two or three minutes. The knee-jerk was absent in both sides. There were no other symptoms; and she did not appear to have ever been subject to symptoms of inherited syphilis. The pain resisted the use of nitrate of silver, in doses of one-eighth part of a grain, and the application of the constant current; but yielded completely to the use of ergot, in ten-minim doses of the liquid extract, thrice daily. I have not seen the little patient since, and am therefore unable to say whether the patellar reflex has returned.

The next youngest patient with tabes whom I have seen was an omnibus-conductor, aged 22, who came under my care at the hospital in February 1878. He had had small-pox ten years before, and a primary sore when seventeen years of age. He appeared to have had no secondary symptoms, but had an attack of hemiplegia of the left side two and a half years ago, being then in his twentieth year. He recovered from this completely in three weeks. In June 1877, he had an attack of double vision, which was cured at Moorfields. A week before he came to the hospital, he suddenly felt pain at the back of the head and down the neck, and a curious sensation of numbness in his face, which soon afterwards was drawn to the side. When I examined the patient, there were all the symptoms of paralysis of the left portio dura in the first portion of the Fallopiian canal, together with paralysis of the left rectus externus. The knee-jerk was absent in both sides. There could be no doubt that it was a case of commencing tabes; but it was difficult to say when this affection commenced, and whether it was already present when the patient had the stroke of paralysis at nineteen years of age, or whether the attack of double vision at twenty-one was the first symptom of it. An examination of the knee-jerk alone at the earlier period of his illness could have settled this question.

Another case in a very young man was that of a lieutenant in the Indian army, who was sent to me by Mr. Erichsen in April 1872. He was then twenty-three years of age, and had contracted syphilis three years ago. He had had an indurated chancre and bubo, and had subsequently suffered from severe ulceration in the region of the left shoulder, and from iritis. Symptoms of tabes appeared about twelve months ago, that is, at twenty-two years of age, and were more marked in the left than in the right side of the body. He was much troubled with numbness, particularly in the left foot; had difficulty in standing on the left foot, while he could stand tolerably well on the right; staggered when he was requested to close his eyes; and had much difficulty in walking slowly, while he could walk fast better. He then, however, had to manoeuvre considerably, and showed the characteristic gait of ataxy in the most unmistakable manner.

From the table which I have just given, it appears that tabes is most prone to break out between thirty and fifty years of age. The ages of the same patients at the time they came under my care were as follows.

At 9 years in 1 case.	
From 20 to 29 years in 3 cases.	
" 30 " 39 " 12 "	
" 40 " 49 " 21 "	
" 50 " 59 " 11 "	
" 60 " 69 " 3 "	
At 72 years in 1 case.	

Tabes is, therefore, in general a disease of the prime of life.

The oldest patient with unmistakable tabes whom I have seen was a gentleman aged 72, who consulted me in June 1881, and who had had syphilis thirty years ago. The first symptoms of tabes appeared in him three years ago. In the same month, I saw another gentleman, aged 66, a widower, who had had syphilis twenty-six years ago. He had remained well for sixteen years, and it was only then that the first symptoms of tabes presented themselves. At present, he shows all the usual symptoms of the disease confined to the lower dorsal and upper lumbar portion of the cord. Such cases, however, are exceptional.

With regard to sex, all observers are agreed that the male is much more liable to tabes than the female. I have never seen this disease in a lady, but a good many cases of it amongst the out-patients of the hospital. These were chiefly women who had to work in damp unwholesome shops, and some of them had had syphilis.

In conclusion, let me for one instant draw your attention to the practical deductions which appear to follow irresistibly from the facts I have brought before you. I hope I may have succeeded in showing that, in the vast majority of cases of locomotor ataxy, syphilis is the cause of the complaint—syphilis which has not been sufficiently treated in the beginning, and which might never have led to such results if it had been more energetically and perseveringly combated at the time of its first appearance. Allow me, therefore, most earnestly to entreat you to take syphilis well in hand at the earliest

stage of its appearance, when it is much more under our control than at a later period of its existence; and do not rest in your endeavours until you have good reason to believe that every germ and vestige of that horrible poison has been thoroughly uprooted and destroyed. Examine such of your patients as have had secondary symptoms, from time to time, for the knee-jerk, loss of which I believe to be the first symptom of tabes; and, should you fail to elicit it, take it as a warning that locomotor ataxy has pushed forward its outposts, and is on the point of invading the system. Do, then, your best to obstruct its further progress by every means in your power; and let us thus, by suppressing that terrible and painful malady, tabes, add one more triumph to the victories of preventive medicine.

THE FAMILY-HISTORY OF CANCER-PATIENTS.

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THE following remarks are based on the record of 132 cases of cancer under treatment at the Middlesex Hospital during the year 1882.

With regard to the occurrence of cancer, it was found that, in 34 cases of uterine cancer, there was a history of previous malignant disease in eight families, or in 23.7 per cent.; in 41 cases of breast-cancer, in ten families, or in 24.3 per cent.; in 28 cases of cancer of the tongue, mouth, and lip, in one family, or in 3.5 per cent.; whilst in 18 miscellaneous cancers, including 10 of the rectum, no history of any previous malignant disease could be obtained. Thus, of the whole 121 cases, there was a history of previous malignant disease in nineteen families, or in 15.7 per cent. Of former estimates, Mr. Sibley's was 8.7 per cent., and Mr. Baker's 24.2.

The hereditariness of cancer has been disputed by Mr. Harrison Cripps (*St. Bartholomew's Hospital Reports*, vol. xiv, p. 287, *et seq.*); on the strength of a calculation which, as he says, proves that cancer in the parent in no way increases the liability of the offspring to suffer from the same disease. This conclusion appears to me to be based on fallacious reasoning, and consequently to be erroneous. According to Mr. Cripps, the question is, does the proportion of cancerous parents of the cancerous exceed that of the non-cancerous? It seems to me a more correct statement of the question would be, Does the proportion of cancerous relatives of the cancerous, to those of the non-cancerous, exceed the proportion of the cancerous to the non-cancerous in the whole community?

The final step of the argument, based on these incomplete premisses, exhibits this imperfection—that the conclusion is arrived at by substituting for the latter part of the initial proposition, namely, for the proportion of cancerous relatives belonging to the non-cancerous, the death-rate from cancer among the whole adult population; but these two are not identical, and consequently they are not mutually interchangeable. I have failed to find the data requisite for the solution of this question in Mr. Cripps's paper. Sir James Paget's analysis of the family history of 147 cases of innocent tumours (*Medical Times and Gazette*, August 22nd, 1857) tells against Mr. Cripps's conclusion; for only 6.8 per cent. of them were aware of having had any cancerous relative, whilst 22.4 per cent. of the cancerous had one or more relatives affected with the same disease.

With regard to the occurrence of phthisis, it was found that in 34 cases of uterine cancer there was a history of phthisis in nineteen families, or in nearly 56 per cent.; in 40 cases of breast-cancer, in twenty-four families, or in 60 per cent.; in 27 cases of cancer of the tongue, mouth, and lip, in twelve families, or in 44.4 per cent.; in 10 cases of cancer of the rectum, in four families, or in 40 per cent.; and in 8 cases of miscellaneous cancer, in one family. Thus of the whole 119 cases there was a family history of phthisis in 60, or in about 50 per cent. Mr. Sibley found it in 48 out of 130 cases, or in nearly 37 per cent. In 15 of the above cases there was a history of both phthisis and cancer in the same family.

The relatives thus affected may be classified in this way: On the father's side, phthisis in 10 cases; cancer and phthisis in 2 cases. On the mother's side, cancer in 10 cases; cancer and phthisis in 1 case. In the patient's brothers and sisters, phthisis in 2 cases; cancer in two cases.

In 32 *post mortem* examinations, the lungs were found healthy in 3 only. The following lesions, not due to cancer, were revealed: old general pleuritic adhesions over both lungs in 9 cases; localised old adhesions, chiefly over both upper lobes, in 10 cases; old tubercular disease, chiefly of both upper lobes, in six cases. These facts, together with those of the family history, show plainly how thoroughly

saturated with phthisis these cancer-families are, and how erroneous is the common idea of the incompatibility of the two diseases.

For the sake of comparison with the above, I have analysed the family history of 100 cases of phthisis under treatment at the Middlesex Hospital during the years 1882-83, with the following result. There was a history of phthisis in 42 cases; on the father's side in 19, on the mother's in 13, and in both parents in 3. In 25 families, one or more of the patients' brothers or sisters had died of, or were affected with, this disease. There was a history of cancer in 4 families only; but it ought to be stated that inquiries had not been specially directed to this end.

Subjoined is a statement of the facts elicited in the course of this inquiry with regard to each of the chief groups of cancer.

1. **UTERINE CANCER.**—*The Fathers.* Of 31 cases in which inquiries were made, in 29 the fathers were dead, the causes of death being as follows: phthisis, 8; bronchitis, 2; pleurisy, 1; asthma, 1; lung-disease, 1; heart-disease, 1; apoplexy, 3; epilepsy, 1; gout, 1; unknown, 10. In 2 they were still alive and well. Of those who died of phthisis, in 4 cases other members of their families had also died of this disease. There was not a single death from cancer among the fathers. Their average age at the time of death was 59, the youngest being 30 and the oldest 80, two having attained the latter age.

The Mothers.—Of 29 cases in which inquiries were made, 25 had died of the following diseases, and 4 were still alive and well: phthisis, 4; diarrhoea (in a phthisical person), 1; bronchitis, 4; cancer, 4; childbirth, 2; dropsy and paralysis, 1; apoplexy, 1; epilepsy, 1; unknown, 9. Their average age at death was 61; the youngest being 34, the oldest 87.

The Patients' Brothers and Sisters.—In 17 cases, the following causes of death were noted amongst the adults in these families: phthisis, 12; cancer of the uterus, 2; insanity, 1; scarlet fever, 1; apoplexy, 1. Of the families in which phthisis prevailed, more than a single member died of this disease in 7. In only one instance were all the brothers and sisters alive and well.

In 26 cases, the number of members in each family was noted, with the result that the smallest family consisted of 4, the largest of 18, the mean being 8.7.

The Occurrence of Cancer.—Of 34 cases in which this point was specially investigated, there was a history of previous malignant disease in eight families, or in 23.7 per cent. The relatives thus affected and the seats of the disease were: on the mothers' side (6)—mothers (4)—breast in two; uterus and stomach, each one; mothers' sisters (2)—locality not stated. Patients' sisters (2)—uterus in both.

The Occurrence of Phthisis.—Of thirty-four families in which this particular was noted, one or more relatives had died of, or were the subjects of, phthisis in 19, or in nearly 56 per cent. In all but 5 of these cases, more than a single relative had been thus affected. In one case, the father's father, the father, and several of his brothers and sisters; and 4 of the patient's brothers and sisters, had died of this disease.

The relatives thus affected may be classed as follows. On the father's side (in 10 families): grandfather, 1; fathers, 6; fathers' brothers and sisters, 6. On the mother's side (in 4 families): mothers, 3; mothers' brothers and sisters, 1. Both parents in 2 cases. One or more of the patients' brothers and sisters in 13 families.

2. **BREAST-CANCER.**—*The Fathers.*—Of 40 cases in which inquiries were made, 35 had died of the following causes, and 5 were still alive: phthisis, 10; bronchitis, 1; heart-disease, 3; diabetes, 1; cholera, 1; dropsy, 1; fever, 1; diarrhoea, 1; strangulated hernia, 1; hæmorrhage from ulcer of leg, 1; senility, 1; unknown, 13. Of those still alive, 3 were well, and 2 were suffering from heart-disease and dropsy. Three of those who died of phthisis had lost other members of their families from this disease; there were 5 cases in which, though the fathers had not themselves suffered from phthisis, their parents or brothers and sisters had. Hence, out of these 40 fathers, 15 may be said to have been of decidedly phthisical families.

None of the fathers had died of cancer; but, in 3 cases, there was a history of cancer on their side, in each case the person attacked being a sister, who had died of cancer of the breast. The average age of the fathers at death was 64 years; the youngest being 33, and the oldest about 93; 5 having exceeded the age of 80.

The Mothers.—Of 37 cases, 28 had died of the following causes, and 9 were still alive and well: phthisis, 5; bronchitis, 2; chest-disease, 1; dropsy and pneumonia, 1; dropsy, 4; cancer, 2; apoplexy, 3; cholera, 1; liver-disease, 2; diabetes, 1; unknown, 7.

One of those who died of phthisis had lost several other of her relatives of this disease; in 3 cases, though death had not resulted from phthisis, they had lost one or more relatives from it. Thus, of 37

mothers, 8 were of decidedly phthisical families. Among those whose deaths were not due to cancer, 5 had cancerous relatives, and 1 had a sister who died of an "internal tumour."

The average age of the mothers at death was 65 years; the youngest being 26, and the oldest nearly 100, 6 having attained or exceeded the age of 80.

The Patients' Brothers and Sisters.—In 17 families the following causes of death amongst the adults were noted: Phthisis, 10; cancer of the breast, 1; diabetes, 1; apoplexy, 1; heart-disease, 5; paralysis, 1; pyæmia, 1; scrofulous joint-disease, 1; childbirth, 1; dropsy, 1.

Of the families in which phthisis prevailed more than a single member had died of this disease in 6 cases.

In 31 cases the number of individuals in each family was noted, with the result that the smallest family consisted of 1, and the largest of 14; the average number being 7.4.

The Occurrence of Cancer.—Of 41 cases there was a history of previous malignant disease in 10, or in 24.3 per cent. The relatives thus affected were: Maternal grandmothers, (2)—1 uterus, 1 breast; paternal grandmother (1)—breast; mothers (2)—1 stomach, and 1 tongue; mother's brother (1)—tongue; patients' sisters (2)—breast in one, in the other, locality not stated; female cousin on mother's side (1)—locality not stated; fathers' sisters (2) breast in both.

In one case more than a single relative was thus affected, viz., the patient's sister and her maternal grandmother, both of whom died of cancer of the breast.

The Occurrence of Phthisis.—Of 40 cases, one or more relatives had died of or were the subjects of phthisis in 24, or in 60 per cent.; in 11 instances more than a single relative of the same family had been thus affected. These may be classed thus: On the fathers' side (in 15 families), both grandparents, 1; fathers, 9; fathers' brothers or sisters, 8. On the mothers' side (in 9 families), mothers, 5; mothers' brothers or sisters, 4. Both parents in 1 case; one or more of the patient's brothers or sisters in 10 families.

3. **CANCER OF THE TONGUE, MOUTH, AND LIP.**—*The Fathers.* Of 20 cases, 18 had died of the following causes, and 2 were still alive and well: phthisis, 6; cancer, 1 (stomach); lock-jaw, 1; "lung-disease," 1; old age, 1; unknown, 8. Their average age at death was 61; the youngest being 30, and the oldest 95.

The Mothers. Of 19 cases, 15 had died of the following causes, and 4 were still alive and well: phthisis, 1; dropsy, 1; apoplexy, 1; childbirth, 2; abdominal tumour, 1; heart-disease, 1; old age, 1; unknown, 7. Their average age at death was 67; the youngest, 42; the oldest, 84.

The Patients' Brothers and Sisters.—In 9 of these families, there had been one or more deaths from phthisis. In 13 cases, the average number of each family was 8, the smallest 1, the largest 16.

The Occurrence of Cancer.—Of the 28 cases, there was history of cancer in 1, a father having died of cancer of the stomach.

The Occurrence of Phthisis.—Of 27 cases, one or more relations had died, or were subjects of phthisis in 12, or in 44.4 per cent. In 4 of these families, more than a single relation had died of this disease; in 1 case both parents had died of it. On the fathers' side (in 6 families), fathers, 6; fathers' brothers or sisters, 2; on the mother's side (in 1 family), the mother's brother; both parents in 1 case; one or more of patients' brothers or sisters in 8 families.

4. **MISCELLANEOUS CANCERS** (including 10 of the rectum).—*The Fathers.*—Of 17 cases, 14 were dead of the following diseases: phthisis, 2; bronchitis, 2; apoplexy, 1; old age, 1; dropsy, 1; fever, 1; accident, 1; unknown, 4. Three were alive and well. In 1 case, though the father had not died of phthisis, several of his brothers and sisters had. Their average age at death was 62 years, the youngest being 36, the oldest 97.

The Mothers.—Of 16 cases, 11 died of the following diseases, and 5 were still alive and well: bronchitis, 1; childbed, 2; apoplexy, 1; cholera, 1; dropsy, 1; small-pox, 1; rheumatic fever, 1; unknown, 3. Though none had died of phthisis, three had lost several brothers or sisters of this disease. Their average age at death was 51, the youngest being 30, the oldest 84.

The Patients' Brothers and Sisters.—There was no history of phthisis or cancer among them. In 15 cases, the number of individuals in each family was noted; the smallest was 1 (of which there was only a single instance), the largest 18, the average 7.4.

The Occurrence of Phthisis.—Of 18 cases, there was a history of phthisis in 5 families, or in 27.7 per cent. Two of the fathers died thus; two mothers had phthisical sisters. In one case both parents, though not phthisical, had lost several of their brothers and sisters of this disease.