substance forms a stable compound with arsenic, not only preventing arsenic from combining with tissue proteins but also causing existing arsenic-protein complexes to dissociate. B.A.L. is available in 2-ml. ampoules, each containing 100 mg. of the substance. It should be administered by deep intramuscular injection, in an adult 100 mg. being given four times in the first twenty-four hours, twice daily on the second, third, and fourth days, and once daily for two further days. Local pain may follow the injection, and intramuscular abscesses have been reported. With this dosage toxic symptoms are not likely, but vomiting, headache, generalized muscle pain, and paraesthesiae in the limbs have at times been recorded. B.A.L. is occasionally beneficial in cases of polyneuritis associated with treatment by gold and bismuth compounds. It has also been tried in cases of chronic polyneuritis of uncertain aetiology, but the results have been disappointing and there does not seem to be any real justification for its use here.

When polyneuritis is due to periarteritis nodosa it may respond to cortisone or prednisone; but when it is due to such systemic diseases as carcinoma of the bronchus, porphyria, and primary amyloidosis drug treatment has no appreciable effect on the neurological conditions.

Treatment Apart From Drugs

Administration of drugs plays only a minor part in the treatment of most cases of polyneuritis other than those associated with deficiency of aneurine, absorption of lead or arsenic, and, to a lesser extent, acute polyneuritis of toxic or infective origin. The main essentials of treatment are bed rest in the acute cases, in which tachycardia frequently occurs, measures to deal with bulbar palsy and paralysis of the respiratory muscles, and physiotherapy. When the bulbar nerves are affected, postural drainage, pharyngeal suction, physiotherapy to the chest, and feeding through a gastric tube are essential, and in some cases tracheotomy with positive-pressure respiration is necessary to enable the patient to get through the acute phase of the disease. In patients with intercostal and diaphragm paralysis without bulbar paralysis a box or cuirass type of respirator may be useful, but if there is in addition bulbar paralysis positive-pressure respiration will be essential. The object of physiotherapy is to prevent contractures and stiffness of the joints by passive movements and light splintage. When the acute phase is passed active movements, including movements against resistance but within the limits of muscle fatigue, are helpful to the patient.

SEXUAL OFFENCES AS SEEN BY A WOMAN POLICE SURGEON

BY

NESTA H. WELLS, M.B., Ch.B.
Surgeon, Manchester City Police, 1927–54

The Wolfenden Report has brought homosexuality and prostitution into the headlines, but the discussion of sexual misbehaviour has not usually arisen. The general public do not appreciate how much is going on all around us all the time, nor do they realize how much education and research is needed if these offenders are to be given adequate and proper treatment.

Many cases are not reported to the police for various reasons, including the reluctance of the parents to let the child be seen by the male police surgeon after being assaulted by a man, and their dislike of the publicity of a court case. Having lived in the poorer parts of Manchester, Councillor Annie Lee (before becoming an alderman) knew the conditions there and how people felt, and when she became a member of the Manchester Watch Committee she managed to persuade them in 1927 to appoint a woman police surgeon for the special purpose of examining, when required, any women and children seen by the police.

This was a pioneer step, and from the letters I received when appointed it seemed to be the first of its kind, not only in Britain but anywhere else. Apart from London, very few towns, if any, have as yet made similar appointments. As Manchester is probably little different from other cities, I hope that the following survey may help to show the need for the examinations to be done by a woman and also the need for the consideration of various other points in connexion with sexual offences.

Present Survey

My figures concern only those cases which were referred to me by the police for examination during the years 1927 to 1954, when I retired. They do not of course include cases needing no medical examination, such as "indecent exposure," which during 1950–4 averaged between 280 and 330 a year. Nor do they compare easily with figures given in the Chief Constable's Reports for the various crimes. For instance, in 1952, there were:

Indecent assault cases known to police	109
" " " cleared up	93
Total number proceeded against	56
Referred to higher court (included above) ..	7
Complainants seen by me	51

The differences arise in various ways. A number of offences are only technically indecent assault and do not need a medical examination. One man may have attacked more than one child, so that my figures will be increased in comparison with the number of the criminals. Actually 19 cases detected by the police in 1952 were committed by only four men. In quite a number that I saw, the men had got away and could not be traced, though occasionally they were found after attacking another child. In cases where I had found nothing these might go to court if there was other corroborative evidence or the men admitted the offence.

My figures must therefore be regarded as cases of "suspected offences" needing medical examination. The findings were often not very helpful: at times they were consistent with but not necessarily the result of interference; at times they gave definite corroboration to the story. However, no attempt has been made to analyse these results, but to give a picture of the kind of case which needed to be seen, the ages of the children involved, and some of the problems that arise.

Fig. 1 shows the increase in the total cases seen each year from 1927 up to 1939, followed during the early war years by a marked drop. After the war, however, the numbers rose again, reaching a higher level than ever before. The graph also shows the number of cases of indecent assault, carnal knowledge, and incest seen. Rape, common assault, and miscellaneous cases kept fairly level, at between 0 and 10 each, over the whole period until 1954.

A survey to July, 1937, after my first 10 years, showed an increasing number of cases seen; there were as many during the last four years as during the first six years. The remaining 17 years have been divided into four groups—the three

pre-war years, the five war years, and the two five-year periods since. The total came to just under 2,000 cases, with the average annual figure for each period rising from 48 to 86 in the pre-war periods, dropping during the war to 64, followed by a marked rise since the war to 92 in the last five-year period. The averages for the individual offences are shown in Fig. 2.

Table I gives the offences since 1937, arranged according to the age of the complainant, and Fig. 3 puts them in graph form. It will be seen that 82% of the subjects were under 16 years—the age of consent. Of these, 26% were 13–15 years old, thus leaving over half aged 12 and under. The

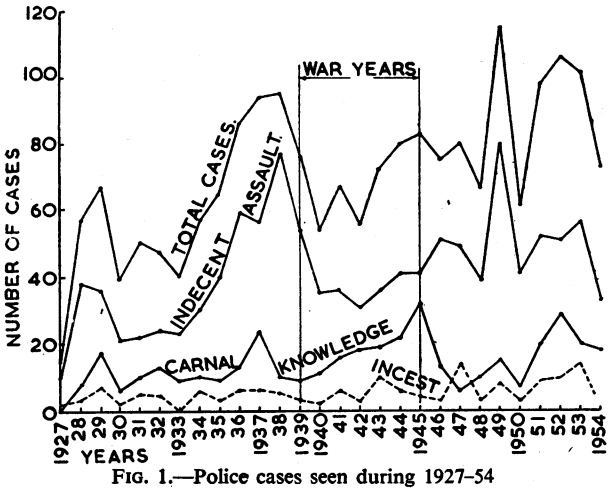

FIG. 1.—Police cases seen during 1927–54

most striking thing of all is that, of these 822 young girls, well over half were 7 years or under, and 254 were only 5 or 6 years old.

It will also be seen that nearly 20% of all cases were 5 years or under, and 34% were 7 or under, a point which is referred to later. Fig. 3 also shows that the indecent assault cases mainly involve those under 11 years, the carnal knowledge cases those from 14 to 16, followed by a spike for rape, assault, and incest cases between 20 and 30. Otherwise a fairly even scatter from 0 to 10 cases is seen in most ages.

Suspected Indecent Assault

These cases always form the largest proportion of all those seen, varying from 45% to 80%, but usually they were between 55% and 65%. The increase during the first 10 years had been very marked, and it continued to a peak in 1938, but with the outbreak of war in 1939 the picture changed completely. The indecent assault cases dropped and the carnal knowledge cases rose.

Possible reasons for this drop would include the evacuation from the city of some of the children in the early war years, with perhaps a lower child population following the lower birth rate in the 1930's. Then also the men left at home were more fully occupied, working long hours, there were fewer loafers about, and the blackout kept people more at home. But, whatever the causes, the number dropped by nearly one-half, from an average of about 62 a year for 1937–9 to 35 a year for 1940–4 (see Fig. 2). Unfortunately they have risen again, as have all the sexual offences, to 52 and 49 a year respectively, for the last two post-war periods.

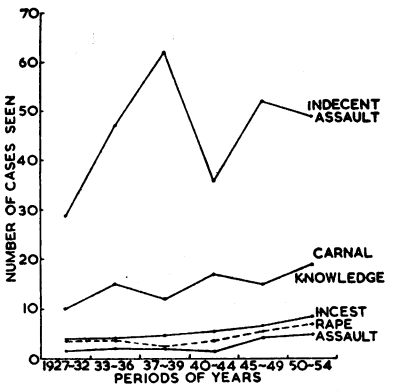

FIG. 2.—Annual average number of each offence in each period of years.

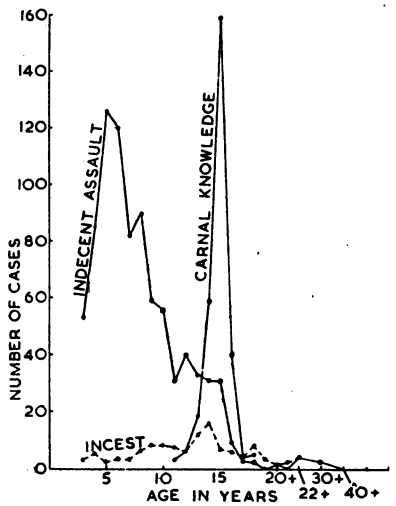

FIG. 3.—Totals of types of cases by age. 1937–54

Indecent assault was the principal reason for seeing the younger children, and, as has already been said, half the subjects were under 7 years, with many more aged 5 and 6 than any other age. Even the very tiny infants of 3 years and under were more numerous than the 9- and 10-year-olds. Table II shows that the age distribution is very much the same in each of the periods, though the actual figures vary. The highest annual numbers seen were in 1938 and 1949, when they were 78 and 80 respectively, and the lowest figures were during 1930–3 and the war years, lying between 20 and 40 a year. The variation occurred mainly in those under 9 years.

With so many young children involved a difficult situation often arises, as most courts consider that a child under 7

TABLE I.—*Total Cases of each Offence, 1937 to 1954, According to Age of Complainant*

Age:	3–	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22+	30+	40+	50+	60+	Total
Indecent assault ..	53	85	126	120	82	90	59	56	31	40	33	31	31	9	3	2	0	1	0	4	2	0	0	0	858
Carnal knowledge ..	0	0	0	0	0	0	0	0	3	6	18	59	159	40	4	5	0	0	0	0	0	0	0	0	294*
Incest	3	5	2	3	3	6	8	8	7	6	12	16	7	6	4	8	3	1	2	4	0	0	0	0	114†
Rape	0	0	0	0	0	0	0	0	0	0	0	0	4	5	9	9	5	11	2	21	13	8	2	3	92
Assault	5	0	0	1	0	1	1	0	1	2	1	2	3	1	5	3	1	3	3	14	7	2	1	1	58
Miscellaneous ..	3	0	0	2	1	0	3	0	0	0	0	0	0	1	1	0	1	1	2	4	7	4	0	0	92
Total	64	90	128	126	86	97	71	64	42	54	64	108	204	62	26	27	10	17	9	47	29	14	3	4	1,446
	282 (19·6%)			540 (37·5%)							376 (26%)			142 (9·8%)					106 (7·3%)					
Jan. 1937 to Sept. 1954	494 (34·1%)			1,198 (82·8%)										(248 17·2%)										1,446
Aug. 1927 to July 1937	88 (15·4%)			446 (78·2%)										124 (21·7%)										570

* 70 Pregnant. † 37 Carnal knowledge.

	2,016
Deduct 7 months overlap in 1937	57
Total cases seen	1,959

TABLE II.—*Indecent Assault Cases at various Ages Grouped in Periods 1937–54*

Ages:	3–	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22+	30+	40+	Total	Yearly Av.
1937–9	9	20	32	22	17	26	13	8	10	11	8	2	5	1				1		1			186	62
1940–4	15	13	23	22	16	18	14	13	4	9	9	9	7	2	0	1				2	2		179	35·8
1945–9	16	24	39	43	28	28	18	17	5	11	7	10	9	3	1					1			260	52
1950–4* ..	13	28	32	33	21	18	14	18	12	9	9	10	10	3	2	1							233	49
Total for 1937–54																							858	48·3
,, ,, 1927–32																							173	28·8 p.a.
,, ,, 1933–6																							188	47 p.a.

* Total period of four years and nine months.

cannot be sworn. "The unsworn evidence of a child of tender years is admissable, *but* when this is given on behalf of the prosecution the accused shall *not* be liable to be convicted *unless* that evidence is corroborated by some other evidence . . . implicating him." It is allowable to accept as such evidence what was said in way of complaint, provided it was made at "the earliest possible moment." In many cases, however, one cannot use this complaint because there was delay, perhaps because the child did not know the first person met, or the man may have threatened her if she told anyone. As the man is unlikely to assault the child where he can be seen, the case often falls through lack of corroboration.

Difficulty has also arisen where the witness of an offence has been a child under 7 and the unsworn evidence has been disallowed, although the child made a good statement and had obviously been telling the truth. Unless the man admits the offence the case may not be taken to court or it may be dismissed. One bad case concerned a man who kept a shop and bribed little girls into the back room by giving sweets or pennies. He usually took one or two at a time, but it went on for some considerable period, so that, although five or six girls were involved, the statement of each was corroborated by one or more other children. The man was defended in the police court, and he elected to be tried by a jury; but when the case went on to the Sessions the Recorder turned it down, without hearing, because there was no sworn evidence, all the girls being under 7 years, and no complaint had been made.

This problem needs very careful consideration, among others concerning children's evidence in general. One must respect the rights of the individual, but it should not always have to be those of the accused that are respected and those of the injured that are ignored.

Suspected Carnal Knowledge

Apart from the initial rise in the first period after my appointment (Fig. 1) the numbers for carnal knowledge remained fairly steady at about 10 to 14, with the exception of 1937, up to the early war years. After 1940, however, we had many of the Forces of our own and other countries stationed in and around Manchester, and there were always many of them to be found wandering about the city streets. They were met by many young women, including the 14- to 16-year-old girls, with the result that the carnal knowledge cases increased and reached a peak of 32 in 1945. After the end of the war the figure fell to almost pre-war level, but as people settled into peacetime life in the 1950's with greater freedoms, so also did the carnal knowledge cases rise again to 29 in 1952, with an average of nearly 20 cases a year in the last five-year period. They also formed a higher percentage of all the cases seen during the last few years (Fig. 2).

As one would expect, the largest number of cases are found in the 15-year-old group (Table I and Fig. 3). A comparison of the numbers seen in each period of years is given in Table III, in which the increase in the 1950–4 period is clearly shown.

For carnal knowledge it is only necessary to prove penetration with the penis if the girl is under 16 years, as it is an offence whether she gives consent or not. What the graphs cannot show was the change in the type of case history which developed during and after the war. Previously there were not only fewer cases but in most of them the girl was not a willing partner and had been taken advantage of, possibly because she had been a bit slow in the uptake. But during the war almost all the girls had been going out with members of the Forces or deliberately meeting them in town or near the camps. They were seldom found after the first offence, and, as many of the men were known to the girls only as Charlie or Johnny, etc., it was often impossible to track them and take steps against them. These girls therefore were being seen more as being "in moral danger" or "in need of care and protection" than as ordinary police cases.

TABLE III.—*Carnal Knowledge Cases, Giving Ages in Groups of Years*, 1937–54

Ages:	11	12	13	14	15	16	17	18+	Total	Yearly Average
1937–9	0	2	3	11	16	4	1	1	38	12
1940–4	0	3	7	15	48	10	1	2	86	17
1945–9	1	0	3	13	42	16	1	0	76	15
1950–4	2	1	5	20	53	10	1	2	94	19
Total	3	6	18	59	159	40	4	5	294	16·6

The voluntary homes run by the various religious denominations to which these girls had to be sent were soon full to overflowing, so the Home Office had to open more remand homes and approved schools in 1942 and 1943. The remand home in Manchester, to which I was appointed as M.O., was fortunately equipped for the treatment of venereal disease, and most of these girls needed such treatment. However, the majority of them went direct from the courts for medical reports and therefore are not included in this survey. Their background was nearly always a broken home of some kind or bad parental influence or example, and their I.Q.s lay on the low side of normal, usually between 70 and 90, though there were some of 60 and under.

The men concerned were for the most part the poorer type of the average man in the Forces, who may have thought that by going with a young girl he might avoid V.D., etc.; but as he was not always the first, he might catch infection which she had acquired from an earlier partner.

The carnal knowledge cases involving girls of 11 and 12 years were mostly those of boys under 16 years. Where girls of 16, and therefore over the age of consent, were concerned, they were either suspected to be pregnant or the history suggested that intercourse had taken place before the age of 16. Over the period 1937–54 there were 70 who were pregnant, about 23% of the cases of carnal knowledge seen. Those girls who were 17 years or over were very mentally slow or known to be defective, and should therefore have had some protection in law; but if they went to court this never seemed to apply. That is one of the points which should have further investigation.

There were also cases of procuration by proprietors of immoral houses, perhaps sending out young girls to be picked up by car kerb-crawlers. Some of these and the remand-home type of girl, even after an approved-school training, may revert to the "streets" and the easy money obtained there, and their treatment is a hard problem. It would be easier if people would believe that extramarital intercourse was wrong and promiscuousness in men was not accepted as a normal occurrence. If there was no demand

for females the supply would go down. It is therefore necessary to raise the moral standard of the community as well as make the laws applicable equally to men and women.

Suspected Incest Cases

Included in these figures are those of indecent assault by relatives (see Figs. 1, 2, and 3). One to three of the five cases seen each year would be true incest with penetration by the penis; and here again since the war the numbers went up to 6.5 a year for the 1945–9 period and to 8.6 a year for 1950–4. Of the total 114 cases, 37 showed penetration (see Table I). The age distribution is also given, 14 years being the most frequent time.

In the majority of cases the father had assaulted the daughter, but in some the offence had been between brother and sister. Where the girl was over 16 years, the men seemed to have taken advantage of the fact that she was a bit mentally slow and more easily intimidated.

Suspected Rape Cases

A similar kind of picture is seen here, with a steady number of 2.2 to 3.8 a year in each of the earlier periods, and a definite rise after the war to 5.6 and 7.1 a year respectively for the last two periods (Fig. 2). Police records for the city show that on only one occasion since 1927 did figures for rape reach 10, and that was in 1950. Table I gives the numbers seen in each age group.

Before the war there were fewer suspected cases, and most of them were genuine, though not always proved to the satisfaction of the court. One of my earlier cases fell through because the girl waited till the next day before complaining to her sister of the attack made on her when she answered an office advertisement. It was not considered to be "the earliest possible moment," so there was no corroboration. No account was taken of the fact that the girl was shy and lived alone and was unable at once to see her sister, who lived on the other side of the city.

Since the war there have been more of the doubtful cases, such as one where it seemed more an excuse because she had not been paid and the man had gone off with her handbag.

Cases difficult to assess included those where the woman was slow or mentally backward and did not realize what the man was up to until it was too late to resist penetration properly.

Suspected Common Assault and Miscellaneous Cases

Some of these include borderline cases between rape and assault, but there were two cases of women over 70 years attacked in their rooms, one being in bed at the time. The cases in children were mainly those of cruelty by the parents or chastisement by adults. The numbers rose after the war to between 4 and 5 a year.

The miscellaneous cases were usually odd cases of abduction, of criminal abortion, of infanticide and abandoned babies, and of neglected and ill-treated children. One condition seen only since the war was sodomy, and in each case the man stated he had learnt the practice in the Army and had continued it with his wife or family after demobilization.

The Offenders

Apart from the men in the Forces, already referred to, the offenders range in age from young boys of 8 or 9 years to men of 70. With many of the lads it often seemed to be more inquisitive and experimental behaviour rather than real badness, but of course it does mean lack of training and teaching of decent behaviour at home. Then there are the old men and wrecks of men who are apt to hang round the parks, conveniences, and cinemas, and whose poor mental faculties are apt to be associated with somewhat perverted sexual feelings.

In the middle age groups there are a large number with I.Q.s probably between 70 and 80 who lack interests and occupations (which they got in wartime) and give way to various sexual urges, normal and abnormal. The majority of the cases of indecent assault are done by the hand only, though some are with the penis between the legs, and they chiefly involve sexually immature little girls of under 12 years (mostly only 5 or 6 years), so there is no advance or sexual response by the child. This indicates that some form of mental abnormality, defect, or perversion must be present —and these conditions are unlikely to respond to prison treatment.

Another type was the emotionally and sexually uncontrolled man who would rape the office girl or someone he had met at a dance or in the public-house as they went home. In many cases the effects of alcohol undoubtedly entered into the picture.

However much one feels that the men should be severely punished, the fact remains that prison will not cure a sexual perversion, though sometimes it may be necessary as a form of shock treatment to begin with. In a certain number, some form of psychiatric treatment may be possible, but the kind of condition likely to respond is limited. Moreover, the man must not only be willing but also mentally capable of co-operating with the doctor.

This makes it all the more necessary for the court to receive a medical and psychiatric report on the accused before sentence is passed, as was strongly advocated by the joint committee of the B.M.A. and Magistrates' Association in 1949 in their report on the criminal law and sexual offenders. Among other recommendations they suggested that, after guilt had been decided but before the sentence was passed, the courts "should be under an obligation, wherever possible, to seek the advice of a duly qualified medical practitioner with experience of this type of case, as it is only when furnished with an adequate report that it is possible to pass a suitable sentence. Possibly a team such as is found in a child-guidance clinic would give the best results." They also felt that more practitioners with the necessary qualifications and experience should be available.

Some cases could be dealt with by probation, with or without a condition of special treatment; but, again, to get good results it would need more psychiatrists and more probation officers to give adequate supervision.

There still remain the mentally and physically poor types who really need to be "cared for" rather than punished, as prison will not prevent further trouble arising. For these, as for some other types of mental defectives, I feel that the best place would be small homes within a colony where they could work and live according to their ability, protected and under supervision, and yet the public would be protected from their bad habits. Though expensive to set up and difficult to staff, in the long run it would probably prevent much damage and crime in the general community and eventually help to cut down the prison population and reduce the number of recidivists.

Points Arising

1. Women Police and Woman Police Surgeon.—It is clear that a large proportion of the examinations are of sexually immature girls under 12 years, of whom more than half are under 7. To take statements from these children that are accurate and full needs special qualities, and it is here that women police have shown their worth. A policewoman was always in the room with me, often before the statement was taken, as it is very important to get the examination done as soon as possible or slight corroborative signs may have gone for ever. Both of us being women, I am sure the child gave a better story, and one nearer the truth, than would have been given if either of us had been a man. Experience gained over the years by the surgeon can prove very useful in doubtful cases, and I feel very strongly that a woman doctor should be called in all cases of sexual assault. Women doctors, available now in almost all districts, could be given part-time appointments, as I was. And yet after 30 years I believe Manchester still remains the only place outside London where such an appointment

has been made, though there are a few places like the Manchester Division of Lancashire County where a woman is called in "in suitable cases." But as experience is very helpful and it is not everyone who wants to be bothered with possible court cases, a definite appointment probably gives best results.

2.—Court Procedure.—The aim should be to make conditions at court at least as good for the child witness as it is for the child delinquent, especially as in these cases she is often the most important witness. Everything should be done to reduce any further emotional damage. The following practices are helpful, and should be carried out in more courts than is done at present.

(*a*) In the cases of an adult offender where the juvenile court cannot be used, there is usually available a small room where there can be less formality, no dock, with everyone on the same level, and no great distance between the magistrates and the witness-box. Otherwise the atmosphere of a large court, the fencing round the dock, the high witness-box and magistrates' bench, and the numbers of strange folk present can be overwhelming for the child or young girl, who, in any case needs courage to give the unpleasant details of what has happened. It makes her more likely to get nervous and easily confused, and therefore more liable to appear to be an unreliable witness.

(*b*) A woman magistrate and policewoman should be required to be present in court in all cases of sexual assault.

(*c*) It should not only be possible, but compulsory, to clear the court in these cases, and publication of the names of the child witnesses should be prohibited, as with child delinquents.

(*d*) The cases should be brought to court as soon as possible. Delay in hearing or reference to sessions or assizes, with a wait of maybe weeks or even months, means that the child forgets the details of time and sequence and therefore gives a wrong impression, especially with a hard cross-examination. This holds good, too, where the witness is mentally slow or defective. The evidence while fresh in the mind can make such witnesses quite reliable, but the impression soon becomes hazy and then very patchy. Unfortunately the defence are not beyond taking advantage of this, as delay gives the accused a better chance of getting off. But it is bad for the injured persons, as a second appearance in court and repetition of their evidence tends to increase the psychological trauma from which they were possibly beginning to recover.

(*e*) An alteration in the law might be made so that a child who could not be sworn might be allowed "to affirm" the truth in suitable cases.

(*f*) Another alteration should make it possible to accept the unsworn evidence of a child if corroborated by one or more other children who have not been sworn.

3. Disposal of Accused.—As many of the accused are mentally slow or suffering from sexual perversion of some kind, it is clear that no amount of prison sentence is likely to stop them doing the same thing again on discharge. It is *treatment* of some sort with a view to *prevention* that is needed, rather than punishment, and this approach needs to be more fully realized by both the public and the courts. This means that it should be compulsory in sexual cases for the magistrates to get, before sentence, a medical and psychological report on the accused, in order that they can decide what is likely to be the best way of dealing with him.

Summary

This survey of cases seen over a period of about 27 years shows a large amount of sexual misbehaviour, particularly affecting girls of under 7 years.

Its management is helped by the presence of women in the Police Force. The necessity for the appointment of a woman police surgeon is pointed out if further trauma to the children is to be avoided.

The legal position of the child under 7 years and also the older mentally backward person needs careful consideration, and legal practice altered in some way if justice is to be done by them.

However, without further legislation much could be done to improve the way in which these cases are handled, both in and out of court.

CARBON-MONOXIDE POISONING

USE OF CARBON-DIOXIDE–OXYGEN MIXTURE

Statement by the Medical Research Council

In February, 1955, a report under the title of "Gases Administered in Artificial Respiration with Particular Reference to the Use of Carbon Dioxide" was published (*Brit. med. J.*, 1955, **1**, 313) by the Medical Research Council's Committee for Research on Breathing Apparatus for Protection against Dangerous Fumes and Gases, to explain the reasons that had earlier led the Council, on the advice of the Committee, to recommend the abandonment of the practice of carrying cylinders of carbogen (oxygen containing carbon dioxide) in ambulances.

The report confined itself to consideration of the first-aid treatment of patients in respiratory failure. The possible adverse effects on such cases of even comparatively low percentages of carbon dioxide in the inspired air were stressed and the report concluded with the recommendation " . . . that in first-aid practice carbon dioxide should not be administered with oxygen in the resuscitation of subjects requiring and receiving artificial respiration."

While accepting that pure oxygen was preferable to oxygen and carbon dioxide in the treatment of many cases of respiratory failure, Dr. H. L. Marriott (*Brit. med. J.*, 1955, **1**, 664) challenged this recommendation in so far as it related to carbon-monoxide poisoning, on the grounds that the administration of an oxygen–carbon-dioxide mixture caused increased elimination of carbon monoxide and quicker recovery.

The Medical Research Council accordingly set up a special subcommittee of Council to "review all available evidence and to prepare for Council a statement for publication in the medical press." The following were appointed to this subcommittee: Professor Robert Platt (chairman), Sir Lindor Brown, Professor R. C. Garry, Professor J. McMichael, Sir George Pickering, Professor F. J. W. Roughton, Professor G. Payling Wright, and the Secretary of the Council, Sir Harold Himsworth.

Statistical Evidence

In view of the fact that mixtures of oxygen and carbon dioxide had been withdrawn from local authority ambulances in favour of pure oxygen as a result of the advice that they had received from their Breathing Apparatus Committee, the Medical Research Council had already asked Professor A. Bradford Hill to analyse the available mortality statistics on carbon-monoxide poisoning. If one method of treatment had any considerable advantage over the other, whether in patients with respiratory failure or not, it would be expected that the difference would be revealed in the statistics. Professor Bradford Hill published his report in the *British Medical Journal* (1956, **2**, 1220). After drawing attention to the limitations of the available data, and emphasizing that they were clearly not precise enough to prove the relative advantages (or disadvantages) of the oxygen–carbon-dioxide mixture compared with pure oxygen, he concluded that there was no evidence of any association between the number of registered deaths from carbon-monoxide poisoning and any change of practice in the treatment of such cases.

Respiratory Failure in Carbon-monoxide Poisoning

Members of the Council's Breathing Apparatus Committee have recently completed experiments on a number of species of laboratory animals in order to try to induce a state of respiratory failure by the administration of carbon monoxide. Although it is theoretically possible for an animal with carbon-monoxide poisoning to pass through a stage before death when respiration has failed but the circulation is still maintained, the experiments indicate by actual observation that, both in pure carbon-monoxide poisoning and in carbon-monoxide poisoning complicated by the prior administration of respiratory depressants, this stage either does not exist or is so short that it provides no opportunity for special treatment. Similarly, inquiries which the Council's subcommittee have made of those experienced in treating patients suffering from carbon-monoxide poisoning indicate that respiratory failure without circulatory