

First report of the Medico-Statistical Association / by W.T. Gairdner and J.W. Begbie.

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FIRST REPORT

OF THE

MEDICO-STATISTICAL ASSOCIATION.

W. T. GAIRDNER, M.D., AND J. W. BEGBIE, M.D.,

SECRETARIES.

EDINBURGH:

SUTHERLAND AND KNOX, GEORGE STREET.

FIRST REPORT

OF THE

MEDICO-STATISTICAL ASSOCIATION.

(Read to the Association, July 31, 1852.)

Number of returns,	75
Of these there are, of males,	41
of females,	34
Number of patients, single,	43
married,	25
widowed,	6
Condition not ascertained,	1
Number resident in Edinburgh at death,	68
in Leith,	6
elsewhere,	1
Ages of patients:—	
From birth to 15,	11
15 to 60,	51
60 upwards,	13
Average age of males,	41
of females,	31
Average age of total patients,	36
Of the 75, there died in the Royal Infirmary,	34
in Blind Asylum,	1
in Private houses,	40
Of the 40, there died in Dispensary practice,	4
in Private practice,	36
Of the 36, there died in the Old Town,	10
New Town,	17
Leith,	6
At a distance from Edinburgh or place of death not stated,	3
Position of patients:—	
Persons of rank, gentry, and professional,	10
Master tradesmen,	14
Journeyman tradesmen,	28
Labourers,	12
Destitute,	4
Not ascertained,	7

In comparing the returns of the Medico-Statistical Association with those of the Registrar-General, or with any of the hospital or other reports which have

been hitherto submitted to the public, it will be necessary constantly to keep in view the peculiarities in the system of registration adopted by the Association. The practitioners who have furnished the data on which this report is founded, have been in all cases invited to inscribe in the schedules, not, indeed, trivial details, but the fullest possible statements as to the more important morbid phenomena, and particularly the causes of death; and all of the phenomena so detailed have been separately registered (distinguishing between admitted causes of death and accidental symptoms, or morbid appearances). The schedules embracing the details of individual cases are, therefore, in no respect like the very brief and unsatisfactory data on which bills of mortality, and other registers of causes of death, have hitherto been furnished. They are rather to be viewed as a series of compendious, but authentic and interesting, medical histories,—in themselves, replete with materials for study and reflection, and rendered accessible for this purpose by the copious and complete index to be found in the register. The interest of these cases is, therefore, by no means exhausted in a general numerical statement of nosological details; on the contrary, they will form a series of records constantly accumulating, and open to consultation on special subjects of pathological inquiry,—thus enabling every member of the Association not only to recur to his own experience, but to call in aid of it that of his fellow-members, for the solution of questions which may arise to his mind in the course of practice, or the pursuit of scientific investigations.

The number of cases reported at present is too small to justify much numerical detail, or to lead to many secure conclusions as to the frequency of special diseases, or the relation of morbid phenomena to one another. It has been from the first the aim of the Association, not so much to add to the number of its records, as to secure well-weighed statements and careful observations; and they have, therefore, addressed themselves only to those who, though engaged in the laborious duties of medical practice, are yet the willing and able friends of scientific progress. The aggregate returns of the Association can thus never represent the entire mortality, either of every particular locality, or of any fixed circle of practice; they will necessarily be subject to considerable fluctuations, and can never, under any circumstances, be used without large qualifications for the numerical estimate of the endemic or epidemic prevalence of disease, the influence of season, etc. The sporadic forms of disease, on the contrary, which, from previous returns on a larger scale, and from the general experience of medical men, are known not to present sudden fluctuations to any considerable extent, may be expected to be subject to such laws in respect to their causation, combination, and phenomena, as shall be a legitimate subject of investigation in any series of miscellaneous cases, after due allowance has been made for accidental causes of disturbance of the results. And it is to these diseases, accordingly, and especially to the consideration of a few of their more frequent and well-recognised forms, that the present report is chiefly directed.

It must further be borne in mind, that the numerical proportion of individual causes of death to the whole number of deaths is, in the returns of the Medico-Statistical Association, generally much higher (*cæteris paribus*) than in the Registrar-General's returns, in which only one cause of death is stated in each case. Indeed, it is abundantly evident that, according to the latter system, many diseases, and some of these the most important to be known as influencing the mortality, must necessarily be lost sight of in order to allow of the registration in each case of the more palpable or more immediate, though possibly not more real or efficient, cause of the fatal catastrophe. In the returns of mortality hitherto furnished to the Association, the assigned causes of death are probably not less than six or seven times as numerous as the cases; that is to say, the morbid conditions bearing on the fatal event are in each case (on the average) stated at six or seven, instead of only one, as in most other returns. The effect of this mode of statement is, as will be seen immediately, not only to raise the apparent numerical frequency of almost all causes of death, but especially to bring to light, and to place in a prominent position, some causes of death, well

known to practitioners as of great frequency and importance, but apt to be overlooked by the general public, and all who draw their information in any degree from the ordinary returns of mortality.

In estimating the proportion of individual causes of death to the whole mortality, it has been considered most convenient to reduce the numbers representing this proportion to decimal fractions of unity, disregarding in the meantime, on account of the small aggregate of cases, all fractions and fractional differences less than $\frac{1}{10}$ th. When the numbers dealt with become larger, and the second decimal place is employed, the per-centage in any given case will be found by removing the decimal point two places to the right: thus, '05 of a decimal, or $\frac{5}{20}$ th (unity being taken as a standard), represents 5 per cent., '75 or $\frac{3}{4}$ ths represents 75 per cent., etc.

Sources of the Returns.—The schedules have been received from the following medical practitioners in Edinburgh and Leith:—

From Dr Alison.

Dr Andrew.

Dr Begbie.

Dr J. W. Begbie.

Mr Benjamin Bell.

Mr Bickersteth.

Dr Christison.

Dr Coldstream.

Dr Halliday Douglas.

Dr W. T. Gairdner.

Dr J. Gillespie.

Dr Gordon.

From Dr Keiller.

Dr R. Mackenzie.

Professor Miller.

Dr Moir.

Dr Murchison.

Dr J. Robertson.

Dr W. Robertson.

Mr Sidey.

Dr J. Sidey.

Dr Struthers.

Dr Thom.

I. *Cause of Death unknown or imperfectly understood.*

There occurred four instances of unexpected and unexplained death. One of these occurred in the case of a young and generally healthy man, aged 21, under circumstances unexplained, either by the history of the symptoms or by a careful examination of the body. The details will be adverted to in a future report. The three remaining deaths are fairly referable, in some degree, to old age, possibly complicated with some affection of the heart or coronary arteries. The patients were respectively 76, 80, and 85 years of age; death was in all of them more or less sudden, apparently by syncope. No disease of the internal organs had been known to exist, and no dissection took place in any of the three cases. One of them (a female, aged 76) is stated to have been of very fat habit of body, and to have had for many years a cancerous growth on the forehead. She had likewise suffered many years ago in India severely from dysentery. She "had retired to bed in apparently even better health than usual, when she complained of a sudden pain in the precordium, with a feeling of suffocation, and shortly afterwards lapsed into a state of insensibility. She was seen by me (Dr James Gillespie) about ten minutes after the seizure, when I found her lying in a state of syncope, pulse quite imperceptible, extremities cold, face suffused with perspiration, very pallid, and breathing laborious. By the use of stimulants and rubefacients she was roused for a time to consciousness, complained of difficulty of breathing, and again gradually relapsed into her previous state. No abnormal sounds could be heard in the chest; but the heart's action and impulse were very feeble, and latterly very irregular." In this case it seems not improbable that there may have been some cerebral affection. Another (male, aged 80) died suddenly in bed,—having been subject to attacks of fainting on at least two previous occasions. After the first attack of fainting the heart was examined, and found to act very feebly; "first sound very weak; second, sharp and distinct. From that time up to death the state of the heart continued much the same; pulse weak, 80, and occasionally fluttering" (Dr Struthers). The third case of the above

series was a male aged 85. He had been for many years very corpulent, but enjoyed remarkably good health, was not confined till the day previous to his decease, and (although in a good position in society) was not seen by a medical man till after his decease. "On the afternoon preceding his death he complained of a sudden feeling of weight at the precordium, his pulse becoming very feeble, extremities cold, and a clammy perspiration appearing on the forehead. He retained his consciousness till within an hour of his decease, the respiration never becoming laboured, but diminishing in frequency, and he died so quietly that the persons present could not note the precise period when he breathed his last" (Dr James Gillespie).

Death from Old Age.—The termination of human life by pure senile exhaustion and decay, uncomplicated by any special functional or organic derangement, is undoubtedly a rare phenomenon. In¹ Dr Begbie's report of the mortality of the Scottish Widows' Fund and Life Assurance Society, only 6 out of 642 deaths, 38 of which were in persons upwards of 75 years of age, are returned as from old age,—being about 1 per cent. of the aggregate mortality, and 8 per cent. of the deaths beyond 75 years of age. In the annual returns of the Registrar-General the deaths from old age vary from 3·2 per cent. (in 1849) to 7·7 per cent. (in 1838); and it is further to be observed, that in all the earlier years the proportion is greatly in excess over that of the later annual returns; so that, from 1838 to 1851, the proportion of deaths returned as from old age presents, on the whole, a gradual decline to the extent of fully a half. The older bills of mortality for the city of London do not, on the whole, differ very materially from the higher of the two estimates given above. In twenty years of the seventeenth century (1629 to 1658) the deaths returned under the head of "Aged" were 15,757, the total deaths being 219,250; the proportion, therefore, is 7·1 per cent.² In the eighteenth century the bills of mortality show a proportion sometimes higher and sometimes lower, but nowhere so much reduced as in the latter years of the Registrar-General's returns.³

Taking these facts into account, and especially considering the small proportion of deaths from old age returned among the carefully selected lives of the assurance company above mentioned, it becomes obvious that the apparently high proportion borne by this cause of death in the ordinary returns of mortality is merely the result of inaccurate and random statements, and disappears whenever any series of deaths is submitted to more careful scrutiny. This conclusion is not without importance, both to the medical practitioner and the actuary; and Dr Christison has already drawn attention to it in commenting upon the returns of the Standard Assurance Office. The above facts amount to a demonstration, that a large number of deaths from old age, so far from being a cause of satisfaction in the returns of an assurance office, is in general to be looked upon merely as an indication of want of care or of skill on the part of those furnishing such information.

In the nosology adopted by the Medico-Statistical Association, it has not been considered advisable to assign a separate position to deaths from old age. In conformity with the general scheme of the Association, it is intended that the circumstances attending such deaths should be recorded in such a manner as to permit of their being otherwise classified. Deaths from pure exhaustion, without special symptoms or organic lesions, which may be considered as probably the only instances of the strictly natural termination of human life, will find their appropriate place under "Exhaustion or Debility" (IV. 12); while those in which any special phenomenon occur will be registered according to the nature of these phenomena. The diseases of advanced age, however, and the mode of termination of human life, when it has been protracted beyond its usual limit, form a subject well worthy the attention of the Association; and it is proposed

¹ Monthly Journal for 1847.

² Observations, etc., on the Bills of Mortality. By Capt. John Grant, Fellow of the Royal Society. Oxford, 1665. Fourth edition. Table opposite p. 172.

³ Willan's Diseases of London. Miscellaneous Works, pp. 422 to 429.

in future reports to give very special attention to the circumstances of all deaths occurring beyond the age of 70 years. The members of the Association are, therefore, requested to hold this inquiry specially in view in making their returns of such cases of death, and, in particular, to seize every opportunity of communicating in some detail cases of death at advanced ages, where post-mortem examination has revealed the state of the different internal organs, or where careful examination has been made during life. Two cases besides those already mentioned occurred in the present series,—a male, aged 76, and a female, aged 81. In both of these cases there was such an amount of internal organic disease as fairly to remove them from the category of simple senile decay, although there can be little doubt that the mode of death was in both cases modified by that condition. The female patient died exhausted by vomiting, occurring along with symptoms of mitral valvular disease of the heart. The male patient (No. 68) had been very frequently salivated in early life on account of hepatic disease, and the liver, as well as the kidneys, were found after death much atrophied from old disease; the heart excessively flaccid, thin in its parietes, and its muscular fibre presenting everywhere considerable granular degeneration. This patient was long under medical treatment before his death, on account of dyspeptic symptoms. He lived on exceedingly small quantities of solid food, and had latterly taken large quantities of stimulants (chiefly brandy); and, whether in consequence of this peculiar regimen, or in spite of it, the fat, both external and internal, had accumulated to a great extent (being in some places upwards of an inch in thickness), while the muscles were much attenuated. The cardiac symptoms were remarkable in connection with the morbid appearances above mentioned. The patient had been subject to repeated faintings, but without any angina; and his death, which was probably hastened by the formation of several large boils in the epigastric region, was an example of syncope or of sudden prostration in an extremely debilitated subject. The heart presented no abnormal murmurs, but the pulse, which was always very soft, was seldom many beats above twenty in the minute, and was frequently counted as low as twenty (Dr Begbie), and even (on one occasion) nineteen in a minute (Mr Alexander). There was no dropsy, notwithstanding the old-standing disease of the liver and kidneys.

II. and III. These headings in the nosology, comprising Injury, Privation, Neglect, Accident, etc., and Surgical Operations, present nothing which it is worth while to dwell on in this report.

IV. *Constitutional or General Disease.*

The cases registered in this class amount to 59, or about $\frac{1}{3}$ ths (.8) of the whole number. This very large proportion depends on the great variety and importance of the pathological phenomena registered under this head, having nothing in common but the absence of definite local manifestation. Besides the "Diseases of Uncertain Seat," the class includes many of the "Zymotic Diseases," and the class of "Tubercular Diseases" in the nosology of the Registrar-General. The materials before the Association warrant a few remarks on the inflammatory and tubercular affections.

Inflammation.—Although not admitting of very precise definition, this term is extensively, and on the whole clearly, understood by practitioners, as indicating the acute and febrile types of disease, attended with much local and general disturbance of function. It has been thought proper, on various grounds, to place the "pyrexia" in a group by themselves. Admitting into this category only the well marked and unequivocal examples of inflammation, they are found to number 27, or a little more than one-third of the deaths. This list comprises—

5 Cases of *Pleurisy*: 3 with tubercle of lung (1 also with Bright's disease), 1 with pneumonia, 1 with hydrothorax and disease of heart.

8 Cases of *Pneumonia*: 2 from purulent infection, with laryngeal ulceration, 1 after hooping-cough (broncho-pneumonia), 1 with pericarditis, disease of liver, and dropsy (no dissection), 1 with considerable pleurisy, 3 with marked bronchitis.

6 Cases of *Bronchitis*: 1 with typhus fever, 3 with pneumonia (1 after hoop-

ing cough) 1 with dropsy, diseased heart, and incipient disease of liver and kidney, 1 without distinct complication in a child of eighteen months, in whom a blister, applied without medical advice, appeared to hasten death by its severe effects.

1 Case of *Pericarditis*, with *pneumonia*, etc. (see pneumonia). Another case of well-marked asthenic pericarditis occurred in Bright's disease, with general dropsy of the serous cavities; but this presented no symptom of inflammation.

3 Cases of *Peritonitis*: 1 with dysentery, 1 from perforating tubercular ulcer, 1 from corroding ulcer of uterus, involving the peritoneum.

2 Cases of *Dysentery*: 1 with peritonitis, the other also with slight peritonitis, and secondary abscesses of liver.

2 Cases of *Enteritis*: 1 from strangulated hernia; 1 apparently spontaneous (gangrene of an appendix to the small intestine).

2 Cases of *Meningitis*: 1 after scarlatina in a child of seven years, 1 tubercular in a child of three years.

1 Case of *Acute Rheumatism*, fatal by exhaustion from uncontrollable bed-sores, with incipient purulent infection (multiple abscesses of lungs).

1 Case of *Croup*, apparently uncomplicated (child of three years).

1 Case of *Carbuncle*, fatal by typhus fever, caught in the hospital ward at commencement of convalescence.

1 Case of external inflammation from *scald*.

From the above synopsis of the cases of acute inflammation, it will be seen how very small a proportion of these is composed of uncomplicated cases; and it is to be observed, that no complications are here mentioned which were not of sufficient severity and importance to be distinctly recognised as collateral causes of death. Hence it is obvious, that in the ordinary returns of mortality a vast number of acute affections must be passed over in the recording of what is arbitrarily termed the principal or primary disease; and, on the other hand, numerous important chronic diseases must either be merged in the acute affections of which they are really the causes, or must render the returns of the latter extremely imperfect. In no case is this more evident than in the acute pulmonary affections. In the Registrar-General's annual returns, from 1847 to 1851, excluding 1849 (the cholera year) the sum of deaths from pneumonia, pleurisy, and bronchitis, varied from a little below $\frac{1}{3}$ th to somewhat above $\frac{1}{4}$ th of the total mortality. If, in the above list, the sum of cases of the same diseases be taken (15), and the cases of chronic bronchitis, etc., be added (about 6 or 7), the proportion of these affections to the whole mortality will approach $\frac{1}{3}$ d. If, on the contrary, the cases be rigidly excluded in which the chest affection was not the principal or primary disease, the proportion is reduced much below that of the Registrar-General, probably to about $\frac{1}{5}$ th, or even lower, had all the cases been completely investigated; for the records of post-mortem examinations in hospitals show that fatal inflammations of the respiratory organs are, in the great majority of cases, complicated with chronic affections. It will be at once seen that the difference between these two estimates of proportion is made by a series of cases, which, in the Registrar-General's returns, might have been placed (almost at random) under the heads of pleurisy, pneumonia, bronchitis, rheumatism, typhus fever, hooping-cough, phthisis, pericarditis, dropsy, and disease of heart.

Tubercular Disease.—In the Registrar-General's return, scrofula, tabes mesenterica, hydrocephalus, and phthisis, form the order of tubercular diseases, and constitute from one-fifth to one-sixth of the annual mortality in ordinary years. The first three are emphatically diseases of the infantile period; and as children have hitherto formed a small proportion in the returns of the Medico-Statistical Association, a very large relative number of the tubercular deaths is, as might be expected, registered under the head of phthisis pulmonalis, almost to the exclusion of the other diseases above mentioned. The whole order of tubercular diseases gives a mortality of twenty cases, or somewhat more than one-fourth of the aggregate mortality, the deaths from phthisis being seventeen in number. It thus appears that tubercular diseases, and in particular, phthisis pulmonalis, have, in the returns now submitted to the Medico-Statistical Association, a consider-

ably more prominent position as to frequency than in the general mortality lists. It would be premature to attempt to determine at present whether this discrepancy is apparent or real; for it may be fairly presumed, that, in the ordinary method of registration, a considerable proportion of tubercular and phthisical cases disappear from the returns by being merged in other diseases of apparently predominating importance. By way of vindicating the accuracy, however, of the facts on which the above numerical statement is founded, and with a view, at the same time, to illustrate the natural history of a most important order of diseases, the following details are extracted from the returns made under the head of tubercular disease.

Of the twenty cases of death from tubercular disease, there were three (as above mentioned) which were not included in the register under the head of phthisis pulmonalis. One of these was a case of tubercular meningitis, in a child of three years, who had been affected a year before death with scrofulous ophthalmia, which recurred two months before death, succeeding an eczematous eruption of the scalp and face. The fatal symptoms, which in most points resembled those of acute hydrocephalus, were of eight days' duration; and there was found after death lymph at the base of the brain, with slight tuberculisation of the pia mater. There were no tubercles in the lungs, which presented numerous portions of lobular atelectasis or collapse, without trace of inflammation; mesenteric glands slightly and generally enlarged; epithelium both of liver and kidney much loaded with oil granules (Dr Struthers). The second case of tubercular disease (not phthisical) was that of a woman, aged 27 (No. 27), who died of coma following hemiplegia, of three and a half months' duration, from a tubercular mass in the right crus cerebri; there were likewise found tubercles of the lungs (very slight), and tubercular ulcers of the intestines, with considerable chronic peritoneal adhesions, including tubercles; and to these lesions none of the symptoms observed during the fatal illness can be referred. A third case presented a very singular, if not a unique, variety of tubercular disease, of which the details will be found in the Appendix (No. 46). In a boy of 12 years, an attack of chronic tubercular peritonitis, with tubercle of the mesenteric glands, but not of the mucous membrane, resolved itself into a fœcal fistula, by opening on the one hand externally, and on the other into the ileum (No. 44, see Appendix).

Phthisis Pulmonalis.—Among the seventeen cases of phthisis pulmonalis, the great majority pursued the ordinary chronic course, ending in emaciation and exhaustion, generally with more or less diarrhœa and hectic fever, and occasionally other complications. Hectic fever was well marked in nine cases, diarrhœa in ten cases, having in one or perhaps two of these a somewhat dysenteric character. In all the cases of well-marked diarrhœa which were examined post-mortem (with one exception, to be afterwards mentioned), there were found tubercular ulcers of the intestines; on the other hand, these ulcers were found in one case (No. 9) in an exaggerated form, notwithstanding the ascertained absence of diarrhœa throughout the disease, which, in this case, terminated by peritonitis from perforation (Dr J. W. Begbie). In yet another case (No. 58), the cicatrices of extensive ulceration of the intestine existed; but the ulcers were entirely healed. There was no diarrhœa, and very inconsiderable emaciation. There were, however, nocturnal perspirations. Dyspnœa was a very marked symptom, and greatly implicated in causing death, which was perhaps scarcely if at all hastened by a profuse hæmoptysis, occurring six weeks before the fatal event. In strict conformity with these symptoms, the lungs were found to present much emphysema, and the tubercles were mostly obsolete or retrograde; the cavities numerous, small, contracted, and scattered. The patient, a man of 41 years of age, had attempted suicide by cutting his throat about eight years before death. The fatal disease had run a course of several years, and was evidently in progress of cure, so far as the tubercular affection was concerned; but the injury sustained by the respiratory organs had been too great to permit of a protracted life. The emphysema was probably in part chronic, and partly due to a recent attack of bronchitis, the evidences of which were found after death. The hæmoptysis too

may have been caused by the violent respiratory efforts made under these circumstances. The case is every way remarkable, but chiefly as showing the extent to which phthisis may proceed, the patient escaping from all its ordinary dangers, though with permanently injured organs; and after a partial cure, becoming the victim of another form of pulmonary disease.

Pleuritic effusion is mentioned as a complication of phthisis in three cases, pneumonia in none, evidently because the relations of this disease to tubercle prevent its being recognised and recorded as a separate affection. Hæmoptysis to a marked extent occurred in five cases, but did not prove directly fatal in any. Laryngeal affections are recorded (not as a cause of death) in three cases. Bronchitis occurred as a considerable and important complication in two cases, one of which has been detailed in the last paragraph.

Vomiting is mentioned as a serious complication in two cases. Very extensive aphthæ contributed to the fatal issue in one case (a woman, aged 28). Hæmorrhage from the intestines was observed in one case of acute phthisis (see below) shortly before death.

Delirium is recorded in three cases. In one case of acute phthisis there were a few small tubercles of the cerebral hemispheres, not affecting the membranes, but imbedded in the nervous tissue. In another case, likewise very rapid in its course, no apparent tubercular lesion of the brain was found on dissection, but three or four ounces of limpid fluid in the ventricles (Mr B. Bell). In this case (male, aged 45) "the chest symptoms had ceased to trouble him ten days before death. The cough and expectoration were gone; but he had become restless and sleepless, and complained of pain in his head and complete retention of urine; the urine high coloured, not affected by heat or nitric acid; he required the catheter until his death. The pulse for a few days calm and rather slow; it then became accelerated; he was confused, and like a person in advanced typhus; the respiration became oppressed, and he died rather rapidly." The tubercle of the lungs was recent and extensive, chiefly crude, but partially softened; there were a few tubercles in both kidneys; duration of the whole affection three months. In the third case delirium was an occasional symptom in an ordinary case of chronic phthisis. There was no post-mortem examination.

In one case (No. 21) phthisis pulmonalis was complicated with diabetes, which had probably been the original affection. In one case (No. 50) it was immediately preceded by hooping-cough, caught during the convalescence from scarlatina. In one case (No. 55) it was accompanied by Bright's disease.

In one instance (No. 56) very obstinate vomiting and diarrhœa, with some pain of abdomen and pain in micturition, are probably to be referred to tubercular abscesses of the kidneys, with inflammation of the pelvis and ureters. The intestines in this case were quite free from disease.

In another case, which will be found in the Appendix (No. 46), the disease ran a rapid course, apparently of not more than a few weeks, in a woman, aged 34, the symptoms being marked febrile oppression, vomiting, diarrhœa, and latterly a typhoid condition, very similar to that of typhoid fever, the resemblance to which disease was increased by abdominal tenderness, and by the discharge of some ounces of blood from the bowels. Tubercles were found in great abundance in the lungs, in most of the glands, and in the substance of the brain, as well as on all the thoracic and abdominal serous membranes.

To sum up the preceding details, it may be said, that out of seventeen cases of tubercular phthisis, thirteen followed more or less closely the ordinary course of that disease to the close; two were remarkable for rapid course, and for a termination by typhoid delirium, masking the pulmonary symptoms; one terminated by perforation of the intestine and peritonitis; and one by emphysema and bronchitis, after exhaustion of the tubercular diathesis.

V.—*Disease of Nervous System.*

VI. ... *Circulation.*

VII. ... *Respiration.*

VIII.—*Disease of Digestion.*

IX.	...	<i>Secretion and Excretion.</i>
X.	...	<i>Generation, Pregnancy, and Childbirth.</i>
XI.	...	<i>Bones and Joints.</i>
XII.	...	<i>Integuments.</i>

In these local classifications there is so much which differs from the system adopted by the Registrar-General, as to render a material discrepancy of numerical results unavoidable. The exclusion, in that system, of diarrhœa and dysentery from the diseases of the digestive organs, of phthisis pulmonalis from those of the respiratory system, of hydrocephalus from the nervous system, of scrofula and rheumatism from the diseases of bones and joints, will always to a great degree prevent its most general results from being harmonised with those of the Medico-Statistical Association. Nor does it appear, on the whole, that the comparison could ever be of much importance, even were the two systems of classification more similar; for the differences in the method of registration are more than sufficient, when acting over so wide a field as is presented in any of the above orders, to preclude all rational comparison.

With respect to the special diseases included under these orders, some of the more frequent have already been mentioned under the heads of inflammation and tubercular disease. Many others it is considered advisable to overlook in the present report, as their numbers are still too small for profitable consideration. A few of them, however, deserve a moment's consideration.

Diarrhœa.—The cases of diarrhœa as a cause of death amount, in the returns of the Medico-Statistical Association, to nineteen, or very nearly one-fourth of the whole number. In this list the cases of diarrhœa from phthisis or other organic affections are included. The Registrar-General's returns profess to account for those cases of diarrhœa only in which it is a primary or idiopathic disease; and that it is considered in this view a disease of great importance, may be inferred from the classification, which removes it from its natural place in the nosology, and places it among the diseases produced by zymotic causes, and subject to epidemic laws. Diarrhœa so classified in 1851, numbers 2271 victims out of 54,966 deaths from known causes, or about one-twenty-fourth of the whole number; and this is exclusive of dysentery, enteritis, and cholera, which have all separate places in the returns.

The experience of many careful and well-informed practitioners will detect in this principle of classification, and in these numbers, an enormous amount of probable fallacy. When it is presumed that the idiopathic or essential varieties of diarrhœa are separated from the forms which are the result of organic or other disease, on what principle can even the most moderate amount of accuracy be expected? A large proportion of cases of fatal diarrhœa are ascribed to the infantile period. Can it be supposed that infantile phthisis, which so often terminates by the abdominal complications, almost to the exclusion of the pulmonary affection, is in any reasonable measure separated from these cases? And at more advanced periods of life, is there any probability, *a priori*, that the instances of diarrhœa from Bright's disease, or even from phthisis, are excluded from the returns of simple diarrhœa?

The returns of the Registrar-General are in themselves sufficient to show the fluctuating character of the medical opinion by which the separation of diarrhœa as a primary and epidemic form of disease, professes to be guided. During the fourteen years for which returns have been published, the cases of idiopathic diarrhœa have apparently multiplied in England more than six-fold, and this with a regular and graduated increase, which precludes the idea of epidemic influences. The extremes of this graduated scale are as follows:—In 1838, 393 cases of diarrhœa; in 1851, 2271 cases. The whole return shows, in a manner not to be mistaken, that diarrhœa, as an independent disease, owes its apparent numbers far more to the state of medical opinion, and the mode of classification adopted by the Registrar General, than to any other cause.

The nature and prevalence of diarrhœa, therefore, whether as an independent primary disease, or as a secondary affection, can only be exhibited with an approach to correctness by a careful series of returns on the principle adopted by this Association. Indeed there is no reason to suppose, nor does ordinary medical experience bear out the idea, that the secondary forms of diarrhœa are less prone than the primary, to be influenced by periodical or epidemic predisposing causes. The cases hitherto recorded are too limited in numbers to throw much light on this question; nor is the season one in which diarrhœa has been unusually prevalent; but an analysis of the nineteen cases will serve the purpose of showing the small proportion of cases in which the affection can justly be pronounced an idiopathic disease.

Among eighteen cases of diarrhœa recorded, eleven were certainly connected with tubercular disease,—viz., ten from phthisis, as already mentioned above; and one in consequence of perforation of the intestine from without, in a case formerly alluded to, and detailed in the Appendix (No. 44); one other case of diarrhœa was in all probability tubercular, occurring as it did in a child of 16 months, affected with marasmus, and dying comatose. In three cases diarrhœa was apparently due to Bright's disease, once in combination with phthisis; in one case it was in connection with ascertained organic disease of the pancreas, and was superseded by constipation some time before death (No. 17). Two cases were from dysenteric ulceration of the colon; in one with abscess of the liver, ascertained by dissection (No. 23); in the other, combined with acute peritonitis. In one instance diarrhœa occurred in the fatal termination of a case of acute rheumatism, along with very large and foul sloughs on the sacrum, and with distinct evidences of purulent infection of the blood (No. 42). In the only remaining case (No. 4), the diarrhœa was probably the result of perforation of the intestine, arising from a fœtid accumulation of pus in the peritoneal cavity from a corroding ulcer of the uterus.

It thus appears that, in the whole series of seventy-five cases of miscellaneous disease, nineteen of these cases being affected with diarrhœa to a marked degree, *there has hitherto been no one unequivocal instance of fatal idiopathic diarrhœa*; and the only one which could, with any propriety, have been registered as such, according to the information received, was a case of infantile diarrhœa with marasmus, very probably of tubercular origin, though not distinctly ascertained to be so.

Dropsy.—This affection occupies a most prominent position in the returns of the Registrar-General; and in the returns of the Medico-Statistical Association, it is registered in about one-seventh of the whole cases, although it was not probably a distinct cause of death in that number. The fluctuations in the numbers over a series of years, which was above remarked in the case of diarrhœa, are nearly as considerable in that of dropsy, but in the reverse order; for whereas the apparent frequency of the former affection has been on the increase, the numbers of dropsical cases is less by nearly two-thirds in the latter than in the earlier returns of the Registrar-General. The dependence of this fact upon the increased amount of recognition of the organic conditions on which dropsy generally depends, is so obvious to every one as to require no illustration.

Diseases of the Heart and Kidney.—It is intended, in a future return, to analyse these forms of disease with some care. In the meantime it may be remarked, that nowhere is the imperfection of the ordinary returns of mortality more clearly displayed than in the absurdly small numbers assigned to these affections, and particularly the latter. That diseases of such unquestionable importance as causes of death should be recognised as such in the returns of the Medico-Statistical Association in the respective proportions of one-seventh and one-ninth of the whole cases; while, in the returns of the Registrar-General, they are represented by the diminutive proportion indicated by the following numbers, may well excite surprise and distrust of the principles, as well as of the accuracy of the details, upon which these returns are founded.

In 1850, out of 48,579 deaths from all causes, only 1754 are stated to have

resulted from disease of the heart, and 417 from disease of the kidneys. In 1851, the total mortality being 55,354, disease of the heart is represented by 1955, and that of the kidneys by 417.

Making all reasonable allowance for the possible errors arising from small numbers in the case of the returns of the Medico-Statistical Association, it is quite evident that an enormous proportion of the diseases of heart and kidney, in the national registers, are placed under the secondary affections; and that the virtual omission from these registers of two of the most frequent and most fatal classes of disease that affect humanity, is thus due to the arbitrary system which requires the selection of one cause of death in each case to the exclusion of others. That the general experience of the medical profession on this point is opposed to the inferences that might be drawn from the returns of the Registrar-General, is well known; but the extent to which the general mortality can be ascertained to be influenced by cardiac and renal organic diseases, and the manner and degree to which these are complicated with other affections in producing death, are subjects on which, notwithstanding multiplied investigations on these diseases of late years, much still requires to be done. The importance of these inquiries to medical men, and to insurance companies, would seem to give them a high claim on the attention of the Medico-Statistical Association; and it is hoped that succeeding reports may furnish contributions of some value to their solution.

APPENDIX, INCLUDING THREE ILLUSTRATIVE CASES SELECTED FROM THE SCHEDULES RETURNED DURING THE FIRST QUARTER.

CASE 21.—*Diabetes; Phthisis Pulmonalis; Syphilis (?) ; Œdema of Lower Extremities; Death by Exhaustion, with Emaciation.*—[Reported by Dr W. Robertson.]

Patient, a female, æt. 42; had probably suffered from syphilis of old standing; diabetes had existed for upwards of two years; phthisis for a somewhat shorter period. Fourteen days before death an eruption of purpura covered the whole body. Some days before death the sugar disappeared from the urine.

Dissection.—Tubercle and cavities in lungs; old adhesions of liver, spleen, and diaphragm; complete atrophy of left kidney; pancreas very small; almost complete obliteration of ascending vena cava; brain normal.

CASE 44.—*Chronic Peritonitis with Effusion; Ulceration of Umbilicus, and Discharge of Feculent Matter at Opening there; Subsidence of Abdominal Swelling; Rapid Emaciation; Diarrhœa; Death by Exhaustion.*—[Reported by Dr Gordon—Dissection by Dr Howden.]

Patient, a boy, æt. 12, was at school, though in weak health, for a very considerable period before his fatal illness. Three months before death, symptoms of chronic peritonitis with effusion were manifested; the fœcal abscess was established a few weeks thereafter, and three weeks before death diarrhœa and emaciation commenced.

Dissection.—Over the umbilicus an opening capable of admitting a filbert, its edges quite free and sharp; through it a probe passed quite freely into the peritoneal cavity. On opening the abdomen, the surface of the intestines presented a raw appearance and red colour, while over many parts there were masses of feculent lymph. The lower pelvic cavity contained a quantity of feculent matter mixed with lymph. An opening, capable of admitting a crow quill, existed between the umbilicus and the ileum; another and larger opening was found two feet from the caput cœcum, the edges everted, and of a dark purple colour. Numerous tubercular spots were detected under the peritoneal coat of the intestines; mesenteric glands enlarged; liver, dark and congested, contained numerous small tubercular depositions; mucous coat of intestines and other abdominal organs normal.

Thorax.—Tubercle in all stages in both lungs, which were generally adherent; small tubercular cavity in lower and posterior part of middle lobe of right lung; bronchial glands much enlarged.

CASE 46.—*Acute Deposition of Tubercle in Lungs, Pericardium, Pleuræ, Peritoneum, etc., simulating Fever; Death by Asthenia with Typhoid Oppression.*— [Reported by Dr Andrew, Dr Gairdner, and Dr W. Clarke.]

Patient, a female, æt. 34; for about a year intellect had given way, and for same period had had indifferent health, with diminished strength, and tendency to reject food. For some weeks febrile symptoms, with gastric irritation and tenderness on pressure over abdomen, much vomiting, occasional diarrhœa, great prostration; skin usually dry; pulse at first hard, afterwards quick, weak, and irregular; slight cough with purulent expectoration (in no great quantity); no marked dyspnœa. Two days before death some ounces of blood passed from bowels. Died exhausted, after typhomania, not very apparent, had continued for some days.

Dissection—by Dr Gairdner.—Tubercle mostly yellow miliary, very extensively deposited in lungs; tubercular adhesions of pericardium, pleuræ, and of the peritoneum, between diaphragm and spleen; incipient tubercle of liver, spleen, and kidneys; tubercle in mesenteric glands; three small tubercular deposits in brain, two in white matter of hemispheres, one in left crus cerebri.