

Original Articles.

REVIEW OF A YEAR'S MEDICO-LEGAL WORK IN THE CALCUTTA MORGUE, 1910.

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DURING the year under review 283 cases were sent up by the police for *post-mortem* examination, as cases in which death appeared to occur under more or less suspicious circumstances.

TABLE I.

Distribution of cases according to months and quarters of the year—

January	... 23	} = 61 in the 1st quarter.
February	... 13	
March	... 25	
April	... 28	} = 70 in the 2nd quarter.
May	... 24	
June	... 18	
July	... 19	} = 63 in the 3rd quarter.
August	... 24	
September	... 20	
October	... 18	} = 89 in the 4th quarter.
November	... 27	
December	... 44	
TOTAL	... 283	= 283

TABLE II.

Number of cases according to sex—

Males	... ..	... 185
Females	... ..	... 98
TOTAL	... ..	... 283

TABLE III.

Number of cases according to race—

Hindu	... ..	... 196
Mahomedan	... ..	... 45
European	... ..	... 13
Eurasian	... ..	... 7
Chinese	... ..	... 2
Jew	... ..	... 1
Indian Christian	... ..	... 1
Doubtful or unknown	... ..	... 18
TOTAL	... ..	... 283

TABLE IV.

Number of cases according to age-periods—

At or about the time of birth	... ..	... 15
Up to and including 1 year of age	... ..	... 3
Above 1 and up to and including 5 years	... ..	... 7
" 5 years	" 10	... 8
" 10	" 15	... 9
" 15	" 20	... 29
" 20	" 25	... 41
" 25	" 30	... 34
" 30	" 35	... 31
" 35	" 40	... 27
" 40	" 45	... 15
" 45	" 50	... 27
" 50	" 55	... 7
" 55	" 60	... 12
Carried over	... ..	... 265

Brought forward	... 265
Above 60 years including 65 years	... 6
" 65 " " 70 "	... 5
" 70 " " 75 "	... 0
" 75 " " 80 "	... 1
Of unknown age (<i>i.e.</i> , where age could not be made out owing to decomposition or other cause)	... .. 6
TOTAL	... 283

TABLE V.

Number of inquests held.

The City Coroner held an inquest in	... 239 cases.
No inquests were found to be necessary in	44 "
TOTAL	.. 283

TABLE VI.

The viscera preserved at the time of *post-mortem* examination were disposed of as follows:—

Sent to the Chemical Examiner to Government for analysis	... 175
Destroyed after disposal of the case, under instructions from the Commissioner of Police	... .. 108
TOTAL	... 283

I have introduced the plan of preserving the viscera in the usual manner and with the usual precautions in all cases. In such instances as afford evident signs of poisoning, or where, on the other hand, although no naked-eye appearances of poisoning are present, the police report points to a possibility of some poison having been used, or where a suspicion arises owing to the absence of manifest cause of death, the viscera are despatched at once to the Chemical Examiner. If, however, death is found to be clearly due to natural causes or if the unnatural cause (being other than poison) is quite obvious, and there is at the same time no suspicion of poisoning in the police report or in the *post-mortem* appearances, the jar containing the viscera is preserved carefully. The viscera are retained pending advice from the Commissioner of Police either for destroying after disposal of the case judicially, or for forwarding to the Chemical Examiner (should a suspicion arise later or any clue be obtained by the police pointing to the use of a poison). This I consider a plan with advantages over that according to which the viscera used to be preserved only in such cases as appeared to the Police Surgeon at the time of *post-mortem* examination to require immediate forwarding to the Chemical Examiner. The only (?) disadvantage in the new method is that it involves an increased expenditure of preserving fluid which, in most cases, is rectified spirit.

TABLE VII.

Result of Chemical Examiner's analysis in 175 cases.

Poison found (including cases in which alcohol only as differing from other poisons found) in	83 cases.
No poison found in	... .. 92 "
TOTAL	... 175 cases.

TABLE VIII.

Analysis of the 83 cases of poison found by the Chemical Examiner :—

Opium found in	...	47 cases.
Alcohol only	...	12 "
Morphine	...	5 "
Opium and Alcohol	...	2 "
White Arsenic	...	2 "
Yellow Arsenic	...	2 "
Cyanides (generally K C N)	...	2 "
Carbolic Acid	...	2 "
Morphine and Alcohol	...	2 "
Strychnine	...	1 case.
Yellow Oleander	...	1 "
Cocaine	...	1 "
Arsenic and Strychnine	...	1 "
Strychnine and Aconite	...	1 "
Opium and Asafœtida	...	1 "
Opium and Yellow Arsenic	...	1 "
TOTAL	...	83 cases.

Attention need hardly be called to the great preponderance of opium cases over all other cases of poisoning taken together. In over 72 per cent. of all the opium cases the drug was used suicidally, exclusive of the cases in which opium was used in combination with other poisons, such as yellow arsenic! Further comments on this point will be made later under the heading Suicide.

TABLE IX.

The total number (283) of cases that were sent up for *post-mortem* examination, classified according to nature of death :—

I.—Natural causes—	
Cases where no inquest was held	... 38
Cases in which an inquest was held	... 53
	91
II.—Violent deaths—	
(Including deaths by poisoning)	... 192
TOTAL	... 283

TABLE X.

The 192 violent deaths classified :—

1. Deaths by accident or misadventure	... 74
2. Suicidal cases (including one opium case said to have been "without suicidal intent")	... 67
3. Homicidal	... 15
4. Doubtful (on the evidence produced)	... 24
5. Due to rash and negligent acts (generally without criminal intent)	... 7
6. Due to violence sustained during the riots of December 1910	... 5
TOTAL OF VIOLENT DEATHS	... 192

NOTE.—The classification in Tables IX & X is based on medical opinion in all instances where no inquest was held, and on medical opinion and verdict of Coroner's jury in cases where an inquest was held.

Analysis of the deaths due to natural causes.

The cause of death in these cases was one or other of the following :—Heart disease, rupture of a diseased heart, perforation of a diseased aorta (with aneurysm), embolism of the pulmonary

arteries, acute cerebral congestion, cerebral apoplexy, meningitis, septic meningitis, tumour in the brain, pulmonary, tuberculosis, hæmorrhage from the lungs, acute congestion of the liver, peritonitis, acute septicæmia following septic-peritonitis, dysentery, tetanus, etc.

In a few cases alcohol was found in the viscera by the Chemical Examiner, and in one instance morphine and alcohol were discovered. In both these, however, death was returned as due to 'natural causes' on the medical and general evidence, death not having been caused by the poisonous substance discovered. Again, in one case, there were evident *post-mortem* signs of some irritant poison having passed through the system, but the death was returned as from 'natural causes' inasmuch as the Chemical Examiner failed to discover any poison in the viscera and as on the general evidence no suspicion arose in the mind of the jury with regard to foul play.

TABLE XI.

Analysis of the 74 accidental (violent) deaths.

These may be arranged in the following manner according to the cause of death :—

1. Poisons—	
(1) Opium	... 6
(2) Co. (from charcoal fires)	... 2
(3) White Arsenic	... 1
(4) Yellow Arsenic	... 1
(5) Strychnine	... 1
(6) Carbolic Acid (mistaken for Glycerine)	1
	12
2. Motor car accidents	... 11
3. Falls from a height (in one case under the influence of alcohol)	... 9
4. Tramway accidents	... 8
5. Burns	... 8
6. Drowning	... 6
7. Carriage accidents (including 1 case in connection with the festival of the Ruth Car)	5
8. Railway accidents	... 4
9. Falls and other forms of accidental violence occurring on boardship	... 3
10. Fall on a person of a weighty object from a height	... 1
11. Carriage and tramcar collision	... 1
12. Bullock-cart accident	... 1
13. Bicycle accident	... 1
14. Suffocation	... 1
15. Exposure after over-indulgence in a alcohol	1
16. Accidental wounds becoming septic and followed by acute septicæmia	... 1
17. Accidental wounds followed by tetanus	... 1
TOTAL	... 74

TABLE XII.

Analysis of the 67 suicidal (violent) deaths.

(1) Opium	... 34	(over 50 per cent. of all cases of suicide).
(2) Morphine	... 2	
(3) Cyanides	... 2	
(4) White Arsenic	... 1	
(5) Yellow Arsenic	... 1	
Carried over	... 40	

	Brought forward	... 49
1. Poisons—		
(6) Yellow Arsenic and Opium	1	
(7) Carbolic Acid	... 1	
(8) Alcohol	... 1	
		43 (<i>i.e.</i> , 64 per cent. of the whole).
2. Hanging	... 19	
3. Drowning	... 1	
4. Gunshot	... 1	
5. Cut throat	... 1	
6. Fall from a height	... 1	
7. Burns	... 1	
	TOTAL	... 67

Notice the extraordinary preponderance of cases of "opium self-administered" over all others taken together. The Coroner's jury have time and again drawn attention to this matter and have constantly added 'riders' to their verdict suggesting the desirability of legislation for restricting the sale of poisons in general and of opium in particular. While on the one hand it would be very highly desirable that the sale of such an effective and popular poison as opium should have certain restrictions placed upon it, at any rate so far as its sale to minors is concerned, yet on the other hand, it is to be doubted whether such a measure would have material effect in diminishing the number of suicidal deaths. For would not, let us say, suicidal hangings increase in proportion, as now they constitute the not inconsiderable percentage of 27.4 of the total number of cases? If difficulties can be put in the way of obtaining opium, measures cannot perhaps be very readily adopted to interfere with intending suicides obtaining *dhoti* or *sari* cloths for twisting and applying as a ligature round the neck. Still this does not do away altogether with the question of putting the favourite means of self-destruction so far as possible out of reach of the suicidally inclined. Besides opium and hanging, the other methods mentioned in the table are severally of minor importance. Taken together they account in all for 14 cases in the year, 9 belonging to the group of poisons and 5 to diverse other methods.

The motives for committing the crime, so far as the Calcutta statistics for 1910 show, are the usual ones which impel the weak-minded to seek destruction at their own hands. Yet what does not fail to strike one in this matter is the not insignificant number of instances in which comparatively trivial causes account for the offence, such as a mother-in-law's reprimand for inattention to household duties on the part of a young daughter-in-law, or a husband's refusal of his child-wife's request to be allowed to visit her father's house on a particular day and so on. This surely points to an element of the hyper-sensitive and neurotic in the temperament of the race to which most of the suicides belonged. In

this connection I will analyse the number of opium suicides and of those by hanging according to sex, age, etc., and the result may be noted.

TABLE XIII.

I.—Opium suicides	... 35		
(A) According to sex	{ Male ... 20	{ Prostitutes	6
	{ Female ... 15	{ Others	... 9
			35
(B) According to age-periods.		Males.	Females.
From 10—20 years of age	... 4	4	6
" 20—30 "	... 7	7	5
" 30—40 "	... 7	7	3
" 40—50 "	... 1	1	1
" 60 "	... 1	1	0
		20	+ 15 = 35

II.—Suicides by hanging	... 19		
(A) According to sex	{ Males ... 10	{ Prostitutes	3
	{ Females ... 9	{ Others	... 6
			19
(B) According to age-periods.		Males.	Females.
From 10—20 years of age	... 0	0	5
" 20—30 "	... 3	3	4
" 30—40 "	... 3	3	0
" 40—50 "	... 4	4	0
		10	+ 9 = 19

Prostitutes account for 17 per cent. of the total number of suicides and for 41 per cent. of the female suicides, by these two favourite methods of committing the crime. Again, 20 out of 24 female suicides (*i.e.*, 83.3 per cent.) were of an age below 30 years. Whereas out of the 30 male—suicides only 14 (*i.e.*, 46.6 per cent.) were below 30 years of age. That is to say, of young suicides there were nearly twice as many females as males.

What then is the practical indication offered by such statistics in the matter of prevention? Surely the raising of the sisterhood of the *demi-monde* in moral and social status, and the more liberal education of the young female of the country and her early emancipation.

TABLE XIV.

According to race the 67 cases of (violent) death by suicide are divided thus:—			
Hindu	... 61		
Mahomedan	... 2		
European	... 2	{ Gunshot, wound head, under the influence of alcohol ...	1
		{ Fall from a height	... 1
Eurasian	... 1	(Alcohol.)	
Jew	... 1	(Opium.)	
			67

Perhaps the fact of there having been over 30 times the number of Hindu suicides as compared with Mahomedan is not to be accounted for only by the excess of Hindu over Mahomedan population in Calcutta. Other factors

bearing on race and on temperament, probably play a part.

TABLE XV.

Analysis of the 15 homicidal (violent) deaths according to mode of occurrence:—

Stabs	...	4	
Kicks, blows, etc., and falls in consequence	...	3	
Strangulation	...	3	(All victims prostitutes)
Throttling	...	2	Newborn child 1 Prostitute 1
Lathi blows	...	2	
Gunshot	...	1	
		—	
		15	

This table offers no room for discussion. There is no common factor at work in these cases and no particular preponderance of one mode of occurrence over others. The causes reveal nothing worthy of note, for they are just the usual ones impelling the uncontrolled mind to acts of homicide. Homicides in 1910 contributed not quite 8 per cent. to the total number of violent deaths, that is, if we exclude the 5 cases which occurred during the riots of December. These cases, though due to homicidal acts, were still of a somewhat different nature as they occurred during a breach of the public peace, that is, in times of riot and were characterised by an absence of personal motive.

TABLE XVI.

The 24 cases of (violent) death classified as 'doubtful' in para. IX, represent those cases in which on the general evidence adduced, the jury found it impossible to arrive at a definite conclusion as to whether the death was of an accidental, suicidal, or homicidal nature. In such cases what is known as an open verdict was returned in accordance with the medical opinion, e.g., "death due to irritant poison, but on the evidence before us, we are unable to say whether it was self-administered or not," or to "shock and hæmorrhage due to fracture of ribs and rupture of the liver but how caused we are unable to say"—

Poisons—

Of these 24 cases:—

Opium poisoning accounted for	...	8	deaths.
Strychnine	...	1	
Irritant poison (unknown nature)	...	1	
Morphine	...	1	
Yellow Oleander	...	1	
		—	
		12	
Drowning	...	4	
Violence of a mechanical nature	...	4	
Motor car	...	2	
Carriage	...	2	
		—	
		24	

TABLE XVII.

Of the 7 cases which were returned by the coroner and his jury as cases of death due in some manner to

rashness and negligence (without criminal intent), the following is the analysis—

Carriage and tram-car collision	...	1
Carriage	...	3
Runaway horse	...	1
Motor car	...	2
		—
		7

TABLE XVIII.

The following are a few discoveries of interest from the point of view of pathology and morbid anatomy made in the cases that came to the *post-mortem* table—

I.—Rupture of the internal organs due to violence alone:

Liver	...	4 cases.
Spleen	...	1 "
Liver and spleen	...	1 case.

II.—Perforation of large blood-vessels due to disease alone, and rupture of heart and large vessels due to violence supervening on a diseased condition of the parts:—

	Perforation.	Rupture.
Right auricle of heart	...	1
Right pulmonary vein	...	1
Thoracic aorta, 1st part	1	...
Abdominal aorta	1	...

III.—Disease of heart and blood-vessels:

	Endocarditis.	Atheroma.
Right auricle	...	1
Thoracic aorta, 1st part	...	10
Thoracic aorta, 2nd part
Mitral valve

	Aneurysm.	Ulceration.
Right auricle	...	...
Thoracic aorta, 1st part	...	...
Thoracic aorta, 2nd part	1	...
Mitral valve	...	4

IV.—Abnormalities of (a) disease:

	Liver.	Spleen.	Kidney.	Ovary.	Brain.
Abscess	1	1	1	...	...
Stone—Gall-bladder	4	...	1	...	...
Cirrhosis	10	...	3	...	...
Waxy degeneration	1	...	...	...	...
Fatty infiltration	1	...	...	...	...
Fatty degeneration	1	...	...	...	...
Infarct	...	1	...	...	...
Cyst	1	...	...	4	...
Granular contracted	...	...	3	...	...
Tumour	...	...	...	...	1

NOTE.—*Gall-stones*—In 283 cases only 4 cases of gall-stones were discovered, making a percentage of 1·4 of the total number of autopsies, as compared with 5·9 recorded in Philadelphia.

(b) In regard to weight,—

Liver.—The weight of the liver varied between 22 oz. and 91 oz., taking into account only adult cases.

Spleen.—The smallest adult spleen that came under notice weighed 2 oz., and the largest 23½ oz.

ON THE POSSIBILITY OF TWO DISTINCT VARIETIES OF RELAPSING FEVER SPIROCHÆTAL INFECTION EXISTING IN INDIA.

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As is well-known the term relapsing fever includes infections in different parts of the