FORENSIC MEDICINE

An analysis of 10,000 cases

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FORENSIC medicine may be defined as the science concerned with the application of medical knowledge to particular branches of the law. From time to time, doctors are required to give assistance and opinions in medicolegal cases and their attendance at court is sometimes necessary. It is important that the medical and legal aspects of this science should be appreciated.

There have been no surveys covering the medicolegal work undertaken by medical practitioners and thus the types of episodes seen and their relative frequency is not known. Before starting a full scale national survey of clinical forensic medicine lasting a year, two pilot surveys were arranged to ascertain the size of the field to be covered, the details required, the approximate number of cases needed for statistical purposes, the optimum number of participants, the type of *proforma*, how long the survey should last, the approximate cost and other information necessary when planning a full survey (Laidlaw, 1960).

Thirteen police surgeons took part in the one pilot survey and 46 general practitioners in the other. Both surveys were organized simultaneously over a three-month period and 643 cases were analysed. The information and experience gained from these pilot surveys were invaluable when planning the larger one. The Medical Research Council made a grant to cover the expenses of the survey over a 12-month period.

J. COLL. GEN. PRACTIT., 1964, 8, 333

Method

The episodes that a medical practitioner meets during the course of his day which could be classified as medicolegal are numerous, e.g. notification of infections and industrial diseases, certification of illness and death, cremation forms, agreements between practitioners, the terms of service of the National Health Service Acts, the responsibility for any acts of omission or commission of a deputy, administration of the Dangerous Drugs Acts and the Poison Rules. Other important episodes include the examination of a driver believed to be under the influence of alcohol or drugs, cases of sudden death reported to the coroner or procurator-fiscal because the cause was not clear or an accident had contributed to the cause of death, cases of grievous bodily harm, sexual assaults, aid to persons detained in cells, and many more.

For the purpose of this survey a Clinical Forensic Medical Episode was defined as a case in which a doctor and a legal authority were concerned. The legal authorities in this context include police, coroner, procurator-fiscal, and duly authorized officer. Episodes not included were court attendances, examination of recruits for the police force, examination of policemen for superannuation purposes, private examinations and reports to solicitors.

The survey was divided into two parts and analyses made separately and jointly. The participants in one section were 137 police surgeons. They were all members of the Association of Police Surgeons of Great Britain (A.P.S.G.B.), from different parts of the country and from various types of practices, some highly industrialized, a few from small towns and others from rural areas. The doctors in the other section were 53 members and associates of the College of General Practitioners (C.G.P.). Some were often requested to help the police and some only occasionally.

Those taking part were not all in the watertight compartments of police surgeon or family doctor. All members of the A.P.S.G.B. were invited to take part and almost one-third participated initially. It was only possible to ask those police surgeons who were members of A.P.S.G.B. as there was no simple method of inviting non-members. This was of no consequence as the association has members from all parts of Britain. Most police surgeons are 'appointed', an official appointment made by the local Watch Committee or, in the case of London, the Home Office. Some police surgeons are not officially appointed, although they carry out the

same duties as their colleagues. Almost all the police surgeons were engaged in some form of general practice; the ratio between these two responsibilities varied enormously between different areas. The doctor in a small town may have a very busy general practice and attend a few forensic cases a year; in the larger towns the reverse may occur. Members of the College of General Practitioners which has a good national representation were invited to help. Most were not asked regularly by the police or legal authority to attend forensic episodes. Many of the participants were members of both organizations.

Most police surgeons outside London and the large towns attend all forensic cases; in some large towns women police surgeons examine assaulted females and children. A few police surgeons perform post-mortem examinations for the coroner or procurator-fiscal. In other areas the doctor may attend to all prisoner casualty work at the police station and in other areas all casualties may go direct to the local district hospital casualty department.

From the pilot surveys it was clear that the forensic episodes attended in one area differ considerably from those in another, but, provided all the facts are known, it is possible to make relevant analyses.

The proforma

The *proforma* which was printed on a stiff white card ($11\frac{1}{4}$ x $4\frac{1}{2}$) was divided into two main parts. The first part was concerned with general data including the patient's sex, age and case number, and details of the time, day of the week and date on which the episode took place. The second part was divided into eight main sections and these were subdivided to give 83 categories in all. The symbol X was included in all eight sections and this was ringed if the person being examined had recently consumed alcohol.

Each practitioner had a code number; the key to this was known only to the organizing secretary, thus ensuring strict confidence. This number was entered on each *pro forma* and the cases numbered consecutively. The name of the examinee did not appear on the form, thus maintaining professional secrecy, and the sex, age, and date were noted. The agent responsible for requesting the doctor to attend was recorded. The appropriate episode subdivision number was selected, ringed and brief details given in certain cases.

A new card was used for each episode, brief notes assisting classification in difficult cases. " Notes for guidance " gave definitions

and standardized procedures.

Practice details were requested, e.g. type of practice, approximate number of patients ' at risk ' and the population of the area from which non-practice forensic episodes came. All participants were asked if their practice was mainly urban, rural or mixed and to give the approximate number of patients in the practice ' at risk '. The figures for doctors in partnerships were adjusted to allow for partners not taking part.

The estimation of the population of the police area from which cases were seen or the " size of the catchment area " was a simple matter when the doctor lived in a small town or if the area was neatly circumscribed. In the large towns the assessment of population ' at risk ' could be difficult and quite impossible for certain parts of the London Administrative Area.

The survey lasted one year from 1 November 1960 to 31 October 1961. England and Wales were divided into the Registrar-General's standard regions and the code to each was incorporated in the doctor's code number. The London and South-eastern area was subdivided into the London Administrative Area and the South-eastern region.

Results

A total of 190 doctors took part in the survey, 10,543 episodes were recorded; 8,241 episodes were from urban practices, 2,199 from mixed and 103 from rural areas.

The number of family-doctor patients at risk was 518,700 and the population of the police area cases was estimated at 11,141,300; thus the people ' at risk ' during the survey year was about 11,660,000; the total population of Britain on 30 June 1961 was 54,578,210 so that the survey covered more than one-fifth of the population. Apart from the Southern and South-western regions, a good coverage of each standard region was achieved (*see* table I).

The numbers of episodes seen by police surgeons (A.P.S.G.B.) and members of the College (C.G.P.) are given separately in appendix A for each of the 83 subdivisions referred to above. A total of 9,476 episodes were dealt with by the first group of doctors and 1,067 by the latter. The percentage distributions of episodes according to the 11 main categories of the nature of episodes are given in table II for the two groups of doctors; the distributions are compared graphically in figure 1.

Of the episodes treated by police surgeons, 29 per cent were cases of drunk-in-charge (D.I.C.). Examination of prisoners gave rise to the

TABLE I

MID-1961 — POPULATIONS OF REGISTRAR-GENERAL'S STANDARD REGIONS, POPULATIONS AT RISK, AND THE PERCENTAGE OF EACH REGIONAL POPULATION SURVEYED

Regions	*Total pop. (thousands)*	*Pop. at risk (thousands)*	*Percent surveyed*
Northern	3,253	400	12
East and West Riding ..	4,174	725	17
North-western	6,569	1,550	24
North Midland	3,652	500	14
Midland	4,779	930	19
Eastern	3,762	700	19
London and South-eastern ..	11,073	725	7
Southern	2,856	155	5
South-western	3,417	75	2
Wales (incl. Monmouthshire)	2,631	400	15
London Admin. County ..	3,180	1,600	50
Scotland	5,184	660	13
Isle of Man	48	40	83
Total	54,578	8,460	

TABLE II

DISTRIBUTION OF CASES ACCORDING TO MAIN HEADING OF CLASSIFICATION OF TYPE OF EPISODE

Type of episode	*A.P.S.G.B.*		*C.G.P.*		*Total*	
	No.	*Per-cent*	*No.*	*Per-cent*	*No.*	*Per-cent*
Drunk in charge	2,759	29.1	204	19.1	2,963	28.1
Sudden death	1,010	10.6	145	13.6	1,155	10.9
Sexual assault	1,667	17.6	225	21.2	1,892	17.9
Criminal assault	235	2.5	56	5.3	291	2.9
Abortion (non-fatal) ..	12	0.1	1	0.1	13	0.1
Attempted suicide ..	53	0.6	21	2.0	74	0.7
Cruelty to children ..	157	1.7	27	2.5	184	1.7
Examin. of prisoners ..	2,006	21.2	218	20.4	2,224	21.1
Post-mortems	950	10.0	41	3.9	991	9.4
Reports and examinations	449	4.7	67	6.3	516	4.9
Miscellaneous	178	1.9	62	5.8	240	2.3
Total	9,476	100.0	1,067	100.0	10,543	100.0

next highest proportion (21 per cent), followed by sexual assaults (18 per cent). These three categories therefore account for over two-thirds of the total. The corresponding proportions for the College of General Practitioners' participants relating to the last two categories were of the same magnitude, but drunk-in-charge cases account for only 19 per cent of their total episodes. However, these three categories together were 60 per cent of the total.

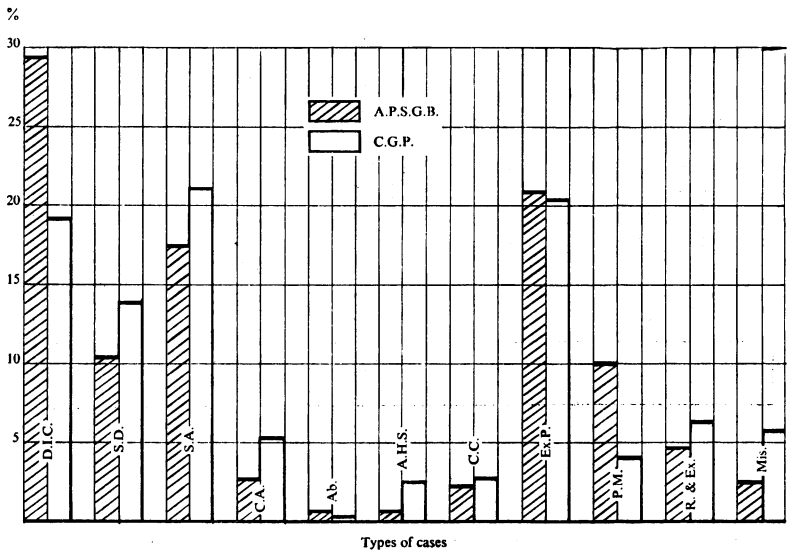

Figure 1
Percentage distributions of cases dealt with by (i) A.P.S.G.B., (ii) C.G.P. according to type of case.

The differences between the two percentage distributions are evident from figure 1. The greater proportions for ' D.I.C. ' cases and post mortems with which the police surgeons were concerned are compensated by the greater values referable to sexual and criminal assaults and the miscellaneous group obtained for the C.G.P. participants.

Details of the authority or person initiating the request for the presence of the doctor are given in table III. As would be expected, the police were the initiators in the large majority of episodes and the doctor attended in the capacity of family doctor in two per cent of the police-surgeon cases and in eight per cent of the C.G.P. cases.

A detailed examination of episodes dealt with under each main section will now be made and for this purpose both groups of doctors will be considered together.

TABLE III

DISTRIBUTION OF CASES ACCORDING TO THE AGENCY INITIATING REQUEST FOR DOCTOR'S ATTENDANCE

	A.P.S.G.B.		*C.G.P.*		*Total*	
	No.	*Per-cent*	*No.*	*Per-cent*	*No.*	*Per-cent*
Police	8,037	84.8	853	79.9	8,890	84.3
Procurator-fiscal	287	3.0	72	6.8	359	3.4
N.S.P.C.C.	83	0.9	16	1.5	99	0.9
Mental health officer ..	78	0.8	13	1.2	91	0.9
Solicitor	15	0.2	9	0.8	24	0.2
Others	787	8.3	19	1.8	806	7.7
As family doctor ..	189	2.0	85	8.0	274	2.6
Total	9,476	100.0	1,067	100.0	10,543	100.0

Drunk-in-charge

Of the 2,963 cases (28.1 per cent of the total) recorded under this heading, 1,997 patients were under the influence of alcohol, 14 under the influence of drugs, and 28 under the influence of drugs and alcohol; 29 patients were ill, 12 refused to be examined, and the remaining 883 (30 per cent) were not drunk, drugged or ill. In all but 17 the doctor attended at the request of the police. There were only 41 female patients.

The monthly average for each episode was 247, the lowest monthly value (199) occurred in August and the peak in December (355 cases). About 270 episodes were recorded on Mondays, Tuesdays, Wednesdays and Thursdays, about 475 on Fridays and Sundays, and 728 for all Saturdays combined. The time that the episodes occurred varied considerably, although the majority (2,025) occurred between 9 p.m. and 3 a.m.

The age distribution is shown in figure 2. The maximum occurred in the 35–39 years group, and the other quinquennial age-groups between 20 and 50 years each contributed more than 10 per cent to the total.

Most drivers were in charge of motor cars. A few were motor or pedal cyclists, train drivers and horse and cart drivers. One who was determined as not being under the influence of drink was re-arrested later and found to be drunk. A few were ill and under the influence of alcohol; two had diabetes, and others had head injuries, multiple abrasions, disseminated sclerosis, tabes dorsalis, and so on.

The drugs concerned in such episodes included the barbiturates, insulin, dexamphetamine sulphate, drinamyl, chlorpromazine and other tranquillizers, paraldehyde, pethidine and morphine.

Those not drunk-in-charge had consumed some alcohol but insufficient to render them drunk at the time of examination. In this group were patients with congestive cardiac failure; eyesight too poor for night driving; head and crush injuries; gastro-enteritis; fatigue; epilepsy; and a man with multiple injuries who should not have been driving at all.

Twenty-nine cases were due to illness alone; eleven concussion; four disseminated sclerosis; chronic bronchitis, associated with exhaustion; cases of shock and otorrhoea. Others included gastro-enteritis, pregnancy, diabetes, brain haemorrhages, head injuries, hypertension, chest injuries, hysteria and psychopaths.

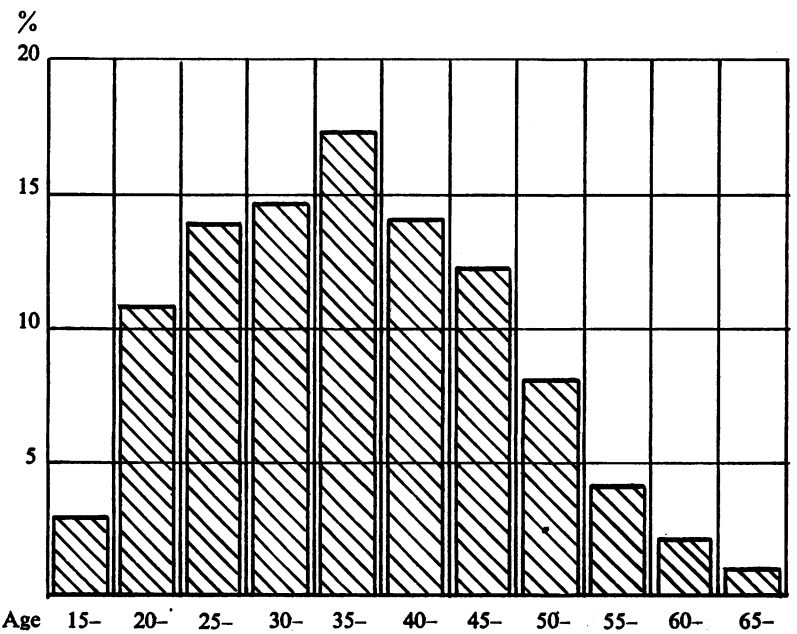

Figure 2

Percentage age distribution of 2,963 drunk in charge cases.

Sudden death

Of the 1,155 cases recorded (11 per cent of all episodes), one-quarter were to certify that a body was dead, one-quarter were reported to the coroner or procurator-fiscal, one-fifth were accidental and one-fifth

suicides. The monthly figures varied from 66 in September to 141 in January. The day case rates were fairly constant and the busiest period of the day was from 9 a.m. to 12 noon.

The above total includes 195 suicides. Drugs alone or in combination with carbon monoxide and alcohol were the commonest methods used. The drugs included barbiturates, chloral hydrate, chloroform, potassium cyanide, nicotine, nitrous oxide, drinamyl and alcohol. Other methods employed were: polythene bag over head, car exhaust to inside of car, hanging, throat cut, wrists cut and other self-inflicted injuries such as gunshot wounds, jumping from buildings or under moving vehicles.

Secondly, there were 207 *fatal accidents.* Road accidents were common (74). Falls accounted for 24, and some of these were partially due to alcoholic inco-ordination. Others included falls from cranes and from ships; mother falling on child causing fatal head injury to child; baby with body through cot bars and the head held fast, death being due to suspension and asphyxia.

There were 32 cases of *murder or manslaughter.* This small but varied list included: drowned by father after partial strangulation; gas poisoning by parent; general assault; infanticide by strangling; multiple head injuries due to blows; manual compression of neck; newborn drowned in brook; stab wounds in chest and heart; shot by bank robbers; attendances at the scene of the crime; taking particulars and specimens.

There were two cases of *abortion.* One was a coloured girl found dead in a ditch; the other a fatal antepartum haemorrhage following a criminal abortion.

Of four deaths which took place after *fights,* three were the result of severe wounds and one the result of heart failure when assaulted.

There were four deaths from *neglect.*

In 336 cases the doctor was concerned with reporting deaths to the coroner or procurator-fiscal. This list is extensive and includes anaesthetic deaths; Christian Scientist died—no doctor called; exposure when drunk; Ministry of Pensions cases; silicosis and so on. Other cases are included in appendix B.

All cases of sudden death were placed in their respective categories by the examining doctor, who based his opinion on the evidence available at the time. Subsequent information may have helped in a more accurate classification, but for the purposes of this survey only the initial opinion was considered. It is sometimes necessary for

police purposes for a doctor to certify that a body is dead and most of the remaining 375 cases of sudden death fall into this category. A small number could not be placed in any category and this included: body in gas stove with post-mortem charring; body on railway line —multiple pieces over 200 yards; dead in bed for approximately four months; headless torso, approximately six months old, decomposed in sea; house on fire and a charred body found in front of gas oven, previous history of suicide attempts; marks on neck as if strangled (? murder). For others *see* appendix B.

Sexual assaults

There were 1,892 cases (18 per cent of the total) of sexual assaults, and the monthly figures varied from 178 in May to 101 in December. The frequency by day of the week was fairly constant at about 230 except for Sundays (172 episodes) and Mondays (314). Of these 1,582 were females and 310 males; and 1,381 (73 per cent) were 16 years and under (*see* table IV).

It is difficult to make a simple classification of sexual assaults that can readily and uniformly be interpreted. Those divisions used here are defined below; and the frequencies relative to each are shown in figure 3.

Rape was defined as the carnal knowledge of a woman forcibly and against her will. There must have been some penetration of the vulva by a penis; emission may, or may not have occurred, and the usual signs of virginity may or may not have been disturbed. Intercourse with girls under the age of 13 years in England and 12 years in Scotland is always rape; they are deemed incapable of giving consent. The law assumes that a boy under 14 years is incapable of committing the offence. The decision as to whether a case was ' actual ' or ' attempted ' was left to the examining doctor.

There were 320 cases of rape or attempted rape and their age distribution is given in table IV. All ages from 3 years upwards were involved with peaks occurring at 12, 15 and 16 years.

Unlawful carnal knowledge (*U.C.K.*) is not the crime of rape. If a girl of over 13 years in England and 12 years and over in Scotland, but less than 16 years in both countries, gives ' her consent ', this is classified as U.C.K., as she is legally unable to give valid consent. For survey purposes, cases from Scotland giving U.C.K. in girls of 12 years were classified as rape.

There were 663 cases and, as would be expected, the majority were 14 or 15 years of age. The 61 patients aged 16 years were in

TABLE IV

SEXUAL ASSAULTS BY AGE, SEX AND TYPE

Type	*Females—age (years)*																						
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21+	*Total*
Rape	—	—	—	—	4	2	5	4	5	8	13	15	28	9	4	22	13	6	13	9	11	37	208
Attempted rape ..	—	—	—	2	1	2	—	1	2	3	2	2	3	8	7	7	16	9	11	6	3	27	112
U.C.K.	—	—	—	—	—	—	—	—	—	—	—	—	—	81	225	296	61	—	—	—	—	—	663
Incest..	—	—	—	—	2	1	1	3	6	3	7	7	11	9	10	10	17	5	6	6	1	1	106
Indecent assault ..	—	1	4	15	30	27	40	42	31	32	27	30	28	31	44	34	12	5	1	—	3	16	453
Sodomy, passive ..	—	—	—	—	—	—	1	2	—	1	1	—	5	—	—	1	3	1	1	—	—	—	16
Lewd practices ..	—	—	—	—	2	—	—	—	1	—	3	1	—	1	2	—	—	2	—	—	1	11	24
Total	—	1	4	17	39	32	47	52	45	47	53	55	75	139	292	370	122	28	32	21	19	92	1,582

Type	*Males—age (years)*																						
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21+	*Total*
Indecent assault ..	—	—	1	1	2	4	5	6	5	13	7	5	1	3	4	1	3	1	3	—	—	—	65
Sodomy, active ..	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	1	1	—	—	—	1	32	37
Sodomy, passive ..	—	—	—	2	1	3	5	4	11	7	7	13	10	14	17	3	7	9	—	2	5	33	153
Lewd practices ..	1	—	—	—	—	1	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	4
Assaulter	—	—	—	—	—	—	—	—	—	—	—	—	—	1	4	—	5	3	2	4	1	31	51
Total	1	—	1	3	3	8	10	10	16	20	14	18	14	19	25	5	16	13	5	6	7	96	310
Totals (males and females)	1	1	5	20	42	40	57	62	61	67	67	73	89	158	317	375	138	41	37	27	26	188	1,892

fact girls having U.C.K. when 15 years old but not examined until after their sixteenth birthday.

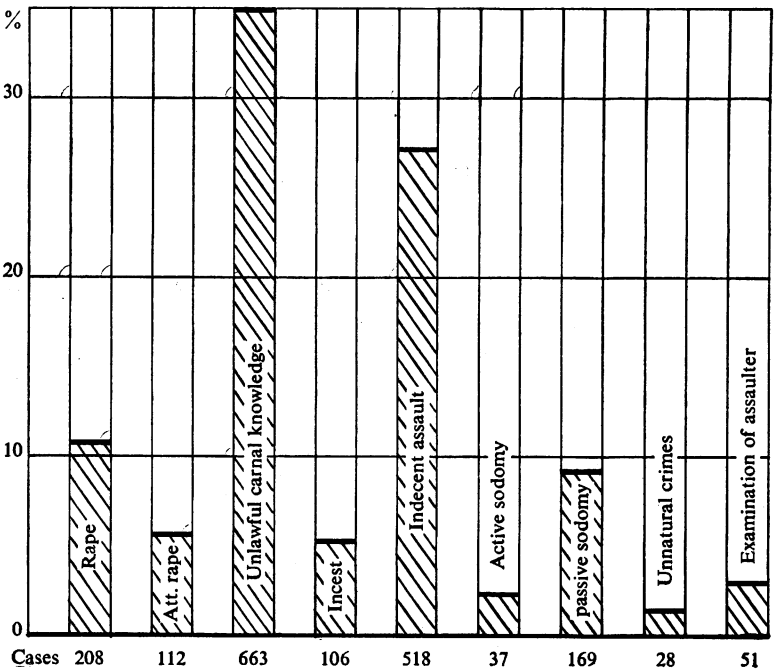

Figure 3
1,892 sexual assaults—distribution by type of case.

Incest is the carnal connection between persons held to be within the forbidden degrees of relationship. There were 106 cases aged from 4 years upwards (*see* table IV), the most frequent age being 16 years.

Indecent assault includes most sexual assaults that are not serious enough to be classified above. The most common condition is some form of illegal handling of the genitalia of another person. The 453 females so classified comprise the second largest subdivision in this section. The youngest was one year old and from 4 years to 15 years the numbers in each age group varied between 27 and 44. There were 65 males, the youngest 2 years of age and the oldest 18 years; the majority (three-quarters) were under 12 years of age.

Sodomy is unnatural connection; penetration must have occurred but not necessarily emission. The 206 cases reported may be classified as follows: males, active participants 37; males, passive participants 153; females, passive participants 16. All ages were involved from 3 years upwards (*see* table IV).

There were 28 cases (24 females and 4 males) of *other cases of indecent and lewd practices, unnatural sexual crimes, unlawful carnal knowledge of a lunatic, bestiality,* and so on, but full details of these are not given in this report. First, 51 persons alleged to have made the sexual assault were examined. The clinical material in this section of 1,892 sexual assaults was most diverse. Specimens required included: blood; faeces; fibres; hair from head, pubis; animal hair; nails and nail scrapings; saliva; spermatozoa; swabs from anus, throat, vagina; urine. A few cases included the accused bitten by the raped girl; accused had recently had a bath and a complete change of clothing—nil found; examination of trousers and underpants for sheep fibres and stains; mutual masturbation and congestion of penis; signs in male of recent intercourse and sodomy, torn fraenum.

When a case could be grouped under several headings the most serious assault was the one chosen. All females, irrespective of the type of assault alleged, require the same kind of clinical examination. Classifying these under different headings is more of legal and social interest than medical. When the whole group of 1,582 female cases is analysed by age the distribution obtained has a pronounced peak at age 15 (*see* figure 4).

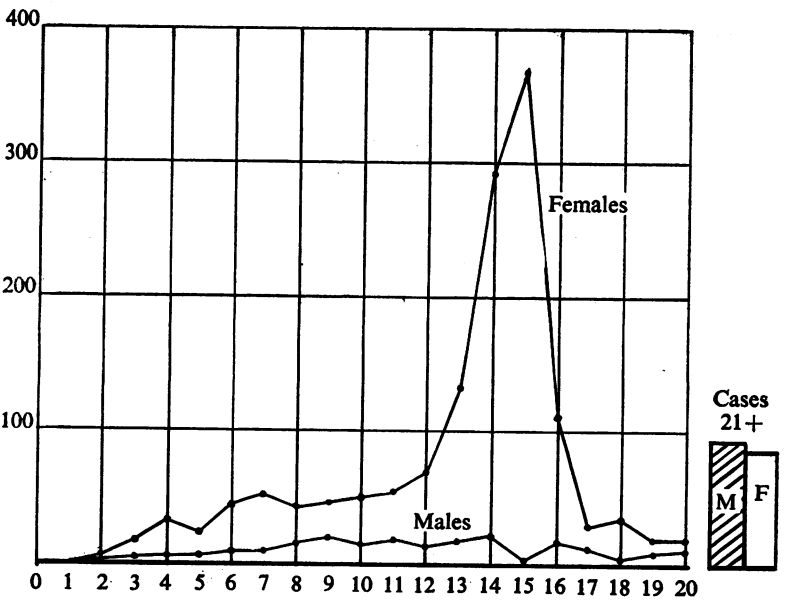

Figure 4
Age and sex distribution of cases under 21 years of age.

Criminal assaults (non-fatal)

There were 291 such cases, three per cent of the total in the survey. Of these 241 were cases suffering grievous bodily harm (G.B.H.), nine were attempted murders and in 41 instances the assaulter was examined. The clinical conditions included: attempted strangulation; lacerations, bruises, fractures, bites and stabs (police constables were often the victims); gunshot and air rifle pellet wounds; retinal detachments; and in some instances, complete fabrications were encountered. Specimens were often taken, and mental states diagnosed.

Abortion (unnatural and non-fatal). This small group of 13 cases used the traditional abortifacients: catheter, Higginson's syringe with soap, chloroxylenolis and water, knitting needle, various tablets and pessaries.

Attempted suicide. The 74 cases included cut wrists and throat; the use of drugs including aspirin, barbiturates, codeins, coal gas, iron tablets and various forms of antiseptics; one case attempted drowning in the lavatory pan, another jumped on to a moving car, one ran in front of a car, and one stabbed chest with knife.

Cruelty to children. There were 184 cases (1.7 per cent of total) of cruelty to children which could not appropriately be classified above. Of these, 107 were cases of neglect, including: an abandoned baby due to parental illness; several children abandoned—one with pyloric stenosis; neglect by drunken parents, and so on. There were 34 cases of assault on children and various traumatic lesions recorded

Care and protection were required in 38 cases. Episodes included a bruised neck from ' shaking ' by mother because the 12-year-old girl stayed out late; child of separated parents in custody of mother found with burn on her buttocks after visiting father (the doctor asked to say when burn occurred); 4-year-old child " in charge " of drunk motorist; minor living as a prostitute.

Post-mortem examinations

Post-mortem examinations were made of 991 cases (9.4 per cent) and the principal causes of death recorded were:

Carbon monoxide poisoning	53
Drowning	34
Heart disease	507
Stroke	22
Drugs	18
Respiratory diseases	140
Others	217
	991

Many of these were road traffic accidents; falls at home or work; drowning when drunk and burns. Drugs causing death included aspirin, barbiturates, insulin, and nicotine. Most of the deaths were found to be due to natural causes, although some were of forensic interest, e.g. died after taking cocaine and adrenalin nasal drops. The suicides used the methods mentioned under the section *Sudden death, suicide.*

Many carbon monoxide deaths were accidental; such as the death of a man mending a leaking gas point at home, or the accidental gas poisoning of a housewife when making a cake; or turned on gas tap accidentally when cleaning—no sense of smell.

Other cases included assault, murder; blood taken for alcohol and drug estimation, ? murder; bodies in water for one or two months; body burned ? post-mortem burns; cot death, inhaled vomit; cut in two by train; decomposed body, ? drowned or suicide; dead in bath, no asphyxia, no drowning; shotgun wounds; ? stillbirth; strangulation, ? suicide.

Examination and medical aid to prisoners

There were 2,224 cases (21.1 per cent of all episodes), 1,982 male and 242 female. The monthly figures varied from 150 to 258; Friday, Saturday and Sunday were the busiest days and accounted for about three-quarters of all the cases: The busiest hours were from 9 p.m. to 3 a.m., and almost half the cases were seen during these hours on Fridays, Saturdays and Sundays.

Examination of prisoners. The doctor was called primarily to examine the prisoner in 593 cases. Of these, 342 cases (328 male and 14 female) were to ascertain if the accused was fit for an approved school, borstal, prison, corrective training or preventive detention. These examinations were usually carried out at the request of the prison authorities, usually before the prisoner appeared in court. This medical examination was to assist the court regarding the fitness of the accused should he be found guilty and sentence be necessary. Almost all those examined were fit; a few were found to be either unfit to attend court; insane; unfit to plead; or had some disease such as V.D.

Fifteen males and five females were charged with being drunk on licensed premises. All these were found to be drunk and not suffering from any illness. Of 182 prisoners denying drunkenness (163 males and 19 females), two were diagnosed as ill and not drunk;

four ill and drunk; three injured and drunk; three ill and one a malingerer.

The remaining 49 cases (32 males and 17 females) under this heading included cases of alcoholic intoxication plus reefers; alleged police assault; alleged loss of memory; arrested as a drunk, found dead in cell; drug addicts; fit to attend court, fit to travel, fit for a remand home; infestation—decontaminated; recent parturition; suicide in cell; under the influence of reefers; various mental diseases.

Medical aid to prisoners. 1,631 (1,444 males and 187 females) prisoners were given medical aid. In these cases the doctor was called to make a diagnosis and render medical aid. These were classified as organic illness, injured (not drunk), ill and drunk, injured and drunk, and malingerer. Full details are given in appendix B.

In all there were 267 prisoners found to have an *organic illness* and these were the usual medical cases seen at a general practitioner's surgery; most of these were treated in the cells; the drug addicts usually showed signs of overdosage or withdrawal symptoms and these people used the usual drugs such as cocaine, heroin, morphine or the barbiturates. Quite a number were mentally ill and all types of illnesses were encountered from anxiety states to psychopaths.

A relatively large group of 348 *injured prisoners* (*not drunk*) resembled the casualty officer's clientele. Bruises, contusions, lacerations, fractures, dislocations, strains, sprains and head injuries; others were self-inflicted wounds; stab wounds in chest. Many of these wounds were dressed and sutured in the cells.

The 113 cases found to be *ill and drunk* had illnesses which were often difficult to diagnose, because of lack of co-operation. Reasons for attendances—alcoholic coma, alcoholic neuritis; asthma; bronchitis; cerebellar lesion and drugs; diabetes; D.T.'s, hallucinations; dysmenorrhoea; dyspepsia; epilepsy; haemorrhage; hernia; herpes zoster; hysterical collapse; methylated spirits and drugs; migraine; mitral stenosis; post-alcoholic debility; psoriasis; psychopath and drugs; pulmonary tuberculosis; salpingitis; stupor; tachycardia; took drugs in cell; and so on.

There were 717 cases who were *injured and drunk.* This list is similar to the injured list and includes all varieties of soft and hard tissue injuries. Some of these people were not fit to attend court the next day.

In the case of 93 prisoners *found to be drunk* the doctor was usually

called, if the drunk was unconscious for a long time or had delirium tremens, to confirm he was not fit to attend court. One was a deep sea diver who really had the ' bends '.

Various symptoms of diseases were simulated by the 93 *malingerers*. In all cases nil was found. A list is given in appendix B.

Reports and examinations (where these cannot be classified above)

The 516 recorded (4.9 per cent of the grand total), could be separated into four main sections:

Examination and opinion regarding injuries	210
Examination and opinion regarding mental condition	195
Expert opinion on report(s)	22
Others	88
	516

Many of the 88 miscellaneous cases were similar to those under the sexual assault section, but legally were not assaults. These included: virgo intacta, excuse for home absence; confirm intercourse for police purposes; examination for virginity; person accused of masquerading as a woman who on examination was found to be a woman; hermaphrodite; procuring young persons; with different men for 12 hours.

The mental conditions included the usual neuroses, mania, depression, epileptics and schizophrenics. Other cases were: fitness to plead or to stand trial; fitness to be a witness; infanticide, to hospital; threatening suicide; wandering; to give a report whether a mentally subnormal girl could be registered so as to claim National Assistance.

Episodes associated with pregnancy included: concealment of childbirth; confirmation of pregnancy; to determine if person had recently been confined; person believed to have concealed pregnancy, dead child found.

Wounds examined included: the usual hard and soft tissue injuries: bitten by police dog; police constable alleged being wounded while arresting; ? self-inflicted wounds.

Reports for solicitors included the following circumstances: cruelty and violence; duration of pregnancy; mentally ill; nullity of marriage; precognition to defence lawyer regarding road traffic accident; works injuries.

Laboratory specimens included: blood for carbon monoxide estimation; blood for grouping; pubic hair; swabs in cases of forcible sodomy; stomach contents.

Other cases included under the heading were: bodies from water;

examination and treatment for various injuries, poisons; examination and witnessing of birching; examination of child for adoption; opinions on written reports; report on foster home.

Miscellaneous

The 240 cases (2.3 per cent) which could not be classified above may be considered under three headings:

(*a*) Examination of remains, thought to be human (24 cases) this included: human bones unearthed during alteration to hotel, buried 200 years; bones from old plague pit, near cemetery; animal bones from under floor boards; many full term and immature foetuses from bags, cases, the river, park, lockers; human remains on railway.

(*b*) Urgent medical examination at police request (148 cases). This group included the usual medical emergencies seen by the general practitioner. *See* appendix B.

(*c*) Any other episodes, e.g. blood tests, special reports and examinations (68 cases).

Conclusion

It is only possible to discuss the principal findings of this survey; many other facets of forensic medicine may be deduced from the preceding figures and tables.

The survey was comprehensive and about 8½ million people were 'at risk' during the year. The Clinical Forensic Medical Episode rate was about one case per year per 1,000 people 'at risk'; this figure was constant for family doctor and police surgeon practices whether mixed, urban or rural. Thus the family doctor in a rural area will see the same ratio of cases per population 'at risk' as the police surgeon in a busy city practice. The variety of cases seen by these 'average doctors' is similar. It is thus important for the family doctor to be as prepared and equipped as the police surgeon.

The largest group was the drunks-in-charge, and of the 2,963 arrested for this offence, 938 were found to be not drunk at the time of examination. The age distribution had a peak at the 35–40 age group.

In the sudden death section, drugs (including carbon monoxide), accidents and suicides were the principal causes of death.

A large percentage of sexual assaults was reported, and the majority of these were assaults on females, and mainly those in the

age group 13–16 years. The importance of a full examination in this type of case is obvious. There is a wealth of material here for the sociologist to study.

Criminal assaults were few, though serious, and the recording of the types and variety of lesions is important. Illegal abortions, attempted suicides, and cruelty to children were also few in number.

Examination of prisoners was the second largest section. About one-seventh were examined for court sentence; some for birching. Out of the remaining 1,882 cases, 1,125 were to some extent under the influence of alcohol. The cases in this section are similar to those found in the casualty officer's department.

Reports and examinations mainly consisted of reports on injuries; about one-third of the 516 cases were to ascertain the mental condition of the person.

The symbol X was printed in each main category, and this was ringed if the person examined had recently *consumed* alcohol (i.e. the person was not necessarily drunk). It was found that alcohol had been consumed by 4,341 cases, 41 per cent of all survey cases.

This very high figure is broken down according to the numbers in each of the main categories below:

Drunk-in-charge	2,963
Sudden death	65
Sexual assault	84
Criminal assault	48
Attempted suicide	8
Prisoners	1,125
Post mortems	39
Reports and examinations	6
Miscellaneous	3
	4,341

We conclude by estimating the numbers of forensic medical episodes which a general practitioner with an average size National Health Service list of 2,500 would attend over a period of 40 years in practice. He would probably attend a total of 100 cases divided as follows:

Drunk-in-charge	20
Sudden deaths	14
Sexual assaults	21
Criminal assaults	6
Suicides	2
Cruelty to children	3
Examination or prisoners	21
Reports and examinations	7
Miscellaneous	6

Similarly, a police surgeon in a town, population 100,000, would over a period of 30 years attend to some 2,500 episodes. These would be divided as follows:

Drunk-in-charge	800
Sudden death	285
Sexual assault	460
Criminal assault	70
Abortion	5
Attempted suicide	10
Cruelty to children	50
Examination of prisoners	360
Post mortems (if performed)	270
Reports	130
Miscellaneous	60

This survey shows the diverse work of those practitioners practising clinical forensic medicine and the importance of understanding the effects of alcohol, mental conditions, injuries and general casualty work.

Acknowledgements

We are grateful to the 190 doctors (*see* appendix C) who completed record cards for the forensic medical episodes they were concerned with during the year of the survey.

Our thanks are also due to Miss Mary Wall, late of the Department of Medical Statistics, University of Birmingham, for her help in supervising the processing of the data. We also thank the Medical Research Council for financing this survey.

REFERENCES

Laidlaw, A. J. (1960). *J. Coll. gen. Practit.*, 3, 172.

APPENDIX A

Analysis of all cases by type of incident

	C.G.P.	*A.P.S.G.B.*	*Tota*
Drunk-in-charge			
Under influence of alcohol	158	1,839	1,997
Under influence of drugs	—	14	14
Under influence of alcohol and drugs	2	26	28
Not under influence etc.	42	841	883
Person is ill	2	27	29
Refused examination	—	12	12
	204	2,759	2,963
Sudden death			
Suicide	19	176	195
Accidents	33	174	207
Murder	—	31	31
Manslaughter	—	1	1
Abortion	—	2	2
Fighting	—	4	4
Neglect	—	4	4
Reported to the Coroner/Proc.-Fiscal	54	282	336
To certify body is dead	39	336	375
	145	1,010	1,155

Sexual assault			
Rape	13	195	208
Attempted rape	15	97	112
Unlawful carnal knowledge	73	590	663
Incest	11	95	106
Indecent assault	73	445	518
Sodomy, active	5	32	37
Sodomy, passive	22	147	169
Indecent practices	2	26	28
Assaulter	11	40	51
	225	1,667	1,892
Criminal assault			
Grievous bodily harm	47	194	241
Attempted murder	—	9	9
Assaulter	9	32	41
	56	235	291
Abortion (non-fatal)	1	12	13
Attempted suicide	21	53	74
Cruelty to children			
Neglect	13	94	107
Assault	8	26	34
Care and protection needed	5	33	38
Others	1	4	5
	27	157	184

	C.G.P.	*A.P.S.G.B.*	*Total*
Prisoners			
Examinations			
Fitness for court sentence	5	337	342
Charged with being drunk on licensed premises	2	18	20
Prisoners denying drunkenness	16	166	182
Others	11	38	49
Medical aid to prisoners			
Organic illness	16	251	267
Injured not drunk	42	306	348
Ill and drunk	17	96	113
Injured and drunk	92	625	717
Drunk	5	88	93
Malingerer	12	81	93
	218	2,006	2,224
Post mortem	41	950	991
Reports and examinations (where these cannot be classified above)	67	449	516

Miscellaneous			
Examination of remains thought to be human	2	22	24
Urgent medical aid	51	97	148
Others	9	59	68
	62	178	240
Grand totals	1,067	9,476	10,543

APPENDIX B

The basis of the classification of clinical conditions in this survey was of necessity forensic and not medical, e.g. a death due to carbon monoxide poisoning could be classified as a suicide, an accident or even murder. There were many such cases and in order to keep the text readable, only a few examples were given in the various sections. An alphabetical list of all the clinical conditions seen under each relevant heading is given below.

Accidents (in many cases associated with alcohol)

Anaesthetic deaths; asphyxia due to inhaled vomit when drunk—due to a pillow (baby of eight months); barbiturates taken when drunk; burns—fire in armchair—smoking and drunk; child jumped off swing, head injury; concussion; crushing by cranes, lorries, etc.; electric shock; fumes—coke, oil heater; gas poisoning—unlit gas tap, kettle boiled over and put out gas; house being demolished—fall of masonry; putting head out of a train window while in a tunnel; run over by car when lying drunk in road.

Drugs

Alcohol, aspirin, barbiturates, chloral hydrate, chloroform, cocaine, dexedrine, drinamyl, heroin, insulin, lysol, nicotine, nitrous oxide, opium, pethidine, potassium cyanide.

Injuries

Bronchopneumonia (fatal) after multiple fractures caused by mother; gunshot wounds; stab wounds of chest and heart.

Malingerers

Abdominal pains; alleged miscarriage; appendicitis; backache; blackout; blood in urine; brain tumour; bronchitis; burning in throat; carcinomaphobia; cell was too cold; coma; demanded an examination; disseminated sclerosis; drinamyl addict; duodenal ulcer; epilepsy; earache; fractures; headaches; in labour; migraine; pregnancy; pseudo-epileptic fit; simulating drunkenness; sprains and strains; stomach pains; swollen leg (tight elastic band round knee); swallowed safety pins, a known Munchausen.

Mental illness

Acute mania; anxiety state; depression; hysteria; psychopath.

Organic illness

Abdominal pains; angina; appendicitis; asphyxia due to inhaled vomit when having epileptic fit; asthma; ataxia; bronchitis; cachexia due to mongolism; central nervous system diseases, including meningitis encephalitis; Christian

Scientist died (no doctor called); collapse; concealed antepartum haemorrhage; constipation; coronary thrombosis; cough; cystitis; dental abscess; diabetes; duodenal ulcer; dysmenorrhoea; earache; epilepsy; exposure; extreme emaciation; fibrilliation; gangrene of gut; gastro-enteritis; glaucoma; haemorrhage from abdominal aneurysm; haemorrhage from varicose veins; heart disease including coronary thromboses, ruptured ventricles, pericarditis, etc.; hypoglycaemia; kidney disease; menorrhagia; morbus cordis; neoplastic diseases; orchitis; paroxysmal tachycardia; P.I.D.; pemphigus; peptic ulcer; peritonitis; pernicious anaemia; pilonidal sinus; pneumokoniosis; poisoning (accidental and suicide) various; pregnancy; pulmonary embolism; rash; respiratory diseases; scabies; septicaemia; silicosis; status epilepticus; strokes, including all brain diseases, cerebral haemorrhages, embolism and thromboses, subarachnoid haemorrhages, extra-dural haemorrhage; thyrotoxicosis; tonsillitis; toxaemia of pregnancy; tuberculosis; viral infections.

Self-inflicted injuries

Car exhaust to inside of car; gunshot wounds; hanging; head in cellophane bag, tube to gas tap; jumping from a height; jumping under a moving vehicle; polythene bag over head; throat cut; wrists cut.

Urgent medical aid

Abortion, natural, on railway line; assaulted female in cinema; amok due to alcohol, drugs; mental state; addict, heroin; boy in detention—ill; civilian treated—helped police; collapse following police enquiries regarding indecent assault; collapsed p.c. on duty; cerebral thrombosis, patient alone, door broken down, stroke; cyclist trapped under lorry; car over cliff—climbed down to beach and gave first aid; collapsed in street, alcohol, hysteria; drunk, disorderly, injured (many); drowning; epileptic fits; house on fire—emergency treatment; insulin coma; insane (several); miscarriage, collapsed; missing person—thought a suicide—mental, advice during search; poisoning, CO; p.c. injury (41 cases); prisoner in labour—membranes ruptured—hospital; R.T.A. female, trapped by car—hacksaw used to release her; shop fire—overcome by smoke, child burned etc.; turned out of house—certified fit for rest centre; trapped under machinery; witness giving evidence fainted; witness collapsed in ' box ' giving evidence for the police.

Others

Attended post-mortem examination for conference with pathologist regarding murder; blood from prisoner, robbery with violence; blood, from accused of manslaughter (a few); blood, hair, clothes—murder; blood, urine, for laboratory analysis; blood and saliva test from youth alleging indecent assault; body on gas stove—? post-mortem charring; body on railway line—multiple pieces over 200 yards; cinema lavatory wall examined for seminal stains, specimen taken (sodomy case); criminal abortion death; cut hand sustained by a man trying to take knife away from another; dead in bed—approx. 4/12; dead in canal, multiple bruises, no external signs of drowning; examination of clothing by ultra-violet light; girl came home very upset, had blood on genitalia, told story of a fall from bicycle and caught pubic region on machine, parents sceptical, made complaint of possible indecent assault, injuries and examination compatible with girl's story; headless torso—decomposed in sea, approx. 6/12 old; house on fire, charred body in front of gas oven, a previous history of suicide attempts; hypoglycaemia and carbon monoxide poisoning; interview with probation officer regarding alleged neglect; inquiry by C.I.D. as to possibility of a criminal abortion having been procured using castor oil; man wandering, called into police station—not certifiable; marks on neck as if strangled (? murder); microscopic and chemical examination of seminal fluid; nail clippings and blood—murder case; report on medical history of patient at request of H.M. Prison

Authorities; strangulated hernia; to certify whether a prisoner accused of fire-raising was fit to plead; young girl spent all night with youth, examined to ascertain if she were a virgin.

APPENDIX C

List of doctors participating in survey

The following took part in the survey. The letter (M) (U) or (R) after the name indicates whether the doctor was in a mixed, urban or rural practice; and (P) or (C) shows whether they were introduced to the survey via the Association of Police Surgeons of Great Britain or the College of General Practitioners.

The country was divided into the standard regions.

North-western Region

Alexander, B. L. (U.P.)
Brand, W. (U.P.)
Comrie-Hill, J. (U.P.)
Ferguson, J. W. (U.P.)
Fletcher, G. C. (U.P.)
Forrest, R. E. (M.P.)
Freeman, S. (U.P.)
Hall, H. D. (U.P.)
Hartnell, H. R. (U.P.)
Hirsh, B. (U.P.)
Howitt, E. (U.P.)
Hunter, T. R. (U.P.)
Kirwan, M. (U.P.)
Lees, H. W. (M.P.)
Mackichan, I. D. (U.P.)
McKinney, W. W. M. (U.P.)
McVean, J. D. (U.P.)
Martindal, E. (M.P.)
Ryner, J. E. (U.P.)
Seed, H. G. (M.P.)
Selkirk, W. L. (U.P.)
Sharp, C. (U.P.)

Northern Region

Adamson, J. K. (R.P.)
Bell, C. M. (U.P.)
Byrne, H. (U.P.)
Fox, E. A. (M.P.)
Freedman, W. A. (U.P.)
St. John Cosgrave, M. (U.P.)
Taylor, H. L. (U.P.)
Walshaw, P. A. (M.P.)

East and West Ridings Region

Cretney, E. (M.C.)
Elliott, D. (U.P.)
Gibbons, J. R. P. (M.C.)
Lawson, R. P. (R.P.)
Metcalfe, J. S. (M.P.)
Palmer, W. C. (R.P.)
Prentice, J. (U.P.)
Robinson, J. F. (M.P.)
Sale, F. J. (U.P.)
Schofield, J. D. (U.P.)
Sheldon, K. M. M. (U.P.)
Sinton, A. S. R. (U.P.)
Staley, G. R. (U.P.)
Wigglesworth, G. F. (R.P.)

North Midland Region

Batty, A. M. L. (M.C.)
Buckley, J. H. M. (U.C.)
Corbett, J. (U.C.)
Froment, R. I. (M.P.)
Latham Brown, R. (U.P.)
Lundie, S. (U.P.)
Lynd, W. J. (U.P.)

North Midland Region (contd.)

Ward, G. L. (M.C.)
Watts, C. A. H. (R.C.)
Young, O. G. (U.P.)

Eastern Region

Bradford, H. W. (M.P.)
Clark, J. D. (M.P.)
Craig, I. D. (M.P.)
Forbes, F. D. (M.P.)
George, K. (M.P.)
Gilruth, J. G. A. (M.P.)
Hurn, W. Lincoln (U.P.)
Paterson, I. D. (U.P.)
Silberstein, K. (U.P.)
Walker, J. J. (U.P.)

London and South-eastern Region

Baker, D. M. (M.P.)
Cook, E. D. (U.P.)
Cooke, R. (U.P.)
Curwen, M. (U.P.)
Dunnill, D. E. (U.P.)
Edmond, M. C. (U.P.)
Edmond, M. G. (U.P.)
Groome, J. J. (U.P.)
Harris, C. (U.P.)
Hastings Hardy, W. (U.P.)
Ledger, P. K. (U.P.)
Leigh Smith, A. (M.P.)
Marshall, D. (U.P.)
Mathews, A. D. (M.P.)
Morgan, J. C. C. (U.P.)
Partridge, J. R. (M.P.)
Patuck, D. F. (M.P.)
Pole, K. F. M. (U.P.)
Repps, L. C. de (M.P.)
Rosenberg, H. (U.P.)
Seccombe, C. J. P. (U.P.)
Weston, A. (U.P.)

London Region

Billig, H. (U.P.)
Bowtell, A. R. (U.P.)
Crane, S. (U.P.)
Dixon, M. (U.C.)
Gavin, J. A. (U.P.)
Gorman, E. M. (U.C.)
Greaves, C. E. B. (U.P.)
Harcourt, K. W. (U.P.)
Herst, E. R. (U.P.)
Heweyson, S. F. (U.P.)
Hicks, P. Y. (U.P.)
Jarvis, H. C. M. (U.P.)
Johnson, C. H. (U.P.)
Johnston, I. F. B. (U.P.)
Kennedy, P. G. S. (U.P.)
Kobner, H. L. (U.P.)
Lascelles, B. D. (U.P.)
Lloyd-Williams, A. L. (U.P.)

London Region (contd.)

Moore, G. S. (U.P.)
Morton, B. G. (U.P.)
Peters, J. H. (U.P.)
Peters, R. (U.P.)
Robertson, C. W. (U.P.)
Squire, J. (R.C.)
Striesow, H. H. (U.P.)
Summers, R. D. (U.P.)
Wilson, E. B. (U.P.)

Southern Region

Gaster, B. S. C. (R.C.)
Gibberd, A. A. (M.P.)
Leggett, H. D. (U.P.)
Mackessack-Leitch, K. (M.P.)
McFarlane, G. J. (U.P.)
Markby, E. H. (M.P.)
Pickering, P. L. (M.C.)
Samuel, H. S. (R.P.)
Tait, W. G. (U.C.)

South Region

Eastcott, E. H. (R.P.)
Eckersley, R. G. (M.P.)
Hart, J. R. (R.P.)
Mitchell, A. S. (U.P.)
Stewart, W. L. (R.P.)
Townsend, E. (M.P.)
Turney, W. J. (M.P.)

Wales Region

ap Cynan, E. (M.C.)
Lewis, J. (U.P.)
Lewis, J. T. (M.P.)
White, W. J. B. (U.P.)

Midland Region

Allen, A. J. (M.C.)
Beatson Hird, J. (U.C.)
Beatton, P. (M.C.)
Black, F. S. (R.C.)
Bosc, F. V. A. (U.C.)
Brown, J. W. (U.P.)
Browne, R. (U.C.)
Burne, S. G. S. (M.C.)
Caldwell, C. F. (R.C.)
Chitnis, J. G. (M.C.)
Clarke, J. A. G. (U.P.)
Colston, B. (U.C.)
Craig, D. G. (M.C.)

Midland Region (contd.)

Crawford, W. C. (U.C.)
Cresswell, J. L. S. (U.C.)
Crombie, D. L. (U.C.)
Dean, D. (U.C.)
Dean, I. N. (U.C.)
Dennis, V. (U.C.)
Doherty, P. J. (U.C.)
Hay, K. M. (U.C.)
Hildebrand, M. J. (U.C.)
Hoyle, G. (U.P.)
Inman, K. (M.P.)
Ireland, D. (M.P.)
Keen, J. E. (U.P.)
Laidlaw, A. J. (U.P.)
Lester, J. P. (U.P.)
Marker, H. R. (U.C.)
McGavin, J. G. (M.C.)
McKenzie, J. Clyde (U.P.)
Nairn, W. P. (U.P.)
Perry, F. S. (R.C.)
Pinsent, R. J. F. H. (U.C.)
Potts, C. L. (M.C.)
Price, J. H. (U.C.)
Readett, G. A. (M.C.)
Richmond, J. H. (U.P.)
Rose, R. (M.C.)
Summers, W. (R.C.)
Targett, D. H. (U.C.)
Teal, M. B. (M.C.)
Turner, M. H. (U.C.)
Walker, J. (U.C.)
White, D. (U.C.)
Wilkinson, B.R. (U.C.)

Scotland

Cochran, R. (U.P.)
Dorward, W. F. J. (U.P.)
Hendry, O. (U.C.)
McLaren, R. C. (U.C.)
Mill, R. M. (U.P.)
Morris, A. M. (M.P.)
Morrison, J. E. (M.P.)
Pow, A. A. (M.P.)

Northern Ireland

McClatchey, E. (U.P.)

Isle of Man

Beardwood, H. K (M.C.)
Beckett, S. R. A. (M.C.)

Complications of Self-Treatment with Ring Pessary. G. A. C. BINNIE. *Brit. med. J.* 1964. **2**, 554.

An unusual complication of pessary treatment for uterine prolapse is described. The patient, who had bought and inserted the pessary on her own, succeeded in pushing it over the prolapsed body of the uterus causing a condition of strangulation. The offending pessary had to be cut away under general anaesthesia and at a later date a successful Fothergill repair operation was performed.