:—

SIDNEY JOHN —, aged 12.

This boy is charged with stealing tools from a store. Educationally he is a year behind the average, but he has been amenable to school discipline and, though inclined to be inaccurate, needs firm handling. His health is good.

There are two outstanding features of this boy's case. In the first place, the lack of proper parental control and upbringing. One brother has already been in trouble, and was three years at Borstal, and both father and mother are regarded as being doubtful characters.

The offence with which the boy is charged appears to have been motiveless except for mischief, in that the tools were taken, and then thrown away. He got into the shed more from necessity than anything else, and, having found himself there, took the things. He needs strict supervision.

He used to be in the Cadets, and left. It is hoped to get him to rejoin.

(Signed) R. N. C., M.D., D.P.M., B.S.

23rd May, 1936.

REGINALD DAVID —, aged 16.

This boy is charged with breaking into a shop in June and stealing £2 and some cigarettes, and with doing the same thing in July when he stole £5. He was very difficult to deal with. Defensive, evasive, inaccurate in his statements, he was inclined to shift the responsibility on to others. Eventually I got him talking more frankly about his activities. The last exploit, in which a considerable sum of money had been obtained, is the outcome of previous minor successes which, unfortunately, being undetected, led to bigger ventures.

He is a boy who will need strict supervision. He already shows propensities which, unless checked, are going to lead to disastrous results. With regular supervision over a reasonably long period of time, he stands a very good chance of reform. The control needs to be consistent.

(Signed) R. N. C., M.D., D.P.M., B.S.

19th August, 1936.

FRANK —, aged 13.

This boy is charged with stealing £5, and has previously stolen. There is a bad family background here. Though the boy is well behaved at home, he is indulged and vindicated by his mother in anything he does. The mother is a housewife of doubtful character, and she is spoiling the child. When interviewed she kept repeating that it was not his fault as he had been led astray.

I regard this boy as being the leader of his companion. He is of an adventurous type, and is a keen reader of "thrillers" and detective stories. It will be noticed that he bought a toy gun with the money stolen. He is living in the world of make-believe, in which he is going to carry out all sorts of adventures, and he is beginning to convert these fantasies into reality. He did not appreciate the result of his plans, and they were lacking in co-ordination. For instance, having acquired the money, it was he who said, "Now we will go to Plymouth, or shall it be Torquay?" He gave no thought to the anxiety he would cause his parents, he assured his companion that the prospects of their being caught were *nil*, and he could easily dodge the police. It was only when funds were running out, that some realization of their predicament dawned on them. In his narrative, which he gave with a wealth of detail and which was embellished with descriptions of various fantastic situations which had clearly never arisen at all; he was simply living his life of adventure over again, and taking a pride in it.

I suggest that this child needs considerably more than simple probation. He is showing a type of psychological disorganization, but it is one which can be adequately dealt with by the Clinic. I hope, therefore, that the Bench may see fit to make it a condition of any punishment they administer to him, that he should attend the Clinic for a minimum period of a year. By so doing, the tendencies towards seeking adventure can be gradually and carefully turned into a useful and constructive channel, rather than be developed into a war between the individual and the community. With proper and careful supervision, this is a type of case which stands a reasonable chance eventually of doing well.

(Signed) R. N. C., M.D., D.P.M., B.S.

19th August, 1936.

VERA —, aged 12.

This child is charged with larceny of cigarettes from a machine, in company with another girl.

In type she is different from her companion. She is the weaker character of the two, and easily led. She is keeping house for her father, her mother having died some months ago, but is free to go out every afternoon, and usually goes swimming. The important feature here is that she has no regular pocket money at all, and this, in my experience, so often leads to the acquiring of small amounts by young people who are without any. It matters not how little they get, but the feeling that they have nothing at all even to buy sweets with, often leads them to take that which does not belong to them, in order to acquire sweets, and so on.

I suggest that this child needs more than simple probation; and I hope the Bench will require her to attend the clinic for a few months. At an early age she is accepting heavy responsibilities in the management of her father's house, and a little helpful assistance and guidance would be of benefit to her.

(Signed) R. N. C., M.D., D.P.M., B.S.

19th August, 1936.

JOYCE MAY —, aged 12.

The motive here is entirely one of profit and gain. She is up to the normal standard at school, and gets on well there; she enjoys swimming, is fond of domestic work, and is going into service later on. She receives an adequate amount of pocket-money, but was not above acquiring some more by illicit means when the opportunity presented itself. I think her explanation of the theft is true. The packet of cigarettes was stolen with the aid of a foreign coin, and the cigarettes were being kept back until her father sent her out to buy some, when she intended to produce the stolen packet of cigarettes, and to retain the sixpence given her by her father for the purchase.

It is quite clear from this that there had been forethought and planning in the execution of this theft, to a degree which, if allowed to go unchecked and undetected, would in due course evolve into larger enterprises.

The child is intelligent and alert, and has very quickly seen the error of her ways. I consider she should do well on probation, and is unlikely to cause further trouble.

(Signed) R. N. C., M.D., D.P.M., B.S.

19th August, 1936.

JACK —, aged 14.

This history of this boy makes bad reading. He started at the age of 8½ with stealing biscuits. Two years later he was cautioned for stealing oranges, and was bound over in 1934 for stealing milk. In 1935 he stole a pair of shoes, and he is now charged with stealing 10s. He is regarded as a persistent thief, and an inveterate liar. He has been on probation.

There appear to be two aspects of this boy's conduct which need explanation. The first is that of being a liar, and the second is the stealing.

With regard to the lying, he is devoted to his invalid mother, and, when questioned by police officers, he either feels, or knows, that whatever he says will be told to her. In consequence he tries to protect her from being more distressed than is necessary by his misdeeds, and he fabricates in an endeavour to prevent her being hurt. He has yet to learn that, in so doing, he creates further difficulties for himself, and is earning a character which he does not entirely deserve.

With regard to the stealing, on the first, second, and third times he was charged, it referred to food on each occasion. There may be a shortage here, which led to that which he did, and, owing to the lack of adequate preventive measures, the habit of acquiring things has gradually grown, until now it is not food, but money, which has been taken.

In spite of the boy's past history, I suggest he be given a chance under more constant and personal supervision in order that there may be an opportunity for adequate correction of his difficulties. With careful guidance and control there is every possibility of his doing well in the end, and before sending him elsewhere I hope the Bench will feel that individual direction should be given a trial.

(Signed) R. N. C., M.D., D.P.M., B.S.

ALFRED WILLIAM —, aged 12. (Adjourned three months.)

As promised I am sending you a further report on this boy, who was charged with stealing a violin.

He has been attending the clinic regularly during the last three months, is quieter and not nearly so excitable as before. He has been given a violin, and has joined the school orchestra, which was what he wanted to do very badly.

He is progressing satisfactorily, but I should like to keep contact with him at the clinic for a further six months.

(Signed) R. N. C., M.D., D.P.M., B.S.

STANLEY —, aged 22.

This young man is charged with indecent assault, and also exposure.

He comes of a bad stock, there being a strong history of syphilis on the father's side. The father is still suffering from it; there is a married daughter who has it; two of the children died in infancy of this disease; and the mother has contracted it from the father. This is a disease which, unfortunately, leaves very grave effects on both the physical and mental health of the sufferer.

A blood test has been taken and proves to be negative, so he at any rate has not got syphilis.

This young man is educationally and intellectually below standard, but he has been earning his living as a clothes presser in a cleaner's business for some years. He quite clearly knows the difference between right and wrong, and he knew that what he was doing was wrong. Superficially there is little, if any, excuse to be made for him, except that there are certain facts here which are found in nearly all juvenile sexual misdeeds, in that there is a complete absence of any normal sexual education, and he has had no teaching with regard to the ordinary biological facts of life. Much, therefore, that has been done has been committed in terms of an infantile form of sexual curiosity, and, through lack of education, there is a total absence of the proper respect due to women.

Apart from this it will be noticed that this is not an isolated case, but represents at least three young persons.

The only other feature to which I feel I should draw your attention is that of the child —, who is clearly in just as much need of guidance, supervision, and care, as this boy. Whilst he, being older, can obviously not be excused for what he did, it was unfortunate that he came into contact with a child of this type, who clearly aided him in his weakness owing to her own low moral standard.

Quite apart from any punishment the Bench may see fit to impose, this young man is one of the group of cases who should receive assistance, supervision, and guidance through a psychiatric clinic, as he does need careful directing and training.

Most of these cases do very well indeed, in the end. It may, perhaps, be of some assistance to the Bench to know that there have been a fairly considerable number of young people charged with these offences during the last few years, with whom I have had to deal, and, during the period of supervision, not one case has shown the smallest tendency to relapse.

(Signed) R. N. C., M.D., D.P.M., B.S.

10th June, 1936.

The efficiency of this scheme depends first on the willingness of the Court, the police, and the officials concerned to work it on a co-operative basis, and secondly on the ability to satisfy parents and others interested in the welfare of a young offender that the object of the police, the court, and all concerned is to do what is best in the interests of the child or young person.

The boy of 1936 is not inherently more wicked than was his father in the year of grace 1906, and it is difficult to believe that he has more vice than his elder brother of 1926. The changing social conditions, the new temptations of the counter display of the multiple stores, the unguarded automatic vending machine, and the numerous other "aids" to juvenile crime must all be taken into account. It remains for the vigilance of the police to be augmented by wise administration in the juvenile courts to cope with the changing needs of the day.

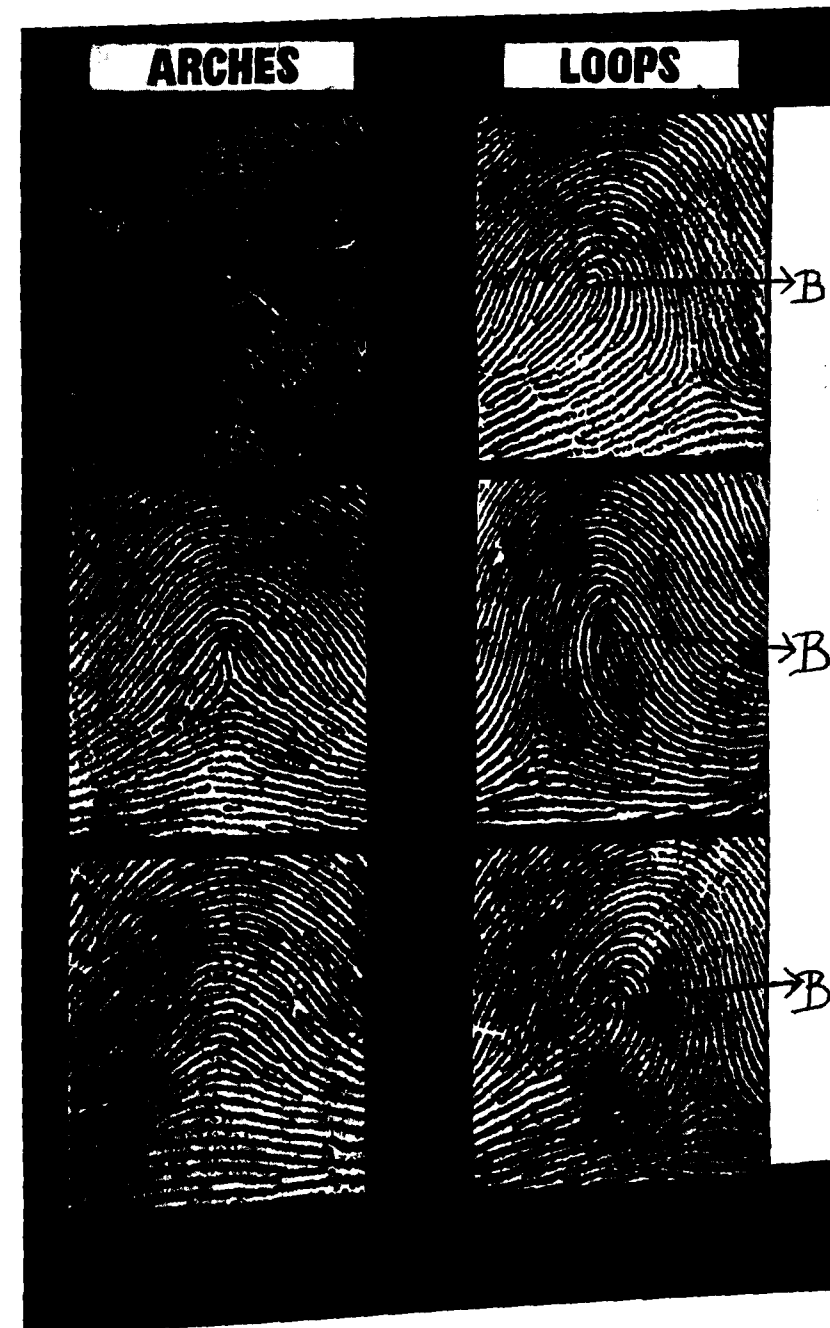


FIG. 1

(face p. 164)

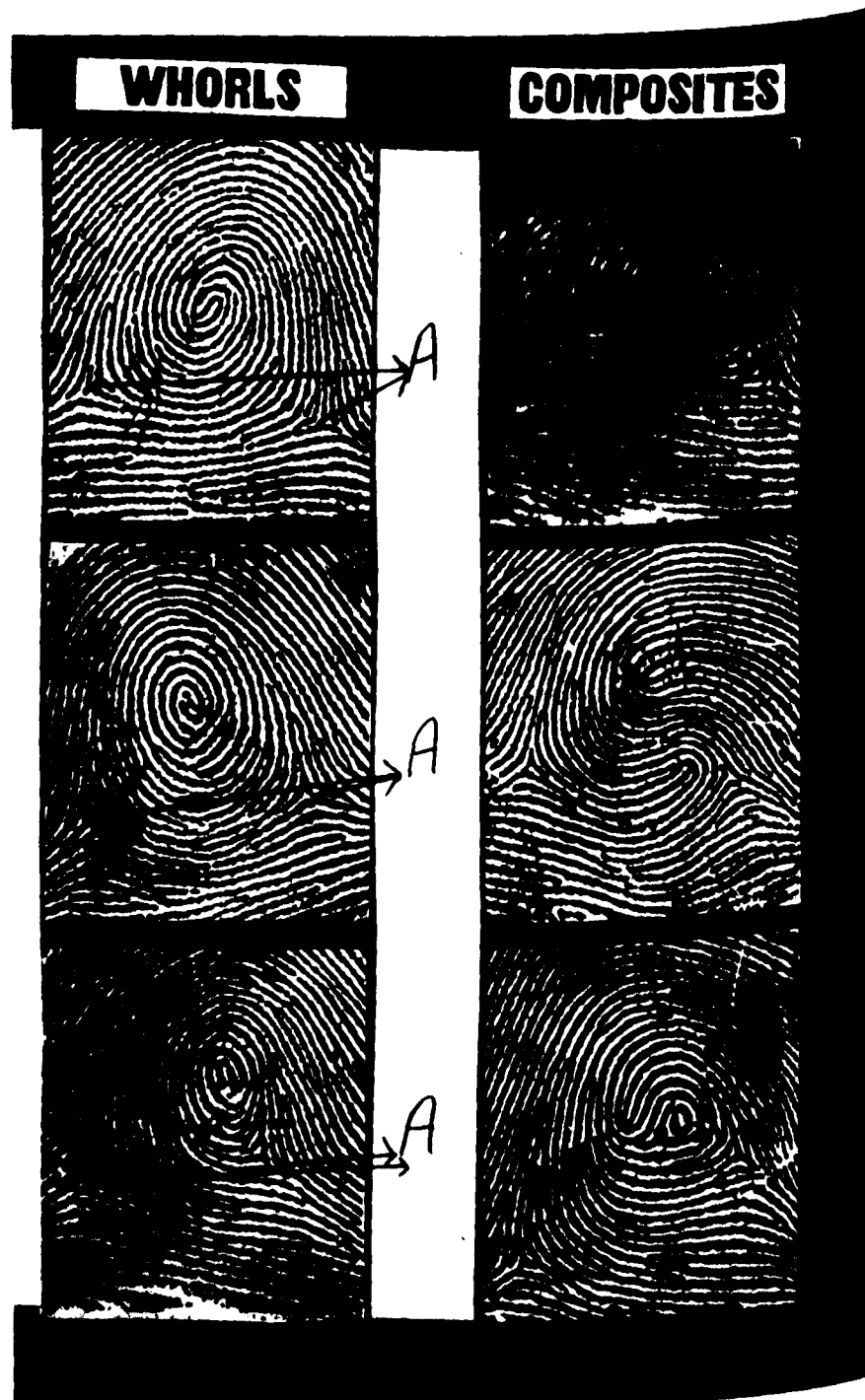


FIG. 2

All About Finger-prints

By SUPT. H. BATTLE

Officer-in-Charge, Finger-print Branch and Criminal Record Office,
New Scotland Yard

VI

THIS article is devoted to the points to be observed in the taking of finger impressions.

Before describing how a set of finger-prints should be taken, I will explain the major points which should be borne in mind by officers to ensure that the finger-prints submitted meet with the requirements of the Finger-print Branch. Those of you who wish to obtain a comprehensive knowledge of the system of classification of finger-prints for Main Collections should consult Sir E. R. Henry's book, *Classification and Uses of Finger-prints*.¹

Officers engaged on the duty of taking finger-prints should be conversant with the main features of a finger-print. "Deltas" and "Cores" of impressions are most important for classification purposes, and special care should be paid to these, not forgetting, of course, that the remainder of the impression should be as complete, clearly defined, and free from blur as possible.

Figs. 1 and 2 show the types of pattern. The deltas are shown in the illustration by the arrows "A", whilst the cores are shown by the arrows "B".

Deltas may be formed by the bifurcation of a single ridge, or by the sudden divergence of two ridges that hitherto had run side by side.

¹ *Classification and Uses of Finger-prints*. By Sir E. R. Henry. Price 3s. Obtainable from H.M. Stationery Office, Adastral House, Kingsway, W.C.2, or through any bookseller.

The core of a loop may consist of an even or odd number of ridges not joined together (see Fig. 3), or it may consist of two ridges joined together at their summit in the manner shown in Fig. 4. In the diagrams the first ridge that envelops the core is dotted.

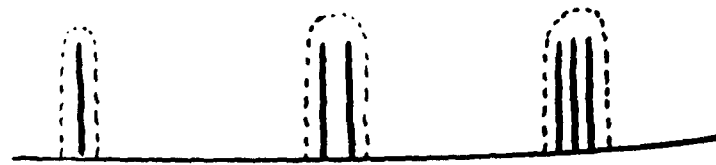


FIG. 3.

There are no deltas in patterns of the arch type, and in these and tented arches, it is only necessary to obtain well-rolled prints with the ridges clearly defined and without blur.



FIG. 4.

There is only one delta in patterns of the loop type, but it is most essential that the ridges should be distinct, as, in patterns of the loop type, the ridges intersecting an imaginary straight line from delta to core are counted for subclassification purposes.

In patterns of the whorl type, which have two deltas, and composite types, which sometimes have three deltas, the course of the lower limb or lower ridge of the left-hand delta is followed, and will be found either to meet, go inside, or go outside the corresponding ridge of the right-hand delta. If the ridge which is being traced or followed terminates, the course of the ridge next below it is followed. When the traced ridge bifurcates, the tracing proceeds along the lower limb of the bifurcation. In the case of those composite

types which have three deltas, the tracing is carried out between the two outside deltas. Tracing of such ridges affords a means of subclassification.

Special attention should be paid to these points when impressions are being taken.

THE TAKING OF FINGER IMPRESSIONS

I am afraid a number of officers fail to realize the importance of submitting for search a correct and well-taken set of finger-prints. A finger-print form is an important document, and may at some future date have to be produced in Court. Every care, therefore, should be exercised when taking a set of finger-prints, and the instructions printed on the finger-print form should be rigidly adhered to. If a badly taken set of impressions is supplied, the task of the searcher is made much more difficult, and if, as very often happens, prints which are almost indecipherable are supplied, there is a great danger that the former record, if any, would be missed on search. The duty of searching the Main Finger-print Collection all day and every day is no easy task, and I am sure that if you all realized the particularly trying nature of finger-print work, better finger impressions would be supplied for search.

As you no doubt know, the finger-prints of a person charged with any offence can only be taken without his consent if and when such person is in prison. Police have no power to take the finger-prints of a prisoner unless he consents. If a person who has refused to allow police to take his finger-prints is remanded *in custody*, an application, signed by a Magistrate or Justice of the Peace, for the finger-prints of the prisoner to be taken and forwarded for search to the Finger-print Branch, is sent to the Prison Governor concerned. This application or authority empowers the Prison Governor to obtain the finger-prints of the person in question by force, if necessary.

Assume that the prisoner has no objection to police taking his finger-prints.

As already stated in my last article, the Main Finger-print Collection at New Scotland Yard actually consists of two collections, one for the finger-prints of male prisoners and the other for females. To differentiate between the finger-print forms used, a red printed form is used for the finger-prints of females, and a black printed one for males, so that there can be no possible chance of the finger-prints of a male being filed in the female collection, and vice versa.

The apparatus required for taking finger impressions comprises : —

(1) *A finger-print plate.* This may be a sheet of smooth brass, copper, or tin, measuring about $2\frac{1}{2}$ inches by $10\frac{1}{2}$ inches and mounted on a wooden block about an inch thick. The edge of the metal should be flush with the edge of the wooden block. A sheet of smooth glass, firmly fixed to a table top, would serve a similar purpose.

(2) *A finger-print roller* for spreading the ink on the plate. A strongly made photographic squeegee roller answers this purpose.

(3) *Finger-print ink*, which is finely ground printer's ink with special drying properties.

Finger-print plates and rollers used by the Finger-print Branch, New Scotland Yard, are supplied by Messrs. Perken Son & Co., Ltd., 94 Hatton Garden, London, E.C. 1.

Finger-print ink is supplied by Messrs. Reeves & Sons, Ltd., Artists' Materials Manufacturers, Ashwin Street, London, E. 8.

A suitable stand or table, with the edges cut square (not moulded), on which the impressions can be taken, should be at hand, and its height should be about 4 feet. An ordinary office table is too low for taking finger-prints, and the edges are generally rounded.

A clean finger-print plate and roller should be available. It is most important that these articles should be kept scrupulously clean, and all traces of finger-print ink should be

removed from them after finger-prints have been taken. This ensures that the apparatus is always perfectly clean and ready for use when necessary. It is impossible to obtain good results with dirty plates and rollers.

Six small deposits of ink should then be squeezed at intervals of about two to three inches on the plate, and *thoroughly* rolled with the roller until a very thin film of ink is obtained, spread evenly over the whole surface of the plate. Care should be exercised to ensure that the correct amount of ink covers the plate. Theoretically, the thickness of the film of ink on the plate should be less than half the elevation of the papillary ridges on the skin surface. Before the impressions are taken on the finger-print form, a test print may be taken. If the impression is faintly defined, more ink should be spread on the plate. If there is too much ink on the plate, some of it can be removed by placing a sheet of paper on the plate and passing the roller over it.

Should the ink be stiff and difficult to spread owing to low temperature, the plate may be slightly warmed in front of a fire.

The digits should not be rolled over the same part of the plate without the plate having been re-rolled with the inked roller.

Now take the correct finger-print form according to whether the prisoner is a male or a female.

The form should be folded at the lines marked 'Fold', opened out again, and the creases so formed should, according to whether the right hand or the left hand is being dealt with, be placed as close as possible to the sharp edge of the table or stand. Thus when the rolled impressions of the right fingers are being taken, the top portion of the form containing the spaces for those impressions rests flat on the table, the crease formed along the first of the lines marked 'Fold' being tight against the upper sharp edge of the table, and the remainder of the form hanging over the edge of the table. The form can be held securely in position by means of drawing or ordinary pins.

Before the rolled impressions of the left digits are taken, the position of the form is adjusted so that the crease formed along the second line marked 'Fold' shall be in the position originally occupied by that formed along the first line marked 'Fold'.

The completion of the form, *i.e.* the taking of the plain impressions, etc., can then be carried out with the whole of the form flat on the table.

The person taking the finger-prints should stand at the end of the table, with the prisoner alongside on his left and facing the table.

Before the impressions are taken, the digits should be thoroughly cleaned with petrol or other spirit. This removes all traces of perspiration which, if allowed to remain on the skin, would prevent the ink from adhering to the skin surface, and the resultant impression would be blurred and indistinct.

Fig. 5 is an impression from a finger from which the perspiration had not been removed.

Fig. 6 is an impression from the same finger which had been thoroughly cleaned.

If the prisoner has been engaged in heavy manual labour, the ridges of the digits will no doubt be coarse, and the fingers should be washed in cold water, whilst in the case of a person who has been engaged in a sedentary occupation, the ridges will undoubtedly be shallow, and the fingers of such persons should be cleansed in warm water. If these precautions are not taken, indifferent impressions will result.

As you will have observed, impressions on a finger-print form are of two kinds--"rolled" and "plain".

Rolled Impressions

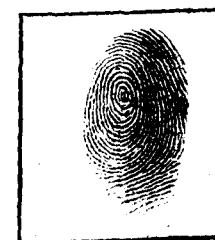
A rolled impression is obtained by placing the finger on the inked finger-print plate with the finger nail at right angles to the plate, and the bulb of the finger facing right. The flexure of the last joint of the finger should be just within the edge of the plate. The finger should be quite limp and easy to manipulate. It should then be rolled on



FIG. 5



FIG. 6

A
FIG. 7B
FIG. 7A
FIG. 8B
FIG. 8

(face p. 170)



A
FIG. 9



B
FIG. 9



FIG. 10

the plate, towards the person taking the finger-prints, completely from one side of the nail to the other, until the nail is again at right angles to the plate with the bulb of the finger which originally faced right now facing left.

This rolling operation is repeated in exactly the same manner on the finger-print form, the result being a "rolled" impression of the digit. When rolling the digits on the form, light and even pressure should be applied. If excessive pressure is used, the resultant impression would be blurred and indistinct.

The flexure of the last joint of the finger should be immediately above the line marked 'Fold'.

If the finger is not completely rolled, the impression might not contain the necessary delta or deltas, and data which is on the finger might be missing in the impression, with the resultant danger of the impression being incorrectly classified, and the former record, if any, of the person not being located on search.

Fig. 7 are incompletely rolled impressions of two fingers.

Fig. 8 are correctly rolled impression of the same fingers disclosing the deltas which are necessary for subclassification.

Fig. 9A is an incompletely rolled impression of a finger. This would be classified as a loop.

Fig. 9B is a correctly rolled impression of the same finger, which shows that the pattern is not a loop but a twinned loop (which is included under whorls for purposes of primary classification).

The rolled impressions should be taken in the spaces provided for each particular digit. No mistake should occur as the instructions are so simple, but I am sorry to say that mistakes occur frequently. Rolled impressions are misplaced on the form, whilst an impression of say the right middle finger is taken in the space provided for it and also in the space provided for that of the right ring finger, whilst no rolled impression of the latter is taken. A very common error is for the rolled impressions of the right-hand digits to be taken in the spaces provided for those of the left-hand digits

and vice versa. It will be appreciated that if these impressions are misplaced on the form, there is a danger of the form being incorrectly classified, and consequently the former record, if any, not located.

If an imperfect rolled impression has been taken, another impression of that digit may be taken in the same space and above the imperfect print in the manner shown in Fig. 10.

Should a digit be missing, deformed, or injured so that no impression of it can be taken, the word "missing" or "deformed", etc., should be written in the space allotted to that digit, and an explanatory note should be made under the heading "Remarks" on the finger-print form, *e.g.* "right ring finger amputated", or "finger poisoned through recent injury and is in bandages", etc. It will help the task of the searcher at the Finger-print Branch considerably if, when the finger-prints of a person who has a digit(s) missing are being taken, the officer taking the prints could make a note on the form as to when the digit(s) were amputated, *e.g.* "Prisoner states the right middle finger was amputated in 1927".

After the rolled impressions have been taken, the plain impressions are obtained by taking each hand in turn, holding the four fingers together and placing them first on the inked plate, and then lightly, and with not too much pressure, impressing them in the space provided for each hand on the form. Thus, impressions of the four fingers would be taken simultaneously, and would be in their natural sequence. This permits of a check at the Finger-print Branch as to whether or not the rolled impressions have been taken in their correct order.

The plain impressions of the thumbs are taken next. These are obtained by taking both thumbs and holding them together—right thumb on the right and left thumb on the left. *Keeping the thumbs in that position*, place them first on the inked plate, and then in the spaces provided on the form between the spaces for the plain impressions of the four fingers of each hand.

The next two things to be done are most important. The prisoner should sign in the space provided on the back of the form. If the prisoner cannot write, he should make his mark, and this should be witnessed by the Officer taking the prints. The prisoner's signature should agree with the name in which he is charged. If it differs, the reason must be shown under the heading "Remarks", *e.g.* "Prisoner is charged in the name of 'Alfred Smith' but persists in signing the form 'William Smith'".

Immediately the prisoner has signed the form, the right forefinger impression must be taken in the space provided on the back of the form. The importance of this is not realized by officers. If this is not done, there is no guarantee that the finger impressions are those of the person described on the form. The space for the right forefinger impression on the back of the form is in such a position that, when the front of the form is being examined, by bending the top of the form towards one, the impression on the back can be checked at once with the impression of the same digit on the front of the form.

If the right forefinger is so injured that an impression of it cannot be taken, an impression of another finger should be taken in the space provided on the back of the form after the signature, and the words "Right Forefinger Impression" in that space should be amended accordingly.

Should an officer be aware of the Criminal Record Office number of the prisoner, or of the fact that he has a previous conviction, make a note of this under the heading "Remarks". This will assist the Finger-print Branch.

When the prisoner is charged with "being a suspected person", full particulars of the offence should be shown, *i.e.* "loitering with intent to steal from unattended motor-cars", or "loitering with intent to commit housebreaking", etc. This information assists the task of the searchers in the Scenes of Crime Section.

On no account must another prisoner be finger-printed until the form with which you are dealing is complete in every respect.

The form should then be completed with the description of the prisoner, year of birth, date of appearance at Court, offence, nationality or place of birth, etc. Care should be exercised in inserting these particulars correctly.

The five questions which appeared on the back of the finger-print form have now been abolished in favour of a new form - C. 4/74 - which was recently issued to all Forces, and was compiled with a view to obtaining more comprehensive information for the purpose of searching the various indices in the Criminal Record Office. This form should be attached to every set of finger-prints submitted for search. If no finger-prints are taken by police, but application is made to the Prison Governor for the person's finger-prints to be taken and forwarded for search to the Finger-print Branch, New Scotland Yard, the Form C. 4/74 should be attached to the application which is sent to the Prison Governor concerned.

The completed form should then be folded along the lines marked 'Fold' so that there are no creases on the prints themselves, placed in an envelope, and the envelope should be clearly addressed to "The Commissioner of Police of the Metropolis, C. 3 Branch, New Scotland Yard, London, S.W. 1".

It is important that the correct date of the prisoner's appearance at Court should be shown. All searches received at the Finger-print Branch, New Scotland Yard, are dealt with on the same day they are received, but, as stated in my last article, those searches relating to prisoners who are appearing at Court on that particular day are dealt with first. It sometimes happens that a telephonic inquiry is received at the Branch just prior to the prisoner appearing before the Court - as to whether any previous convictions have been traced against him. The finger-prints of that person cannot be found amongst those relating to prisoners who are appearing at Court that day, but are subsequently found amongst those of persons who are not appearing that day, and it is found that the date of the prisoner's appearance at Court has been shown incorrectly, with the result that the Force concerned

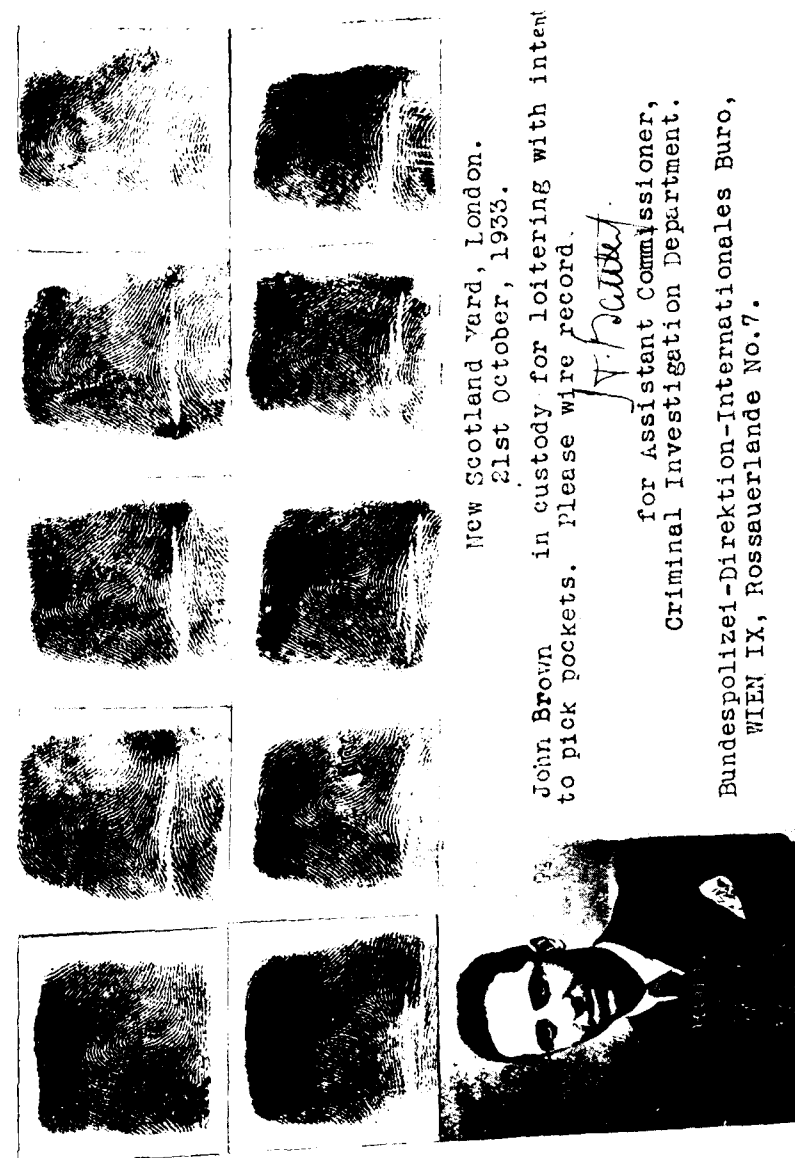


FIG. 11

Customer Number

Customer Number

POST OFFICE



IMPERIAL OR FOREIGN TELEGRAM OR RADIOTELEGRAM

Prof's if Code Book sent 1/2d	Mailed in 7.20 p.m.	Charge £ s. d. : : : : : : : : :	FOR POSTAGE STAMPS (To be charged to Sender's Account)	To
Office of Origin • Route and Service Instructions		Words Charged Actual	SPECIAL FORMS SHOULD BE USED FOR DEFERRED AND LETTER TELEGRAMS FOR DETAILS OF OTHER SERVICES SEE OVER	
ADDRESS WOMEN, WELLINGTON, NEW ZEALAND.				

PLEASE WIRE RECORD JOHN BROWN D14 B D11 D7 D12 D10 C7 C4 D8
 D11 R.M. 10101050201040106010109.

MODULUS.

I request that the above Telegram may be forwarded, subject to the conditions which are printed on the back hereof, and by which I agree to be bound.
NAME & ADDRESS OF SENDER Commissioner of Police of the Metropolis.
(NOT TO BE TELEGRAPHED)

* The sender need not indicate a route unless the charge depends on the route selected

ALL ABOUT FINGER-PRINTS

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has been unaware of any previous convictions which may have been traced until after the prisoner has appeared at Court.

The nationality or place of birth of a prisoner should always carefully be noted. In addition, where it is known that a prisoner has resided or travelled in any country other than England, Scotland, or Wales, particulars of such countries in which the prisoner has travelled or resided should be shown on the form. The finger-prints of such persons are automatically transmitted for search to the country of origin or to any other country where it is shown that the prisoner has travelled or resided. It may be that there are no previous convictions traced in the Finger-print Branch, New Scotland Yard, but that person may have been convicted in some other country in which he has travelled or resided at some time. If the matter is urgent, the finger-prints can be coded to certain Forces, whilst by means of the Picture Facsimile Process, the actual finger-prints and other data can be transmitted for search to certain continental Forces. The Picture Facsimile Process is not yet as perfect as is desired, but identifications have been effected by its means. Excellent results have, however, been obtained as the result of coding finger-prints. Fig. 11 shows you how a set of finger-prints etc., is prepared for transmission by the Picture Facsimile Process, and it is received in exactly that form by the Force to which it is sent. Fig. 12 illustrates a cablegram containing the code of a set of finger-prints.

Every person should be finger-printed on every occasion when he is in custody, irrespective of whether the Force concerned knows that the person has a previous criminal record. This is necessary so that—

(a) Search can be made in the various indices in the Criminal Record Office as the person may be wanted elsewhere.

(b) Search could be carried out with the impressions and the copies of marks which are filed in the Scenes of Crime Collection awaiting identification.

(c) The Criminal Record Office would be aware of the fact that such person was in custody, and

(d) It follows that the criminal record of that person would be complete.

Many instances have occurred where a Force has known the previous record of a person in custody and has not thought it worth while to take his finger impressions when he has been in custody. It is subsequently discovered that a person has had perhaps several convictions recorded against him which are not contained on his criminal record, owing to the fact that it has not been reported that a person possessing a criminal record has been in custody and has been convicted.

Juveniles should also be finger-printed on every occasion. Youths are now responsible for a great number of offences that are committed, and their finger-prints should be sent to the Finger-print Branch, not only for search in the Main Finger-print Collection and subsequent registration (if convicted) but also so that search can be carried out with the finger-prints in the Scenes of Crime Collection. There seems, however, to be reluctance on the part of Forces generally to take the finger-prints of these persons. No distinction should be made between adults and juveniles.

A great deal of nonsense is talked by people who ought to know better, and who are described in America as "sob sisters" and "yammerheads", as to the possible demoralizing effect on juveniles if their finger-prints are taken. The truth, of course, is that the taking of finger-prints of any juvenile can be made interesting if ordinary tact is used, and is in any event absolutely innocuous.

Finger-prints of all *unidentified* dead persons should be taken and sent for search to the Finger-print Branch. Coroners have frequently commented on the utility of finger-prints as a means of identifying dead persons and thus enabling the body to be buried under a name. Last year, fifty-three unknown dead persons were identified by means of finger-prints.

The finger-prints of persons found wandering suffering from loss of memory could also be taken and sent for search

to the Finger-print Branch in an endeavour to discover who the person is.

The taking of finger-prints of corpses should present no difficulties, although it is admitted the operation is not so simple as the taking of a living person's prints. The best method is first of all to apply an inked roller to the digits (after having cleaned them, of course). Then take a finger-print form, fold it along the lines marked "Fold", and place within it a piece of cardboard or thin plywood to stiffen it. The form can then be rolled around the bulb of the digit. Care must be exercised to ensure that the impressions are taken in the correct spaces and also that well-rolled impressions are obtained.

Another method is to be provided by using small pieces of paper instead of a form. Care must be taken, however, that if this method is used, each piece of paper must be clearly marked with particulars of the digit to which it relates, *i.e.* "right thumb", "right forefinger", etc. These pieces of paper can afterwards be pasted or pinned in the correct spaces on an ordinary finger-print form.

A very interesting case occurred recently in which it was desired to obtain for search the finger-prints of an unknown foreigner who committed suicide. Before committing suicide, the person had taken steps to destroy everything by which he could have been identified, and even went to the trouble of mutilating, by means of boiling water, the skin on his fingers. A request was received for a skilled officer from the Finger-print Branch to be deputed to obtain the finger-prints of the dead person. An officer was detailed for this duty, but discovered that the scalds on the fingers made it impossible to obtain a decipherable set of prints. This, however, did not defeat the finger-print officer, for he hit upon the following ingenious idea.

He obtained the skin from the end joints of the digits and took impressions from the under side of the skin. These impressions were in reverse, *i.e.* what were "ridges" on the reverse side of the skin were actually the furrows on the

correct side, and vice versa. The impressions were photographed, and reversed photographs were obtained, *i.e.* the "furrows" on the reverse of the skin (being actually the true ridges) appeared white in the first photographs. These were photographically reversed to show black. The result was that it was possible to carry out an exhaustive search with the finger-prints at New Scotland Yard, and also to transmit a copy of the finger-prints for search to the person's country of origin.

This concludes my series of articles and my sincere hope is that they have been found interesting and of use to officers generally, particularly to those of you who hitherto knew little or nothing of this comparatively new science of finger-print identification. I am sure if all of you will bear in mind the hints and advice which have been given in these articles, errors now being made by officers will be obviated entirely.

POSTSCRIPT

In my second article, when describing how to develop imprints on candles (p. 171 of the April-June, 1936, number of this Journal), I omitted to include another and better method which was discovered here some little time ago.

This method is to apply charcoal powder with a brush, taking care to work the powder well into the furrows created on the candle. The surplus powder is then removed by rubbing the surface of that particular area carefully with cotton wool. Up to this point the method is exactly the same as the second method already described in the article referred to above. Using the charcoal powder in the furrows as a flux, ordinary indian ink should then be applied to the impression very carefully, and the surplus ink afterwards removed.

If the greatest care has been exercised, the resultant impression is almost as good as one obtained in the ordinary way on a finger-print form, and excellent photographs of it can be obtained.

Fraud on the Road Fund

By POLICE-SERGEANT VICTOR MEEK

Metropolitan Police

THE duty payable by motorists to the Road Fund for the privilege (theoretically, at any rate) of wearing out roads repairable at the public expense, and known colloquially as Road Fund, Excise, or Revenue Licence duty, amounts in the aggregate to many millions of pounds a year. With such a sum to be collected annually, it is not surprising that, though millions honestly pay their share, there is good reason to believe that there are thousands who do not, and there certainly are hundreds who endeavour to conceal their default by exhibiting on their vehicles what purports to be, but is not, the official badge of the honest customer, to wit, the Revenue Licence. It is with the activities of the last mentioned class that I propose to deal.

In doing so I will divide the illegal methods of producing an apparently current licence into three classes, *viz.* :

1. The complete manufacture of a false licence.
2. The alteration of a genuine licence.
3. The exhibition of a colourable imitation of a licence.

Before, however, dealing with the false licence, a glance at the genuine one will help us to understand better the task that lies before the would-be successful imitator.

The licence, when issued, is rectangular in shape, measuring about $3\frac{1}{4}$ inches wide by $3\frac{1}{4}$ inches long, and is serrated at the left edge where it has been torn from the counterfoil in the book of licences. In the centre of this rectangle is a circle, just under 3 inches in diameter, constituting the licence proper. The four corners outside the

circle contain respectively a rose, a thistle with two leaves but no stem, a flower resembling a wild rose, and a daffodil with six outer petals showing. Also round the outside of the circle are printed headings to assist the issuing clerk in completing the licence details.

In most cases the licence proper is cut out by the purchaser and exhibited in a circular holder, but on heavy goods vehicles a rectangular holder for exhibiting the complete licence is still sometimes used. I will refer to the circular portion only as the licence.

It has a $\frac{3}{16}$ in. border all round the circumference, containing round the upper segment, the date of expiry, and round the lower the words 'Licence for a mechanically propelled vehicle'. A $\frac{1}{4}$ in. wide strip, also containing the date of expiry, runs horizontally across the centre, and a vertical strip of the same width, containing a rose, a thistle with stem and one leaf, a wild rose with no centre, and a daffodil showing five outer petals, complete the division of the licence into four segments.

The upper left segment contains details of horse power, seating capacity, and unladen weight, the lower left those of class, make, and colour, the upper right gives amount of duty, identification mark of vehicle, and serial number of the licence, and the lower right quarter bears the date stamp of the office of issue. In quarterly licences the three first-mentioned segments have a number of close wavy lines in the spaces where particulars have to be inked in, to assist in detecting erasures, whereas in annual licences the whole of the white portion has the words 'Road Fund Licence' printed in letters $\frac{3}{16}$ in. high all over the licence. These letters are usually of the same tint as the coloured stripe or cross that distinguishes the annual licence from the quarterly, although in the 1937 licence there is a very slight variation. This tinting gives the background a tinge of that colour instead of it being plain white. This is not the case with annual trade plate licences, which bear no such wording and consequently have a pure white background.

Another small difference in the printed particulars of the annual licence as compared with the quarterly, is that the date of expiry as shown round the upper circumference of an annual licence is given as '31 DEC.' whereas on a quarterly one (for the last quarter only, of course), it reads '31st DEC.' Both have the date as '31st DEC.' on the horizontal centre strip.

On the reverse of every licence is information regarding the surrender of licences.

Having looked at the article to be reproduced, let us now examine the methods of its reproduction, and also what, to the policeman, is more important, its detection.

The Complete Manufacture of a False Licence

In constructing a complete licence, the obvious and usual way is to draw it with ink of the required colour on a piece of plain stiff paper of the colour of the current quarter's licence. Strangely enough, it is seldom that an annual licence is made, possibly because the forger prefers to keep his offence as small as possible, or perhaps because the necessity of perpetrating the fraud is a temporary one only. For my part I have detected only one annual licence fraud against dozens of quarterly ones. Maybe the others were too good. However, to the little errors that spell failure. One man copied a December quarter's licence from one of his old ones for the June quarter, adjusting the dates of issue and expiry accordingly, but he did not realize that the letter 'J' preceding the serial number on the licence he was using as a model, should have been changed to 'D' for the December quarter. An alert P.C. on traffic duty noticed the discrepancy, and the driver, as in most cases of calculated forgery, was sent to prison.

Another case came to light as the result of the forger making his licence expire on 31st March, the licences for this quarter terminating, of course, on 24th March.

Of all the errors made, however, the seemingly simple date stamp houses the vast majority. The favourite method of making the circle is to ink round a halfpenny, a shilling being

unpopular by reason of its milled edge. No Council stamp that I have encountered, with the exception of Wolverhampton, however, is as large as the one obtained by this means, although those of London, Surrey, West Sussex, and Liverpool are very nearly so. Leicester and Kent have particularly small stamps, and those of Post Offices are mostly on the small side, East Sheen, Ealing, and Kingston being noticeably so. Many forgers use a farthing to make a second smaller circle inside the first, although I have not seen this double circle on any genuine licence. To go to the other end of the scale, nearly all omit the six pointed asterisk which comes immediately above the date, and even more leave out the issuing clerk's initials which are always present on a licence issued by London, Leicestershire, and Peterborough, although just as certainly absent from one by Middlesex, Hertfordshire, and Somersetshire, to mention, of course, only a few.

Most Councils, and almost all Post Offices, put the day before the month, e.g. '4 AP' and the year invariably comes below, e.g. '4^{AP}₃₄', forming with the aforementioned asterisk a small diamond, so: $\begin{smallmatrix} \cdot \\ 4AP \\ \cdot \\ 34 \end{smallmatrix}$. The forger, however, will often curve the date round inside the circle formed by the words 'London C.C. Licences'.

I saw one otherwise very well carried out forgery that was ruined by having the date shown as '6th OC 34', the 'th' never being used on genuine stamps. Other errors that have given away the careless artist are the use of more than two letters for the month, Wolverhampton again being the exception, and having the licence purport to have been issued on a Sunday.

Occasionally a piece of rubber, or, more often, potato, is used, and the imprint of the stamp cut out of it, but the result is generally more clumsy than that attained by the use of pen and ink. In the Black Museum at Scotland Yard are date stamps forged by Browne, who with Kennedy was hanged for the murder of P.C. Gutteridge. Browne was an expert

motor-car thief and used forged revenue licences to assist in disposing of stolen vehicles. Surely no more desperate and violent criminal ever turned his head to the subject of this article.

Let the roving eye, therefore, linger on the date stamp.

Another little point that the present-day private car owner-forger may miss, when copying an old licence, is that the rate per horse-power is now 15s. annually, whereas before 1936 it was £1. The fact that the quarterly rate is $27\frac{1}{2}$ per cent of the annual, and not 25 per cent, is another trifle sometimes forgotten.

Next to the date stamp, I consider the four little flowers, previously referred to, as most worthy of notice, as constant observation of these small symbols, which never vary from year to year on genuine licences, will enable any but a perfect reproduction to be readily detected.

Last of all, assuming always that the licence particulars correspond to those of the vehicle, the word 'mechanically' of the phrase 'Licence for a mechanically propelled vehicle' running round the lower circumference, should have the letters 'ICA' coming inside the $\frac{1}{4}$ in. wide vertical strip previously mentioned, the letter 'A' being cut through its right edge by the right line of the two. This is a most difficult item to get just right and is noticeable on every manufactured false licence that I have seen.

Let us leave now 'The Compleat Forger' to his difficult task and consider my next classification.

The Alteration of a Genuine Licence

In dealing with the alteration of licences, I am treating expired licences as licences and not merely as pieces of paper. At one time it was necessary in cases where an out-of-date licence was in fraudulent use as a current one, to consider the line of defence likely to be taken. In the event of the offender being summoned for 'fraudulent use of a licence', it might successfully be pleaded that it was no licence at all but merely

a piece of paper. On the other hand, if the police alleged exhibiting a colourable imitation of a licence, it might equally successfully be contended that a licence could not be an imitation of a licence. The only safe procedure from the police point of view was to summon for both offences alternatively, and leave the defence to contend and the Court to decide, which, if either, was the applicable one. It has now been decided, however, that an expired licence is still a licence, so the position is cleared up satisfactorily, and the old confusion no longer arises.

The particular form of alteration favoured depends on the material at the disposal of the criminal. If he has a current licence stolen from another vehicle of similar horse-power, class, make, and colour, he has only the identification mark to concern himself with unless he also alters the serial number to avoid recognition of it by police in cases where the loser has reported his loss. I have referred more fully to many of this class in a previous article,¹ so will mention only a few here. The best I have seen, and it earned its maker six weeks' imprisonment, consisted of a stolen current licence with the identification mark carefully cut out with a razor, and replaced by the identification mark of the thief's car similarly cut from an expired licence of the same colour, the whole being kept together by a piece of adhesive paper stuck across the back. This was detected when a P.c., his suspicion aroused, took the licence from the holder and held it to the light, when the joins were clearly visible. Another driver cut out the entire top right quarter of an expired September, 1931, licence for his car, including the upper half of the vertical strip and the whole of the horizontal one, and gummed it in place over a current March, 1933 one, stolen from a similar car, the colours of both licences of course being the same. 'Information received' brought this one to light and the skill of the forger received its due meed of praise—two months' hard labour. The more common form of dealing with a stolen licence, however,

¹ 'The Fraudulent Motorist,' published in THE POLICE JOURNAL, July to September quarter, 1935.

is to alter the particulars to agree with those of the thief's vehicle, sometimes by removing the original details with ink eradicator, india rubber, by washing, or exposing to the sun, the former two damaging the close wavy lines aforementioned, and the two latter respectively altering the texture of and fading the licence. The amended details are then filled in afresh. This is when the little errors in determining duty paid, etc., are likely to creep in, unless great care is taken. The handwriting of the Local Council clerks and their initials (when it is the practice to add them) become familiar to police from continual examination of licences, and, again, the serial number of the licence may have been circulated and be recognized. In many cases, however, the owner considers a stolen licence as having blown away and been lost and does not report to police, merely paying 5s. for a duplicate from the Council.

Whilst on the subject of duplicates, a form of fraud not coming under any of my three classifications is for the owner of, say, three Dennis lorries, to tax one for the year, report the licence as lost and obtain a duplicate which he uses on a second lorry, which he provides with identical identification plates to the first, switching plates and licence of either, in the event of a breakdown, on to the third. I once spent nearly two years trying to bring this particular fraud home to an ingenious lorry owner, although he never knew, without success. Sometimes, again, the vehicle is altered as to colour, identification mark, etc., to agree with a stolen licence, instead of the more usual reverse method. The interchanging of licences and plates from broken-down taxed vehicles to road-worthy untaxed ones is a form of fraud difficult to detect, success by police usually involving long observation and a little outside assistance in the first instance by way of information.

Another very common practice in alteration, is the variation of the date of expiry on an old licence of the same colour, but the date stamp must also be adjusted and the quarterly letter 'M, J, S, or D' preceding the serial number be changed, as no December licence is a good copy of a former December

licence, *e.g.* if the colour is the same the print will be different, and so on. I have come across one which had been dyed pink with diluted red ink, another made a dark blue by the use of coloured chalk, and another soaked in grease to darken the colouring, but on the whole, a previous licence of the same colour is used for this particular phase of alteration. Attention to the date-stamp will usually expose such efforts at once. A rarer type of fraud is the adjustment of the identification mark and serial number of a stolen licence, *e.g.* MP 3214 to MB 8244, and D 0113821 to D 0478824, etc., and the alteration of the thief's identification plates to correspond. Such a subterfuge requires keen observation to detect, if carefully carried out, but may come to light if the new identification mark is obviously not of the same vintage as the vehicle, for example, the prefix of a third letter making PD into BPD changes a 1926 mark into one of 1934, and would clearly stand out on an old vehicle, although the possibility of the car having been broken up and then re-registered must not be forgotten.

On the whole, the use of scissors appears to be the most efficient method of alteration, but as a resort to this nearly always results in imprisonment when detected, the balance is maintained.

The Exhibition of a Colourable Imitation of a Licence

The term 'Colourable imitation' does not infer that the resemblance must be in tint only, but merely that the imitation must be a passable one or, in other words, must give colour to the belief that it is genuine.

Assuming, then, that an expired licence is nevertheless still a licence, the act of exhibiting an unaltered licence of the same colour is 'fraudulent use' and not 'colourable imitation', the latter offence dealing solely with the exhibition of such articles as beer bottle labels, tops of cream cartons, etc., done more generally for a bet or in the nature of a 'stunt', than in any really deliberate intent to defraud.

It must not be forgotten, however, that 'the exhibiting of a colourable imitation' is a further offence committed by the type of criminal dealt with under my first classification, *i.e.* the man who uses a home-made licence on his vehicle. This does not apply to my second classification, but an additional charge to that of 'fraudulent use' will, in this case, generally be 'exhibiting a defaced licence'. The Revenue offence of 'failing to pay the requisite licence duty' automatically arises in all cases, except when a current licence has been lost, and the loser, instead of paying 5s. for a duplicate, carries on with a makeshift.

In conclusion, many forgeries have been missed by taking particulars of a vehicle from the licence instead of, in the first place, from the vehicle itself, prior to comparing the details so obtained with those on the licence, with a close search for the little points that give the game away. A driver may be nervous because he has someone else's wife with him, or he knows that his brakes are not efficient; but if an examination of the vehicle, driving licence (including the signature), insurance certificate, and revenue licence give no apparent reason for this demeanour, the removal of the licence from the holder for a closer inspection is indicated.

Just in case any reader should propose taking advantage of the 'hints to the intending forger' included in these pages, let me once more draw attention to the almost invariable practice of the Courts in increasing the penalty in accordance with the perfection of the production, with imprisonment for the top boys.

For the policeman, however, the penalty is an after-thought. First catch your hare.

Towards a Co-ordinated Constabulary

By SUPT. P. McA. STEWART

Indian Police

(Continued from p. 86)

XIV. Regional Centres for Forces under 1,000

We may thus conclude that there is an unanswerable case for grouping all forces with less than 1,000 officers and men, for recruit training : and that forces with 1,000 or more officers and men may well be able to provide suitable training with permanently employed training establishments for their own, and if necessary, for adjacent forces.

This gives us at once a list of possible Recruit Training Centres, namely the eight forces in the United Kingdom which number 1,000 or more :—

Glasgow . . .	2,231
Lancashire . . .	2,050
Liverpool . . .	1,725
Birmingham . . .	1,587
West Riding . . .	1,535
Manchester . . .	1,380
City of London . . .	1,162
Durham County . . .	1,022

Now if we deduct Glasgow's 2,231 from the total (6,512) of Scottish Police we have 4,281 left and these (with annual wastage of one-twentieth or 5 per cent as gauged from the Metropolitan figures) have to be maintained at strength by average annual intake of some 200 recruits. A regional training school for all Scottish police, Glasgow excepted, is thus indicated ; this would standardize instruction for 47 Scottish forces, of which 29 are county police and 18 city or burgh police.

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Similarly in England and Wales if we deduct the totals of the cities and counties with over 1,000 police from the totals of county and borough police we have 28,274 or in round figures, 28,000 to be kept up to strength by annual recruitment and training of 1,400 men.

It would be one solution of the perennial training problem to divide up the 1,400 men among the seven forces which exceed 1,000 in strength and hence are able to maintain whole-time training establishments.

But though for adjacent boroughs Liverpool, Manchester, and Birmingham ; and for adjacent counties West Riding and Durham would afford suitable training, it is obvious that for large areas of England and Wales no solution of this kind would be possible.

The need therefore exists for centralized training out— with the establishments of existing forces, and this need would be met by placing two regional training schools for Police under two of H.M.I. of Constabulary with suitable buildings, grounds, and staff to turn out say 500 police recruits every year.

In Scotland, similarly, the Inspector of Constabulary would control a central training and refresher establishment for the police establishments, totalling over 4,000, outside the Glasgow City Force.

Glasgow would continue, as a unit running into four figures, to have its separate recruit school and to train and refresh its own men, as well, perhaps, as those sent to it from adjacent and closely related forces.

XV. Regional Detective and Criminal Record Centres

Having dealt with recruit training, we may now turn to regional and national detective organization. This is widely recognized, even by those who are opposed to police mergers in general, to be one of the most pressing police needs of the United Kingdom at the present time.

Part of the police machinery that has come down to us

as a result of the legislation and rule making of the last century is—

- (1) the concession to the local police of England and Wales to call in skilled detectives from the Metropolitan Police; and
- (2) the maintenance by the Commissioner of the Metropolitan Police of a 'register' for the whole of England and Wales of important classes of criminals. This appears to be founded on Section 6 (2) of the Prevention of Crimes Act of 1871.

The Metropolitan Police detectives have scored many triumphs in their consultative capacity as crime unravellers for England at large: but the time is now past when the detective needs of the country at large, other than those which can be met unaided by local forces in their respective jurisdictions, are adequately supplied by the exertions from time to time of Scotland Yard detectives.

The time is also past when the maintenance in London by the Commissioner of the Metropolitan Police of a register of the criminals of England and Wales can suffice as a national Criminal Record for the whole country.

It is well known that the clamant need for an extension of the meagre provision for Criminal Records made by the Prevention of Crimes Act, 1871, has actually led to the unofficial but highly successful emergence of one of the North of England local police units into the field of criminal record maintenance for the country at large.

With the cognizance, but probably without the authorization of the Home Office, the Chief Constable of the West Riding of Yorkshire has assumed detective responsibilities, far beyond the borders of his own jurisdiction. He has published and is publishing crime gazettes giving particulars of persons wanted and of offences undetected, etc., throughout a wide area of the north and centre of England. He has also accumulated a considerable record, indexed in several ingenious ways, for ready reference, of criminals whose addiction to recognizable modes of crime make it possible for the detectives up and down the country to look for distinguishing trade marks among the mass of undetected crimes which await elucidation.

There is, indeed, at the present time, a certain feeling of rivalry between the operators of the official crime record in the office of the Metropolitan Police Commissioner and the operators of the unofficial felt-want-supplier's system in West Riding.

West Riding has had the support of 87 other local forces in its assumption of regional and national police functions; and these forces help to finance the operations by subscribing to West Riding "Police Reports", a daily publication dispatched to probably about 50 per cent of the detectives of the whole country. We are not here concerned with the intricacies and merits of the *modus operandi* system of which West Riding is the leading exponent and of which the Metropolitan Police are rather less devoted admirers. The importance here of West Riding's effort is to establish the need for some such centralization and the curious result of Home Office omission to supply that need, namely that one particular local force took the initiative and assumed national and regional functions to such useful purpose that 87 other local forces concurred in the usurpation.

Such optative arrangements, however, are not wholly satisfactory because it is open to any local force, which might derive much benefit from co-operation in the maintenance of the West Riding machinery, to decline to be interested. It is, in fact, a complaint of the West Riding operators that while many far distant forces come into their scheme and subscribe for their Police Reports, some almost contiguous forces remain outside and uninterested.

Therefore, if any national and regional detective machinery and agency is to be set up outside that of the Metropolitan Police, it is necessary to their satisfactory functioning that it should be under the ægis of the Central Government, which by its 50 per cent contribution to local police upkeep and through its Inspectors of Constabulary, is in a position to enforce and ensure the co-operation of all local forces in the general detective system.

If we turn to Scotland we find the official inauguration

as recently as 1934 of the national system of police gazettes and criminal record already referred to. These arrangements have been introduced in the form of addenda to Police (Scotland) Regulations, under the general heading "Mutual Aid of Police Forces". But here it would seem that the co-ordinating regional agency is to be divorced from the general authority vested in the Inspector of Constabulary for Scotland, and to be operated by the Chief Constable of the City of Glasgow. It is, however, satisfactory to find that this extension of the responsibilities of a particular Chief Constable to matters beyond his own jurisdiction at least has at least the sanction and approval of the Scottish Office.

XVI. *Scientific Aids*

In the 1934 Mutual Aid Addenda of Scottish Police Regulations we find another topic introduced which is characteristic of modern police developments—"apparatus."

It is provided that "Where the Secretary of State is satisfied that it is desirable for the more efficient policing of any district that the Police Authority should co-operate with the Police Authority of another district in the provision and maintenance of apparatus for police purposes, or should utilize apparatus which has been provided by the Police Authority of another district . . . he may require it to do so".

In England and Wales force after force, particularly in the boroughs, is equipping laboratories for scientific detection, with the commendable but perhaps vainglorious motive of being up to date. The number of police scientific laboratories and the mass of mechanical apparatus now under police control in the United Kingdom, and especially in the boroughs of England and Wales, is probably in excess of the requirements of the United Kingdom at large, though its distribution is probably such that while some forces have several laboratories to which they might have ready recourse, others have none at all.

Apparatus for displaying invisible writing, for ascertaining out of what weapon a bullet has been fired, for magnifying and scrutinizing hairs and dust, for analysing stains, for photographing exhibits under different conditions of lighting, and so on, is part of modern police equipment. But the number of cases annually occurring in the whole of the United Kingdom, which require resort to such aids is probably insufficient to keep more than four laboratories in regular work for purely police purposes.

Here then is another phase of regional and national police effort which it would be well to place under Home Office control and to add to the functions of regional Inspectors of Constabulary in England, Wales, and Scotland.

XVII. *Selection for Positions of National Importance*

Finally there is the important and delicate function of co-ordinating promotion to the highest police appointments. It will not be disputed the selection of the right men to be superintendents and chief constables is a matter of more than local importance. At present it is the rule rather than the exception for promotions even above the rank of inspector to be made from the force in which the vacancy occurs, as local police authorities in county and in boroughs have no data on which to judge of competent senior men in other forces.

It would, therefore, be of assistance to local police authorities if regional inspectors of constabulary were to maintain lists of inspectors in all forces within their areas, fit for trial as superintendents or for chief constable. It appears to be the case that senior officers whose experience has not been limited to one force have in the past proved the most successful administrators in the United Kingdom. So long as promotion is made mainly within watertight compartments authorities cannot hope generally to get the best or the broadest-minded man for their higher police grades.

Regarding the matter from the point of view of inspectors, it seems obvious that the probabilities of their attaining to higher rank must vary according to the percentages of appointments open to them.

The Committee on Police Powers (CMD 3297) noted in this connection in 1929 that "the proportion of higher to lower ranks varies considerably from force to force. In the county constabulary taken together, the ratio of officers of the rank of superintendent and above to those below the rank of superintendent is about 1 to 38; in the city and borough forces, 1 to 72; in the City of London, 1 to 231; and in the Metropolitan, 1 to 430.

These figures would appear to indicate that in counties the chances of becoming superintendent are twice as good as in boroughs, on the whole; but as they relate in themselves to county and borough averages, it is probable that the disparities between force and force are far greater than between county and borough taken statistically as aggregates. For the system of local promotion does not enable the best county inspector available to get the first vacant county superintendentship, nor the best borough inspector the first borough superintendentship. It is well known that some of the ablest inspectors in the United Kingdom are in the Metropolitan Police. Their chances of promotion are, however, under a prevailing system of local promotions, very small in comparison with county or borough inspectors elsewhere in the country.

But after all in the Metropolitan Police there are 33 superintendentships and 68 chief inspectorships that are available for successful officers; whereas in most of the boroughs of England and Wales whose strength falls below 100 police personnel, the highest rank to which anyone can rise apart from the chief constableness, is inspector.

In the large forces whose strength runs into four figures, whether in counties or in cities, there is sufficient scope for men to rise within the limits of their own unit; and here also, as in recruit training, there is no need to provide machinery for translation of merit from one unit to another. But in all other

forces it would be well if the personnel branch of the Inspector of Constabulary's Office built up records which would assist authorities in getting the ablest men for their higher appointments, and would assist the ablest officers in the country to secure the positions to which their merits entitle them, apart from the accidents and exigencies of the flow of local promotion.

XVIII. *Programme for Regional Co-ordination*

In Section XXII below a full summary of co-ordination suggestions will be given, but it may clarify the position now reached in this discussion to recapitulate the proposals so far made. They are as follows:—

- (1) That forces of which the strength is 1,000 or more should be self-contained for administrative purposes, as at present.
- (2) That forces below this strength should be grouped regionally under an Inspector of Constabulary for—
 - (a) Recruit Training.
 - (b) Criminal Record and Detective Co-ordination.
 - (c) Scientific Aids to Detection.
 - (d) Preparation of panels for promotion to positions of national importance.

These proposals are in themselves not sufficient, and they involve others that will now be put forward. One argument against them will be that no Inspector of Constabulary can undertake such heavy responsibilities. This is a valid objection and one that we shall attempt to meet with tangible proposals for adequate staffs and office buildings to be set up in England, Wales, and Scotland to enable the Inspectors of Constabulary to set about their new tasks of organizing and co-ordinating police effort on regional and national lines.

XIX. *Merger of Units under 100*

Before considering these aspects, however, we have to dispose of the problem of the small forces, whether county or borough, which fall below the 100 figure of total establishment.

The charge against such forces is that they do not attain to such a degree of police importance as to justify their separate existence as police units, having regard to modern conditions of transport, mobility, and complexity of administration.

Every police unit must receive separately all Police Gazettes, and all Home Office circulars, to mention no other inward correspondence; and the general administration of the force in the matters of promotion, discipline, allotment of duties, calculations of pay, pensions, and allowances, separately for small forces under 100 involves multiplication of clerical duties in 81 small forces in England and Wales, and in 34 small forces in Scotland.

It is therefore necessary to lay down a figure, and the figure 100 is suggested, below which no police force shall be entitled to rank as a separate unit for the ordinary purposes of administration.

If such a rule is made, it will obviate the tedious contentions so familiar a feature of official inquiries in the past, as to the population which a borough or a burgh must attain to before qualifying for a separate police.

The real test in such case is the strength of police needed for the area and not the population nor the acreage. It may be assumed that with existing strengths, the needs of the various populations now policed are adequately met or approximately so. Where that figure comes below 100 police, separate police administration is definitely wasteful and merger is indicated.

If the 1,000 rule and the 100 rule suggested here were adopted and given legislative effect, we should doubtless see local authorities moving for merger with adjacent police bodies that would give resultant units of over 1,000 or over 100.

Bedford (56) and Luton (72) would be merged in Bedford County Constabulary (143); Windsor (31) in Berkshire Constabulary (267); Chipping Wycombe (31) in Buckingham County Constabulary, and so on.

Not only would borough forces under 100 have to

amalgamate: county forces would have to do the same. Huntingdon (62) by carrying its present partial merger with Isle of Ely (80) to a logical conclusion would escape extinction: Rutland (16) would probably merge with Leicestershire (224); Westmorland (49) would merge for all purposes with Cumberland (236) and Cambridgeshire (71) with Cambridge Borough (90).

There would be possible mergers of adjacent boroughs to maintain the existence of local forces separate from the county. Hove (77) might merge with Brighton (216).

Again there might be groupings on the higher scale to result in autonomous forces of 1,000 or over.

This would be possible in Staffordshire (900) which by adding Newcastle-under-Lyme (55) and any one of Walsall (110), Wolverhampton (133), or Stoke-on-Trent (251) would attain to independency of administration.

Similarly Kent (695) by absorbing Canterbury (35), Dover (64), and seven other borough forces about 50 each in establishment, would come up to over 1,000.

In short police administration in England, Wales, and Scotland would according to local circumstances and desires classify itself into two systems—one of self-contained forces of 1,000 or more; the other of forces between 100 and 999 grouped regionally under an Inspector of Constabulary for purposes of (a) Recruit Training; (b) Detective and Criminal Record Work; (c) Scientific Apparatus; and (d) Personal Records of officers eligible for promotion above the grade of inspector.

The number of police units in England and Wales would be reduced from 181 to about 100, of which about seven or eight would be self-contained and the remainder grouped and co-ordinated regionally under one of H.M. Inspectors of Constabulary. Scotland would emerge with some 25 units.

XX. *Contributory Personnel for Regional Offices*

If we assume for the moment that each grouped and co-ordinated force has at least one member of its establishment

placed at the disposal of the group office, not to be set aside to the purposes of that force, but to carry out such duties in the group office as may be allotted to him, then we begin to glimpse a method whereby the requisite regional staffs can be brought into existence and remunerated. The contribution of one member of its establishment to the group office would be regarded as the minimum requisition; and doubtless the larger forces within the group, say those with establishments of 500 and upwards, would be called on to depute two or more officers.

Necessarily the selection of personnel for the purposes of creating a group headquarters training, detective, and administrative staff would be left to each H.M. Inspector; but his choice would be subject to the condition of drawing at least one officer from each police unit within his group.

Experience and convenience would regulate the formations, boundaries, and numbers of the groups. It is suggested, however, that for England and Wales, three would probably suffice.

The Home Office would require, as before, to have efficiency certificates for the four figure autonomous police establishments; and a fourth H.M.I., preferably the senior of all, would have the task of co-ordinating their work and that of the regional groups of smaller forces under the more immediate guidance of the other Inspectors of Constabulary.

XXI. *Residuary Local Control*

These suggestions are an attempt to outline a scheme which, without infringing the fundamental constitutional principle of local control of local police forces, would at the same time break down territorial barriers where their existence is against the public interest.

The benefits of local control would be combined with the advantages of regional co-ordination in four important respects—departmental training, detection of crime and control of criminals, scientific aids, and selection for the higher command.

Even in these four departments of police administration, a substantial residuum of control would continue to vest in local police authorities and chief constables. They would still be masters in their own houses.

For instance, in the matter of recruiting, selection of recruits would continue to be done locally, whether by chief constable or by watch committee, in accordance with local policy. The only condition underlying the arrangement would be that the recruits sent to the regional school were up to the courses of instruction prescribed there for them. Those who failed to satisfy the regional examiners as likely to become efficient police officers, would be rejected and the local authority would have no right to continue to employ them.

Secondly, in the department of detection and maintenance of criminal record, the chief onus of detecting offences in its own jurisdiction and of maintaining adequate records of criminals resident in its own jurisdiction would continue to be upon each local force, whether in county or in borough. The regional bureau and the regional detectives would be concerned with crime and criminals of an inter-district importance or incidence.

Thirdly, in the matter of scientific aid, local forces would not be expected to refer to the regional centre everyday matters of medical opinion, ordinary post-mortems, expert evidence in motor smashes, and the like. Everyday routine matters even if of a scientific aspect would ordinarily be handled locally; and it would only be when the assistance of highly specialized scientific opinion or the use of rare and expensive scientific apparatus was considered necessary that the regional scientific bureau would be resorted to.

Finally, in the matter of selection for promotion, the local authority would, as now, have plenary jurisdiction to promote constables to sergeant, sergeants to inspector, without looking beyond the limits of their own force. There would be no objection, just as there is none now, to their looking beyond if they considered they had no one in their

force fit for promotion. But instead of advertising, as appears to be the present practice in such an eventuality, they would be required to appeal to the Regional Inspector of Constabulary.

Even in selecting for superintendent and for chief constable, the local police authority would make the final decision. The only limitation on their discretion would be that before doing so they should intimate the vacancy to the Regional Inspector and select from the lists of eligible officers supplied by him.

In all other subjects of police administration the plenary control of the local police authority would be restricted only in the same respects as it is now, namely, the necessity of complying with the Police Regulations, and the necessity of receiving annually the Home Office certificate of efficiency enabling the authority to receive the central contribution towards the cost of the force.

XXII. *Summary of Suggestions*

In elaboration of the points made in Section XVIII above, it will here be attempted to set forth in six separate propositions a policy which, it is believed, would meet the urgent needs of the various forces in the United Kingdom, and would enable them, without losing the advantages of local control, to work together for the common good :—

(1) The Central Power must judiciously intervene to secure not nationalization, but rationalization of local police units, and especially to mitigate the hampering effects of territorial boundaries and of jurisdictional jealousy.

(2) This can best be done by giving to the Inspectors of Constabulary regional control, of forces under 1,000, in recruit training, in detective and criminal record co-ordination, in provision of scientific aid, and in preparing regional lists for higher promotion.

(3) Simultaneously with the setting up of regional inspectorates, all forces with establishments of less than 100

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should be merged with other forces, thus reducing the number of police units in England and Wales to about 100.

(4) Large forces with establishments of 1,000 or more should be excluded from the purview of the regional group inspectorates, and should be as at present in full control of recruit training, crime disposal, scientific aids, and higher promotions.

(5) The Senior Inspector of Constabulary, however, should continue to inspect such forces and to co-ordinate their relations with the regionally grouped inspectorates.

(6) Inspectors of Constabulary should no longer work as individuals without buildings or establishments, but should be empowered to select at least one officer from each unit within their groups to provide day to day service in recruit training, detective and criminal record co-ordination, and in the other functions of the inspectorate.

XXIII. *What is wrong with things as they are?*

Before concluding this discussion, it may be well to adduce as much evidence as is possible, from those who for some years have been at the centre of police administration in this country, to establish the need for greater co-ordination, and to suggest answers to those who pose the question set at the head of this section.

Sir Edwin Troup in his book already quoted, *The Home Office*, in the Whitehall Series, observes :—

“ It would add much to efficiency if a good many other boroughs agreed to consolidation.” And again, “ In their original constitution the County forces were largely, and the Borough forces entirely, independent of the central government ; but the needs of the times have brought about changes which have given to the Home Office a much larger share in police administration.”

Mr. A. L. Dixon, of the Home Office, writing in *THE POLICE JOURNAL* of 1933 on the “ Constabulary of England and Wales ”, observed :—

" Their organization is primarily *local*, while the problems with which they are faced in preventing and detecting crime are, nowadays, largely national in character."

The same authority in his Memorandum, published as Appendix I to the *Report of the Select Committee on Police Amalgamation*, stated that mere multiplication of units and boundaries was inevitably a source of complication and weakness, and that a given number of men under single control could be employed more economically than the same number under separate control.

In his evidence before that Committee Mr. Dixon advocated large units for detective work, and pointed out that it was not possible economically to provide technical equipment to a great number of small units.

He was asked whether adequate co-ordination and co-operation between adjacent units was not secured by the system of conferences of chief constables set up in 1917 and continued since then: to which he replied that these conferences were in their nature intermittent, and failed to provide that continuous day to day guidance which was the desideratum.

This dictum and another by Sir Llewelyn Atcherley, the Senior H.M. Inspector of Constabulary, appear to go to the heart of the present weakness of police organization in the United Kingdom.

" Police efficiency," he writes in his Report for 1934, " is not to be decided merely by the existence of a good state of efficiency in the individual force, but in the part the forces play as an integral unit of the whole organization."

But, after all, is there an organization in which local forces can play a part? There is none which provides that continuous day to day guidance which Mr. Dixon with his wide experience of Home Office police administration sees to be necessary.

XXIV. *Where is Guidance to Come From?*

The evidence quoted in the previous section may be summed up in the statement that the needs of the times have forced the Home Office more and more to interest itself in what police forces are doing, and it has been realized that there are far too many small units and far too many consequent jurisdictional boundaries; conferences have been set up to promote co-operation, but this method has obvious limitations; continuous day to day co-ordinating agencies are needed, and Inspectors of Constabulary must be empowered to insist not merely on individual efficiency in local forces, but on team efficiency.

It will not do for the Home Office to continue, by the issue of general instructions and circulars, or by the enforcement of Police Regulations, to attempt to control all the units in England and Wales from Whitehall; nor for the Scottish Office to follow similar methods either in Whitehall or in Edinburgh. The detail of day to day police co-ordination is far too great for the Central Government to settle.

Still less will it do for individual police forces to be turned into consulting specialists for other police forces. The relations between county and borough and the antagonistic mentality so clearly revealed in 1932 are not good enough to justify such expedients.

Neither can central conferences of chief constables, each with the administration of his own unit as his first concern, provide a solution.

In the Police Federations of Scotland and of England and Wales, it is true that we find representative aggregations of the forces of the United Kingdom; and with the rather over-elaborate machinery of meeting and joint committees which hurried legislation provided in the post-War crisis, their functioning is more or less continuous. But the Federations are more concerned with improvement of the pay and privileges of the rank and file than with improvement of the organization in the wider public interest; and the Report

of the Police Amalgamation Committee bears evidence of a tendency to oppose Home Office proposals which may not be to the immediate advantage of portions of the forces on their personnel.

Having thus ruled out, as possible co-ordinating agencies for police work in the United Kingdom, first the Home and Scottish Offices, then individual police units, and finally the Police Federations, we are left with the conclusion that the Home and Scottish Office Inspectorate, staffed as it is, or should be, with experienced police administrators with no predominating local claims on them, and nothing to deflect them from the aim of securing the greatest possible all-round efficiency throughout the areas entrusted to them, is the one and only solution to the problem of police co-ordination in this country.

The Evolution of Criminal Law and Criminal Investigation

By DAVID MURRAY

Head Constable, Royal Ulster Constabulary

IT is interesting to stop for a minute in the march of progress through which criminal investigation is passing and consider the process of evolution.

The evolution of the criminal law itself has reached the fourth stage in the process. In the earliest, the State recognizes the need for redress, but the amount and mode of redress are left to the discretion of the injured person or his relatives. A decided advance is made when the penalty for any given class of crimes is specified and limited. The injured person still retains the privilege of exacting it, but it is all he can exact. Later on, it is perceived that when one member suffers the community suffers, and, therefore, compensation is due not only to the victim and his kindred, but also to the State. A fine is exacted on behalf of the community, either in addition to, or instead of, the private redress. The fourth and final stage in the process is reached when the State realizes that its interest in the preservation of order is so great that it must no longer be left to a question of compensation, either on its own behalf, or on behalf of the injured person. The criminal must be deterred by more severe threats from committing any such violation. This idea of true punishment thus supercedes all idea of compensation either to the injured person or to the community, and it is only in the interest of the community that such threats are held out or such punishment inflicted. This fourth stage is, perhaps, found at its best where proceedings are instituted by the State in cases where something is done which is forbidden by law, though the act committed may not directly injure any particular person.

In the process of evolution criminal investigation ~~has~~ reached its third stage. The earliest might be said to be the stage of the police officer alone; the next, which includes the first, may be called the stage of the expert; and the final stage, which includes the former two, may well be termed the stage of the scientist.

In the first stage we have the old method of relying principally on, and being almost entirely confined to, personal observation, that is, the interviewing of persons who are likely to have committed the crime under investigation, or those who have seen it committed; drawing inferences from the fact that a particular person was seen in the locality at or about the time the crime was committed; or drawing inferences from the fact that a particular person had a well-defined motive for committing that particular crime—whether from spite, poverty, insanity, drunkenness, or some other cause. In all these cases the essential qualifications required are tact and a good local knowledge.

The climax of the second stage was reached when Sir Edward Henry benefiting from the labours of Herschel, Faulds, and Galton, perfected the finger-print system of identification by devising the present numerical formula for classification. This stage may be called the stage of the expert. All its various activities are carried out by the police expert. Here we have finger-print identification; photography in all its aspects—photographing of criminals, of the scenes of crime, and the scenes of serious motor collisions; wireless telegraphy, whether operated from the police station, the police vehicle, or by the constable on his beat with his pocket set. Again, the motor-car, in moving swiftly to the scene of crime, pursuing absconding criminals, or merely preventing crime by patrolling streets and country roads. Many other means of assisting in criminal investigation which belong to this stage are the use of the telephone, whether used from an ordinary street kiosk, or from a special police-box, and the evidence obtained from casts of footprints or other tracks, whether left on the highway or in the garden soil. Tracks

- left on linoleum or other polished surfaces can now be lifted by suitable materials. The identification of handwriting may be said to be the only expert work outside the scope of the expert police officer. This is perhaps due to the desirability of avoiding any question of bias.

The third stage has now been reached and this may be called the stage of the scientist. Scientific evidence has been for a long time tendered and received in serious cases of personal violence—usually the evidence of a pathologist or medical man—but until quite recently, scientific evidence has been confined to such cases. Within recent years the scope of scientific evidence has been widened so as to include such crimes as arson, burglary, coinage offences, sexual crimes, and a great many others. This evidence is for the present outside the scope of police work. It is not for the police officer to say whether a stain found on a garment is blood, semen, or some other matter. It is not for him to say whether a hair found on a suspect's coat is the hair of a human being, a dog, or other animal. He is not expected to distinguish between the dust of iron filings and dust from the filings of some other metal. Similarly he is not required to know whether a minute particle adhering to a suspect's shoes is the debris of an insect or a plant. All this is the work of a scientist, whether chemist, botanist, zoologist, or other appropriate scientist.

In the evolution of criminal investigation all these stages must be combined and worked together in close harmony. The interviewing of suspects or possible witnesses is no less important now than formerly. The search for finger-prints or footprints must not be any less exacting than ever it was. In both the first and second stages in the evolution the police officer on the scene is sufficiently well acquainted with his responsibilities. They come to him naturally. He will take care to obtain the names of suspects and possible witnesses, and he will ascertain the criminal's means of ingress and egress, or approach and departure, and note carefully the *modus operandi*. It is in this, comparatively new, third stage

that he is more likely to obliterate or overlook possible and important clues or traces. The duty of the police officer must in this last stage be confined principally to a knowledge of its great possibilities. He should, on finding an innocent looking stain on a suspect's garment, realize the possibility of its being a blood-stain or seminal stain according to the circumstances of the case under investigation. He should know what questions to ask the scientist and what answers he expects to receive. In murder or other crimes of violence he should know to ask the scientist the questions, "Is this stain blood?" "If it is blood is it human blood or the blood of some particular animal as alleged by the suspect?" and lastly, "If it is human blood might it have come from a particular individual—the suspect himself or his victim?"

It is the job of the youngest constable to know that even a single hair may yield a considerable amount of information. The scientist may be able to tell that it came from a particular part of the body; whether it had dropped out naturally, or been removed by violence, including the kind of instrument by which it had been removed—either sharp or blunt; if dyed, the class of dye used; its colour; its comparison with other hairs of a known source, and a variety of other things which are obviously of great importance. He should know the information which might possibly be obtained from a tiny grain of dust found in a suspect's pocket, or from the mud adhering to the insteps of his footwear. In cases involving the use of fire-arms he should know how to handle the weapon and cartridge cases before transmission to the scientist for examination. These things are, as already stated, comparatively new, and through ignorance of their possibilities or want of a little thought, important clues and traces may be destroyed or overlooked.

It is the job of the scientist to examine such articles or traces as may be forwarded to him by the police officer on the spot, but it is equally the job of the police officer to know what traces to look for, where such traces are likely to be found, the evidence which they may yield, and how to

preserve them when found, by careful packing and conveyance so as to avoid the danger of loss, or damage or contamination. In this, his knowledge of the possible evidence that any object may yield under scientific examination should guide him in how to search the scene; how to preserve and pack articles found and possibly bearing valuable evidence. To carry out the packing of an article properly the police officer must be conversant with the specific manner in which scientists advise the several possible articles should be packed, and to ensure that the article will in fact be evidence when produced in court, he should know how to label it and provide for a written account of its successive changes in the course of transit and examination.

Laboratories have already been established in many parts of the country to which articles and traces may be sent. These institutions are in charge of police officers, but for the present the police officer can only make a preliminary examination, chiefly to eliminate articles from which obviously no information may be expected. How far the police officer's work in this connection may be carried remains to be seen. It is possible that in the near future a number of officers at least will be trained to such an extent in the various branches of science as to be qualified to offer scientific evidence on such matters as chemistry, botany, and zoology.

The Future of Police Radio

By H. J. REDGRAVE, A.M.INST.R.E.

I DO not propose, in this article, to deal with the possibilities of wireless communication in connection with police duties, as they are now widely known and appreciated. My purpose is to place before police authorities the radio control system which I know to be the gateway to the fullest use of that branch of electrical science in its application to police administration. I shall lightly touch the past, then more fully the present and, as I see it, the future of police radio.

In 1924, when I first turned my thoughts towards police radio, wireless communication had already been introduced into the police service. Patrol cars were equipped with receivers only, and tenders were equipped with both transmitters and receivers, thus providing two-way communication between themselves and headquarters. A medium wave-length band had been allotted to the service, extending over a band-width of about 13 metres.

As time went on and more forces became interested in the subject of police radio the question of wave-length allocation had to be seriously considered. It was quickly apparent that if interference between the signals of one force and those of another, not necessarily a neighbour, was to be avoided, the medium wave-band would have to be considerably widened. This, however, was not possible, as other services, commercial and otherwise, were already operating wireless stations at either end of the band, and the only course therefore was to limit the number of police 'message-broadcasting' stations to that number which the wave-band width would accommodate without an overlapping of signals, or as it is

known technically, 'mutual interference.' Thus was chaos in the police wave-band avoided; but at the same time it meant that individual operation of radio control by all forces was definitely out of the question.

The medium by which messages were to be broadcast also demanded close attention. There were two media: telephony (speech) plain or simply coded, or telegraphy (Morse); the former unlimited in its scope, giving general reception and ease of transmission, the latter calling for the employment of skilled telegraphists or the training of existing police personnel to send and receive Morse code at working speeds of about fifteen to twenty words per minute. Actually this is a very slow speed where Morse is concerned; a good telegraphist can send and receive at thirty words per minute, counting five letters to the word and an average of three Morse signs to the letter. I have known cable and wireless operators whose everyday speeds were in excess of forty words per minute, and it might be of interest to point out here that Ted McElroy, the world's champion telegraphist, received a plain-language test message at sixty-nine words per minute in achieving his distinction; on the above basis he received 1,035 Morse signs per minute or seventeen per second. Needless to say transmission was by an automatic sender, and the received message was typed on a 'silent' typewriter.

For certain technical reasons connected with the 'spread' of a telephony signal on the tuning scale of a receiver (which would, of course, have still further limited the number of stations the wave-band width could accommodate) and partly from a secrecy point of view, Morse was adopted as the medium for police message-broadcasting, although it limited the number of police personnel which could be contacted with by wireless to those concentrated at Morse receiving points, i.e. mobile patrols or police stations equipped with receiving apparatus. This and other serious disadvantages were recognized and acknowledged, but there was no other way out of a very difficult position.

However, in the early days of police radio the use of telephony was sanctioned for certain pioneers, and at Brighton it was used in connection with my development of the now well-known 'pocket-wireless' system. There it is still in everyday use in maintaining contact with cycle and foot patrols equipped with pocket receivers, and the almost universal adoption by the public of modern broadcast receivers possessing knife-edge selectivity on the medium waves has removed the 'eavesdropping' which, by the way, many times proved of value. The scope of this article will not permit me to recount the many incidents where members of the public acted as 'relays' of messages intended for patrols, but I would draw attention to the excellent article on 'Police Pocket Wireless' which appeared in the July-September, 1936, issue of THE POLICE JOURNAL. I would also add that the reason against the general use of telephony (referred to in the first part of the preceding paragraph) is, to a major degree, the explanation as to why this invaluable system has not, up to the present, been able to expand. I say 'up to the present' with a reason which will become apparent in later paragraphs.

In the article referred to above the author concludes, "Any scheme which does not ultimately take into account the constable on foot will fail to result in the highest degree of efficiency, since every beat constable is a potential agent for giving effect to a wireless message. . . ." It is very true; if the fullest use is to be made of any system of wireless communication, and that system is to be worthy of the name of radio control, it must be such as to include the maximum of police patrols—car, cycle, and foot—in its scope. Having regard to the obligations and restrictions a Morse system places upon all police authorities desiring to adopt wireless communication, *i.e.* the Morse training of police personnel or the carrying of a skilled telegraphist in every mobile patrol, and the relinquishing of any idea of adopting the pocket-wireless scheme (the pocket receivers will not respond to ordinary Morse signals), it is obvious that such a system, by force of

circumstances, must be limited to a relatively few patrols, and the potential value of thousands of pairs of eyes belonging to cycle and foot patrols lost. This loss at a time when they are needed the most, *i.e.* in observing the direction taken by mobile criminals, looking out for 'wanted' or missing persons, etc., is a very serious matter where police administration is concerned and is recognized as such; but is there any alternative? Yes. It lies in the adoption of an ultra-short wave system which has been in use in various American police forces for some time past and which has recently been greatly improved and extended.

In America, where for many years now wireless has been such an essential part of the various municipal police systems, considerable progress has been made in the development of police radio, especially that for mobile use. Long ago telephony was recognized and adopted as being generally more convenient than telegraphy for communication with mobile patrols, since it does not call for the qualifications mentioned in preceding paragraphs and the 'mutual interference' question was not such a difficult one as faced authorities elsewhere. The single-way working system on medium wave-lengths (between 100 and 200 metres) whereby mobile patrols could only *receive* messages is being replaced by the two-way system on ultra-short wave-lengths (10 metres and less). This two-way or 'simplex' system permits mobile patrols to reply to headquarters, and when necessary to become the origin of messages to one another, or to headquarters as the case may be. Of late attention has been devoted to improvements in the 'simplex' system, and it is now possible to carry out true 'duplex' working, *i.e.* two-way speech communication, with the added advantage of either participant being able to 'break-in' on the conversation of the other at will. This is, of course, the system we enjoy on the ordinary land-line telephone service, but hitherto 'duplex' working by radio has only been possible if the participating stations operated on two wave-lengths which differed by a wide margin, sometimes as much as 100 metres. Now, in addition to making

this facility available to police radio, the American engineers have achieved it, whereby stations using it operate on wave-lengths differing only by a decimal of a metre. This advance in 'duplex' working is therefore of great importance, and to the technical mind its significance is profound; it is indeed a very creditable performance on the part of our American friends.

The adoption of the ultra-short waves for police radio is a step in the right direction, since it permits a large number of forces to adopt the system and institute individual radio control over their respective police areas without the parasite, mutual interference, raising its head. Between ten and eight metres it is possible for a very large number of radio stations to operate without mutual interference; but to prove this assertion it would be necessary to discuss frequencies and 'channel widths', matters which are outside this article. Suffice it to mention that if a list of short-wave broadcasting stations is referred to, it will be noticed that the separation of stations is measured in decimals of a metre; on the ultra-short waves this difference is even finer still, without introducing mutual interference.

'Simplex' and 'duplex' working from a car has presented many problems, not the least of which has been the matter of the aerial, or aerials. Low height, for the wireless may often have to be used when the car is travelling at high speeds, does not make for efficiency, especially when transmitting, and roof aerials similar to indoor aerials strung to and fro across a room were ruled out as being unfit for transmission although they are reasonably efficient for reception only. Telescopic masts were also tried, but again the speed factor ruled them out. Eventually the vertical rod type of aerial was adopted, as it was found under test to be greatly superior to all other types, since its length controlled its tuning, and has been made standard on all mobile patrols using the ultra-short wave simplex or duplex system. In practice its height corresponds to a quarter of the wave-length (on 10 metres this is about 8 feet), but it can be made telescopic, reducing

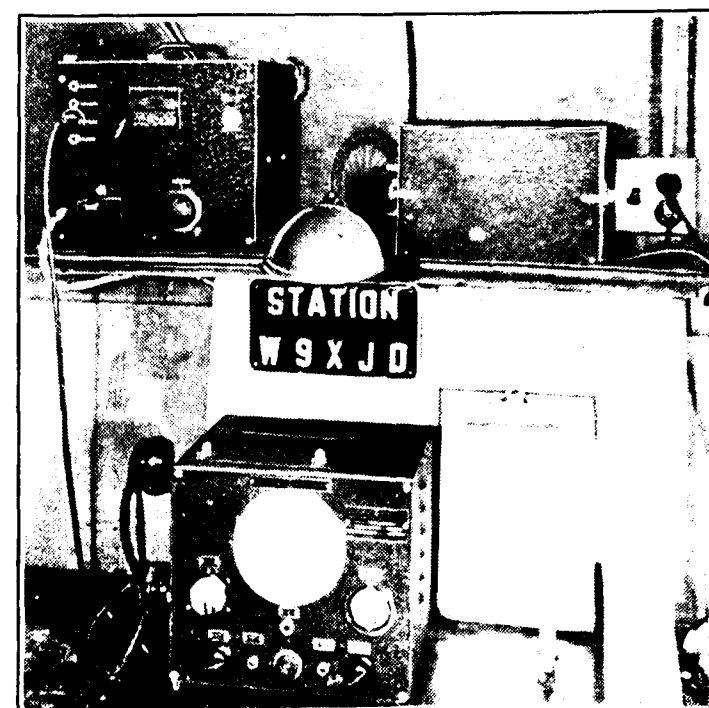
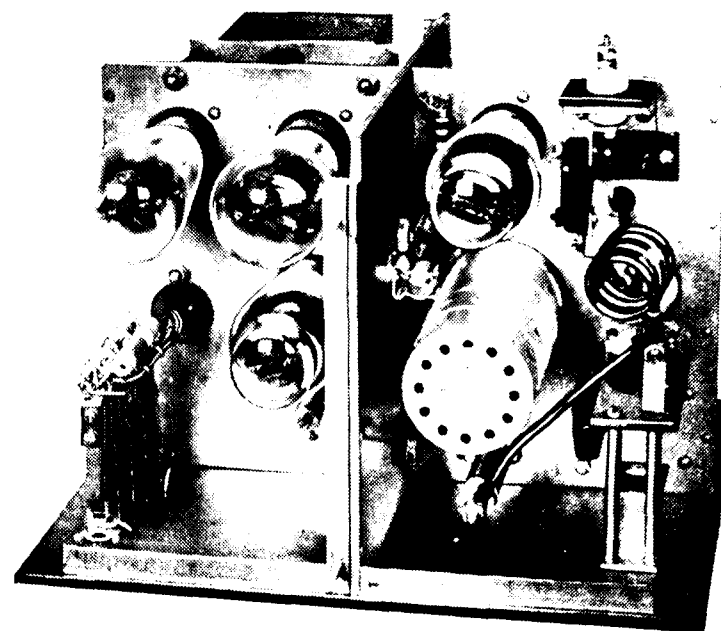
its height to about 4 feet, and this in turn can be camouflaged, making it possible to eliminate any distinction between a police car and its privately owned counterpart.

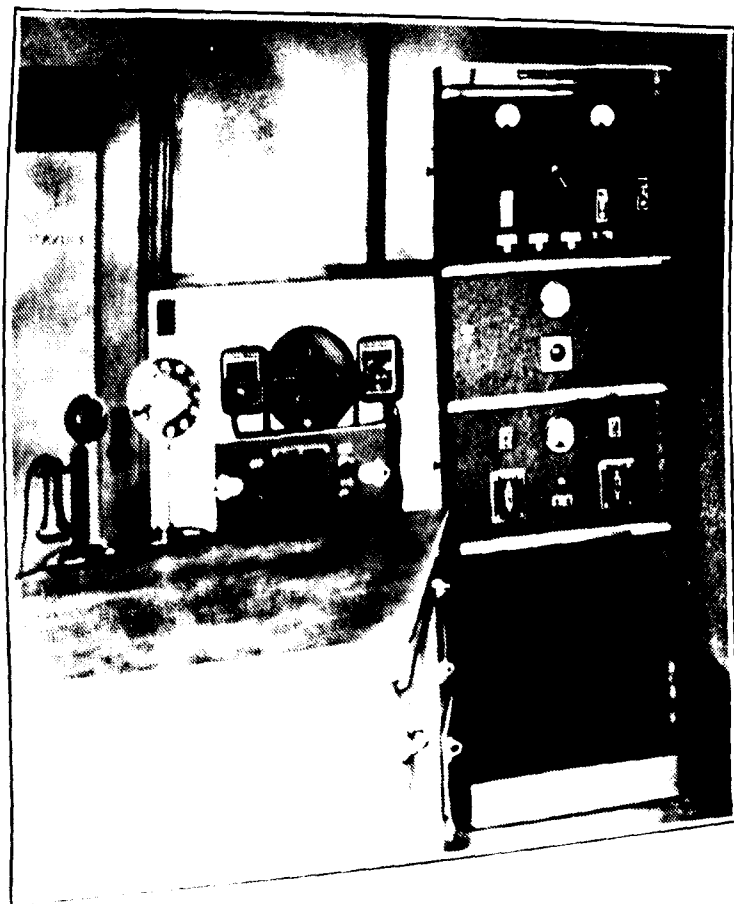
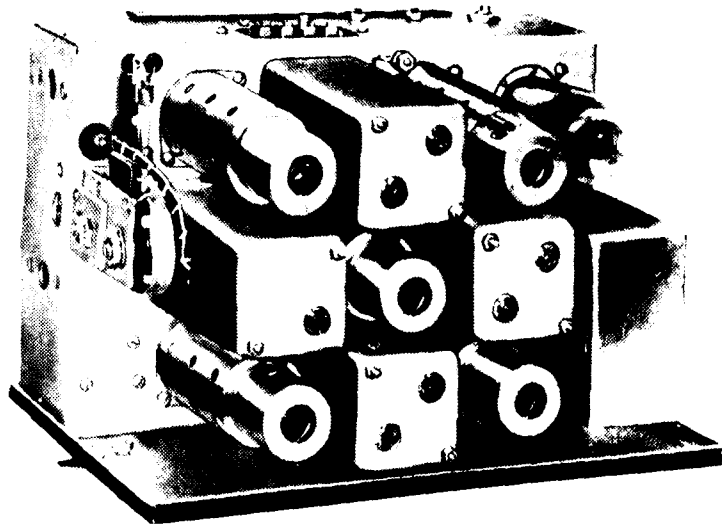
The whole of the mobile apparatus now in use in the ultra-short wave system can be operated from a 12-volt car type battery, charged periodically at the headquarters' garage or from a special heavy-output generator mounted on the engine cylinder block and driven by the fan belt. Since the present day demands upon the lighting and starting battery of a car are heavy it is not good practice to add further loads, and the radio equipment is therefore operated from a separate battery. I will briefly describe the mobile apparatus, transmitting and receiving.

Robust construction, reliability, and good frequency (wave-length) stability under very adverse conditions are essential features of a transmitter designed for this wave-band and class of work. It cannot be kept switched on the whole of the time, yet it must be ready for instant use, and since only a few seconds can be allowed for the valves to warm up frequency stability is of paramount importance. The transmitter which has been developed is of the 5-valve master oscillator type, with a power output of 15 watts. This power fed to the rod aerial gives a working range of ten to fifteen miles, local conditions and the efficiency of the headquarters' receiver being contributory factors. Since the valve filaments cannot be 'on' continuously (the current drain on the battery would be too heavy since the valves in the *receiver* must be permanently 'on') and frequency stability must be maintained, special 'mains' type valves have been produced with quick warming-up filaments. Where duplex working is used no 'send-receive' change-over switch is fitted, each operator listening or speaking as he finds necessary. A carbon microphone is used, the microphone amplifier stage being incorporated in the transmitter. If necessary at any time Morse can be substituted for speech by replacing the microphone with a telegraph key and moving a switch on the transmitter.

The mobile receivers are of the 4-valve loudspeaker type, using indirectly heated valves, the 12-volt radio battery supplying the current for the filament heaters and the high tension generator. For this class of work the receivers must be very sturdily built since they are subject to considerable vibration, and they must be capable of giving good reception under adverse conditions. To function satisfactorily in any large city with its mass of steel-framed buildings, where within a few yards the signal strength may change appreciably, very rapid and efficient A.V.C. (automatic volume control) action is essential to maintain the signal at reasonably constant level. The sensitivity must also be high, and in addition the receivers must be capable of giving good rejection to electrical interference (sparking plugs, etc.). Actually the receivers do all that is required of them; they are a combination of the super-regenerative principle which possesses high sensitivity and very rapidly acting A.V.C., and the super-heterodyne principle which is known for its selectivity, being the basic circuit of modern broadcast receivers. This combination is known as the 'infra-generator' principle and is becoming the ideal receiver for reception of the ultra-short waves, which, of course, include television services on 6.67 and 7.23 metres, and go as low as 1 metre.

A particular refinement in these receivers is worthy of mention and description. Normally a super-regenerative receiver gives a very pronounced 'hiss' when its sensitivity is high, and amplified by a power valve and a loudspeaker this hiss becomes a moderate roar. Since the receiver is switched on when the car leaves the garage, and remains so until its return, it is necessary that this roar should be reduced to a bearable level or suppressed entirely. By skilful design a noise-suppression circuit has been incorporated in the receivers, and quiets the loudspeaker. When the transmitter at headquarters or that of another police car is switched on it instantly brings the receiver back to maximum sensitivity and the roar would commence but for the fact that, due to a highly technical action, the transmitted wave itself suppresses





it, at the same time producing speech in the loudspeaker. When the transmitter is switched off at the end of a message the noise-suppression circuit again takes charge, and so between calls there can be heard in the loudspeaker only those clicks and stray noises with which we are all familiar since the advent of mains-operated broadcast receivers.

In order to simplify the operation of the mobile equipment both transmitter and receiver are pre-tuned by the engineer-in-charge and periodically checked for frequency correctness, thus permitting the whole of the equipment to be housed in the rear of the car and to be operated by a remote-control mounted on or near the dash-board.

The transmitter at headquarters is operated from the electric mains, and usually has a power output of 250 to 300 watts. The special type of aerial necessary for ultra-short wave working is slung between masts mounted on the roof, the requirement being that the aerial shall be as high above earthed objects as possible. The more efficient the aerial the less power required to provide a strong signal over the desired area, and the decreasing of power is all to the good, especially when filing an application for a final licence. As speech is used for all messages these can be sent out by any police officer at hand to the microphone, which can be positioned remote from the transmitter. It is possible for the desk telephone in any office to be connected to the transmitter and for any officer to carry on a conversation with a mobile patrol on the outskirts of the city or borough. It is such facilities as these that make the system so attractive and particularly applicable to the police service, and instil that feeling of real 'radio control'. Where the strength of a force permits it, control is centralized in a radio room where such additional facilities as internal telephone system, maps of the police area, etc., are accommodated.

To sum up American police radio in its latest form, we see that :—

1. It operates just within the ultra-short wave band, prior to television and to wave-lengths on which communication is erratic, *i.e.* the neighbourhood of 5 metres ;

2. The medium of communication is speech, plain or simply coded ;

3. Two-way working to mobile patrols (with the added advantage of 'break-in' if desired and a second wave-length is applied for, since 'duplex' working necessitates the mobile units using a wave-length slightly different to that of the headquarters' station) ;

4. Patrols cars can speak to one another as well as to headquarters, thus where necessary acting as relay points considerably extending the range of the system at any moment ;

5. The personnel of the mobile patrols can be changed at any time without affecting the continuity and efficiency of the radio control ;

6. Being on ultra-short wave-length it permits a number of forces to adopt independent radio control without causing mutual interference.

Here then, I feel convinced, we have the foundation of our future system of police radio control, and it is up to us to build as comprehensive a structure as materials will allow. The success which has attended the adoption and long use of the ultra-short wave system by a number of American forces and has more recently resulted in the Oslo (Norway) police authority installing the system to control its mobile unit of ten cars, can be enjoyed by our cities and boroughs in the interest of greater efficiency of police administration, giving them not only individual radio control over their respective forces but a radio control second to none in the world. Let us examine the possibilities of the system in the light of our police patrol system and present radio facilities.

Firstly there is no reason why the system should be confined to mobile patrols, *i.e.* motor-cars, tenders, etc. Since the medium of communication is speech it permits all classes of patrols being equipped with some type of radio apparatus. With the introduction of 'Acorn' valves (valves specially designed for ultra-short wave work) it is now possible to equip cycle patrols with small transmitters as well as receivers. Thus these patrols transmitting over short distances, say

half a mile, could pass reports to the nearest mobile patrol, who in turn could pass them to headquarters. Headquarters would, of course, reply direct to the cycle patrol. The cycle receivers would incorporate the patented relay bell-ringing device which forms a part of the present 'pocket' receivers, thus obviating the need of a small loudspeaker to attract the patrol's attention. In a finished form I visualize a cycle patrol transmitter-receiver as a small box resiliently mounted in a cradle fixed to the handlebars, with a post office type telephone-microphone handset clipped in a recess facing the patrol. When the bell rings, due to the transmitter at headquarters being switched on, the hand-set would be lifted out of the recess, the action of so doing stopping the bell and permitting reception via the telephone earpiece. A pressure type of switch in the hand-set could determine reception or transmission. The weight of the equipment would be but a little more than that of a high tension battery and a small accumulator.

As regards the foot patrols, by far the greater proportion of police personnel, the successful adaption of the 'pocket' receivers to an ultra-short wave-length would bring them into the scope of the system, and thus we should achieve the fullest possible measure of radio control. Again, small transmitters are not outside the bounds of possibilities, and development work would undoubtedly evolve very efficient and compact equipments. It is a case of "we don't know what we *can* do until we try".

Thus the future system of radio control can be summed up as follows :—

1. Two-way speech communication between headquarters and all mobile patrols and also between individual mobile patrols ; 'duplex' working if two wave-lengths are allocated to each force ;

2. Two-way speech communication between headquarters and cycle patrols equipped with transmitter-receivers, the latter using the nearest mobile patrol as a relay station for its reports or replies, or one-way communication where patrols are equipped with receivers only ;

3. One-way speech communication with all foot patrols equipped with pocket receivers of an improved type (lighter and smaller).

So far as development work on this future system is concerned much has already been done to show the outstanding advantages of it. Early in 1936, in collaboration with certain technical friends in Derby, 10 metre transmissions were made to a car equipped with rod aerial and two-way working apparatus. Using a low power transmitter at the fixed station, a 2-valve transmitter and a 4-valve loudspeaker receiver in the car, two-way conversation was successfully and impressively demonstrated up to 6 miles; later the range was extended to 10 miles. In and around the town fading was counteracted with the quick acting A.V.C. action of the super-regenerative receiver, and where reception was found to be poor, improvement was quickly obtained by raising the height of the fixed station aerial above the roofs of surrounding houses. Passing motor-cars caused slight interference, due to ignition systems, but on no occasion prevented the easy reception of speech, and the delay between reception and making a reply was but the time necessary to move a small switch—with practice this became a split second. 'Duplex' working was not attempted then, as time did not permit the construction of the special filters necessary. Experimental work in connection with ultra-short wave pocket receivers showed that they were a definite possibility, but required valves with a lower inter-electrode capacity than those at present available in the 2-volt filament series. This presents no difficulty as, given the demand, supplies will quickly be forthcoming from manufacturers—an attitude which is not confined to valves alone, but applies equally to all apparatus used in the ultra-short wave system.

So much then for what has already been done for the future success of police-radio control. The next step lies not with the technicians but with those who control the wave-lengths, and it is to be hoped that the near future will see the technician again responsible for progress.

I would draw attention to the following. Ultra-short wave work, whether experimental or established, is a science in itself, and bears little relation, apart from basic principles, to wireless as it is known to "the man in the street". It possesses peculiarities of its own; for example, television on ultra-short waves of 6.67 and 7.23 metres has a range limited to the optical range or a few miles further, whilst broadcast programmes on short waves of 13.93 metres will circumscribe the world. This restricted range of ultra-short waves is of great importance to police radio; it ensures that for a given aerial power the range of a police transmitter can be limited to that police 'area' or a few miles outside it. Again, the falling of darkness does not have the effect of greatly increasing the range as with longer waves, so it would be possible for police forces in the south to operate on the same wave-length as police forces in the north without finding that with the coming of darkness they were 'jamming' one another. Let me also say that speech (and music) on ultra-short waves is exactly the same in its reproduction as that on broadcast wave lengths; the wave is only the carrier of the broadcast; it is the *performance* of the wave with which the technician is concerned when seeking to establish a service.

In conclusion, let us visualize a city police force equipped with the ultra-short wave system of radio control.

A message is received at headquarters that a certain car is wanted, and the car number is given. It may be a 'smash and grab' raid, a case of 'ringing the changes' on a shop-keeper, or the more common 'joy ride'. At once an 'all patrols' call is sent out in plain language, followed by the number of the wanted car, direction travelling when last seen, and any other relative matter, also in plain language or partly in code (it is a simple matter to disguise a car number and an offence). The patrols cars in turn announce their positions, and make their way to pre-arranged 'key' positions, probably on main roads leading from the city. Whilst doing this the wanted car is seen by a foot patrol, who has received the broadcast on his pocket receiver, and he telephones

headquarters from the nearest 'phone. The radio controller notifies all patrols of the fact, directing patrol cars to points ahead and behind the wanted car (to prevent doubling back) and no matter how the fugitive car may turn and twist it is bound to be seen by a patrol—car, cycle, or foot. A large scale map in the radio room shows the position of patrol cars, and as they close in on the wanted car observers there are able to see the process in vivid form. The advantages of speech over Morse are strikingly displayed on such occasions, where seconds may mean the difference between success and failure; speech alone can bring all patrols into the 'observation ring', can permit a patrol car to be manned by a driver alone, and ensures the correct reception of instructions even though speech be hurried.

My work at Brighton prepares me to expect certain queries, and I will deal with what I believe to be the most important. In this country very few of the so-called 'All wave' broadcast receivers will tune down to the ultra-short waves, so the only 'eavesdroppers' will be the amateurs; but as they are all Morse readers, speech and Morse are alike to them; in America, where crime is on a more organized basis than in this country, radio equipped criminal cars are sometimes met with, but in England criminals favour 'doing a job' with one car and changing cars by stealing another from a car park, etc. This is but another reason why any system of radio control should include as many patrols as possible in order that constant track may be kept of the initial car and the changing-of-cars system combated. Only by being two or more jumps ahead of the criminal can the police maintain their superiority over their natural prey, and I feel certain that even as the ultra-short waves are giving us the latest advance in wireless—television, so too the ultra-short waves hold for us the future of police radio.

The Identification of a Cartridge

By D. G. WATSON

Offg. Deputy Inspector-General of Police, Central Provinces, India

THE following case is of interest as being an early instance (in Central India) of the identification of fire-arms by modern scientific methods.

Nagpur, the capital of the Central Provinces of India, is a rising city of about 240,000 inhabitants. Shortly before daylight on 11th January, 1932, the night watchman of a shop in the main street of the quarter known as the Sadar Bazaar was shot dead. Only one shot was fired. Two constables on patrol duty at once reached the spot and searched, without success, for the assailant. They found a large bundle on the doorstep of the shop and a crowbar inside the shop, which is known as the 'Bombay Fancy Market' or 'The Green Shop'. The locks of the shop were found broken and the show-cases had been opened; but nearly all the missing goods, chiefly watches and electro-plate to the value of 300 rupees (£22 10s.), were found in the bundle, which had evidently been left behind by the burglar when he was disturbed by the watchman. The stolen property was tied up in a grey sheet of the type used in the North-West Frontier Province.

After some time, information was obtained that a crowbar similar to that found in the shop had been missed from a theatre in Nagpur City some weeks before the murder; and that one Afzal Khan, a Pathan from Peshawar, had occupied a room in the theatre at that time. The proprietor of the theatre furnished an address in Delhi where Afzal Khan might possibly be found.

The Inspector verified this information in Delhi; and, on 24th March, Afzal Khan was located, with two other Pathans,

in a room in an upper story. Afzal Khan was decoyed downstairs on a pretext and was immediately handcuffed; whereupon he shouted to his friends in Pushtu, a language not usually known except on the Frontier, that they should use his revolver on the police or hide it. One of the other Pathans subsequently told the Inspector what Afzal Khan had said. During their search of the place, the police discovered a revolver and 18 rounds of ammunition hidden in a bathroom.

Abundant evidence was found to show that the accused was in Nagpur on or about the 10th/11th January. Various witnesses deposed that when Afzal Khan was in Nagpur he had a revolver similar to the one seized by the police. A coloured string, mostly green and red, which was attached to the revolver, was also recognized by two witnesses. Other witnesses stated that Afzal Khan, while he was in Nagpur, had a Peshawari sheet of the type found at the shop. Again, part of the stolen goods consisted of handkerchiefs; and evidence, which appeared reliable, was found that the accused made a present of a somewhat similar handkerchief to one Khadim a day or two after the occurrence. None of the stolen property, however, was recovered from the possession of the accused.

The above evidence would not, of course, have sufficed to convict Afzal Khan, without the addition of expert evidence which would identify the revolver seized from the accused's possession as being the weapon which fired the fatal bullet — evidence, in fact, which would prove that no other weapon could have fired it. According to various authorities, such evidence regarding the identification of fire-arms was first utilized in England in the case against Brown and Kennedy, who murdered P.c. Gutteridge; and the only other case which has since been heard in England, in which such evidence was given, concerned a Cypriot doctor who was shot in 1933. In the first case, identification was based on examination of the cartridge used by the murderer; and, in the second case, of the bullet extracted from the victim. In the case which is now being described, the latter method was used.

The general principle involved is the same in both methods. As Major Burrard says in his book, *The Identification of Fire-arms and Forensic Ballistics*, 'no two barrels are microscopically identical . . . in fact, every barrel has its thumb mark in exactly the same way that every breech-face has its thumb mark.' It is admitted, however, that it is more difficult to establish identity from a fired bullet than from a fired cartridge; and it is perhaps remarkable that bullet identification was used in a case which occurred in Central India nearly five years ago (and one year before the first case involving bullet identification was heard in England).

Through the courtesy of the Inspectorate of Small Arms in India, the services of a highly qualified expert were made available for the case. This expert, who is the Chief Examiner of Small Arms at Ishapur, possesses knowledge and experience of an extremely technical nature, and during the eleven years previous to the case, he had been engaged in making the most minute and scientific examinations of fire-arms and ammunition. At Ishapur he is accustomed to examine about 60,000 'small arms' a year, in order to detect any faults in manufacture. For these examinations he has at his disposal instruments capable of showing measurements to 1/100,000th of an inch.

In the present case, the expert first made very exact wax moulds from the barrel of the revolver and from the surfaces of the 'crime' and 'test' bullets. He examined these moulds with a Cussons Horizontal Shadowgraph Projector, which produced their outlines on a screen, with a magnification $\times 50$. The outlines thus projected clearly depicted what had already been detected by the trained eye of the expert, namely that there was a serious defect in the manufacture of the revolver and that this defect had been faithfully reproduced on the 'crime' bullet and on both the 'test' bullets. As will be seen from the diagrams, the groove situated at 7 o'clock, seen when looking down the barrel from the muzzle, had been wrongly cut during manufacture. The corner was cut too deep, with the result that the radius

FIG. I.
SECTION OF BORE.

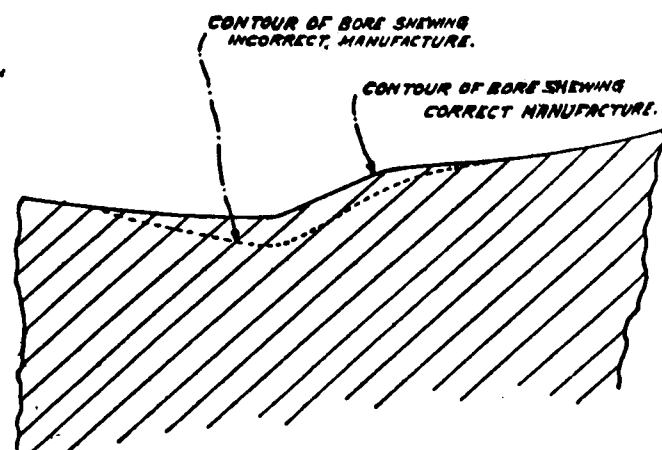
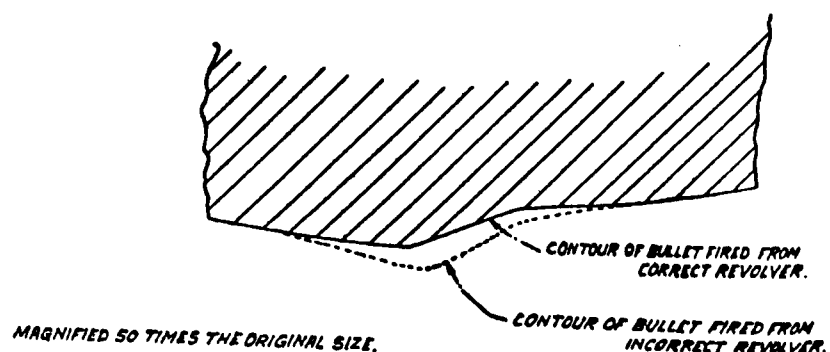


FIG. II.
SECTION OF BULLET.



at the foot of this particular wall, instead of being $\cdot 005$ of an inch, as required by good manufacture, was $\cdot 01$ of an inch.

The 'crime' revolver was certified by a Birmingham firm of gunsmiths to have been supplied from their works well over thirty years ago, when the examination of fire-arms was not so accurate as it is at the present time. The possibility of the existence of two revolvers of the same type, manufactured at the same period in Birmingham and having exactly the same defect in the same groove, is sufficiently remote; but when it is proved that a revolver with this peculiarity had been fired thirty years later at Nagpur and also that a revolver of exactly the same type and with the identical peculiarity was in Nagpur at the same time and in the possession of a man strongly suspected of firing it, the conclusion is irresistible. The court held that no other weapon but the revolver recovered from Afzal Khan could have fired the fatal bullet. The accused was convicted and sentenced to death. His appeal was dismissed.

Police officers familiar with the use of the comparison microscope will notice the absence of any attempt at photomicrography in this case. No special apparatus existed in the Central Provinces C.I.D. at that time; and the expert, whose evidence was held to be conclusive without recourse to photography, stated under cross-examination that the microscope was not more accurate for this particular piece of work than the shadowgraph. No comparison was undertaken of marks and scratches in the barrel, caused by the cutting-tool or by cleaning-rods or by rust or in any other way, with similar marks on the 'crime' and 'test' bullets. Actually, such barrel marks were visible under magnification and corresponded with those on the bullets; but it was not necessary, in this case, to give evidence regarding such marks, as a much more decisive 'thumb mark' was available. If the 'crime' weapon had not shown the defect in manufacture noticed by the expert, recourse to photomicrography would have been desirable.

An interesting point was that only two grooves out of

seven were clearly defined on each of the 'crime' and 'test' bullets; but in every case the groove with the tell-tale corner was included. The easier cartridge identification could not be adopted, as no empty case was found on the scene of occurrence.

The Cussons Projector has been in use since 1927 at the Small Arms Factory at Ishapur, where it is constantly employed for the inspection of gauges and for checking the form of screw threads. It does not appear to have been mentioned in any work on the identification of fire-arms.

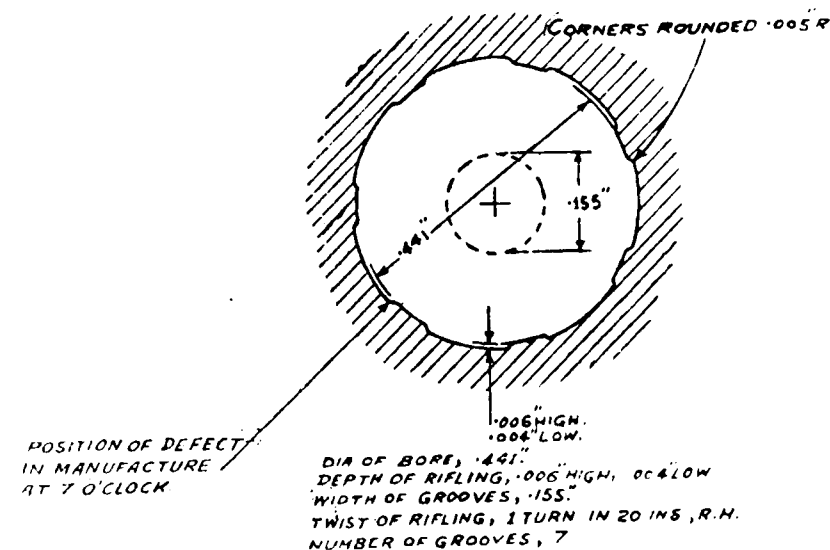
Before accepting the testimony of the expert witness in this case, the Court subjected him to a test. The witness had already assured the Court that if bullets fired from any weapon in which a pronounced defect existed were mixed up, unknown to him, with bullets from other weapons, with or without pronounced defects, he would be able to pick out with certainty all the bullets fired by each weapon having a well-defined fault and would probably be able to point out those fired from weapons with less definite or no defects, provided the bullets were not greatly distorted by impact.

Accordingly, nine bullets were fired in the Court from the accused's stock, in the expert's absence. Three bullets were fired from the 'crime' revolver, three from a second revolver, and three from a third revolver. The two 'test' revolvers were of the same bore and type as the 'crime' revolver and resembled it closely. The nine bullets were all of the same kind. The fired bullets were caught in a water-butt in an undistorted condition, except one which was badly damaged. (Here it may be noted that the bullet found in the deceased's chest was not distorted and showed only a small nick where it had probably struck a bone.)

These further test bullets were carefully sealed and sent to the expert, who had returned to Ishapur. The expert picked out the three bullets fired from the 'crime' revolver and stated that the remaining six bullets had not been fired from it. Although he was not being tested as regards these

six other bullets, the expert voluntarily subjected himself to a further trial of skill regarding them. It may be emphasized that the expert had never seen the revolver or revolvers which had fired the six bullets; and, actually, they had no marked defects. The expert correctly picked out two bullets fired from each of the two 'test' revolvers and made a mistake by interchanging the last two bullets. This mistake may possibly have been due to an error in labelling; but it is significant that one of the bullets not properly classified was the one which was deformed.

SECTION OF RIFLING SHEWING
DETAIL OF CORRECT MANUFACTURE.
SCALE- $\frac{4}{1}$.



The Recording of Motoring Convictions

By SERGEANT W. E. BRITTON

East Sussex Constabulary

THE increasing volume of motor traffic on our roads has its reflection in an increasing number of convictions in the Courts, and consequently, notifications of convictions pour into the various forces with greater frequency as time goes on. It is with the method of dealing with motoring conviction notifications that this article is primarily concerned.

To view the marvellous conglomeration of conviction forms and cards which arrive almost daily at a headquarters' office fills one with amazement at the ingenuity displayed by the authorities concerned—ingenuity, it would almost seem, apparently directed towards producing a form or card differing to that used in any other force. The penalties inflicted on the erring ones are set out on short forms, long forms, foolscap forms printed both length and widthwise, coarse forms, forms of the finest texture, large cards, medium-sized cards, small cards, thick cards, thin cards, coloured cards, white cards, and even cards giving among other things the height of the offending motorist!

The convictions have to be filed, and it now becomes necessary for each one to be copied afresh on to a card as used by the particular force concerned; although, I suppose, there are still some forces where this entails copying by hand into conviction registers. Some forces, too, keep also divisional indexes, and in such cases, after the conviction has been recorded at headquarters, the form or card is passed to the divisional headquarters of the district wherein the motorist resides, for similar procedure; or the notification may, and often is, received in the first instance at the divisional office, recorded, and the form or card then passed to headquarters.

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From the foregoing it will be seen that there is no uniformity and a great deal of unnecessary labour and duplication in the system at present in vogue.

It is my submission that a standard conviction card should be adopted by all forces as from some specified date, and that pressure should be brought to bear (if and where necessary) to ensure that a uniform procedure should be followed in notifying—and incidentally asking for particulars of—motoring convictions. The size and lay-out of the card could no doubt be decided upon by senior police officers in conference. The adoption of such a scheme would without doubt cause a certain amount of inconvenience to those forces which happened not to be using the standard card already; but change practically always has that tendency, and the difficulties, I think, would not be insuperable.

Passing now to procedure I would suggest that all motoring conviction cards be sent direct to the headquarters of the force concerned; and in no case to divisional headquarters; this has particular application, of course, to the county forces. The card, being of standard size, would on receipt be placed immediately into the filing cabinet, thus doing away with the necessity of copying, and, incidentally, the risk of error involved in the process. This cabinet would constitute the sole motor conviction filing system of the force. Divisional indexes being no longer necessary, divisions would be relieved of a little work, and duplication of records avoided, *i.e.* of course, in those forces where the additional records are kept.

In conjunction with the standard card, a standard form asking for particulars of previous convictions should also be adopted—a form similar to that used in B 4, Metropolitan Police, would suit admirably. A force sending a summons for a motoring offence into another police district for service, and wishing to know whether the defendant had any previous motoring convictions, would send with the summons the standard form asking for particulars. In the case of a city or borough force the procedure would be quite straightforward.

The summons would be served, the convictions, if any, entered on the form, and the copy summons and form returned to the originating force. In the case of county forces the procedure would be a little different, as the summons would in most cases be sent direct to the division concerned. Upon receipt of the summons and form the responsible divisional officer would detach and transmit the form to headquarters, where the appropriate entries would be inserted and the form returned to the officer from whom received, the latter returning it with the copy summons to the originating force. In urgent cases, of course, a division could ask headquarters to return the form direct, to save delay; this, however, would be the exception rather than the rule. The form could also be utilized by those forces which serve their summonses by post, for the purpose of obtaining particulars of convictions.

Finally, there remains the case of a person being summoned to appear at a Court in his own police district. Here two courses would be open to headquarters upon receipt of the form from a division; it could either supply the particulars on the form as in other cases; or the card could be taken from the file and sent to the division for retention until the case was disposed of, being subsequently returned to headquarters with the result of the more recent case added. One drawback to the latter course, however, would be that the card or cards might be required further whilst in the possession of a divisional office.

A certain amount of preliminary work would be entailed, in some instances, at headquarters offices, in order that the scheme should be on a firm basis from the commencement, but once in working order it would, in my opinion, prove far more efficient than the present system, with its duplication and wasted effort. The filing of motoring convictions would thus be centralized in each force and uniformity of procedure ensured both in supplying, and asking for, particulars of convictions. Without a certain amount of uniformity there can be no large measure of efficiency.

Under Sentence

"How do you find the prisoner?"
Measure for Measure, Act IV, Scene 3.

TWO publications of 1936 may be regarded as giving an answer, from different points of view, to the Provost's question. The Prison Commissioners' Report, presented in April, includes the official statistics for 1934; an account of the chief developments in the following year; and also a summary of the changes made in English prisons during the reign of King George V. The second answer comes from still more intimate knowledge of the prisoner's state, and supplies a human commentary on the facts and figures of the Report.

The title-page of *Five Years for Fraud*¹ bears the words "Anonymous—by Necessity", and is dedicated to the London business man who, after the writer's release, put him in the way of earning an honest livelihood again. It is a remarkable record of experiences in four different prisons; the more impressive, perhaps, because set down with no special literary art, yet showing the ability of a trained mind to look at the problems of prison life fairly and squarely. The difficulties and the uncongenial nature of the officials' work are never minimized in these pages; and the author's extremely outspoken descriptions, and his strictures on certain regulations and details, clearly do not spring from a sense of personal grievance, but rather from his wish to "speed reform". To those who have read both his book and the Report, it will be clear that his views are not wholly at variance with the aims of the Commissioners—only those aims are hampered and delayed by many considerations outside the range of a prisoner's observation.

Nevertheless, this is a valuable study of the reactions of

¹ Sampson Low, Marston & Co., 1936.

a sane, intelligent man to prison surroundings and the companionship of criminals. As the Commissioners themselves admit, "classification within a prison is at best an imperfect arrangement"; and "Anonymous" was in daily association with those who seemed to him vicious and degraded—though together with some for whom he could feel respect. He believes that it is impossible for a higher type of man to escape some moral deterioration in that atmosphere; and he asserts that "Prison will always be a deterrent but it can never have a reformatory effect".

The educated and the uneducated must undergo the same routine; but each will suffer chiefly from a different cause. A man of the professional class is overwhelmed by the fact that he has forfeited his good name and his place in the community; to this is added the loss of privacy and independence, with all the decencies and comforts of his former life; and the rigours of forced manual labour. On the other hand, one who has been used to work in the open air is more oppressed physically by prison walls, and usually finds the hours when he is locked in his cell (5.30 p.m. till 9.30 next morning) "the worst feature in his prison life". This solitude and the opportunity for quiet reading, which are the greatest solace to many prisoners, are only a burden to those unaccustomed to any mental exercise.

The attitude of Convict XXX (the author's prison number) is best explained by a very brief outline of his own story. He was a young solicitor, practising in a country town in the North of England; before his act of "fraudulent conversion" was discovered, he contrived to leave the place and take passage to New Zealand, where he obtained work on a boat running between Auckland and Fiji. But while spending a week-end at Napier, his hotel was wrecked in the great earthquake. Though injured himself, he worked with a rescue gang until a tottering roof crashed above him. When he became conscious again, he found himself in the improvised field hospital, covered with bandages. A detective was at his bedside, and he realized that in delirium or extreme

weakness, he had given away his identity; certain conviction and imprisonment lay before him. And even then he foresaw that his severest punishment would begin with his discharge.

On his recovery, he was taken to Mount Eden Prison, Auckland, where he remained four months, pending the arrival of his extradition warrant from England. When at last he was sent back, he passed a further five months at Walton Gaol, Liverpool, awaiting his trial. The Assize Court was held in his own town, and to his horror he found himself, for the first time, handcuffed and chained to a couple of lads, one only seventeen, from the part of the prison reserved for "young remands". None of the three had been previously convicted, but his remonstrance was vain, and thus chained they were taken by prison van, ferry, and train to the Court and the cells below. After waiting five hours in the half-darkness of a hut so small that he was stiff and cramped, he took his turn in the dock, pleaded guilty, and was sentenced to four years' penal servitude. He had already been imprisoned for nine months; and, with all possible remission, this meant that the judge had "sent him out of the sunlight for three further years"—one of the few phrases in this book which express the bitterness of his own heart.

Shrewsbury was his next destination; and looking back afterwards, he saw that those first six months of his life as a convict were the least unhappy. From the time of his arrest he had accepted his fate manfully as the result of his own actions; and in each prison where he was confined he observed his companions with interest and sympathy, making many strange friends among them, and being generally on good terms with the prison staff. But he pays a special tribute to the Chief Officer and the Governor at Shrewsbury, both of whom gave him kindly advice in those early days which influenced his outlook throughout his term of imprisonment, and upheld his determination to make good later.

No. XXX was fortunate, too, in his occupation at Shrewsbury. After working for a time in the mail-bag shop, he obtained the much-coveted post of librarian, with many

privileges attached. The "red band" worn by its holder enabled him to remain in the library till 8 p.m., and to move freely about the prison while carrying out his various duties—changing the books in rotation, entering their numbers on each man's card and on the duplicate record kept in the office; lighting the gas-jets in the building; and keeping the chapel, and the rooms used by the Governor and the Chief Officer, in order. In the evening he was responsible for taking the names, and other particulars of the new arrivals, in the reception office, in order that books might be chosen for them and delivered early next morning.

After six months of this comparative freedom, he was transferred to Maidstone, where he was to spend the remaining two and a half years of his sentence. In its present form it is accounted a "model" prison, more convenient in buildings, more up to date in method and equipment than other convict prisons. The greater part of *Five Years for Fraud* consists of the author's impressions of life at Maidstone in its various aspects. His specific complaints of certain details of administration there, and his plea for alterations in the penal system are based, not only on careful comparisons made among his fellow prisoners, but on the unusual opportunities of studying the whole question of crime and punishment which came to him in his work as librarian at Shrewsbury and Maidstone; still more in the clerical post that he held during his last nine months, with access to official papers and records.

In particular, his arguments for the reduction of sentences of penal servitude carry conviction because he has seen for himself the physical, mental, and moral effects of long terms of imprisonment on men who had reached the "special" stage—above four years. More than fifty of his companions were serving life sentences; others had already spent from three to fourteen years in prison. The disintegration of a man's mind and capacities for normal existence that begins after a certain period, is recognized by the prisoners themselves, and also by officers and chaplains. Finally, when

"Anonymous" was discharged and able to put together his accumulated memories and conclusions, he checked the accuracy of his facts by Mr. Fox's book *The Modern English Prison*, an authority whose "essential fairness" he fully recognized. The same quality in his own book makes it worth the consideration of those concerned with penal reform.

II

One of the duties of the Prison Commissioners is to prepare a large number of classified lists, and tables of statistics, for the information of the—mainly inattentive—public. But if we turn from unsuggestive figures to their review of the past twenty-five years in that hidden, inarticulate world named Prison, it appears that Commissioners, too, are reformers at heart, trying to adapt buildings and regulations, which accorded with age-old conceptions of justice and retribution, to the newer purposes of rehabilitation. They begin by tracing the fall in prison population to important changes in Criminal Law during that period, and also to a general upward tendency in social conditions. Between 1910 and 1936 thirty local prisons have been closed; and the average daily number of prisoners has fallen from 20,826 to 12,238 (1934). The Commissioners expect that a further reduction in the class known as Civil Process prisoners will result from the Money Payments Act which came into force on 1st January, 1936.

To go farther back, I will quote from an old book written by a prison matron of Millbank, at the time when a part of the building was used for women convicts. Brixton Prison and Fulham Refuge were also given up to these, though for different stages of their imprisonment. She mentions that the total number of women convicts at the end of the year 1860 was 1,283; the Government's available accommodation being only 1,371. The women convicts in prison on 31st December, 1934, numbered 68—a satisfactory decrease even when the long interval is considered.

The most effectual method of classification yet attempted was the opening of Borstal institutions as separate places of detention and training for young delinquents. There are now eight of these for lads, and one for girls; an increase which has enabled the authorities to group a different type of youth in each institution, and has remedied the crowded state of the earlier buildings, so that more individual attention can be given. The average daily number of inmates in 1934 was nearly 2,000. Since 1923 voluntary women workers have investigated the antecedents and, whenever possible, visited the homes of boys on remand in the London area, and those sentenced elsewhere to Borstal treatment. Their work is now carried on at the Boys' Prison, Wormwood Scrubs, and the reports sent in by them (225 last year) have proved of great value to the Courts in deciding difficult cases; and to the Commissioners in assigning the lads sentenced to Borstal detention to the most suitable institution. The use of the Boys' Prison as a clearing house has also enabled the Medical Officers attached to it to collect medical data of their charges to aid the classification of these youths, and to discover "as far as was practicable, the causal factors of adolescent crime".

In 1935 a new Borstal institution, taking the form of a camp with huts, was opened on the Lincolnshire coast near Freiston. Here, as at Lowdham Grange, which was added in 1930, the inmates are selected as "likely to respond to a comparatively short period of training . . . in which considerations of security have, as a result of experience, been put aside and buildings have been devised with a view solely to reformatory training". The chief work undertaken at North Sea Camp is the reclamation of a large area of salt marsh adjoining the coast.

The experiment of allowing selected boys of the special grade to go home for a week-end on parole was first made at Feltham Borstal Institution at Christmas, 1933, and the following Easter; the results being so satisfactory that the privilege has since been extended to two other institutions.

Both the Governor and the chaplain of Feltham report the excellent effect of this "home leave" as a stimulus, producing "an increase of zest and friendliness when they return".

It has been comparatively easy to bring about a great, though gradual, change in the treatment of young offenders within the quarter-century under survey, for the current of public opinion has set in that direction. The adult prisoner, and above all the recidivist, offers a stiffer problem; and the Commissioners are, no doubt, compelled to steer a middle course between two ways of thinking in penology: the one which regards prisons in their present form as "places for the manufacture of criminals", and would fain abolish the whole system; the other inclined to condemn any changes that make the prisoner's lot less grim. It may be that the greatest obstacle lies in the ignorance—and indifference—of most people as to what a long term of imprisonment really involves.

Yet the Commissioners can record a measure of advance towards their objective which is—

"to construct a system of training such as will fit the prisoner to re-enter the world as a citizen. To this end the first requisite is greater activity of mind and body, and the creation of habits of sustained industry."

Further, they have aimed at—

"the promotion of self-respect and education on broad lines calculated to arouse some intelligent interest, and to raise the mind out of a sordid circle of selfish broodings."¹

On the disciplinary side, the most important modifications have been (1) the abolition of a period of separate confinement on reception, varying from twenty-eight days for prisoners under sentences of hard labour, to three months for "star" convicts, and nine months for recidivists; (2) those undergoing close confinement as punishment for prison offences are no longer deprived of daily exercise in the open air for one hour; (3) the prison brand on the men's

¹ *Annual Report, 1922-1923. Quoted in the last Report.*

clothing disappeared in 1921, and was followed by the "close crop"; (4) the prison officers, instead of supervising the prisoners from raised seats during services in chapel, now have their places at the back and sides of the building as members of the congregation. The former compulsory daily service is replaced by one week-day service, "at which attendance is entirely voluntary"—and made by the majority; (5) since 1927, physical training, for those passed as fit for it by the Medical Officers, has been substituted for the monotonous exercise of walking round paths in the prison grounds.

"The results were so favourable, not only to discipline, but to the mental and physical condition of those who took part, that physical training has now become a regular feature of all prisons. . . . Selected prison officers are sent each year to the Army School of Physical Training at Aldershot to be trained as instructors."

Progress is more marked in the industrial direction. In 1934-5 only a daily average of forty-three men, all in local prisons, were employed in the low grade work of picking oakum, against 6,923 engaged in different kinds of manufactures. Farm work accounted for 521, building for 1,456, and domestic labours in the prisons for 2,162. The variety of the goods turned out from prison workshops is not generally realized. In 1931, owing to the economic crisis, it was necessary to reduce the staffs, and the hours of associated labour were perforce shortened in most prisons. The difficulty of providing occupation for an increased number of prisoners led to a Departmental inquiry into the whole question, and the appointment in 1934 of a Director of Prison Industries. Since then it has been possible to restore the longer working hours in most of the prisons; and the Commissioners hope that by the end of 1937 "a closer approximation to an actual eight hour day of associated labour" will have been made in all. Gradually the electrification of the prisons is being carried out by prison labour, directed by specially trained officers.

In 1923 Wakefield Prison was reopened as a training centre for selected men from the Midlands and North with

sentences of six months or more; and it has repeatedly been the place chosen for trying out new experiments. A weekly wage scheme was begun there in 1929, with such good effects that similar schemes have been adopted in the Borstal Institutions and the Convict Prison at Maidstone. An interesting venture was made, three years ago, of sending out a daily party of fifty carefully picked men to clear and cultivate a large area of land about seven miles from the prison. A hutted camp is now being established on the site, where the prisoners live and work from Monday to Friday. This scheme resembles the "open-air prison" which was set up in Sweden some years ago, and suggests the readiness of the authorities to use other penal methods than the traditional ones.

III

It is the educational developments of recent years that give the clearest indication of a new outlook in prison administration; of a nearer approach to "the individualism which is the inspiration of social justice and equity". A beginning was made as long ago as 1910 with the provision of two lectures and two concerts yearly in each convict prison. These are now given much more frequently, and even Dartmoor, whose remote position has made educational training difficult, is not excepted. After the War this effort to bring fresh food for thought and conversation to the prisoners was extended to some of the local prisons. Since the Commissioners' decision to organize a system of adult education (1923), the increase of evening classes, in a wide variety of subjects, has been a steady growth.

In this respect, too, Wakefield takes a leading place, with its record of 1,853 classes held during 1934, and a total attendance of 25,585 men; elementary arithmetic and English showing the largest number of pupils. The Housemaster's report points out that "in many cases classes at Wakefield are no doubt the first introduction to education since leaving the elementary schools". Some of the men were allowed

to enter for certain examinations, and several obtained certificates for shorthand or modern languages. First aid classes were also followed by examinations, and a large number of entrants obtained certificates or other recognition from the St. John Ambulance Association.

Libraries, of a sort, were attached to prisons at any rate before the 'sixties, for the matron already quoted mentions small collections of books at Millbank and Brixton. But these were mainly duplicate copies; and, with the exception of a few favourites of that time—such as *Uncle Tom's Cabin* and *The Wide, Wide World*—consisted of works of piety, histories, and bound volumes of a serious type of magazine. To-day, in all prisons, the libraries have been immensely enlarged; and there is a wide choice of titles, classed as religious, educational, and fiction. "Anonymous" had above 15,000 books in his charge at Maidstone, and each prisoner was allowed to exchange three weekly. In his experience, the order of popularity was (1) "Thrillers", (2) Biographies, (3) Good novels, (4) Travel books.

The Governor of Liverpool Prison reports that "the library is well patronized and the system of changing books when the men are in the newsroom gives them a more intimate touch with the library and a personal satisfaction in the direct choice of a book". At Parkhurst the library has been moved to larger premises and entirely reorganized. An up-to-date catalogue has also been issued to aid the reader's choice. The Director of Education, Isle of Wight, is Educational Adviser to the Governor, and by arrangement with the Seeley Library, Newport, the "latest and most authoritative books" are now available for convicts who are studying technical subjects. The great demand for books of this kind is met in other prisons by generous co-operation on the part of county or local libraries. The Commissioners have now created a new post of Librarian Officer in prisons; and the appointment of a special officer who, in many instances, has had a course of instruction at a public library, adds to the efficiency of the service.

Usually the evening classes in prisons are held by voluntary teachers, who sometimes travel considerable distances in their free time for this valuable work. At Wakefield, for example, they are drawn not only from the local educational centre, but from Bradford, West Riding, Dewsbury, and others.

Yet the whole organization of education in prisons has been built up since 1922, and may, therefore, be regarded as a rapid development. The story of its origin is to be found in a very interesting chapter of the book¹ in which Mr. Charles Douie—the Subaltern of *The Weary Road*—relates his post-War adventures. He was the first to have the position of "Educational Adviser to Wormwood Scrubs Prison" thrust upon him, and he held the post for five years, during which he acted as visiting tutor to the men, conducted Shakespeare readings among them, and introduced them to modern English poetry. He even brought it to pass that the first offenders at Wormwood Scrubs had a weekly play, acted by leading companies—a wonderful series that began with *The Tempest* and included plays by Sheridan and Bernard Shaw and Barrie. After the first performance, Mr. Douie wrote to the producer: "Surely no audience has ever been more appreciative. . . ." Watching the prisoners' response to comedy and tragedy, he became more than ever an advocate of humanizing treatment.

After all, it was no sentimentalist, nor amateur reformer, but the Lord Chief Justice who publicly acknowledged:—

"I often wonder when I see prisoners in the dock or look over a prison whether the people outside are really worth the sacrifice which they compel the people in prison to make. No doubt prison, with all its appalling faults, is necessary until we can find a better substitute, but at least society does owe to these unfortunate persons—some are no doubt wicked, but all are unfortunate—the duty of helping them as far as may be."

M. K.

¹ *Beyond the Sunset*. John Murray, 1935.

The Complete Hoaxer

By E. A. PERKIN

Indian Police

THE hero of the following exploits possesses no special gifts of mind or body, and in the matter of forgery his productions are often crude, yet he compels admiration by the manner in which he grasps his opportunities and judges the lengths to which impudence can be pushed.

About 1895 a child, who was given the euphonious name of Didalesar Sinna, was born into a poor family of clerkly caste and traditions resident in the county-town of Bolganj, in the Indian province of Magadhastan. The local educational facilities were sufficient to enable him to pass the matriculation examination of the nearest University, after which he obtained a very minor ministerial job in a Government office. Several years later, in 1925, fortune favoured him with a slight smile and he transferred to a better but still comparatively humble post under the High Court of Judicature at Patalnagar, the capital city of the same province.

Being by then the father of three children, he seems to have found it necessary to supplement the somewhat meagre pay which he drew as a dispatching clerk, whose chief duty it was to return the bulky records of cases sent up on appeal from subordinate courts. By mere chance his immediate superior discovered that he had obtained a payment order for twenty rupees for dispatching records on the 16th and 17th April, and had then altered the amount to forty rupees, which he supported by receipts forged on purloined railway forms and purporting to have been issued on the 18th. Unfortunately for him this date supplied the error into which

criminals are supposed always to fall, for it happened to be Good Friday, on which day the railway parcel office had been closed.

For this little error Didalesar was sent for trial to the local sessions court, where he put forward such a moving yet fictitious tale of woe about starving dependants and losses by theft, that the jury disregarded the evidence and declared him "not guilty". The presiding Judge, rightly scandalized, referred this perverse verdict to the High Court, as is permissible under the Indian Code of Criminal Procedure, and a conviction was duly recorded. Unfortunately the Judge here proved nearly as kind-hearted as the jury below, for he gave a sentence of only one day's imprisonment, at the same time expressing a pious hope that the prisoner would later find opportunity to retrieve his name and fortune.

He did.

Didalesar's next known lapse from the lily-white path was some two years later, when a little natural misunderstanding about the propriety of peddling cocaine resulted in six weeks' retirement. Soon after release he commenced canvassing in his home town, Bolganj, explaining to listeners that he was an M.A. in Economics (a happy choice of subject) and had been offered the opportunity of a post-graduate course in the University of Bakbay, twelve hundred miles away, should the necessary funds be forthcoming. This claim was well documented with forged letters from Bakbay, and he had "touched" a dozen persons for loans before the fraud came out. For this escapade he got a sentence of fifteen months, to be followed by three years' police surveillance; but the latter does not seem to have been very effective, for in 1929 and 1930 he was concerned in a perfect orgy of swindling.

He toured several towns, saying he had passed into the Indian Civil Service by competitive examination and would have to go to England for a year's training, but had insufficient funds and so would lose this golden opportunity of entering the élite of all Government services. In support,

he produced letters from Judges of the Patalnagar High Court itself. He supplemented the collections thus made by attending railway stations all over the province and telling heart-rending stories of how his pocket had been picked and a ticket to a distant place stolen ; nor was he averse from bilking lodging-house keepers or from pinching watches from unsuspecting persons who stood him meals.

When matters became too hot, he went to earth in Patalnagar itself by obtaining a job as temporary clerk in a teachers' training college, where during his brief incumbency the head clerk of the institution fortunately fell ill, so that his duties devolved on the junior clerk. These duties included receiving the students' fees and were enthusiastically carried out by the *locum tenens*, who, however, overlooked the usual little formality of putting the money through the account books. Unfortunately, as warrants were now out for his arrest for various frauds, the police were hard on his heels, and the adventurer soon found himself charged with seven different offences, for which he was booked to appear in four separate trials, all before different regional courts.

This was a horrible predicament, for each of these courts was empowered, and would probably be very much inclined, to give the maximum sentence of two years' imprisonment, and the accused foresaw the possibility of having to go into compulsory retreat for anything up to eight years. These fears received some confirmation when the first court gave him a two year sentence in March, 1930, and therefore he set about making the best of a bad job. Posing as an experienced typist and correspondence clerk, he tendered his services to the overburdened staff of the Patalnagar Jail, who accepted the offer with alacrity.

Didalesar thereupon proceeded to put the jail typewriter and notepaper to good use, for when he appeared before the court appointed to try the next offence with which he stood charged, that bench received a letter purporting to have come from the provincial Government's chief law officer. In it the hope was expressed that, if the accused should be

so unfortunate as again to be proved guilty, consideration should be shown to him in view of his late father's splendid, and incidentally imaginary, services to the State. The communication actually went so far as to suggest that this consideration should take the form of making any sentence passed on the accused run concurrently with the one he was already undergoing and not consecutively, as would normally be the case.

Strange to say, the Magistrate accepted this letter without making any reference to the prosecution, and in May passed sentence in the identical terms which the forged letter had suggested and which the accused desired. Even more astonishing is the fact that this hoax was successfully perpetrated twice more on the remaining courts, so that when his ordeals at last came to an end in the month of December, 1930, Didalesar was in the comparatively sound position of having to serve out only what was left of a two years' sentence, with the prospect of earning at least four months' remission for good conduct.

He was then transferred from the Patalnagar Jail to the one at his home town, where his arrival coincided with the receipt of an official letter from the head of the prison administration reiterating that in view of his father's outstanding services, the local Government had decided to release him as early as March, 1932. (Months later a handwriting expert was able to identify this letter as having been typed on the Patalnagar Jail machine, as had been all the others.)

Having telescoped at least eight years' imprisonment into something less than two, Didalesar decided to rest on his laurels. He conscientiously carried out his enforced duties to the entire satisfaction of his temporary employer, obtained full remission for good conduct, and was duly released from prison in October, 1931.

As a means of livelihood he then decided to set up at home in Bolganj as a "Court Compound" typist, his occupation being to type out copies of judgments and original petitions on behalf of litigants and lawyers appearing in

the local courts. Apparently there was severe competition in this particular line of business, so, as a preliminary, he embarked on a campaign to eliminate the excessive number of his rivals.

Early in February, 1932, the local District and Sessions Judge received, ostensibly from the Patalnagar High Court, instructions to regulate the number of professional typists working in and about the courts, and was told how to institute a system of licensing. Selected men were to be limited in number and must possess a matriculation certificate. On no account were men to be selected who had convictions for participating in any subversive movements against Government, but any little conflicts with the ordinary criminal law of the land might be overlooked—(for Didalesar has always been a loyalist). The Judge was given to understand that identical orders were issuing to his dozen other confrères in the province of Magadhastan, that his selections were to be absolutely final, and (perhaps the most important consideration of all) no registration fees were to be charged.

Although Didalesar filled the bill, yet results cannot have been quite up to expectations, for a month later came a peremptory order to the effect that these instructions were to be acted upon immediately, and adding, as an afterthought, that only men with ten years' experience were to be chosen. (The exact nature of this experience was not specified!) Yet a fortnight later the Judge received what purported to be a copy of instructions issued to a brother Judge some 200 miles away, to institute criminal proceedings against any unlicensed typists who persisted in carrying on their ordinary avocations in the vicinity of the Courts! Thereafter the Judge set about complying with the various directions received, and Didalesar had no difficulty in getting his name inserted in the attenuated list which was put up on a public notice-board.

By way of consolidating his position, after the lapse of another month, he caused the Judge to receive one more circular order, restricting the selection of typists to men born within a few miles' radius of the courts, and laying

down, at the same time, some minima, but by no means niggardly, scales of remuneration. There was a hint that someone in high authority would shortly come on circuit to inspect progress, and for guidance was enclosed a copy of a lengthy and entirely imaginary inspection note recorded by one of the Judges of the High Court on the working of a neighbouring tribunal, the bench clerk of which was alleged to have been summarily pensioned off for not seeing that the instructions about selecting and licensing Court Compound typists had been complied with. This inspection note contained some remarkable specimens of modern English, as for instance that "the Honourable Judge was depressed to see so many court typists all mess up together", and it contained some alleged Latin tags culled from no known dictionary; nevertheless the whole of it seems to have escaped suspicion.

As the local authorities had swallowed so much, Didalesar might well have thought himself secure; but here again he had fallen into another of the pitfalls which beset the poor criminal. He had overdone matters. The local lawyers began to find that the few men who alone had been granted licences were unable to cope with all the work that was going in the large and litigious town of Bolganj, and, therefore, their Bar Association humbly represented to the Honourable High Court through the learned District Judge that their number might be raised to fifteen. The High Court, sensing that something was wrong, handed the matter over to the provincial C.I.D., who proceeded to obtain specimens of the work turned out by various suspected typewriters, including Didalesar's.

This completely exposed matters, and by July, 1932, the experimenter was back in jail, while the police were investigating how he had got out from there in 1931 instead of 1937.

When this problem had been solved, and the necessary evidence collected, he was produced before the High Court, who made all the 1930 sentences consecutive instead of

concurrent, but at the same time suggested that in view of the involved nature of the proceedings, the local Government in their discretion might care to examine the possibility of remitting some of the period of incarceration. This was done, and on the 1st of November, 1932, Didalesar's combined sentences were commuted to a single one of four full years, to take effect from that same date. It was also decided not to go on with the proceedings instituted for playing what amounted to practical jokes on the Judge of Bolganj.

It might have been expected that in view of his record and proclivities, the jail authorities would regard all his actions with the gravest suspicion; but when, after three months, he was transferred to a bigger jail at Hataripur, no information about the nature of his activities seems to have been passed on.

Immediately on arrival at his new home Didalesar put his extensive and peculiar clerical experience at the disposal of the prison staff there, and was at once set to work in the office, thus obtaining access to all the official stationary as well as the much-to-be-desired typewriter. (At a later date it was discovered that in the jail admittance register his conduct, which had originally been shown as BAD, had been altered in heavy block letters to GOOD, but whether this metamorphosis preceded or followed his appearance in the office is not known.)

Some weeks later the jailor found in his office tray an official communication from the provincial Government saying that this particular convict's sentence was to take effect from the date of the first conviction recorded in 1930, and that his unexpired sentence, "which was of two years only," was to run from the date of his recommittal in November, 1932. The worthy official transferred this order in his own fair hand to the relevant jail register, and the original document has since become "untraced".

Nothing succeeds like success, so the convict proceeded by a similar *tour de force* to induce another jail official to alter

the date of recommittal from November, 1932, to the date of his rearrest in July of that year, thus saving another four months.

Having by these means reduced his sentence by considerably over half, Didalesar next turned his attention to securing his creature comforts, and produced a Government order which promoted him from the lowest to the middle division of prison classification. As he was already comfortably installed in the prison office, the chief reason for this manoeuvre was to become eligible for a better ration of food.

Within a short time he had so worked himself into the confidence of the jail staff that he was left in sole charge of all the correspondence receipt and despatch registers, which accounts for the fact that the Jailor of Bolganj suddenly began to develop sentiments of extreme gratitude towards his former protégé and to award him small periods of "extra-special" remission for imaginary good work done many months earlier. These found their way into the accommodating office tray and were duly entered up on his record.

It must be remembered that at the same time the convict, by his exemplary conduct, was also accumulating quite substantial periods of remission in the Hataripur Jail.

His date of release, as arranged by himself, was rapidly approaching when, on the 15th January, 1934, the province which he adorns was stricken by an earthquake, which in intensity has rarely if ever been equalled. Some cities were almost completely wiped out, and others, such as Patalnagar and Bolganj, were extensively damaged. Didalesar took advantage of the confusion to get another small remission credited to him, and took a formal farewell of the Hataripur Jail on the 24th January, 1934, instead of the 1st November, 1936, as should have been his fate. On arrival home, he had the sense to explain that his somewhat premature reappearance was due to the Government's clemency in amnestying prisoners after the earthquake—which plausible story sufficed for the harassed authorities, who had other more important affairs on hand.

Didalesar enjoyed his well-earned freedom and rest for over six months, during which period he did not come into conflict with the law; but in August he made yet another error of judgment, this time attributable to greed or economic pressure, which brought his holiday to a close. Large sums had been collected to afford relief to those who had suffered loss during the earthquake, and the administration of some of these charities was vested in the District Magistrate of Bolganj. Didalesar prepared an application to that authority for a grant for the repair of his house, and then forged thereon an order to pay the applicant the modest sum of fifty rupees.

As he was unacquainted with the signature of the official in question, it was not a particularly convincing piece of work and was immediately detected at the office of payment; so this plan for getting rich quickly failed. He had not, however, entirely thrown caution to the wind, for he had had the sense to ask an acquaintance to present the bogus payment order and had thereby covered up his tracks sufficiently to avoid being run in for this particular escapade. It was enough, however, to draw the attention of the C.I.D. to his absence from prison, and a study of the reasons leading thereto resulted in his being taken back to serve the unexpired portion of his four years' sentence. But worse was to follow, for an unsympathetic court awarded him another four years for the series of forgeries which had secured his premature release from Hataripur Jail, added to which the poor man has been put into the lowest class of prisoner reserved for recidivists.

Our hero is a thorough rascal, although he has nothing to show for all his pains, and he deserves no sympathy, although he can still draw copious tears from any prison visitor. But at least one can salute a persistent trier and speculate on what his future may have in store.

NOTES FROM THE FORCES

RETIREMENT OF SIR HERBERT DOWBIGGIN

A FAMOUS POLICE OFFICER

SIR HENRY DOWBIGGIN has retired from his position of Inspector-General of Police, Ceylon, after thirty-six years' service. He joined the Ceylon Police on 1st January, 1901, and in his farewell message to the Ceylon Police Force he says:—

"If I could go back thirty-six years and be given the choice of again joining the Ceylon Police or of taking up any other occupation or profession, I would, without any hesitation, join the Ceylon Police. I would do so for two reasons: the absorbing interest of the work and the happy associations connected with it. I have spent thirty-six very happy years in the Force, and I am quite sure that these years could not have been spent more happily in any other work."

He can look back on this period with a sense that much progress has been made in police organization and administration in Ceylon. Eight out of the nine provinces are now applying for additional police. The scale of pay of constables has been raised. In 1901 the pay of a constable in the Third Class was only Rs. 15, and First Class Rs. 22/50. A constable now starts on Rs. 27 a month and, provided his work and conduct are satisfactory, he can receive nineteen increments during his course of service as constable. The maximum pay of a constable is now Rs. 50.

Better quarters have now been provided for constables and sergeants, as well as improved uniform and other accoutrements. The Police Training School has been removed from what were decidedly unsanitary buildings to a much more satisfactory home. A Pensioners' Corps has been formed to help men of good character to find employment when they leave the Force. A Boys' Brigade has been started for the sons of constables, and here the senior boys can earn pay. One in every ten of the present constables has been drawn from the Brigade. Three police schools for boys have been established, and, as a result, the general standard of candidature for the Force has been unquestionably raised.

Sir Henry Dowbiggin has always taken a keen interest in clubs for boys, believing them to play an important part in removing some of the incentive for crime. "The benefit of these Clubs to the members," he says, "has only to be seen to be appreciated, and I can assure all who have helped in looking after these Clubs and our friends who have been so generous in supporting them that they are rendering service of very great value to the

Police Gold Medal Essay Competition

RULES FOR THE 1937 COMPETITION

1. The Competition shall be held annually and shall be open to serving members of regular Police Forces within the Empire or Mandated Territories. Any question as to the eligibility of any competitor shall be determined by the Council.

2. His Majesty's Gold Medal and a cash prize of thirty guineas will be awarded for the essay which is adjudged to be the best, provided it is considered of sufficient merit, and second and third prizes (of twenty guineas and ten guineas respectively) will be awarded under the same condition for the essays adjudged to be next in order of merit.

3. (a) Essays must be the original work of the competitor.

(b) Essays must not be less than 7,000 or more than 11,000 words in length and must be typewritten and submitted in triplicate.

(c) Where a reference is made to any published work the title must be quoted in a footnote.

4. Essays must be submitted ANONYMOUSLY. Each essay must be accompanied by a sealed envelope bearing on the outside a nom de plume or motto and containing the competitor's name, rank, Force, and address.

5. The Council may at their discretion appoint such persons as they think fit to act as Referees or Judges of the Essays under such conditions as they may prescribe.

6. The award of the Council shall be made public in such a manner as the Council shall think fit, and any essays submitted for the competition and adjudged of sufficient merit, may be published by the Council in *The Police Journal* or otherwise.

SUBJECT OF THE ESSAY FOR 1937

"The Control of Crowds by Police in connection with Demonstrations, Processions, Strikes and Riots."

Essays must be submitted on or before 1st November, 1937, to—

THE SECRETARY OF THE COUNCIL OF THE
POLICE GOLD MEDAL ESSAY COMPETITION,
HOME OFFICE,
WHITEHALL,
LONDON, S.W. 1.

THE POLICE JOURNAL

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

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boys who are thus enabled to lead honest lives, and acquire self-respect which is the first element in good citizenship. It is environment that often makes the criminal. If a boy is provided with a roof over his head and has opportunities of playing games, is able to secure work, and realizes that as a member of the Club he is working for the common good, the urge to commit crime ceases. It is the youthful offender that is deserving of consideration, for it is almost impossible to reclaim the hardened criminal. Any service which can be rendered to the youth of the country to prevent him from becoming a criminal is well worth while.

"It is entirely by the goodwill of members of the public that it has been possible to maintain these Clubs, and in thanking all who have so generously supported these Clubs in the past, may I take this opportunity of making the request that their support and encouragement which are so much valued may be continued.

Sir Henry has some interesting remarks to make on the criticism, raised in some quarters, that militarization has been the keynote of police training in Ceylon. "I have been a policeman for thirty-six years, and no one is more conscious of the difference that lies between the duties and responsibilities of a soldier and of a policeman. In a total Force of 3,233 men it is necessary to train sergeants, sub-inspectors, inspectors, and officers to control and command men. I have not discovered any better way of training constables to habits of mental alertness, disciplined steadiness, and instant compliance with an order, or of training sergeants, sub-inspectors, inspectors, and probationers to control a body of men and to be self-reliant in an emergency than by the lessons which are learnt on the parade ground. A Police Force composed of men who cannot move and act in an orderly and disciplined manner is of little use to the public it is required to serve. If drill was the only training that a police officer on appointment received there would be grounds for criticism. A visit to the Police Training School will indicate to any person interested that drill, though a necessary part, forms but a small portion of the training which a policeman goes through on first appointment. His instruction includes law, the investigation of crime, his duties, responsibilities, and conduct towards the public, First Aid and saving life from drowning, and every other branch of police work."

Sir Henry Dowbiggin gives up his work in Ceylon amid universal regrets, and we may perhaps add our own word to the many congratulations and expressions of goodwill which he has received. For from the moment THE POLICE JOURNAL came into existence, and even in its pre-natal period, Sir Henry Dowbiggin has taken the keenest interest in its existence, and has been one of its most loyal supporters. We venture to express the hope that, although he has resigned from the post of Inspector-Generalship, his services will not be lost to the Police Service as a whole, for whose efficiency and welfare he has spared no effort in his long record of faithful work.

Police Gold Medal Essay Competition

The Council of the Police Gold Medal Essay Competition have the honour to present their report on the Competition which closed on the 1st November, 1936. The subject was:—

"WHAT STEPS CAN BE TAKEN EITHER BY LEGISLATION OR BY POLICE ACTION TOWARDS IMPROVING THE CIRCULATION OF TRAFFIC AND THE REDUCTION OF ACCIDENTS."

The number of essays was about the same as last year, the proportion from abroad being higher than usual, namely 20 per cent of the total. The standard was, perhaps, not quite so high as it has been.

The essay of the winner was outstanding, but the Council had such difficulty in placing the next two in order of merit, that they decided to divide the 2nd and 3rd prizes, bracketing the two essays as equal second.

Awards were made as follows:—

His Majesty's Gold Medal and First Prize of thirty guineas:—

R. P. Wilson, Chief Constable, West Sussex Constabulary.

Second and Third Prizes (twenty guineas and ten guineas):—

F. T. Tarry, Chief Constable, Exeter City Police.

W. A. Bourne Price, Superintendent of Police, Howrah, Bengal.

The following competitor has received "Hon. Mention" for his essay:—

Arthur Cain, Sergeant, Metropolitan Police.

The following competitor has received "Mention":—

R. J. Preston, Constable, Salford City Police.

The
POLICE JOURNAL



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THE POLICE JOURNAL

Recent Judicial Decisions

MURDER—FRESH MEDICAL EVIDENCE HEARD IN EXCEPTIONAL
CIRCUMSTANCES

R. v. Harding

(190 Criminal Appeal Reports, Vol. 25)

THIS was an interesting case in which the Court of Criminal Appeal decided to hear additional evidence from the Governor of a Prison, himself a medical man, who happened to have been present in his capacity of Governor, at the trial, and who formed a different opinion from that given by the doctor who conducted the post-mortem and gave evidence at the trial.

The appellant was convicted of the murder of her infant child and sentenced to death. The following statement of facts was taken from the judgment of Mr. Justice Finlay:—

“The appellant was a married woman of 31 years of age and had four children, three of whom were older than the infant to whom the charge related. The appellant’s husband was a traveller, and before 23rd December, 1935, the family had been living in Maidstone. The infant to whom the charge related was born on 26th June, 1935. The appellant had a sister-in-law, Mrs. Gladman, who lived in Chichester, and she and her husband and the children were to go to stay with the sister-in-law on the day before Christmas Eve. There was evidence that neither the appellant’s mother, nor the sister-in-law, knew that the last baby had been born. The appellant had not been in communication with her

mother for some time. Also there was evidence that the appellant did not take the baby's perambulator with her to Chichester, and, moreover, that while the appellant's sister-in-law had room for three children she had not room for four. On 8th December the appellant had caused an advertisement to appear in a Kentish newspaper, and had also advertised elsewhere for someone prepared to adopt the baby.

"On 23rd December the appellant and her husband and children went to Chichester by train and reached the railway station there about 3 p.m. The husband and the three older children then went to the house of Mrs. Gladman, and the appellant carried the baby along the path of a canal bank, where she was seen by two different groups of witnesses. The first group saw her with the baby, and some of them saw her sitting on a seat apparently suckling the child. One of them was so much impressed by the strangeness of her sitting on the seat for so long a time on a bitterly cold day, that he watched her for an appreciable time. Somewhat later in the afternoon, the appellant was seen by other witnesses along the canal, and then the baby was no longer with her. Two boys, who had a spaniel by the canal on that afternoon, saw an object in the water, and the dog retrieved it. It was thought at first that that object was a doll, but the boys discovered that it was the body of a child and informed the police. The body was examined by a doctor, who formed the opinion that death had been due, not to drowning, but to shock. The appellant walked from the place by the canal, where she had been with the baby, to the house of her sister-in-law, a distance of some 3 miles, and arrived there at 5 p.m. She entered without greeting her sister-in-law, and then left the house in order to do some shopping with her husband and came back about 8 p.m. The police came to the house and when the appellant saw them she said, 'Shall we go into the front room?' and there she made a statement to them, in the course of which she said:—

"On my way I went along the canal bank. I sat down on the seat. I became rather worried whether this person

would take the child'—this is, a person expected or hoped to become an adopting parent—'and I became rather giddy and faint. When I was feeding baby I fainted right off. When I came to I missed the child and I looked for it; I looked around for it and I never dreamed that I should find it in the water. It was such a shock for me, when I came to, to find my baby gone. I couldn't think what had happened to it. I suppose, whilst I was in the faint, it had rolled in the water. When I realized where it was, it so frightened me, that I was afraid to tell my husband.'

"The appellant gave evidence on her own behalf and admitted that neither Mrs. Gladman nor her mother knew that the infant to whom the charge related had been born. She said that she had not been in communication with her mother for the last two years, and that she was walking along the canal bank, because she thought she would go and see her mother, whom she had not seen for a long time. Her mother, she said, lived in that direction. She sat down on the seat by the canal and there fed the baby; she became giddy and faint, and when she came to, missed her baby; she was lying near the water on the tow-path, and saw the baby in the water. She went on to say that she tried to reach the baby with a piece of wood, and then got frightened and went away."

The Lord Chief Justice in the course of his summing-up said that the prisoner had been found guilty after an eminently fair trial and after an admirable summing-up upon which not a word of criticism could be suggested.

He went on to deal with the evidence of the doctor called for the prosecution and said:—

"The point of that evidence was that death by shock, as distinguished from death by drowning, pointed to a sudden and complete immersion of the infant's body in the cold water of the canal. It is quite obvious that the attention, not only of the witness, but of counsel on both sides, and of the Judge and the jury, so far as that critical matter was concerned, was directed to the effect produced by immersion, which

was rapid in point of time and complete in point of extent."

(After referring to the evidence of the doctor, and certain questions put by a member of the jury, His Lordship continued):—

"It is apparent that the mind of, at any rate, one juror was clearly directed to the question whether the symptoms disclosed by the post-mortem examination, and regarded by the doctor called for the prosecution as pointing clearly to the throwing of the baby into the water, as distinguished from symptoms which might have been found if the baby had fallen from the arms of the mother straight into the water, might be attributable to the other antecedent. The answer was given that, although possible, it was very unlikely that the signs observed, as distinguished from signs of drowning, would be found if the baby had fallen straight from the mother's arms into the water, and that 'very unlikely' was translated ultimately into the words, 'so very unlikely as not to be worth considering.' One cannot help observing, with regard to some of those questions, a combination of essentially different matters, which are so often wrapped up where a medical witness is being questioned. The ultimate problem being to find out what has happened, questions are asked as to the probability of such-and-such an effect being found. That, of course, involves the further question as to the probability or improbability of the appropriate cause having been made manifest, and it is very important to distinguish between the question: Was the particular cause more likely to have occurred than some other cause? And the essentially different question: If the cause had occurred, would the effect follow?

"It is clear to anyone who considers the full note of this evidence that throughout the case the minds of all concerned were being directed to the problem: Could these signs of death by shock, in sharp distinction to the signs of death by drowning, have made their appearance if the child, not being thrown, had suddenly fallen into the water? In other words,

everybody was considering the rapidity and the degree of the immersion. Now this Court has been asked to-day, in circumstances which are quite exceptional, perhaps unprecedented, and never likely to be repeated, to hear further medical evidence, and we have had the great advantage of hearing the evidence of the distinguished medical gentleman who now has the responsible duty of being Governor of Holloway Prison, where he is also the experienced medical officer. It happens that he heard the evidence, at the trial, not as a witness, nor as a potential witness, but because, in his capacity of Governor of Holloway Prison, he was present in the Court. He has been called to offer his evidence, and in the peculiar circumstances we have thought it our duty to hear that evidence. He has shown clearly, if his evidence is accepted, as it is, that shock and death from shock may well be due to the fact that water goes up the nostrils. In other words, the question is, as between shock and drowning, not what was the area of bare skin which suddenly came into contact with cold water, but were the circumstances such as to permit cold water suddenly to go into and up the nostrils? He described the pathological and physiological effect of the entry of cold water in that way; and if that view is right, it follows that the rapidity of the immersion and the completeness of the immersion become possibly minor considerations, and in tracing the possible cause of death the important question is: 'Was there such a sudden entry of cold water up the nostrils as might have such an effect upon the nervous organization of the body as to cause the heart to be made void of blood and bring about death by shock? In his opinion it is clearly possible. Of course, he does not express a view—it is not a medical question—whether the antecedents are likely to have taken place, but he has no doubt at all that, given the cause, the effect would follow.

"We cannot help feeling that, if evidence of that nature, or directed to that point, had been in the hands of the defence at the Assizes, the course of this trial would of necessity have been different. The line of cross-examination would have

been different; the addresses to the jury would have been different; and undoubtedly the summing-up of the Judge, both as to what it says and as to what it does not say, would have been different."

It is quite true, as has been pointed out for the prosecution that "apart from the moment immediately preceding the event which brought about the death of the child, there were circumstances tending to excite suspicion, to indicate motive, and to make it seem probable that the appellant was guilty of the crime which was charged. But on the matter, which was the very pith of the case at the end, how exactly did the child come into contact with water so as to die from shock, the crucially important view, which has been clearly laid before this Court by Dr. Mathieson, was entirely absent. It had occurred to nobody. It was suggested by nobody. It was not the subject of any observations.

"The question for this Court to consider is whether, if that evidence had been given before the jury, it might have had the effect of raising in the minds of the jury a reasonable doubt. The function of the prosecution is, of course, to establish the case beyond a reasonable doubt. If it fails to fulfil that condition, the prisoner is entitled to be acquitted. The burden of proof is never upon the prisoner. Acquittal must follow if the evidence is such as to cause a reasonable doubt, because that is only another way of saying that the prosecution have failed to establish the case.

"Looking at this evidence with care, and recognizing the force of the rest of the evidence in this case, we are clearly of the opinion that, if this evidence had been offered in the Court below, there might have been upon the part of the jury a reasonable doubt as to the guilt of the appellant; or, to put it in another way, we cannot say that, if that evidence had been offered, the jury must inevitably have come to the same conclusion. In those circumstances the only conclusion which is possible for this Court is to say that the appeal must be allowed, and the conviction quashed."

ADMISSIBILITY OF EVIDENCE DIRECTED NOT TO CREDIT BUT
TO FOUNDATION OF THE DEFENCE

R. v. Phillips

(Reported at page 17 of 26 *Criminal Appeal Reports*)

The appellant was convicted of incest mainly on the evidence of two of his daughters, aged 11 and 12. The defence was that the charge was a plot engineered by the mother who had schooled the children as to what they should say. In cross-examination each of the children was asked whether they had, on separate occasions, each admitted to a different third party, that their evidence had not been true, when, in November, 1935, the appellant had been convicted of indecently assaulting one of them, and that it had been merely a repetition of what their mother had told them to say.

The defence wished to call two women to prove that this was so, but the Judge at the Assizes excluded the evidence upon the ground that the cross-examination of the children had been directed solely to credit. In the course of his judgment the Lord Chief Justice said:—

"... the matter having been faintly adumbrated and the point not having been fully argued, the Judge excluded the evidence of the two women as being irrelevant. He evidently took the view that the questions had been put to the children for the purpose of testing their credit, but that view was not accurate. The purpose and effect of those questions was to raise the defence on which the appellant sought to rely. The substantive part of his defence was that the children, upon whose evidence alone the case for the prosecution rested, were not speaking for themselves, but for the designer and controller of the whole matter, their mother.

"Whatever the merits of that defence might have been proved to be, it was, at any rate, a defence which the appellant was entitled to raise. The questions were directed not to the credibility of the two witnesses, but to the very foundation of the appellant's answer to the charge. It was not denied by

counsel for the Crown, and it appears to us that the evidence was wrongly excluded, because a misapprehension arose from the brevity of the manner in which the matter was dealt with. If the evidence had been admitted, it is impossible to say what effect it would have produced. The witnesses might not have produced a favourable effect upon the jury, and even if they had done so, the jury might not have disbelieved the story of the two girls. On the other hand, the jury might have taken the view that the charge was a pure invention. That being so, it seems to this Court, especially in a case which exhibits an unpleasant atmosphere of a suspicious kind, impossible to say that, if the evidence excluded had been allowed to be heard, the jury must certainly or would inevitably have arrived at the same verdict. The appeal must, therefore, be allowed and the conviction quashed."

The decision in this case reminds one of the story of the late Frank Lockwood who, when faced with the difficulty of calling a witness to contradict the answer given to him in cross-examination by a prosecutrix in a rape case, called his witness and asked, whether having heard the prosecutrix give evidence, she was a person whom he would believe on her oath. Upon the answer "No" being given he is said to have remarked: "My Lord, I leave it to my learned friend to ask him why." It should be added that the question he had put in cross-examination to the prosecutrix was whether she recognized his witness and whether she had not, in fact, slept with him on the previous night.

COMMENTS ON OMNIBUS COUNT IN ONE INDICTMENT CHARGING
AN AGGREGATE OF OFFENCES OVER A LONG PERIOD

R. v. Robertson

25 Criminal Appeal Reports

The appellant was convicted of obtaining food by false pretences and of obtaining credit by fraud—he was sentenced to six months' imprisonment. The first count of the indictment was in the following terms :—

"First Count. Statement of offence: Obtaining goods by false pretences, contrary to section 32 (1) of the Larceny Act, 1916. Particulars of offence: Louisa Robertson and John Robertson on divers dates between the 14th day of June, 1935, and the 27th day of February, 1936, at Brighton, in the County of Sussex, with intent to defraud, obtained from the Regency House Private Hotel (Brighton), Limited, food to the value of £197 6s. 5d. by falsely pretending, etc."

In giving judgment the Lord Chief Justice said :—

"There is a word to be added with regard to the indictment in this case. No complaint was made on that matter in the Court below, but the indictment is not in the proper form. It is elementary that a count in an indictment should not charge more than one offence. It is obvious, however, that the first count in the indictment before us deals with scores, if not hundreds, of offences. The charge was laid as one of obtaining, with intent to defraud, food from an hotel over a period beginning on 14th June, 1935, and ending on 27th February, 1936—that is to say, a period of over eight months, on every day of which it is alleged that the offence was committed.

"It is said that that form of indictment is becoming 'common'; it ought to be stopped. It is difficult to understand why an indictment should be framed in that form. It is said that the object was to have all the material before the Court, but that could have been achieved by charging the last of the offences, and giving evidence of the others. It is to be hoped that this kind of indictment will disappear. In the present case if objection had been taken to the indictment, it would no doubt have been promptly amended, and no injustice was, in the circumstances, done to the applicants."

Applications refused.

Scientific Aids in Criminal Investigation

By F. G. TRYHORN, D.Sc.(Liv.), A.I.C.

Professor of Chemistry, University College, Hull

PART VIII

THE EXAMINATION OF BLOOD AND BLOOD-STAINS (*continued*)

IT was pointed out in the last article that although the recognition of the species from which a given blood sample is derived is possible from the examination of the shape and size of the corpuscles, this method is not of frequent application in practice: its use is precluded except in those cases where the blood specimens have not had time thoroughly to dry, since thorough drying causes irretrievable distortion of shape of the corpuscles. It seems desirable, therefore, that a more detailed description should be given of the preliminary chemical tests for the recognition of blood to which reference was made at the end of the last article.

Benzidine Test.—This is one of the earliest tests proposed for the testing of stains suspected to be blood, and probably the first which was of real use.

The reagent used is a 2 to 5 per cent solution of benzidine in glacial acetic acid: this solution must be kept in a glass-stoppered bottle since it deteriorates rapidly when exposed to air: it is, indeed, desirable whenever possible to make up a fresh solution when required, unless the procedure described later is adopted. The addition of this reagent to a suspected blood-stain, followed by the addition of hydrogen peroxide solution, produces a deep bluish-green colour *within a few seconds* with oldish blood, and instantaneously with blood less than a few days old.

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The following particulars of application are applicable to the benzidine and the two following tests:—

(a) If the suspected blood is present as a dry clot, a piece of filter-paper, or good quality white blotting-paper, should be moistened with physiological saline solution and pressed against the clot for 10 to 15 seconds. At the end of this time a drop of benzidine solution and then a drop of hydrogen peroxide solution should be placed on the moistened filter-paper. The development within a few seconds of a bluish-green colour indicates that the stain *may* be blood.

Should blotting-paper be used in place of chemical filter-paper a "blank test" should be made by adding drops of the benzidine and hydrogen peroxide solutions to a separate piece moistened with physiological saline. The object of this is to make sure that there are not present in the blotting-paper impurities which will give a positive result with the benzidine test. The hydrogen peroxide solution used may conveniently be that sold by druggists as "10 volume" strength: this contains about 3 per cent of hydrogen peroxide and should be fresh. Unless kept in scrupulously clean bottles hydrogen peroxide solution quickly decomposes and becomes useless.

For applying reagents in this and similar tests, pieces of glass tubing drawn out in a gas flame to a narrow capillary tube at one end (cf. a fountain-pen filler) are most suitable. Separate tubes must be used for applying the benzidine and hydrogen peroxide solutions, and it is of the utmost importance that the stock solutions of the reagents shall be kept free from mutual contamination.

(b) If the stain is a dispersed one on a fabric, as distinct from a clot, the test is made preferably on a fibre drawn from the material by a pair of forceps: a fibre about $\frac{1}{4}$ in. long drawn from the stained area is ample. This should be placed on a watch glass and one drop of physiological saline solution added. If the stain is believed to be more than a few days old the fibre should be left to soak for 10 to 15 minutes: in this case the watch glass should be covered to prevent evaporation of the liquid. Then, as before, drops of benzidine

and hydrogen peroxide solution are added: the development rapidly of a bluish-green colour indicates the possibility of the stain being one of blood.

(c) If confidence is to be placed in the results of the benzidine or of the two following tests it is essential that the reagents employed shall be known to be freshly prepared, or, at any rate, free from deterioration. Dust particles falling into bottles while the stoppers are out are able to cause decomposition of most of the reagents used in these tests. Keeping solutions in bottles that are only half-filled also promotes decomposition.

It has, however, been found possible to preserve these solutions for long periods (*e.g.* for more than eighteen months) by sealing them in narrow glass tubes. These tubes are made conveniently by drawing out glass tubing in a flame to a diameter of about $\frac{1}{10}$ – $\frac{1}{15}$ in.; the narrow tubes are then cut in lengths of about 3 inches, one end being sealed by holding it for a moment in a gas flame. A couple of drops of reagent are introduced into a tube by means of another piece of tubing drawn out to the fineness of a coarse hair, so that it will slip easily into the wider tube: after the reagent has been thus introduced it should occupy the lower 2 inches of the tube: the remaining open end can then be sealed in a flame. For a test two such tubes, one containing benzidine solution and the other hydrogen peroxide, are required. To apply the reagents from the tubes it is best to break one end of a tube in the barrel of a small key, and then, holding the broken end against the material (*i.e.* soaked fibre, or filter-paper prepared as in (a) or (b)), to break the other end: the reagent will then run out of the tube easily.

It has further been found convenient to use, instead of hydrogen peroxide in these tests, a 5 to 10 per cent solution of sodium perborate in water or acetic acid: this solution is less liable to decomposition.

The chief drawback about the benzidine test is that many substances other than blood give with it a positive result. It is the more unfortunate that many of these substances,

such as stale urine, decomposing food stains, gluten, and certain fruit juices, are likely to be found on garments which are being tested for blood-stains. It is, therefore, best to regard this test as a sorting-out one: its value lies in the fact that a negative result may be taken almost as conclusive evidence that the stain is not blood.

Kastle-Meyer Test.—This test employs, instead of benzidine, a solution of phenolphthalin. This substance may be purchased through the British Drug Houses, Ltd., but is more conveniently made as required from phenolphthalein, which may be obtained from any druggist. To prepare the reagent solution 30 grains of phenolphthalein are added to a solution of 1 ounce caustic potash in 3–4 ounces of water. The solution has a very deep red colour; it is then boiled whilst 1 ounce of zinc dust is gradually added. After 10 to 15 minutes' boiling the solution will have become colourless: the phenolphthalein will then have been converted into phenolphthalin. When cold, it should be decanted from any undissolved zinc and stored in a rubber-stoppered bottle containing a few pieces of zinc. It is used, together with hydrogen peroxide or sodium perborate solution, as the second reagent, in a manner analogous to the benzidine solution in the previous test. In the presence of even very minute traces of blood the Kastle-Meyer test produces a strong rose-pink coloration. Care must be taken to keep the neck of a bottle containing Kastle-Meyer reagent scrupulously clean: otherwise red stains may develop which may contaminate the contents of the bottle: for this reason the capillary tube method is particularly useful for storing the Kastle-Meyer reagent.

In comparison with the benzidine test the Kastle-Meyer test is both more sensitive and more specific. It has been subjected to careful scrutiny at various times since its adoption in 1902. Many substances such as urine, saliva, perspiration, fæces, food-stuffs, soap solutions, were found to give negative results with this test, although they responded positively to the benzidine test. Certainly there are many chemical

substances which react positively with the Kastle-Meyer reagent, but they are unlikely to be found in circumstances where blood-stains occur. It may therefore be said that a stain which gives a positive result with this test is very probably blood. The rose-pink colour given in this test is very distinctive when the test is made on an extract of a stain: it is not very prominent on fabrics other than white, or faintly coloured ones, when applied direct to a stain. It is advisable to use the technique described in (b) above.

The sensitivity of the test is remarkable; experiment shows that 40 gallons of water containing one drop of blood give a positive reaction, if the test is made on a pint or so of the water in a tall glass cylinder, so that the colour of a column of liquid about 15 inches high can be examined. It should be noted that the colour in this test must develop in a few seconds for the result to be regarded as positive; certain samples of "pure" water, containing traces of organic impurities, *gradually* develop a pink colour when submitted to the Kastle-Meyer test. It has been found also that this test is useful in recognizing traces of blood in soapy water: here again it may be noted that solutions of certain types of soap give a pink colour with this test after standing for a few minutes. Brief boiling of a soap solution containing a trace of blood does not destroy its responsiveness to the test, but prolonged boiling does. The value of this test will be apparent in cases where, for example, a test is to be made of water in the trap of a wash basin at which it is thought a suspect has attempted to remove blood from his hands or clothes by washing.

Leuco-malachite Green Test.—A 2 to 5 per cent solution of leuco-malachite green (tetramethyldiamino-triphenylmethane) in glacial acetic acid may be used in conjunction with hydrogen peroxide or sodium perborate as a sensitive test for blood. It has not been subjected to as exhaustive an examination as the Kastle-Meyer test, but appears to be equally specific, and has the advantage, in some degree, of giving a deep green colour in a positive reaction, which is much more intense than the rose-pink of the Kastle-Meyer test. In the writer's

experience the latter is preferable when suspected weak solutions of blood are being examined, and the former when a test is being made on a fragment of fibre or fabric. In the test the leuco-malachite green, which gives in acetic acid an almost colourless solution, is converted into the strong dye-stuff, malachite green, which gives an easily discernible coloration even on a strongly-coloured fabric. This test is also specially suitable when technique (a) above is used in making preliminary tests.

As with the other reagents, staining will occur round the necks of bottles containing leuco-malachite green solution unless they are kept thoroughly clean. When stored in capillary tubes the reagent appears indefinitely stable.

All these three tests give positive reactions even with blood-stains of very great age: in the case of old stains, however, it may be necessary to extract the stain with saline solution for several hours, or even a day, before sufficient has gone into solution to respond to the test: in some measure the time needed to prepare the extract indicates the age of the stain. No precise deductions may be drawn on this point, however, because the ease with which a stain is extracted by soaking in saline solution depends on its history as well as its age.

Recently a test has been described for blood which promises to have advantages over those already described. This test depends on the fact that dried blood is able to bring about a chemical reaction between hydrogen peroxide and certain chemicals (e.g. 3-amino-phthalhydrazide) which is accompanied by the evolution of light that may easily be seen in a dark-room. Fresh blood causes only a feeble luminescence: dried blood, in which the hæmoglobin has been partially or completely converted into hæmin, causes a bright blue, persistent luminescence. It is claimed that the test is specific for blood, inasmuch as it is a test for hæmin and not for hæmoglobin. Further, the greater the age of the blood, and therefore the greater the hæmin content, the more persistent is the luminescence.

If, as seems possible, this test proves really specific for blood it will afford an extremely useful technique in blood examination.

Microchemical Tests for Blood.—At various times tests for blood have been proposed based on the microscopical shape and appearance of crystals obtainable from it by chemical means. Little reliance can be placed on most of these, especially on those which claim to differentiate between blood of different species. Very little indeed is known scientifically about the factors which affect the form and growth of crystals, and until more is known it would be rash to place reliance on empirical or rule-of-thumb tests depending on such phenomena. Only a brief account will therefore be given of these tests, and only those will be included that have real semblance of authority.

Reference has already been made to the gradual conversion of the hæmoglobin of blood into hæmin during the ageing of a stain: this change occurs in a few minutes when a trace of blood is boiled with glacial acetic acid containing a small amount of salt. In the original technique of applying this test a trace of the suspected material was warmed on a microscope slide with a drop of glacial acetic acid containing a trace of salt: on cooling, the presence of blood is confirmed if minute dark brown crystals of hæmin are observable under the microscope. The crystals so obtained are extremely minute, and in recent years a much improved technique has been devised which renders much more certain the obtaining of considerably larger hæmin crystals if blood is in fact present. In laboratory practice this test (Teichmann's test) is very useful in obtaining a confirmation of the presence of blood after applying one or other of the tests described above. Unless the modern technique of Beam and Freak is used there is always some uncertainty in obtaining hæmin crystals, and several modifications have been proposed to render this test more certain.

Little need be said of the attempts to differentiate between blood of different species by the shape of the hæmoglobin

crystals given by the blood. The uncertainty of the method and the lack of scientific basis would render such tests of little value, even if much more precise tests of a totally different character were not now available.

Spectroscopic Examination of Blood.—Suspensions raised by positive results in tests so far described may be proved or disproved by the spectroscopic examination of blood. This examination is based on the specific power which hæmoglobin and its products possess of absorbing light which falls on them. White light, from the sun for example, is shown to be complex and to consist of lights of various hues or qualities when it passes through a prism-shaped piece of glass.

Light is refracted, or bent, when it passes from one medium, *e.g.* air, into another, *e.g.* glass: light of different colours is refracted in different degree, bluish light being refracted most, red the least. White light thus issues from a prism as a bundle of colours, or spectrum, in the order violet, indigo, blue, green, yellow, orange, and red. In ordinary white light substances appear coloured if they have the power of abstracting certain parts of the spectrum and reflecting the rest: thus a red object, generally speaking, appears red to the eye because it is able to absorb from white light falling on it all of the blue and green components, and to reflect only the red, and perhaps the orange. On the other hand a green object will reflect the green components of white light whilst it absorbs the red and blue. Many substances do not absorb continuous sections of the spectrum, but take out selectively a number of narrow portions, which are then referred to as the "absorption bands" of the substance.

By means of a spectroscope, an instrument in which light may be passed through a train of glass or quartz prisms, light may be split up and spread over a spectrum of considerable length. To specify any particular portion of the spectrum the concept of light as a succession of waves through space may conveniently be used. The light of different colours may then be regarded as varying in wave-length, blue light consisting of the shortest, and red of the longest

waves. The length of these waves is measured usually in ten-millionths of a centimetre, a quantity known as the Angstrom unit. It is possible thus to refer to the wave-length of any particular colour of light in terms of this unit, and this in turn refers that light to its place in the spectrum: and therefore when a substance is able to absorb light selectively it is possible to say that it possesses an absorption band between such and such wave-lengths, or more usefully, that it shows maximum absorption at a particular wave-length. By means of the spectroscope these "bands" may be recorded visually, appearing as dark bands on a varicoloured spectrum as background when a solution of a substance is interposed between the spectroscope and a source of white light. In the spectrograph it is possible to record the position of these bands on a photographic plate. Hæmoglobin and its derivatives oxyhæmoglobin, methæmoglobin, hæmochromogen, and reduced hæmoglobin, all show distinct and different absorption bands: these substances can, moreover, be readily interconverted by simple chemical reagents. It is, therefore, a simple matter to determine by means of a spectroscope or spectrograph whether an extract of a suspected blood-stain does or does not show the appropriate absorption bands of hæmoglobin: if these are present addition of a suitable reagent should convert the hæmoglobin into a known derivative, in which case the absorption bands should change to those peculiar to that substance. Thus spectroscopic examination of a suspected blood-stain extract is in fact a multiple test, and enables the stain to be identified as blood beyond all doubt. By suitably devised spectroscopes which may be attached to a microscope, extremely small amounts of blood will suffice for this examination. It may be mentioned in this connection that when carbon monoxide is breathed (poisoning from gas, motor-car exhaust fumes, or charcoal fires) the carbon monoxide unites with the hæmoglobin of the blood to give a very stable compound, carboxy-hæmoglobin: this is of a bright cherry-red colour, and its presence is responsible for the bright flushed appearance of victims of such poisoning.

The blood of the subject is thus rendered incapable of acting as an oxygen-carrier in the body since the hæmoglobin has been converted into a form in which it is no longer capable of taking oxygen from the air: death ensues in fact from oxygen-starvation. Carboxy-hæmoglobin shows three well-defined absorption bands in positions which differentiate it sharply from all other hæmoglobin derivatives. The spectroscopic method is therefore exceedingly useful in confirming a diagnosis of carbon monoxide poisoning: other chemical methods are available if it is necessary to determine quantitatively the amount of carbon monoxide in the blood.

(To be concluded)

Evidence and Procedure

By NOEL KER LINDSAY, B.A., B.C.L.

Barrister-at-Law

THE title which I have chosen for this article is a general one, and would allow me to deal with almost any subject connected with the administration of justice. In the space at my disposal I cannot do more than touch upon a few of the more important and outstanding topics which are likely to arise as practical problems in the life of a police officer.

When I was invited to write it, it was suggested that one of the subjects I might take would be "Criticisms of Police Evidence". This appeared to me, as a barrister, to be a heaven-sent opportunity, and I naturally considered very carefully how I might best make use of it, only to come to the conclusion that there was very little which could justly be said in general criticism of police evidence. It is one of the minor difficulties of an advocate's life that he sometimes finds himself, by the necessities of his profession, obliged, in the interests of the particular client whom he happens at the moment to be representing, to criticize the evidence of a particular police officer, or even the methods of the police as a whole. But I hasten to add that whatever we may say on such occasions, there is not one of my colleagues who does not feel a profound admiration for the police forces in this country and, in general, of the way in which they do their work in court. Every counsel with experience of criminal prosecutions knows that he can always rely upon receiving the greatest possible assistance from the police officers concerned in the case. There are, however, three points which might be worth consideration.

(1) *Prisoners' Histories*.—In every criminal case in which a prisoner pleads guilty, or is convicted, it is customary for

a police officer to provide the court with all available information about the man's past, and his character. This is a highly responsible task, since the evidence of the police officer naturally carries great weight with the judge in determining the appropriate sentence. A good character given by a police officer may often mean the difference between a heavy sentence and a light one, or even between a sentence and binding over. Equally, of course, the converse holds good. This is obviously a task which should, whenever possible, be entrusted to a senior officer of experience and judgment, and preferably to one who has had no other connection with the case, as it is in many courts. Sometimes, particularly in country courts, it is done by a young constable, who cannot do more than read out the type-written form with which he has been provided. It is a great temptation to a police officer sometimes to use vague phrases like "he is a bad character", or "he is an associate of thieves", or "this man has given the police a lot of trouble". While such comment is perfectly legitimate on the part of the police, it is obviously only to be used with great discrimination, and it is partly for this reason that senior officers should perform this duty whenever possible.

There is one further point with regard to prisoners' histories. I have referred to the reading of type-written statements. This is a widespread practice, and should not be encouraged. It is desirable that the officer "informing the sentence" should be sufficiently intelligent to inform himself first, and be able to assist the court by giving only those portions of the prisoner's history which are really useful in helping the judge to decide the appropriate sentence. We have all heard judges say to police officers, "I don't want to know where this man was at school, or how he spent the first twelve years of his life." This is, of course, a minor point, but one upon which the police evidence might well be improved.

(2) *Prisoners' Statements*.—Another criticism which I desire to make is concerned with statements made by prisoners. These vary very considerably in their importance and in their

nature. I suppose it is inevitable that when persons make statements on arrest or on casual inquiry by a police constable, the statements should sometimes be recorded in pencil in a note-book, often under conditions which render them almost illegible thereafter. The blame for this no doubt rests partly with H.M. Stationery Office; but it is desirable, whenever possible, that even statements of this sort should be signed by the persons making them, so as to avoid any possible dispute afterwards. I am aware, of course, that in many cases statements by the prisoner are of the greatest possible assistance to the police; but a case which rests wholly or largely upon statements made by the accused is never so satisfactory as one which can be proved by external evidence.

Care should also be taken that the caution is administered in such a manner as to be clearly understood, particularly by a person who may be hearing it for the first time.

(3) *Hearsay Evidence*.—In spite of the increasingly high standard of police training and education it still happens, not infrequently, that hearsay evidence is given, particularly in cases where the parties are not legally represented or where the bench is less than usually vigilant. Especial care should be exercised by police officers in such cases, and evidence which might be subject to objection should not be allowed to "slip out". Subsequent correction may be too late, and the damage already done. The "hearsay rule" is not difficult either to learn or to understand. It is stated by Phipson in the following terms: "Oral or written statements made by persons not called as witnesses are inadmissible to prove the truth of the matters stated."

The chief exceptions to the rule which are likely to arise in police practice are (a) admissions and confessions, and (b) statements made in the presence of a party. So far as admissions and confessions are concerned, the rule of the criminal law is inflexible that the confession must be voluntary and not induced by any pressure or threat. It is not necessary to add anything on this point to what has already been stated. Questions of great difficulty, however, may arise with regard

to the second exception—statements made in the presence of the accused. It cannot be too clearly stated that such statements are admissible against him only if he acquiesces in their contents by his answers or conduct. If the statement is accepted it is admissible in evidence; if it is denied it is, as a rule of practice, not admissible.

But suppose such a person to remain silent, what then? It becomes a question, in all the circumstances of the case, whether a reply was so obviously called for that silence may properly be construed as acquiescence in the statement made. Clearly this may be a question of the gravest difficulty, and in such circumstances it is the duty of a police officer not to give the statement in evidence until the accused or his representative have had an opportunity of objecting and until the bench has taken the responsibility of admitting or rejecting the statements. The common formula "the accused made no denial" is open to serious objection.

These remarks dispose of the general criticisms or suggestions which I desire to make as to police evidence. In the space which remains, I can deal only with some limited aspects of evidence and procedure. I do not propose to attempt to indicate what evidence is necessary to prove the commission of a particular offence by a particular person. The most useful subject with which I can deal is the many difficult questions involved in the admissibility of evidence of general bad character, or of particular offences committed by the accused man, which are not at present the subject of a charge.

(1) In all cases where there is a criminal record, details of this record in as full a form as possible should be provided to the prosecuting counsel with his brief. They may affect his conduct of a case and may become admissible either as evidence in chief, or in cross-examination as a result of the conduct of the defence. This is a point which should never be neglected, in cases of any importance.

(2) The general rule of English law is that it is not open to the prosecution to prove (a) that the prisoner has a bad

character, (b) that he has a "disposition to commit crime", either generally or specifically, or (c) that he has on other occasions committed particular acts, whether amounting to crimes or not. There are, however, many exceptions to these rules.

Evidence of general bad character, or of previous convictions, is generally inadmissible, for obvious reasons inevitable in a Jury system; but, of course, if the defence gives evidence of good character or cross-examines on the subject, it is open to the prosecution to contradict this, either by cross-examining the prisoner's witnesses, or under the Criminal Evidence Act, 1898, by cross-examining the prisoner himself. This may be done wherever the prisoner gives evidence of his own good character, or attacks the character of a prosecutor or his witness, or gives evidence against a co-defendant. If the prisoner in answer to such questions gives false answers, he may be contradicted by independent evidence.

Evidence of previous convictions is, of course, always admissible after a verdict of guilty, and before the verdict if the prisoner gives evidence of good character. It was laid down in the case of *Baldwin*, 1925, however, that the prosecution should never ask questions *merely* for the purpose of bringing the prisoner within the Criminal Evidence Act by making him attack the prosecution, etc. Previous convictions, of course, are never to be disclosed after a verdict of Not Guilty. Great care is necessary in the police court that the magistrate shall give his decision before asking for the history of the prisoner. This is a point which is often overlooked. The whole question is one of great difficulty which requires delicate handling.

(3) An even more difficult question, perhaps, is that of the proving of similar offences. Here again the general rule is that they are inadmissible; but this rule has been very much eaten away. Both the rule and the root of the exceptions are to be found in the statements of Lord Herschel in *Makin v. A.G. of New South Wales*, 1894. "It is undoubtedly not

pertinent for the prosecution to adduce evidence tending to show that the accused has been guilty of criminal acts other than those covered by the indictment for the purpose of leading to the conclusion that he is a person likely from his criminal conduct or character to have committed the offence for which he is about to be tried. On the other hand, the mere fact that the evidence adduced tends to show the commission of such crimes does not render it inadmissible if it be relevant to an issue before the jury, and it may be so relevant if it bears upon the question whether the act alleged to constitute the crime charged in the indictment were designed or accidental, or to rebut a defence which would otherwise be open to the accused." The reason for this general rule of exclusion is a practical one, partly to avoid the expenditure of time, and partly to avoid any danger of prejudicing the jury. The principal exceptions to this rule are as follows:—

(a) Where the similar offences really form one with the facts in issue, *e.g.* in arson, firing several ricks close together one after the other, or in larceny, taking money from a till several times on the same day, or taking gas from a main without passing it through a meter. A well-known example of this is the case of *Mrs. Thompson*, 1922, where letters inciting to murder by poison were held admissible as evidence against the writer on a charge of being the principal in the second degree in murder by violence, for the letters were written continuously over a long period.

(b) To prove *guilty knowledge*; where a person is charged with an act involving guilty knowledge or some other state of mind, after the physical acts have been proved, evidence is admissible of similar acts on other occasions in order to show such guilty knowledge or other state of mind.

In the case of *Wylie*, 1804, Heath J., said: "God only knows the hearts of men, and as an intention does not appear from the transaction itself, it must be proved from other facts and circumstances," and Lord Ellenborough said that the jury, from his conduct on one occasion, might infer his

knowledge on another. Cf. *Geering*, 1849, where a woman was charged with murdering her husband by poison, and it was proved that she had administered the poison to her husband, evidence was subsequently admitted to show that other members of her family, whose food she had prepared, had died from similar poison, in order to show that the administering to her husband was not accidental. The best known case under this heading is probably the famous case of *Armstrong*, 1922, who was charged with murdering his wife by arsenic, and evidence was admitted to show that Armstrong had attempted to murder another person by arsenic, in order to prove that the poison was not in his possession for an innocent purpose. In *Bond*, 1906, the charge was using instruments to procure abortion. The defence was that they were used for lawful purposes and there was no criminal intent. Evidence was admitted to show that nine months before, the prisoner, who was a medical man, had used the instruments on another woman with the avowed object of procuring an abortion, and had then used expressions showing that he was in the habit of so doing. Bray J. grouped the cases where evidence of this nature had been admitted under three heads, (1) where the prosecution seeks to prove a system or course of conduct, (2) where they seek to rebut the suggestion on the part of the prisoner of accident or mistake, and (3) where they seek to prove the knowledge by the prisoner of some particular fact.

The defence of accident or mistake need not be raised before the evidence is given. The evidence is admissible to anticipate such a defence, and has, in fact, been allowed, rightly or wrongly, in some cases where the defence have intimated that they do not intend to raise the defence, *e.g.* in *G. J. Smith*, 1915, evidence of drowning other wives in other baths was admitted in order to rebut a defence which might otherwise have been open to the accused. In the later case of *Thompson*, 1918, Lord Sumner in the House of Lords pointed out that before evidence so obviously prejudicial to the accused could be introduced, the defence should have

been raised in some form or another, and the prosecution could not credit the prisoner with all sorts of fancy defences merely for the purpose of introducing evidence of other criminal acts. The Court of Criminal Appeal, however, did not act on this principle in *Armstrong's* case, 1922, where the defence was suicide, and defending counsel intimated that no defence of accidental poisoning would be raised.

The present tendency of the courts is to make the admission of such evidence very much easier. In *Thompson's* case, 1918, it was used to establish identity, where the charge was gross indecency, and it is also used regularly to prove the actual commission of the act charged in incest (*cf. Ball*, 1915), and similar cases and by way of corroboration, in certain other cases of doubtful authority, one of which, however, is of historical interest, as it was the trial of the great poisoner *Neil Cream*, in 1892, where Hawkins J. admitted the evidence of three other deaths in similar conditions as corroboration, and Shore, in his account of the trial, states that the strength of the case for the Crown lay in the cumulative power of the evidence against the prisoner which could be produced only if the evidence in the other cases was held to be admissible. There can scarcely be a doubt that the admission by the court of this evidence hanged Cream, just as similar evidence was fatal in the cases of *Armstrong* and *G. J. Smith*, and just as Mrs. Thompson's letters hanged her.

It may be useful to conclude with a few words on the position of a police officer who is personally conducting a prosecution before the magistrates. This is, of course, in many cases, inevitable, and in summary cases the power is given to a complainant or informant to conduct his own case, by virtue of the Summary Jurisdiction Act, 1848, and though the Divisional Court has held (in *Duncan v. Toms*, 51 J.P., 631) that a police officer may take advantage of this, and may, for example, examine and re-examine witnesses for the prosecution, and cross-examine witnesses for the defence, even where he has himself given evidence. They have

also laid it down clearly in *Webb v. Catchlove*, 50 J.P., 795, that a police officer ought to be a mere witness and not put himself into the position of an advocate.

The safest rule, therefore, for a police officer conducting a prosecution is to say as little as possible, except on oath, and in all cases of difficulty or doubt to obtain competent legal assistance. The legal profession and the police are partners in the administration of criminal justice, each with their own part to play, and each incomplete without the other.

The laws of evidence and procedure are full of difficulties and pitfalls, and only training and experience can enable anyone, lawyer or police officer, to master them. The only safe general guide is always to remember that even in the smallest cases the scales must always be weighted heavily in favour of the prisoner.

Rex v. Ruxton

By H. J. VANN

Chief Constable of Maidstone

TWO books bearing upon this case of extraordinary importance to the police have already been published, but as they deal primarily with the medico-legal aspect I feel, knowing the case so intimately, that there are many important phases of interest to the police which will be lost sight of unless someone takes it upon himself to set them out in ready and simple form.

I am privileged, therefore, through the courtesy of THE POLICE JOURNAL, to make my remarks in a periodical with a large police circulation.

This has been a case which has exemplified in every conceivable way the co-operation which is so desirable between police forces, not only of England and Wales, but also of England and Scotland. The range of inquiry covered an extensive area, and there were working together the forces of Glasgow, Edinburgh, Dumfries, Lancashire, Lancaster Borough, and New Scotland Yard.

Much of the success of the police work must be attributed to the excellent team spirit which prevailed throughout, for it was the aim of everyone concerned to bring to a satisfactory conclusion a most perplexing problem. The detail work was most exhaustive and it was only after many weeks of patient inquiry that the intricate "jig-saw puzzle" was finally fitted together.

The medical experts gave their fullest possible support, and the whole of the resources of the Universities of Edinburgh and Glasgow were available to the prosecution. For my own part I must record my appreciation of this whole-hearted

support, not forgetting the members of my own force, without whose help and co-operation my task would have been a very difficult one.

I propose to deal as briefly as possible with the general outline of the case and I shall also refer to the importance of recording accurate details when called to a crime, and later on shall point to the numerous mistakes made by a very clever man in his efforts to defeat the searching inquiries of the police.

The case commenced with the finding of the mutilated remains of two human bodies in a ravine about a mile from the small town of Moffat, Dumfriesshire.

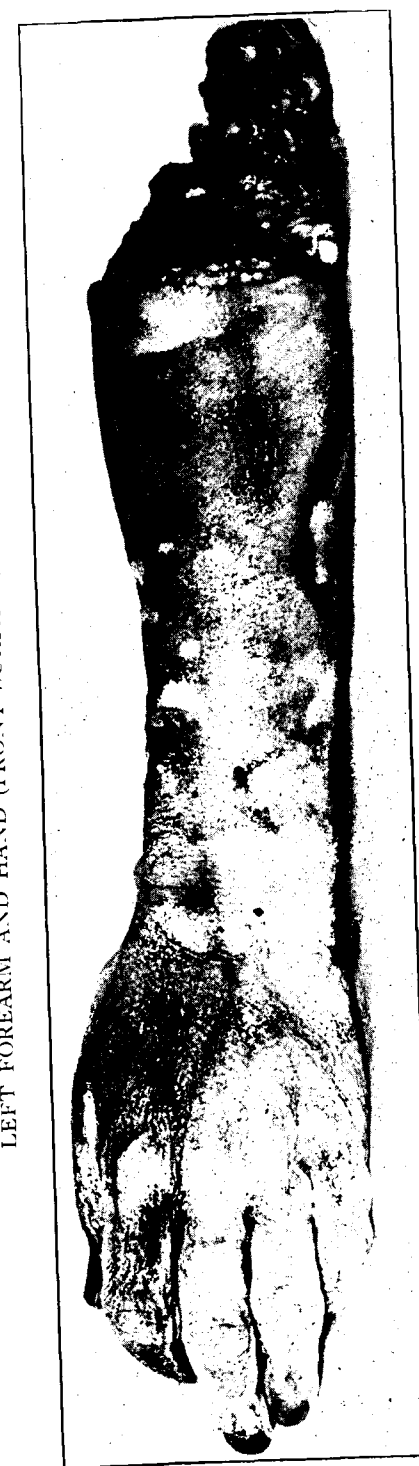
A young lady on holiday took a walk to the bridge over the Lynn and, looking into the stream below, saw what she thought to be a human arm. She mentioned this to her brother, and a further visit revealed a number of human limbs wrapped in cotton sheeting and newspaper. The police were called and the pieces collected. They were in such a mutilated condition that on a preliminary examination Professor Glaister and Doctors Martin and Millar had the greatest difficulty in deciding whether they were male or female; in fact the first report they gave described the bodies as a male 50 to 60 years and a female 30 to 35 years.

The Chief Constable of Dumfries called in the help of the Glasgow C.I.D., and Detective-Lieutenants Ewing and Hammond went to the scene together with members of a local fire brigade who assisted in a search of the area. To appreciate their difficulties it should be remembered that the Lynn is a fast flowing mountain stream emptying itself into the River Annan. Some portions of flesh were found as far as 500 yards from the bridge, and, as a torso and a large quantity of soft parts have never been found, it is quite possible that when the stream was in full spate these were washed into the Annan.

After the preliminary examination at the Moffat cemetery mortuary, the bodies were taken to the pathological department of Edinburgh University and there submitted to a more



LEFT FOREARM AND HAND (FRONT SURFACE) OF BODY NO. 1.



LEFT FOREARM AND HAND (BACK SURFACE) OF BODY NO. 1.

careful examination. The bodies were assembled, and as an expert in anatomy was essential the aid of Professor Brash was sought. The collective knowledge of these experts resulted in the portions of the bodies being assembled as follows :—

<i>Body No. 1</i>	<i>Body No. 2</i>
Two arms.	Two arms.
Two forearms, and hands.	Two forearms.
Two thighs.	Two hands (minus fingers).
Two legs.	Two thighs.
Two feet.	Two legs.
No trunk.	One foot.
	Complete trunk.

The work of the professors was rendered even more difficult owing to the decomposed state of the bodies, the soft parts being literally covered by maggots. Apart from whatever the medical examination revealed it was apparent that whoever had committed the crime had endeavoured in every possible way to remove permanent marks of identification, particulars of which are as follows :—

Body No. 1.

Turn in one eye—eyes removed.
Defective front teeth—teeth removed (after death).

Body No. 2.

Prominent teeth with space for denture—all teeth removed (after death).
Mole and freckles on back of body—the whole of the skin removed.
Strong square finger-nails well manicured—finger-tips removed.
Left foot : hammer toes and bunion at large toe joint—toes and bunion removed.

As a result of further investigations by the professors it was agreed that death had been caused by strangulation and that the disintegration had been carried out by someone possessed of a marked degree of medical skill. This was particularly noticeable in the separating of the vertebræ in the lumbar region, an operation which I understand is always a difficult piece of work even for one who is skilled.

If a person dies from asphyxia as a result of strangulation evidence of this is often visible at the point of the tongue,

the eyes, the ears, and the tip of the nose. All these organs were removed, apparently with a view to destroying means of identifying the cause of death. These symptoms would of course be known to a medical man of the experience of Doctor Ruxton. To further hamper the work of the Professors the bodies had been denuded of blood by cutting open the arteries and placing the dismembered limbs into a bath of cold water.

The head of one of the bodies was wrapped in a pair of child's woollen knickers, and portions of flesh were also wrapped in a woman's cotton blouse, whilst pieces of newspaper of varying dates up to and including Sunday, the 15th September, 1935, were adhering to the bodies. All these were photographed and particulars circulated to all police forces. The Press were also called in and published photographs of the blouse and knickers.

Among the pieces of newspaper was a portion of *The Sunday Graphic and News*, dated the 15th September, 1935, which by a coincidence contained photographs of the Morecambe Carnival held on the previous day. Inquiries of the newspaper office revealed that only 3,700 copies had been printed and circulated and the circulation had been confined to the Lancaster district.

This in itself was important but not conclusive, and preliminary inquiries failed to bring any immediate result.

To Detective-Lieutenant Ewing, however, must go the credit for the first fruitful line of inquiry. Following the disappearance of Mrs. Ruxton and the maid Mary Rogerson, the Rogerson family had become very anxious about their daughter and had interviewed Ruxton several times concerning her whereabouts. Ruxton had put them off by saying that she had gone for a holiday with Mrs. Ruxton and later that she was in a certain condition and had gone away with Mrs. Ruxton in order that an abortion might be procured. The Rogerson family were not satisfied and made a request to the Lancaster Police that her description should be circulated through the usual channels. Inquiries followed at Lancaster

and the absence from home of Mrs. Ruxton and the maid was confirmed. As a result *The Daily Record*, a Scottish paper, issued a description of Mary Rogerson.

Detective-Lieutenant Ewing noticed the remarkable similarity of the description of the missing nurse and the approximate description given by Professor Glaister.

Further, the marked degree of medical skill which had been used in the dissembling of the bodies directed attention to some medical man or other person skilled in the disarticulation of bodies. The two women had lived in the house of a doctor!

Suspicion therefore came to be focussed on Dr. Ruxton. Inquiries as to his movements were begun, and it was learned that he had that day—9th October, 1935—gone to Edinburgh to see a Mrs. Nelson (Mrs. Ruxton's sister) as a result of Mrs. Nelson becoming insistent that Ruxton should tell her where Mrs. Ruxton was. Dr. Ruxton visited Mrs. Nelson and, as afterwards transpired, she put very pointed questions to him concerning Mrs. Ruxton's whereabouts and her suspicions as to what he had done with her. These disturbed him very much. He, however, returned to Lancaster at about 4 a.m. the following morning, and was met by Police Inspector Clarke, of the Borough Police. During the conversation they had whilst the Inspector drove the doctor to his home in the police car, the whereabouts of Mrs. Ruxton was discussed and Ruxton volunteered that on the 17th September, 1935, he had been stopped by the police at Milnthorpe because of an accident at Kendal in which he had been involved. When, however, the Inspector asked him if he had been to Carlisle, the direction of the ravine, he said he had been to Seale, and had taken his little son to see about taking up music (his son was then only two years of age) and he had gone by way of Grange and Lyndale Hill.

This afterwards proved to be one of the points in his undoing, because the accident referred to occurred on the east side of the main road whereas Grange is on the opposite side, and without making a detour of many miles it is not

possible to get to the east side to be in the position Ruxton was when the accident occurred.

He also told the Inspector a pitiful story concerning his wife and his loss at understanding where she could have gone.

Before going into further details it is perhaps as well to give some idea of the character with whom we are dealing.

Dr. Ruxton was a French-Indian possessed of a cunning disposition and excitable temperament. In his early days he showed great promise as a student of medicine and surgery, and it is possible that had he not wasted his time whilst studying at Edinburgh he would have passed his F.R.C.S. examination. He failed on three successive occasions and, after a short time as a locum to a London doctor, came in 1928 to practise in Lancaster, and it would appear that he and Mrs. Ruxton lived very happily for some time. He was, however, of a very jealous and suspicious disposition, very often imagining men were making love to his wife when in fact they were merely paying the usual courtesies which a gentleman should accord a lady. In his evidence he described very appropriately their relationship when he said, "We could not live with each other and we could not live without each other."

Mrs. Ruxton came of a hard-working Edinburgh family, and until the last few years of her association with Ruxton she lived happily with him. The Chief Constable of Lancaster had on a number of occasions settled their domestic disputes in his office, and it was no surprise to him when this terrible tragedy came to light. Ruxton often imputed that his wife had been unfaithful to him, but it was impossible for the police to find any grounds for the many allegations he made, and as he was unable to find support for them they would appear to have been quite unfounded.

Mary Rogerson was one of a family of ten, the daughter of a hard-working man. During the last four years the home life of the Ruxtons gradually deteriorated, and there came a time when blows were struck. Ruxton's bad temper became uncontrollable and Mrs. Ruxton became more afraid of him.

On one occasion when she had danced with another man at a local function Ruxton made her perform an act of penance by running in bare feet fifty times up and down the stairs whilst he stood at the bottom with an unsheathed knife. On another occasion he compelled her almost naked to enter his Oriental room, where, sitting on a throne or raised seat, she was obliged to kneel before him and kiss his feet. There were other instances of similar conduct of which space does not permit mention.

THE MURDER

There have been many theories put forward as to how the murder occurred, but the only reasonable one seems to be the following :—

On the night of Saturday, the 14th September, 1935, Mrs. Ruxton went to Blackpool to meet her sister, Mrs. Nelson, who was going there from Edinburgh on a day trip. As a result of the previous week's happening, when Ruxton followed his wife in a hired car to Edinburgh, where she stayed at a certain hotel, he was of the opinion that she had arranged to meet a young man in Blackpool on this evening. Consumed with rage he waited in his bedroom for her return. She reached the top flight of stairs and was challenged as to where she had been. A struggle took place ; she was strangled and, in addition, it is probable, stabbed. Mary Rogerson, in the bedroom opposite, heard the shouting and loyally came to the assistance of her mistress. Mrs. Ruxton had been killed and Mary Rogerson was the only witness of the crime. To conceal his guilt the only possible thing Ruxton could do was to murder her. She also died from strangulation.

When the heat of the struggle was over Ruxton found himself with two dead bodies on the top flight of stairs in his house. The problem was how to get rid of them.

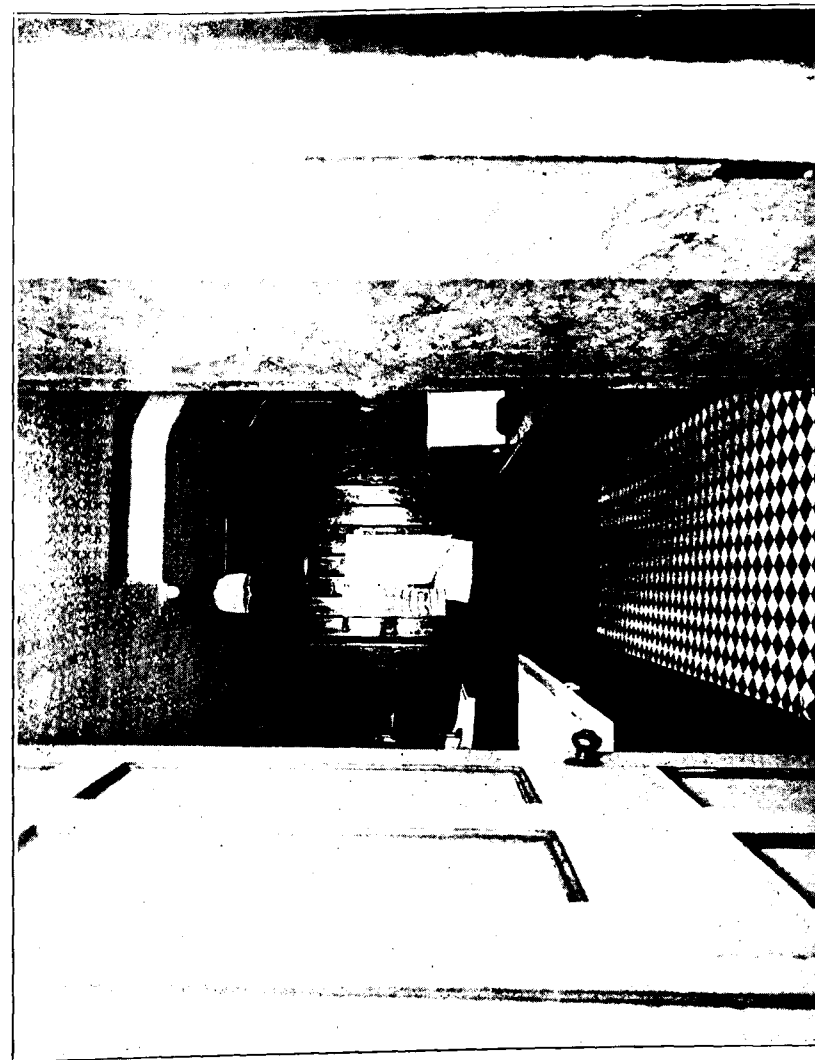
It is presumed, therefore, that his medical knowledge suggested he should cut them into portions capable of being removed by hand and take them to some place where they were not likely to be discovered for some time. In Scotland

there is no inquiry such as the coroner's inquest held in England, and there was therefore a greater possibility of the crime remaining undiscovered. He dragged (Ruxton was not a strong man) the bodies to the bathroom, laid them on a long seat approximately 15 feet long and 18 inches wide, and cut them up. After filling the bath with cold water, as each limb was dismembered he cut the arteries and placed it in the bath, thereby allowing the blood to dissolve. Having drained the portions of bodies completely of blood he dried them with cotton wool, wrapped them in pieces of cotton sheet and newspapers, and packed them into suitable parcels, placing some in a cupboard in the dining-room and some on the floor in his bedroom, being careful when leaving to lock the doors after him. His efforts in the bathroom could not have been without difficulty because the suit he wore was literally covered with blood, and large stained areas were subsequently found inside the bottom of his trousers and on the front of his jacket. The linoleum in the bathroom, although it had been scrubbed several times since the murder, had a large bloodstain approximately 12 in. by 4 in. on its underside when the police made their investigations.

Although inquiries were made by the police no person could be found who saw his car at any time on the journey to Moffat ; but there seems to be no doubt that he made one journey on the night of Sunday, the 15th September, 1935, as he returned to Lancaster at 8 a.m. on the Monday unshaven and dishevelled looking.

The other journey it is thought was made on the morning of the 19th September, 1935, as his movements cannot be traced between 8 a.m. and 3 p.m. on that day, and it was on this morning that his charwoman heard him making numerous visits to and from the dining-room, presumably carrying the portions of the bodies he had temporarily stored in the dining-room cupboard and bedroom.

To support the theory that the murder occurred on the top flight of stairs are the bloodstained carpets, blood-stained stair-pads, and the finding by Professor Glaister of soda-water



PHOTOGRAPH OF THE INTERIOR OF BATHROOM, TAKEN FROM LANDING.
SHOWING DOOR OF CUPBOARD CONTAINING CISTERN AT FAR END AND
FIXED BENCH ON RIGHT

Mrs. Rogerson purchased a white cotton blouse at a jumble sale some months before the murder. It was a good blouse in every respect except that it had a small hole under the left arm. She obtained some material similar to that of the blouse and inserted a small patch. The blouse when found in the ravine contained eighteen pieces of human flesh, and when later shown to Mrs. Rogerson was readily identified by the patch and stitching.

In June, 1935, Mr. and Mrs. Ruxton took Mary Rogerson and the three Ruxton children to stay with a Mrs. Holme at Seale, a small place in Westmorland. Mrs. Holme and Mary Rogerson talked quite a lot to each other, and when Mrs. Holme learned that Mary Rogerson had a number of small brothers and sisters she gave her several children's woollen garments which had become too small for her own children.

Amongst them was a pair of woollen knickers. When the police inquiries traced the clothing to Mrs. Holme she unhesitatingly said, "These are my Benny's knickers, I recognize the elastic and the knot I usually make." This identification appeared to be quite satisfactory, but in view of the length of time that had elapsed from the handing of the garment to Mary Rogerson, and its appearance in the ravine covering a human head, the defence suggested that it might have been possible for Mrs. Holme to have made a mistake. Counsel for the defence, Mr. Norman Birkett, K.C., gave Mrs. Holme a piece of string and asked her to tie a knot similar to that in the elastic. The effect on the jury can readily be imagined when Mrs. Holme quite calmly tied a knot in the string identical with that in the elastic.

As police officers will appreciate, in a case of this magnitude no detail can be allowed to escape. The police, therefore, cut away all pipes leading from the bathroom and examined them. The sump in the drain of the waste pipe leading from the bathroom contained a quantity of human hair, afterwards identified as being of the colour and nature of that of Mrs. Ruxton's, whilst in the drains was found quite a large number of small pieces of human flesh.

Following all the inquiries made by the police, the identification of the knickers and blouse, and the recovery from a Mrs. Hampshire of the bloodstained suit and carpets, it was decided to interview Dr. Ruxton and ask him to account for his movements between the period 14th to 29th September, 1935, the former date being the day on which Mrs. Ruxton was last seen alive, and the latter date that on which the remains were found in the ravine.

There is one interesting incident, however, which occurred shortly before Ruxton was called to the office of the Chief Constable of Lancaster. On the Saturday prior to his arrest Dr. Ruxton called at the police station in a very agitated frame of mind and saw the Chief Constable. He pointed out to him the publicity given to his name in connection with the disappearance of his wife and maid and to the statements appearing in the Press implying some connection between these two persons and the remains found at Moffat. He told the Chief Constable that at that time he was negotiating for a loan on his practice, and coming as it did at that unfortunate moment this publicity was having a derogatory effect upon the value of his practice. He implored the Chief Constable to publish a statement in the Press to the effect that there was no evidence to connect his wife and maid with the remains found in the ravine. Such an unusual request made the Chief Constable even more suspicious, but as it was desirable that the doctor's mind should be set at rest until the police were ready to act, the Chief Constable of Lancaster arranged with the Press at the next conference of Press representatives on the Saturday afternoon to publish such a statement.

In that evening's paper the Chief Constable of Lancaster stated that he had no evidence to connect the bodies found in the ravine with those missing from Dalton Square. Doctor Ruxton apparently purchased the first available issue of the *Daily Post* on that day, and immediately rang up the Chief Constable to express his delight at what had been done.

The doctor's suspicions had therefore been allayed and

in the meantime the police had reviewed the information in their possession. It was decided that the time was opportune to interview Ruxton, but knowing his violent temperament it was decided, instead of calling at his house, to ask him to come to the Chief Constable's office.

The Chief Constable therefore rang up Dr. Ruxton at 9.25 p.m. on Saturday, the 12th October, 1935, and asked him to come over to his office as the police had some information about his wife. Ruxton seemed pleased at this prospect and came within a few minutes to the police station. There is no doubt that on reaching the Chief Constable's private office he was taken aback on finding a number of highly placed police officials there. He was asked to sit down and the Chief Constable of Lancaster told him that he was very anxious to trace his wife and maid and suggested that the doctor might be able to give some assistance in finding them. He was also told that it was proposed to ask him to account for his movements from the night of the 14th September until the 29th September. He was cautioned and asked to relate in proper sequence as near as possible his movements day by day. Ruxton appeared to be highly delighted to have this opportunity and said, "Go on; ask me anything you like; I will be only too pleased to tell you."

The Chief Constable told him he would take down the statement in writing and Ruxton would be required to sign it when completed. Imagine the amazement of those present when Dr. Ruxton took from his pocket an envelope marked "My Movements", which contained a typewritten account of his movements day by day for the very days in question, *i.e.* the 14th to the 29th September. His statement was taken down in pencil, and as each sheet was completed it was typed in an adjoining office. It occupied eighteen foolscap sheets of typewritten matter. It was commenced at 9.30 p.m. and completed at ten minutes to four the following morning.

He was then handed the complete statement to read and check, and he was occupied until 5 a.m. weighing up the paragraphs and repeating to himself certain phrases which

to him seemed to be of great importance. During the time the statement was being taken down he was supplied with bread and cheese and coffee, and everything possible was done for his comfort.

Following upon this the Chief Constable put a series of questions to Dr. Ruxton, and although these were not admitted by H.M. Judge at the Assizes, His Lordship remarked that the police were technically correct in putting them to Ruxton at that stage of the proceedings, even though he would not admit them in evidence. The bloodstained carpets, blouse, knickers, etc., were put to him and he was asked to explain the presence of blood on these articles. He made various evasive replies, some ingenious but all obviously untrue.

After a brief conference had been held by the senior officers present it was decided that Ruxton should be charged only with the murder of Mary Rogerson, because at that time there was little or no evidence of identification in respect of Mrs. Ruxton.

During the taking of the statement Ruxton was in turn violent and emotional and on one occasion thumped violently upon the Chief Constable's table when he came, in the course of his statement, to certain matters dealing with the alleged association of his wife with a young man. On another occasion he stood on a chair and stamped violently and it was with great difficulty that he was restrained.

When the display of temper was over, however, he was most apologetic and apparently repented his lack of control. But when he was eventually charged he went into a raging temper and said, "Most certainly not; the furthest thing from my mind; what motive and why? What are you talking about?"

The Traffic Problem

By R. P. WILSON

Chief Constable, West Sussex Constabulary

[This is the Winning Essay of the King's Gold Medal Essay Competition, 1936]

THE situation with which we are now confronted is, of course, the result of a tremendous increase not only in the number but in the speed of vehicles using our roads. Highways built in the days of slow moving traffic have also become quite unsuited for modern vehicles, and such improvements as have been carried out are inadequate. A ready answer would be that the remedy lies in a reduction in the number of vehicles on the roads, but to limit the production of our motor-car factories would be to strike a vital blow at that industry and through it at the prosperity of the whole country. The answer must then be found elsewhere, though much can be done by improving our roads through a far-sighted policy which will take into account a still greater increase in traffic, together with even higher speeds than are usual to-day. The lines on which further road improvement might be based in both towns and the country will be suggested later on in this essay. It will also be discussed whether sufficient control over all road users is exercised and what further means, if any, are required to provide a reasonable check on human errors of judgment, carelessness, inattention, and the like.

There is the additional problem of the free circulation of traffic. This must not be lost sight of, as an excess of safety devices, which might go some way towards saving life and injury, would at the same time tend to slow up traffic to such an extent that the business of the community would suffer to an unreasonable degree. Though it would be callous to suggest that mere business interests should be considered before

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the safety of the public, in this, as in all things, a reasonable standard must be sought and it would be over-sentimental to argue that the economic factor should be ignored. Later on it will be demonstrated that a large measure of responsibility for our casualty lists rests not with the motorist but with other sections of the public, and these sections must be instructed and controlled so that they will be fitted to carry their share of the burden.

In examining this problem it is first of all necessary to find out the primary causes of accidents and then to consider what means can be devised to eliminate or at least control them. For this purpose the figures collected in the Ministry of Transport's Report on Fatal Road Accidents in 1935 will be consulted and also figures recorded by the writer in connection with accidents in his own area, which is largely rural but contains many main roads, between London and the South Coast, as well as several large seaside towns. In examining these statistics it will be kept in mind that it is sometimes difficult to see the wood for the trees, and general causes for accidents have been sought rather than particular ones. It is impossible to legislate for every conceivable kind of human error or to expect that the public should be protected from itself to such a degree that individual care and caution are to be entirely subordinated to State legislation. In short, a reasonable standard should be our goal and the rest left to the individual, whether motorist, cyclist, or pedestrian, who through propaganda, as well as by punishment, may be induced to exercise more care than is normally the case at present.

Cause of Accidents

The statement given below shows the types of vehicle involved in fatal accidents in 1935, in Great Britain.

Vehicle.	Built-up Areas.	Areas not Built-up.	Total.
Private Motor-cars .	1,350	1,163	2,513
Public Conveyances .	688	139	827
Motor-lorries, etc. .	1,315	588	1,903
Motor-cycles .	574	923	1,497
Pedal-cycles .	1,037	709	1,746

This second statement goes a step further than that above and illustrates the type of vehicle to the driver or rider of which the fatal accident was attributed.

<i>Vehicle.</i>	<i>Built-up Areas.</i>	<i>Areas not Built-up.</i>	<i>Total.</i>
Private Motor-cars .	315	399	714
Public Conveyances .	52	17	69
Motor-lorries, etc. .	175	119	294
Motor-cycles .	338	585	923
Pedal-cycles .	620	421	1,041

To complete these general statistics it is necessary to note the number of fatal accidents attributed to pedestrians, and the 1935 statistics show that 2,575 people were killed through their own fault in stepping into carriageways, inattention when crossing streets, etc.

Some very interesting conclusions can be drawn from these figures. A comparison of the totals in the first and second statements will show that in the case of private motor-cars the accidents were attributable to their drivers in 28% of the cases in which vehicles of this class were concerned, while in the case of public conveyances the percentage is only 6, in that of motor-lorries 15, motor-bicycles 43, and pedal-bicycles 64. In part these variations might be explained by the proportion of vehicles of each class which are in use on the roads, but these proportions, whatever they may be, cannot possibly explain such wide differences as 6% in the case of public conveyances and 64% in that of pedal-bicycles, and again 15% for motor-lorries. It can be accepted that the number of bicycles is not ten times that of public conveyances and, to take another example, that the figure of 43% for motor-bicycles does not indicate that there are 50% more motor-bicycles than motor-cars on the road. If the real reason for these variations can be discovered considerable progress will have been made in tracing the root cause, or causes, of the road accident problem.

The two percentages which attract most attention are those for public conveyances and pedal-bicycles, and an examination of the circumstances surrounding the use of these vehicles sheds some light on the problem. The following

points are intended to suggest why so few drivers of public conveyances are at fault, and, on the contrary, why pedal-cyclists are very frequently to blame.

Public Conveyances

- (a) These are subject to a special speed limit.
- (b) The drivers are carefully selected and are subject to supervision by the owners and the Traffic Commissioners.
- (c) Each vehicle carries passengers who expect to be carried safely and who are potential witnesses of careless driving on the part of the driver.
- (d) The vehicle and the driver come within the scope of the Road Traffic Act and similar acts of Parliament, and the driver is likely to be prosecuted for careless or dangerous driving.
- (e) The driver is earning his living in his capacity as a motor driver and does not readily risk dismissal as a result of being involved in an accident.

Pedal Bicycles

- (a) There is no speed limit to which bicycles are subject, though they can and do attain high speeds, particularly on hills.
- (b), (c), (d), and (e) Cyclists are not within the scope of the Road Traffic Act and they are free from supervision or control of any sort.

In short, the conclusion which can fairly be drawn is that the drivers of public conveyances are in the main careful, while cyclists are not. To apply the same theory to the other classes of road traffic, it is noticed that lorry drivers have the next lowest percentage and the same checks are applied to them, except that they do not carry potential witnesses, and this may be the reason for the slightly greater percentage of accidents in which they are concerned.

The figure for private motorists is higher, at 28%, but even so it is apparent that the motorist is not responsible for 72% of the accidents in which he is involved. The increase over the paid drivers of public conveyances and lorries can again be attributed to his personal circumstances, as ordinarily a private motorist does not suffer loss of employment by being concerned in an accident, nor does the fine generally inflicted

hit him so hard as it does the professional driver. His passengers, too, are as a rule witnesses in his favour.

To explain the high percentage (43%) of motor-cyclists held to be responsible for accidents in which they are involved, all the above factors can be taken into account and in addition the great speed and manœuvring ability of these machines, which encourage their riders to take risks in overtaking, cutting in, and cornering.

All the above factors may be reduced to one standard and that is, fear of the consequences of being concerned in an accident. To turn to the pedal-cyclist, it is found that he has virtually nothing to fear, and tops the list as a fertile cause of accident. The professional driver, on the other hand, has a great deal to fear and is careful. Private motorists expect nominal punishment by fine and, accepting the risk of being concerned in a really serious accident, travel faster than they should and take risks which they could avoid; the same is the case with the motor-cyclist, but by virtue of the capabilities of his machine he comes off worse than the private motorist.

Fear of the consequences appears then to be the underlying principle, and where these are too light they should, if necessary by legislation, be made heavier. That is the general conclusion which can be drawn from the figures so far examined. But it is unwise to jump at conclusions, however obvious they may appear to be, and the writer therefore proposes to discuss in some detail accidents occurring in his own area, of which he has made a close study. The figures on p. 431 relate to accidents in which injury or death was caused in July, 1935.

The figures opposite suggest that mechanically propelled vehicles are almost invariably responsible, and it would seem that an examination of statistics on these lines has led to the spate of legislation directed against the drivers of motor vehicles. The true state of affairs is that as the Road Traffic Acts, etc., have been passed for the control of motorists, proceedings in courts of law are directed only against this class of road user. Actually in the 93 cases set out in the next page, though 29 pedestrians (b), (f), and (j), were killed or

injured while crossing or walking on the roads, there was evidence to proceed against the driver of the vehicle concerned in only four instances and not one of these prosecutions was directed against the driver of a motor-car, the proceedings being against three motor-cyclists and one pedal-cyclist. It is therefore evident that in relation to these cases the pedestrians themselves were in the main at fault, a conclusion which had been suggested during the examination of the statistics for the country as a whole.

EVIDENCE FOR PROCEEDINGS.

Cause of Accident.	No. of Accidents.	Private Cars.	Lorries.	Public. Convey- ances.	Motor- cycles.	Pedal- cycles.	Pedes- trians.
(a) General carelessness, overtaking, etc. . .	24	8	1	1	2		
(b) Pedestrian crossing without looking . .	22						
(c) Collision at cross-roads . . .	15	6			1		
(d) Taking a bend carelessly . . .	8	1		1	2	1	
(e) Misunderstanding a signal . . .	6	1					
(f) Pedestrian walking on road . . .	6				3	1	
(g) Overtaking a bicycle . . .	6						
(h) Dazzle . . .	2						
(i) Skid . . .	1						
(j) Pedestrian on official crossing . . .	1						
(k) Drunk in charge of a car . . .	1	1					
(l) Speed . . .	1						
Total . . .	93	17	1	2	8	2	

The statement also shows that only two pedal-cyclists were proceeded against. This does not mean that the general figures already quoted are wrong and that cyclists are not responsible for 64% of the cases in which they are involved, but that there is no Act of Parliament which can readily be applied when these road users are at fault. In actual fact no less than 30 bicycles were concerned in the 93 accidents, but in only two cases could the only Acts available be applied, the Highways Act of 1835, with a maximum penalty of a £5 fine, and the Public Health Act of 1925 (section 74 (2)), with a similar penalty.

It is also interesting to notice that proceedings were taken against the drivers of only one lorry and two public conveyances, thus supporting the theory that fear of prosecution and dismissal constitutes a real check on careless driving.

The first conclusion which can be drawn is that it is unfair to exclude pedal cyclists, who were responsible in 1935 for 1,041 fatal accidents, from the provisions of the Road Traffic Act. Not only is it unfair but if real progress is to be made in checking accidents it is absolutely essential that they should be required to conform with the common standard and suffer, when in the wrong, equally with motorists. The fact that bicycles are neither large nor very fast is of minor importance, the important point being that each cyclist is using the road and his behaviour thereon must strictly conform with the Highway Code or he will endanger his own safety and that of persons in other vehicles or on foot. Every vehicle whatever its size or character should be brought within the scope of the Road Traffic Act, 1930, and it is hard to understand how the cyclist has escaped inclusion in most of the recent legislation. That he has escaped is a sad fact.

To take another point in relation to bicycles. It is common knowledge that these machines are ridden not only two but three abreast. Some riders in fact behave as though they had a particular right to the road—an attitude probably engendered by their comparative immunity from prosecution—and when it is remembered that bicycles cannot be ridden very close together and that the space between two machines ridden side by side is continually varying, there can be no dispute that two of them ridden abreast occupy at least as much space on the road as one motor-car; further, as there are independent riders there is in a sense dual control, with correspondingly increased chances of confusion. It would therefore seem eminently reasonable that bicycles should not be ridden more than two abreast.

There is also the difficulty of teaching children the rule of the road, and the practice of allowing quite small children to ride bicycles on our busy roads is one which cannot commend

itself to those concerned with road safety. It seems little short of amazing that parents should allow their younger children to join in the delicate and dangerous operation of negotiating modern traffic, and there is ground for consideration whether an age limit should not be imposed. The matter is, after all, not one concerning only these children or their parents. It concerns all road users who, through the ignorance or carelessness of the children, may either cause their injury or death, or are themselves injured or killed in avoiding accident. As the driver of a motor-car or motor-bicycle is required to reach a certain age before he can obtain a licence, so it seems right and proper that some age limit should be imposed in respect of pedal cyclists, and the age of ten years is suggested as the minimum age at which children should be allowed to use bicycles on our highways.

The above proposals concerning the use of pedal-bicycles would require legislation, and most unpopular it would be with the thousands or millions who use this form of transport; but the writer contends that if the road accident problem is ever to be brought under control such legislation is unavoidable. The figures provided in the Report on Fatal Road Accidents for 1935 are irrefutable proof in support of this argument, and there is every reason to believe that courageous legislation in this direction would yield good results and very substantially reduce our casualty lists.

The legislation which suggests itself is that the Road Traffic Act should be extended to include bicycles and that a further provision be provided making it illegal for two or more vehicles of any description to travel abreast except when overtaking or passing other vehicles.

The next problem relates to pedestrians. The statement concerning the writer's area shows that of 93 accidents 29, or 31%, involved pedestrians and that the drivers of vehicles could be proceeded against in only four of these cases. In addition the general statistics for 1935 show that 2,575 pedestrians were killed through their own lack of care. If motorists are to be punished for driving without due care and

attention why should not pedestrians be required by law to consider not only their own safety but that of other road users? It cannot be questioned that sudden and careless moves by pedestrians lead to equally sudden and *dangerous* action by the driver of motor and other vehicles in trying to avoid them. Pedestrians therefore have a duty to other road users quite as strong as that of motorists or cyclists, and it would seem quite proper to introduce legislation which would require pedestrians over a certain age (that is, excluding children) to conform with the general traffic rules, give signals when stepping off the pavement and crossing the road, and in short give notice of their intentions. The pedestrian should also be required by law to walk on the road (where no pavement is provided) *against* vehicular traffic as advocated in the Highway Code.

With regard to children it hardly seems possible to include them in the proposed legislation, and so far as they are concerned the only remedy seems to be in training and example, the example of their elders.

It remains to consider the motorist, in which class is included not only the private car owner but the driver of motor-bicycles, lorries, and public conveyances. Earlier in this essay the theory has been advanced that the fear of consequences is the factor to be stressed, and the arguments in support of this theory need not be repeated. At present the consequences are generally speaking light, but they vary in their effect upon the different types of driver, a fine of £3 with or without endorsement or suspension of licence being a serious annoyance for the average private owner to suffer, but it is a fairly heavy punishment to the lorry or bus driver. The standard of punishment is unsatisfactory; the fault lies more with the police courts than in any defect in the Road Traffic Act. Justices should be urged to consider this aspect of their duties and to inflict what they consider to be severe penalties when careless or dangerous driving has been proved.

The powers of suspension of licences which are provided should also be used without hesitation, and sentiment should

not be allowed to interfere with the proper course of justice. To try juvenile offenders special benches and magistrates are required, and it is worth consideration whether legislation should not be introduced to make it obligatory that similar provision be made for the trial of offenders against the Road Traffic Act. There is no doubt that justices sitting even in one court and hearing the same evidence vary in their opinions and attitude towards the offender, and it would seem both wise and reasonable that magistrates should be specially selected by virtue of age and motoring experience and that special courts¹ should sit to hear cases under the Road Traffic Act. The same end would more easily be attained by the employment of more stipendiary magistrates.

The legislation which has been suggested is briefly outlined below :—

(a) To include bicycles as vehicles to which the Road Traffic Act, 1930, shall apply.

(b) To add a clause to the same Act making it illegal for more than two bicycles to be ridden abreast.

(c) To add a clause to the same Act requiring pedal cyclists to be old enough to understand fully and be able to comply with the rules contained in the Highway Code. The age of ten is suggested.

(d) To provide by a new Act of Parliament that pedestrians shall when leaving a pavement, or crossing a street, or road, give the signals required of the driver of a vehicle.

(e) To require by the same legislation that pedestrians shall, when no pavement or path is available, walk against the traffic flow and that they shall not walk in the road when a pavement or path is provided.

(f) That special benches of magistrates or stipendiary magistrates be required for the trial of highway offences.

¹ It is interesting to note that the case for the establishment of Road Traffic Courts, with suggestions for their constitution and procedure, is argued at some length by a writer in the October Number of *The Journal of Criminal Law* (vol. i, No. 4).—ED.

Police Action

So far no mention has been made of the police, and yet the responsibility of bringing offenders to book rests with them. This complicated and often unpleasant duty has been imposed upon them without, at least in some areas, adequate equipment or increase in personnel, and it must be accepted that a great proportion of road offences are not noticed and brought before the courts. Much of the detection is done by patrol cars, and to insure that the general public fully realize that their conduct on the road is the subject of supervision the number of these cars should be greatly increased. In addition, danger spots on the roads should be watched, and such offences as overtaking at the wrong moment, taking bends and cross roads at high speeds noticed and the offenders dealt with by caution or proceedings. Very often a caution administered at the time of the incident would impress itself on the driver, more than if it was sent by letter days or even weeks afterwards.

As regard proceedings there is a marked tendency to employ section 12 of the Road Traffic Act (driving without due care and attention) where the more serious offence (section 11) of dangerous driving is the proper charge. Such offences as overtaking against oncoming traffic, cutting in and the like, most certainly constitute dangerous driving and should be regarded as such and dealt with under the latter section.

Police action is after all limited by the Acts of Parliament which the police have to enforce, and the legislation which has been suggested will not greatly increase the scope, though it should the volume, of police action. Increased control would, however, be secured through the recruitment of extra men and the purchase of additional patrol cars. There does not seem to be any sound reason for the establishment of separate road police, but if such a force should ever come into being it should certainly be under the control of the existing police authorities and chief officer of police. The writer, however, advocates nothing more than a reasonable increase

in strength. The police have proved themselves both courteous and efficient instruments for the enforcement of the law, and all that they require is encouragement and up-to-date equipment. It should, however, again be remembered that nothing the police may do will check the increase in our casualty lists unless the proceedings they initiate are followed up by adequate punishment, and the suggestions which have been made for the creation of suitable police courts, prepared to use their powers to the full, are of great importance.

A mention has been made of the value of immediate caution by the police when a case of bad driving is noticed. This would appear to be of considerable value provided the circumstances did not justify proceedings and also that a sufficient number of police are available on the roads to notice these breaches of highway etiquette and discipline. In rural areas the number of men on road patrol is certainly often insufficient, and to a lesser degree the same is the case in cities. This situation is not due to inactivity on the part of the police but to the fact that much of their duty is performed at night while the busiest times on the roads are during the day or evening. The provision of additional police is then essential if a policy of administering immediate caution is to be adopted. The form of caution would, however, require careful consideration and in practice it would be little more than a statement by the police officer to the delinquent that he had noticed a breach of the Highway Code and that though he did not propose to treat the matter as a subject for proceedings it would be reported to his superior officer. The report could take the simple form of a note in his notebook.

The Situation in Cities

The police are required to pay particular attention to pedestrians in our large cities, and there is ground for the view that such duties are hardly those of a police officer. It is true that one of the many duties of the police is to control traffic, but surely the pedestrian should be taught to look after

himself, particularly in these days when numerous devices are employed to protect him and ensure his safety in crossing the streets.

To relieve the police of this task and at the same time safeguard pedestrians, it is suggested that two further safety measures should be insisted upon, if necessary by legislation, as was done in the case of pedestrian crossings.

(a) That in very busy streets pedestrians should be permitted to cross the street only at recognized crossing places, and that between the crossings the pavements should be railed off from the highway.

(b) That at very busy crossings, instead of holding up vehicular traffic pedestrians should be provided with underground passages.

It might be urged in the case of (b) that underground crossings exist but are not sufficiently used as many pedestrians prefer to risk their lives and limbs in the street rather than take the trouble to go underground. The reason for this attitude would appear to be that these underground crossings are sometimes too complicated or unnecessarily long. A *direct* crossing is required with as little depth and as few steps as possible.

The point will be mentioned again when the problem of traffic circulation is being examined, for the reason that the more pedestrian crossings there are on the streets, the more frequently will traffic be delayed.

Under the head of police action, in so far as accidents are concerned, the improvements suggested are in brief the following :—

(a) An increase in police personnel and patrol cars.

(b) The adoption of a policy of immediate caution in the case of minor breaches of the Highway Code.

(c) Special attention to be paid to danger spots.

(d) As suggested in the earlier section of this essay, to make proper use of section 11 of the Road Traffic Act.

Improvement of Roads

With the exception of a few arterial roads our highways have grown out of the ancient paths and coach roads which followed the line of least resistance, with the result that they twist and turn, approach bridges at dangerous angles, negotiate blind corners, and in general provide a maximum of dangers to the present-day high speed motor vehicle. It is true that they have been and are being widened, awkward turns are being made less difficult, and the more obvious dangers are being reduced, but they are still studded with signs denoting danger ahead, danger of hills, of curves, of cross roads, and of blind corners. These very danger signs are indications of the unsatisfactory attempts which have been made at improvements, and in our main arterial roads few warnings should be necessary. If the high speed vehicle is to be permitted on our roads, these roads must be made fit to carry them. Arterial roads which are suited to modern requirements should therefore be constructed and it is suggested that they should take the following form and further that, through legislation, these roads should be standardized to conform with State requirements. Separate carriageways should be provided for traffic in either direction, and the division should be in the form of a grass strip with trees or reasonably high bushes which would prevent dazzle from the lights of approaching vehicles. Each carriageway should then be divided by markings into three lanes, for slow motor or horse-drawn vehicles on the nearside, medium-speed vehicles in the centre, and on the offside high-speed vehicles. It has often been urged that bicycles should be accommodated on a separate track, but the writer does not see any need for this if these vehicles are included under the Road Traffic Act. This would particularly be the case on three-lane carriageways, on which bicycles would keep to the nearside or slow-moving lane. This modern arterial highway would require footpaths on either side even in purely rural areas. At present these paths are generally provided near villages, but for the safety of "hikers" as well as country people walking

into their towns or from farm to farm, suitable paths throughout the length of the roads is essential.

So far provision has been made for all classes of road users so long as they remain in their particular tracks or paths, but this they cannot or will not do. Vehicles may wish to enter a side road and pedestrians may desire to cross to the other side, and a means must be provided to carry them there in safety. Perfection would be found in the provision of bridges to carry cross traffic, both vehicular and pedestrian, but this extreme measure does not appear to be necessary. Instead, traffic islands would be provided at all cross roads in rural areas, thus imposing a system of "roundabout" traffic. These islands would in the first place slow down the traffic flow and in addition narrow the road for the convenience and safety of pedestrians. Vehicles turning to the offside would then not cross traffic going in the opposite direction, but would mingle with it before leaving the arterial road for the desired side road. Pedestrians would require to cross only one lane of vehicular traffic on either side of the island, over which a footpath would be provided. This system would serve to check excessive speed while providing reasonable safety for all road users at crossings, and would be comparatively cheap to construct as no separate track for bicycles is demanded nor any 'freak' system of overhead bridges to carry cross traffic. The only objection would appear to be a slight slowing down of traffic, but this would by many be regarded as an advantage.

Arterial roads alone have been dealt with above and it is obvious that these cannot be provided between the smaller villages or towns. They should be constructed wherever there is heavy traffic, but there must in addition be other roads which may at times be fairly busy, but which cannot readily and without enormous expense be entirely remodelled on the lines suggested.

This second type of road might be conveniently classified to include major roads of about 18 feet width and carrying a good deal of traffic. A third type would be minor or village roads. The second type should be treated in exactly the same

manner as arterial roads, including the provision of islands at cross roads, except that only a central line would be provided, thus making two lanes of traffic instead of three.

It is important to note that the lines denoting two and three traffic lanes would be provided throughout the whole length of the roads and not merely at bends as is the present custom on minor roads. This would mean that the significance of these lines would be to some extent lost at bends, and therefore at all danger points a *double* line would be marked on the road between each traffic lane. There is always a tendency for cars travelling at speed to cross these lines, but if the double lines are placed 6 inches apart it would indeed be a careless driver who would cross both! The system of double lines at bends would, in the writer's view, constitute a valuable factor in road safety.

On the two and three lane roads no speed limit would be enforced except in built-up areas, but on the remainder, the village roads, a 35 mile per hour limit is suggested. These narrow roads would not be provided with all the safety devices advocated for the two types of major road, and the imposition of a reasonable speed limit would appear to be fully justified. The absence of too extensive development would also lead to the retention of the rural character of these roads, a factor which would be appreciated by a large section of the public.

The safety measures advocated for minor roads are as follows :—

At all bends and danger points "keep left" and "slow" signs would be insisted upon. These signs would be marked on the roadway. At *all* cross roads "Halt at road ahead" signs would be erected, and *a line drawn across the road at the point where the vehicle is required to halt.*

The imposition of a 35 mile per hour speed limit on minor roads would of course have to be provided for by legislation, and as it would be essential that all roads throughout the country should be of the same three standards and supplied with the same type of safety devices, it would probably be necessary to introduce legislation to secure uniformity in all

these respects. Without legislation it is feared that country road authorities would continue to use their own discretion and that a variety of theories and safety measures would be employed. As the motorist requires to concentrate all his attention on the manipulation of his vehicle amongst the traffic it would relieve him considerably if uniformity could be obtained.

The measures suggested in the sphere of road improvements are therefore :—

(a) The provision of arterial roads with three lane carriageways in either direction, an anti-dazzle band of trees between, and roundabout control at cross roads.

(b) The provision of two paths on arterial roads with pedestrian crossings at the roundabout islands.

(c) The provision of two lane carriageways on second-class major roads with the roundabout system at cross roads of importance.

(d) The imposition of a 35 mile an hour speed limit on third-class or minor roads.

(e) The supply of " Halt at road ahead " signs on all cross roads where the roundabout system is not provided.

Circulation of Traffic

Before new avenues are explored it may be recalled that some of the suggestions which have been made for the promotion of road safety will tend to encourage traffic circulation. These points are :—

(a) The improvement of arterial and other first-class roads and the provision of roundabouts at cross roads. This chiefly concerns rural areas, though not entirely, as the system could be used more freely on main roads leading out of our great cities as well as within them.

(b) The prohibition by law of indiscriminate crossing of streets by pedestrians and the fixing of compulsory crossing places on the roads or underground in the case of very busy

streets. This would remove some obstruction and so encourage traffic flow.

(c) The railing off of pavements in very busy areas to prevent indiscriminate crossing and careless stepping off on to the streets. This would allow vehicles to move closer to the pavements than they can do now with safety and so provide more space and therefore freer movement.

Now let us consider what are the causes of restricted traffic flow and try to find remedies.

Narrow Streets

It has been suggested in the writer's hearing that in the future our pavements will be moved from street level to first floor level, the second stories of buildings being set back to accommodate pavements. This solution, which smacks of Mr. H. G. Wells's imaginative genius, seems a remote possibility, and for narrow, busy thoroughfares the only reasonable solution would be to provide the railings already suggested and compulsory crossing places.

Concentration of Traffic at one Point

This is one of the main sources of trouble. Let us suppose that three, four, or more important streets join at one point, with the obvious result that congestion at this place slows down traffic not only there but, as the direct consequence, throughout each of the streets. To encourage the flow of traffic a remedy has therefore to be sought at the point of concentration, and not elsewhere.

When traffic at the junction of these streets is controlled by police or traffic lights it is clear that each stream of traffic must in turn be delayed, but supposing that there is ample space at the junction, delay can be reduced by the provision of a roundabout. This system is thoroughly sound and could often be used to advantage instead of the other methods of control. It has the immense advantage of keeping traffic on the move, however slowly.

At these points of concentration it is also usual for pedestrians as well as vehicular traffic to be in considerable volume, and if they have to cross the roads on the surface still further delay is caused. Where possible it is advocated that, together with the roundabouts, there should be established underground pedestrian crossings and their use enforced by law. Pedestrian crossings on the street level should be sternly suppressed.

In some cases the volume of traffic from a large number of roads might be so great that the space available under the roundabout system could not accommodate traffic from all these roads at once, and to meet this the volume could be reduced by a modified system of control by lights whereby the entry of traffic from each road could be held up in turn for a very short period. This would not cause so much delay as would the sole employment of traffic lights.

Parked Vehicles

Except in very narrow or very busy streets these do not impede traffic so much as might be imagined; but in "bottle necks" and the like, where a traffic jam might occur, parking should be entirely prohibited. Where blocks do not occur there is no objection to vehicles being left at the roadside for a reasonable period. This is a matter for purely local consideration and no general rules can be set down, but where road improvement or building development permits, 12 foot bays along the frontage of shops should be provided to leave the main through street entirely unencumbered with stationary vehicles.

Large shops and industrial concerns should, when building new premises, be required by law to provide parking accommodation for their own and customers' vehicles. All town authorities should be forced to provide free parking accommodation to encourage the private motorist to park his car off the streets.

Bus Halts

Public conveyances, by virtue of their bulk, slow speed, and frequent halts, cause considerable delays, and halting places should not therefore be permitted where it is very important to maintain traffic flow and avoid definite traffic blocks. Suitable halting places should be provided where traffic is normally less dense, or the public conveyances should, alternatively, be deflected into subsidiary roads where these are available. At present there is too general a tendency to permit public conveyances to halt on busy sections of the road, and though public convenience has to be considered there are limits, and those who use the buses must also be prepared to use their legs a little more than they now have to.

Electric trams should be entirely removed from the streets of our great cities. To a great extent they have disappeared, but where they still exist steps should be taken to replace them by trolley-buses or motor-buses. It is so clearly obvious that our busy streets cannot accommodate vehicles on fixed tracks, that those city authorities who still retain them have themselves to blame for the congestion which must result. This point hardly merits discussion and will not be argued at further length.

Heavy Vehicles

There is a tendency for motor transport to develop larger vehicles, and some, with or without trailers, are too big for the average thoroughfare. It is true that legislation exists which limits their size, but some adjustments would appear desirable, as not only do these enormous vehicles occupy more space on the roads than is reasonable, but they block the field of vision of the drivers of smaller cars, and when turning in the streets of cities and country towns they dislocate traffic. The power of these vehicles is also sometimes excessive, it being quite possible for them to travel at 50 m.p.h. It seems to the writer that both the power and dimensions of both public service conveyances and motor-lorries should be the subject

of investigation and that further limitations should be imposed by law. The only alternative would be to restrict the larger vehicles to the roads most suited for them, but this course is hardly to be commended owing to the serious inconvenience which would be caused.

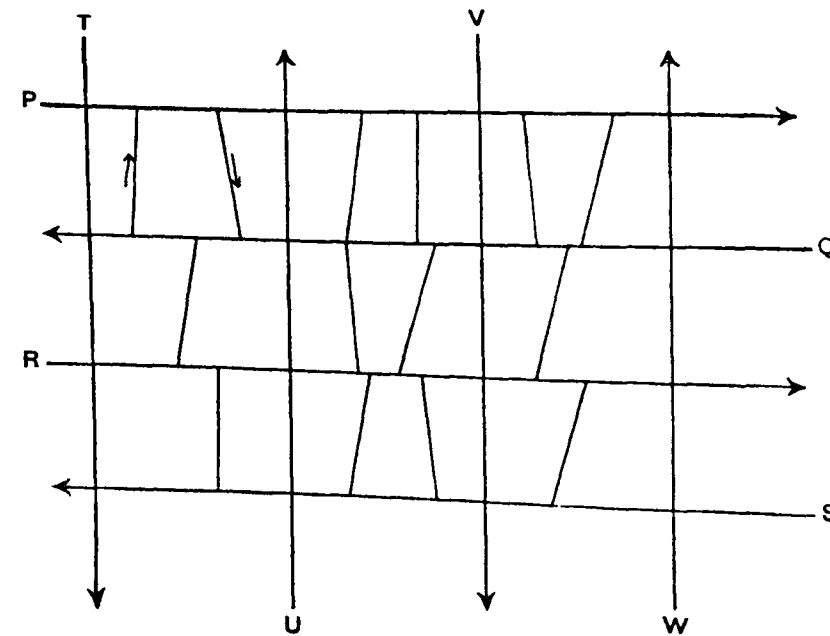
In brief the suggestions put forward for the promotion of free traffic flow are :—

- (a) The improvement of arterial roads.
- (b) The prohibition of indiscriminate crossing of streets by pedestrians and the provision of fixed crossing places both on and under our streets.
- (c) The provision of railings to enable traffic to operate close to pavements without endangering pedestrians.
- (d) The more general use of the roundabout system either in its full, or a modified, form.
- (e) The more careful selection of bus halts.
- (f) The removal of fixed track traffic from the streets.
- (g) The compulsory provision of parking places in connection with large commercial or other places of business or entertainment.
- (h) The revision of the rules governing the size and power of lorries and public conveyances.

It is perhaps superfluous to add that the above suggestions would require legislation.

The remedies put forward so far are very obvious, and if tremendous alteration in our streets cannot be effected, and if at the same time the volume of traffic continues to increase, there will come a stage when road traffic in our great cities will be able to proceed only at a crawl. Some further and much more drastic control must therefore be considered, and the scheme which will be suggested to meet this situation is the imposition of one-way traffic on a much larger scale than is known to-day. The scheme will, however, be based upon the needs of an area and not merely of one street, and the one-way systems will be fitted one into the other on a definite principle, so that the motorist may readily accustom himself to the plan.

Cities in this country have, generally speaking, grown without any proper plan of development and the streets therefore run in all directions and at first sight appear to bear little relation the one to the other. This is particularly the case with London, but before an attempt is made to give practical application to the suggested scheme the reader is asked to refer to the diagram below, which is intended to illustrate the broad outline of the proposals.

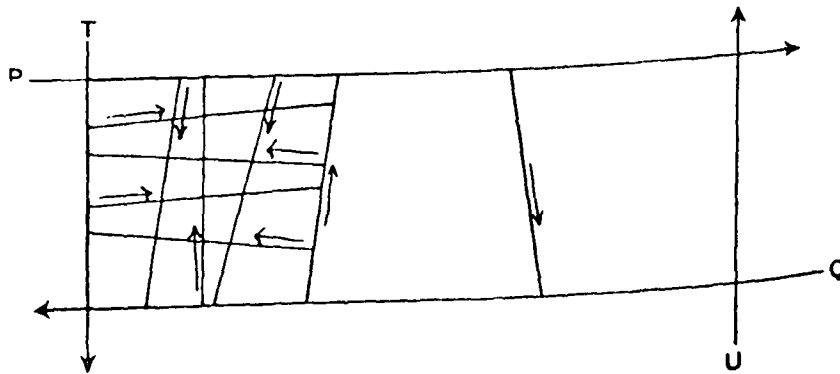


P, Q, R, S are one-way main streets running from east to west, and T, U, V, W similar streets running from north to south. The arrows indicate that alternate main streets carry traffic in the same direction. Other streets which are also important ones link up these main streets and constitute blocks round which there is one-way traffic joining in the one-way traffic flow in the main streets. The system has many advantages, chief of which are that a greater volume of traffic will be accommodated on each street and at the important cross

roads vehicles will be travelling in only two directions so that congestion and traffic blocks would be largely avoided and traffic flow maintained.

That there would be some inconvenience cannot be denied. For example, should a vehicle at the west end of road Q wish to go to the east end of the same road, it would have to take the nearest link road up to road P or down to road R and travel along either of these roads until another convenient link road is followed to the destination in road Q.

To ease the situation there are, however, many other roads within the blocks and these would also be thrown open to traffic, each *alternate* road carrying traffic in the same direction but *all* being one-way roads. A further diagram will illustrate the system within a block.



Vehicles could therefore make use of these side streets except when for good reason they might be marked as closed to through traffic, but though these roads would serve to mitigate the annoyance of making long circuits to reach a point only a short distance "up traffic" on a main street, they would not be used by the larger vehicles or by vehicles travelling a fairly long distance between two points.

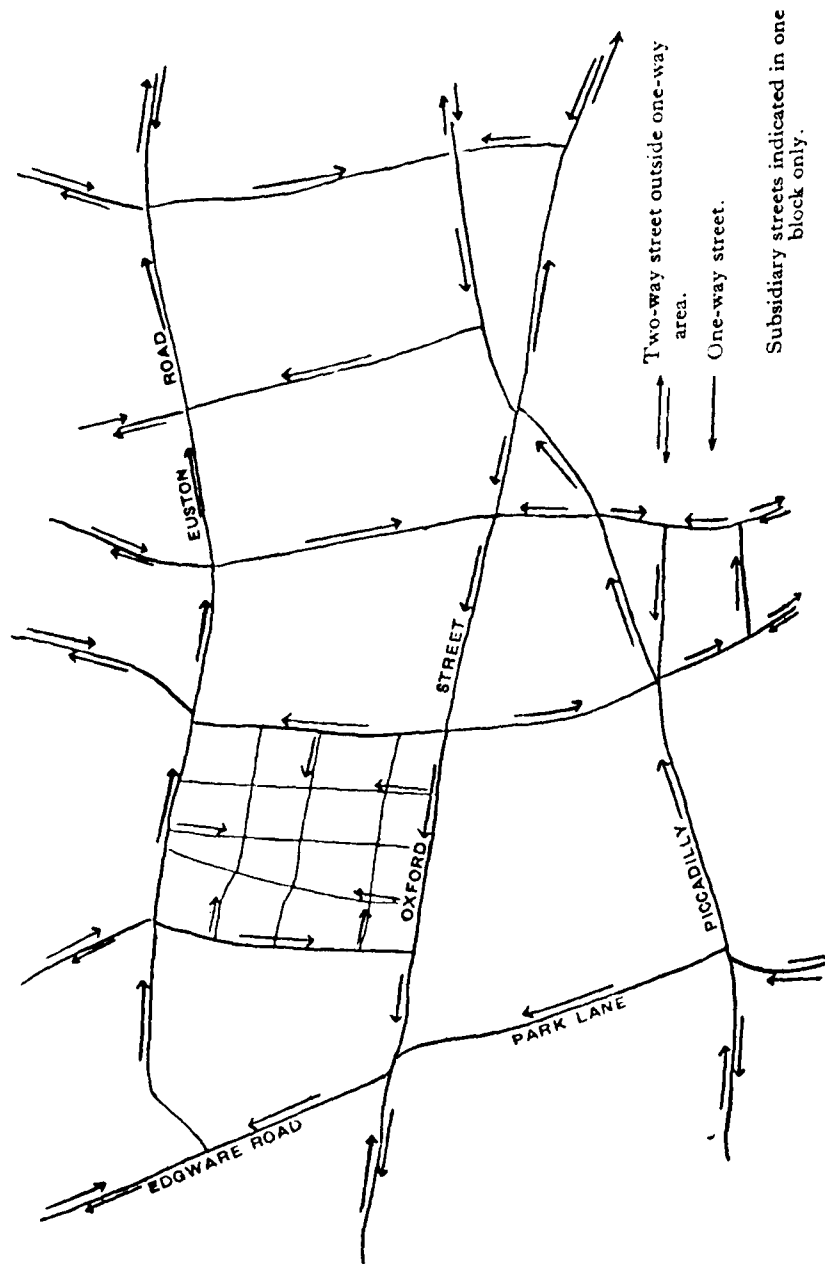
The diagrams have been drawn with parallel roads; unfortunately our towns have not been designed on these ideal lines, but, as has been suggested, there is some degree of reason in the lay-out of the streets of all our cities, and in the plan

on the following page of this essay the writer's ideas are applied to some London streets. It is not suggested that the scheme should be used throughout a city but only in congested areas, so that the main roads of entry and exit would remain two-way thoroughfares.

In applying the scheme to London no attempt has been made to consider the best directions for traffic flow or the needs of particular streets. Intimate knowledge of local conditions would be required for the proper application of the idea and no more has been attempted than to demonstrate that a scheme of this description could be applied to a city in which the streets do not appear to follow any particular plan. It would remain for the local traffic authority to decide in which directions the one-way traffic flow could best be imposed in each street. The critic is therefore asked not to condemn the proposals on the ground that traffic in Piccadilly should be from west to east and not in the opposite direction as the plan indicates.

Any new idea is at once suspect and no doubt the one just suggested will not be an exception. But after all, what is there novel about it? One-way streets have been introduced and are now accepted as a matter of course. True they are not very numerous, but they do require vehicles to go round by other roads before gaining entry, and the proposed scheme is nothing more than the general application of the same idea. It may also be argued that there is no necessity for such drastic control, but the writer has pointed out that some general plan will inevitably be necessary if traffic should still further increase, and in some areas congestion seems to have reached such a pitch that any scheme which would give relief would be welcome. The idea of closing streets to vehicles entering at one end was due either to the street being narrow or overcrowded. Now many main streets in our great cities are, if not narrow, terribly crowded, and the extension of the one-way traffic scheme to them is therefore perfectly logical.

The effect of the plan would be to give more room on the streets (which could possibly be marked off into traffic lanes),



at junctions there would not be so many streams of traffic travelling in different directions, and so congestion and delay would be reduced, while the risk of accident would be much less.

The one objection which the writer can see is the trouble caused to drivers in learning how to use the plan, but provided it is applied in a logical way, making proper use of main streets and their link roads and subsidiary connecting roads, there should be no great difficulty in securing its acceptance by the public.

The element of inconvenience caused by the necessity, in some cases, of taking a longer route should be set off against the greater speed with which the destination is reached, together with the increased safety and reduced annoyance through being held up in traffic blocks.

To give a final point in favour of the scheme, it may be suggested that any great plan of reconstruction would entail vast expenditure while the proposals just set out require little more than the provision of signs.

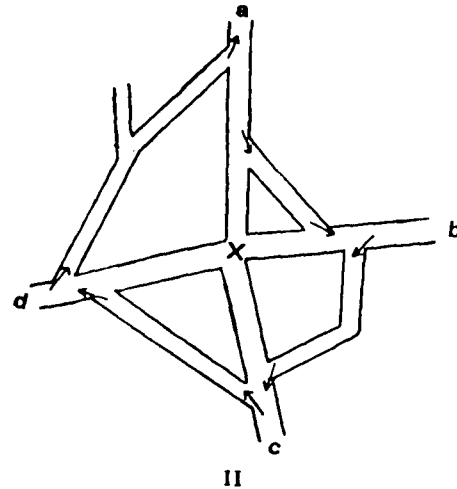
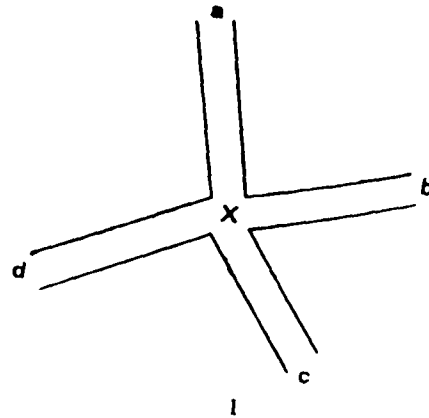
An Alternative System

An alternative system for the encouragement of traffic circulation may be outlined.

It has been indicated that congestion in busy streets is chiefly due to the checking of traffic flow at road junctions. If traffic could be conducted over these junctions without delay the movement of traffic along the streets would be encouraged. Roundabouts have been suggested as being more advantageous than traffic lights, but even they are not always possible or are overburdened with traffic, and to overcome the difficulty the idea is suggested of by-passing the junctions, just as busy towns are avoided by conducting traffic round them. The theory is best explained by the diagrams on pages 452 and 453.

Diagram I shows the junction of four roads, a, b, c, d, and it is a congested point, as all traffic has to pass through the central area X.

Diagram II shows how the junction could be treated by providing *one-way* by-pass roads for traffic turning left only. As only left-hand traffic is allowed in these by-pass streets no additional dangerous crossings are created, but the traffic

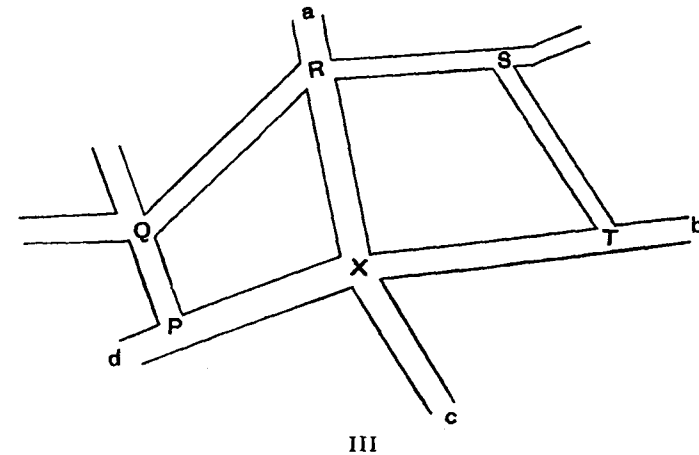


which will have to cross the area X is immensely reduced. There must be many crossings where suitable by-pass roads already exist, as it is not essential that the street linking the two main thoroughfares should be immediately at the junction. The use of existing facilities of this nature should not be ignored,

and even if only two roads at a junction can be so connected a good deal is gained and the expense is probably negligible.

Diagram III shows a method of obtaining partial relief over the area X, by using existing roads P, Q, R, S, T, to by-pass all traffic from d to b, thus avoiding the congested area at X; but this street, which would carry only one-way traffic, would also accommodate vehicles passing from d to a and from a to b. No expense would be incurred except for traffic signs and possibly control by lights at R.

Alternatively the streets P, Q, R and R, S, T could be used for traffic turning left from d to a and from a to b on the lines of Diagram II, while through traffic from a would continue to cross the area X.



These proposals are eminently simple and it is suggested that all busy junctions would repay close study with the object of finding suitable existing streets through which traffic could be carried round the congested area. Sometimes these will be found to be available, but occasionally it might be worth while to widen lanes and incur the expense of some measure of reconstruction.

In dealing with this problem it is essential to study the general situation ; that is, it is not enough to try to control

traffic in a street junction, it is necessary to study where the traffic is going and try to find a route for it without allowing it to enter the troublesome area. The writer feels that much more could be done on these lines and better use made of side streets which at first appear to be of little value, but which could be turned to great account.

A great deal more could be written on the subject of road accidents and their causes, and a variety of theories advanced for the promotion of traffic circulation, but the writer has endeavoured to avoid fantastic solutions. The broad grounds on which remedies have been based are the unfair concentration of preventive action on motor-car drivers, the uneven and inadequate schemes for road improvement, the excessive size and power of commercial and public service vehicles allowed to use our roads, and the narrow standpoint from which traffic congestion problems are regarded. The meticulous detail of the statistics collected for the purpose of determining the causes of accidents have so complicated the problem that the proper solutions may well be missed, and to return to the metaphor employed in the opening pages of this essay, there is grave danger of the wood not being seen for the trees. In short the problem is not so difficult as it has been made out to be, and courageous legislation in the proper directions would reduce our casualty lists to reasonable dimensions.

That road accidents will entirely disappear is not possible, as no amount of legislation or police control can counteract human fallibility. There will always be the rash youth who takes risks and leads himself and others into trouble, and the pedestrian who unthinkingly walks in front of a passing vehicle. All that can be done is to make these acts of carelessness or thoughtlessness, whether they be committed by motorists, cyclists, or pedestrians, offences against the law, and leave the further responsibility for looking after himself to the individual.

The Use of a Graph in Relation to a Recent Motor Accident Case

By A. E. HARWICH, F.R.M.S.

Assistant Superintendent, Uganda Police

THE district of Masaka is one of the largest and richest in the Protectorate of Uganda. It derives its wealth mainly from the annual cotton crop which matures early in the year. The "cotton season" during which the crop is picked, ginned, and packed is consequently fairly hectic for all concerned.

Hundreds of lorries collect the raw cotton and bring it, together with the growers, to the ginneries, where it is bought for cash, cleaned, and prepared for export. Most of it is then taken to the port of Bukakata on Victoria Nyanza for shipment to the coast.

For the police this is the season of unceasing vigilance on the roads to curb the zeal of lorry drivers who endeavour to make up in speed what they lack in skill. When it is realized that driving hours are unlimited and that the driver receives a bonus for each trip made one can form an idea of the number of accidents which the police are called upon to investigate in the course of the season. Such an accident of rather unusual interest is recounted below.

Just before sunset on the 7th of May this year a cyclist returning to his home from Bugonzi was knocked down and severely injured by an overtaking lorry coming from Bukakata. The lorry did not stop and continued at a high speed towards Masaka.

Two natives whom the lorry had passed a few seconds earlier did not actually see the accident owing to a slight bend

in the road. They had, however, heard the crash. Hurrying round the corner they first noticed a Public Works Department handcart which had been struck by the lorry. Further on they found a wrecked cycle, and further still the unconscious cyclist lying at the side of the road. A quarter of an hour later another lorry, M438, approached from the Bukakata direction and, on being hailed, stopped and, hearing what had happened, the driver took the three natives and the bicycle to Kidzi ginney, a couple of miles along the road. From there a telephone message was sent to the police and then the lorry left for the hospital at Masaka. On the way lorry K6589 was met. This lorry had also just returned from Bukakata where it had delivered a load of cotton seed.

An inspection of the scene revealed very little of assistance to the police. The road surface was very hard and dry and, with the exception of a tyre-mark running across the shafts of the handcart, there was no clue to the identity of the culprit. The two witnesses were only able to say that the bonnet of the lorry had been black. They had been unable to see the driver. The task of identification was rendered more difficult owing to the fact that the accident had occurred at the close of the cotton season, a time when hundreds of journeys a day are made by lorries carrying cotton from the various ginneries for shipment at Bukakata. Failing wax or plaster of paris a rubbing was made of the tyre-mark with a sheet of damp paper and the design of the pattern was carefully measured.

At Kidzi ginney two lorries were found which, judging by the temperature of their respective radiators, had recently returned from a run. One of these could be ruled out immediately as it had a red bonnet and was known to have returned to the garage after the injured man had been taken to hospital; this was lorry K6589. The other lorry, M480, however, was interesting. Although it had been in the ginney since shortly after sunset and considerably longer than K6589 its radiator was hotter than that of the latter's; it must, therefore, have been travelling at a very high speed. Its offside headlamp was loose and the socket showed a recent break in

the metal. The driver had not been seen since his return. These facts, highly suspicious as they were, were not in themselves sufficient to justify a charge being brought against the driver.

That night all ginneries and garages in and around Masaka were visited but no fresh evidence was elicited.

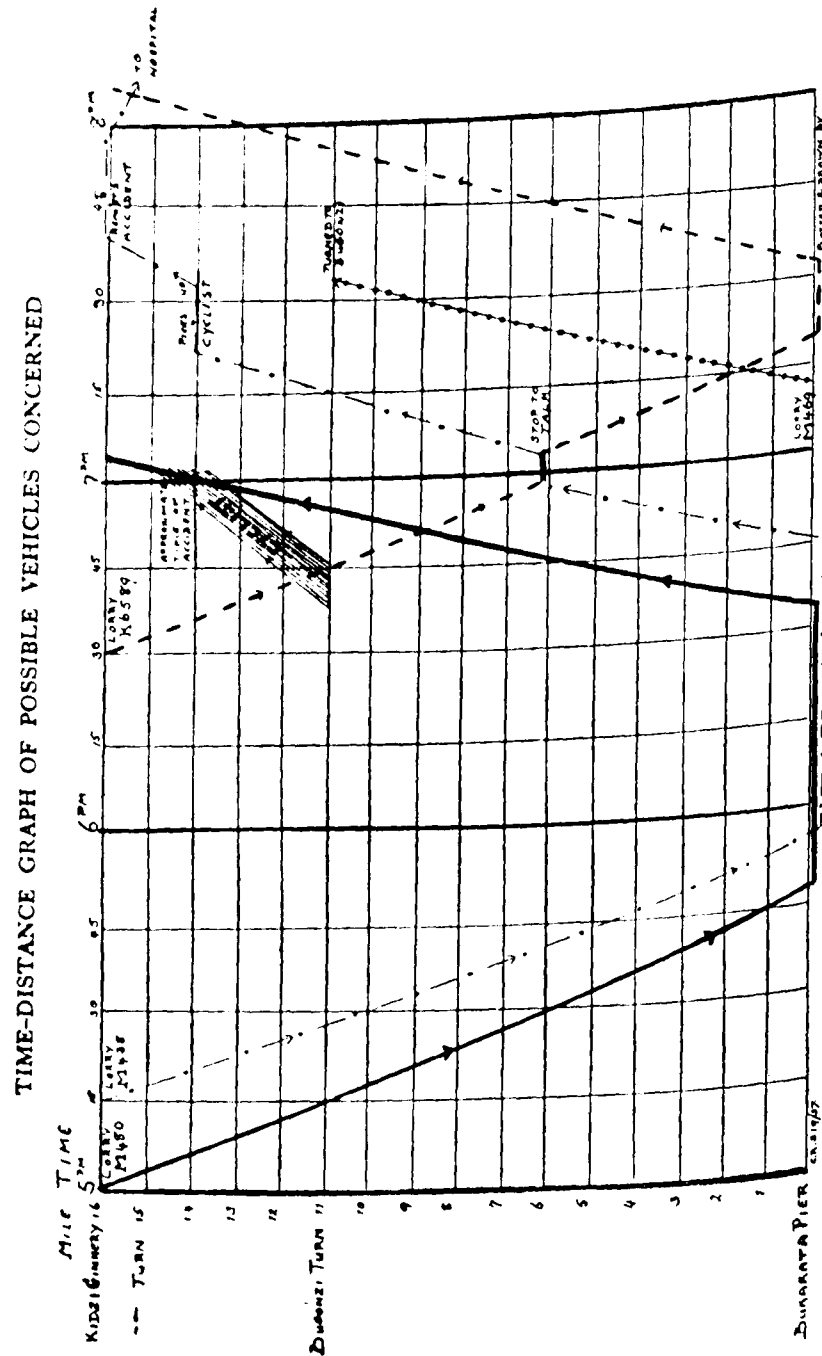
Next morning a scrutiny of the delivery records at the Piermaster's office at Bukakata revealed that nine lorries had unloaded cotton the previous evening.

After further inquiries at the different ginneries concerned five of these lorries were eliminated—they all had red bonnets. This left four lorries—the three already mentioned and one other, M469. This last one was also ruled out as it was proved to have turned off towards Bugonzi before reaching the scene of the accident. We were now left with lorries M438, K6589, and M480.

M438 had left Kidzi on the outward journey at 5.15 p.m. and arrived at the pier at 5.50. It left for the return journey at 6.45 and met K6589 at mile $6\frac{1}{2}$ at 6.55. The two drivers stopped for a chat and then continued their respective journeys. At 7.20 p.m. M438 arrived at the scene of the accident, picked up the injured man, and carried him first to the ginney and then to hospital. This lorry could, therefore, be absolved from blame.

Lorry K6589 did not leave Kidzi on the outward journey until 6.30 p.m. At mile 12 at 6.40 he passed the cyclist going in the opposite direction. Ten minutes later at mile $8\frac{1}{2}$ he passed M480 but neither vehicles stopped. At mile $6\frac{1}{2}$, as already stated, he stopped to talk to the driver of M438. At mile $1\frac{1}{2}$ he passed lorry M469. At 7.20 he arrived at the pier, unloaded without wasting time, and left for home again at 7.35 p.m., arriving at Kidzi in time to meet M438 on its way to Masaka hospital. He was also eliminated.

M480 left Kidzi on the outward journey at 5.0 p.m. and arrived at Bukakata at 5.47—the reason for the delay en route is not far to seek. He left again at 6.40 p.m. and arrived at Kidzi at 7.05, taking twenty-five minutes for the 16 mile journey which is, incidentally, uphill all the way. He was, also,



USE OF GRAPH IN MOTOR ACCIDENT 459

driving into the setting sun! After arriving at the ginnery he immediately went away on foot and was not seen again until the following morning. There is good reason to believe that during his last journey he was well under the influence of drink.

The number of vehicles involved and the varying times of departure and arrival at the different stopping places, added to the conflicting and often reluctant statements of the witnesses, made it extremely difficult to determine at what time any particular vehicle had passed a given point, *i.e.* mile 14, where the accident had occurred.

A graph was prepared in which the mileage is shown by a corresponding number of horizontal lines and time by vertical lines representing quarter-hour divisions. Each vehicle starts at the top of the graph (Kidzi ginnery) and works its way to the bottom (Bukakata Pier), and then, after a halt for unloading, back again to the top. The diagonal lines showing the distances covered and the time taken by each individual vehicle are based on the approximate times of arrival and departure as given by independent witnesses. It can be seen quite clearly that the only possible vehicle which could have knocked down the cyclist was lorry M480. This was further corroborated when the tyre patterns were compared with the rubbing of the tyre-mark found at the scene. Also its bonnet was black.

On this purely circumstantial evidence the magistrate convicted the driver and sentenced him to three months' imprisonment with hard labour. The cyclist, fortunately, recovered from his injuries.

Identification by means of the Data in Papillary Ridge Systems on the Plantar Surfaces

By CHIEF INSPECTOR POPPY

Officer in Charge of the Criminal Records Office, Nairobi, Kenya Colony

IN civilized parts the term 'footprint' normally conveys to the mind an impression made by a boot or shoe, for it is most unusual for a person to go barefooted. Consequently, although it is well known that the papillary ridges which appear on the plantar surfaces are no less persistent, and that the data in those systems are just as reliable for purposes of identification as those which occur on the palms, it is not possible to take advantage of this knowledge with a view to the detection of perpetrators of crime.

With few exceptions, natives of East Africa go unshod and, whilst there are many factors, such as dirt adhering to the soles of the feet and the unsuitable nature of surfaces trodden upon, which more often than not prevent the ridge characteristic data from appearing in their footprints, it occasionally happens that those details are to be observed, and recently, for the first time in Kenya Colony, advantage was taken of such an impression to bring an offender to justice.

A club-house in Nairobi was broken into during the night, and property stolen from the bar. When the premises were examined the following morning a number of footprints in dust were noticed upon the polished counter-top and upon the tops of stools which were standing in front of the counter, which had been impressed by feet which had come into contact with dirt prior to being placed upon the stools and counter.

These impressions were evidently those of the thief, for they were most conspicuous, and must have been noticed if they had been present when the bar was locked up the previous night, for the lighting was quite good. Furthermore, they were of a most fragile nature and, even if not noticed, they would have been obliterated by persons using the bar up to the time when it was closed.

As it was, some of the most conspicuous of them appeared on the portion of the counter above the till and on stools in front of that part of the counter. Those impressions would have been the most likely to have been marred, had the bar have been used after they were impressed, because, by virtue of their position adjacent to the till, they were in those parts which one would expect to be most used in the course of transactions in the bar. These particular impressions pointed behind the counter, indicating that the person who made them had walked over the counter at that point to get behind the bar, having utilized the high stools to assist him to get on top of the counter.

One of the stools which was standing in front of that part of the counter under which the till was situated, and over which a light depended from the ceiling, was taken to the Criminal Investigation Department, and the impression of a right foot which appeared on its top surface was photographed.

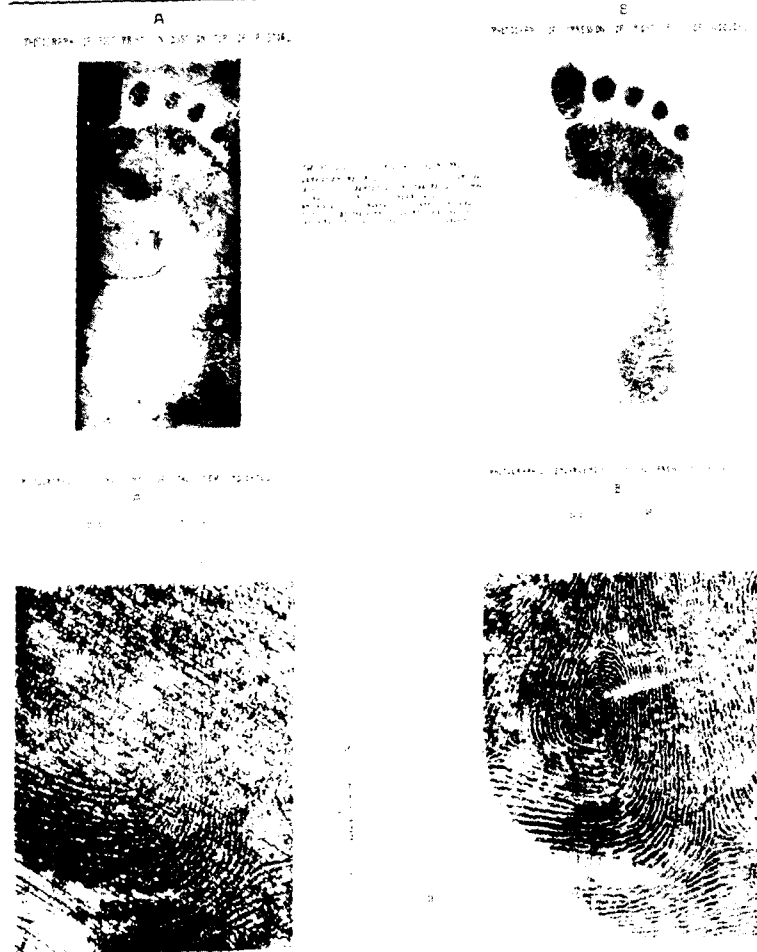
The footprints of all natives employed in any capacity by the club were then taken, and the impression on the stool was found to be identical with that of the right foot of the head ground-boy, who had no occasion to enter the bar on the day of the offence except once, when he returned some tennis balls to the steward.

This boy was charged with the offence, pleading 'Not Guilty', and evidence was given to the effect that he had walked upon the stools and counter, which he had no right or reason to do, and that since the bar and the stools were used by numerous people for a number of hours *after* he had returned the tennis balls, and it would have been impossible for the delicate footprints to have survived.

Photographic exhibits were produced of the footprint on the stool and of the impression of the right foot of the accused, in two of which twenty-four ridge characteristics which were in identical sequence were marked, as shown in the illustration. An expert testified that, during a number of years' experience, he had never known impressions of papillary ridges taken from different persons to agree in the sequence of the ridge characteristic data. He stated that these ridges occur only on the palmar and plantar surfaces and that, although for purposes of convenience and because systems of classifying them had been evolved, those ridge systems which appear on the inside surfaces of the end phalanges of the fingers and thumbs were ordinarily used for identification, the data which appear in the systems on the remainder of palmar surfaces and the soles of the feet are no less constant or reliable. In fact, impressions from portions of palmar surfaces other than the end phalanges of digits were frequently used as a means of identification and he had, for that purpose, taken footprints of infants, whose finger- or palm-prints it was impracticable to take, owing to clenching and the fragile nature of the hands.

It was explained to the Court that identification by means of data in papillary ridge systems was founded upon the theory of probability, which theory was based upon the fact that when events are independent of each other the probability of their occurrence together is the product of their respective possibilities. On applying that theory to the twenty-four coincident points of similarity marked in the footprints in question, as it was applied to finger- and palm-prints by Sir Francis Galton, the chance of the footprint on the stool being that of any person other than the accused was 1 in 281,474,976,710,656, and there were other points of similarity which were not marked. According to one estimate the population of the world in 1932 was 1,400,000,000, and if that estimate were taken as being approximately correct, the chance of the footprint on the stool being that of a person other than the accused was 1 in a number some 200,000 times greater

IDENTIFIED BY PAPILLARY RIDGES ON THE SOLE OF THE FOOT



than the estimated population of the world in 1932. In the application of this theory due and ample allowance had been made for the relative frequency with which some characteristics occur as compared with others, and a number of experts considered that Sir Francis Galton was somewhat conservative, and that the allowances he made were too great.

The expert had no doubt that the impression had been made by the right foot of the accused.

The native advanced as his defence that he had walked on the stool when he returned the tennis balls but, when he perceived the futility of such a defence, he suggested that his footprint had been placed upon it by the police. This, naturally, did not assist him to any extent.

The Court stated that there could be no doubt as to the identity of the footprint, and that there was a weight of evidence to show that the mark could not have been impressed before the closing of the bar.

A sentence of one year's hard labour was passed upon the accused, who had no previous convictions and who, but for the footprint, would have escaped detection. Indeed, as head ground-boy with seven years' service with the club, he would have been deputed to keep watch with a view to the apprehension of the offender should he have attempted to repeat his criminal activities in so far as the club property was concerned.

The Law of Public Meetings¹

By J. GRIFFITH MORGAN, M.A., LL.B.,

Barrister-at-Law, Director of Legal Studies at the University College
of the South-West of England

WE live in a very strange country. Some people do not quite understand our system of law or our system of order. They seem to treat us as being rather peculiar people, and indeed, there is a certain measure of correctness in their attitude, because, strange though it may seem, we really have no law of public meeting in this country. That is an extraordinary statement, but I hope that point is reasonably clear. We have been so accustomed to have public meetings, which the police have to control in some way or another, that we imagine that there is a definite law of public meeting.

In many countries they do set apart special parts of their law to deal with such things as public meetings, but in this country the position is accurately set out in the above statement. Any man, any number of men, can go where they like, say what they like, and do what they like, provided they do not violate the ordinary principles of English law. That is a rather broad definition, but nevertheless it is the manner in which our system of English law of public meeting is based. You, myself, any number of us, can go where we like, do what we like, and say what we like, provided we do not violate any of the ordinary principles of our English legal system. That is, provided we do not slander or libel people, or commit trespass, or violate any of the elementary principles of our system of Justice.

You will wonder, I expect, why I have the temerity to make such a statement as that. I should be very hesitant to do so, were it not for a statement made by the Lord Chief

¹ A Lecture given at the Detectives' Conference for the South-Western Police Forces, 1937.

Justice in this country, Lord Hewart. In a case of which perhaps many readers will be aware, the case of *Duncan v. Jones*, he prefaced his judgment by these remarks :—

“ There have been moments during the argument in this case when it appeared to be suggested that the Court was being confronted with a grave case involving what is called the right of public meeting. I say ‘called’ because *English law does not recognize any special right of public meeting either for a political or any other purpose.*”

This quotation should be ample authority for the statement which I have just made. We do not recognize the right of people to come together for any special matter.

Many of us may be interested in mass demonstrations. Many of us, perhaps, are interested in public meetings on the highway. If these meetings on the highway are obstructing traffic, or cause a public nuisance, then the people have no right to be there. But in this country there are many technical breaches of the law which we tolerate, and one of them is the habit of allowing people to congregate in a public highway for the purpose of expressing their views on current policies. This has been tolerated, but there are restrictions, and I would like to discuss in this article how and when it is that an assembly of people gathered together in a public place becomes what is known in our English legal system as an unlawful assembly. Under what circumstances does a meeting of people in this country, in a public place, become an unlawful assembly?

Let me put it in this way. These points are relatively clear, but this is a particular branch of law which is even more obscure than the ordinary principles. If three or more people—the number is rather important—congregate together for the purpose of committing a breach of the peace, that clearly is an unlawful assembly; I do not think there can be any measure of doubt about that proposition. Many people intend to commit the breach of the peace, but through the efficiency of the police they are prevented from so doing. But if three or more people gather together to commit a breach of the peace they are obviously guilty.

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Supposing three or more people meet together under such circumstances, and that they cause a reasonable fear to arise that a breach of the peace will be committed by them. Is that an unlawful assembly? Yes. If three or more people meet together and give rise to the belief that they are going to commit a breach of the peace, that undoubtedly is an unlawful assembly.

Supposing I and my friends meet together for a perfectly lawful purpose, and suppose, further, that our views are not those of the people round us, and that those people commit a breach of the peace: are we then guilty of an unlawful assembly? Now that, I think, is one of the most difficult questions to which lawyers and policemen will have to address themselves. The Lord Chief Justice himself said that was an extremely difficult question.

But it arose years ago at Bristol. There was a very famous case, the case of *Beatty v. Gillbanks*. You all remember that Salvation Army people were parading the streets, and some people objected to the Salvation Army and immediately indulged in breaches of the peace. Two local justices ordered the Salvation Army to cease from meeting, but in spite of these orders the Salvation Army continued to meet, and the leaders were arrested and charged with unlawful assembly.

It is the habit of the law (a very profitable one for lawyers!) for cases sometimes to be changed from court to court until they reach the House of Lords. In this particular case, when the case went from the Bristol court, where those people had been convicted, up to the Divisional Court in London, the Divisional Court said—and this is a very important principle—that these men were not guilty of unlawful assembly. They were doing a perfectly lawful act, and the fact that other people saw fit to interrupt them was no reason whatsoever to make them guilty of unlawful assembly. I would like to emphasize the value of that case. It is a case which will probably be discussed further by the courts, since a section of the Bar is not satisfied with the decision.

Therefore, if you and I, and a number of other people,

meet for a perfectly lawful purpose, the fact that other people are likely to cause a breach of the peace does not make our meeting in any way unlawful. I make that statement as a general statement, and the authority for it is *Beatty v. Gillbanks*.

But is it true under all circumstances? Is that true under every circumstance? The answer is 'no'. It is a general statement; but if you have to administer order it would be very difficult to do it if that statement applied to every possible case. Is there any qualification? Our purpose may be perfectly lawful; we may intend to do everything that is good. But if the police cannot keep order (notice the qualification), if it is impossible to maintain public order without preventing that meeting, then that meeting can become an unlawful assembly.

Here is a case which has been very much misunderstood in police and legal circles—the case of *Wise v. Dunning*. On the authority of that case people say, and probably correctly, that if there is anything illegal in a meeting—if a man, for instance, libels another in a meeting, or slanders another in a meeting—any illegal act—illegal in the sense of causing a breach of the peace—makes a meeting an unlawful assembly, and *Wise v. Dunning* is quoted as an authority for that proposition.

Here are the facts. In 1902, at Liverpool, a Protestant was addressing a public meeting. In Liverpool there is an atmosphere of permanent antagonism between Protestants and Roman Catholics. The Protestant orator, speaking from the platform, was using violent and vulgar epithets which were directed against the Roman Catholics. This was in violation of a local by-law in force in Liverpool, and the Court came to the conclusion that he ought to be bound over to keep the peace. I do not think anyone would disagree with that decision, but the decision is being used for something far wider. In this case the interpretation of the constitutional law was that if a slander occurs at a meeting, that meeting becomes an unlawful assembly if the natural result is to commit a breach of the peace.

I confine myself at the moment to the English Common Law. We in this country recognize no right of public meeting. People can do what they like provided they comply with the conditions I have already indicated. The fact that people meeting for a lawful purpose are likely to upset others is totally immaterial unless you can bring the proposition within the two cases I have mentioned. If the police cannot keep order in any other way, then it becomes unlawful. If a slander has been used, and if a breach of the peace is likely, then the meeting becomes an unlawful assembly.

No one can look at this proposition and say that we have a satisfactory law with regard to public meetings in this country.

I will now deal with attempts which have been made to get round certain difficulties. These are not actually attempts to avoid the law: but the law of public meeting, as it has been understood, has been felt to be unsatisfactory from the police point of view. They have found that they are not obtaining sufficient authority.

In 1934 there was a very celebrated case, *Duncan v. Jones*. This case did not in any way deal with the right of public meeting. People are quoted as saying that it has given the police certain additional powers to make an assembly an unlawful assembly. But the case of *Duncan v. Jones*, which the police will probably rely upon frequently in the future, did not discuss the question of unlawful assembly. It decided a most important point; perhaps a method of getting round the difficulties.

In 1934 a woman desired to address a public meeting. It was felt that a breach of the peace and disturbances would immediately result. The police took the matter into their hands, and politely requested her to leave. She refused. The inspector said he was very much afraid she could not address the meeting. She replied: "I intend to address this meeting, and no force in England will stop me." The inspector was sufficiently firm, and she did not address the meeting. She did not create any disturbance, and the meeting was not

held. Were the police within their rights in stopping her, because the meeting was not an unlawful assembly—no evidence had been produced to show that it was? Well, they got round the difficulty very cleverly, and probably quite rightly. The Court held, in substance, that this had nothing to do with unlawful assembly; this lady has obstructed an officer in the execution of his duty; it was his duty to prevent apprehended breaches of the peace.

It was proved in evidence that this inspector reasonably apprehended a breach of the peace, and Lord Hewart held that he had a public duty to perform and that he acted properly.

Interfering with a police officer in the execution of his duty is one thing, and an unlawful assembly is another thing; but without doubt the decision of the Court on the facts was perfectly right. The duty of a policeman is to prevent apprehended breaches of the peace, and consequently, said the Court, he was justified in what he did. I suggest that if that be so, a great deal of the law with regard to unlawful assembly and public meetings can be skated round.

There is another point to be mentioned—the right of the police to enter upon private premises where a public meeting is being held.

About eighteen months ago another important case was decided. It was a Welsh case, from Bridgend, *Thomas v. Sawkins*. A public meeting was held at a hall in Bridgend. Many people were invited to come to that meeting, by various methods—we know what those methods are. The meeting was for a very controversial purpose, and it was very likely to cause a breach of the peace. The premises were private ones.

Now comes the interesting point. In this case five members of the local police force entered. The man who was going to speak, Thomas, politely requested them to leave. They refused. He again requested them to leave, and they refused; whereupon he seized hold of a man who had the rank of inspector and began to thrust him out. Now, the

sergeant who was there took hold of Thomas and said, "You must not hurt my superior officer."

While this altercation was going on the people in the hall began to agitate to throw out the police; but at that moment other uniformed men appeared and the incipient rebellion was stopped. The meeting was held.

Thomas brought an action against the sergeant for assault and battery, in order to test the legality of the police to enter the building, and at a subsequent hearing the Lord Chief Justice ruled that if the police reasonably apprehended that if they were not present at the meeting, seditious speeches would be made or breaches of the peace would take place, they were entitled to enter and remain in the hall and at the meeting, and as Sergeant Sawkins was merely asserting his right to remain there and protect his superior officer, the information was rightly dismissed.

That is a very important case.

Another case decided some time ago was that of a person driving a car who had committed an offence. He disappeared into a garage and the police officers went after him. The owner of the garage—as described in the reports, more forcibly than politely—requested the police officers to leave, and the question came before the courts as to whether the police officers had the right to go into private premises in pursuit of a person whom they wanted to interrogate. Lord Hewart decided that they had no right to remain on the premises against the wishes of the garage proprietor. This case shows how extraordinarily delicate is the law. But the case of *Thomas v. Sawkins* is obviously of very definite value to the police.

In recent years, owing to various subversive activities, it has been found necessary to pass certain statutes, and one of these is the Public Order Act of 1936.

Most readers will be familiar with that Act, and there have been some prosecutions under it. You are aware of its general provisions. It deals with uniform as well as public meetings. Now, there was an older Act, the Public Meetings

Act of 1908, and under that Act if a man was guilty of disorderly conduct which prevented the purpose of the meeting being carried out, he was guilty of an offence. That Act had very little result.

Has the new Act added anything? What it has done is to establish that if a police constable has any reason to believe that any person in the audience has any intentions of upsetting the meeting, and the chairman requests the constable to do so, he can take the names and addresses. But, far more important is this proviso; if the police constable reasonably believes that a man is giving a false name and address, or if the man refuses to give an address, he may be arrested.

This is a general summary of the law relating to public meetings, as it at present stands. The moral at which we are bound to arrive is that the law is far from clear on many crucial issues. The maintenance of order is one of the chief practices of Government, and there can be little doubt of the need of some definite statutory rule which will remove the doubt or obscurity which centre round some of the aspects of this subject.

Receivers of Stolen Property

By R. MORRISH

Ex-Chief Inspector, Metropolitan Police

STATISTICS show that large quantities of goods are stolen throughout the country every year. The percentage of property recovered is comparatively small. What becomes of the major portion?

It would be impracticable to give a detailed list of every kind of goods acquired by thieves and receivers, but amongst the most valuable are articles of gold, jewellery set with precious stones, bales of cloth, clothing of all descriptions, tobacco in various forms, motor vehicles, and bicycles.

In minor cases of stealing the property is often found in the prisoner's possession, or in the keeping of friends or relatives. A considerable portion is traced to pawnbrokers.

The greatest difficulty of investigating officers is to find property stolen by gangs, and in many cases it is well known that clever receivers are involved. Housebreakers, shop-breakers, warehouse-breakers, and thieves who steal from transport vehicles, often arrange to take their property to certain receivers, and when such criminals are arrested they do not usually say anything regarding their 'employers'. Thieves are generally reticent, too, in relation to their past depredations, and in those cases where they admit having committed other offences they are silent as to the disposal of the property.

It is true that receivers are sometimes caught, and they are occasionally convicted. There are, however, difficulties in connection with these dangerous criminals which would sometimes appear insurmountable; questions of guilty knowledge; questions of identity of the property; questions

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of control, that it needs all the skill of experienced officers to obtain such evidence as will satisfy the jury beyond all reasonable doubt that the accused is guilty of feloniously receiving stolen property. There are in fact many acquittals of persons indicted with this serious offence.

What is the law as to felonious receiving? 'Receiving' means receiving property stolen or unlawfully obtained, knowing at the time of its receipt that it was so obtained. You must first prove the larceny or fraud; then you must prove the possession, either actual or constructive, of the actual goods; and you must prove guilty knowledge at the time of receipt. (Section 33, Larceny Act, 1916.)

The offence is complete as soon as the person obtains control of the property. The word 'control' is very important. Let us consider an example. Police officers receive reliable information that a man in the East End of London is going to receive a quantity of stolen furs. The officers are satisfied he is going to receive them feloniously, but let us remember they have to satisfy a jury. The thieves are followed in a police car, and are seen to take the furs into the premises of the receiver. The officers enter the shop and at once arrest the thieves and the occupier of the premises. On the receiver being arrested he says, "What are you talking about? These men brought the furs into my shop and asked me to count them over, examine them, and give them an idea of their value. I don't know these men or where the furs came from." The thieves want to clear him, and one of them follows up his remarks by saying, "Quite right, it's no good pulling him in, he knows nothing about it." No other stolen property is found on the receiver's premises; there is no evidence of guilty knowledge or control, and he is certain of an acquittal.

What is 'control'? A man may handle property as did the man in the above-mentioned case, counting over furs and examining them; there is no 'control' from the legal point of view. But the same man might have control of those furs if he never saw them and if they were five miles away. The evidence may point to the fact that he has his agents working,

somebody else on his behalf has got control of the goods, and so they are in his constructive possession.

It is most important that police officers should understand how to obtain evidence in cases of receiving; and how and when to decide to make the arrest. When you go to a receiver's place do not make up your mind too quickly to arrest him. You may have received reliable information that he has certain stolen property in his possession. That does not mean you are certain he received it with guilty knowledge, or that he controls it. It is safe to assume that in numerous cases officers have made the mistake of deciding to arrest receivers without questioning them as soon as the property is found. It is certain you cannot read the suspect's mind, and you are entitled to investigate the case by asking questions without caution until you have made up your mind to arrest, and this you should not do until you are satisfied that the evidence is sufficient to justify the action. If, of course, there is ample evidence of felonious receiving before you enter the premises, which is very seldom the case, then you must caution at once, because you have decided to arrest.

The following example will explain my point more fully. The writer went into a cycle dealer's shop, knowing full well that the dealer had a stolen cycle in his possession, and suspecting he had several such machines, but not knowing him to be a felonious receiver of cycles or anything else. This receiver had never been arrested before. He was questioned at great length about several cycles which were found—some of which proved to be stolen—and the matter was investigated as one of suspected felonious receiving. A second shop belonging to the same dealer was visited, and other cycles were found. At last, after numerous questions as to prices paid, records in books, etc., had been asked, it was decided that the time had arrived to caution and arrest the dealer. Evidence was given at the trial of the whole conversation leading up to the arrest. Had I decided on entering the first shop to caution and arrest at once, I should not only have acted wrongly, but much evidence would have been lost.

There are several points worthy of discussion in relation to evidence in receiving cases.

It is not wise to set traps to catch thieves and receivers. We must remember that goods are not stolen if taken with the consent of the owner. If goods are placed in position by the owner in the hope that thieves will take them, then tacit consent at least is given, and a charge of larceny cannot be sustained. To carry the case further, you must prove in receiving cases that the goods were stolen. Therefore if a trap is set, and the goods go from the taker to the receiver, then both may well be acquitted.

If goods are hidden by the receiver on his premises, and he denies having received them, there is a strong presumption of guilty knowledge. Some years ago the writer investigated a case of shopbreaking. Several rolls of material were stolen, and suspicion fell on a family of four persons. They denied all knowledge of the matter; but their house was searched, and ultimately nearly the whole of the property was found hidden under the floor-boards.

Again, several juveniles who were arrested for a long series of larcenies from shops gave information that the goods had been sold to a woman who kept a small shop. She was interviewed, but denied all knowledge of the boys and the goods. Her place was searched and the property found in her bedroom.

The price given for the goods is sometimes important. I say 'sometimes' because good bargains are obtainable legitimately, and one of H.M. Judges remarked on one occasion that an article might be worth ten shillings or ten pounds.

Goods altered or disguised, and identity marks removed, are of considerable importance in receiving cases, and often support the contention that there was guilty knowledge on the part of the receiver.

Another important point is the evidence of association of the receiver with the thieves from whom the property was received. It is sometimes possible to prove that the receiver must have known the character and criminal history of his associates, and his evidence professing ignorance of the thieves

can be rebutted. In this connection it might be well to mention that observation upon known receivers is often worth while.

Search warrants are obtainable from a Justice of the Peace under section 42, Larceny Act, 1916, on information that there is reasonable cause to believe that any person has in his custody or possession any property with respect to which any offence against the Larceny Act has been committed.

A chief officer of police may give authority in writing for premises to be searched under the following conditions : When the premises to be searched are or within the preceding twelve months have been in the occupation of any person who has been convicted of receiving stolen property or of harbouring thieves ; or when the premises to be searched are in the occupation of any person who has been convicted of any offence involving fraud or dishonesty, punishable with penal servitude or imprisonment. Note that in the first mentioned condition it is the *premises* involved ; in the second it is the *person*.

In order to prove guilty knowledge against a receiver, section 43, Larceny Act, 1916, is also important. When a person is being proceeded against for receiving stolen property, knowing it to have been stolen, or for having in his possession stolen property, there may be given in evidence at any stage of the proceedings the fact that other property stolen within the period of twelve months preceding the date of the offence charged was found or had been in his possession.

Sometimes the proceeds of several cases of larceny or housebreaking, stolen within the twelve months, are found at the same time in possession of a receiver. It is usual in such an event to charge the receiver with from three to six cases. The evidence of each case is called in order that the issue may be tried upon all of them. It may be that a receiver is re-arrested for receiving, after having been acquitted for a similar offence occurring within the twelve months. In such a case evidence can be called to prove his previous possession of stolen property in spite of the fact that he was acquitted in the first instance.

Evidence may also be given at any stage of the proceedings of the fact that within the five years preceding the date of the offence charged, a receiver was convicted of any offence involving fraud or dishonesty. In this case seven days' written notice must be given to the accused that it is intended to prove such a conviction against him. A certificate of the conviction must be obtained, and this is proved by an officer who was present when the accused was so convicted.

In view of the excuses made by, and the subtlety of, receivers, it is important to obtain as much evidence as possible against them. They urge amongst other things that they bought the property as a job lot, or as bankruptcy stock, or salvaged goods, or from a person unknown at Caledonian Market or Petticoat Lane. It is not easy to refute such statements unless rebutting evidence can be obtained.

Among the most difficult of receivers to deal with are those who obtain large quantities of jewellery. In some such cases the receivers ostensibly carry on small businesses as working jewellers. As soon as the jewellery is received, the stones are removed and the gold melted down. In one such case a search warrant was obtained. Several melting pots were found in various rooms, including the basement of the shop. The gold that was found had been broken up so as to make identification impossible. The suspect was found in possession of a large number of loose stones, but none of these could be identified. It was known beyond all doubt that this man had received large quantities of stolen jewellery, the proceeds of several cases of housebreaking. Subsequent to our unsuccessful visit constant observation was kept upon the premises, and the receiver was ultimately convicted.

The value of observation upon such persons cannot be over-estimated. It is beyond question that some of the stolen jewellery finds its way to the Continent. To give another example, the premises of a receiver were raided, and a quantity of broken-up gold and loose stones was found. When asked by the writer from whom he had obtained the property, the suspect, who called himself a jewellery dealer, failed to give

any information, excusing himself by saying he bought from all kinds of people, and as he kept no records of his transactions, he could not or would not supply any names or addresses. He was, however, in possession of a passport, and admitted paying frequent visits abroad in connection with his business in jewellery.

Receiving cannot be attributed to any particular class of person. The writer well remembers assisting to raid a tobacconist's shop in North-East London. Here we recovered a large quantity of goods, the proceeds of larcenies of parcels and boxes from vans in transit. This receiver, who was no doubt financing the thieves, at first denied all knowledge of the goods, but a search revealed that he had hidden them in a room at the rear of his shop, and in his bedroom.

Persons carrying on the business of wardrobe dealers have been found in possession of stolen clothing, received feloniously or otherwise.

Referring to what was said earlier in this article regarding property pledged with pawnbrokers, it occasionally happens that valuable property is so disposed of. A servant, whose criminal history proved her to be a persistent thief, whilst employed in a South London hotel, stole and pledged rings, etc., in various parts of London, to the value of several hundred pounds.

Investigating officers are sometimes baffled for a long period on account of the fact that stolen property is consigned or taken to persons residing long distances from the place where the thefts are committed. Bicycles in large numbers have, as soon as stolen, been labelled and dispatched by rail to a receiver many miles from London. Officers from the Metropolis have from time to time paid visits to the provinces and there recovered as many as forty motor vehicles. In one such case three visits were paid by officers and many witnesses to a provincial city. A large number of motor vehicles, stolen in London by a gang, had been recovered. The cars and vans had been taken to an innocent receiver after having been repainted and otherwise disguised. About thirty of

the vehicles were identified and brought by road to London.

Old metal and marine store dealers are among those who are known to receive stolen property, either knowingly or innocently. The law affecting these persons gives wide powers to police officers, and should be closely studied.

I would stress the value of charges of conspiracy in receiving cases where there is evidence to support such charges. It is doubtful whether sufficient attention is paid by police officers to charges of conspiracy to steal and to receive. It is usually urged that to obtain a conviction against a receiver the property must be recovered, etc. Perhaps the following illustrations will assist the reader to appreciate the value of charges of conspiracy where there is little or no evidence to obtain convictions for felonious receiving.

The writer and a colleague had four men in custody for larceny. These men had been employed by a large firm of rag merchants, and admitted that for some months they had stolen sacks of rags from the warehouse, and sold them to another dealer in the locality. All four men made voluntary statements giving the circumstances of the larcenies; the meetings in a public house with the receiver; the method adopted of dropping sacks at his premises, etc.

With my colleague I went to the receiver's premises, told him who we were, and informed him according to the statements of the prisoners. He denied all knowledge of the men, and said he had had no transactions with them. I asked if we might search his place, and he gave his consent. It was a large place, the usual type of rag dealer's storehouse. We had a good description of the kind of goods we were looking for, but failed to find them.

There was no evidence against this man apart from the statements of the prisoners, which of course was only evidence against the employees themselves. However, I decided to arrest the receiver. I received information that he had sold a large quantity of goods from time to time, similar goods to those stolen, to a large reputable firm in another part of

London. I made inquiries there and saw the record of the receiver's dealings with the firm. It was utterly impossible to identify anything in the warehouse as having been received from the man in question, as the rags had all been re-sorted. The only evidence we had was the record of transactions. Not a stitch was recovered, and of course rags are notoriously common.

I charged the receiver with receiving one sack. In this case the evidence was very weak as nothing was recovered. A further charge of conspiracy was preferred against the five prisoners, conspiring to steal and to receive over a period of three months.

All five prisoners were committed to the Central Criminal Court, where the four employees pleaded guilty. The receiver pleaded 'not guilty'. Two of the employees voluntarily gave evidence against the receiver in accordance with their statements. The Recorder, in summing up the case, was careful to point out to the jury that great care should be exercised in considering the evidence of the employees. In the result the receiver was found guilty of receiving and conspiracy, and having regard to his past criminal history he was sentenced to penal servitude.

This article is intended to deal with receivers and not with conspiracy, but I venture to give the details of another case, which again shows the value of such charges.

Some years ago C.I.D. officers in various parts of London were troubled on account of larcenies from shop tills. There was strong circumstantial, although no direct, evidence against a gang of men who visited tobacconists' and newsagents' shops in the early morning. One man would enter the shop, purchase a packet of cigarettes, and ask for change. Noting where the money was kept he left the shop and evidently told a confederate what he had ascertained. No. 1 would then himself call the shopkeeper out, saying, "Come out here, Mister, and see what the kids have been doing; they have carried your newspaper boards round the corner."

What happened then can only be imagined, as there was

no evidence of what actually occurred. When the shopkeeper went round the corner the second man entered the shop, robbed the till, afterwards joining his confederate and dividing the spoils with him.

A shopkeeper in the district where the writer was then serving complained of what he thought had happened to two private individuals going to business. They saw two men in the distance, followed them, saw them board a tramcar, called a constable and gave them into custody. The prisoners made a grave mistake by denying all knowledge of each other, as on searching them I found two tram tickets with consecutive numbers in the pocket of one of them. They were first charged with being concerned together in stealing the cash from the till, although the prosecutor had identified only one of them at the parade, and the money found in their possession did not assist. In short, there was no evidence whatever of stealing or receiving.

A remand was obtained, and the following week witnesses attended the Police Court from various parts of London. Three witnesses from different places were able to identify one or other of the prisoners, but all these witnesses could say was, "That man came in my shop and bought a packet of cigarettes, just before I missed my money," or "That man called me out of the shop just before I missed my money and said that some boys had taken my boards around the corner", or "I saw that man standing on the corner of the street on the morning I missed my money".

I charged these two men further with conspiracy over a long period to steal from shops. They were committed to the Central Criminal Court, and after the summing-up of the Judge, the jury could come to only one conclusion, that although there was not the slightest evidence of stealing or receiving, the prisoners were guilty of conspiracy. Each was sentenced to a long term of imprisonment.

The Justices

By E. R. HORSMAN

IT has taken about 650 years for our present system of the administration of justice in the lower courts to evolve, and any attempt to relate the history of its evolution must necessarily be brief.

In the year 1189 a proclamation was made by the Justiciar of Richard I whereby knights were required to take oaths to keep the peace, and in the twelfth century knights were definitely appointed for that purpose. In 1264 Simon de Montfort appointed men in every county known as 'custodes pacis' for the same purpose. In 1316 these 'custodes pacis' were given powers to arrest, suspect, and to make inquiries into felonies and trespasses.

In 1327 a statute was passed enacting that "in every shire good and lawful men shall be assigned to keep the peace" and in the following year they were given power to imprison persons indicted before them until such time as they could be tried by a Justice of Assize. It is very interesting to note that in 1327 Parliament made a request that Justices be given powers of punishment; but this was refused, only to be granted the following year, 1329. It seemed that this was not to last, for in 1330 these powers were taken away from them. However, in 1332 they were restored and have been possessed ever since.

Thirty years later a special commission issued to each county directed that "four of the most worthy and some learned in the law" were to be appointed with power to arrest persons, and hear felonies and trespasses committed within their county. By 1350 their duties were the preservation of the peace, inquiry concerning malefactors and negligent officials, and determining trespasses. They had

also certain military duties and some administrative duties which were rapidly increasing. In 1388 the power of these men was further enhanced in that they could try at Quarter Sessions all indictable crimes except treason and the more difficult cases, which latter cases were triable at the Assizes. In 1483 they were empowered to grant bail.

Having by this time become well established more and more duties were given to the Justices. The jurisdiction of the corrupt Sheriff's Court was gradually ousted, and Justices took cognizance of petty offences, and records show, for instance, that as early as 1433 Justices fined a man for being in possession of faulty weights. Justices were always men of substance and were consequently respected in their own neighbourhoods, and this system of justice became very popular, being much fairer than the Sheriff's Court and much more convenient and inexpensive than the Royal Courts.

The jurisdiction has expanded in many and varied directions during its 500 years existence, and although Justices have now lost a considerable amount of work at the hands of what we now know as our local government system, the amount of work done by the lay magistracy is evidenced to some extent by the fact that during 1934, in the 1,000 petty sessional courts in the country, 650,000 persons were found guilty of offences. There is also, of course, an extensive civil jurisdiction possessed by Justices.

The names 'Justices' and 'Magistrates' are often incorrectly used. Justices are either appointed to the commission directly, or are Justices by virtue of some office. Of these, the only persons to be called 'Magistrates' are Stipendiary Magistrates and Metropolitan Police Magistrates.

The appointment of Justices has always been in the hands of the King, except during the reign of Edward I, and at the time of the Commonwealth; but in the year 1640 the Lord Chancellor was empowered to make the appointments following nominations by the Lord Lieutenants of the counties. During the fourteenth century, the Commons

expressed a wish that the names of proposed Justices should be submitted to Parliament, but this was not granted. Up to the end of the seventeenth century, the Assize Judges used to recommend persons for appointment, but during the eighteenth century the recommendations were generally made by the Lord Lieutenants of the counties. Following the recommendations of the 1909 Royal Commission, local advisory committees were set up to advise the Lord Chancellor, but he may still appoint persons without a recommendation from an advisory committee, and is in no way bound by any recommendations.

Justices are judicial, ministerial, and executive officers, and derive their powers from the Commission of the Peace, statute law, and possibly from the Common Law. They usually constitute a 'court of summary jurisdiction', which as well as a criminal jurisdiction has also a certain civil jurisdiction. On occasions, such as a General Annual Licensing Meeting, Justices are an administrative body acting judicially.

Justices for counties are appointed by the Crown usually on the recommendation of the Lord Lieutenant to the Lord Chancellor, but, as already mentioned, in recent years local advisory committees have been appointed by the Lord Chancellor to inform and advise him and the Lord Lieutenant thereon. Justices for Boroughs having municipal corporations and separate commissions of the peace, are appointed by the Crown, the Lord Chancellor having in recent years also appointed local advisory committees to inform him and advise him as to these appointments.

Formerly, to be a county Justice, a property qualification was required, but this is no longer the case. Any person who resides within a county or within seven miles of it is eligible to be appointed as a Justice of the Peace for that county, unless personally disqualified. For borough Justices the only qualification required is that the Justices while acting as such should reside in the borough or within seven miles of it, or occupy a house, warehouse, or other property within it. He need not be a burgess.

Upon appointment all Justices must take the judicial oath and oath of allegiance.

The Mayor is *ex officio* a Justice for the borough during his year of office and during the year following, and if present is entitled, as Mayor, to preside at all meetings of Justices within the borough. The Mayor of a non-county borough is a Justice for the county in which the borough is situated during his year of office, but this does not give him any right of precedence over such county Justices. He is not entitled to take precedence over any stipendiary magistrate engaged in administering justice, but he may preside over a borough licensing committee.

Recorders and Stipendiary Magistrates are *ex officio* Justices for the borough to which they are appointed, and a County Court Judge is *ex officio* a Justice for the district where his court is held, and continues to be so even after he has ceased to hold such office.

Certain ecclesiastical persons have a right by statute to act as Justices in their counties, and so has the Vice-Chancellor of the University of Cambridge.

The Chairman of a County Council is *ex officio* a Justice for the county, and a Chairman of an Urban or Rural District Council for the county or counties in which his district is situated.

The Chairman and Deputy Chairman of the County of London Quarter Sessions and the Chairman and Deputy Chairman of the Middlesex and Hertfordshire Quarter Sessions are Justices for their respective counties.

A Sheriff and a Clerk to Justices is disqualified for acting as a Justice, but a Coroner is not.

A bankrupt is disqualified from being appointed or acting as a Justice, and provision is made by statute for the cesser of such disqualification. Any Justice may request that his or her name be removed from the commission, and in recent years many Justices have done this following the demands for younger Justices, especially for service on Juvenile Court Panels and Probation Committees. Justices often make such

requests when prevented by age or infirmity from participating in their duties. They may be placed on a retired list, in which case they may retain the title of Justice of the Peace and perform ministerial acts as distinct from judicial acts, but of course cease to sit on the bench. Some Justices cease altogether to be Justices by having their names removed from the commission. By section 1 of the Sex Disqualification (Removal) Act, 1919, women are eligible for appointment as Justices.

It seems that in 1875, the Lord Chancellor stated that clergymen, though not legally disqualified, were not appointed as Justices if there were laymen in the district who could be appointed instead, and this probably still obtains. Solicitors may be appointed to the commission, but they must give an undertaking that they will not practise themselves or by their partners in certain courts. This applies in the case of solicitors appointed to a borough bench, to that bench only, and in the case of a county bench to all borough and county benches in that county.

Stipendiary Magistrates are appointed by the King upon the presentation by a borough council, or an urban district council, with a population of 25,000 persons, of a petition to the Secretary of State. They must be barristers of seven years' standing in the case of boroughs, and five years in the case of an urban district. They hold office during His Majesty's pleasure and are *ex officio* Justices, acting in place of or in addition to the local Justices.

Within the Metropolitan Police district there are salaried magistrates, limited to twenty-seven in number, known as Metropolitan Police Magistrates. They are appointed by the Crown on the recommendation of the Home Secretary, and hold office during the King's pleasure. The commission under which they act is the same as that of county justices, except that they may not act as Justices at General or Quarter Sessions.

The Metropolitan area is divided into police court divisions, and in each one a police court is established. These are the only police courts in the country. All other courts of

similar jurisdiction, to give them their full title, are 'Courts of Summary Jurisdiction'. One learned Clerk to Justices has suggested the use of the name 'Justices' Courts' rather than the admittedly cumbersome name 'Courts of Summary Jurisdiction', and the local press has adopted it. The Report of the Departmental Committee on Social Services presented in March, 1936, speaks of 'Summary Courts'. However, an Act of Parliament would be required to alter the names, but in the meantime the names 'Police Courts' and 'Courts of Summary Jurisdiction', like 'Justices' and 'Magistrates' should be used correctly.

All Justices, with the exception of Stipendiary Magistrates and Metropolitan Police Magistrates, are unpaid, and their services are entirely voluntary.

Justices, Stipendiary Magistrates, and Police Magistrates officiate in courts of summary jurisdiction and in police courts. The former may sit in any number for most purposes, two being the minimum except in one or two isolated cases where one can sit alone, for example, to remand a prisoner or to deal with a case of simple drunkenness. The latter may, and generally do, sit alone, but Justices may accompany them on the bench and adjudicate. A court of summary jurisdiction with Justices or a Magistrate officiating is said to be a court of 'petty sessions' and the place where the court sits is called a 'petty sessional court-house'.

County Justices assembled at Quarter Sessions are empowered to try and determine certain felonies and misdemeanours committed in their counties, and to adjudicate in various appeals to Quarter Sessions. This does not apply to Justices of Quarter Sessions Boroughs as here the Recorder is the sole judge. Justices of boroughs with a separate commission are not entitled to sit at the Quarter Sessions for the county in which the borough is situate.

County Justices have jurisdiction throughout the county, including all boroughs, except county boroughs, within the county, unless specifically excluded. They do, however, generally elect to serve in one particular court within the

county rather than attend any or all of the courts. The jurisdiction of a borough or county borough Justice is generally restricted to the area determined by the commission.

Precedence of Justices among themselves depends upon the date of insertion of the name in the commission, and not upon the date when the oath was taken. It is usual for Justices to appoint from among their number a chairman and deputy chairman, who will *ipso facto* be entitled to take precedence. In boroughs, the Mayor usually attends as often as his other duties permit, and of course takes the chair.

Justices sitting in petty sessions are acting judicially and defamatory observations made by them in the course of the proceedings are not actionable. They will, however, be liable to an action for damages at the suit of the person aggrieved if they act maliciously and without reasonable and probable cause, and without or in excess of their jurisdiction.

Justices and Magistrates, the former particularly, in petty sessions are advised on points of law by their Clerk, they being themselves the sole judges of fact.

Section 159 (1) of the Municipal Corporations Act, 1882, enacts that the justices of a borough shall from time to time appoint a fit person to be their clerk, to be removable at their pleasure. Women are now competent to hold such a position (Sex Disqualification (Removal) Act, 1919). County justices have similar powers, but the clerk to a Metropolitan Police Magistrate is a civil servant, whereas a Clerk to Justices is neither a civil nor a municipal servant. Justices have no authority to appoint a deputy clerk, but a Clerk may be appointed to act for him in certain circumstances.

A Clerk to Justices must be either (1) a barrister of not less than fourteen years' standing, (2) a solicitor, (3) a person who has served not less than seven years as a clerk to a police or stipendiary magistrate or to a metropolitan police court or to one of the police courts in the City of London. A person who has served as a clerk or as an assistant to a Clerk to Justices for not less than fourteen years may under special circumstances be appointed as clerk. Certain disqualifications

are set out in section 7 of the Justices Clerks' Act, 1877, and in section 159 (2) of the Municipal Corporations Act, 1882.

Many criticisms are directed from time to time against the lay magistracy, especially when mistakes are made, but considering the vast number of cases which is dealt with by them throughout the country every year, the standard of efficiency is on the average very high. Justices give hours of their own time without remuneration, and administer the law with little or no legal training. It is true that many commissions have a number of inactive Justices who ought to retire to make way for new ones, but it is doubtful whether this is injurious to the system to any extent. It might be useful if Justices on attaining the age of 70, or if they left the district, or if through sickness or infirmity were unable to carry out their duties, would cease to sit on the bench, but continue to assist ministerially.

It is often said that there is no consistency in the penalties imposed, but experience shows that generally speaking this is not so.

It is frequently suggested that Stipendiary Magistrates should be appointed in all districts to take the place of the Justices altogether, or failing this that every court should have a full time clerk, possibly a civil servant. There would be advantages and very many disadvantages, to say nothing of the enormous cost entailed. Changes in some directions are probable in the future, but it is doubtful whether our present system will be substantially changed for many years.

The Examination of Blood and Seminal Stains¹

By JOHN C. THOMAS, M.R.C.S., L.R.C.P. (LOND.)

Serologist, Metropolitan Police Laboratory, Hendon

I. BLOOD-STAINS

IN every case in which a dead body is found the clothing and the surroundings must be carefully searched for blood-stains. The same obtains in cases of grievous bodily harm and certain other crimes in which injuries occur, and in every case it is always necessary to examine the clothes and possessions of the suspect as well. The examination of these stains falls into two parts: (a) the immediate examination at the scene of crime by the police officers in charge of the case, or if necessary by the medical expert who has been called there, and (b) the scientific examination in the laboratory.

A. Examination at the Scene of Crime

Stains of three types may be found:—

- (a) Sprays or splashes.
- (b) Smears.
- (c) Pools.

The purpose of the immediate examination is to determine the way in which the stains were produced, so that in every case the position and size of the stain is to be carefully noted and its position in relationship to the body entered on a sketch-plan drawn at the time. In case of sprays and spurts of blood the direction in which they are pointing is to be

noted, and where possible photographs should be taken. It is preferable, if it is obvious that considerable importance will attach to the stains at the trial, for the medical expert to be called to the scene of crime to make the preliminary examination in conjunction with the police officers.

(i) Direction of Splashes

Blood splashes occur if the blood has dropped from a height or if an artery has been severed and the blood ejected with force. The direction in which the blood was splashed may be determined from the shape of the stain, and this may conveniently be reproduced by splashing a nibful of ink on to a vertical sheet of white paper. The splashes are oval and the densest part is always at the end towards which the blood is spurting. Here, in a heavy stain, there are usually a few jagged streaks (Fig. 1-A), or more commonly a single streak terminating in a small blob where a little was carried on from the main stain by the force of the splash (B). This is always the case in the more distant splashes. There may be a few thin streaks radiating out towards the sides (C) which also point the direction in which the splash was made. Smears are usually irregular and thin, but in some cases it is possible to determine the direction in which a stain was smeared. If the arm of a coat has been smeared across a pool of blood, the irregular edge of the smear is the last to leave the actual blood, so that the coat was smeared *away from* this edge. If the original pool of blood is examined the reverse, for the same reason, is found to be true; that the irregular edge is pointing forward in the line of smearing, so that the stain was smeared *towards* this edge (Fig. 2).

The position and extent of pools of blood is important in yielding evidence of the position of the body at the time the actual assault took place, and often, by a proper examination of all the stains, the progress of a wounded man may be accurately traced out. In the final position of the body the pools of blood will follow the contours of the ground upon which it is lying, and in one famous French case a

¹ A lecture delivered to the Exeter City Police at the University College of the South-west of England, Exeter, on 17th February, 1937.

knowledge of this enabled the detective to trace the exact place of a murder in a cellar although the body was missing and the cellar had been washed down, the blood having run into a worn part of the floor and seeped between the flagstones. The importance of this part of the examination cannot be too highly stressed. In many cases the position and shape of the blood-stains forms the basis of the evidence for the prosecution and the necessity for their correct interpretation is only too obvious.

(ii) *Position of Blood-stains*

It is impossible to detail every position in which a blood-stain may be found. Stains on the outside of a garment are usually obvious, but they are commonly found on the inside of the cuffs and the linings of the pockets, and there may be easily missed. The finger-nails of a suspect should always be examined as blood may lodge there, together with his boots as he may have walked through a pool of blood. If he has washed his hands the taps and drainpipe of the wash-basin or bath may be blood-stained, while scrubbing brushes and cloths may give a reaction for blood. Knives may have been wiped clean after the crime but blood often lodges in the cracks between the handle and blade, so that it is always worth while having an apparently clean knife examined in the laboratory.

(iii) *Colour of Blood-stains*

Blood-stains vary in colour according to their age, the amount of blood present, and the nature of the material which has been stained. Recent stains are reddish; older stains are brown, the alteration being due to a chemical change in the blood pigment, *haemoglobin*, depending on free access to the air and certain other factors such as temperature. Stains on dark materials are more easily seen in artificial light, and on light materials in good daylight. Stains on cloth stiffen the fabric as they dry, and on woollen materials the individual fibres are matted together. On metal they form dark crusts

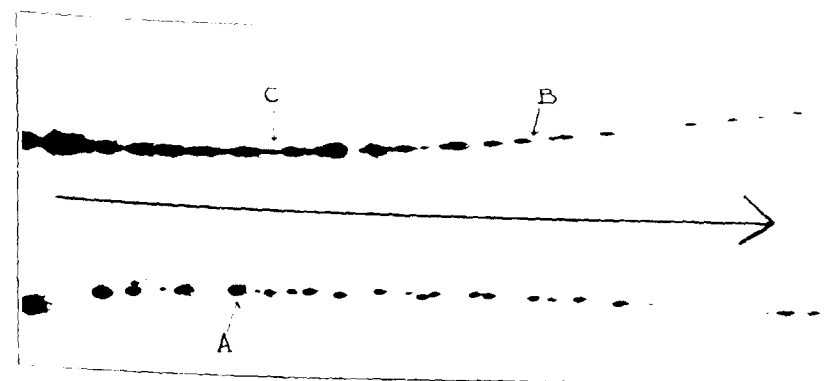


FIG. 1.

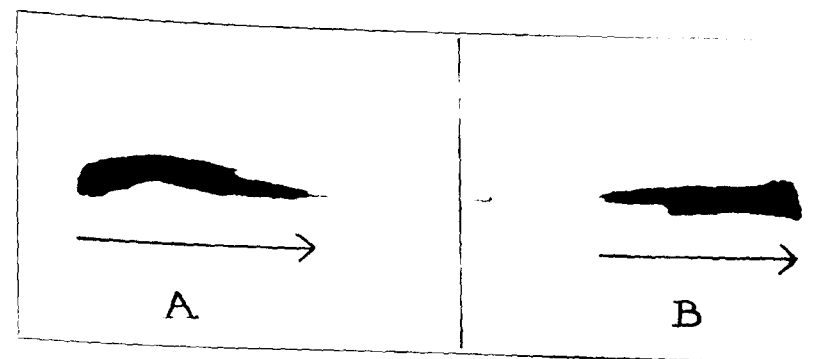


FIG. 2.



FIG. 3.

(face p. 492)

which appear very like rust and tend to crack as they dry, and on glass they may be mistaken for smears of paint.

(iv) *Age of Blood-stains*

It is impossible to give an accurate opinion as to the age of a blood-stain from its appearance unless it is very fresh. Some idea can often be obtained in the laboratory from the ease with which the cells can be freed from the stain, but even so the estimate is only approximate. Recent stains are red in colour, and occasionally large stains may remain moist for 36-48 hours. I have found blood-stains on a sandy road almost fluid after 36 hours, and on the inside of a cap after 48 hours. In both cases the stains were large, and still bright red in colour. The colour tends to change more rapidly in small stains.

(v) *Packing of Blood-stains*

The object of the laboratory examination is to determine the origin of the stain, and if two persons are involved in a crime and both are wounded it is desirable to determine which stains came from which person. Thus it is always better, where a number of stains are present, to call the medical expert to the scene of crime to take those stains which he thinks most suitable to the laboratory for further examination. In other cases, in which only a few stains are present they may conveniently be packed by the police officers in charge and subsequently taken to the laboratory together with details of where they were found. It is better to have every stain examined regardless of the amount of work entailed, rather than just one or two selected at random, so that the proper interpretation may be placed upon the whole picture.

Blood-stained clothing is to be sent to the laboratory intact, and *all* the clothing should be sent rather than just one garment such as a coat. It is important to preserve both the identity and the individuality of the samples; the identity is preserved by the proper labelling of each sample, and its individuality by careful packing with the minimum of handling.

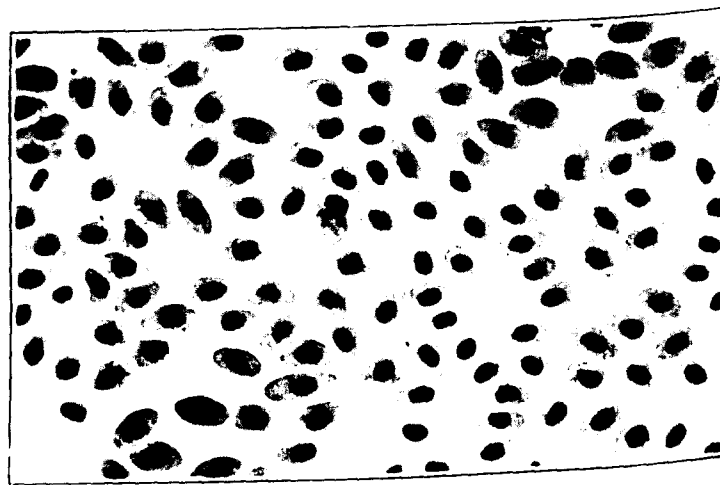


FIG. 4.



FIG. 5.



It is essential that blood-stains *should not be directly handled* before they are examined at the laboratory, nor should two stains be packed so that they touch each other. Each garment should be labelled and wrapped separately in clean, brown paper, and the whole parcel again labelled with the name of the person from whom the clothing was taken. Blood-stained weapons and similar objects such as bottles and pieces of glass are best preserved between packing boards, and should be treated as if they were being examined for finger-prints. Smaller objects may be kept in metal boxes or in sealed glacing envelopes. It is a general rule that every conveniently movable object which is blood-stained is to be sent intact to the laboratory. This is impossible with large objects such as furniture or immovable objects such as walls and wood-work. In these cases the stain must be carefully cut out together with a surrounding area of unstained material, as it is always necessary, in determining the origin of a blood-stain by biological tests, to make control experiments on unstained areas. A wide area should therefore be removed to include both stained and unstained parts, and if possible it is better to cut out the whole of the stain. As blood soaks into porous substances such as wood and plaster, a sufficient depth must always be removed. The stains which are cut out in this way should be packed separately in tin boxes for forwarding to the laboratory. If the blood-stain is still damp, a part should be soaked up on a piece of clean, new blotting paper, and the rest allowed to dry, after which it is appropriately removed. Moist blood-stains and wet clothing should never be dried by artificial means but allowed to dry naturally. In these cases it is preferable to call the expert to the scene of crime, and if this is done the further examination of the stain may be greatly simplified. It is always worth while examining even the smallest stains; it is possible to determine the origin of stains as small as 2-3 millimetres in diameter.

In cases of murder or manslaughter, a sample of the dead person's blood should always be taken at the post-mortem

examination, in order that the blood-stains may be compared with it. Unless this is done the examination of the stains may be useless unless one of them at least can be proved, by other evidence, to have arisen from the deceased.

B. Laboratory examination

A supposed blood-stain is examined in the laboratory in three stages:—

(i) Preliminary examination.—“Is the stain blood or not?”

(ii) Confirmatory examination—chemical and other special tests for blood.

(iii) Biological tests—(a) Precipitin test to determine whether the blood is human blood, or if not from what species it arose.

(b) Blood grouping test to determine the group of the person from whom the stain originated.

(i) Preliminary Examination

A number of tests have been devised for this purpose, each depending upon the presence of certain substances in the blood which are capable of changing a colourless reagent into a brightly coloured one. Among these are the benzidine test, the Kastle-Meyer test, and the leuco-malachite green test. The benzidine test is the most widely used and is the safest and simplest of the three; it is capable of detecting blood in a dilution of $\frac{1}{200,000}$ but a positive reaction is given by a number of substances apart from blood. This is not important as the test serves purely as an indication of whether the stain is a blood-stain. Thus a stain which gives a positive benzidine reaction must be further examined, while one which gives a negative reaction may be disregarded as not being blood.

The reagent consists of ten volumes of hydrogen peroxide

mixed with one volume of a saturated solution of benzidine in glacial acetic acid. A piece of clean filter paper is smeared across the stain and then flooded with the reagent. If the stain is blood a bright blue colour will develop across the smear within five seconds. Its great value lies in the fact that the stain is left intact after the test, sufficient blood being removed by simply smearing the filter paper across it. The Kastle-Meyer and the leuco-malachite green tests give a bright purplish-red and a brilliant green colour respectively, but in each case a small part of the stain must be used for the test, and in practice they offer no advantages over the older established benzidine reaction.

It must be emphasized that a positive benzidine reaction, although it is strongly suggestive, is not positive proof that the stain is in fact a blood-stain. It indicates that the stain must be more carefully investigated by other methods.

(ii) Confirmatory Tests

(a) Microscopical Test.

It is usual to describe a microscopical test for blood, but in practice this is often found to be of very little use, as it is only in recent stains or stains which are still moist that the cells can be soaked off and examined microscopically. A number of special solutions have been described for this purpose such as Vibert's solution (mercuric chloride), Roussin's fluid (acid glycerin), and borax and potassium cyanide solutions. Although each of these has its advantages, probably the best is the ordinary normal saline solution (0.9 per cent sodium chloride).

The red cells of man and mammals present a typical appearance under the microscope. They are small biconcave discs and are the only cells in the body without nuclei. In man they are about 7.5 thousandths of a millimetre in diameter and just over 5,000,000 are present in each cubic millimetre of blood; that is 25,000,000,000,000 in the whole body (Fig. 3). The domestic animals have similar cells, although the majority are slightly smaller and present in greater

numbers. The red cells of the goat are only just over 5 thousandths of a millimetre in diameter but more than 9,000,000 are present in each cubic millimetre of blood. The camel is the only mammal to have oval cells, although in common with the rest these are non-nucleated. On the other hand, the red cells of birds (Fig. 4), reptiles, amphibia, and fishes are oval and nucleated, so that it is possible under favourable conditions to differentiate between a human and chicken's blood-stain by the microscopical test alone. This test is also valuable in distinguishing menstrual blood from blood resulting from hæmorrhage.

(b) Hæmin Test.

The blood pigment, *hæmoglobin*, which is contained in the red cells and which gives them their colour, is a complex substance and does not easily crystallize under normal conditions, so that it is not possible to identify it directly in a stain. If, however, it is broken up chemically several of the resulting substances are found to possess characteristic crystalline structures and may be easily identified by this means under the microscope. Of these the most easily demonstrated is *hæmin*.

A small fragment of the stain is placed on a clean microscope slide and moistened with a drop of saline and two drops of glacial acetic acid. A cover slip is placed over it and the whole gently warmed until the fluid begins to steam. It is allowed to cool, another drop of acid run underneath, and the whole re-heated. If the preparation is then examined under the microscope the characteristic crosses and clusters of long, narrow, dark brown hæmin crystals may easily be seen (Fig. 5). This is a positive proof that the stain is blood.

(c) Hæmochromogen Test.

Hæmochromogen is another breakdown product of hæmoglobin and may be prepared from a blood-stain. If anything, the resulting crystals are even more characteristic than those of hæmin. The reducing agent, known as

Takayama's Reagent, is added to a fragment of the stain on a microscope slide and the preparation examined for the presence of the typical pale salmon-pink, feathery crystals of hæmochromogen. A positive hæmin or hæmochromogen test is sufficient evidence that the stain is blood, but in certain cases where the stain is small and a part cannot be sacrificed for these tests, other means may be used to identify the stain as blood.

(d) *Spectroscopic Examination.*

It is a matter of common knowledge that white light is composed of a mixture of coloured rays, and that these may be resolved by passing the light through a prism producing the typical rainbow spectrum. A number of substances possess the property of absorbing certain of the light rays, amongst them being hæmoglobin and its derivatives, so that if the light is passed through a solution of hæmoglobin before the prism, the resulting spectrum is found to be incomplete. The hæmoglobin absorbs part of the red and yellow rays which are replaced in the spectrum by black bands. These bands occupy a constant position for any given substance, so that if one examines an extract of a stain (which may later be used for the biological tests so that none of the stain is wasted) the presence of the characteristic bands of hæmoglobin is proof that the stain is blood. A part of the extract should be treated with a strong reducing agent and then examined spectroscopically for the presence of hæmochromogen.

(iii) *Biological Tests*

(a) *Precipitin Test.*

If an animal is injected with the blood of another species of animal it will react to this in a characteristic and well-defined manner. The injected blood, being foreign to the animal, has to be removed before it can do any harm, and what is called the "defence mechanism" is called into play. The animal produces special substances in its blood which

are designed to deal with the injected material, and which vary with the nature of the foreign substance. If human blood serum, that is the fluid part of the blood in which the red cells are suspended, is injected into a rabbit, the animal develops substances known as *precipitins* in its own serum which are capable of precipitating the human serum and thus preventing it from doing any harm. However, the rabbit produces precipitins against human serum only if it has been injected with human serum; if it is bled and the serum separated it will precipitate human serum in a test tube, but will give no reaction with the serum of any other species of animal with the possible exception of the anthropoid apes. Correspondingly, if an animal is injected with ox serum it will react specifically with ox serum and not with human, pig, horse, or sheep serum. Thus we can prepare many different sera from rabbits, each of which will react specifically with the serum of the species with which it was injected, and it is convenient to have a number of these so-called *anti-sera* available for medico-legal work.

To examine a stain by the precipitin test an area is cut out and soaked in distilled water overnight to dissolve out the serum. The fluid is filtered next morning and pipetted into a clean test tube; the appropriate anti-serum is then run carefully below it so that the two liquids layer instead of mixing, and the junction of the two is examined for the presence of a white ring precipitate which is the positive reaction. It is possible to prepare anti-sera which will react with the appropriate serum diluted more than 100,000 times.

(b) *Blood Grouping Tests.*

If one takes the blood of a number of persons and adds the cells of each to the serum of each separately, conducting as it were an American Tournament, then in certain cases a peculiar phenomenon occurs in which all the cells clump together or *agglutinate*, while in others the even suspension of the cells is undisturbed. It is possible, by this means, to

divide the whole of mankind into four types or *blood groups*, which are determined by the presence or absence of two substances called A and B in the red cells. Either of these may be present separately (the groups are then called Group A or Group B, according to which is present), both may be present together (Group AB), or neither may be present (Group O). The blood group is fixed and unchangeable during life and after death so that the blood group of a blood-stain can be determined in the laboratory. The blood group is also inherited according to fixed laws, so that apart from identification, the blood grouping test is of very considerable value in cases of disputed paternity.

By determining the group of a blood-stain and matching it with the blood of the suspect and the injured person it is possible to say from whom the stain could or could not have originated. This is of the greatest importance in forensic work, as, for instance, if a person of Group A has been murdered and the suspect has a number of blood-stains on his clothes and a cut hand. He alleges that the stains on his clothes came from the cut on his hand, but if he is of Group B and the stains are of Group A, then his story is immediately disproved. If, alternately, the stains are of Group B, his story is substantiated, and it is possible to say that they could not have come from the murdered man. For this reason it is essential that a sample of blood should always be taken at the post-mortem examination in all cases of felonious killing, and it is obviously desirable, if such a defence is raised, for the prisoner's blood to be examined as well, although this cannot be done without his full consent.

II. SEMINAL STAINS

Clothing and other exhibits are often examined for seminal stains in cases of gross indecency, indecent assault, carnal knowledge, and other sexual crimes. The same rules of packing and the precautions with regard to handling apply to seminal stains as to blood-stains, and they should always be packed flat.

To identify a seminal stain it is necessary to soak the actual spermatozoa off the garment and to prepare a permanent microscopical preparation from them. There is no other means of positive identification of a seminal stain, and all the other tests which have been suggested are designed to help in the making of the final preparation. The actual examination is made in three stages:—

- (i) Preliminary examination in ultra-violet light.
- (ii) Chemical examination—Florence test.
- (iii) Final microscopical examination—(a) Roussin's fluid, (b) Permanent preparation.

(i) Preliminary Examination

The various secretions of the body, such as urine, semen, and nasal secretion, possess the property of fluorescing when examined in ultra-violet light. Therefore a garment which may have seminal stains on it is first examined under the U.V. lamp and those areas which fluoresce are ringed around with a pencil to be further examined. A typical seminal stain glistens in daylight, stiffens the fabric of the garment, and is usually streaky or smeared where the penis has been wiped across it. This preliminary examination is purely to indicate those areas which require further examination and does not prove that any stain is actually seminal in origin.

(ii) Chemical Examination

(a) Florence Test.

The Florence test is performed by treating an extract of the stain with a solution of iodine and potassium iodide. The preparation is then examined microscopically for the presence of small, dark brown crystals, which are almost exactly like hæmin crystals. A positive Florence test is not positive proof that the stain is seminal, although it is highly suggestive, but it is usually said that a negative test is proof that the stain is not a seminal stain. This is in fact not so,

and one may find spermatozoa in a stain which gives a negative Florence reaction. For this reason the test is not often used to-day.

(b) *Roussin's Fluid.*

This test is used if the garment cannot be cut, and is designed as a rapid method of examination. A small fragment or fibre from the stain is shaved off with the minimum of handling and a small area teased on a clean microscope slide in Roussin's fluid. It is then examined under the $\frac{1}{4}$ th lens for spermatozoa. Instead of Roussin's fluid, acidulated water (1 drop hydrochloric acid to 1 ounce distilled water) may be used, and in this case a direct permanent preparation may be made afterwards.

(iii) *Final Examination*

(c) *Permanent Preparation.*

The suspected stain is placed, stain downwards, on a clean microscope slide and moistened with a drop or two of acid water. It is left for some hours in a moist chamber to prevent it drying, and the slide is then stained with hæmatoxylin and eosin to make a permanent microscopical preparation. This is examined under a magnification of not less than 500 for spermatozoa (Fig. 6). Spermatozoa are extremely fragile and a suspected stain must not be handled directly. The entire spermatozoon consists of an oval or lanceolate shaped head (a) with a long, wavy tail, (b) the total length being about $\frac{1}{1000}$ th of an inch. It is a common finding that the heads separate from the tails in a seminal stain which has been roughly treated, so that one finds a large number of heads with very few complete spermatozoa in the final preparation. Hence great care should always be taken in the handling of garments with suspected seminal stains. As there are a number of other organisms, such as yeasts, which appear very like the separated heads, it is always necessary to find at least one complete spermatozoon in

order to be certain of the positive identification of a seminal stain.

The origin of a seminal stain may be determined if necessary by the precipitin test, and the blood group may also be found from such a stain. Although there have been no cases in this country in which this type of evidence has yet been necessary, we are now grouping all seminal stains as a routine in this laboratory, and abroad there have been a number of cases in which a man has been exonerated from a charge of rape by an examination of his own blood and the group of the seminal stain.

CORRESPONDENCE

A SIMPLE METHOD OF LEARNING MORSE CODE SIGNALLING

To the Editor of THE POLICE JOURNAL.

SIR,

The "dots" and "dashes" recorded on a Morse printing machine or expressed by sounds of short and long duration, are the elements of an alphabetic code of signals. That in common use is the International Code, a modification of Morse's Code. By different combinations of "dots" and "dashes" the various letters of the alphabet are represented, and it is possible in the case of a skilled operator to send messages by means of these at the rate of thirty to forty words per minute.

Morse is learned by the sound, and the simplest method of picking it up is by calling the dot a 'tit' and the dash a 'ta'. If one listens to the machine, it does not sound like "dot"—"dash" but simply "tit ta; ta ta tit" and so on.

During the War I was a signaller and had a six months' course in all forms of signalling before leaving for the front. Our instructor told us to cut out the "dot" and "dash" system, because the words were too choking and difficult for one's tongue to turn over when trying to memorize the different letters by the sounds. He kept us at the letter 'P' (· — ·) for about five minutes and the class altogether repeating "P · — · (tit ta ta tit)". From that time Morse was simple to us.

In the *Guide to Signalling* one is told that by learning the letters and their opposites, one can memorize the alphabet much more quickly than by learning it straight through from 'A' to 'Z'. This is quite true, but in my opinion a better method still is the following, and if tried by the reader I think he will agree that I am correct.

Group 1	Group 2	Group 3
A · —	N — ·	E ·
U · · —	D — · ·	I · ·
V · · · —	B — · · ·	S · · ·
		H · · · ·
Group 4	Group 5	Group 6
T —	W · — —	R · · ·
M — —	J · — — —	P · — — ·
O — — —	G — — ·	K — — ·
	Z — — · ·	X — — · ·

CORRESPONDENCE

Group 7

F · · — ·
L · — · ·
Y — · — —
Q — — · —
C — — · ·

By taking Group 1 those letters can be learned off by heart within a week. By continuing in this manner till all the groups are memorized, I can guarantee that every man who is really interested can read at a speed of about fifteen words per minute at the end of seven weeks.

The numerals from '1' to '0' are learned in their proper order, but should be grouped from '1' to '5' and from '6' to '0'.

It should be noted that although one turns out to be a perfectly good reader, it by no means goes to prove that one will be a good sender or operator. This requires a separate course of training, and by the time a course is completed, if 50 per cent of the class can send messages accurately, the instructor may be well satisfied.

To make his message easy to read, the operator should use the following method when numerals are brought into the message or where inverted commas or brackets become absolutely necessary.

To signify "figures about to be sent" transmit the letters 'ff', and when the group of numerals has been sent, again transmit the letters 'ff'. Similarly for brackets, send the letters 'kk' before and after the words to be bracketed; for inverted commas the letters 'rr' before and after the words to be enclosed.

If one considers that the letters 'ff' are confusing to begin with, one can send the figures by the words, but when the letters 'ff' are sent and run together, the reader will soon become acquainted with them.

If this method of learning Morse Signalling was adopted throughout the whole of the Forces in Great Britain, and a book of instructions handed to every officer and constable, I feel sure that each would be a perfect reader at the end of seven weeks from the time he commences his first lesson.

I should be greatly interested to read in your estimable journal of the ideas of any other reader regarding a simpler method of learning Morse Signalling.

There appears to me to be no doubt that a sound knowledge of this subject will be an essential qualification of the efficient police officer of the very near future.

FRANK MACKIE (Constable, Stirling County Constabulary).

THE POLICE JOURNAL

THE COLONIAL POLICE

The following appointments are announced by the Colonial Office:—

AGNEW, H. LE P. (Assistant Superintendent of Police)	Superintendent of Police, Tanganyika.
BANKS, P. N. (Deputy Inspector General of Police, Criminal Investigation Department)	Inspector General of Police, Ceylon.
BARKER, A. T., M.C. (Deputy Superintendent of Police)	District Superintendent of Police, Palestine.
BROWN, E. J. G. (Assistant Inspector of Police)	Inspector of Police, Tanganyika.
CORMACH, W. S.	Assistant Superintendent of Police, Kenya.
DOWLING, D. B. (Inspector of Police)	Chief Inspector of Police, Tanganyika.
ELLIS, J. A. (British Section, Palestine Police)	Inspector of Police, Straits Settlements.
ERSKINE-LINDOP, Major R. A. (Deputy-Inspector-General of Police, Barbados)	Commandant of Police, Bahamas.
FARRELL, G. H. (Superintendent of Police)	Senior Superintendent of Police, Nigeria.
GOWING, Captain D. S. (Assistant Chief of Police)	Chief of Police and Superintendent, Civil Prison, Gibraltar.
GRANT, H. D., M.B.E., M.C. (Inspector of Police)	Assistant Superintendent Prisons Service, Palestine.
GULLOCH, W. S. (Chief of Police, Gibraltar)	Chief Commandant of Police and Inspector of Prisons, Cyprus.
JACOBS, E. J. G. (British Section, Palestine Police)	Assistant Commissioner of Police, Nigeria.
JENKINSON, J. (Assistant Superintendent of Police)	Superintendent of Police, Tanganyika.
KING, W. C. C. (Chief Commandant of Police and Inspector of Prisons, Cyprus)	Deputy Inspector-General of Police, Nigeria.
LA TOUCHE, P. D.	Assistant Superintendent of Police, Tanganyika.
LEATHES, F. P. (Superintendent of Police)	Deputy Commissioner of Police, Tanganyika.
MCLEOD, A. (Assistant Inspector of Police)	Inspector of Police, Tanganyika.
MACPHERSON, J. (Sub-Inspector, Colombo Port Police)	Inspector of Police, Straits Settlements.
MATHIAS, C. A. (Inspector of Police)	Assistant Superintendent of Police, Uganda.
MILLER, F. H. (Assistant Superintendent of Police)	Deputy Commissioner of Police, Palestine.

THE COLONIAL POLICE

MULLIN, J. V. (Sub-Inspector of Police, Mauritius)	Assistant Superintendent of Police, Uganda.
NOTTINGHAM, Captain E. C., M.C. (Commissioner of Police)	Assistant Inspector-General of Police, Nigeria.
PAGE, C. E. (Assistant Superintendent of Police)	Superintendent of Police, Tanganyika.
POTTER, E. J. (Assistant Inspector of Police, Kenya)	Assistant Inspector of Police, Uganda.
PLUNKETT, E. O. (British Section, Palestine Police)	Superintendent of Police and Assistant Superintendent of Fire Brigade, Barbados.
RIGGS, A. W., M.B.E. (Assistant Superintendent of Police)	Deputy Superintendent of Police, Palestine.
RIPPON, E. M. (Assistant Inspector of Police, Tanganyika)	Inspector of Police, Zanzibar.
RUDDICK, C. W. (Chief Inspector of Police)	Assistant Superintendent of Police, Tanganyika.
SIGRIST, A. E. (Assistant Superintendent of Police, Palestine)	Assistant Superintendent of Police, Tanganyika.
SWAIN, H. S. (Assistant Superintendent of Police)	Deputy Superintendent of Police, Palestine.
THOMSON, M. D. A. (British Section, Palestine Police)	Assistant Inspector of Police, Tanganyika.
WEBER, W. R. (Sub-Inspector of Police)	District Inspector of Police, British Guiana.
WIDDUP, T. D. (Sub-Inspector of Police, British Guiana)	Assistant Commissioner of Police, Gold Coast.
WINTER, R., D.C.M., M.M. (Superintendent of Police)	Assistant Commissioner of Police, Nigeria.
WOOLNOUGH, H. J. (British Section, Palestine Police)	Inspector of Police, Straits Settlements.
WORKMAN, J. E. (Commissioner of Police, Gold Coast)	Commissioner of Police, Fiji.

SOME POLICE BOOKS OF THE YEAR

SHANGHAI POLICEMAN. By E. W. PETERS. Edited by Hugh Ross.
(Rich and Cowan.) 15s. net.

THIS book is full of adventures culminating in the trial of the author's murder. Moreover, it is of special interest just now as it contains a full account of police duties during the Japanese attack on Shanghai in 1937, and of the fine resistance put up by the Chinese in spite of their very inferior equipment.

The author describes the complex geography and corresponding jurisdictions of this most cosmopolitan city, showing how difficult it is for an officer to avoid exceeding his authority at times, and gives a detailed account of the intensive training, physical and mental, required to fit a policeman for his quasi-military duties. For where criminals go armed, and, like the gangsters of U.S.A., shoot to kill, there must police also be armed with pistols and vests of steel, and provided with 'riot vans', the civilian substitute for military tanks.

Among the more civilian duties of the police, traffic control is anything but a sinecure in Shanghai, where robot lights go unheeded; whether by jehu-like drivers of motors, ricksha men, and/or trundlers of wheel-barrows, or the dozens of Chinese pedestrians who seek to escape from the day of evil spirits by dodging between motor-cars at the busiest hours of the day.

The maintenance of Law and Order depends to a great extent on the co-operation of the Chinese Police, who are trustworthy and loyal enough in emergencies (when they will fight to the death), but when left to themselves soon tire of routine work and not very rarely are found asleep "on duty".

It is for the suppression of armed robbery and of rioting generally that the 'riot van' is so serviceable, but it often comes in for the raiding of opium dens and gambling resorts. The author's observations on the prevalence and evils of opium indulgence are all the more interesting and worthy of consideration in that they challenge some of the conclusions of the Opium Commission. He, indeed, holds that opium not merely hinders the awakening of China, but is actually a racial poison which "destroys the mind, morals, and physique of the people", especially the cheap raw stuff bought by the poorer classes.

Other subjects of interest include gain and loss of 'face', public reprimands (contrary to King's Regulations), Chinese music, character of students, help given by the Salvation Army during the fighting of 1932, and finally the arrest and trial for murder of the author, which, along with his romance, is described in detail in the last ninety pages. The literary expression may not be above reproach, but the style is lively and the interest well sustained throughout, so it can be confidently recommended to police and others who like to know how Britain's prestige is maintained by justice overseas.

DICTIONARY OF MEDICO-LEGAL TERMS for Criminal Lawyers and Police Officers. By ALBERT CREW and K. W. AYLWIN GIBSON. (Pitman and Son.) 5s. net.

THIS is rather more than a pocket *pronouncing* dictionary as it contains many brief little essays: on legal matters such as assault, circumstantial evidence, child stealing, and/or murder, and the Court of Criminal Appeal; and on medical matters, such as drunkenness and *delirium tremens*, fractures, medical ethics, experts, and secrecy—any of which may be of service to police who take an all-round interest in their cases. Moreover there are warnings for junior officers concerning the rights of prisoners *re* personal examination, and the resemblance between insulin poisoning and states of alcoholism. Sundry criticisms might be made, e.g. that concussion may cause *total*, and occasionally prolonged, unconsciousness, and that the note on jugular veins, as printed, seems to imply that there are eight of them altogether!

In a second edition notes might be welcome of the Law *re* baby-farming, and covering; of the meaning of 'choke damp', 'after damp', and 'water gas', and of the medico-legal significance of automatism. Apart from such matters the Dictionary may be confidently recommended to junior lawyers and doctors as well as to the police.

THE CONQUEST OF CRIME. By NIGEL MORLAND. (Cassell and Co.) 5s. net.

THIS book is a plea for the more systematic investigation of crimes by concentrated team-work; or, as Dr. Mercier expressed it, 'on an orderly plan, and by the efforts of many men combined into a regular system.'

To this end the author gives us a sort of bird's-eye view of most of the resources of modern civilization for the investigation of crimes; a view admittedly imperfect as regards detail, but coupled with a bibliography at the end of *every* chapter as a guide to further study. Among the subjects dealt with Identification and Finger-prints take a prominent place, and illustrations show how the latter may supersede or correct photographs. Poroscopy is explained, and other more speculative methods of identification are noticed.

Mr. Morland's study of Forensic Medicine and Chemistry shows how these dovetail or overlap, and emphasizes the need for team-work. Blood characters, groups, and tests come under both; also, of course, poisons and their effects.

Under Chemistry references are made to: dust and ashes, hair and fabrics, wheel, tyre, and foot marks, coining and forgery of sundry kinds, most of which yield their secrets to the chemist-microscopist of to-day, or to the physicist with his ultra-violet rays, spectroscopy, comparison microscope and its up-to-date developments for use in Court.

The subject of forensic ballistics—so highly developed of late in the land of gangsters—is dealt with in considerable detail, with some account of the painstaking researches made for the Crown in the Gutteridge case, and of the *exonerating* evidence obtained from a single bullet in the Arlossoroff case.

His duties as officer in charge of the enormous Peak Hill district, over 100,000 square miles, were multifarious indeed, too many for mention here but included those of lawyer, confessor, scientist, arbitrator, and friend above all. To patrol this district was a stupendous, sometimes heart-breaking business. Perhaps motorists will appreciate it when told that a sixty-mile journey took more than all day by car. Time after time tyres were deflated to get grip on the shifting sand; but that was nothing to getting stuck in river beds and having to improvise a track on faggots cut for the occasion.

A thrilling account is given of the struggle of a whole tribe to a well during drought and their fight for water there, and there is a pathetic account of the removal of two orphan children from their tribe to a Mission down south by Government order, which called for no little tact on the part of the police officer in charge. Again and again one reads in this book of the evil effects of loneliness and silence—of the brave women who endure all for their men, and of men who avoid native camps for fear of being attracted by the young women therein.

The book is well printed and profusely illustrated, but lacks an index, and has its (short) title on the top of every page instead of words giving some idea of subject matter on alternate pages; a concession called for the more as there is no table of contents. However, the racy style more than makes up for these minor defects.

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POLICE GOLD MEDAL ESSAY COMPETITION

Subject of the Essay for 1937

"The Control of Crowds by Police in connection with Demonstrations, Processions, Strikes and Riots."

Essays must be submitted on or before 1st November, 1937, to:

THE SECRETARY OF THE COUNCIL OF THE POLICE GOLD-MEDAL ESSAY COMPETITION, HOME OFFICE, WHITEHALL, LONDON, S.W. 1.

Essays must be the original work of the competitor, 7,000 to 11,000 words in length, typewritten and submitted in triplicate and anonymously. A sealed envelope bearing on outside a *nom de plume* or motto, and containing the competitor's name and address, must accompany the essay. (For full conditions see THE POLICE JOURNAL, April number, p. 294.)

