patient now walked some distance daily, and said he felt strong. He has gained much flesh; the foot and leg are of their natural warmth. He walks with the limb as strongly as ever; the circulation in it is powerful, and perfectly re-established.

ILLUSTRATIONS OF THE PATHOLOGY OF CANCER.

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

PART I (concluded).

GENERAL CHARACTERS AND CLASSIFICATION OF CANCEROUS TUMOURS.

Mr. Paget had, in 1853, reason to "suspect cases (of myeloid tumours) may be found in which . . . a malignant course is run."* Since the time he wrote this, this suspicion has become a certainty—the occasional malignity of fibro-plastic tumours must now take its rank amongst the best established surgical doctrines. M. Lebert has collected six cases of the kind, the main features of which are given in the following tabular exposition.

M. Léopold Ollier narrates a case of *Fibro-plastic tumour of the back, accompanied by secondary tumours in the inguinal region, both lungs, and the liver*. The tumour in the back had been removed by the *écrasement linéaire* of M. Chassaignac. M. Delore "found in it only fibro-plastic elements". In the lungs were "little masses of a yellowish white material, pulpy and very soft". In the liver were tumours with "the same outward characters". "In the right inguinal region existed a fluctuating tumour, full of sanguineous serosity and fibrinous deposits". The above description is much more in accordance with that of a case of encephaloid than of fibro-plastic cancer. The figures M. Ollier gives of the microscopic elements, agree more with some of the forms of caudate cancer-cells I have

seen, than with those of typical fibro-plastic corpuscles; they are, at any rate, open to doubt, as is indeed the whole case.†

Dr. Follin, in a recent letter, writes me, that "since that time (viz., the publication of Lebert's cases), we have had on more than one occasion the opportunity of observing analogous facts in the Paris hospitals."

The following case, from my essay *On the Diagnosis of Surgical Cancer*, is intermediate in its characters between fibrous and fibro-plastic cancer.

CASE. An old man, aged 65 years, of a muscular frame and florid complexion, had a very large tumour at the lower end of his left thigh. It was about the size of a walnut when he first observed it some two years before; but had since progressively increased to its present size. There were no inguinal enlargements. He had suffered occasional "scalding" pains in the part. There was no cancerous predisposition to be traced; but some of his brothers and a sister had died of phthisis. This man died from the effects of chloroform administered for the purpose of amputation of the thigh. At the *post mortem*, a tumour was noticed on the left arm, which, somehow, had escaped notice during life: one in the substance of the liver, and some deposits in the lungs. A section of the tumour of the thigh presented all the naked eye characters of a fibrous tumour (*propr. sic dict.*), just as is observed in ordinary fibrous tumours of the uterus. At one spot, however, a considerable hæmorrhagic effusion had occurred into the substance of the growth. The microscopic characters of the tumours were equally distinctive. Large quantities of fibres, for the most part parallelly arranged, constituted the main element. Some few fibro-plastic cells, here and there an elongated nucleus (brought out by acetic acid, which effaced the fibres), and a number of fatty molecules, were the secondary elements. Not a single cancer cell could be seen. The tumour from the arm was about the size of an olive, and its section was characterised

M. LEBERT'S CASES OF MALIGNANT FIBRO-PLASTIC TUMOURS.‡

No. of Case.	Age (when the tumour first appeared).	Locality.	Operation, and date after first appearance of tumour.	Local return of the disease.	Died after last operation, in	Consecutive deposits.
1	16 years and 2 months.	Left epididymis.	Excision; 11 months.	—	One month of marasmus.	Vast tumours in left inguinal and lumbar regions; multiple tumours in peritoneum, diaphragm, and pleuræ.
2	40 years.	Two subsynovial tumours on—1, external condyle of femur; 2, on head of tibia.	Amputation; 3 years.	—	Two months with pulmonary symptoms.	In lungs (?) and surface of liver.
3	70 years (?).	—	—	—	—	Twenty-seven fibro-plastic tumours in the body, viz.: 3 in the meninges, 1 in the left breast, 18 in the pleuræ, 5 in the body of the uterus.
4	34 years.	Popliteal space.	Extirpation; some years after.	1½ month after extirpation in cicatrix and inguinal glands.	Five months with pulmonary symptoms.	Enormous tumour in popliteal space, inguinal, crural, and lumbar glands; multiple tumours in lungs and pleuræ.
5	20 years.	Middle of right thigh.	First removal (Oct. 1848); 14 months.	Five times in the course of one year; amputation in Jan. 1850; return in stump four months afterwards.	One year and 8 months with pulmonary symptoms.	Vast tumour of mediastinum; tumours in lungs, pleura, inguinal and bronchial glands, and abdomen.
6	24 years.	Bones of feet.	—	—	? of pulmonary symptoms.	Multiple tumours in lungs, pleuræ, bronchial glands, and diaphragm.

* Op. cit., vol. ii, p. 225.

† Recherches Anatomopathologiques sur la Structure intime des Tumeurs Cancéreuses aux diverses périodes de leur Développement, par Léopold Ollier. Montpellier: 1856. (page 88.)

‡ Traité d'Anatomie Pathologique, par H. Lebert. Paris: 1855. (p. 194.)

by numerous pearly fibres concentrically arranged. It had under the microscope an indistinctly fibrous structure, but acetic acid developed quantities of round and elongated nuclei, the latter with their long axes in the same direction. In a word, it was a most typical specimen of a *fibrous tumour*. The growth in the liver, on the other hand, differed from the two preceding ones, in having the properties, not of a fibrous, but of a *fibro-plastic growth*. It was about the size of a filbert, cut hard with a section of a uniform dead white, with points of translucency here and there, and devoid of any sanguineous staining. A mass of fibres was seen in the field of the microscope, and after the addition of acetic acid, a number of nuclei, some spheroidal, some fusiform and narrow. In the lungs were some irregular deposits resembling exudation-matter, consisting of a great many fibres, mostly of an elastic nature, and what appeared to be a few oat-shaped nuclei.

(11) **EPITHELIAL CANCER.** (Paget, Schuh.) Epithelial growths agree with the general characters of cancer in three particulars:—

1. Their infiltrating character, irrespective and destructive of the natural tissues met with in their progressive evolution.

2. Their tendency to the production of the same disease in the adjacent lymphatic glands.

3. Their tendency to recurrence after surgical operations.

Now, if of these three cancerous attributes it could be proved, that the two latter are dependent on, and mere consequences of, the first, a great step would be made in the surgery of the disease. That epithelial cancer of the tongue and lips should so constantly recur after operations, need not surprise us; indeed, any one who has dissected these tumours, and observed how marked their infiltrating nature is, would feel more surprised if they did not return. If, on the other hand, it can be shown that epithelial cancers of the extremities do not return when amputation is performed early (and before any trace of glandular swelling has manifested itself) above the next joint, it becomes a question, whether complete removal of the tongue and lips, although an operation of extreme severity, would not be more in accordance with the principles of surgery than any partial operation on those organs?

CASE. *Epithelial Cancer of the Foot; Amputation at the Ankle-Joint; no return of the Disease three years after the Operation.* Mary B. was 71 years of age when she was admitted into the University College Hospital for a malignant ulceration of the foot. She had hitherto always enjoyed good health: no cancer was to be traced in her parents. Many years ago she had a corn about the size of a florin, near the little toe; this she had been in the habit of soaking and cutting from time to time, when, from its size, it prevented her walking. Last January, in going up stairs, she struck her corn, and felt severe pain in it. From that time forwards it had gradually been getting into its present condition. On the outer side of the anterior half of the left foot was a malignant looking ulcer, which extended an inch and a half back on the dorsum, and three inches into the sole of the foot, and rose about half an inch above the general level of the adjacent sound skin. The surface of the ulcer was very rugged from prominent shreds of concreted discharge; and where this was absent, pale red warty excrescences came into view. The margin of the ulcers was thick and rounded. The skin around had a slight blush, but felt natural. With the exception of the little toe (which was involved in the ulceration in its posterior half), the toes of the foot were sound. The discharge had a fœtid smell; she compared this at times to that "of a water-closet". It had bled several times. During the day she suffered comparatively little pain, of a "gnawing" character; but at night a most intense pain was superadded, which she described as of "a plunging nature, as if a bundle of forks were driven into the part".

She was, considering her age and sufferings, a remarkably healthy looking old woman, with a tolerable amount of flesh on her extremities, her mental faculties most per-

fect, her spirits excellent. Two days after she had been in the hospital, Mr. Marshall removed the foot at the ankle-joint.

Anatomy of the Growth. Its most marked character was that, by gently insinuating the handle of a scalpel, the growth could be split up into several portions: a section through its substance shewed this to depend on the columnar structure it possessed, allowing its separation into papilliform shreds. Some portions, however, consisted of a mere granular pulp of broken up structures. The general colour of the section was dead white, but the individual papillæ had a degree of opalescence. Portions of these were examined microscopically, and then found to consist of epithelium scales, similar to those of healthy cuticle; but in some fields of view multitudes of nuclei were alone seen, the outlines of the epithelium cells been concealed, when in several layers.

After a prolonged stay in the hospital, several abscesses and sinuses having formed in the course of the healing of the operation-wound, she ultimately made an excellent recovery.

August 14th, 1856. The stump continues perfectly sound, being constituted by a firm thick pad of flesh: about an inch above this there is in front a very narrow firm cicatrix. She feels "throbbing" pains in the stump, similar to those she felt formerly in the corn, before the weather changes. She walks once a week to St. Pancras Work-house and back with the aid of a stick. She told me she was seventy-four years of age the 16th of last March, and continues in excellent health.

Here we have a case of, what the German pathologists would call, the most "exquisite" epithelial cancer, which has not returned three years after amputation.

The only objection that arises is, How are we to explain away those cases, where, after removal of the primary disease, the disease returns not in its original situation, but after perhaps a considerable lapse of time in the adjacent lymphatic glands?

Yet we have two important points in support of the non-constitutional nature of the disease. 1. That these growths appear to kill by their purely local effects: involvement of vital organs, pain, discharges, and hæmorrhages. I do not remember ever having seen a cachectic state produced independent of such effects. 2. That it is extremely rare to find secondary deposits in the viscera in *post mortem* examinations of cases of epithelial cancer, of however long duration.*

ON FÆCAL FERMENTATION AS A SOURCE OF DISEASE.

By C. H. F. ROURIE, M.D., Physician to the St. Pancras Royal General Dispensary; Assistant-Physician to the Samaritan Hospital for Women and Children; Vice-President of the Medical Society of London; etc.

[Read before the Medical Society of London, May 17th, 1856.]

PART III.

INJURIOUS INFLUENCE OF FÆCAL EMANATIONS.

In my first paper, I alluded to some of the contingent phenomena which accompany the evaporation or emanation of miasmata. I dwelt particularly on four of these: 1. A comparatively high temperature for the period of the year. 2. A light atmosphere. 3. Moisture in the air. 4. The co-existence of ammonia, always present in the decomposition of animal and vegetable matters, and in contagious diseases.

The co-existence of the first two phenomena is also insisted upon by an able writer as co-operative in coal mine explosions. I allude to the very interesting paper by Mr. Dobson of Cambridge, on the influence of revolving storms in the escape of inflammable gas in coal mines. The propinquity of these storms is always marked by a *rise in the*

* Velpeau has seen epithelial cancer of the lip recur in the thickness of the lower jaw, in the upper jaw, and in the liver; Paget, in the lungs, in the liver, and in the heart; Rokitsansky, in the liver.