OBSERVATIONS
ON
THE LOCAL DISEASES
TERMED MALIGNANT.

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PART I.

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CHRONIC local diseases may be divided into tractable and intractable; this is the simplest division, but somewhat too general without further explanation.

A disease, curable in its nature, may be so intractable from its situation, or extent, or some local peculiarity, as to be extremely difficult, or even not to admit, of cure. Of such kind are many ulcers which have existed in variable states of progress for twenty years or upwards, which either have been healed, or have seemed to be approaching a cure, and have unexpectedly returned or relapsed. Tumours also so situated, or of such size as to render operation hazardous or impracticable, sometimes continue to inconvenience and disfigure the subject of them through life.

They do not disturb the health, but their removal is always attended with danger. Many cutaneous affections, as herpetic and impetiginous ulcerations, are of the same unmanageable character. That they are not in their nature destructive is proved by the length of time during which they coexist with a tolerable, if not good, state of health.

A disease may be intractable in its nature—first

On account of its depending upon a poison absorbed, as the venereal, or an ill condition or habitual morbid state of the system, as the scrofulous; or an inveterate cachexia compounded of both. Second,

From its being a disease of a part which, when it has reached a certain stage, generates a poison, and thus diffuses its species and destroys contiguous textures, so that after this stage is reached, however complete its apparent extirpation or destruction, it is liable to reappear. Third,

From its being a disease of the constitution shewing itself primarily and exclusively in tumours, bearing a similar character, in various parts of the body, and proving within a short period destructive to life, in despite of the earliest interference of art.

To the two latter classes belongs the genus *Cancer*, in all its varieties.

Many diseases intractable in the first sense; viz. from the presence of a foreign poison or a depraved state of the habit, assume a character nearly resembling those of the second class, and being frequently destructive to life, are considered to partake of malignity. But they admit of distinction, both in their external character and progress, and for the most part in their manner of affecting the constitution, and of ultimately destroying life. The accurate knowledge of this distinction so as to adapt the treatment with confidence in all cases, as far as treatment avails, would be an important attainment in surgical practice.

A question of primary importance, in reference to the diseases termed malignant, is the following. Is the disease on its first appearance malignant? By which term I mean, not intractable, but incurable, and at the same time directly tending, sooner or later, to the destruction of the individual. Or does the disease arising in circumstances favourable to the attainment of malignity, as texture, sex, temperament, age or climate may explain, become in the course of time malignant? The point of this inquiry is obvious. If upon its first appearance a local affection is stamped with the essential character of malignity, as above defined, it is in fact a disease of the constitution,

whence alone such a character can be derived. It is conceivable that a simple local disease may become malignant by the influence of the constitution upon it, as a simple fever may become typhoid or putrid, but a strictly local affection cannot be malignant. When we speak of the decided malignity of a tumour, or ulcer, we mean to say, that it is such a disease of the system shewing itself in a part. When we say that it has a malignant aspect, or resembles a malignant tumour or ulcer, we mean that it is analogous to those in which the constitution, sooner or later, takes such an action. We cannot well conceive of malignity, as the exclusive or innate property of a part. A change of structure, whether of increase or loss of substance, which not only resists every remedy, but which, being extirpated or destroyed, is reproduced either in the vicinity or at a distance from the original site, is certainly not, in strictness, a local disease. But if from any local cause a sore refuses to heal, or falls into gangrene; if by the extension of the ulcerative process blood-vessels are opened and fatal hæmorrhage ensues; if by the profuseness of a secretion the patient dies exhausted; if by the incessant irritation of the nervous system, or the morbid actions set up in vital organs under a protracted symptomatic fever, life is extinguished; the disease does in no respect imply a malignant nature, though often so considered, malignant diseases being subject to a similar termination. It is to incurableness from

causes not local, and consequently the disposition to appear in more than one part at the same time, or to reappear when the first affected part has been freely removed, that the term malignity is applicable.

If a local disease were from its earliest germ impressed with a malignant character derived from a morbid matter in the constitution, it would be so much a constitutional disease, that the removal of it could never be urged on the ground of permanent benefit. To one species of malignant disease this character is applicable, as I shall explain hereafter.

But although a local disease, strictly speaking, cannot be malignant, it is clear that a disease, altogether local in its commencement, may in its progress stir up an action of the constitution which imparts to it that character, or a malignant constitutional disease may only shew itself in a part.

Again, constitutional malignancy may not shew itself in any part by a specific organic change, as is the case with some poisons and contagious fevers; whereas the disease of a part must derive its malignant property from the constitution.

A scirrhus tumour may therefore be, and undoubtedly is, in the first instance, a local and

single disease. The proof of this may be found, allowing for all the prejudices against the operation, and all the mistakes of pathology, in the record of a thousand instances of the early and complete removal of the disease, without threat of return during many years of the patient's after life; nay, the ulcerated stage is not always too late for recovery, and under otherwise favourable circumstances the removal of the fungating ulcer of the cancerous breast, and other parts, has been successful. This, however, has proved a fortunate exception to the ordinary course of experience.

This single fact is an answer to the question, whether the scirrhus is local or constitutional in its origin. The actual relations of the constitution and the part in the production of the disease in which scirrhus commonly terminates, I shall discuss after describing the characters of scirrhus cancer.

We may consider carcinoma as a genus of the order "malignant diseases". Its species are 1st. the scirrhus, 2d, the medullary. Their respective modifications and varieties are to be referred to those of structure. The first has been also called the 'hard' or the 'stone' cancer—the second, the 'soft' cancer, 'fungus hæmatodes'—'encephalodes'—'melanodes'—'fungoid inflammation'—'medullary sarcoma', &c. &c. according to its varying phenomena of colour and consist-

ence. The inconvenience of a change, or a multiplicity of name, is far greater than the retention of one that might admit of improvement. Medullary is the most descriptive and comprehensive definition ; I shall therefore retain it.

Of Scirrhus Cancer.—Scirrhus cancer originates in some or other description of secretory structure. Its seats are, 1. The follicles of the mucous membrane ; mouth, fauces, stomach, and intestinal canal : 2. of the reflected integument at the orifices of canals ; uterus and vagina, anus, urethra : 3. of the skin, especially where they most abound ; face, scrotum, prepuce. 4. The secreting glands termed ‘conglomerate’, as the lachrymal, salivary, mammary,—the liver, pancreas, testicle. 5. The lymphatic absorbent or ‘conglobate’ glands. I am not aware that it originates in other textures.

Since it is confined to secretory structure, and appears there without any exception, it is natural to look to this structure for some peculiarity or property which may explain its liability to the disease. Some have supposed that the natural secretion having become stagnant in the vasa efferentia, excretory ducts, or follicles, has acquired a particular acrimony, and engendered the disease in the containing and surrounding parts. This is a plausible conjecture, but not proofworthy. 1st. We have daily examples of this occurrence in se-

baceous follicles and mucous ducts, and the utmost effects are, if diffused, a papular or tubercular eruption—if circumscribed, a furuncular inflammation, a phlegmon, or an encysted serous or albuminous tumour—events depending upon the texture of the affected part, and the duration and extent of the irritation; but the diseased state, whichever it be, is simple, casual, and, unlike cancer, common at all periods of life. 2d. We have no reason for supposing that the proper secretions of a part, as the saliva, the tears, the milk, the urine, the semen, are capable of undergoing such a change as to render them deleterious to their native structures; while the animal and vital powers remain in operation; and to suppose so, would be a gratuitous impeachment of the design of their formation. But a more fatal objection is, that the disease often springs up, not only when the affected organ is in full and healthy action, as during suckling, but when the secreting function has never been employed, as for example in the virgin breast; or when from age, the structure is obliterated. Others have thought that under a change of the action of glands at a particular period of life, and perhaps influenced by a morbid state of the constitution, they have secreted a poisonous virus, which, being absorbed into the circulation, proves ultimately fatal to life. To this it may be answered, that proof is wanting, that proper glandular structure is more than the *nidus* of the disease. Scirrhus is an adventitious, not a con-

verted or changed, structure. It is in the connecting and parenchymatous tissue that it is deposited, and the glandular structure only yields to the disease in its progress, and that slowly. The closer and more compact the texture of the gland, the less frequently is it affected. Where it is encased in a dense sheath, as the body of the testicle, the scirrhus is rare; hence also its infrequency, and with many even doubtful existence in lymphatic glands as a primary affection, though of the fact I have positive evidence. Where, on the other hand, the structure is more loosely disposed, as the lobules of the female breast, the greater the liability to the disease. The uterus is no exception to this remark, for the disease begins, not in the body or cervix, but in the reflection of the vagina at its mouth, where the looser membrane becomes strict; this also happens in the lip and membrane of the mouth, the prepuce at the corona glandis, the junction of the skins at the verge of the anus, &c. There is however much reason to believe that, at a certain period, the secretion of the diseased part is absorbed into the circulation, because we see first neighbouring, and, ultimately, remote parts, exhibiting the same changes, and, when this is the case, invariably leading to a fatal termination.

Glandular organs are the seat of scirrhus, because they are more abundantly than other parts supplied with vessels whose office is the separation

and combination of new materials from the circulating fluid ; and it is sufficiently probable, that when, having been habitually and actively employed, they cease to be so, these vessels make preternatural deposits, and expend their energies, wantonly as it were, upon new and useless structures. This seems to me to be the origin of the scirrhus tubercle. The dilatable tissues—those most subject to changes of capacity under great diversities in the quantity and impulse of the circulation, and necessarily furnished with a very abundant cellular tissue, common or proper—are peculiarly subject to originate scirrhus.

But it must at the same time be admitted, that the disease often arises in those individuals, in whom the organs most frequently visited by the complaint have not been subjected to extreme variations of capacity, as in the virgin female.

Having considered the peculiarities and properties of place, let us consider those of time. The exceptions to the formation of scirrhus before the forty-fifth year are rare. It seems, therefore, that as the place is connected with particular structure, the time of its appearance is connected with the general state of the circulation. It is seldom until the catamenia are ceasing or are terminated, that the disease attacks the female—a time at which the organs most subject to feel the tides of the circulation may be supposed to be

particularly affected—it is in the decline of the circulating power that semi-organizable cartilaginous deposits, the results of passive congestion rather than inflammation, are most frequent; as those which take place about the valves of the heart, or the linings of the great vessels, and about the apparatus of the joints, and in the sheaths of tendons. To the male sex equally, in the various seats of the disease, the same observation is applicable; viz. that for the most part it is in the decline of life, when insidious and unperceived deteriorations are taking place, and most especially in glandular structures, that scirrhus begins. A condensation of spongy texture, an opacity of that which is naturally pellucid, a preponderance of the earthy part of bones, and a tendency to cartilaginous and ossific deposition in the coats of arteries, and elsewhere, are natural to this period, and may be considered as climacteric changes. I do not mean to compare the deposit of the matter of scirrhus to such natural degenerations, but to shew that a particular period of life favours the disposition to inorganizable and unabsorbable deposits; and I have observed the coincidence in the dissection of cancerous subjects. Such changes are, I imagine, connected with a sluggish and feeble, perhaps obstructed state of the capillary, vascular and absorbent circulation.

*Structure of Scirrhus.—External characters—*hardness with increase of weight, inelasticity or

toughness in some cases, knotty or craggy induration in others. Circumscription, and mobility beneath the skin in its earliest stage, but not to such a degree in the subjacent bed as to allow of the fingers passing beneath the tumour, and turning it edge upwards. Next, i. e. in the second stage, close adhesion to the tegument, and such incorporation with the glandular organ in which it is seated, as to have no mobility but that of the gland itself upon the parts beneath. The adhesion of the skin, either stretches, or partially retracts and puckers it, according to the smooth or unequal surface of the tumour, and to the close or loose attachment, and particular conformation of the integument at the spot, as for example, next the nipple and at a distance from it; or beneath the mucous membrane of the pylorus or rectum, and the common integument of the body. Third stage: Contraction and diminution, by pressure, of volume in the gland as the tumour increases. Abrupt projection of one large coloured tubercle, sometimes of several smaller tubercles or nodules. Irreducibleness of volume and hardness by topics or medicine. Transient pains, which have been hitherto obscure and occasional, now more distinct and frequent, like the pricking of a sharp instrument, with a sense of heat or burning. Dusky or livid red colour of the skin, with resplendent tension. Excoriation or cracking of the skin at the summit or base of the tubercles, and fungous elevations, with ichorous and sanious

oozing. Neither of these signs is individually diagnostic. There is a tumour met with in the breasts of young women, more like a shelled walnut, in point of size and nodosity, than any thing to which I can compare it. It is of a stony hardness, and is not reduced by regulated and equal compression, mercury, iodine, or blisters. It is an enlargement and partial cohesion of the lactiferous tubes in a cluster, in one or more places, and which disposition in a less degree pervades the ducts throughout the organ. No well-informed person mistakes this affection for scirrhus.

There is a deep-seated, partially elastic swelling, with an uniform smooth surface, in consistence resembling cartilage, which I have seen in childhood, middle and advanced age, is not painful, but gradually increases until it involves, by adhesion, the skin and all neighbouring parts, and becomes a solid, unyielding, immoveable mass, which shews no disposition to suppurate, and is absolutely irreducible. It often destroys by compression of the first passages, as the larynx and œsophagus, or alimentary tube, in some other part. This is not, nor is it conceived to be, a cancer. Upon section it is found to resemble the ovarian tumour, or what has been called the potatoe tumour of the uterus; the osteo-sarcomatous tumour of the ribs, ossa innominata, and other bones. It has a dense and

uniform interior, so compact as to present nothing like cyst or cell.

Thus neither irregular rocky hardness, nor smooth gristly firmness, nor irreducibleness, separately considered, are diagnostic of scirrhus. As to mobility, colour, pain, puckering, rate of progress, these are too uncertain, casual, and frequent of occurrence in cases not liable to be mistaken, to need example.

But if the assemblage of the characters before mentioned is contemplated, it will be admitted to describe a scirrhus and nothing else. So that the external characters are in the main sufficient, though they furnish no unique diagnostic sign.

Internal Characters.—These, though presenting some variety, are more to be depended upon. In the first stage, on section, a tough, inorganizable, and pretty compact mass, of a white and yellow-brown colour, smooth and moistened by a slightly unctuous fluid; its consistence is not uniform, being hard in the centre, so as to form a nucleus. The circumference is defined by the termination of red vessels forming a vascular boundary. Upon floating in water, and still more by a certain maceration, the texture opens so as to bring into view concentric areolæ, having their interstices filled by a white granular matter, which may be

picked out from the meshes. These areolæ are crossed by faint white lines, at irregular intervals, in the direction of radii from a centre, visible to the naked eye, and very conspicuous under a magnifier, giving the section some analogy to that of a lemon.

In the second stage, when inflammatory action commences, and is announced by shoots of pain, the relative firmness of the centre and circumference of the tubercle becomes reversed, the centre being pulpy or broken, while the circumference retains its firmness. The surrounding parts are now found to have lost their natural elasticity by condensation of texture, and partake of the firmness and weight of the scirrhus, giving considerable apparent increase of volume to the tumour, which is now less defined at its margin, and, in fact, of a compound character. The dense opaque white lines which, traversing the tumour in the direction of radii, diminish in density as they proceed outward, and are lost in the extreme circumference of the gland, are not the production of disease, but the septa, which divide and support the lobules of which the gland is composed, in an opaque and thickened state. Within the wall of the tubercle, one or more cysts, containing a dark yellow or coffee-brown fluid, are sometimes met with, but are often not present.

The above appearances are characteristic of the genuine scirrhus. The softened and broken

down nucleus bears little analogy to the appearance of imperfect and caseous suppuration in the centre of diseased mesenteric glands, or other scrofulous swellings. The peculiar firmness of the exterior; the entire absence of inflammatory effusions, membranous lymph, and purulent matter; and the involvement of surrounding parts in the same compact and indurated state,—cellular membrane, skin, and even muscle,—are sufficient to distinguish it. The lymphatic glands in the vicinity are enlarged, but present a very inferior degree of hardness, and on section are found to have retained their natural colour and structure for a considerable time. The septa are conspicuous, as before described, and eventually, the centre and surrounding parts undergo the same change as was observed in the texture originally affected. By extension, no parts are excepted from contamination in the progress of a scirrhus; but neither the mammary, the lymphatic, nor other glands have any original substantive share in the disease,—it is a new and interstitial deposit.

That the scirrhus tubercle is an insulated formation, may be seen at once, by examination of it in the liver, where the contrasted colour and texture display the definite outline of the diseased growth, and the displacement of the glandular structure. The stages are also well seen in this tubercle. 1st, The firm and homogeneous section, but retiform on maceration, of the smaller sized

tubercles, round or oval shaped. 2d, The middle-sized, broken up in the interior, and indented, where contiguous to the surface, on the external centre. 3d, The largest in size, of an irregular rhomboid figure, boldly projecting, when near the surface, around a small central depression, and occupied with a soft whitish medulla in its entire circumference. This is the scirrhus tubercle of the liver. The change which takes place in its interior is pure ulceration, there is nothing resembling a suppurative process. The inflammatory action which ensues in the surrounding parts, and opens the disease to the surface, conferring upon it the name of 'cancer' among surgeons, though strongly characterized, and of grave importance as an epoch in the history of the disease, and of its effects upon the system, is altogether incidental; the original scirrhus soon disappearing under the rapidly destructive combination of ulcerative absorption and gangrene.

The ulcerative process at length opens the tumour where the cracked and livid integument, previously exuding a sanious ichor, is most prominent, and the external opening is sometimes enlarged by a partial sloughing of the integument. Suppuration now takes place in the surrounding cellular membrane, and as granulations spring up luxuriantly from the sides, the centre of the tumour gapes and becomes a cavity more or less considerable. The granulations have a spongy or fungoid

character, and are so elevated and broadly everted as to give the appearance of additional depth and breadth to the sore. As the sloughing process enlarges and deepens the centre, the disease becomes exceedingly offensive, and although granulations continue sprouting circumferentially at the same time, they have not the power of maintaining their vitality. It is in vain that we attempt to preserve the ulcer from foulness and fetor by detergent applications; we can render it clean, but in a day or two the newly cleansed surface ulcerates afresh, instead of advancing towards cicatrization.

The incised wound of the operation heals kindly, but soon after, or sometimes even before its perfect closure, an indurated tumour appears or may be felt at the angle of the cicatrix or near it, in the course of the absorbents, which in time goes on to ulceration. The disease is however so common, and terms of description so inadequate to convey appearances familiar to every Hospital student, that I shall not dwell longer on these details, observing only, that in no stage of the process, after ulceration is established, is there any analogy to scrofulous action. But a scirrhus is sometimes mistaken. I have gone into the country, prepared to extirpate what was considered by an intelligent surgeon to be a scirrhus mamma, and on thrusting a double-edged scalpel deeply into the centre of a hard massive tumour, have

given discharge to a cupfull of well-formed pus. This is a case of deep-seated chronic abscess. Sometimes it forms between the breast and pectoral muscle, when it lifts the gland, and may be felt obscurely at its edge.

In scirrhus it is not suppuration which, as in scrofulous and other tumours, brings the disease to the surface, nor does the external skin ulcerate, until after the scirrhus. Its first and proper action is within itself. Encompassed by a dense wall, the centre breaks up by ulceration, constituting the state of occult cancer. Indeed the scirrhus is seldom removed so early as to be found with its nucleus unbroken. A sudden and extensive gangrene has been known to eliminate the disease completely, and upon this principle the cautery, arsenic, and other corrosives, are sometimes successfully employed by cancer curers. Mr. Cline had a patient in St. Thomas's Hospital many years ago, in whom the sloughing process went on spontaneously under a linseed meal poultice, to such extent, that the wound afterwards healed soundly. I have seen more than one case in which extensive cicatrices of ulcers existed with much puckering and stretching of the skin of the chest, and no vestige of the breast remained. In one of these the patient, a lady residing in Berkshire, resisted the pressing advice of a consultation of London surgeons to allow of the extirpation of the tumour many years since. She has been in the constant habit

of taking the medicine then prescribed, the extract of hemlock, almost *ad libitum*, with which she supplies herself regularly from Apothecaries' Hall. She is still a stout, healthy-looking person, as formerly, and attributes her cure to the medicine.

Not unfrequently the scirrhus tumour is perfectly inert from the period of its formation to the close of life, undergoing very slight, if any, increase, and giving, when mental apprehension is appeased, no trouble to the subject of it. A lady now under my observation has been many years so situated, enjoying uninterrupted health, though considerably above seventy years of age. The tumour is of the size of a hen's egg, and has the genuine scirrhus character. She takes sarsaparilla as a beverage, and the probability is, that what in no degree affects her health, will not eventually shorten her life. Other cases I have met with and heard related of inert scirrhus, the patient dying of another and distinct disease.

The complete removal of the scirrhus by a sloughing process, and its remaining through a period of many years inoffensive to the system, though somewhat rare occurrences, are additionally conclusive as to the original strictly local character of the disease. Sometimes the ulcerative action is superficial and herpetic, and, instead of excavating the breast, creeps upon the surface,

and converts the entire front or side of the chest into a warty or tubercular ulcer, discharging profusely a thin and very acrid matter, if we may judge from its tendency to inflame and excoriate the sound edges. The subjacent tumour is at the same time very large, hard, and immovably fixed. The sufferings of patients with this form of the disease are remarkably acute. The skin is highly irritable, and as if charged to saturation with the poison, for a pimple, a mole, or a leech bite is often converted into a tubercle. In such cases it is very usual for the opposite breast to become similarly affected, and an inflamed absorbent or a chain of small skin tubercles extends across the sternum from one to the other. Such a case may now be seen under my care in Elizabeth ward of St. Thomas's Hospital, in the person of a poor Irishwoman.

In other cases oblong folds and furrows, which look like cicatrices, would lead a surgeon to suppose that the scirrhus had been extirpated, and that the disease had returned. The cause of this appearance, I apprehend, is an interstitial, instead of ulcerative, absorption, and partial but firm lines of adhesion between the skin and pectoral muscle.

The permanent obstruction or obliteration of the absorbents, together with the disease of the lymphatic glands, gives occasion to that enormous

œdematous swelling (as of the upper extremity in cancer of the breast) which are among the last symptoms of this dreadful disease.

Of the Medullary Cancer.—This species, also a morbid growth, differs from the scirrhus cancer, 1st. In its property of affecting any or all textures without exception, skin, bone, muscle, fascia, tendon, ligament, nerve, membrane and gland of each description, blood-vessel, and all the viscera and organs of sense.

2d. In travelling as much by the blood-vessels as the absorbents of the part, and therefore not affecting contiguous parts only, but remote districts of the body; structures altogether dissimilar, and often, many at the same time.

3d. In external characters—which, however modified by structure, situation, and connection of parts, are the reverse of those of scirrhus, the tumour having a degree of elastic softness which conveys a sensation of fluidity, a uniform roundness, and a volume far exceeding that of scirrhus, and in short, more resembling a deep collection of matter.

4th. In internal characters—being uniformly lardaceous on section, or pulpy, or semi-fluid, and intimately blended with original textures, i. e. deposited in their interstices and proper cellular

tissue. By its seat it is modified in consistence, being in bone of so much firmness as to be osteosarcomatous in appearance; also in colour, as in the eye and some other parts, hence the term 'melanodes'; and in the limbs where it reaches a formidable magnitude, being mixed up with the coagula of blood which has escaped from the veins destroyed by it, 'hematodes.' The extreme states of a fresh and a decomposed brain present its different degrees of consistence; and its colour upon section is either opaque white or black, or a mixture of the two, a mottled grey and brown, or cineritious.

5th. It differs last, but not least, from the scirrhous species, in being the disease of early rather than advanced life, and from the first a truly malignant and therefore a constitutional disease.

Like scirrhus, it is unconnected with a suppurative process, its characteristic action is first adhesive, then ulcerative; it is seldom associated with gangrene at any period.

The medullary cancer is so universal that a patient from whose limb a tumour of this species is removed, and to all appearance with complete success, falls a victim to the poison (if not cut off by some other disease) developed gradually or obscurely in some visceral organ or organs within a comparatively short time. I have never

known a person survive this disease after its removal by the knife, more than four years, and in very few instances so long; when, as often happens, it returns upon the part or neighbourhood, its progress to destruction is vastly more rapid. After removing a medullary cancerous tumour from the calf of the leg in a young man, I was compelled within three months to amputate high in the thigh. After removing such a tumour from the foot, including some of the toes and metatarsal bones, of a young woman, she was attacked by the disease in the groin, and died within six months. So, after extirpating the testis, the disease has presented itself very speedily in the groin.

Two young gentlemen, for one of whom a small tumour was removed from the thigh, and for the other, amputation at the thigh performed for a tumour involving the knee joint, lived each from three to four years, without any re-appearance of the disease externally, and with very little interruption to health in the interval; both died of the disease in the chest.

The scirrhus cancer also developes itself occasionally in remote organs, after the removal, and without return, of the external tumour. In the liver, and in the uterus, I have met with the tubercle after extirpation of the breast a year or two before. But these instances are, by comparison

with those just mentioned, rare. A particular stage of the scirrhus marks its malignity, prior to which, its complete removal confers security, and after which it is unavailing, and probably shortens life. When ulceration begins, absorption also begins, for ulceration is the action of absorbents. Ulceration is distinguished by a peculiar pain, and it has been observed, that after this pain has been much complained of, the operation is seldom successful.

There is, however, a great and obvious difference in the sympathy of the constitution with scirrhus in different individuals. I should say there were two classes of cases, one in which the constitution might either be supposed to labour with the *materies morbi* before its local manifestation, or which, by the general and simultaneous failing of the functions of health, appears to invite or to be incapable of resisting the assault. As when mental disquietude, bodily fatigue, impaired digestive power, wasting and muscular flaccidity, sallow and haggard countenance, prurient affections, or erythematous inflammations of the skin precede the accidental discovery of a small lump in the breast. In precisely such a case I was consulted, within six weeks from the discovery, by a widow lady of 57 years, who had suffered from a domestic affliction severely a year before, and upon immediate conference with Mr. Cline, the opinion given was decidedly adverse to the opera-

tion, although the local circumstances were yet as favourable as could be conceived. She died within two years, the disease running through all its stages.

In the other and more frequent case, the actual enjoyment of health appears not to be incompatible with the slow progress of the scirrhus even for years, of which the pain or rather uneasiness is so inconsiderable as scarcely to draw attention to it. Somewhat suddenly it becomes more uneasy from increase of size and weight, a short acute darting pain with a flush of heat is experienced at lessening intervals, and although the health is not very noticeably disturbed before the skin inflames and threatens, or begins to ulcerate, yet, in despite of strong animal spirits, there are obscurer indications to the medical observer—in the sallow complexion and lack-lustre eye, the languor and frequent headache, defective appetite and rest, with transient heats and wandering pains in different parts of the body, and especially in the loss of volume and firmness in the muscular flesh—that the poison is at work and circulating with every pulse.

Where the constitution is affected as in the case first described, it is at least predisposed to be sooner irritated by any local malady, and to favour, rather than otherwise, those changes by which the deleterious qualities of morbid secretions are evolved, and the more rapid career of the disease

to its termination is thus explained; where, on the other hand, the constitution is healthy and even vigorous at the time of the formation, its power of resistance both to the local irritation and to the changes which precede and promote the admission and action of the poison, is in proportion great, and the progress of the disease tardy.

I fear that there is too much reason to fix the period at which the scirrhus becomes a constitutional disease at a considerably earlier date than that at which the surface gives way. The idea and the phrase of 'occult cancer' have become old fashioned, but there is to my conception much and grave meaning in the term. That the mischief pervades the system long before the process of external ulceration, is proved by the numberless cases in which the glands next in the course of absorption have previously undergone the first, if not the fatal, change. This is of itself regarded as a bar to the operation by most surgeons; but it should depend on the degree of induration and the state, especially the freedom from adhesion, of the principal tumour, whether they ought to be so regarded. Certain it is that the affection of these glands in every degree lessens materially the chance of success, and it is equally certain, that comparatively but few cases are the subject of consultation in which they are not more or less affected. I consider it therefore, a warrantable conclusion, that the affection of the consti-

tution is generally anterior to the ulceration of the skin. It may be said, that the operation has sometimes succeeded, as for example, in the practice of Mr. Hill of Devonshire, where the cancer was already open. I am by no means disposed to deny this.

I admit the possibility that under favourable circumstances the action of chronic, and especially of chronic morbid poisons, may be overcome by the mere force and duration of vitality and the nutrient powers of the system. But if there be a principle of universal application and acceptance in modern surgery, it is that which enforces the earliest possible removal of a true scirrhus. Whence is this derived but from repeated failures, attributed, and justly, to procrastination? Pain, the proper pain I mean of scirrhus, is perhaps the symptom to be regarded as that which most powerfully remonstrates against delay, being symptomatic of ulcerative action in the tubercle.

OF THE ACTUAL ORIGIN AND NATURE OF CANCER.

The formation and circulation of a poison in the blood is the only notion competent to explain the universality of the same species of malignant disease, by which I mean its simultaneous or successive appearance in remote parts of the individual. A contamination exclusively local favours the belief that the poison is generated in the part affected, and that the atmosphere of contagion is

for a period greater or less restricted to the contiguous parts. Ultimately however, there is reason to believe, that this is so disseminated as to alter the integral composition of all parts, solid and fluid, of the animal fabric, although the patient dies of exhaustion as in other protracted diseases. Diffused contamination, on the other hand, furnishes a presumption of the primary depravation, from whatever cause, of that fluid which visits, nourishes, refreshes, and repairs all parts of the machine, or of that nervous principle by which its resources, quality, and distribution are regulated.

The section of the scirrhus tubercle, while its texture is yet perfect, yields, as we have said, a slightly unctuous moisture. Its vessels are colourless, and incapable of being demonstrated by the injection of a coloured fluid. The inflammation of surrounding parts is always slowly excited, and in some rare cases, never. It does not provoke abscess like an inorganic substance, nor form a cyst in the surrounding texture, but excites chronic inflammatory action of a nature resembling its own in the glandular substance in which it is deposited. This in fact becomes condensed and in a degree incorporated with it, but the original tumour still preserves its character until it breaks up in the centre. The ulceration extends by degrees to its circumference, and the absorbents, becoming charged with the fluid poured forth by

the vessels of the eroded surface, convey it to the neighbouring glands, and there initiate a similar train of destructive operations. All this may take place before the disease extends to the skin, by a process of inflammatory adhesion and subsequent ulceration; and the absorbents being numerous in this texture, it becomes extensively charged with the poison. What we have said of the disposition of accidental excrescences and cutaneous lesions of the slightest kind to tuberculate, proves that a leaven of contagion exists, even though it be not spontaneously manifested in surrounding parts.

Probably when the ulcerative process is quickened and extended, as it always is, by the communication with the surface, the veins and excretory ducts opened in its progress, as well as the absorbents, become laden with the morbid secretion.

It is not the inflammation excited in surrounding parts by the irritation of a semi-organized tubercle, which is productive of the poison. If it were, the scirrhus could not remain stationary, as it sometimes does, for twenty years, without change of bulk or texture in the organ, and in fact harmless to the individual. Neither is the communication with the surface necessary to the production and fatality of the poison, for it sometimes destroys life before reaching this stage.

Nor is it consistent with ordinary observation that the poison acts upon the system during the integrity of the tubercle, since persons generally recover, and finally, in whom the disease is freely removed in this early stage. On the contrary, if the tubercle be softened and undergoing ulceration, *i. e.* absorption, the disease recurs, however freely the part be removed, in the majority of cases; although, perhaps, a few years' extension of the term of life may be gained by the operation. The formation of the poison therefore is concomitant not with the adhesive, but the ulcerative inflammation; and it is fair I think to infer that the matter of the poison is generated not by the action which forms the tubercle, but by the series of actions instituted to destroy and remove it. But it is probable that the vessels which deposited the tubercle are the parents of those which nourish it, and from which, in the ulcerative stage of inflammation, the morbid secretion is derived.

The character of the medullary species of cancer has some analogy to that of hereditary and inveterate scrofula, the difference seeming to consist in the addition of a destructive action *sui generis*, and proper to the cancer, to that of unas-similable deposition and growth, common to both. Scrofula seems to indicate the imperfection or disease of absorbents, which is shewn in negative changes, as the non-assimilation of the alimentary matter—the non-conversion of fluid into solid, and

vice versa—and the non-removal of natural and vicarious superfluities. In the medullary cancer, the deposits are not the results of indolence in the absorbent, but of morbid activity in the arterial extremities; they are foreign, not accretions of original texture. The subdivisions of arteries are found in a discoloured and distempered state where they have been minutely examined, and a modern Morbid Anatomist considers the disease to consist in an inflammation of the arteries, and has named it accordingly ‘*Arteritis*.’

To me it has often appeared to be the modification of cancer by scrofula; *i. e.* a disease arising out of the combination of scrofula and cancer in the habit. I have seen the disease terminate life by scrofulous tubercles of the peritoneum and pleura, and abscesses of the mesenteric and lumbar glands, and have repeatedly noticed the subjects of it to be of the scrofulous temperament.

In the formation of an adventitious structure, in the process of its destruction which forms and propagates the poison, and in the varying and uncertain interval betwixt its formation and development, an analogy may be found in this to other morbid poisons.

When the matter of absorption is foreign to the system, as in lues or inoculated small pox, it serves only as a fomes, inducing or compelling the

secretion of a like matter by the vessels of the part, and the interval transpiring between the insertion and the production and development of the poison marks the local and constitutional boundaries.

Without supposing the scirrhus to be malignant in its origin, I am quite ready to admit constitutional predisposition in many cases, as when the disease is obviously supervening upon a slight local injury, or upon a tumour or ulcer of indolent character or long standing. In these, if in any, the disease, tumour or ulcer, may be considered to furnish a model, or physical prototype for the malignant action, and in process of time an elaboratory of the poison itself; but the distinction between a poison generated in the individual and that communicated, as those above named, from one to another, is sufficiently wide to release us from the difficulty of reconciling their laws and phenomena.

The various appearances of cancer modified by texture and situation, as it affects the several regions of the body, and of diseases resembling, and liable to be mistaken for it, I shall make the subject of another Paper.