ILLUSTRATIONS OF THE PATHOLOGY OF
CANCER.

By J. ZACHARIAH LAURENCE, Esq., F.R.C.S.

PART II.

THE HEREDITARY (!) NATURE OF CANCER.

MR. PAGET states that, in 160 cancerous patients, there were 26, or very nearly one-sixth, who were aware of cancer in other members of their families.* M. Lebert, that "he sought with much care for hereditary predisposition in 102 cases, and found it in 14 of these patients.† In 54 cases which I have observed myself, and in which I have specially noted the point, I find 6 cases of an apparent hereditary predisposition. [1. Scirrhus of the breast: a cousin died of the same disease. 2. Scirrhus of the breast: the mother died of the same disease. 3. Osteoid cancer of the femur: a grandmother and a sister died of cancer of the breast. 4. Scirrhus of the breast: a maternal aunt died of cancer of the liver. 5. Epithelial cancer of the malar bone: the mother died of scirrhus of the breast. 6. Scirrhus of the breast: the mother died of the same disease.]

Summing up these cases, we have, in 316 cases, 46 cases of apparent inherited tendency to cancerous disease, about one-seventh of the total number of cases, or about 14.5 per cent. This proportion is too small to establish the hereditary nature of cancer; but even this statement must be taken *cum grano salis*; for a reason which Louis advances in his *Recherches sur la Phthisie*, viz., that the bare statement of a patient, that one of his relations died of cancer, is not sufficient evidence to the pathologist that such was really the case; he must endeavour to elicit the main features of the disease, and then judge for himself whether the patient's statement and his own opinion are in sufficient unison to warrant a positive conclusion. Louis, in this way, found, even in the case of phthisis, that, "of 31 phthisical patients, only 3 sprang from parents who were obviously phthisical, 12 from parents who were not phthisical, and 16 from parents the nature of whose disease could not be determined with precision." Now, if Louis considered such precautions necessary to elicit the hereditary character of phthisis, *à fortiori* should they be observed in a disease the hereditary predisposition to which is yet *sub judice*. We may very well conclude that all the above numbers in the case of cancer are, in this point of view, open to objections. I have hence attempted to solve the problem by a totally different method.

Let us assume, in the first instance, that phthisis may be safely taken to be the type of an hereditary disease, then, from the fact that phthisis and cancer are both fatal diseases, we have the means of instituting the following comparisons, which are best exhibited in a tabular form.

COMPARATIVE MORTALITY OF CANCER AND PHTHISIS IN LONDON
IN THE YEARS 1845-1850.

Year.	Deaths from Cancer from the age of 25 to 80.		Deaths from Phthisis from the age of 5 to 65.	
	Males.	Females.	Males.	Fem.
1845 ..	160	519	3233 ..	2762
1846 ..	174	626	3441 ..	2862
1847 ..	177	574	3407 ..	2923
		(from ages of 20-80.)		
1848 ..	205	640	3266 ..	2739
		(from ages of 20-80.)		
1849 ..	195	645	3045 ..	2740
1850 ..	208	656	3049 ..	2683
Sum	1119	3660	19531	16709
Total	4779		Total	30240

Hence the average annual mortality in London from cancer in both sexes, from the age of 25 to 80, and from phthisis from the age of 5 to 65, is respectively 796.5 and 6040; and the ratio of the average mortality of cancer

to phthisis is 1.7-5.* Now, I contend that, if cancer is less than one-seventh as fatal as phthisis,† this fact alone is sufficient to render it highly probable that cancer, as a rule, is not a hereditary disease.

Any objections to this conclusion, founded on the disparity of frequency of the two diseases, are met by the probability that, if cancer, *ab origine*, was a much rarer disease than phthisis, but that both propagated themselves by hereditary transmission, after the lapse of so many centuries, their numerical ratios would by this time have equalised themselves to a greater degree than is the fact.

CASE OF IRREPRESSIBLE HÆMORRHAGE FROM
THE INCISION OF A GUM-LANCET.

By D. NICOL, M.D., Swansea.

MY child, an infant of sound constitution, who, after the first month, had been chiefly dry-nursed and thriven well, had an attack of infantile cholera when about four months old. From this he quite recovered; but at the age of six months he was again seized with a similar affection. On this occasion, he was supported mainly by a diet of gum arabic and barley; and frictions over the abdomen with opiate and camphor liniments, a blister on the epigastrium, astringents, including tannin by the mouth and injection, and hydrocyanic acid to allay vomiting, were the remedies which, after a duration of rather more than three weeks, ultimately arrested the disease.

In the course of the treatment—i.e., thirteen days before death, while he yet manifested no indications of exhaustion, and when some general wasting and depression of the fontanelle were the only constitutional effects of the disease—it was thought proper to scarify the gums over the upper incisors for the relief of topical swelling and redness with flushing of the cheeks, and restlessness. The incisions bled moderately, and healed as usual. Four days subsequently, the incisions, for the same reasons, were repeated; but one of them continued to bleed long beyond the ordinary term; and, although styptics were applied with little success, after the lapse of two or three days the hæmorrhage ceased. No sooner, however, had it been arrested in one than it recurred in the other incision, and persisted until the death of the child—a period of twelve days in all. During this time, numerous means of repressing the hæmorrhage were used with great assiduity, and with painful but unavailing solicitude; the blood continued to flow with pertinacity, and the infant sank anæmic on the thirteenth day from the second incisions.

The styptics and escharotics employed were the tincture of sesquichloride of iron, saturated solutions of alum and of sulphate of zinc with sulphuric acid, strong solution of nitrate of silver, solid nitrate of silver, dry tannin, dry gallic acid, solid sulphate of copper, oil of turpentine, freezing mixtures, the actual cautery, lint dipped in saturated solution of tannin applied with compression, charcoal, solution of bichloride of mercury in alcohol, pure nitric acid, liquor plumbi, and tincture of iron sesquichloride with hydrochloric acid. Several of these were applied repeatedly. The solid nitrate of silver alone once arrested the hæmorrhage for several hours; but on the eschar becoming detached by the motion of the lips and jaws, the bleeding recommenced. The actual cautery, applied freely under chloroform, had little or no effect; and the same may be said of the nitric acid, likewise used while the child was in a state of anæsthesia. None of the other styptics in any degree controlled the flow of blood; and for obvious

* The deaths in London have been taken as the basis of calculation, because from the large proportion of deaths that occur in public institutions the diagnoses can better relied on. Deaths from "phthisis" before the age of five have been excluded on account of the doubtful nature of the diagnosis. It is satisfactory, however, to find that deaths at all ages from the two diseases being taken as the data, nearly the same result is arrived at, viz., 1.7-9.

† It is not unworthy of remark, that this ratio is also nearly that which the number of hereditary cases of cancer bears to the total number of cases of cancer, in which this particular has been inquired into.

* Op. cit., vol. ii, p. 538.

† Lebert's "Maladies Cancéreuses", p. 134.