

On cancer : its allies and counterfeits / by Thomas Weeden Cooke.

Contributors

Cooke, Thomas Weeden.
Royal College of Physicians of Edinburgh

Publication/Creation

London : Longmans, Green, 1865.

Persistent URL

<https://wellcomecollection.org/works/r3xs6ttx>

Provider

Royal College of Physicians Edinburgh

License and attribution

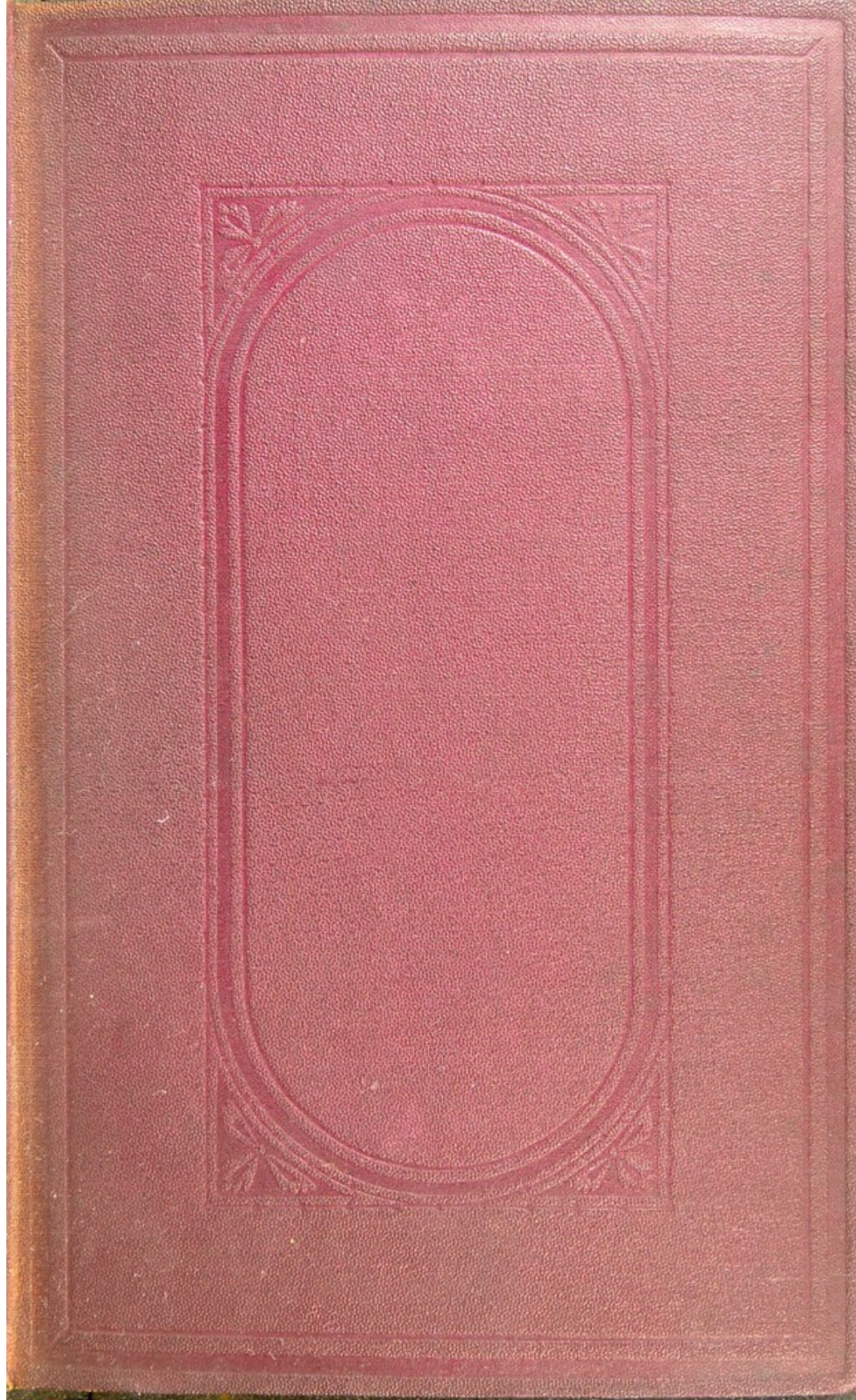
This material has been provided by This material has been provided by the Royal College of Physicians of Edinburgh. The original may be consulted at the Royal College of Physicians of Edinburgh. where the originals may be consulted.

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>



12/6

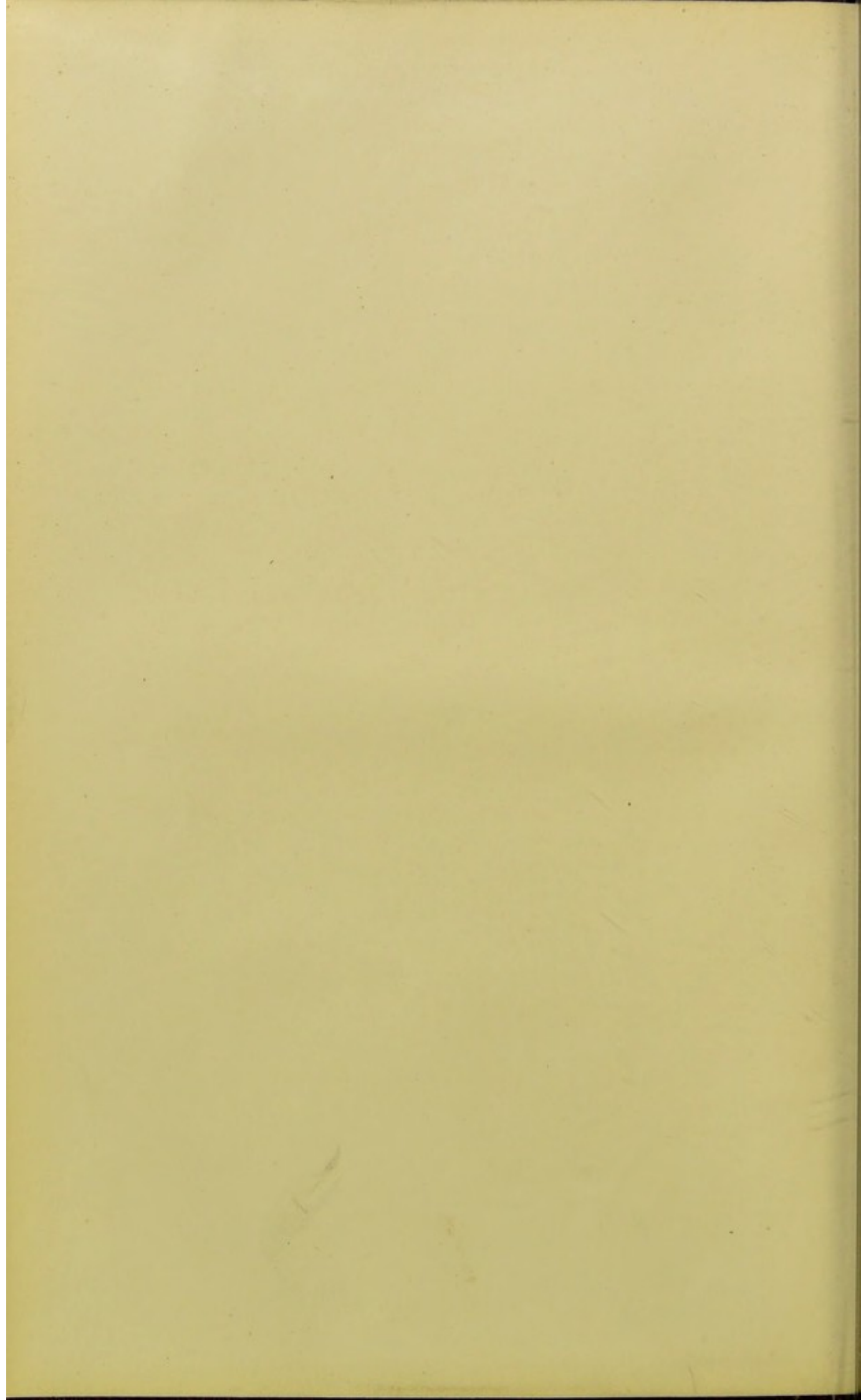
Li 3.3



Ci 3.3

R34667





THE ALLIES AND COUNTERFEITS

OF

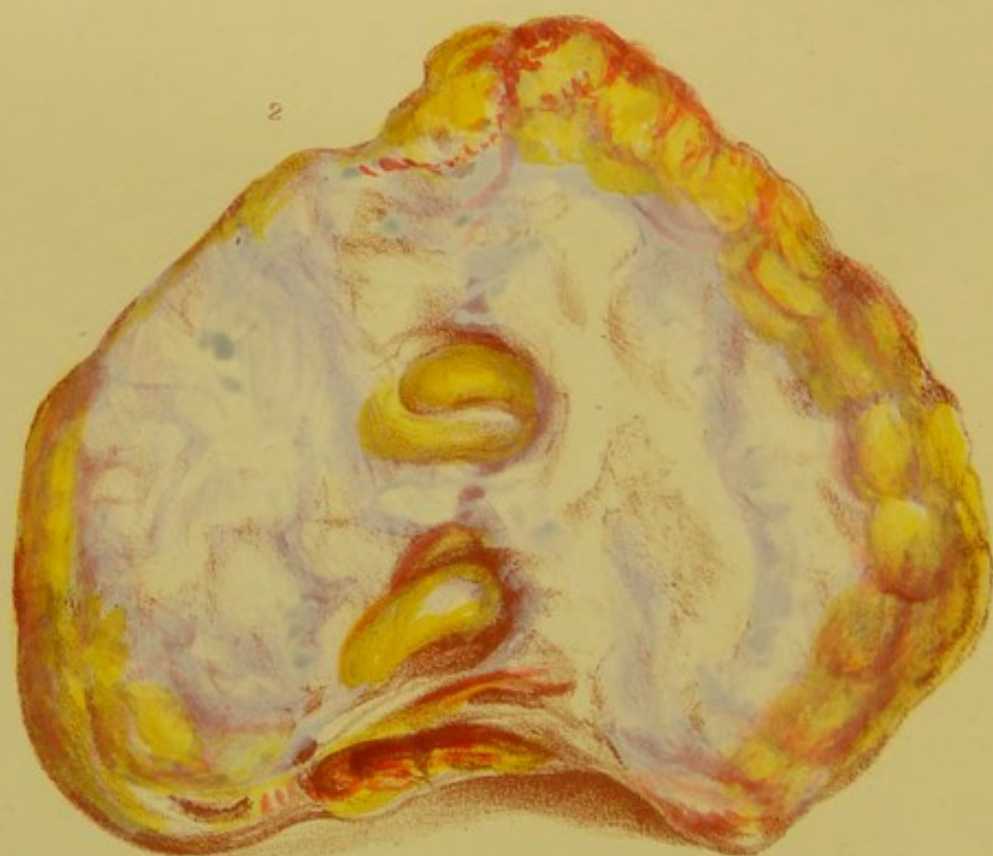
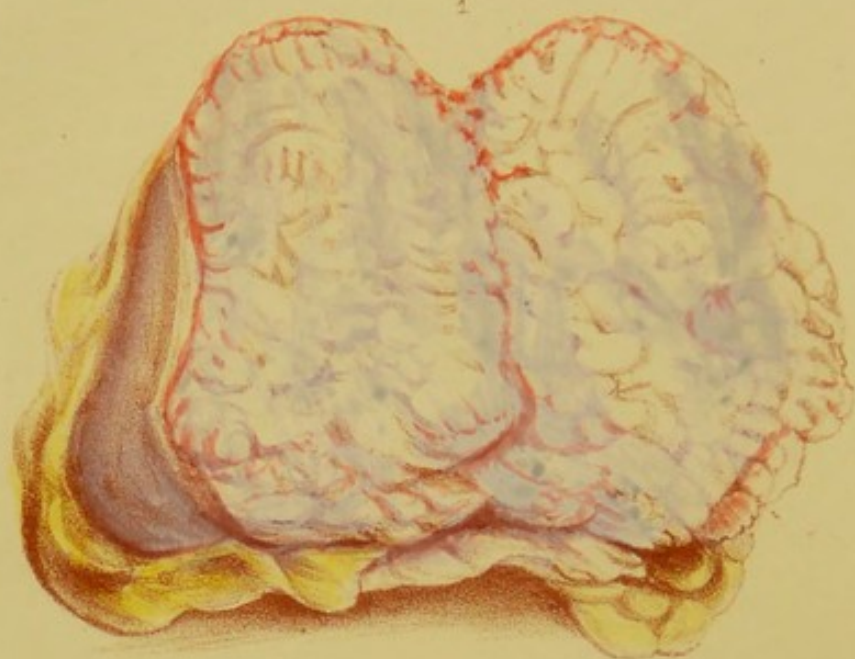
CANCER.

LONDON
PRINTED BY SPOTTISWOODE AND CO.
NEW-STREET SQUARE



Digitized by the Internet Archive
in 2015

<https://archive.org/details/b21950039>



ON

C A N C E R :

ITS ALLIES AND COUNTERFEITS.

BY

THOMAS WEEDEN COOKE

SURGEON TO THE CANCER HOSPITAL AND TO THE ROYAL FREE HOSPITAL, LATE PRESIDENT
OF THE HARVEIAN SOCIETY OF LONDON, ORATOR FOR THE YEAR 1866 TO
THE MEDICAL SOCIETY OF LONDON ETC. ETC.

BIBLIOTHECA
COLL. REG.
MED. EDIN.

LONDON:
LONGMANS, GREEN, AND CO.
1865.

GAZETTE

TO ALLIES AND COLLEAGUES

OF THE

REPUBLIC OF THE UNITED STATES OF AMERICA

OF THE

PREFACE.

‘If every young practitioner,’ says Dr. Hughes Bennett, the learned Professor of Medicine in the University of Edinburgh, ‘would dedicate his life to the careful elucidation of the natural progress of only one disease, he would do more for medical practice than has been accomplished by centuries of empirical trials of remedies.’

Few unprejudiced minds will dissent from this observation, provided the student-practitioner be enabled to check and compare his enquiries into the natural history and habits of the one disease he has fixed upon by an every-day experience in all the varying pathological changes to which the human frame is liable.

Fortunate in my opportunities for the last twenty years of studying a variety of disease in an aggregate and very generally an aggravated form, I have pursued the study of the one disease this work treats of, untrammelled by any preconceived theories, preserved

by the experiences of a general surgical practice from a narrow estimate of the facts presented to my view, and at all times eager for information from others; whilst I have guarded myself against the acceptance of any established dogma which would not bear the scrutiny of practical application on a sufficiently extended scale.

Facts as to the natural behaviour of the disease, when untended by art, when subject to the surgeon's scalpel, and when attempted to be influenced solely by therapeutic measures, have been the object of my search; and if I have arrived at conclusions as to the nature and habits and associations of this disease, and formed an opinion as to the best mode of treating it in all its varying phases, it is only the enforced result of an analysis of a very large number of facts, which have been carefully noted, and the results compared with the predominant theories and practice of the time.

I have dwelt much upon diagnosis, and endeavoured to facilitate this important investigation, because many in the profession, from the absence of much experience in this matter, find the task of pronouncing an opinion difficult, whilst pretenders take advantage of the confusion which has prevailed, and call all the many counterfeits by the one alarming name.

I have shown satisfactorily, I trust, how intimate is the association between Cancer and Phthisis, which helps us in our estimate of the hereditary character of

the disease, and points also to a method of treatment founded on that which is now universally employed in the latter disease.

The conflicting theories as to the nature of cancer seem now to be set at rest by the revelations of the microscope, showing that it is no new heterogeneous substance which is deposited among the healthy tissues, but an alteration only of the natural cell-growth or germinating material, which has lost its power of forming healthy structure. This new light also suggests a method of renovation which is consonant with practical experience, and gives us a reason for our treatment which was necessarily wanting to our predecessors in all their endeavours to combat this malady.

Fully conscious of the difficulties of my task, and of the deficiencies which will be found in its execution, I have nevertheless felt that the opportunities of study afforded me by my connection with the Cancer Hospital carried with them a duty to the profession and the public, and I have endeavoured to perform it before the time comes 'when no man can work.'

The drawings executed for me by Mr. Christopher D'Alton, and lithographed and coloured by hand in the very highest style of art by the Messrs. Hanhart and Mr. Bayfield, will, I trust, give no little assistance in distinguishing many forms of cancer from other less formidable diseases not unfrequently confounded with it.

In conclusion, I would offer my warmest acknowledgments to the founder, Dr. Marsden, the Committee of Management, and the Supporters of the Cancer Hospital, for the opportunities of study afforded by their generous benevolence to the poor afflicted with this malady.

T. W. C.

UPPER BERKELEY STREET, W.

September 1865.

CONTENTS.

CHAPTER I.

THE NATURE AND PRIMARY CAUSE OF CANCER.

- a.* Derivation of the Term Cancer—*b.* Progressive Improvements in Diagnosis—*c.* The Revelations of the Microscope—*d.* The Development and Growth of Cancer Cells—*e.* The Local or Constitutional Origin of Cancer—*f.* Similarity in the behaviour of Cancer and Phthisis—*g.* Influence of Local Causes—*h.* Hereditary Predisposition—*i.* Cancer and Tubercle—*j.* Simple Tumours become Cancerous—*k.* Combination of Cancer and Tubercle—*l.* The relations of Cancer and Tubercle—*m.* Cancer and Tubercle in the same Person—*n.* Cancerous Parents beget Phthisical Offspring PAGE 1 to 22

SECONDARY CAUSES.

- a.* Cancer occurs at Critical Periods—*b.* Men liable to these Critical Periods—*c.* Injuries as a cause of Cancer—*d.* Child-birth as a cause of Cancer—*e.* Hæmorrhoids the Seat of Cancer—*f.* Other Tumours become Cancerous 22 to 28

CHAPTER II.

DIAGNOSIS.

- a.* The Difficulties of Diagnosis—*b.* Hardness a Distinguishing Feature. 29 to 32

CHAPTER III.

PAIN.

- a.* The Diagnostic Value of Pain—*b.* Cancer Invades the Neighbouring Tissues—*c.* The Different Forms of Cancer—*d.* Scirrhus the most Frequent Form of Cancer—*e.* Diagnosis of Scirrhus—*f.* Scirrhus of the Uterus—*g.* Diagnosis of Epithelial Cancer—*h.* Diagnosis of Medullary Cancer—*i.* Medullary Cancer of Bone—*j.* Of Colloid Cancer—*k.* Formation of Cysts. 33 to 47

CHAPTER IV.

THE BREAST.

- a.* Mammary Abscess—*b.* Supernumerary Nipples—*c.* Adenoid Tumours—*d.* Cases of Adenoid Tumour—*e.* The Link between Innocent and Malignant Tumours—*f.* Adenoid Tumours becoming Cancerous—*g.* Intermediate Stages in Tumours—*h.* Tumours the result of Injury—*i.* Fibrous and Fibroid Tumours—*j.* Cystic Tumours—*k.* Multilocular Cystic Tumours—*l.* Proliferous Cysts—*m.* Different forms of Scirrhus—*n.* Medullary Cancer—*o.* Hereditary Relations of Cancer and Tubercle.

PAGE 48 to 88

Treatment.

- a.* The question of Operation—*b.* The Period of Growth when Operation is Desirable—*c.* Method of Operation—*d.* The Medical Treatment of Cancer—*e.* External Applications—*f.* Deodorizing Agents—*g.* Treatment of Sloughing—*h.* Control of Hæmorrhage—*i.* Beneficial Results of Treatment—*j.* Scirrhus in the Male Breast. 88 to 138

CHAPTER V.

THE TONGUE.

- a.* Anatomy of the Tongue—*b.* Hypertrophy of the Tongue—*c.* Nævus and Ranula and Atrophy of the Tongue—*d.* Tuberculosis of the Tongue—*e.* Syphilitic Affections of the Tongue—*f.* Ichthyosis of the Tongue—*g.* Cancer of the Tongue—*h.* Treatment by Excision—*i.* Treatment by Caustics—*j.* Local and General Treatment—*k.* Gastrotomy—*l.* The Results of Treatment. 139 to 163

CHAPTER VI.

THE LIPS AND FACE.

- a.* Various Diseases Affecting the Lips—*b.* Psoriasis—*c.* Ichthyosis—*d.* Lupus Exedens—*e.* Cancer of the Lip—*f.* Operation by Excision—*g.* Combined Medical and Surgical Treatment—*h.* Treatment by Caustics—*i.* Epithelial Cancer of the Cheek—*j.* Medullary Cancer of the Bones of the Face—*k.* Melanosis of the Scalp. 164 to 181

CHAPTER VII.

THE GENITAL ORGANS.

- a.* The Genital Organs—*b.* Diagnosis—*c.* Causes—*d.* Treatment—*e.* The Progress of a Case—*f.* Cancer of the Testis—*g.* Treatment—*h.* Cancer of the Pudendum—*i.* Results of Operation—*j.* Medical Treatment.

182 to 196

CHAPTER VIII.

THE ARM AND HAND.

- a.* The Arm and Hand—*b.* Results of Operation—*c.* Medical Treatment
PAGE 197 to 200

CHAPTER IX.

THE EYE.

- a.* The Eye—*b.* Diagnosis—*c.* Treatment. 201 to 204

CHAPTER X.

THE RECTUM.

- a.* The Rectum—*b.* Diagnosis—*c.* Recto-Vaginal Fistula—*d.* Encephaloid Disease of the Rectum—*e.* Treatment. 205 to 209

CHAPTER XI.

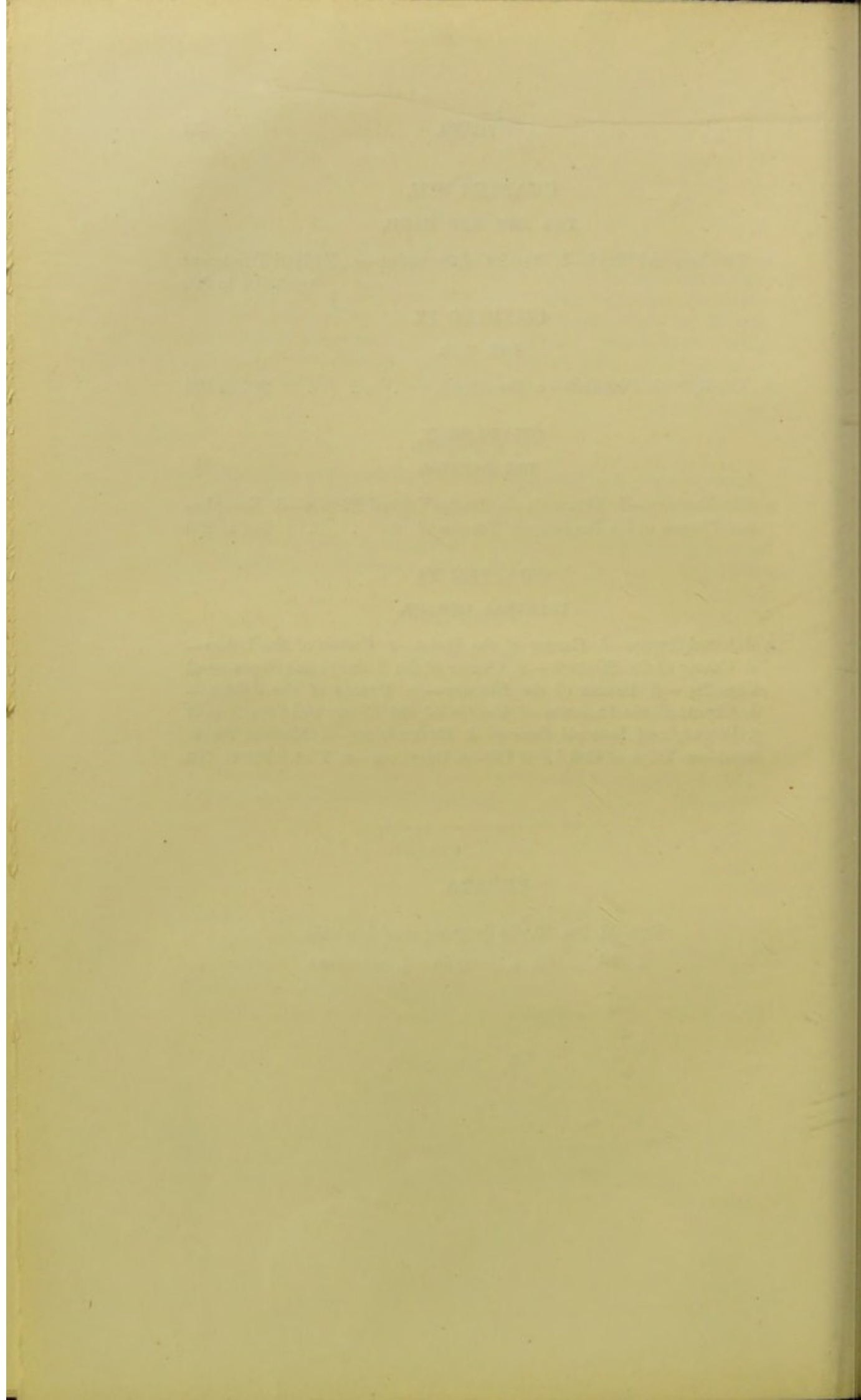
INTERNAL ORGANS.

- a.* Internal Organs—*b.* Cancer of the Heart—*c.* Cancer of the Lungs—
d. Cancer of the Stomach—*e.* Cancer of the Kidneys and Supra-renal
Capsules—*f.* Cancer of the Bladder—*g.* Cancer of the Spleen—
h. Cancer of the Pancreas—*i.* Cancer of the Ovary and Omentum—
j. Diagnosis of Internal Cancer—*k.* Hydrothorax—*l.* Medical Treat-
ment—*m.* Value of Cod Liver Oil—*n.* Injections—*o.* Diet. § 210 to 226

ERRATA.

Page 25, line 20, *for dyscresia read dyscrasia.*

„ 59, „ 28, „ surgeon „ surgeons.



DESCRIPTION OF THE ILLUSTRATIONS.

PLATE FACING THE TITLE-PAGE.

Figure 1 represents a good average specimen of the adenoid tumour. It is laid open from behind, and shows the peculiar granular elevations, as well as the investing capsule. It was taken from the case referred to at p. 53. *Figure 2* represents a scirrhus tumour also cut open from behind. It is surrounded by fatty tissue, which appears also in the centre at the termination of section of the scirrhus.

PLATE I.

Figure 1 represents a scirrhus tumour cured by atrophy, referred to at p. 128. *Figure 2* represents a similar case, mentioned at p. 127 To face page 128

PLATE II.

Shows cystic disease in one breast, and an open scirrhus in the other 138

PLATE III.

Figure 1 is the drawing of a case mentioned at p. 162-163, and *figure 2* its cure 162

PLATE IV.

Figure 1 is the case of ichthyosis of the tongue recorded at p. 150, and *figure 2* is a drawing of an eruption of a syphilitic character, found on the leg of the same patient. *Figure 3* is a case of tuberculosis of the tongue, mentioned at p. 148 150

PLATE V.

Figure 1 represents syphilis of the tongue, aggravated by a hæmorrhagic diathesis. *Figures 2, 3, and 4*, are specimens also of syphilis of the tongue; and all were cured *To face page 152*

PLATE VI.

These are all cases of cancer of the tongue 156

PLATE VII.

Figure 1 is a drawing taken from the lip of a girl who had primary chancre of the lip; 3, 4, & 5, are specimens of an eruption on her body corroborating the diagnosis. *Figure 2* is a drawing of the case of eczema of the lips and palate, taken when he first came under treatment. See p. 165 166

PLATE VIII.

Is a bad case of sycosis cured, as is represented in *figure 2*, by a solution of permanganate of potassa 168

PLATE IX.

Epithelial cancer of the upper lip, removed by operation . . 170

PLATE XI.

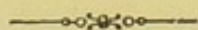
Represents the removal of an epithelial cancer on the cheek by manganese-cum-potassa. 176

PLATE XII.

Represents the cure of an epithelial cancer of the lower lip partly by medical treatment and partly by excision. The case is recorded at p. 173 174

ON CANCER:

ITS ALLIES AND COUNTERFEITS.



CHAPTER I.

THE NATURE AND PRIMARY CAUSE OF CANCER.

CANCER is the quaint term applied to a growth which is alien to the natural tissues of the body, and does not undergo those morphological changes which belong to the healthy structures of man. The reason for the term and who applied it are questions of the smallest import. Who will derive any benefit from an enquiry as to whether a crab with its claws gave a name to a tumour which in reality has only occasionally any suckers or offshoots to justify the typical epithet; or whether Hippocrates indicated the peculiar disease to which we now restrict the term cancer, by the word *καρκίνος*? The Sanscrit 'karka' is no doubt the root of the word used by the Greek father of physic, and that is understood to mean an eroding ulcer of any kind. Our learned modern pathologists have appropriated the Greek expression, and carcinoma is now the accepted classical substantive, to which however many adjectives have to

be attached. The Latin word *cancer* undoubtedly means both the shell-fish and an ulcer of a virulent character. Celsus makes frequent mention of cancer, but not with sufficient distinctness to assure us that he was enabled to diagnose that which we now recognise as cancer, from other tumours and indurated ulcers. Our insular vanity might perhaps induce the assertion that the old Anglo-Saxon word 'scanca,' a sore, an open wound, was the remote root of the term, canker being the intermediate popular expression, from which, of course, cancer would be a natural and legitimate descent. It is curious that the German 'schanker' and the French 'chancre,' indicating an ulcer of an eroding character, should be so near in phonetic and orthographic similitude to the Anglo-Saxon word above mentioned, and to the Latin word *cancer*. These resemblances point to the conclusion that, in former times, two utterly distinct diseases were confounded; and if they were treated alike, I could venture to parallel the obliquity, by instances of a similar character, even in the present day. It behoves us, however, to be humble in the estimate we give of the knowledge of our forefathers, seeing that we ourselves—with all the aid afforded by the wonderful improvements in the microscope, which gives us the advantage of observing the operations of nature in the construction and destruction of tissues—have yet much to learn respecting the origin, and nature, and diagnosis, and treatment of the various tumours, which either are allied to or are in reality cancer.

The feature of the present time, in reference to this class of diseases, is just the opposite of that which pre-

vailed in the time of Celsus, and for many hundred years after. Formerly many clearly distinct diseases were classified as cancer, and now that term is restricted to growths which exhibit only a particular form of cell-formation, although, to the unassisted eye and the sense of touch, the tumour may be in all respects similar. Perhaps it is not surprising that pathologists of the present day insist upon this microscopic evidence as all-important in the diagnosis of tumours, seeing that even so late as the times of Abernethy and Sir Astley Cooper, much confusion existed in the definition of a cancerous growth. To no one, within this century, are we more indebted for enlightenment respecting this disease, than the distinguished Physician, Dr. afterwards Sir Richard Carswell, who was selected by the astute Prince Leopold as his body-physician when called to the throne of Belgium.

Since the publication of the great work of Dr. Carswell in 1833, we have all had the opportunity of studying the aspect of cancer, in its complicated and varying conditions. This elaborate work, in a great measure, supplies the place of that large experience which is necessary to acquire correct diagnostic powers in the disease; except that, whilst showing what is cancer, it of course does not portray tumours, which the public, and certain charlatanic personages, believe, or pretend to believe, to be cancerous, but which have none of the malignant qualities appertaining to that form of disease.

Many scattered essays, especially those by Mr. Travers and Mr. Cæsar Hawkins, have helped on the definition of a cancer. M. Velpeau in Paris, and Dr. Walshe in

London, have published large tomes on the subject, without however exhausting the enquiry, either as to diagnosis or treatment. More recently, high expectations have been entertained of the benefits to be derived from the microscopic investigations of Kolliker, Virchow, Wedl, Lebert, Paget, Bennett, Beale, and others; and these labours have doubtless been of the utmost value in showing in what degree cancer differs from other abnormal growths, and in what measure its ultimate cell-structure has deviated from that of the normal tissues.

When a cancer cell was first announced, it was proclaimed from all the chairs as the one thing needful for diagnosis. *Ecce signum!* Tested however by further enquiry, it was shown by Virchow, Wedl, and others, that many parts of the healthy structures of the body would be found to yield the peculiar nucleated irregularly formed cell, which had been obtained from carcinomatous growths.

The present state of our knowledge of the cell-structure of cancer appears to be this: that in all the forms of cancer, excepting the epithelial, we may find cells approaching the globular form, but deviating from it in some particular, as though the globe had been submitted to pressure, and its walls had bulged out, giving it the appearance of a tadpole in one, of a kidney in another, whilst a third may be so branched as almost to resemble the well-known fish called five-fingers. Whatever shape it may have attained, the cell always contains one or more nuclei, and these again nucleoli. The cell of Epithelial Cancer is an irregularly shaped epithelial cell. It has lost its natural circular appear-

ance, has probably obtained branches like the cell of the other cancers, or has the appearance of having been bitten round its border. It also has its nucleus and nucleoli.

When these deviations from a healthy cell are found in a tumour, we may positively pronounce the case to be one of cancer; but the value of this diagnostic sign is unfortunately marred by two significant circumstances, viz., the necessity to form a decided opinion as to the nature of a tumour before it is possible to place it under the microscope; and the fact that tumours which have been removed and have not yielded under the microscope the especial cancer cell, have nevertheless returned, and destroyed the patient in the very same manner that cancer does its direful work.

Although there are these two great and important deficiencies in the completeness of the diagnostic value of the microscope, the information it affords enables us to devise and pursue a plan of treatment, which has for its basis an exact knowledge of how this destructive disease is propagated in the system—a knowledge which was only guessed at by our forefathers.

The minute anatomy of the structure of tissues, studied at the expense of precious eye-sight, and with great cerebral exhaustion to its devoted enquirers, has shown that the pabulum vitæ, after passing through the lacteals and absorbents, becomes, as Dr. Beale has christened it, ‘germinal matter,’ more generally known as cellular structure. This germinal matter, the immediate result of the deposition of the pabulum, takes on first a globular or cellular form, it then bursts, and its walls become a part of the previously formed

material, whatever that may be—whether muscle, cartilage, bone, or intercellular substance ; and so goes to make up the body corporate. Previous to the bursting of this germinal cell, another or others have been deposited within it, to go through the process just described.

In cancer, as in other abnormal structures, the same process is going on. There is a deposit of germinal matter in the cellular form, which goes to the production of a formed material. But the formed material so obtained differs from all the normal structures of the body. It is not muscle, or cartilage, or bone, or brain, or gland, although it may resemble somewhat any of these parts. It is not kept within certain limits by the absorption of effete material ; or, at anyrate, it does not obey the laws of growth and decay which pertain to the healthy structures. The primordial cell, having obtained, by some means at present not known, the peculiar malformation which has been referred to, we can readily understand how it will generate its like, forming, as it were, a foreign colony in the midst of a commonwealth, and deriving sustenance from the common supplies.

It may be well now to refer to the deposit of cancerous tumours in remote parts of the body of the same person. The explanation of this circumstance is at present scarcely more than conjectural, and therefore perhaps not worth much consideration, except as bearing upon the question of constitutional origin. It is argued by some, that if on the first appearance of a cancer, it be extirpated at once, the constitution will not be affected, and there will be no deposit in any

other part of the body. It is said by others, that if the external cancer be not removed by the knife, but suffered to remain, governed by judicious treatment, it is much more probable that the disease will expend itself upon the one seat it has chosen. The first of these arguments is founded upon the supposition that cancer is primarily a local disease, which may extend itself by means of the circulating fluids to distant parts. The blood-vessels or absorbents, it is conceived, may take up, by endosmotic action, a cancer cell, deposit it far away from its matrix, and there form for itself a fresh crop of diseased tissue. The other view is entertained by those who believe that the external growth is but an evidence of a constitutional predisposition, that frequently many parts of the body are affected simultaneously; that the results of early operations do not favour the idea of local origin; and that cancer may exist for years in one organ, as may tubercle in the lungs, without imparting itself to any other.

Of these two opinions, I certainly incline very decidedly to the latter, and I gather from the occasionally expressed opinions of the most experienced surgeons of the present day, that such is the general impression; although it is still combated by a few, who perhaps theorise, without a sufficiently extended practical basis.

I suppose there is no pathologist who will venture to assert that phthisis is a local disease, affecting the lungs only; and that if we could extirpate the lungs, and live without those organs, there would be no reason why consumption should decimate our people, as it does in these islands.

If a leg be amputated, or a knee-joint be excised, for

scrofulous disease, will it not frequently happen that the blood of the tuberculous patient, having lost its wonted cloaca, will find it again in the lungs, and our operation will only have transferred the seat of deposit?

There is a remarkable similarity in the behaviour of cancer and phthisis. Although the tuberculosis will, in the majority of cases, sooner or later reassert its malicious influence, yet some few of the cases, just referred to, will get permanently well. It would appear as though the scrofulous diathesis had been exhausted by the discharges from the affected limb, and that, when the stump was healed, no further deposit of tubercle took place. In cancer the same phenomena are observed. A breast, a lip, a hand, a tongue, an eye may be excised for cancer; and the surgeon shall have taken every precaution that every particle of the disease has been removed. All goes on well for a season, but at an indefinite period, in the neighbourhood of the original malady, or in some remote organ, mischief is again at work. The sacrificed portion has not appeased the destroyer. There is in truth a constitutional cancerous diathesis, as there is a constitutional tubercular diathesis; and as I shall have occasion to show presently, there are strong grounds for believing that these two depraved conditions of the system have a more intimate relationship than is generally supposed. In cancer as in tuberculosis we have our occasional triumphs. I know persons who have been free from any outward appearance of the disease for ten years after an operation. I know many others who, without any operation, have borne the burden of a scirrhus of the breast for fourteen and fifteen years, and it has gradually

wasted away, so as to cease to be any source of pain or anxiety.

These are undoubtedly happy exceptions, such as are paralleled by the occasional cures of phthisis; but they show us that there is a power in nature which may recuperate her lost balance; and the study of such cases will help us to the right mode of bringing art to her aid.

Those who support the opinion of a constitutional cancerous dyscrasia have to meet the objections that, in certain cases, injuries have been followed by a cancerous deposit; and that in cases of cancer of the lip and of the tongue, smoking has very commonly been the habit of the patient.

Both these circumstances have been most carefully investigated by me in all the cases that have come under my notice, and I find that but one in eight of all the many thousand cases of cancer I have now seen, have been able to suggest the slightest connection between the appearance of the disease and some positive hurt. This is so small a percentage, that it seems to have no weight in favour of the local-origin theory.

It must be confessed, however, that when we come to the question of the influence of smoking, in cases of cancer of the tongue and of the lip, the evidence of local excitement is very marked. In the first place, women are but rarely subject to cancer of the tongue or lip, although they are not entirely exempt. And, secondly, it is an ascertained fact that, of the men who have these parts affected, nineteen-twentieths of them have been smokers. To establish the local-origin theory, it will not, however, suffice to show that so large a majority have indulged in this habit, unless it can also be

demonstrated, that of the millions of persons who smoke tobacco, even a tithe of them are affected with cancer of the tongue or lips. There are seven thousand deaths from cancer every year in England and Wales; from which we may gather, by a rough calculation, that there are about thirty thousand persons in this island always suffering from cancer. From statistics collected at the Cancer Hospital, it appears that the cases of cancer of the tongue and lip form about one-eighth of the whole; so that it would be a liberal calculation to allow four thousand to represent the number of cases of cancer of these parts, distributed amongst a population of twenty millions—i.e., about one in five thousand persons; or, in other words, one case of cancer of the tongue or lip in about a thousand smokers. This certainly cannot be claimed as evidence that cancer is *produced* by exciting causes, external to the body; and this is the most crucial test.

That the *seat* of cancer is determined by exciting causes, in many cases, cannot however be questioned. The constitutional predisposition being present, injuries, whether accidental or occurring in the course of natural processes, or from vicious habits, will be followed by a development of the disease. The latent fault of the system being granted, the disposition to form abnormal tissues from insufficiently developed germinal or cellular structure, will be brought into active existence by many external exciting causes; but only at an earlier period than it would have shown itself, had there been no local injury to determine and hasten the development.

Like phthisis, cancer attacks all classes of people.

The poor are not more its victims than the well-to-do. The crowded courts and alleys of our large towns yield even fewer cases of cancer than are to be found distributed over the green pastures and the fertile fields. Deficient nourishment will hasten the progress, but is never an originator, of the disease.

If then this disease be endogenous, a vice of original organization, perfectly independent of any of the acquired habits or circumstances pertaining to our daily life, to what do we owe the occasional implantation of this noxious weed among the healthy structures of this beautifully and wondrously contrived body?

It can come but from one source—hereditary predisposition. To prove the affirmative of this proposition, it will be said that I ought to have better support than the statistics, gathered by different enquirers, afford. It is strange that the two French writers who have given special thought to this disease, differ so widely in their statistics on this point. Lebert declares that but one in twelve persons affected with cancer had relations similarly affected; whilst Velpeau, whose opportunities of observation were certainly more extensive than those of M. Lebert, asserts that one in three of his patients could trace an hereditary taint. The most distinguished and industrious of our own countrymen in this department of surgery, Mr. Paget, has traced an hereditary predisposition in one in four of those cancerous persons who have come under his notice; whilst the statistics of the Middlesex Hospital, collected by Mr. Sibley, show only an average of $8\frac{3}{4}$ per cent.

The aggregate collection of cases seen by the medical officers at the Cancer Hospital, yield an average of one

in seven who had relations previously affected with the disease ; but my own share of that quantity, noted by my own hands, shows an average similar to that of Mr. Paget, namely, one in four. We have thus, at any rate, a very large majority of persons attacked with cancer who seem to have no hereditary tendency thereto ; and this is the point which has to be met and explained, before we can claim for this disease, with some approach to scientific accuracy, a constitutional origin. It is a fact, established by experiment, that cancer cannot be communicated from one person to another, as may fever or syphilis. Very occasionally it happens that a wife may have cancer of the uterus, and the husband cancer of the penis ; but it is so rare a combination as to amount only to an accidental occurrence. It is not, then, a poison which may be implanted in the system, and give rise to the diseased structures we are contemplating.

For a long time I had looked upon the occasional combination of tubercle and cancer as a curious coincidence, which did not seem to have any practical bearing upon the enquiry as to the nature of cancer. I had seen syphilis and cancer in the same person in rare instances, and the fact of phthisis being a frequent disease in our climate, seemed to make it quite natural that occasionally our cancerous patients should also be phthisical.

I subsequently noticed that adenoid tumours nearly always occur in persons who had phthisical relations ; and further, that adenoid tumours sometimes become cancerous. Stimulated by these associations, I have made diligent enquiry, and I find in a very large

number of instances that phthisis exists in the families of most cancerous patients, who have not an hereditary tendency to cancer itself; and that a cancerous parent will often beget children that become phthisical.

In another part of this treatise, I shall give instances in support of this assertion. At present, in order that I may not break the chain of my argument, I must beg the reader to admit for a moment that the fact is as I have stated. If then phthisis is found to precede and to follow the evolution of cancer in a very marked degree, and if it be a constant associate of tumours which occasionally take on cancerous action, how are we to escape the conclusion that these two diseased products, cancer and tubercle, are interchangeable creations? Thus may we fill up the hiatus wanting in the statistics of the hereditary predisposition to cancer, and thus only may we safely and surely build up the theory of the constitutional origin of cancer.

I know full well that these are new views to the great majority of the profession. It is only the large opportunities of observation I have enjoyed which have forced upon me the conclusion at which I have arrived. I am not moved by any preconceived theory, but by an accumulation of facts; and it was only after the acquisition of those facts that I became aware of the opinions broached by Dr. Wedl of Vienna, in his elaborate work on 'Pathological Histology,' which go so far to support the view I have taken. At page 579 of this work—translated for the Sydenham Society by that able histologist, Mr. George Busk, F.R.S.—the learned author says, 'It must be allowed that our ideas of tubercle and cancer are not widely remote, but

mere expressions (categories) indispensable in anatomical language, and requisite for the designation of particular modes of development of certain new growths. The institution of categories of this kind proceeds from the methods pursued in common thought; at the same time it should not be forgotten, that these indispensable categories have such numerous vacancies and deficiencies, that they can only be regarded as ideal, and not as things having an actual existence. Nature shows that in one and the same individual a fibroid tumour may be formed in the uterus, and a medullary cancer in the liver. Where then is our supposed cancerous dyscrasia? It is well known that decided tuberculosis of the lungs, with cavities, &c., occurs together with cancer in other organs, with intermediate form. Where then is the boundary between cancer and tubercle?'

And again, at page 608, he says :

'There is but one large family of new formations, the different members of which are associated in many ways and should be described as constituting so many categories. For these the names commonly in use—as tubercle, cancer, connective-tissue, new formation, osteophytes, &c.—should be retained ; but the different growths must not be regarded as by nature and essentially different species. Viewed in one sense, the combined forms may be placed in one category, and, in a second point of view, in another. The names are necessary for the description of the direction and form of the development, but must not be taken to express ideal entities.'

It may be said that these are the opinions of a man

who looks at all these matters through a microscope only, and has not the practical experience of a working hospital clinique, to guide and check the speculations of the pure histologist; but I believe that we may take these opinions as those also of the translator himself, whose practical experience as a hospital surgeon is not less than his skill and knowledge in the use of the microscope.

The veteran Velpeau, whose acute powers of observation and large surgical experience command the most respectful attention, does not fail in his late years to suspect that the speciality of the cancerous element which he had asserted for thirty years of his life, is not so certain as he had supposed.

‘Nevertheless,’ says he, in his work on ‘Diseases of the Breast,’ ‘in maintaining these principles in presence of the Academy—principles I have taught probably since 1820—I spoke with some reservation: I had certain scruples. Struck with the approaches nature seems frequently to establish between tumours whose nature and kind seemed at first very remote, I asked myself if it was not required to admit that, in some cases at least, real cancer may have been originally a harmless tumour.’

He then quotes the case of a woman ‘who had for twenty years a tumour in her breast the size of a nut, globular, indolent, movable, without adhesion with the neighbouring tissues, without engaging her attention. Is it possible to deny that this is an adenoid or harmless tumour? Having grown to the size of two fists in six months, and then extirpated by Blandin, this tumour was, notwithstanding, found to be formed of encephaloid tissue.’ A little further on, in the same chapter, he

says: 'It is sufficiently curious to see the anatomico-pathologists the most expert, such as MM. Cruveilhier, Lebert, Broca, lay hold of the doctrine of the independence of cancer—a doctrine I have maintained throughout my whole life—and defend it in an absolute manner or sense, *at the moment when, on my part, I begin to doubt its exactness.*'

Of our own countrymen who have directed their attention to this subject, it will not be disputed that Mr. Paget combines a very considerable surgical experience, with a profound knowledge of histological pathology. It will be found, in his admirable 'Lectures on Surgical Pathology,' that although he greatly favours the opinion, that what are called innocent tumours scarcely ever become malignant, he, with rare impartiality, acknowledges that 'the same methods of degeneration, and of disposal of liquefied materials, which are observed in tubercle and aplastic lymph, may be noticed in other products—for instance, in cancerous and other growths with ill-developed structures,' p. 830. Although given to illustrate another principle, he relates a remarkable case, which shows the intimate relationship between cancer and tubercle. He removed the breast of a woman, twenty-five years old, including a large mass of well-marked scirrhus cancer of three months' duration. She could assign no cause for the disease. It reappeared in the cicatrix six months after the operation. Tubercles formed and ulceration ensued. Twelve months after this second appearance, the ulcer began to heal, and in the next six months a nearly complete cicatrix was formed. But during and after the healing of the cancerous ulcer she lost strength, became much thinner,

and at length died nearly two years after the operation, and six months after the cancer had so nearly healed.

The post-mortem examination is the point to which I would direct attention. 'In the examination after death I found in the situation of the scar of the operation a low nodular mass of the very hardest and densest cancer, extending through the substance of the scar and the pectoral muscle, and nearly all covered by thin scar-like tissue. In the axilla was one hard cancerous gland, and in the liver were many masses of cancer as dense and hard as that on the chest. In all these parts the cancer structures appeared to be condensed and contracted to their extreme limit. The lungs contained no cancer, but were full of groups of grey succulent tubercles and greyish tuberculous infiltration in every part except their apices, where were numerous small irregular tuberculous cavities. The other organs appeared healthy.'

I quote this case as an addition to my own experience, which I shall have to substantiate by a recital of cases to be brought forward in a different part of this work. Mr. Paget believes that he has seen 'at least one instance in which active tuberculous disease of the lungs was arrested immediately before the appearance of a scirrhus cancer in the breast; and we find, in so many of those who die with cancer, the remnants of tuberculous disease from which they have suffered in earlier life, that we may believe that the recovery from the one has been in some manner connected with the supervention of the other.' Thus far Mr. Paget does not intimate any opinion as to the possible conversion of cancer into tubercle, or the reverse,

which the facts he has mentioned strongly suggest ; but in his able summary of the facts and opinions he has collected upon the affinities of tuberculous disease (p. 830), he says :—

‘ The chief grounds for regarding tubercle and cancer as diseases of the same order are the following :—

1. ‘ Tubercles sometimes appear as distinct tissues, like tumours in the brain, and in other instances of so-called encysted tubercle, and the dissimilarity between these and tumours, in that they neither grow by inherent power nor are vascular, is only because their elementary structures abort and very early become degenerate ; it is only the same dissimilarity as exists between a degenerate and a growing mass of cancer.

2. ‘ The general characters of malignant tumours as deduced from cancer are also observed in tuberculous diseases ; namely, the elementary tuberculous structures are heterologous ; they are usually infiltrated, and at length exclude and occupy the place of the natural textures ; they have a peculiar tendency to induce ulceration after softening ; the walls of the ulcer are commonly occupied by tuberculous deposits like those which preceded it, and while thus occupied, have no disposition to heal ; the tuberculous deposits apparently multiply in all the same numbers as the cancerous do ; and whether in their extension or in their multiplication, there is scarcely an organ or tissue which they may not affect, though, like cancers, the primary tuberculous diseases have their “ seats of election,” and different seats at different periods of life.

3. ‘ The tuberculous diathesis, the constitutional state which precedes the formation of tubercle, is

scarcely producible by any external agencies, except climate, but it is frequently hereditary; and in both these respects it resembles the cancerous, and differs from the merely debilitated state in which the aplastic inflammations occur.

4. 'The cancerous and the tuberculous diatheses appear to be incompatible and naturally exclusive: the production of tubercles is extremely rare, but that of lowly organized inflammatory products is frequent in cancerous patients. Such incompatibility implies that cancer and tubercle are equally and in the same sense constitutional diseases; very different, yet of the same order in pathology.

5. 'The tuberculous diathesis, like the cancerous, regularly increases, and is attended with cachexia, which is often disproportionate to the local disease. It is true that tuberculous disease frequently ceases in a part and allows its healing; yet, if we look to its enormous mortality as the index of its natural course, we must see in it a law of increase like that exemplified with fewer exceptions in cancers. And such a law is not usually exemplified in specific inflammatory diseases, for they generally tend to subside with lapse of time.'

To these admirable aphorisms I would add a sixth, to the effect that—The cancerous and the tuberculous diatheses are capable of interchanges, so that the cancerous parent shall beget tuberculous offspring, and the tuberculous parent, cancerous offspring; and further, that some of the children shall be tuberculous, and others of the same family cancerous. With this addition, and qualifying somewhat the fourth proposition, 'that the cancerous and the tuberculous diatheses

appear to be incompatible,' the above statement seems to embrace all the points which go to prove, not only the constitutional origin of cancer, but its very intimate alliance with and dependence on tuberculosis.

Generally speaking, cancer is a disease of advanced life, and phthisis occurs at a much earlier period. When the two occur together or in immediate sequence, it is always, as far as I have remarked, at the tubercular period; suggesting the thought, that the elaboration of the more terrible disease has outrun its wonted slow approach, and come up with its juvenile competitor. In my collection of cases will be found that of a young woman aged thirty, whose father and mother died of phthisis, and who had several brothers and sisters who also all died of the same disease. She herself was the only one left, and she had a cysto-scirrhus of the right breast about which there could be no mistake. My friend Dr. Pollock of the Consumption Hospital was good enough to examine her lungs for me, and he found consolidation of portions of both, but no cavities. This may or may not be a combination of cancer and tubercle, and happily at present it cannot be decided.* In another case, however, I had the opportunity of making a post-mortem examination of a young woman who had an open gelatiniform cancer of the right breast, which gave rise to frequent hæmorrhages, and of the nature of which there could not be a doubt. I found the remains of the breast a soft pulpy mass adherent to the subjacent ribs, and giving under the microscope the irregular-shaped nucleated cells, whilst the lungs on

* This young woman has since died, and the post-mortem examination showed a cancerous deposit in the right lung.

both sides were filled with tubercle as characteristic of phthisis as any I have ever seen, without any of the condensed white patches which indicate cancer in the lungs and in the liver. Very recently I have had to witness the gradual wasting and ultimate death of a young lady, the gifted daughter of one of the most exquisite painters of modern times; a man whose whole thoughts and actions were governed by the truest chivalry, whose pen no less than his pencil has adorned our literature with works scarcely less humorous than those of Sterne, whilst they remind us of the elevated taste and the sterling worth of Addison. In the midst of his labours of love he was taken from his family and his country, by that which proved upon post-mortem examination to be cancer of the liver. Two months previously a daughter had succumbed to phthisis, and now a second daughter has died of the same disease. There is no trace of hereditary disease on the mother's side, she herself being healthy, and all her relations have lived to a great age.

These are but specimens of the kind of association between cancer and tubercle which will be demonstrated more fully by the cases I shall have to bring forward; and I think it will be impossible to resist the conclusion, that cancer and tubercle may interchange their peculiarities in the same person sometimes, but in successive generations so markedly that we may establish it as a rule that cancer has itself, in some of its forms, or tubercle, as its antecedent, quite as generally as hereditary tuberculosis is observed to precede phthisis.

Thus we have the microscopical examination of the germinal elements of diseased structures, and the prac-

tical experience of extensive observation, combining to verify absolutely the constitutional origin of cancer.

Secondary Causes.

The secondary causes which induce the evolution of cancer in particular organs are various. In the front I would place 'change of life,' that climacteric *bouleversement* of the system which seems to represent the summit of the poetic 'hill,' or 'ladder,' from whence we descend, bereft of that tripping gait and joyous *élan* which made the path thereto so happy, and rendered the encroachment of disease more difficult. Cancer doubtless occurs at the extreme points of existence. I have seen it in a child of three years old, and in old men and women of eighty; but taking all the cases together, making no distinction of sex, the average age at which cancer shows itself in the system, according to the statistics afforded by the Cancer Hospital, is forty-eight. This figure represents, in women, the period of cessation of that monthly drainage, which clears away many effete matters that would otherwise remain to render the blood less efficient in its formative function. We have all observed the countenance of a woman who is on the eve of menstruation—its dark dingy hue, and the dazed eye, often exhibiting an injected condition of the vessels of the conjunctiva. Fretfulness of temper, and general malaise, are also more or less the accompaniments of this condition. View the same person a week afterwards, and you will find her complexion 'as clear as a bell;' the white of

the eyes is now transparent, and almost blue ; the lips perhaps are a little pale, but pinkish instead of dusky brown, and all the softness and sweetness of her sex is in full play. The cessation of this function must theoretically, and does practically, contribute largely to the development of any hereditary flaw which may possibly exist. In early life, when the girl is about to enter womanhood, with what anxious care does the experienced mother watch for the on-coming of this important function, which has no parallel in any other animal. And rightly is she anxious, for unless it be established healthily, if it be checked or exaggerated by any youthful frolic or indiscretion, years of illness, perhaps even an early death, may result. Physicians engaged in the treatment of lung disease, tell us how frequently consumption has taken its rise at the period of puberty. It seems to me that the appearance of this active and acute disease in early life at the beginning of adolescence, is paralleled by the development of the more chronic and slow-growing cancer at the termination of the menstrual function.

We have remarked how visible are the changes effected by this depurating process, and therefore we can readily understand how, when that process has ceased, and the system is no longer drained of its effete impurities by that particular mode of elimination, the circulatory system is dislocated ; and until the other organs of elimination—the liver, kidneys, and skin—can accommodate themselves to the increased work devolved upon them, there is a great probability that disease will result, and a certainty that any hereditary deviation from the construction of healthy tissue will

then have its best chance of developement. The age at which cancer has been shown most commonly to appear practically confirms these remarks.

But it will be said that this reasoning can only apply to females. There is, however, in men also a climacteric epoch, when the strong man is made conscious of a change in his powers, and ailments which had been slight and transitory assume a graver aspect. The Greek physiologists divided man's life into five epochs, and from the word κλίμαξ, signifying a gradation, they denominated these climacterics. They begin with the seventh year, and go on to the twenty-first, the forty-ninth, the sixty-third, and the eighty-first. There was some considerable foundation for thus mapping out the periods of life at which changes of structure and function assuredly take place. I am not concerned at present with more than one of these epochs, namely the third. It must have been noticed by the least observant among us, that the men of fifty are very generally more worn and wasted than the men of seventy. The race of life has been swift with us up to this period, and then, if we have not reached the goal of our ambition, unless we are gifted with exceptional constitutional strength, we feel ourselves obliged to give up to the younger aspirants the exhausting strife, and retreat quietly to the council-room, and the mental and physical repose of rural retreats. If ambition or circumstances interfere with this wise retirement, a selected few only will escape the penalty of early decay. How very many instances amongst our public men might be given to show that the human machine breaks down at fifty, if it be made to attempt the work it did at twenty!

It is a remarkable fact shown by the Registrar General's returns, that of those who die in England between the ages of forty-five and fifty-five, the males very considerably preponderate, the ratio being seven to six, and this notwithstanding the peculiar circumstances of the female at this period. A marasmus climactericus in men has been noticed and written upon by Sir Henry Hallford, Dr. Mason Good, and Dr. Roget; and all agree that cases are continually occurring which show that there is a periodic tendency to the on-coming of some great malaise, which shall shake the whole system and try fearfully its powers of resistance. The deaths from cancer in men are most numerous between the ages of fifty-five and sixty-five, whilst deaths from the same cause amongst women number the largest between forty-five and fifty-five. This difference quite accords with the circumstances of the two sexes, and supports the hypothesis that the cessation of menstruation, and the more protracted development of the climacteric dyscrasia of man, are powerful quantities as secondary causes in the production of cancer.

Next in importance to that just discussed as an exciting cause of cancer, undoubtedly stands the subject of blows or other injuries. It has been seen that one in eight attribute the disease to some mischief of this sort. This of course is a very small per-centage to rely upon, and gives very little support to the opinion entertained, I believe still by a select few, that cancer has a local origin. My own experience leads me forcibly to the conclusion that many supposed cases of scirrhus resulting from blows, are nothing more than deep-seated abscesses with indurated walls, produced by the inflammatory

exudation of lymph around a sanguineous effusion. I have seen cases that might be very readily mistaken for scirrhus, from the hardness and heaviness of the tumour, yield to the exploring needle thick tears of pus of that laudable character which is never afforded by true cancer; and these cases have been entirely and permanently cured by enlarging the opening made by the needle, and allowing a free escape of the enclosed pus. The pain attending these tumours is generally characteristic. If it be cancer, it will certainly be intermittent, and lancinating; if it be an abscess in the centre of much indurated tissue, the pain will be continuous, dull, heavy, and wearying. The presence or absence of family predisposition to cancer or tubercle will also notably affect the diagnosis of such a case.

The injuries sustained in child-birth have an undoubted influence in determining the seat of cancer, and from the earlier age at which this disease frequently appears in the uterus, than in other organs, it may be presumed that the exhausting influences of parturition have a very powerful effect in hastening its development. That child-birth has the effect of disposing the evolution of cancer in this organ, is well shown by a collection of ninety-two cases, recorded by Dr. Tanner in a very succinct pamphlet not long since published. One only of the ninety-two women was a virgin, and in her case the cancer of the uterus seemed to be secondary to a more extensive deposit in the liver. Twelve only of these ninety-two cancerous patients had never borne children. I may say that my own experience confirms the conclusion arrived at by means of these statistics; namely, that married women are much more frequently the subject of cancer than single women,

although I have certainly seen primary cancer of the uterus in virgins in a larger proportion than that indicated by Dr. Tanner's enquiries.

The liver is a very frequent seat of cancer, and it may be fairly argued that the irregularities of action to which this organ is exposed from the liberties we take with our digestive apparatus by over-feeding, or long fasting, or the ingestion of things difficult of assimilation, resemble the local injuries done to external parts, and serve as points of departure for the evolution of the hereditary malady. The same may be said of cancer of the stomach and of the whole intestinal tube in a modified degree. In the rectum, it is not uncommon to remark that hæmorrhoids, the result of hepatic congestion, take on a cancerous condition in those who have a cancerous or tubercular constitution. A barrister devoted to his profession, and necessarily leading for a great part of the year a sedentary life, was for a long time troubled with piles, which subsided during his annual vacations. At the age of forty these piles became permanent, and ultimately decidedly cancerous. He was seen by Sir B. Brodie and Mr. Cæsar Hawkins, who had no doubt of the character of the disease, and he died after much suffering. The mother of this gentleman and several sisters died of phthisis; two of his own children have since died of phthisis, there being no hereditary tendency thereto on the mother's side, she herself being quite healthy.

Epithelial cancers, affecting the hand, the cheek, the lip, the penis, are very frequently traced to some injury in shaving, or the accidental scratch of a wart or pimple. The effect of smoking on the tongue has been already referred to. In all these cases there can be no ques-

tion that the local mischief is a secondary exciting cause, in the absence of which the disease may remain dormant for a time, the duration of which we have no means of calculating, perhaps even a lifetime; but the circumstance that injuries of all kinds are of hourly occurrence, and are happily so very rarely followed by the evolution of cancer, shows also most positively, that when such a deplorable event does occur, the constitution of the person injured must have within it the requisite cancerous or tubercular predisposition.

The simplest form of tumour—nasal polypus—occasionally takes on cancerous action. I shall have to show that adenoid tumours sometimes become the nidus of cancerous deposit, and also that tumours which have been defined as ‘fibrous,’ even after extirpation, and with the light afforded by microscopic examination, have nevertheless returned and passed through the stages well known in the progress of cancer. In short, experience points to the conclusion, that cancer, like tubercle, being a constitutional dynamic condition, accepts the accidents and opportunities of local injuries or weaknesses to make outward display of its decaying influence upon the whole body. The one, as a rule, elects the organs most engaged in the propagation and nourishment of the new creature; whilst the other affects mostly those parts which are immediately engaged in the sustentation of the life of the individual. Both, however, show a marked preference for the glands of the body—those structures through which pass the elaborated nourishment derived from the food we enjoy, as well as the waste material which is constantly being thrown off from the system.

CHAPTER II.

DIAGNOSIS.

To know cancer, and to be able to separate it from its allies and counterfeits, is of vast import to the patient; and it is consequently, to the medical practitioner, a question of much anxious study, seeing that its solution is frequently surrounded by no ordinary difficulties. Called upon to give an opinion upon a deep sloughing wound in the female breast, with indurated base and edges, an enlarged gland in the axilla, and occasional hæmorrhages from the open sore, the most inexperienced practitioner would not fail to recognise cancer; but if asked to define the nature of an unattached swelling in the breast, of a warty growth on the lip, of an induration of the os uteri, of an enlarged testicle, of an indurated ulcer on the tongue, or of a tumour in the abdominal cavity; the junior practitioner may well distrust his diagnostic powers, although aided by well-stored lore from learned theses. And, indeed, unless the more experienced brother has had many opportunities of comparing these particular cases, he also even may not be able readily to distinguish the true malady from those which so nearly resemble it. To acquire exactness in the diagnosis of these tumours, much personal observation is absolutely requisite.

As has been previously remarked, the microscope is here of little avail. We require to know, in the majority of cases, the nature of the diseased part before any portion of it can be placed under the field of the magnifying instrument. To do this we have to trust solely to the discriminating powers of the unassisted eye and the sense of touch, governed and aided by the whole medical history of the individual, and the symptoms experienced by the patient himself. Carefully weighing the evidence derived from these sources, we shall, as a rule, be in a position safely and satisfactorily to advise as to the treatment appropriate to the case.

It will be more convenient, as well as more practically useful, to enter minutely into the important subject of diagnosis when discussing the disease as affecting the different organs. In this place I think it will be sufficient if I attempt to mark out the broad outlines which distinguish cancer from other diseases, and the various forms of cancer from each other.

It may be said that *hardness* is the peculiar and almost necessary quality of a cancerous tumour, and such hardness as is only seen in two other instances of diseased structure; namely, fibrous tumour of the uterus, and the Hunterian chancre. Medullary and colloid cancers are not characterised by this peculiar feature; but as they form scarcely five per cent. of the whole, I will venture to exclude them at present from our consideration.

The remarkable hardness of a cancerous tumour has been emphasised by the public under the term 'stony,' and the expression is justified by the sense of incompres-

sibility afforded by the manipulation of these growths. Not only in the breast, where it is most manifest ; but in the lip, in the tongue, in the uterus, in the testicle, on the hand or foot, or any part of the body accessible to the touch, this intense induration of tissue is, I may say, never absent.

The probability of confounding fibrous tumour of the uterus with cancer is very slight, owing to the different behaviour of the two diseases, although from experience I find that it is not quite impossible, in even experienced hands. I saw a lady lately who had been operated on for a supposed fibrous tumour in this situation, and the result showed that the disease was cancerous. It may be, in this instance, as I have seen in a case that I related sometime since to the Harveian Society, that the two diseases were coincident in the same person. In its attacks upon the uterus, cancer rarely commences in the fundus or body, whilst these are the parts especially selected by the fibrous tumour. When cancer forsakes its usual point of attack ; namely, the os and cervix, and involves the body of this organ, it may be distinguished from fibrous tumour by the sense conveyed to the finger, when introduced per rectum, of a hard swelling of the whole uterus ; whilst a fibrous tumour will almost invariably convey the idea of a hard round body, thrown out from a somewhat more pliant and yielding base. The hardness of a Hunterian chancre is certainly very nearly as absolute as is that of cancer, but the circumstances of the case are generally so different that one would imagine the diagnosis of these two diseases could not be confounded. I have, however, had occasion to observe cases where

there has been a halting between two opinions in this matter. In a young woman I saw at the Royal Free Hospital, it was a matter of some doubt whether a round ulcer, with an indurated base on the lower lip, was cancer or primary syphilis. Diligent search over the surface of the body, and digital examination of the occipital, submaxillary, and cervical glands, soon decided the question. Some characteristic secondary spots were beginning to show themselves on the chest, and the submaxillary and cervical glands were somewhat enlarged and painful. In a case of cancer of the penis which was for a long time under my observation, the surgeon first consulted had considered that he had to do with syphilis, and treated it both locally and generally with mercury. The patient, a gentleman of about seventy, came to me, believing that he had syphilis. He had been suffering from an indurated sore on the prepuce for four months, and the treatment employed had had no beneficial effect. The sore was very hard and sloughy, certainly much resembling what one has seen in younger men, but beyond that the whole penis was unnaturally indurated. I had no difficulty in at once deciding that it was a case of cancer, and the death of the poor old gentleman two years afterwards confirmed my diagnosis. This case will be found recorded in a subsequent page.

The next great characteristic feature of cancer is *pain*.

CHAPTER III.

PAIN.

THE formation of pus in any of the tissues, but more especially in bone, is attended with the most acute suffering. Sharp and frequent lancinating pains, preventing sleep, destroying the appetite, and wasting the powers of life, are the accompaniments of an abscess. Most of us have endured this torture in the simple form of a whitlow. The pain of cancer, often endured for years, is only paralleled by the severe but happily temporary suffering I have just referred to. This stabbing pain is certainly very characteristic. It is not constant, or the patient could not live; but comes at uncertain intervals, and is so startling as well as severe, that it makes the sufferer bound from her chair or couch, not infrequently with a sharp cry of anguish. It is as though a dagger had been thrust into the tumour. This peculiar pain is remarked in whatever part of the body the cancer may be situated. The breast and the uterus are the parts in which it is most distinct and most distressing; but it is to be observed in cancer of the rectum, of the tongue, of the lip, of the eye, and of all the internal organs. The diagnostic value of this peculiar pain is very great, inasmuch as it does not

accompany the tumours which may be confounded with cancer, except in two instances presently to be mentioned, and is very seldom absent in all true cancers. The exceptions I refer to are mammary abscess dependent on lactation, and a deep-seated chronic mammary abscess the result of an injury.

It is not necessary for me here to describe the well-known symptoms of acute inflammation of the mammary gland, resulting in abscess. Although the pain may be similar, the absence of extreme hardness of the tissues, and the disposition to form sinuses in the milder form of disease, will be ample guides in the differential diagnosis of these two maladies. Much difficulty may, however, be often felt in distinguishing chronic mammary abscess from a scirrhus. The pain is certainly, in the former, dull, heavy, constant, and wearying; but it is not always free from the shoots, and darts which belong to the latter; and it is only by carefully sifting the evidence as to hereditary predisposition, injuries, age, &c., and taking into account also the somewhat less hard and less heavy tumour which forms the wall of an abscess, that we can approximate a diagnosis. The only positive method of distinguishing the two diseases is exploration by the grooved needle. This is neither a painful nor an injurious proceeding in either case, and is so decisive that it should never be omitted in any case admitting of doubt.

I will not say that adenoid, fatty, and fibrous tumours never give rise to the stabbing pain characteristic of cancer. But the pain I am speaking of is so rare a circumstance in these simple tumours, that its occasional presence by no means diminishes the important dia-

gnostic value of this symptom. As in the diagnosis of any other disease, this symptom requires the support of its colleagues.

The only other very distinctive attribute of cancer is the disposition of the tumour to invade the neighbouring tissues; and substitute its own unhealthy material for the natural structures. This is observed in all the forms of cancer. The breast or the uterus will be converted into a scirrhus or encephaloid mass, leaving no trace of the original organ; and the tongue or lip may be entirely infiltrated with epithelioma, supplanting altogether the healthy muscular structure of these parts. This substitution of parts is not observed in other tumours, and the only approximation to it is to be found in tertiary syphilitic deposits in the muscles. The tongue occasionally becomes the seat of this kind of apparent substitution. It is wholly indurated, or there is a hard lump in some part of it, more generally the centre. The hardness, however, is not very intense, and very commonly there is a crack, or sinus, or several, which shall not have the hard everted edges of the sinuses observed in true cancer. The resemblance, however, of these two morbid states is sometimes so great, that we have to await the effect of treatment in resolving the doubt.

The various minuter points of distinction, by which we may know cancer from its allies and counterfeits, in the different organs and structures of the body, will be described when treating of the disease in its local manifestations. I have been content here to indicate the major signs, or symptoms, which of necessity accompany all cancers.

The importance of distinguishing one cancer from another, is of less practical value than the distinction of this from other diseases; inasmuch as the different forms of cancer are not infrequently found united in the same person, and occasionally exchange their peculiarities in the progress of the same tumour.

In times past we had a multiplicity of names, associated with the various growths which were supposed to be of a cancerous nature, and if I do not attempt an analysis of this nomenclature, and bring it into accord with the greater knowledge of the present day, I trust that I shall not be thought to slight the knowledge and abilities of the great surgeons who exhibited their skill in investigating and their ingenuity in giving names to these tumours. The microscope has so revolutionised pathology, that whereas formerly theories were founded on circumstantial evidences, we have now demonstrative facts to guide and govern them. Accepting, then, the nomenclature of the present day, as that which represents our knowledge upon this subject, we have to discuss the differences between scirrhous, epithelial, medullary, and colloid cancers.

These may be fairly looked upon as representative forms of disease having sub-divisions which should be kept strictly in their subordinate position, in order that the student may not be confused by a multiplication of names which do not represent different things, but simply different stages of the same tumour.

Scirrhous is the form of cancer which prevails in three-fourths of the cases that present themselves at the Cancer Hospital; and I believe that about the

same relative proportion is observed at the Middlesex Hospital and at St. Bartholomew's. It should, therefore, take the lead in any description of cancer.

Scirrhus has its preference for the breast and the uterus, and these, as it happens, are the parts most prone to be selected as the seat of cancer. Of 4261 cases seen at the Cancer Hospital, 2745 were cancerous affections of the breast in man and woman. 712, the largest number next in succession, has reference to the uterus and vagina.

This, therefore, is the form of cancer which comes most frequently under the notice of the surgeon, and, from its resemblance to less formidable tumours, requires the utmost care and thought in arriving at a correct diagnosis.

A scirrhus tumour when first recognised is a very hard lump, the size of a walnut, attached to the neighbouring structures, and moving with them, not independently of them, as is the case in adenoid tumours. It is almost invariably a circumscribed tumour. You can handle it as you would a cricket-ball, and its weight is very considerable. You can press it between your fore-finger and thumb, and make no impression on it, and as a rule not give pain in so doing. At this stage we may or may not have the stabbing pain previously referred to; but if it be cancer, we shall almost certainly have a history of cancer or phthisis in some member of the family. Should there be authentic evidence of a blow, and no constitutional taint, there will be good reason to hope that no cancer is present. If the tumour slips glibly beneath the finger and thumb, has an almond shape, and is wanting in the extreme hardness I have

pointed to as characteristic of cancer, we may safely pronounce that the tumour is innocent.

This hard lump grows generally slowly, but sometimes rapidly. It attaches itself to the skin, or to the subjacent tissues; and gradually both these structures become involved in the disease. This is not the case in innocent tumours. Central disintegration is also going on, and the hard cricket-ball is giving way at its most exposed surface, so that the products of disintegration may have a method of escape. We have thus established an open cancer. Periodical sloughings very generally ensue as a sequence to this stage of the disease, and portions of the tumour are thrown off from time to time. In strong women I have seen the whole of the cancer thus eliminated, and a healthy cicatrix form over the seat of the disease. In the majority of cases, however, hæmorrhage which accompanies this process, reduces the powers of life too much to admit of this fortunate termination, and death ensues from exhaustion.

There is happily another direction taken by a scirrhus tumour, in a very large number of cases. At an uncertain period, the unbroken scirrhus not infrequently ceases to increase. It then imperceptibly wastes, and the breast itself partakes of the atrophic action. The shrivelling of the tumour and of the gland go on simultaneously, and we have the satisfaction of seeing this formidable disease subside, with the loss only of the organ it had selected for attack. Examples of this atrophic cure are more numerous than is generally supposed: some instances will be found recorded in the course of this work. Scirrhus, as observed in the

uterus, and in the internal organs generally, has a more obscure history. It is not recognised until it is more fully developed, and when in the majority of cases it has proceeded to the ulcerative stage.

Scirrhus of the uterus is developed at an earlier age generally than scirrhus of the breast. The severe effects of parturition have an indisputable influence in lighting up the constitutional malady more quickly than it would otherwise show itself. The ulcerative stage succeeds very rapidly to the scirrhus condition, and from the position of the organ, as well as from the more obscure character of the earlier stage of the complaint, the application of remedies is more difficult and less beneficial than when the disease attacks the external organs. Great increase of temperature in the vagina is an invariable accompaniment of the scirrhus uterus, and few persons would fail to recognize the nature of such a tumour by digital examination only, from the sensation of cartilaginous hardness communicated to the finger. It is fortunate that such is the case, inasmuch as the use of the speculum is greatly to be deprecated, owing to the suffering induced and the frequent mischief done by its introduction. The sense of touch, in this instance, is certainly of far superior value to the sense of sight, in a diagnostic point of view.

It is said by Dr. Tanner that the medullary form of cancer is by far the more frequent in this organ, but I am not enabled to endorse this opinion. It is not at all unlikely that he has the opportunity of seeing this disease at an earlier stage than we generally see it at the Cancer Hospital, and when it may present itself in that nodular and vascular character which would obtain

the name of medullary. Coming as these patients do to the Cancer Hospital after an opinion as to the malignant nature of the disease has been given and consequently when it is in a somewhat advanced stage; we rarely find anything but a hard scirrhus ulcerating mass, by no means so vascular as is observed in the medullary cancer of other parts of the body, and not, as a rule, attended with such hæmorrhage as cannot be readily controlled by styptics. Epithelioma of the os uteri is not uncommon, and will be recognised by a tripe-like growth around the os, without an indurated base. It takes also the form of a spongy growth, of the denominated 'cauliflower excrescence,' and this also has no hard base, and may frequently be removed with favourable results.

Scirrhus of the stomach, and of the internal organs generally, are all sufficiently described in systematic works on medicine by eminent physicians, but I shall have a few remarks to make when considering the incidence of this disease in these various organs of the body.

The epithelial form of cancer comes next in frequency to scirrhus, and although it embraces very nearly all the cases of cancer in men, it still represents less than one-third of the cases of scirrhus. The numbers recorded at the Cancer Hospital are—Scirrhus, 3287; epithelial, 998.

The most frequent seat of epithelioma is the lower lip, then the tongue, then the penis, vagina, and rectum. The back of the hand is a curious, but not very uncommon point of attack, and when the fauces or œsophagus are unfortunately the subjects of this cancer, it is generally in the epithelial form.

I would insist upon *hardness* as a necessary concomitant in epithelioma no less than in scirrhus. If there be no indurated base to an ulcer, or scaly or warty growth, affecting any of the parts mentioned, as most liable to this form of disease, I would reject the idea of malignancy. I have had so many opportunities of watching growths upon the lips, and tongue, and other parts supposed to be cancer, but which had not this especial symptom, that I feel myself warranted in giving a very strong opinion, that without an indurated base, there is no epithelial cancer.

On the other hand, hardness is not sufficient of itself alone to indicate an epithelial cancer. For instance, a man comes with a tongue, the whole of which is indurated, and it has clefts in it, not unlike those which occur in cancer. If you press this tongue between your finger and thumb, you find that you can make an impression upon it. It is not so hard as it looks, and it is not so hard as cancer. The clefts, moreover, are clean cracks, and not gaping ulcerated wounds. You may or may not have a history of syphilis in such a case, because men forget or hide their early indiscretions. But you have a sure guide to diagnosis in such cases, beyond the suspicion which is excited by the absence of the extreme hardness of cancer. Whenever there is reason to suppose that such a disease may not be cancer, it is only necessary to administer iodine in some form, either as iodide of potassium or iodide of iron, and the result will be either a quick cure of the disease, supposing it to have a syphilitic origin, or no result, in the event of its being cancerous. Warty or scaly growths upon the

lip often give rise to much concern on the part of those who suffer from them, under the idea that they are of a cancerous nature. They are generally more nearly allied to the skin diseases known as psoriasis and ichthyosis, and I have not unfrequently seen the tongue affected in a similar manner. The obstinacy of these affections is very remarkable, and they return again and again after removal by operation; but nevertheless they are not cancerous, they have no indurated base, and they are not followed up by disease in the neighbouring glands.

Epithelioma begins as a pimple or crack, or occasionally in a mole or wart, which has received some accidental injury. It acquires an indurated base, and sooner or later ulcerates. This ulceration is but little influenced by stimulating applications, and is disposed to extend. The ulceration very generally eats deeply into the substance of the tumours, and after a time the neighbouring glands become hypertrophied and painful. If the original tumour be removed before the glands have become affected, many years may elapse before the disease reappears, but when once the glands have been implicated, removal of the primary seat of the disease will only aggravate the malady, and hasten its progress.

Epithelioma in some instances never loses its warty character. It begins as a warty growth, it does not ulcerate, but extends in this form over the neighbouring tissues and supersedes them entirely; so that we have a large mass of indurated warty substance occupying the place of the lips, prepuce, or the labia pudendi. The skin of the hand and foot are also sub-

ject to this peculiar growth, and the chimney-sweep's cancer, now happily so rare, begins in this manner. The induration of lupus, or of keloid disease, is by no means so marked as in epithelioma. It does not descend so deeply into the tissues, neither is it of that inelastic character which indicates true cancer. Moreover the common points of attack are few. Lupus has its preference for the *alæ nasi* and the cheeks, parts rarely affected by epithelial cancer; whilst keloid is confined to the skin, and is generally found upon some part of the trunk of the body.

Medullary or soft cancer is known under many names—encephaloid disease, fungus hæmatodes, hæmatoid cancer, melanosis, &c. These terms but represent the different stages of that form of cancer, which is as nearly universally characterised by the softness, or compressibility of its structure; as is scirrhus, by its hardness. Medullary cancer has been seen in all parts of the body, but it has its preference for the eye, the testis, the breast, and the uterus. It is of rapid growth, and at an early stage exhibits the highly vascular condition, which is one of its most distinctive features. It is that form of cancer which attacks the very young. I have seen it at the age of four years in the eye, as well as in the testis, whilst I cannot call to mind more than one or two such cases, in persons past sixty. From thirty to thirty-five is the period of life at which medullary cancer is mostly to be observed. It begins as a small lump, which grows quickly, and soon infiltrates the neighbouring structures, rendering them highly vascular, almost purple; and is attended with considerable suffering, the pain being of

the same stabbing character which accompanies scirrhus. The tumour sometimes attains a very large size, and becomes a most unsightly object. In a drawing taken from a patient in the Cancer Hospital, and preserved in the museum, it may be seen how such a medullary mass grew from the dura mater covering the anterior lobe of the cerebrum, and passing through a small aperture made by absorption in the occipital bone, it extended itself over the whole of the anterior half of the head, and falling down over the eyes and nose, covered entirely the upper part of the face, before it destroyed the unfortunate patient. In the eye, and in the testis, this tumour reaches a great size; and has generally a very dark appearance. In the breast, disintegration takes place very rapidly, and sloughing, accompanied with severe hæmorrhage, repeats itself until the powers of life are exhausted; or, as in some few favourable instances, the whole breast being destroyed, healthy granulations begin to appear and cicatrization is effected. In the uterus it pursues a similar course, but on the back, as I have sometimes seen it, and on the extremities, it is less destructive in its tendencies, and more amenable to therapeutic measures.

The bones are subject to this form of cancer. I made a post-mortem examination some years ago of a man who had been under my observation for a cancer of the cheek, and when I cut down upon the malar bone, I found that it yielded as readily to the knife as if it had been a portion of brain. All the bones of that side of the face had, in fact, been entirely deprived of their osseous structure, and were converted into something very like adipocire. I have seen this

since in a modified degree, in those remarkable cases, in which the bones of the extremities, and even of the trunk—the ribs especially—are observed to fracture, without any assignable cause. In an old lady who was placed under my care in the Royal Free Hospital for fracture of the thigh, and in whom I noticed an old dry scirrhus of the breast, positive union took place at the seat of fracture, and there was a very evident deposit between the ends of the bone; but it was quite compressible and the femur could be bent at nearly right angles without giving her suffering. It remained in this condition for some months, until she determined to go home to Wales, a journey I believe she lived to accomplish, although her age must have considerably exceeded the biblical limit. It is satisfactory to know that this most intractable of all the forms of cancer is observed in only four and a half per cent. of all the cases seen at the Cancer Hospital.

Colloid cancer is much more rare even than the preceding, and differs very remarkably from all the other forms. It consists of a congeries of gelatinous cysts, generally of the size of a hazel-nut, containing serous fluid, and having an investing envelope of delicate structure, which binds the cysts into a connected mass. The most common seat of this form of cancer is the abdominal cavity, but I have seen it in the external parts of the body, and sometimes intimately associated with the periosteum of the long bones. In the loose textures of the neck, where there is nothing to control the expansion of this cystic formation, I have seen large deposits of this abnormal development. It grows rapidly, and to an enormous size, rarely proceeds to ul-

ceration, and would seem to effect its destructive agency by encroaching upon and spoiling the uses of the organs, necessary for the sustentation and prolongation of life.

Now it will be found, in the investigation of the peculiarities of cancer, that although the distinctions of scirrhus, epithelial, medullary, and colloid, are useful and wise, and practical, and founded on natural laws; nevertheless there are cases in which these different forms pass into each other, and in which all these peculiarities may be seen affecting the same patient. These cases of combination are sufficiently rare to make the distinctions valuable in practice, especially as marking in a great measure the degree of malignancy attachable to each case; but they at the same time show the common character of all these forms of disease.

It remains to be noted that, both in the scirrhus and in the medullary form of the disease, but more especially in the former, cysts, or apertures containing serum and occasionally blood, will form within the substance of the tumour, or around it, and that these cysts may again be filled by solid cancerous growth proceeding from their inner walls. These cystic formations are always multiple, and in very rare instances the primary form of a cancerous tumour. They are developed in the course of the growth of a scirrhus or medullary tumour, and it would only be misleading and confusing the student to attempt to place them in a class by themselves. There may be no harm in employing the terms cysto-scirrhus, and cysto-medullary; but I would rigidly exclude the term cystic alone, from the nomenclature of any of the cancerous tumours, seeing that so many tumours not

cancerous would be necessarily included in such a term ; and the confusion we are now only gradually sweeping away would be indefinitely prolonged. Passing from this general description of cancer, which was necessarily introduced to avoid repetition, we will now direct our attention to its developement in the different tissues and organs of the body ; and to the differences between it and those other morbid products which in some measure simulate it, and are not infrequently mistaken for it, by those who are not skilled in the diagnosis of these tumours. The order of precedence I shall adopt will be governed by the relative frequency of the disease in the particular organ.

CHAPTER IV.

THE BREAST.

THE female breast is beyond all others the most frequent seat of cancer. It is likewise subject to tumours, and other painful affections which result from lactation, or from the intimate sympathetic association it has with the uterus and ovaries in all their important functions.

Even in the new-born infant we see occasionally a swelling beneath the small nipple, with a surrounding blush of the congested vessels. The experienced nurse sucks the part, and she tells you that she obtains veritable milk by so doing. At any rate we know that the swelling subsides in consequence, and no permanent effects remain. I am not aware that cancer has ever been seen in the breast before puberty. At or about that period, it is not an uncommon thing to see a girl with a very painful swelling beneath the nipple, which gives great uneasiness to herself and her female friends, and sometimes continues to be a source of trouble for a long time. I have sometimes seen an abscess result from the high vascular action which has been set up. My own experience in these cases leads me to think that such a result is unfortunate, as it may endanger the future functional action of this important gland; and because appropriate treatment, timely employed, will

always ward off such a termination. Cooling lotions instead of hot poultices should be advised, and when the inflammation has subsided, the part should be shielded by some simple unirritating plaster spread on thick brown leather. The peculiarities of the constitution will of course require to be attended to, and tonics or aperients administered according to the necessities of the case. Although the gland may remain enlarged for many months in these young girls, it always subsides upon the regular establishment of the menstrual flow, and I have never seen it degenerate into cancer. The probable result is that the nipple will be inverted, and when the time comes for performing the function of lactation, a difficulty is experienced by the infant in applying its wonderful powers of suction, and so we may get bad secondary results from the non-performance of the natural functions of the breast.

Supernumerary nipples, like supernumerary fingers and toes, are curious freaks of nature, which need not arrest our attention. Young ladies are, however, sometimes urgent to have such a peculiarity removed before marriage, and as it is very readily effected, and no harm can ensue, I have yielded to the wishes of the patient, and, with a pair of sharp scissors, snipped off a pendulous second nipple, which was attached to the original one. The softness and vascularity of the extra growth are sufficient indications of its innocent nature. Many cases of these extraordinary developments are on record, and recently a very interesting one has been communicated to the medical journals by my friend Dr. Greenhow, of the Middlesex Hospital.

Mammary abscess in connection with child-bearing

and lactation is often a serious and always a very painful event. It may or may not depend on sore nipples, and I have sometimes seen it follow a blow. Owing to the looseness of the tissues, an abscess in this region does not obtain that compact character which is observed in other parts of the body, so that the matter burrows in various directions, and many sinuous openings may result instead of one. The hardness which accompanies mammary abscess is very considerable in some cases, but seeing that it is diffused over the whole breast, and does not communicate to the hand the sensation of a circumscribed tumour, there need be no fear of mistaking this for a scirrhus.

It is always very difficult to cure a milk abscess in one breast whilst the other is kept in action. The cases I am accustomed to see are those of persons who have generally undergone the usual treatment for many weeks or months, and to whom, therefore, decided remedies must be applied. Weaning the child is the first and most absolute requirement, without which no remedies will avail. Then if there be much inflammation, cold lotions or iced water should be substituted for the usual hot poultices, and the constitution should be supported by good diet, with wine or beer, and quinine with acids. The inflammation will thus subside, and the sinuses will be disposed to diminish and close. I would especially observe that probing the sinuses is a most injurious and utterly useless proceeding, which should be entirely abandoned. Injecting them also with stimulating lotions is of questionable advantage. When the inflammatory action has ceased, if the breast be covered with a stout leather plaster of

lead and adhesive plaster, and the constitution is well kept up, there is no case of mammary abscess that will not yield to this treatment. I have seen many of the most aggravated and protracted forms of this disease, and have never failed, with the above recommendations, to effect an entire and speedy cure. It may be said, What has this to do with cancer? This much: many of these poor women have been told by their good-natured friends that as their breasts remain bad so long, it must be something more than a common abscess, and thus they come to the Cancer Hospital. I will not say that there is not occasionally a case which by its persistent hardness may embarrass a young practitioner, but for his comfort I may assure him, that I know of no case of cancer in the female breast that has taken its immediate origin from a milk abscess.

Proceeding with this slight, but I trust sufficient sketch, of what is not cancer of this particular organ, in order that we may by an exhaustive process arrive at a true diagnosis of what is cancer, I will now direct the attention of my readers to those glandular engorgements which have received the name of adenoid tumours, or adenocèle. Commencing as a small almond-shaped tumour very loosely attached to the surrounding tissue, and gliding with great freedom under the skin when pressed by the fingers, it may grow to the size of a duck's egg, or even larger. It is seldom solitary, never attaches itself to the skin, and within my experience never suppurates, so long as it remains simply an adenocèle. This tumour is observed more generally in the *mammæ* of unmarried females. I have seen it in men. In nearly every case that I have noted,

there has been a history of an hereditary tendency to phthisis. It would seem that this tumour is an expression of the tubercular diathesis, and experience shows that the treatment for this departure from the healthy standard, avails for the cure of these adenoid tumours.

There are cases which, I have been loth to believe, resulted from sexual irritation, and in such the tumour is excessively sensitive. It is almost an impossibility for the surgeon to hint at the supposition he may entertain as to the exciting cause in these cases; and moreover the habit, when once established, is so inveterate, that nothing but matrimony will overcome it. I have seen tumours thus produced disappear entirely on the occurrence of pregnancy. A few short notes of the simpler forms of the adenoid tumour will, perhaps, convey more practical information than a more elaborate description.

Sarah S., age thirty-two, a single woman, was admitted a patient at the Cancer Hospital July 23, 1861. Three years ago, after a blow, she perceived a small swelling in the left breast. She had been for some time much troubled with rheumatism. There was phthisis but no cancer in her family. Catamenia regular. The tumour on admission was very movable, slightly tender, and the size of an almond. The treatment adopted was a plaster to shield the breast from irritation; cod-liver oil and tincture of bark with hydrochloric acid. She continued under observation for a twelvemonth, and was then discharged quite cured. The tumour had entirely disappeared, and the rheumatism also was gone.

Ann B., age thirty-five, married. Has had three children and suckled them. Was admitted a patient May 1, 1862. Six months since a small tumour made its appearance in the left breast above the nipple. It was very movable and the size of an almond. No history of cancer in her family. No injury. The treatment consisted of a shielding plaster, and tincture of serpentary with chloric æther. On July 24, three months after her first visit, the tumour had quite disappeared.

In the case of a single girl aged about twenty, the notes of whose case I have mislaid, I excised one of these adenoid growths. The parts healed rapidly by first intention, and there was no return of the tumour. Upon examination under the microscope no cells were observed. There was an investing membrane embracing the whole structure, and it had no other appearance than that of an hypertrophied gland.

The drawing I have given to show the contrast between an adenoid tumour and a scirrhus is a good average specimen of the appearance presented by the section of an adenocèle, when first removed. It was taken from a tumour I excised, in February 1865, from the breast of a lady, who desired to have the operation performed. It had been growing for two years, and although not the seat of any severe pain, was a source of annoyance to her, and moreover it was increasing. She had several relations who had died of phthisis. The operation was perfectly successful, and I directed her to take cod-liver oil, by which means her general health, which had been somewhat impaired, was greatly improved.

These tumours are however rarely single, as in these

instances, but generally numerous, and in such case need never give rise to any possible doubt as to their nature, and the course of treatment to be adopted. In the following instance, however, both patient and friends having made up their minds that it was a case of cancer, I had some difficulty in convincing them of the possibility of curing the patient.

Susannah S., age forty-five, from Norfolk, a single woman, was admitted a patient on October 30, 1862. She is a very nervous excitable person, very desponding, very thin, and generally much out of health. She had at the time of admission five adenoid tumours in and about the right breast, and three above the clavicle of the same side. They varied in size from a hazel-nut to a crow's egg, and were excessively tender. There was no cancer, but much phthisis in her family. The tumours had been present for seven years, and she had not previously adopted any treatment. I covered the parts with the lead and soap plaster, and ordered her cod-liver oil with tincture of bark and hydrochloric acid. It was some time before her health began to improve, but at the end of a twelvemonth the tumours had very considerably diminished, and she had gained flesh, and at last confidence in the possibility of being cured. The progress continued through the next six months, and in June 1864, when I last saw her, she had become stout and ruddy, and the tumours had entirely disappeared.

The following case was one in which a doubt might have been fairly entertained owing to the presence of an hereditary predisposition to cancer as well as to phthisis, and the result could not fail to be in the highest degree satisfactory.

Mrs. B., age forty-four, married. Has suckled ten children. Was first seen March 17, 1864. Stout, but pale leucophlegmatic person. Catamenia regular. A great aunt died of cancer, and many members of the family on the mother's side had died of phthisis. Two years ago she had mammary abscesses in the left breast, and after that some swellings remained. Recently there has been an increase in this swelling, and upon examination I found two hard tumours, each the size of a pigeon's egg, deep-seated in the breast, and closely attached to each other. There was considerable pain on pressure. She had received no previous treatment. I ordered a strong lotion of liquor plumbi, and the tincture of bark and acid. In one month there was considerable diminution of the tumours, and the pain was relieved. In two months the tumours were less than half their original size, and on June 16, just three months after her first application to me, these large tumours which had given much mental and bodily distress, and excited suspicions of an alarming nature, had absolutely disappeared.

A remarkably instructive case of sudden absorption of an adenoid tumour, is under my observation, the history of which is as follows :

Louisa S., aged forty-five, a single woman, admitted September 8, 1864, in a very emaciated condition. Five weeks previously she had been attacked with erythema nodosum on the legs, and severe pain at the præcordium. At the same time a large hard lump which had existed in the right breast for five years disappeared entirely. The catamenia irregular. When first seen the erythema was still visible in patches on both legs, and there

was certainly no tumour in either breast. She was ordered quinine in full doses and generous diet. September 22, better. November 3, nearly well in general health, and is gaining flesh. At this time a very small lump could be felt in the right breast. December 15, the tumour in the right breast has grown as she got stronger, and now there is also one appearing in the left breast. Ordered sulphate of iron and cod-liver oil. Under this treatment she has progressed very favourably. The tumours in both breasts, after attaining the size of a duck's egg, again gradually diminished, and in March 1865 they had nearly disappeared. They never attained the extreme hardness of a scirrhus, and there was no severe lancinating pain. It has been said that erysipelas occurring in a case of cancer will cause absorption of the tumour, and I have seen instances in which there has been a considerable reduction of its size, but for a time only. The sudden absorption of so large a tumour shows what may be done in nature's own workshop, and it is for us to take heed of these exceptional cases, and apply the instructive lesson. That these tumours may be entirely absorbed is quite certain, but the above case does not suggest that we should, by the exhibition of any violent derivative, make such a call upon the absorbents as shall compel them to use up at once all the effete matters of the body, amongst them these glandular enlargements. The erythema nodosum did such work in this instance, as fever has also been known to do in cases of syphilis; but unless the patient is destroyed by this peculiar antidotal treatment, the primary disease returns when the balance of supply

and demand is restored, and we have again to seek its remedy. That such remedy is at hand, the cases I have recited will prove. Increased nourishment in every shape seems to be the means of attaining the desired end, and when the tissues are by this means restored to a healthy standard, the absorbents participating in the general improvement do the work appointed to them, and sweep away gradually all obstructions to the perfect working of the machine.

That other class of adenoid tumours to which I have referred as depending on uterine irritation, or sexual excitement, can only be got rid of by overcoming the exciting cause. If that difficult object can be accomplished, the tumour will be quickly absorbed.

Elizabeth P., age forty-two, single woman, admitted February 25, 1864. Had been the subject of adenoid tumour of the left breast for six months. The size of the tumour was that of a walnut, and gave much pain. There had been no injury to account for the tumour, and there was no history of either cancer or phthisis in her family. For some time the catamenia had been irregular and accompanied with great suffering.

The breast was covered with a plaster as in the other cases, and she took at first tincture of bark and hydrochloric acid, and subsequently the tincture of iron with phosphoric acid. It is unnecessary to give the progress of the case, which was a gradual improvement; and on July 21 my note is, 'The tumour is quite gone, general health good, catamenia regular.'

Elizabeth H., age thirty-six, married. Admitted March 12, 1863. Painful adenoid tumour the size of a walnut in left breast. She had five miscarriages,

and is much troubled with leucorrhœa. No cancer in family. Her father died of hip disease. The tumour first appeared two months before admission, and iodine had been applied ineffectually. The treatment was directed principally to the uterine complication. She was ordered an injection of sulphate of zinc and alum, with some medicine consisting of tincture of bark and hydrochloric acid. The tumour was covered with the usual plaster. On September 24, 1863, the tumour was quite gone. The leucorrhœa also had ceased, and her general health was greatly improved. I have directed her to let me see her from time to time in order that I might test the permanence of the cure, and I find that my last note is dated August 11, 1864, when she was 'quite well.'

Here is a case in which the hereditary tendency to both cancer and phthisis was present, accompanied with the habit of sexual self-abuse, to which I have referred as an occasional cause of these tumours.

Ellen B., aged twenty-four, single, has had a movable tumour in the left breast for two and a half years. It is now (August 10, 1864) the size of a walnut, and is not very hard, although extremely sensitive on pressure. An aunt died of cancer, and her sister is dying of phthisis. Catamenia regular but very painful, and there is much leucorrhœa. The breast was covered with the soap and lead plaster, and she was ordered to bathe with cold water and to take an alkaline tonic. The leucorrhœa was somewhat checked by these means, but the tumour remained, and was equally painful up till November; when, feeling convinced that the little impression made by the treatment was

due to some peculiar exciting cause, and having my suspicions aroused by the peculiarly flushed countenance and heavy senseless eye, I ventured as delicately as possible to perform the distasteful duty of charging her with the practice of self-abuse. I had not much difficulty in eliciting a confession to that effect, and then immediately put her upon bromide of potassium with cod-liver oil. The effect was highly satisfactory. In a month her countenance had cleared wonderfully, and the tumour was much less painful. In 1865, January 5, the tumour was nearly gone. On the 19th it was quite gone.—February 2: No tumour now. Menstruation is very much less painful, and there is no leucorrhœa. The bromide of potassium is certainly a very valuable anti-aphrodisiac, and, as has been recently shown, may be prescribed safely in considerable doses, as a cerebral sedative.

My own feelings lead me to think that I should only weary my readers by continuing this recital of cases in illustration of the various points of interest which crop out in the course of this inquiry. I trust, therefore, that I am only doing as I would be done by, in not multiplying, as I might very largely, the recital of these illustrative facts.

I come now to a very important and remarkable class of cases, which seems to me to be that link between the innocent and the malignant tumour which has been denied existence by nearly all the surgeon of the past generation, but with doubts and reserves, by the most experienced of the present time. The venerable Velpeau, having defended all his life the impossibility of the conversion of an innocent to a

malignant tumour, has, in his latest work on Disease of the Breast, hinted a doubt that a tumour which had existed for twenty years, and upon removal had proved to be medullary cancer, could have been such from the very commencement. M. Lebert also has in two instances seen tumours which were at first of an innocent nature, but afterwards assumed a cancerous condition. Mr. Paget says, 'It need not be denied that cancerous growths may occur in tumours that were previously of an innocent kind, but I feel quite sure that these may be regarded as events of the greatest rarity.'

It certainly may be an accident, that cancer is set up in an already existing innocent tumour, that the circumstance is a *post hoc*, and not a *propter hoc*; but when I have proved the statement I have already made, that phthisical parents beget cancerous offspring, and cancerous parents have phthisical children, that tumours of long standing, having none of the characters pertaining to cancer, suddenly assume an active cancerous condition, I think these occurrences must be looked upon as something more than mere accidents, and we shall have to acknowledge in these matters, as in all the other gradations of nature, that there is a gently declining scale or staircase, each step of which is connected by an accompanying balustrade. And this scale is not only an ascending but a descending one.

The most recent expression of strong views on this question has appeared in a late number of the Guy's Hospital Reports, in which Mr. Thomas Bryant reports that 'tumours never change their original nature, nor

pass nor degenerate into others of a different kind; that a simple tumour is simple to the end, and a cancerous tumour cancerous from the beginning.'

It is as a practical matter having reference to methods of treatment, that I am induced to question the soundness of this teaching; and upon that ground it will, I think, be conceded that we should be guided rather by clinical experience, than by the results of microscopical examinations.

Let the impartial student examine the following cases, and decide for himself whether there has not been something very like a progress from an innocent to a malignant tumour in each of them.

Ann R., age fifty-one, a large placid healthy-looking person of quiet temperament, has had for *nine* years a small movable tumour, the size of a peach-stone, situate just beneath the clavicle of the right side. It made its appearance after the application of a blister. She is married, has had four miscarriages but no children, and the catamenia ceased four years ago. Her mother died of phthisis, and several brothers and sisters died young. She came under my care February 19, 1863, and has had no previous treatment. When first seen the tumour was freely movable beneath the skin, but it was at that time increasing in size, and the surrounding parts were somewhat inflamed. Gradually this tumour became attached to the superincumbent skin and also to the rib beneath. It was covered with a shielding plaster, and the general health was promoted by bark and acid, by iron, and by cod-liver oil, varied to suit the eccentricities of digestion. Little alteration took place in the tumour for a twelvemonth, but in February

1864 it became highly inflamed. There was much lancinating pain, and it increased to the size of a walnut. It was now treated antiphlogistically—poultices were ordered, and the active process quickly subsided. After this there were periodic attacks of the same character, the skin ulcerated, bleeding ensued, and her general health suffered in consequence. In May an enlarged gland in the axilla was perceived, and the tumour had increased. In June the bleeding, which had been frequent, was stayed by an application of the muriated tincture of iron. On the 4th of August there had been no bleeding for a month, the tumour had somewhat diminished, and her general health was improved. The tumour, however, remained a very hard scirrhus mass, sessile and immovable over the first rib, ulcerated on its surface, bleeding occasionally, and attended by its satellite in the axilla. We have here the history of a tumour for ten and a half years. Its early appearance was that of an adenocoele, and she had the phthisical predisposition which accompanies these tumours. Its latest phase is certainly that of scirrhus. She is taking cod-liver oil with much advantage.

Eliza B., age forty-four, married—one child which she suckled. Admitted May 28, 1863. Catamenia regular. No cancer in family, but father's sister died of phthisis, and her own sister has adenoid tumours in both breasts. She had been previously under treatment at St. Bartholomew's Hospital. A small movable tumour appeared in her right breast *fourteen* years ago, and when she first came under my care the tumour was beginning to obtain attachments to the subjacent muscle. In the autumn of 1863 the superincumbent skin

also became adherent to the tumour, which had increased in size; and in May 1864, there was much active progress of the disease. The whole breast became hard and nodulated and inflamed, and ulceration ensued. An ulcer with an indurated base was established beneath the nipple, and there was very severe darting pain. Enlarged glands in the axilla also appeared. Several times did erysipelas set in and so reduce the patient that I despaired of her recovery, but she weathered these storms, and in August 1864 she was still able to come to the hospital.

At that time there was atrophy of the whole breast, with surrounding tubercles, and the ulcer, now the size of a crown piece, showed a disposition to become glazed over. Another attack of erysipelas in the spring of 1865 induced her to become an in-patient, and she is now (June) taking cod-liver oil, and is moderately comfortable. The treatment has been of a supporting character. — Bark and hydrochloric acid. — Tincture of iron. — Cod-liver oil, and æther and opium occasionally, to relieve the suffering attendant upon the active inflammatory attacks.

This is surely not the progress of a simple adenoid tumour, and had the previous history of the case been left out, no surgeon would have hesitated for a moment to decide, from the behaviour of the tumour for the last two years, that it was a veritable cancer. Other similar cases have come under my observation, but it is not necessary to multiply evidence in this matter. If one case of transmutation be satisfactorily established, the whole theory of there being a rigid distinction between

an innocent and a malignant tumour, falls to the ground. I find myself most unexpectedly supported in these views by an able physician who is a colleague of Mr. Bryant.

Dr. Braxton Hicks, in a paper contributed to the Guy's Hospital Reports for 1864 on Proliferous Disease of the Ovary, says, 'The more the aberrations of normal growth are examined, the more they show how impossible it is to define malignant disease strictly. The well-pronounced disease can generally be recognised, at least by taking its many characters in common; but in the numerous intermediate states (and they are more numerous than they have hitherto been thought) there seems no means of distinguishing them. That they may be grouped is possible, but the groups will be formed by characters drawn rather from the particular element so affected than from the knowledge of the exact nature of the change whereby they differ from normal structure or from each other.

'The various names used to distinguish these groups are sufficient proof of this, and, if more were required, the ambiguous nature of the definitions attempted. Let it at once be acknowledged that between excess of growth after the normal type and the various well-pronounced forms of malignant disease, there are numerous degrees, not only in kind, but in grade, and instantly the difficulty ceases. To those who *will* have precision, this will not commend itself; but as there is really no such strictness in nature, the task imposed is severe.'

The result of my own experience is this: that if the adenoid tumours be many, there will be no progress towards cancer; but that if an individual adenocoele remain for many years, it is not unlikely to take on

cancerous action, provided either phthisis or cancer be hereditary in the family of the patient. The practical action to be taken in consequence of this experience is removal of the solitary adenocoele, after the means previously recommended for its absorption have been tried and failed; lest the degeneration into cancer overtake it, and render such an operation a palliative, instead of being a curative measure.

We will now enter upon the study of a class of tumours of the breast, which is more frequently confounded with cancer than any other form of tumour, which often puzzles the most experienced, and frequently requires repeated examination to enable the surgeon to arrive at a correct diagnosis.

A blow upon the soft tissues of the female breast may result in a diffused hypertrophy of the gland and neighbouring structures; or in a circumscribed tumour which obtains considerable hardness, and is attended with great pain; or in the development of cancer.

The first of these lesions is that which is most generally observed to be the result of such an injury. The history given is this:—A child, a person in the street, an awkward husband, has accidentally administered a severe blow upon the affected breast, great pain is felt at the time, swelling results and continues for a few days. The general tumefaction of the breast will then subside, but a tender spot remains, and upon examination it is evident that there is a thickening of the lactiferous ducts which have attained an individuality not observed in the healthy gland. This state of congestion of the breast remains, perhaps little complained of, but always

present to the mind of the patient ; and is monthly a source of considerable suffering. In the event of pregnancy this painful tumour subsides into less prominence, although it does not altogether disappear ; and if proper measures be adopted, lactation perfectly performed by the affected breast, for a restricted period, will restore the viability of the occluded ducts, and so resolve the tumour. The following illustrative case is valuable, inasmuch as it is reported by the husband of the patient, who is himself a distinguished medical officer in Her Majesty's service.

A lady, aged thirty-four, of spare habit and nervous excitable temperament, received a blow on the left breast while nursing her second child twelve years ago. A swelling and hardness was produced in the upper part of the mamma and continued after the nursing ceased, which had been persisted in for twenty months. Five years after the birth of the second child a third child was born, which she suckled for fourteen months : the hardness at this time disappeared, and the whole gland seemed to resume its normal state. When the nursing ceased, however, and the gland diminished in size, the hardness re-appeared and has continued ever since. It has generally been without pain, but there has frequently been uneasiness in it on the approach of the menstrual period. The hardness is irregular in form, about the size of two large filberts, the nipple is not drawn in, and there is no enlargement of any of the neighbouring glands. Pain and swelling having increased, her husband (an Inspector-General of Hospitals in India) brought her to me for advice. The description given above is copied from his own letter, and upon

examining the lady I found it to be correct. I gave it as my opinion that it was nothing more than the result of common inflammation, and that it was perfectly curable. I covered it with a leather plaster as a shield, and ordered tincture of bark and nitro-muriatic acid. She went to the seaside and improved very much in general health; the tumour also was considerably reduced in size. In the November following she proved to be pregnant, and the hardness at this time was not quite gone; I assured her that she need take no heed of it, as it would be sure to disappear, when the time came for her to suckle again. She was confined in March 1863, and when I saw her, six months afterwards, she was quite well, had plenty of milk in both breasts, and the hardness had entirely disappeared.

I saw this lady again in May 1864, when she had ceased suckling, and I found that there was still no return of the tumour. The persistence of the engorgement of the lactiferous tubes for twelve years had very naturally created an uneasiness in the mind of the husband, and induced him to suspect the possibility of cancer.

Sarah F., age twenty-four, single, admitted January 15, 1863. Has had a tumour of the left breast for a twelvemonth. It is the size of a crow's egg, very tender on pressure, and there is a constant dull heavy pain. It followed a severe blow on the breast. The tumour was hard but not incompressible, and it had no very defined edges. Catamenia regular. The treatment employed was of a tonic character, and the application a shielding plaster. In August of the same year the tumour had considerably diminished, and the pain had nearly ceased. She then married,

and soon became pregnant. I saw her again in November, when the tumour had entirely disappeared, and the breast had become plump and full, similar to its fellow.

Mrs. W., age forty, from Warwickshire, of excitable temperament. Married. No children. Applied to me for advice October 31, 1860. She had received a severe blow on the left breast six months previous. Upon examination I found a large tolerably well-defined tumour which was tender on pressure, and gave her much uneasiness, especially at the catamenial period. The hardness was considerable, but not that which could be characterised as 'stony.' She is subject to leucorrhœa, and her general health is not good. No evidence of cancer or phthisis in her family. I ordered the usual shielding plaster, and prescribed nitro-muriatic acid with tincture of bark. She came to see me again on December 3, and then the tumour had so far disappeared that I did not think it necessary for her to come to London again.

Very many cases similar to these might be quoted in which a faulty diagnosis had misled and alarmed the patient, and had moreover prevented the application of such remedies as would at once disperse the grievance. It is even within my experience that these simple hypertrophies have been occasionally removed by the knife, under the impression that it was veritable cancer. Much greater difficulty may be reasonably felt in defining the exact nature of a less frequent form of tumour of the female breast, which also results from an injury, and presents characters which closely resemble a scirrhus.

At some indefinite period subsequent to a blow on

the breast, varying from three weeks to three or four months, the patient will discover a hard lump, to which her attention has been directed by the occurrence of some severe pains. Upon examination it will be found that there is a defined tumour in the substance of the breast, which is quite hard, sensitive to pressure, situate just beneath the nipple, and in rare instances attached to it, but not conveying the sensation of that heavy leaden weight which is so characteristic of scirrhus.

The pain attending this tumour is generally constant, and there is a sense of burning heat in the part. What would be the natural history of this tumour if left to itself can only be conjectured, because the pain is so severe that some kind of treatment is always had recourse to. It may have two natural terminations: first, suppuration and evacuation of the products with healing by granulation; or, secondly, resolution. And these are the results the surgeon should seek to obtain. In the presence of such a tumour, there being no history of cancer or phthisis in the case, I have no hesitation in using the exploring needle to ascertain if central suppuration has ensued. Should that prove to be the case, a trocar and canula may be employed to empty the abscess, and a tent should be kept in the opening to exhaust its contents. If there be no formation of pus,—and this may be frequently decided without the use of the exploring needle,—an occasional application of leeches, with cold lotions, and attention to the general health, will be sufficient to disperse the tumour.

Mary S., age thirty-eight, married, received a blow on the left breast three months before admission, September 11, 1862. She has recently perceived a hard lump

in the breast accompanied with severe and increasing pain. Catamenia regular, no hereditary disease. The tumour is the size of a hen's egg—very hard and very tender. She was ordered four leeches twice a week with some saline aperient medicine. The leeches gave temporary relief only. The pain having increased, I introduced an exploring needle and found upon its withdrawal thick creamy pus in its groove. I then reintroduced the needle, and was enabled to empty the sac of the abscess by pressure, the pus exuding along the groove of the needle. Poultices were ordered, and great relief was obtained. In a fortnight she appeared quite free from pain, the opening had healed, and the tumour was diminished. At the next menstrual period, however, there was a recurrence of all the symptoms, and the pain was unbearable. I then tapped the tumour with a trocar, and after giving freedom to about two ounces of laudable pus, I plugged the opening with lint. This was removed every day and reintroduced until there was no opening left, and the last few drops of discharge were only serum. From this time the induration began to subside, and in three months from her first application she was quite well, the tumour having entirely disappeared.

Here are two cases which greatly resembled scirrhus, but, from the circumstance that there was neither cancer nor phthisis in the family, I felt myself justified in giving a hopeful prognosis in both cases. It will be seen that the result was in accordance with my expectations.

Maria D., age forty-four, married four years ago, and has had no children. Catamenia dodging. Came under

my care June 30, 1864. Six months previously, after a severe blow, she perceived a small tumour in the left breast. It gradually increased, and is now the size of a hen's egg. It is hard, but not absolutely incompressible, and the nipple is retracted. The pain is severe, but not of a lancinating character. No hereditary disease. The treatment employed was hydrochloric acid with tincture of bark, and the local application of diluted liq. plumbi. The report says—July 28: Tumour less hard. August 25: Tumour much less hard and smaller; no pain. September 29: Some inflammation has recently ensued in the tumour. It is painful on pressure. To use warm fomentations. November 10: Tumour quite quiet again; apply a leather plaster and take iodide of iron. 1865, January 5: Tumour much less and softer, general health greatly improved. *Pt. ferri iodid., et add. ol. morrhuae ʒj. ter die.* The patient was unwilling to submit to the exploration or tapping of the tumour, so that I have been obliged to be content with local applications and general treatment. In March a sero-purulent discharge began to flow from the nipple, and the tumour is gradually diminishing. I think there is every reason to expect that it will thus resolve itself.

Esther P., of Jersey, a stout plethoric person, age thirty-eight, came under my care March 24, 1864. Married. No children. Catamenia regular. No hereditary disease. Received a blow on the left breast eight months before, soon after which a lump appeared and has given her considerable uneasiness. When first seen, the tumour was as large as a hen's egg, loose in the breast, and attended with rather severe shooting

pains. Leeches had been applied with some temporary relief. The treatment ordered was diluted liq. plumbi, as a local application, and the tincture of bark with hydrochloric acid.

May 26. No pain now.

June 30. Diminution of tumour.

August 4. Catamenia present. Slight increase of tumour and some tenderness. Same treatment continued.

August 25. Tumour now nearly disappeared: there is no pain. Pergat.

November 19. Tumour less, no pain.

1865 : January 5. The tumour is now reduced to the size of a hazel-nut, and is soft and compressible. No pain. General health greatly improved. Tinct. ferri mur. \mathfrak{m} xx., ol. morrhuae \mathfrak{zj} ., ter die.

February 16. Tumour quite gone, is perfectly well.

The considerable hardness and severe pain attending this form of tumour will always suggest the probability of the existence of the more formidable disease; but if we take into account the blow, the absence of any hereditary predisposition to either cancer or tubercle, and the character of the pain, and then carefully watch the effects of the remedies I have indicated—for, as we all know, the results of treatment are oftentimes our best diagnostics—we shall not fail to distinguish this fibrous exudation from the veritable scirrhus.

The fibrous, fibroid, and fibro-nucleated tumours of various authors, have, as far as my experience goes, no other representative than that I have just described, in the region (viz. the mamma) now under consideration, unless they be but the early stage of scirrhus. It

is certain that tumours have been removed from the breast, and the microscopic examination yielding no cell-growth, such tumours have been pronounced 'fibrous' or 'fibroid;' yet when the further history of these cases has been known, it has been proved that a recurrence has ensued, they are then called 'recurrent fibroid,' but the patient has ultimately succumbed to the pain and sloughings and purulent discharges which destroy those whose cases have been recognised at first as true cancer. There is this great difficulty in all pathological investigations. Patients are fickle, and pass from one observer to another, so that the changes which ensue in all diseased structures are not kept continuously under the notice of the student-practitioner, who is striving to attain a certain knowledge of the natural history of these abnormal growths. To a certain extent the establishment of special hospitals for the study and treatment of one class of disease is rectifying this difficulty. At the Cancer Hospital, for instance, we have patients remaining under our observation for a great number of years, and we have unquestionably the privilege—and it is a privilege which brings with it attendant obligations, both to society and to the profession—of studying on a very large scale the course of action taken by various tumours in their origin, in their progress under treatment, and in their effects upon the life and happiness of our species.

There is yet another form of tumour of the female breast I would wish to note, before entering upon the positively cancerous cases, which is worthy of all attention; because I have known it to be a source of em-

barrassment in diagnosis, and because its proper treatment may effect a rapid cure, after perhaps long anxiety under a course of treatment which might waste the body, but could never absorb the tumour. I refer to cysts in the mamma. These may be either simple or multiple. In the former case they are innocent and curable. In the latter they may be either innocent or malignant.

A simple or single cyst situate in the mammary region is in all probability the distension of one of the lactiferous tubes of which the gland is composed. It may have become occluded by simple inflammatory action common to all the glands of the body; or this effect may have ensued during the process of lactation, by the coagulation of the secretion from some sudden application of cold or mental shock. This single cyst is frequently attended with much dull pain, and very generally there is an oozing of serum or perhaps a dark-coloured grumous fluid from the nipple, especially at the menstrual period. When fully developed this cystic tumour is so tense, that it gives rise to some doubt whether it be a solid or a fluid body. The great point of difference between it and a scirrhus is the greater weight of the latter, and there is always a possibility of compressing somewhat the cystic formation; although it must be confessed that its investing membrane is at times so dense and so fully distended, that it affords scarcely less resistance than does the solid tumour itself. We have always the exploring needle to settle any possible doubt in these cases.

Having arrived at a definite opinion, the course of treatment is simple and effective. Tap with a trocar

and canula, inject iodine as in a case of hydrocele, and the cure is almost equally certain.

Instances of this tumour are not numerous, and on that account are often mistaken for more serious affections. In both of the following cases cancer had been apprehended. C. B., aged forty-five, a monthly nurse, had a compressible tumour in the right breast, which was very painful, and always more so at the menstrual period. She came into the Cancer Hospital for the purpose of having the tumour removed. Having diagnosed a unilocular cyst without much accompanying induration, I tapped and injected tincture of iodine. Obliteration of the sac was obtained, and I heard of her two years afterwards, when she was quite well.

Ann C., age forty-seven, married, has had five children, and suckled them with both breasts. Has had no relations affected with cancer or phthisis. Has had no injury. A lump first appeared in the right breast three years since. Dr. Brown of Chatham, who sent her to me, had tapped the tumour twice. Upon each occasion bloody serum was drawn off, and it soon re-collected. Upon careful manipulation I found that the tumour consisted of one cyst with a base of indurated tissue. She was admitted for operation on October 17, 1863, and the cyst opened by a plunge of the scalpel; four ounces of yellow serum flowed out, followed by a few drops of blood. I then injected the cyst with an ounce of tincture of iodine, and plugged the wound to prevent it healing. Inflammation arose as in a case of injected hydrocele, and after a few days subsided. The walls of the cyst now gradually closed in, and by keeping the wound open for the evacuation of the sero-purulent

discharge the cavity was entirely obliterated. She was discharged with the wound quite healed on November 26. There was an induration the size of a hazel-nut remaining, but whether this was only the collapsed walls of the cyst or a scirrhus time would show.

In November 1864, the fluid had collected again, and I again lanced the tumour, and plugged it without injecting. Being then an out-patient, it was difficult for her to keep the plug in, so I directed her to keep the wound open by passing in a bodkin twice a day. This she did until the cyst was closed again and there was no further flow of serum. In February 1865, some fluid being in the cyst, I lanced it again, and it again closed; her health was then excellent.

Instances of multilocular cysts of the mamma are much more common than the unilocular cyst. They grow to a very enormous size, and from this circumstance alone should be subjected to removal by the scalpel. It is true that in some instances the growth is very slow, and the general health not being influenced by the presence of the tumour, patients are often very loth to submit to any operative measures. I have now under observation a respectable old lady who steadily objects to an operation because she has had some sad experiences of the ill effects of excision of the breast, and I have too much reason to respect her scruples, to urge this proceeding much; although the tumour in her breast is so decidedly enveloped in a capsule, and so thoroughly separated from the neighbouring tissues, that I think there can be no question of the propriety of an operation before the growth

becomes an unseemly and very troublesome incumbrance. Here is a slight sketch of the case.

Mary W., aged sixty-five, has had a tumour in her right breast for six years, which she attributes to a blow. A cousin had been operated upon for cancer, and died. Married, but no children. The tumour is now the size of an ostrich's egg, perfectly unattached to skin or subjacent tissue, and is evidently enclosed in a capsule of its own. It is compressible and nodulated, conveying the idea of multiple cysts. She has been two years under treatment, which has consisted of a belladonna embrocation, and bark and hydrochloric acid internally. The tumour has only slightly increased during that period. She objects to operation.

I recollect seeing a similar growth some years ago, in the breast of a person who withstood my urgent request to operate; and it went on growing until the breast assumed the appearance of one of those large gourds we see exhibited at horticultural shows. In this state at last she was persuaded to have it removed by Mr. Fergusson, but it was too late. Notwithstanding the surgical skill displayed, the neighbouring tissues became implicated, and a few months after this severe operation, she succumbed from hæmorrhage. I think the tumour weighed sixteen pounds. Very rarely these cysts will take on inflammatory action and the whole tumour will slough out, leaving a healthy granulating sore, which will permanently heal: seeing this, an attempt has been made to imitate this process by breaking up the inter-cystic walls with the scalpel, but without producing the intended effect. It cannot be said that these cystic formations have none of the

characters of a malignant tumour ; because, although left frequently, and after a longer interval than the more decidedly cancerous tumours, they do manifest themselves again after operation, whether by injection or by excision ; and then in a form which shows a degeneration into the true malignant type.

The sum of my experience in these cystic tumours amounts to this, that a single cyst is most probably not cancerous, and therefore curable by injections ; that multiple cysts may be innocent, but they have a tendency to become unsightly and inconvenient from their enormous development, and should therefore be removed at an early stage. Further, that these multiple cysts may become cancerous, and as they never undergo that atrophic action which is seen in scirrhus, but if left to themselves ulcerate and fungate, it is manifest that, under all circumstances, the removal of this tumour is highly advisable.

It not unfrequently happens that cysts in the mamma suffer encroachments of glandular or newly-developed solid tissue into their interiors ; and we find, after operation, the cysts themselves entirely or partly filled with these matters, when we had expected only fluid. Cysto-sarcoma and cysto-carcinoma are names that have been given to this peculiar tumour, and if it were necessary to choose either of them, I should prefer the latter, as indicating more positively the special cancerous character which I believe belongs to them. Mr. Paget, however, has coined the name proliferous for these cysts, and as this is peculiarly indicative of the mode of growth, and leaves the question of character open, it is perhaps at present the best.

I have said that the discovery of the prolific nature of these cysts is made after operation, and so it is in the large majority of cases, inasmuch as the fluid cyst very generally exists in the same breast with the solid cyst, and if the exploring needle be employed, the escape of fluid may mislead the diagnosis; whilst the soft and yielding nature of the prolific matter affords no more resistance to the finger than the serous fluid. If the tumour be thoroughly enclosed in a capsule and it can be turned out whole, the prognosis may be favourable; but if these proliferous cysts have become continuous with the neighbouring tissue, the result will be similar to all other cases of true cancer.

I am however somewhat anticipating my subject, and in order to avoid confusing the reader, by further pursuing the inquiry respecting cystic formations, which have representatives in both the simple and the malignant tumours, it will be desirable now to be content with the descriptions and illustrations of the allies and counterfeits of cancer I have brought forward as affecting the human breast, and proceed at once to discuss that disease itself in detail.

Scirrhus is the form of cancer which attacks the breast. At least the medullary form is so unusual, that I am sure I am safe in saying that of fifty cases, forty-nine would be scirrhus.

The origin, progress, and termination of this tumour have been previously described. We have now to enter more minutely into the varieties of scirrhus, and then to support by illustrations the opinions advanced respecting its associations with phthisis. Lastly, we shall have to utilise all our inquiries, by rigidly examining

and contrasting the best modes of applying the knowledge we have attained for the arrest or cure of this disease.

There are practical reasons for recognising varieties of scirrhus, or I should put them aside as incumbrances to the clear comprehension of the subject. Velpeau, perhaps, has refined and classified too minutely the subdivisions of this form of cancer. It may not be necessary to recognise the 'ligneous,' the 'globular,' the 'radiated,' the 'disseminated,' and the 'lardaceous' scirrhus; but the 'cuirass-form,' a name originating with him, and examples of which are so frequently seen in practice, is certainly worthy of our adoption.

The division which experience has suggested to me as the most practical is this:—

Scirrhus proper—viz., a hard tumour which may proceed either to disintegration or absorption.

Scirrhus with cysts, or cysto-scirrhus, a cancerous tumour having an indurated base, in which cysts have been developed, and

The cuirass-form or tegumentary scirrhus, which involves the skin as well as the gland.

The scirrhus proper is that hard tumour which is felt beneath the skin, generally movable, but in an advanced stage attached to the pectoral muscle as well as to the skin, very heavy and incompressible, and attended with severe stabbing pain. When removed by operation, it presents upon incision a fibrous or cartilaginous aspect, generally with a central softening. By scraping the incised portion much turbid fluid may be obtained, and this, upon examination under the microscope, adjusted with an eighth-inch power, will exhibit cells having nuclei, and perhaps nucleoli, and

such cells shall be of various shape—spindle, caudate, three-legged, and so on.

The cysto-scirrhus tumour is, in many instances, only a further development of the former. It may begin as a hard incompressible tumour, and after a time cysts may be developed within this indurated mass, or we may have, from the commencement of the disease, a development of cysts, surrounded by scirrhus exudation. The practical reason for specially naming this tumour is, that it never becomes atrophied as in scirrhus proper, and may therefore with more reason be removed by operation, provided the accompanying circumstances be favourable. The cuirass form, or tegumentary scirrhus, is that form of cancer which involves the skin of the breast as well as the gland itself, binding it down by a hard, brawny, almost iron clasp to the ribs themselves. This peculiar induration of the skin frequently extends over the thorax, creeping gradually round to the back, and anteriorly across the sternum to the other breast. It is the least manageable of all the forms of scirrhus, and never at any time admits of operation with the slightest prospect of delaying its progress. It is in this form of scirrhus principally that we have those nodules or tubercles which are sometimes seen upon the surface of the breast, and indicate generally the hopeless nature of the case ; but these tubercles do also appear in the advanced stages of the other forms of scirrhus, and especially when the disease returns after operation. The progress and termination of scirrhus having been described already, it requires only to be added, that it is in scirrhus proper, which is by far the most frequent form, we see nature exerting her

own beneficent power, and producing in some cases a cure by atrophy; whilst spontaneous sloughing of the whole tumour is more generally observed in the cysto-scirrhous. The cuirass form may have a natural termination. I have at present under my care a person in whom the brawny condition is becoming manifestly softened, and the skin is recovering its natural elasticity. There is also a case recently recorded by Mr. Bryant in the Guy's Hospital Reports which seems to favour that opinion.

Medullary cancer affords, as has been already observed, but few examples of its destructive tendencies in the mamma. It is however occasionally seen, and then follows the course which has been described in a previous chapter.

It appears generally at an earlier age than scirrhous, is more rapid in its progress, and is attended invariably with hæmorrhage, which is controlled with much difficulty. It extends rapidly to the neighbouring tissues, and never shows any of that retrograde conservative power, which culminates in atrophy, as seen in the scirrhus cancer.

There being no hope of a natural termination of this malignant growth, it should be extirpated as soon as recognised, provided the whole of the tumour can be reached by the knife. Life has been prolonged by this proceeding occasionally for two or three years; whereas, if the disease be left to progress as is its natural bent, sloughing and hæmorrhage will bring about a miserable death, in perhaps a few months. One case will suffice to typify the usual progress of medullary cancer of the mamma.

Mary Jane B., age thirty-five, married, no children. Admitted as an out-patient July 2, 1863. No hereditary disposition to cancer that she is aware of. Catamenia regular. Received a blow on the right breast six months before applying at the hospital. A tumour appeared three months after. It grew rapidly, but she took no advice. When she came under treatment, the whole breast was one hard dark-coloured mass, with a protruding portion near the nipple, which was extremely vascular but not ulcerated. Cold lotions subdued the vascularity for a time, but it was not long before ulceration ensued. This was followed by occasional hæmorrhage, then sloughing, so that a deep wound was produced. I then persuaded her to go into the hospital, in order that she might have immediate attention when the hæmorrhage occurred, as well as the best possible food and nursing. The sloughings nevertheless recurred, and one portion had scarcely been removed by the deodorising lotions employed, when another part became involved in the same destructive process. The hæmorrhage became more uncontrollable, and she sank exhausted seven months only after the first appearance of the tumour.

All cases of medullary cancer are not so rapidly fatal as this proved, but they are always distressing, and warn us to watch narrowly for the first indications of this form of the disease, in order that by early excision the only possible chance of prolonging the life of the patient may be afforded.

It behoves me now to support by practical evidence the truth of the opinion I have ventured to enunciate, that cancer and phthisis are interchangeable quantities, seen

sometimes in the same person, but very frequently in parents and their offspring.

If that opinion were founded only on the cases in which cancer and phthisis have been observed in the same person, it would be of very little practical value, because such a coincidence might fairly be attributed to the accidental grafting of one disease upon the other; and, moreover, these cases are not sufficiently numerous to found upon them alone any well-grounded theory. I have quoted from Mr. Paget's 'Lectures on Surgical Pathology' one of these cases, and referred to another which fell under my own observation, whilst others may be found in the records of the Pathological Society. It is, however, only in connection with the hereditary disposition to either of these diseases, that their coexistence in the same person is notable. In all enquiries relating to the predisposition to disease, it is necessary to take into account the difficulty of arriving at anything like mathematical exactitude. In any class of life, perhaps it would not be easy to obtain very correct information as to the nature of the disease of which grand-parents, or grand-aunts and uncles, may have died. It therefore will not be surprising that amongst hospital patients this enquiry is necessarily somewhat imperfect. Perhaps it is surprising, that during the short time I have been engaged in collecting the cases I am about to quote, which is now scarcely more than a year, so many are able to testify to the family maladies. Seventy-nine cases of cancer of the breast have come under my observation since I first became impressed with the importance of ascertaining if there be any, and what, connection between

cancer and phthisis. Of these, three gave evidence of both cancer and phthisis in the family, eighteen had a knowledge of cancer in blood-relations, twenty-seven testified to a family predisposition to phthisis only, and the remaining thirty-one were unable to give any history of the family ailments, or were not conscious of any hereditary tendency to cancer or phthisis. It will be observed that these numbers exactly support the quotient—viz. one in four—I have previously given as the relative proportion of those who could trace an hereditary tendency to cancer itself.

After making every allowance for the frequency of phthisis in these islands, it does appear to me impossible to ignore or slight the important conclusions derivable from the fact which these figures establish—that three-eighths of the cases of cancer are developed in persons having phthisical relations.*

The pathological possibility of this interchange of disease I have already shown. It now remains for me to support this position by a record of cases. In doing so, however, I propose to give only that part of each case which shows the connection between these two diseases, as otherwise I shall weary my reader, and moreover use up material I shall require for illustrating other parts of my subject.

Ann W., aged 30. Atrophic scirrhus of the right breast. Phthisis in family, but no cancer.

Eliza A., aged 44. Scirrhus of left breast. No cancer in family; but an aunt died of phthisis.

* Very curiously, Mr. Sibley's statistics yield the same results,—37 per cent. being given as the number of those cases of cancer in whose families phthisis had been traced.

Jane L., aged 59. Scirrhus of right breast. Mother and sister died of phthisis.

Annie C., aged 53. Cuirass-scirrhous of both breasts. Father and other members of family died of phthisis.

Eliza B., aged 44. Scirrhus of right breast. No cancer in family; but father's sister died of phthisis, and her own sister has adenoid tumours.

Sarah G., aged 51. Atrophic scirrhus. Several members of the family phthisical.

Elizabeth P., aged 46. Scirrhus of right breast, with surrounding tubercles. Phthisis in family, but no cancer.

Mary C., aged 54. Scirrhus of left breast. Father and sister died of phthisis.

Jane I., aged 50. Cuirass-scirrhous of both breasts. Phthisis in family, but no cancer.

Mrs. R., aged 42. Scirrhus of left breast. Phthisis in family, but no cancer.

Caroline P., aged 48. Scirrhus of both breasts. Father and two sisters died of phthisis.

Elizabeth V., aged 60. Scirrhus of right breast. Several brothers and sisters died of phthisis.

Harriet H., aged 39. Scirrhus of right breast. Phthisis in family, but no cancer.

Eliza S., aged 65. Scirrhus of left breast. Phthisis but no cancer in family.

Sarah S., aged 49. Atrophic scirrhus of left breast. Brother died of phthisis.

Louisa H., aged 43. Atrophic scirrhus of left breast. Phthisis on both sides of family.

Mary Ann H., aged 42. Cuirass-scirrhous of right breast. Father died of phthisis.

Mary Ann A., aged 47. Scirrhus of left breast. Three sisters phthisical.

Emma B., aged 60. Scirrhus tumour in right breast. Both cancer and phthisis in family.

Miss B., aged 53. Scirrhus of right breast. Both father and mother cancerous ; and father's sister, as well as many of her children, died of phthisis.

Mrs. G., aged 66. Scirrhus of right breast. All her brothers and sisters died of phthisis.

Lady G. Scirrhus of breast. Daughter died of phthisis.

Susan R., aged 30. Cysto-scirrhus of right breast. All her family have died of phthisis.

Mrs. C., aged 49. Ulcerated scirrhus of both breasts. Two great-aunts died of cancer, and a sister is now dying of phthisis.

Mr. L., aged 62. Scirrhus of liver. Two daughters died of phthisis. Mrs. L. and family perfectly free from either disease.

Mr. W. R., aged 44. Cancer of rectum. Mother and sisters died of phthisis ; and two of his own children died of phthisis.

There is a case recently recorded in the 'Lancet' by Mr. George Rawson, of the Middlesex Hospital, in which he operated for scirrhus of the breast. He comments upon the absence of an hereditary predisposition to cancer, and only mentions incidentally that a sister died of phthisis.

I trust that the publication of these facts will excite the attention of my professional brethren, and induce a more extended enquiry to be made, so that the question

of the transmutation of these diseases may be well sifted ; for assuredly, whether considered from a therapeutical point of view, or as an item of vital statistics interesting to the political economist, it claims the earnest interest and scrutiny of all those who have the requisite opportunities for investigating a matter the right comprehension of which will necessarily throw much light into one of the most obscure points of pathological science.

Treatment.

The sum of all our enquiries into the etiology and symptomatology of this as of all other disease is the practical question of treatment. Ever since medicine assumed the form of a distinct science under the remarkable teaching of Hippocrates, cancer has been known and studied. The chemists and the rationalists, but especially the empirics, have laboured in the praiseworthy hope of obtaining a mastery over this disease. Each age has produced its specific ; but, alas ! ‘ the earth hath bubbles, as the waters have, and these are of them.’

Nothing of this kind has maintained more than a most ephemeral existence, and it may be said that, except for ague and itch, medicine knows of no specific, acting always as such in all the varying physical and moral circumstances which distinguish the divinely-made machine—man—from those formed of human hands.

But whilst the experiments of chemists, the theories of rationalists, and the guesses of the empirics, have failed in arriving at the desired goal *per saltum*, pathology, aided by the great improvements in the microscope, has been steadily unravelling the web which had

heretofore bound up all tumours in one confused mass, and thus has rendered most essential service, by separating the true from the spurious—that which was really cancerous, from simple glandular engorgements, which have been confounded for ages with the more serious affection.

The acquirement of this knowledge enables us to pursue our studies with more exactitude, and gives us the advantage also of holding the rod of ‘diagnosis’ over those foolish and wicked pretenders to medical skill, who especially batten upon the sufferers from a disease which is supposed to be abandoned as incurable by the regular practitioner.

And whilst histological pathology has enabled us in the great majority of instances to distinguish cancer from its counterfeits, it has also shown in what measure cancer differs from the normal structures, and thus has given us a really scientific clue to the mischief which has been done, and, as a consequence, to the means of rectifying this serious error of growth. With this knowledge as our guide in a wide field of observation, watching the actions of nature herself when untended by any interference from art—noting the effects of therapeutic agents supposed to influence the course of this malady, and weighing well the results of operative interference—we may now, with a full acknowledgment of the difficulties of our task, humbly, yet with a chastened confidence, approach the all-important question of the proper treatment of cancer when affecting the breast.

The first question presented to the mind of the surgeon, as soon as he has diagnosed cancer of the

mamma, is that of operation. If it comes from the patient herself—if there be a strong desire, as is sometimes the case, to have the tumour removed—our task is relieved of much difficulty and responsibility. Supposing the entire removal of the diseased structure possible with a good prospect of union by first intention, all our doubts as to the issue may be thrown aside, and we may join the patient in hoping that there will be no further return of the malady. If the question of operation be urged by the friends of the patient, and she herself be passive in the matter, the surgeon is placed in a highly responsible judicial position, and whatever the consequences may be, he should advise in strict accordance with the dictates of science and experience.

If the surgeon himself be of opinion that an operation is the best mode of procedure, he should state it decidedly, and give his reasons for that decision; but by no means should he abandon the treatment of such a case because the fears or the prejudices of the patient will not permit her to follow the advice he has felt it his duty to give. He may, in case of refusal, console himself with the reflection that he has done his duty to his patient, and that, after all, nature may find a way out of the difficulty, if she be carefully watched and aided in the never-ending contest between the forces of growth and decay.

It has been the fashion of late to attempt to arrive at a decision as to the propriety of removing a cancerous breast upon arithmetical principles. Statistics have been collected and published; but, unfortunately, the results obtained at different hospitals and by independent collectors do not tally, and indeed go far to

contradict one another. In the hard matter of figures, we shall see how the varying phases of the delicate machine we have to mend hinder the attainment of anything like mathematical exactitude, or even such an approach to it as to give us fair grounds for action.

Every student of this subject has or should have in his library Dr. Walshe's able work on the literature of Cancer. There will be found a *résumé* of all that has been done and said upon the effects of ablation since the time of Hippocrates to the year of its publication in 1846. He balances the facts *pro* and *con* respecting this proceeding without bias, and gives judgment in the following words: 'From the facts, figures, and inferences now brought forward, the conclusion is inevitable and imperative, that extirpation of cancerous growths with the knife can neither be regarded as a means of curing cancer, nor of prolonging the existence of persons afflicted with the disease. The accumulated experience of intervening ages, dispassionately scrutinised and fairly interpreted, pronounces the very verdict that was upwards of two thousand years ago rendered by Hippocrates in his memorable aphorism. The lapse of centuries of civilisation has done no more, in respect of the question of operation, than furnish elements for *demonstrating* what the observant genius of one man had, in an era of comparative barbarism, so acutely divined.'

Since this was written, we have had the advantage of comparing two rather extensive collections of cases, showing the effects of operation in cancer of the breast,—one by Mr. Paget, of St. Bartholomew's Hospital, and the other by Mr. Sibley, of the Middlesex Hospital. It

may be supposed that, in these instances at any rate, we are not embarrassed by the fear that the diagnosis of the disease operated on has been aught but the most exact, and yet we have the results arrived at differing in a remarkable degree. Mr. Sibley tells us that fifty-three months is the average duration of life in those having cancer of the breast who were operated on, and thirty-two months and a quarter is the length of life of those in whom the disease was 'allowed to run its natural course.'

Mr. Paget, on the contrary, says, 'The average life of those whose breasts are removed, and *who survive the effects of the operation*, is about forty-three months, and the average life of those in whom the disease is allowed to run its course is about fifty-five months.'

The fallacies which surround these numerical enquiries are infinite. Mr. Sibley's cases, for instance, are those of persons admitted into the wards of the Hospital. The reason for admission would certainly be either that the surgeon considered the case favourable for operation, or because the disease was so far advanced that it was impossible for the patient to attend as an out-patient. Is this a fair comparison?—what becomes of all that large number of cancerous women who attend the out-patient rooms of the hospitals for years and years, and who at the same time continue their domestic or other duties with heroic fortitude?

Of the very large numbers seen at the Cancer Hospital, the average duration of the disease previous to coming to the hospital is three years—thirty-six months in place of the thirty-two months of life awarded by Mr. Sibley,—and, as far as can be ascertained, the average duration of life after that exceeds

two years; so that Mr. Paget's estimate would seem to approach the reality of the case much more nearly than that of Mr. Sibley. But in truth these statistics are made up with so much difficulty, and collectors have to depend so often upon hearsay evidence, that they must ever be but poor guides in determining the propriety of operating in individual cases.

We see recorded every week in the medical journals, 'cures' by operation in the various London Hospitals; but if the reporters of these cures, or the surgeons who perform the operations, could follow up the history of such cases, it would be seen that there was small justification for this premature announcement of a successful issue. From 1851 to the end of 1863, we have had the opportunity of seeing at the Cancer Hospital 413 persons who had been operated on for cancer; and it will astonish the reader to be told, that the average lapse of time before the disease returned in these cases was no more than six and a half months. It is true that, in a very few instances, ten years have elapsed before the disease has again manifested itself. It is also true that, in many cases, the incisions made for the purpose of removing the diseased mass have scarcely healed, before tubercles have appeared around the cicatrix; or the wound itself has taken on the diseased action. I have known both of these extreme results follow operations performed by surgeons who enjoy the very highest repute, and under such circumstances in private life as could not fail to favour the best possible termination.

I have at the present time under my care a lady, aged sixty-two, who had scirrhus of the right breast seven-

teen years ago. It was removed a year after its first appearance by Mr. Lawrence, of St. Bartholomew's. It remained well for ten years. She then, upon its reappearance, submitted upon two several occasions to the caustic treatment of Dr. Fell; and this she described as being horribly painful. Then Mr. Lawrence operated again; and subsequently Mr. Holmes Coote operated, in March 1862. Two scirrhus glands appeared soon after in the axilla; and, at her urgent request, I removed these in June of the same year. The small wound healed rapidly by first intention; but in the following September the arm became œdematous, and has continued so up to the present time, May 1865. Her general health is remarkably preserved; and the skin of the arm, although hard and brawny, is not ulcerated, as generally happens in similar cases. Unhappily, there are not many cases of operation for cancer which in their history can show such favourable results as are exhibited in this instance. I do not think I have met with more than four persons in all my experience in whom the disease remained in abeyance for ten years after an operation. Very hopeful patients and very sanguine surgeons may, of course, accept this possible result for the individual case they are about to decide upon; but it is my duty to place in contrast with the foregoing an illustration of a different result, and one which, I am bound to say, is much more frequent than that we have just been considering.

Mrs. S., aged thirty-six, rather pale, and somewhat inclined to *embonpoint*. Married; three children, suckled. Catamenia regular. Received a blow and felt a hardness in the left breast in March 1862. The hardness gradually increased, until, under the advice of

Mr. Paget, the tumour was removed, in September of the same year, by a surgeon of considerable repute in the county in which this lady resided. The incisions healed so rapidly, that the patient went out for a drive ten days after the operation. In the latter part of October, however, of the same year, the disease had returned in the cicatrix; and Mr. Paget, in conjunction with Dr. Walshe, advised iodide of lead ointment to the wound, and the internal administration of arsenic. Of these two remedies the surgeon in attendance says, in his letter to me introducing the lady, 'The arsenic has not suited her at all, and the iodide of lead ointment certainly has done more harm than good.' I was first consulted in this case November 19, 1862, and found a vascular tuberculous growth at the inner extremity of the cicatrix, the remaining portion being covered with a hard squamous growth. Around there were several small tubercles in process of development. Her general health was beginning to fail. Of course I could give no hope of any great prolongation of life under these circumstances; but I advised a residence in a warm climate during the winter months, a lotion consisting of oxide of zinc, glycerine, and spirit, and the internal use of nitro-muriatic acid with bark, and, if possible, cod-liver oil. I learnt afterwards that she had not gone to a warmer climate, but returned to her home in a rather bleak part of the country, and that she died on February 10, 1863. Now, it will be at once apparent from the statement already made respecting the average period of return of the disease after operation in upwards of four hundred cases, that the instance just recorded more aptly represents the

effects of excision in the mass of cases than does that other case, which has, unhappily, so few companions to keep it in countenance. I have ventured to give the names of the eminent men who were concerned in these two contrasted cases, to show what may and does happen under the very highest auspices ; and I would wish to be permitted to observe, that both surgeons can afford to have their failures as well as their successes discussed, in a matter of such vital import to society as that of the right mode of treatment in cancer. Statistics, however, must not, as I have already observed, rule us entirely in the pronouncement of an opinion for or against operation. Prolonged life, and freedom from pain and annoyance, may be obtained in some well-selected cases ; whilst an indiscriminate use of the knife, even in cases in which the tumour may apparently be entirely removed, does undoubtedly aggravate the malady, and destroy those chances of quiescence and inactivity which are so frequently remarked in scirrhus of the mamma, and which may, I believe, be brought about by appropriate local and general treatment.

The rule of practice taught at present in our surgical schools is to operate for cancer of the breast. The tumour is removed, and generally the patient passes through the ordeal favourably. The operation is so easy, and the result for a time so satisfactory, that it need scarcely be a matter of surprise if our young men who enter the profession with a scalpel in their hands should think a great triumph has been obtained when their patients pass from under their care freed, apparently, from a disease which seemed to threaten an early and a painful death. Longer life and further

experience, however, must dispel this illusion ; for we find that our 'successful' operations eventuate in an early return of the disease, and that the constitutional effects of the operation itself, together with the disappointment which succeeds on the recurrence of the malady, accelerate the end we had hoped to avoid.

Looking to my own experience, I would say, then, that this rule of practice should be reversed. In exceptional cases, operation will be justifiable and desirable ; but in the great majority of cases, life will be considerably prolonged by abstaining from this proceeding, and by the substitution of those remedial measures which experience has suggested.

These views necessitate an analysis of the cases which should or should not be operated on ; and in this is involved one of the most important and difficult enquiries in the whole range of surgery.

Ex uno disce omnes is a convenient and comfortable principle for the idle student ; but nature knows no such law, and rather inclines, indeed, to the witty proverb, '*Ce qui est poisson à l'un, est poison à l'autre.*' In surgery as well as in medicine it must be fully recognised, that constitutions differ as much as noses, and that each case has to be treated upon its own individual merits and peculiarities. With this proviso, I will endeavour to give some general rules by which the operation may be divested of its hurtful effects, and be made to prolong life in comparative comfort.

In the first place, I would on no account advise operation in any case where the patient herself has a strong objection to it. Success requires a placid, hopeful temperament, and a thorough belief that good is to be done.

Any indication of serious disturbance of the heart, lungs, liver, or kidneys, should prevent an operation. There should be sufficient restorative power, as indicated by the condition of the muscular system, to make sure of a quick healing of the wound. Very fat or very thin persons do not recover well.

The tumour itself should be freely movable over the pectoral muscle and ribs. There should be no sort of hardness extending from the tumour towards the glands in the axilla, and the latter should not be enlarged and indurated. With reference to this point, however, I have a few words to say. Supposing the operation to take place at an early stage of the disease, when there is no attachment of the tumour to the skin, I would always object to operate should there be any enlargement of the axillary glands ; but in the event of operation when the skin is affected, and the axillary engorgement is slight and recent, I would disregard it. In no case should I think it desirable to operate where the glands above the clavicle are enlarged. The presence of tubercles on the skin should also positively contra-indicate operation. The early removal of a scirrhus tumour does not seem to be followed by a prolonged immunity so often as when the disease has made more progress. There is an active and a passive stage ; and when the tumour is removed in its active condition, the constitution resents this interference with its peculiar propensity, and continues its baneful work very frequently in an aggravated form, either in the same or some other locality. I have seen so many instances of the disease returning rapidly after operation at the commencement of its development, that I feel convinced we shall

advise our patients well in recommending them to wait until the tumour has ceased to grow, or until, having become attached to the skin, it has ulcerated, and is beginning to waste the powers of the body, by the accompanying discharge either of pus or blood, or both.

An operation done on a scirrhus just formed must always be a doubtful benefit; but in the later stage it has the certain advantage of getting rid of a source of constitutional decline, and in many instances of that which is the full complement of the cancerous dyscrasia. I recollect seeing, very many years ago, an old practical surgeon cut through a scirrhus which he could not entirely remove owing to its close attachment to the ribs, and the parts healed so that the woman lived for some years after. But for this somewhat heroic operation, the patient would have died quickly of the hæmorrhage which had been continually flowing from the open wound. The advantage obtained by operation in an advanced stage is well marked in the following case.

Mrs. G., aged sixty-six, of sanguine temperament and good muscular power. Some years a widow, and has suckled children. There is no cancer in the family; but several brothers and sisters have died of phthisis. When first seen by me in conjunction with my friend Dr. O'Connor, she said that she had not noticed any tumour in her breast until twelve months previous. Upon examination, I found a scirrhus tumour, the size of a duck's egg, protruding through the ulcerated skin near the nipple. Its surface was dark-red, and bled on the slightest provocation. It was not attached to the subjacent muscle, and could be moved freely over its surface. There was an enlarged gland, the size of a

bean, in the axilla, of recent growth, and not connected by indurated band with the scirrhous in the breast. Looking to the certain effects of the frequent hæmorrhage, and the possibility of sloughing, I advised the immediate removal of the tumour. The patient readily consented, and showed her fortitude also by submitting to the operation without taking chloroform. I excised the tumour on February 16, 1864, and united the parts by wire suture. Union took place, almost entirely by first intention, in three weeks. At this time the enlarged axillary gland remained *in statu quo*. She went to Hastings for a month, and returned with her general health quite restored, and the axillary gland decidedly less. I ordered her to continue the hydrochloric acid and tincture of bark she had been taking, and wear a soft leather plaster over the axillary gland. Two months after I saw her again, and found that the enlarged gland had entirely disappeared, and she was so perfectly well that she had resumed her accustomed professional duties as an actress. I continue to hear from her occasionally, and she still reports herself 'quite well,' no return of disease in the cicatrix, and only a small lump in the axilla.

There are many opportunities of obtaining equal benefits by operation in the ulcerated stage; but it too often happens that patients cannot be brought to see the advantage of this proceeding, and prefer abiding the issue of palliative treatment, or that which we may sometimes promise them, spontaneous evolution of the tumour by sloughing. I have not taken into account deaths immediately attributable to the operation itself, because, happily, these are very rare, owing to the care

now taken by operating surgeons in putting aside those cases in which there is any doubt about the possibility of excising the whole of the tumour.

The following letter relates to an unfortunate exception to this rule, but I think perhaps the surgeon allowed himself to be over-persuaded, as the patient was very anxious to have the operation done.

‘Farnham : November 18, 1862.

‘MY DEAR SIR,

‘I thought you might like to hear the particulars of the case I sent to you on the 1st of August last, with scirrhus of the breast, and also a scirrhus gland in the axilla, so closely attached to the axillary artery that you said “it would be imprudent to attempt any operation, and of course the removal of the one in the breast would be useless without taking away also the axillary tumour.”

‘After seeing you twice or thrice, some friend advised her to go into the London Hospital, where the surgeons would not operate; she also tried some other hospital with the same result, and at last she saw Mr. —— of the —— Hospital, who admitted her into that hospital and operated on her on Tuesday the 21st of October; but she died on Sunday the 2nd of November, of gangrene, I believe, but have never been able yet to ascertain the exact cause of her death; at all events, I think it must be satisfactory to yourself and other surgeons that the operation was declined as being fraught with so much danger, which the unfortunate termination has fully proved, and remain, dear Sir,

‘Yours truly,

‘E. G. KNOWLES.’

T. W. Cooke, Esq.

The occurrence of erysipelas or pyæmia after an operation will, I suppose, sometimes arise, but such an untoward event has never happened in my practice, and I am somewhat disposed to think that proper hygienic management ought to prevent it altogether. The early and frequent removal of the discharges incident to the process of reparation, the use of metallic wire sutures, and acupressure in place of ligatures for the divided arteries, will prevent personal infection; whilst a generous diet, great cleanliness of person, the quick removal of all evacuations, a well ventilated room of an equal temperature, and, if necessary, the use of deodorising agents, cannot fail to carry the patient safely through the period of healing.

The method of removing the mamma by the knife is described in our class-books on surgery, and it is perhaps one of the easiest operations the surgeon is called upon to perform. Usually two elliptical incisions, made to meet at their extremities, deep enough to pass through the fatty tissue, but not so deep as to wound the pectoral muscle, enclosing the diseased mass and the mammary gland, including of course the nipple, are necessary for this proceeding. Having made these incisions, it remains to separate the gland from its inferior attachments. To do this the mass should be raised upward by the left hand, and the knife be employed to nick gently the cellular tissue, which connects it with the muscle. The direction of the incisions may be varied to suit the position of the tumour. Should it be necessary to operate on a thin person, and the skin covering the tumour be not affected, it will be sufficient to make the ellipsis enclose the nipple only. I am

speaking of true cancer, not of adenoid tumours, in which case a simple incision only is requisite ; but in all cases of scirrhus or medullary cancer of the breast the whole gland should certainly be removed, to give the patient the best chance of escaping an early return of the disease. The diseased mass being removed, our attention should be directed to the condition of the tissues in the cavity, and any remaining indurated portion should be carefully but thoroughly excised. This being effected, the part should be well cleansed with cold water, and any arteries that may still be bleeding should be compressed by the needle so ingeniously suggested by Dr. Simpson of Edinburgh. By this means we escape the danger of suppuration which follows upon the use of the irritating silk ligatures. The lips of the wound may then be brought into apposition, and united by silver or iron-wire sutures at equi-distances of an inch, so as to secure adhesive union. This is generally effected at about the fourth day, when the sutures and needles may be removed. But should any portion remain unattached, the wire suture may be left in that part for a few days longer, without any fear of that ulceration which invariably takes place when the silk suture is used. Over the sutures a pledget of dry lint should be applied, and the parts be supported by strips of adhesive plaster. Last of all comes the broad roller to pass several times round the chest, but not to be so tight as to embarrass the respiration, and two shoulder-pieces should be sewed on to keep the bandage from slipping. In place, however, of the broad roller, I am in the habit of using a jacket made like a many-tailed bandage, the advantage

of which is that the wound can be dressed without raising the patient from the recumbent position.

I decidedly think that whenever we may be called upon to remove axillary glandular engorgements, it should form the subject of a second operation, for the reason already given; viz. that whenever a primary operation is justifiable, these will subside *proprio motu*.

The removal of cancerous tumours by caustic after the manner introduced to this country by an American practitioner, and practised by him at the Middlesex Hospital at the urgent request of some influential lay governors, requires no notice at my hands. It has been most worthily condemned by the profession as a barbarous proceeding, attended with prolonged torture, and giving no better security against the return of the disease than does operation done by the quick scalpel, under the lethal influence of the benign chloroform.

I have only to add to this part of my subject, that an operation by no means implies the necessity of foregoing appropriate constitutional treatment, but rather increases its desirability, owing to the loss of strength which follows any loss of blood, and the debility which results from unwonted confinement to the bed or couch.

We have now to consider the most important question of Therapeutics. In what measure will medicines employed internally, and applied externally, aided by diet and general hygienic regimen, tend to arrest the progress of cancer of the breast, to allay its attendant suffering, nay, even to produce such absorption of the tumour as amounts to its cure?

Arsenic, iron, conium, and iodine, have in various forms been the favourites amongst the internal remedies employed during the last two or three hundred years. It will be necessary, therefore, to examine shortly the claims these medicaments have to our confidence as remedies in cancer. As in duty bound, I have used them all thoroughly, and with an earnest desire to find amongst them the promised specific. The first few years of my connection with the Cancer Hospital were devoted to an exhaustive enquiry respecting these and other drugs, having any reputation as curative agents in this disease. My testimony, therefore, is the result of a wide experience, unbiassed by any belief in any particular treatment, and guided only by the most anxious desire to fathom a mystery, the elucidation of which would confer so much benefit upon the human race.

The revelations of the microscope have given us an important advantage over our predecessors in this enquiry. It has been shown that the ultimate structure of the tumour is not a heterogeneous deposit, differing altogether from the healthy tissues; but a homogeneous although imperfect development, formed of the same blood which sustains the whole body, and repairs the waste which, beginning at birth, accompanies us throughout our mortal existence.

With this light to guide us, it is obvious that all our remedial efforts should be directed to get at the back of the tumour, as it were, by so improving the quality of the blood that it shall no longer create imperfectly developed cells. The supply being thus cut off, the tumour becomes an inert body, the fluid part of which

is absorbed and ejected as effete matter. As this goes on the solid skeleton of the tumour contracts, drawing into folds the surrounding integument, and giving us that appearance and condition known as atrophic scirrhus.

With the view of effecting this condition we have to enquire, then, if there be any medicines, acting directly upon the blood itself, which can so alter its character that it shall bring about this desirable change; or which, by improving and correcting the digestive process, so that only healthy blood shall be made, may enable us to arrive at the same end.

We will begin with the remedy which has, probably from its potency, obtained the greatest popularity. Arsenic is considered to be a tonic to the general system, but it certainly is not so to the digestive apparatus; for, according to all testimony, extraordinary care has to be exercised in its administration in order that it may not injuriously affect the mucous membrane of the whole *prima via*. According to the experiments of Sir Benjamin Brodie, it appears to affect principally the nervous system. We may then discard it as an agent for the improvement of the digestive function, and examine its qualifications for the alteration of the blood itself. In chronic skin disease of an hereditary character, the curative power of arsenic is undoubted, but its beneficial effects are altogether independent of any action upon the assimilating powers. It generally happens that these chronic skin affections occur in persons who are otherwise thoroughly healthy; so that it may be fairly argued that arsenic does its work through the direct medium of the blood itself.

Owing to the acknowledged power of this metal in skin affections of an aggravated and unsightly character, it is not surprising that for ages arsenic has been a popular ingredient in all prescriptions, both lay and professional, for the cure of cancer. Nevertheless there is not a tittle of evidence to support this inferential preference. Dr. Walshe thinks he has seen benefit derived from iodide of arsenic, and others have said as much; but many have seen direct mischief produced thereby, and if there be benefit derived from any other treatment, indirect injury must result from the waste of time alone spent in the employment of a remedy which, if it is to have any effect at all, must be given for months or even years. I have tested this agent carefully in every variety of temperament and constitution, and I have failed utterly in obtaining any benefit from it. I have used and seen used the iodide of arsenic also in a few cases, but have not obtained any results of a satisfactory character. Of the local employment of arsenic as an escharotic I shall speak presently.

Iron, in its various forms, has received much commendation at different epochs. At the early part of the present century Mr. Carmichael of Dublin published more than one essay in favour of chalybeate remedies in cancer, and supported his opinions by the recital of cases greatly benefited by this metal. It has the great advantage of not being injurious like arsenic, and indeed is doubtless a valuable tonic in those numerous cases of cancer which are accompanied with an anæmic condition. The prescriber is embarrassed by the numerous preparations of iron that

are pressed upon his notice by enterprising chemists and druggists. I have used many, but confess an affection for the old red oxide in drachm doses repeated three times a day, and for the tincture of the sesquichloride. The latter, combined with dilute phosphoric acid and glycerine or syrup, has afforded me the greatest satisfaction in numerous instances. In uterine scirrhus, I have seen the red oxide so improve the system, that the disease has subsided for a lengthened period. This is also a medicine which acts through the direct medium of the blood, and can only be advantageously given when the digestive function is duly performed.

Conium enjoyed a great reputation in the last century, and is still prescribed in cancer by those who have no large opportunities of studying the effect of remedies in this disease. Dr. Störck of Vienna, who was the great apostle of this drug, ascribed to it marvellous curative powers; and M. Recamier subsequently lauded it in a less degree. Other enquirers, however, have reduced its claims to that of a sedative only, and one which cannot always be depended on, owing to the varying quantity of the active principle, conia, which the plants hold. I have given it largely both as a vaunted specific and as a sedative, and the results have induced me to put it on one side as useless in the former view, and as less valuable than other agents in the latter. I have indeed found conium produce more stomach derangement and headache than any other sedative.

Iodine, from its remarkable influence upon the system generally, and especially upon all glandular

structures, would seem to be an agent which ought to have some considerable power for either good or evil in a disease which so especially affects the glands of the body. I have hopefully tried it much in the shape of iodide of potassium, iodide of iron, and iodide of arsenic. I have also used it as an external application in the form of a solution painted upon the part, and as an ointment containing iodide of lead. Under all these circumstances, in true scirrhus, I am not enabled to say that I have obtained any results to justify the hope which was engendered by the knowledge that iodine, in some very important diseases, is a curative agent. My late lamented friend Dr. Mackenzie was at one time very sanguine as to the curative effect of iodide of iron, and tried it largely. Dr. Marsden very kindly gave him six cases at the Cancer Hospital for the purpose of trying this remedy, and he failed entirely in obtaining any beneficial results.

After all, if we examine theoretically the action of this medicine, we shall see that practice only confirms that which we might expect from the results obtained in those diseases it is supposed to cure. In rheumatism, gout, and syphilitic periostitis, we desire to stimulate the absorbents, so that they may take up abnormally effused lymph, and thus restore the injured parts to their natural condition. In scirrhus we know, first, that this absorbent action is almost if not altogether in abeyance; secondly, that whatever greatly increases the absorbent power diminishes the vital power; and thirdly, that the cessation of a cancerous growth depends upon the creation of a pabulum so highly

organised that it shall no longer supply the abortive ill-nourished cell. Viewed in this light, it may be very reasonably supposed that the absorbent power of iodine is not exercised upon the tumour itself, but upon the healthy structures ; and so it does mischief instead of good, by intercepting those supplies of genuine nutriment which should go to form normal tissue, rather than the eccentric development termed cancer.

As a diagnostic agent, iodide of potassium is of immense value. When I come to speak of the diseases of the tongue, I shall have to show how frequently ulcers of this organ have been diagnosed as cancerous, when in fact they were the sequences of a perfectly curable disease, and that iodide of potassium was the means of demonstrating the mistake. I have even seen nodes upon the sternum mistaken for cancer, and have been enabled to show the astonished patients how readily they may be cured by this agent.

The alkalies ammonia and soda have been largely employed in cancer, but I believe the results obtained are only those produced by the improvement these drugs may effect in the digestive process. A very enthusiastic person applied to me some time ago urging the employment of acids internally and alkalies externally, so that, the two meeting, as he supposed they would, in the tumour, a *bouleversement* would ensue, of such force as to entirely overthrow and annihilate the peccant growth. He did not see the force of my objection, that the internally administered acid would not come out boldly as acid to meet its expectant antagonist.

Figs, used both internally and externally, are rarely

omitted from the list of things tried by the unhappy sufferers from cancer. Friends have heard of cases 'cured' by them—at any rate they have a high prophetic sanction, which in our reverence for all that is spoken in the Divine Word, when properly understood, commands our notice. It is related in the 38th chapter of Isaiah that Hezekiah the king of Judah was informed of his approaching death, that he prayed earnestly for longer life, and his prayer is granted. 'For Isaiah had said, Let them take a lump of figs, and lay it for a plaister upon the boil, and he shall recover.'

Now, although it is more probable that the disease which came upon Hezekiah was rather a carbuncle which kills quickly, than a cancer which is of slow growth, it is still of course possible that it may have been the latter, and that the lump of figs cured it. But is it not also evident that this cure is represented as being effected by the miraculous interference of Almighty power exercised in the person of the great prophet, just as our Lord Himself spat on the ground, and made clay to anoint the eyes of the blind man? and can we in the present day rationally look for miracles to be performed upon our own individual persons? Suffering is the badge of all our tribe, and our finite intellects are permitted only a certain limited command over the ills that flesh is heir to.

A hot fig will promote the suppuration of a boil and cure it, but however administered it has no beneficial influence in cancer. Cut up and boiled in milk, as commonly recommended, it may be taken for weeks and months without influencing in the slightest degree the growth of the tumour. Applied to the cancer itself,

it gives great pain, and in the ulcerated stage does infinite mischief. It is, nevertheless, borne with wonderful patience by many whose faith overshadows their reason.

It is of course the fresh ripe fruit which is intended to be used, but some persons have employed the dried preserved fig, which is much more acrid and injurious in its effects.

Many herbs have enjoyed repute as remedies in this disease, but few have received such general approval as the *Galium Aparine*, or cliver grass, which is to be found in every hedgerow from May to August. There is much honest testimony in favour of this herb, not only from intelligent patients, but from medical men of excellent repute. Mr. Bulley of Reading has not long since reported a case of hard nodulated tumour of the tongue, apparently of a cancerous nature, which disappeared under the use of the *Galium Aparine*. Dr. Ogle has employed it with advantage in epilepsy, and Dr. Wynn in skin disease. I know also that Mr. Paget has advised it in scirrhus of the breast. I have myself received such excellent accounts of it from patients who have been advised to use it, that I am constrained to think some real benefit is obtained by it. Ladies have taken it under my superintendence for years, and the cancer has remained in abeyance; but it must at the same time be stated that other remedies have accompanied the use of this herb, and that *alma natura* has given her great aid in the remedial proceeding. My own feeling in the matter is that this cliver grass may have some specific effect upon the blood, so that, under its influence, the tendency to the formation of embryotic

or abortive cells is diminished ; and that if this influence be supported by other agents having a sustaining power, we shall and do obtain the requisite factor for establishing at the back of the tumour a block against any further development of its vicious material. In the summer time it is desirable to use the fresh infusion, made by pouring a pint of boiling water upon two ounces of the stems of the plant. Half of this may be taken in the twenty-four hours. In winter a fluid extract may be obtained from Mr. Squire of Oxford Street, who keeps the expressed juice, and the dose is a table-spoonful three times a day.

The preparations of gold have been employed, but have earned no good reputation. I have myself used manganese in various forms without any satisfactory results. The mineral acids have perhaps obtained less favourable notice than they deserve. As agents for improving the digestive process, and so contributing to the better alimentation of the blood, they are of the greatest benefit, and claim our highest approval. There are few cases of cancer that will not be benefited by the administration of such a tonic as these agents afford. It perhaps does not much matter whether we give the sulphuric, nitric, phosphoric, or hydrochloric acids, but as a matter of experience I may state that I have obtained the best effects from the phosphoric and the hydrochloric acids, and this, I believe, is in accordance with the experience of the physicians of the Consumption Hospital, in that disease which seems to me to have such a close affinity to cancer. In combination with that charming aromatic, the compound tincture of bark of the Pharmacopœia, or the tinctures of serpentary,

calumba, or orange-peel, or with any appropriate preparation of iron, such as the tincture of the sesquichloride or the phosphate, these acids may be continued for a long period, and afford the most remarkable results. There is only one other medicine which has any large claim upon our attention, either as an assistant and rectifier of the digestive process, or as a direct alterative and tonic to the blood. In my hands cod-liver oil, administered in the occult stage of a scirrhus of the breast, has more nearly approached the characteristics of a specific than any other agent. It seems to supply that aliment to the cells of new formations, for want of which they droop from their rotund form, and lose the power of creating normal tissues. It is not always, alas, in the power of the patient to digest this remedy, but this difficulty may very frequently be overcome by giving the oil in a solution of the hydrochloric acid, or in combination with a solution of the muriated tincture of iron. We shall thus have our two greatest remedies acting in concert, and whilst affording support to each other, they will give to the alimentary creative power a stimulus which will enforce its due performance, and necessitate the disposition of normal tissue, in place of an irregular diseased growth. It may perhaps be taken as some corroboration of my views respecting the interchangeable qualities of cancer and tubercle, that cod-liver oil is so beneficial in both these pathological conditions.

It will be observed that food is the grand aim and object of all my thoughts in the pursuit of a remedy for cancer. Having put the digestive apparatus into the best working order, and having supplied to the blood those agents which it seemed to lack, we have

to look to the chemistry of the culinary art, and see that our patients are supplied with such food only as affords to the tissue-creating blood the proximate elements of healthy structure. A variety of tastes and of powers have to be taken into consideration here. With the patient before us, we can usefully and materially help the cook with suggestions for the proper alimentation of a cancerous patient, but in a treatise by one who has not studied the 'Divine Art' professionally, it would be presumptuous to attempt anything like a dietary for all cases. As a guide only to the requirements of the patient, I would say aphoristically, Nourish, nourish, nourish, and take nothing that does not nourish.

In advising wine or beer, the general condition and habits of the patient will have to be studied. Some are benefited by them, whilst others digest better without any stimulating beverage. In the early stage of cancer, when we are looking forward to a permanent arrest of the disease, a moderate amount of either wine or stout only should be taken. In persons having a rheumatic or gouty tendency even this small quantity should be avoided if possible. In the later stages of the disease, when there is waste from ulceration or hæmorrhage, we may advantageously give these renovating agents more freely. The precise kind of wine will necessarily be governed by the social position of the patient. Where economy is of slight importance I have found the red Burgundy wines most suitable. Good draught stout is better than ale.

I have omitted perhaps from this review of the internal remedies for cancer, a few things that have from

time to time been recommended, but I am not aware that I have passed over any of the therapeutic agents which have ever obtained any considerable reputation. It has been my aim to try all things, to accept all suggestions, whether empirical or rational; and to know nothing of 'rest' or 'finality' in this enquiry, as long as I am permitted to continue this work.

The external applications used in cancer of the breast are numerous, and if looked upon properly as subsidiary agents to the constitutional treatment, many of them are valuable, when suitably applied.

Pressure, by means of an air-pad contrived by Dr. James Arnott, receives some encomiums from Dr. Walshe; but as the result of experience in many cases I have nothing to say in its favour. On the contrary, I have in several instances seen injurious effects produced, and even ulceration of the tumour hastened by this proceeding. It may possibly in some cases relieve pain, as stated by its advocates, but it certainly increases pain in many others, and adds considerably to the discomfort of these sufferers. I have been recently attending a lady who attributes the breaking of the skin over the tumour to the pressure exercised by the pad, and I have also recently seen a lady from Liverpool who suffered much from this instrument, and has been getting well ever since she left it off. If experience gives no encouragement to the employment of pressure thus applied, certainly it derives no support from reason. Cold, by means of ice applied with great caution, has its uses. It subsides those occasional inflammatory paroxysms to which a scirrhus tumour is prone, and may check the disposition to suppuration,

the result of inflammatory action. Its continuous use, however, in all states of the tumour, is not warranted by experience. The destructive power of this agent is so great, that I have seen the whole breast slough as the result of a prolonged application of ice, and the sloughing, in the instance I refer to, extended through the intercostal muscles into the cavity of the chest. This case occurred in one of the oldest and most highly considered of our London hospitals. Under skilful direction and constant supervision, I think it quite possible that much benefit may be derived from the reduction of temperature effected in the tumour by this means, and I would by no means discourage the careful employment of this local aid to treatment.

Electricity, locally applied, may have some power in exciting absorbent action; but in scirrhus this property of matter is so dull, and the effect produced, if any, is so inappreciable, that, after much wearisome toil in the application, I have despaired of obtaining any useful results.

Iodine has been much used of late as a local application in occult scirrhus. In solution, painted upon the skin covering the tumour, it irritates, and therefore invites a more rapid growth. It certainly does mischief, and never produces absorption in a true scirrhus. In the shape of an ointment of the iodide of lead, it may be used perhaps advantageously; but seeing that lead itself has an indubitable sedative influence upon these tumours, I am disposed to attribute any good effect the iodide of lead ointment may have, rather to the metal than to the iodine.

Vinegar and oil is an application much used by an

unqualified practitioner in London to whom some cancerous patients resort. It produces considerable irritation of the skin, and therefore aggravates the morbid action which is going on in the tumour. All these irritants hasten the suppurative process, and preclude the possibility of that atrophic action which nature herself strives after, and which we may much help her to attain.

The liquor plumbi has certainly an influence over these tumours; most probably by quelling the action which leads to suppuration. In the summer it may be most advantageously used as a lotion, applied by means of two layers of lint covered in with oiled silk; and the strength of the application should be an ounce of the liquor plumbi to a pint of water. This is generally very grateful to the patient, and undoubtedly relieves pain. In winter it is more desirable to cover the breast with a leather plaster, composed of emplastrum plumbi, emplastrum saponis, and emplastrum adhæsivum in equal proportions. Indeed, at all times of the year this plaster, nicely applied, will not only shield the tender breast from injurious irritation, but by the gentle and equable pressure it exercises, assist in producing that contraction of the substance of the tumour we are always looking forward to.

All efforts to 'draw out' the tumour should be studiously avoided. This is generally the effect aimed at by the ignorant pretenders to medical knowledge, who grow rich upon the credulity of suffering humanity. Suppuration of the cancer is produced by these irritating applications, and thus the hope of a cure by atrophy is destroyed.

To keep down inflammation, and subdue pain, are the only requirements capable of fulfilment by local appliances in the early stage of this disease, and these are obtained by the lead lotion, or the plaster already mentioned. In some cases of cuirass-scirrhus, however, it is necessary to give sedatives internally.

Of all the local anæsthetics, I have derived most benefit from belladonna. It requires to be watched, lest it should show its peculiar effects upon the system. I have found two drachms of the extract to six drachms of ceratum saponis a very useful sedative, or, when the dark colour and smell are objectionable, three grains of atropine mixed with zinc ointment form a cleaner and equally efficacious application. I have a lady under my care who has used this for the last five years, with marked benefit.

The subcutaneous injection by morphia and other sedatives has been much urged of late. I am sorry to say I have not been able to persuade patients to submit more than two or three times in succession to this mode of administration, and moreover, I have found it less manageable in its effects upon the system than other methods of administration. Sickness very frequently follows the injection of even the smallest useful dose into the cellular tissue. Opium in every form, hemlock seed and leaves, henbane leaves, the foxglove leaves and poppy-heads, have all a certain value, but according to my experience are less efficacious, when used as topical applications only, than belladonna.

We have now to consider and compare the relative usefulness of those local applications which are employed in an ulcerated cancer of the breast. We have

here four requirements to be fulfilled. First, to heal the ulcer; secondly, to deodorise the discharges therefrom; thirdly, to prevent sloughing; and fourthly, to check or control hæmorrhage.

I have seen an ulcerated scirrhus entirely heal under the influence of a lotion containing chlorate of potash and hydrochloric acid. The proportions I usually prescribe are eight grains of the salt and two minims of the strong acid, to an ounce of distilled water. This, according to my experience, is the most successful of all the various applications. The carrot poultice has a very old reputation in this stage of the disease, and is highly prized by my colleagues. It is very cleansing, and I have seen it heal these ulcers at times in a remarkable manner; but as all poultices are liable to encourage hæmorrhage, when there is any disposition thereto, it is not so generally useful as the foregoing lotion. When the ulcer is quite superficial, it may frequently be healed by the calamine cerate, but, as a rule, greasy matters do not seem to be beneficial. Oxide of zinc with glycerine is a useful application, and so also is a solution of the chloride of zinc, say two grains to the ounce. I have found all caustic applications positively injurious. A poultice composed of bruised cliver-grass is said to have a very healing effect; but although I have advised it in many cases, I have not been able to verify this satisfactorily.

The same chlorate of potash lotion I so prize as a healing agent is also the best deodoriser. If however the fœtor be considerable, it is desirable to set free the chlorine by pouring the strong acid immediately upon the salt, and then, before the gas escapes from the bottle,

adding the water. Prepared in this manner, we get a strong solution of chlorine, which effectually destroys all unpleasant odour. Solutions of the permanganate of potash are very valuable, but certainly less generally efficacious than the chlorine lotion. Extraordinary deodorising powers have been attributed to the carbolic acid, the agent used at Carlisle for deodorising sewage. Indeed, so highly considered is this product by some chemists, that I have heard it said, the fæces themselves need have no odour if it were possible to take carbolic acid with our food. The human laboratory, however, differs from that of the chemist in some particulars, and I find from experience that the disagreeable odour of the carbolic acid lotion or powder is only less offensive than that it is meant to correct, and moreover that it has no lasting effect even in disguising it.

Iodine has been used by Dr. Wynn Williams, and Dr. B. W. Richardson, with good effect. Charcoal and carrot poultices also neutralise the offensive odour of a suppurating cancer, but have little influence when sloughing is going on. Homœopathic practitioners prescribe a minute quantity of charcoal, made from the acacia gum, immersed in a large quantity of water. How carbons may differ, from whatever source obtained, I would leave chemists to decide; but that a few grains in a pint of water can have any deodorising effect, is not only contrary to all experience, but argues in the mind of the prescriber a childish expectancy which is unwarrantable in the treatment of any disease, but surely highly censurable in the management of one so serious as cancer. A spirit-rapper asks no more of

our credulity than do these finicking disciples of a fantastic theory.

To prevent occasional attacks of inflammation, which result in sloughing of a portion of the tumour, is perhaps almost an impossibility; but we should be ever on the watch to control any excessive action that may appear in the part. Our vigilance should be aroused immediately a rigor, or suddenly increased pain, or redness is noticed by the attendants, as these symptoms are generally quickly followed by sloughing of some portion of the affected part. By timely aid the inflammation may be subdued, and the destructive process arrested. The usual cooling spirit lotions should be applied, and it will often be found that an aperient is requisite. Ice judiciously employed is useful in controlling this excessive action. Should, however, the slough have formed, our business is to hasten its separation as quickly as possible. For this purpose nothing is so useful as a manganate of potash, made for me by Mr. Bastick of Brook Street, Grosvenor Square. It is a combination of the manganate and the permanganate of potash, to which we gave the name of manganese cum potassâ. It is a very manageable and effective caustic, and has an especial power of oxidising dead animal tissues, and so depriving them of odour. A layer of this powder made into a paste should be applied directly over the sloughed part only, the other parts having been previously shielded by means of a carrot poultice. Then over the manganese put some more carrot pulp, and let the whole remain for twenty-four hours. There is not generally much pain attending this proceeding, and frequently we see the whole slough turned out

after the first application. Should it be necessary, the process may be repeated, but, as a rule, whatever remains of the slough will readily come away by using the chlorate of potash lotion.

The control of hæmorrhage is comparatively easy in scirrhus, but much less so in medullary cancer. Dry lint will often do it in the one, whilst the perchloride of iron, the most powerful of all styptics, will, in some instances, have but a temporary effect in the other. Whenever hæmorrhage occurs, it should be checked on the instant. The least loss of blood is of vital importance to a cancerous patient, and ought to be carefully guarded against. The nurses or attendants should be instructed in the mode of applying the favoured styptic, so that no time may be lost in this important matter. A small piece of dry lint the size of a shilling, applied over the bleeding point, and slightly pressed upon by the finger, will in very many cases be sufficient to check the flow. If this does not succeed, a similar piece of lint soaked in the tincture of the sesquichloride of iron and similarly applied, will almost invariably effect the desired end. To fill the wound with large quantities of lint, without discriminating the particular point from which the hæmorrhage comes, is highly objectionable, and, moreover, infinitely less efficacious. No application of this kind should remain more than six hours, because suppuration quickly ensues beneath any foreign body in cancerous wounds, and because the styptic action, if likely to be effectual, has done its work in that time. I have had occasion to remove pledgets of lint, reeking with the most offensive odours, the result of a foolish fear lest the dis-

turbance of these applications should bring back the dreaded blood-flow. If it does return, the application, or some other, must be repeated. Matico and gallic acid have their advocates, but they do not compare in certainty with the preparations of iron, and these may always be depended on. The tincture of the sesquichloride is generally sufficient, but in severe cases we may have recourse to the liquor ferri perchloridi of the new Pharmacopœia. Even in those terrible hæmorrhages from medullary cancer of the breast, this preparation poured into the wound will coagulate the blood and compel the vessels to contract in the most obstinate case ; but unless we are driven to this heroic proceeding by the pertinacity of the flow, we should, on account of the caustic effect of this fluid, be content to use pledgets of lint imbued with it.

Having thus, very imperfectly I fear, considered the remedies suggested by experience, as well as those which follow as a logical sequence the pathological discoveries of the present time, I now propose to illustrate the effects of such remedies, and also some of the phenomena of scirrhus of the breast referred to in the foregoing pages, by the recital of a few pertinent cases.

It has already been shown that adenoid and fibrous tumours may be dispersed by treatment. It has also been demonstrated that these tumours are intimate allies of tuberculosis and of cancer, and that in some instances these conditions are but stages in the pathological progress. I have also given quotations from eminent authorities, which point very markedly to the conclusion, that the tubercular and the cancerous dis-

eases exhibit but very slight differences when submitted to microscopical examination.

In scanning the treatment of the following cases, it will, I think, be impossible for the reader to avoid the conclusion, that scirrhus also, the 'incurable' scirrhus, is amenable to remedies, which are acknowledged as such in its confrère tuberculosis, and are at the same time consistent with that rational logic which results from our knowledge of the differences between healthy 'germinating matter' and that imperfectly developed embryotical elementary growth which, by its want of vital power, fails in the production of normal 'formed material.'

It will be a proud thing for science if it shall be established that a few years of patient pathological enquiry have done more for medicine in this one instance than two thousand years of experimental empiricism. I am happy to say that the very eminent physician Dr. Theophilus Thompson supported me some years ago in the opinion I have now broached, not for the first time; and that more recently other gentlemen, especially the accomplished physician of St. George's Hospital, Dr. Fuller, have assured me of their belief in the common origin of tubercle and cancer.

The remarkable facts which the following cases illustrate will, I trust, impress all who have to treat scirrhus of the breast with the hope that it is not beyond our power to effect cures even, in some instances, and certainly comfort and contentment, prolonged life and freedom from suffering, in the great majority. Let the cruel edict so often pronounced,

‘Leave it alone,’ be as much repudiated in cancer as it would be in tubercle; and then we shall not have the pain of seeing our patients tortured in mind and body by the false promises and useless, if not injurious, performances of unscrupulous pretenders, to whose tender mercies such a sentence inevitably consigns them.

Sarah S., aged sixty-three. Married; three children; did not suckle them. Mother died of cancer uteri. Is of placid temperament, thin, pale, and badly nourished. A tumour appeared in the right breast two years before admission, April 14, 1864. She had received no injury to the breast. When first seen the tumour was the size of a plover’s egg, and subject to occasional stabbing pains. It gradually increased and became very painful, until July 1, when she was made an in-patient, and placed upon full diet with stout. The medicine given was hydrochloric acid, tincture of bark, and cod-liver oil. The tumour was covered with the usual leather plaster. She left the hospital in September greatly improved in general health, free from pain, and the tumour reduced to the size of a hazel-nut. She was desired to continue the same treatment, and come occasionally to the out-patients’ room.—November 3: continues equally well, tumour still diminishing. Pergat.—1865, January 5: the tumour has quite disappeared, general health good. The breast is now in that flabby atrophied condition natural to her age and condition. In February she caught a bad cold, and had bronchitis, which reduced her considerably. For the purpose of giving her good nourishment I admitted her again to the hospital, and she soon recovered. The tumour remained quite in the same atrophied condition.

Sarah G., aged fifty-one; a pale, nervous, anæmic woman. Married; suckled three children. Several members of her family phthisical. Catamenia ceased in 1859. In 1851 a tumour made its appearance in the left breast, and gave her much pain. It continued to increase until it was as large as an orange, and then gradually wasted. Having become adherent to the skin, a puckering was produced as the tumour subsided. When first seen, July 9, 1863, the adherent skin was slightly ulcerated. Calamine cerate was used, and the ulcer healed. She has taken hydrochloric acid and bark, tincture of iron with phosphoric acid, and chloric ether; and recently, cod-liver oil. The tumour has quite disappeared; and the treatment now pursued, tincture of iron and cod-liver oil, is partly prophylactic and partly directed to the still somewhat anæmic condition of the patient. She is able to perform all her household duties.

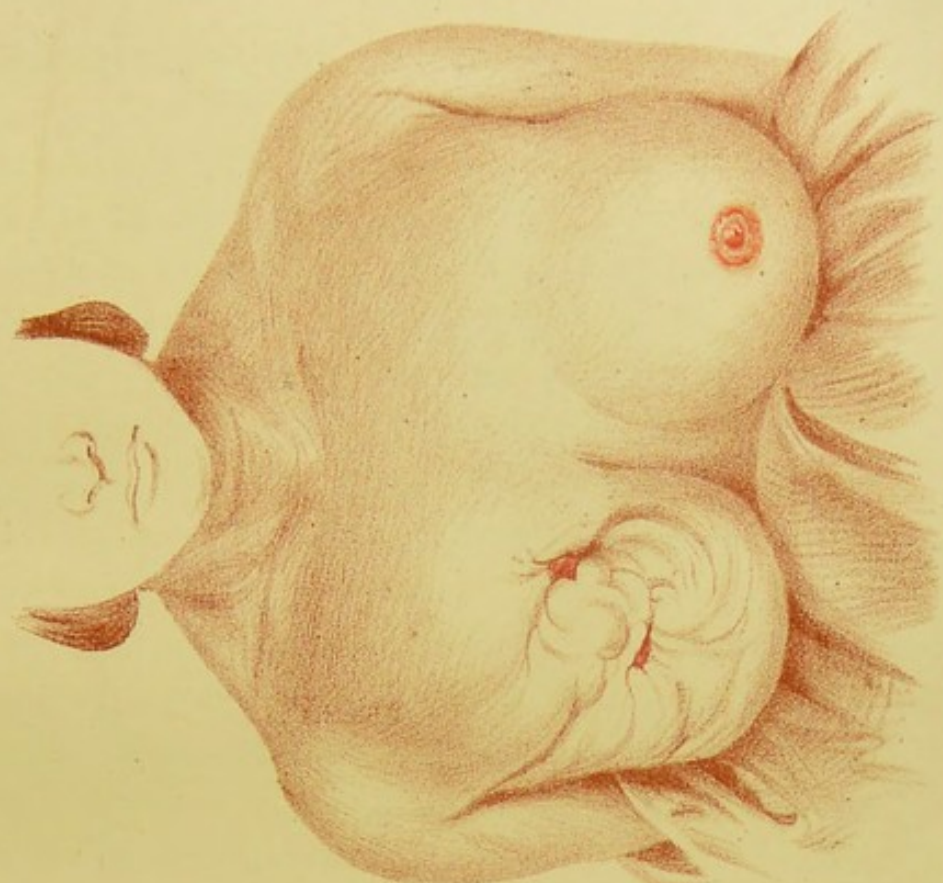
Jane L., aged fifty-nine, of excitable temperament. Married; suckled two children. Mother and sister died of phthisis. Admitted an out-patient, September 25, 1862. Four years previously a small lump appeared in the right breast. It gradually increased and ultimately suppurated. The nipple was destroyed, and the whole breast was atrophied. Upon admission, a dry scab covered the ulcer. This was removed by a poultice, and the wound dressed with calamine cerate in the day, a carrot poultice being applied at night. The medicine given was hydrochloric acid with tincture of bark. The ulcer healed in less than three months, and she remained well until January 1864, when she suffered a great grief by the death of her husband, and the ulcer opened again. The same remedies were

employed, and in six weeks it was again healed. In June, owing to a continuance of mental excitement, there was a slight return of the ulceration. In September it was healed, and she continued pretty well up to December 29, her last visit previous to going to reside in Cornwall.

Ann B., aged thirty-six. Single; pale, leucophlegmatic person. Catamenia regular. A hard tumour appeared in the left breast in September 1860. It increased gradually, was accompanied by lancinating intermittent pains, and at the early part of 1862 began to diminish in size. It then attached itself to the skin, which became puckered, the whole breast sharing in the atrophy. She remains under observation to the present time, June 1865, and the tumour appears to have entirely vanished. The treatment has been principally tincture of iron with chloric ether, and recently cod-liver oil in addition; the part being covered with leather plaster.

Eliza A., aged forty-eight. A thin, fair, placid woman, of cheerful disposition. Married, but no children. An aunt died of phthisis. At the cessation of the menses in the early part of 1859, a hard lump came in the left breast. She had received no injury. On her admission as an out-patient, August 21, 1860, the tumour was the size of a hen's egg, very hard and incompressible, attended with severe lancinating pains. For the first two years she was seen indiscriminately by all the surgeons of the hospital, and each had a share in the treatment; according to a practice which then prevailed, but which has since been altered. She then came under my exclusive care, and my first note of her

2



1





is—September 18, 1862 : tumour decidedly diminished. February 19, 1863 : tumour less, general health good. In June of the same year, there was some excitement in the tumour, and it became larger and very painful. This subsided by means of antiphlogistic treatment, and in August the tumour had returned to its previous quiet state. December 10 : she has become much stouter and more florid, tumour quite quiet ; no lancinating pains now. In April 1864 there was another slight inflammatory attack, the tumour became tender, and somewhat increased in size. Cooling lotions again subdued the excitement in a few days, and May 26 she was in good health, and the tumour less. August 11 : tumour much smaller, it is evidently wasting. December 29 : continued diminution of tumour. It is now about the size of a hazel-nut ; no pain ; general health in excellent condition. January 26, 1865 : tumour gone.

The treatment was occasionally varied, but consisted principally of bark and hydrochloric acid with cod-liver oil ; the tumour being covered with the usual plaster.

Ann W., aged 33 ; a thin, pale woman of placid temperament ; widow ; has suckled two children. Catamenia regular, but has leucorrhœa. Several members of her family have been phthisical. Admitted October 1, 1861. A tumour appeared in the right breast three and a half years before admission. Mr. Cæsar Hawkins had previously advised operation, which she refused. When first seen, the tumour had wasted, and the nipple was drawn down and attached to the ribs, the surrounding areola having become indurated. The part was covered with a leather plaster, leaving a

hole in the centre for the nipple to protrude, and she was ordered bark and hydrochloric acid. September 11, 1862: she had improved in general health, gained flesh, and the disease was quite quiet. August 13, 1863: general health good. Some slight increase of the induration around the nipple. February 18, 1864: disease quite quiet, able to continue her occupation as a tailoress. Pergat. Did not come again.

Ann R., aged 53; of placid temperament and healthy structure; has had a hard movable tumour situate between the mamma and the clavicle on the right side for eleven years. It began as a small pea-like enlargement, after the application of a blister. She is married, has had no children, but four miscarriages, and the catamenia ceased when she was forty-nine. Her mother died of phthisis, and several brothers and sisters died at an early age. When first seen, February 19, 1863, the tumour was the size of a walnut. It was attached to the rib beneath, and to its covering skin. It remained nearly in the same condition for a twelvemonth, but in February 1864 the tumour inflamed. It increased in size, and there was much lancinating pain. This inflammatory condition was controlled by cold lotions, but it recurred at intervals, and the surface of the tumour became ulcerated. The general health did not suffer much from these inflammatory attacks, but a gland in the axilla became enlarged. In May the tumour was quiet, with less pain. In June it bled frequently, and her health suffered in consequence. The bleeding was controlled by an iron lotion, and in August she was much better, and the tumour was quiet. She then began to take cod-liver oil, in addition to the hydro-

chloric acid and tincture of bark she had been previously taking, and from that time her general health has improved. She passes tranquil nights; the wound is lessened considerably, there is never any bleeding now, and a part of the tumour is skinned over. This is her condition at the present time, June 1865, and she is able to continue her household duties in tolerable comfort.

A lady from Bristol, aged 51; a stout person, of cheerful sanguine temperament, subject to dyspepsia, came under my care February 7, 1865. Four generations back, on the mother's side, there was a case of cancer in the throat. Three months previously she had noticed a small tumour in the left breast. It was seen by an eminent surgeon, who pronounced it cancer, and advised immediate operation. To this she demurred, and the tumour grew, and she suffered much lancinating pain. When seen by me the tumour was the size of a plover's egg, unattached to skin or muscle, but defined and hard. No gland enlarged in axilla. I covered it with a leather plaster, and ordered cod-liver oil. February 18: tumour less and softer, less pain. Continue as before. April 10: no shooting pain now, but a burning sensation now and then. Tumour softer. General health improving. May 30: tumour much softer, and more diffused, no shooting pain, no attachment to skin or muscle. General health greatly improved. Continue the plaster and oil.

A lady, aged 65; well formed, somewhat pale, of excitable nervous temperament, came under my care February 16, 1860. She had a hard tumour in the right breast, the size of a duck's egg, slightly adherent to

the skin, but movable. It began two years previously, soon after an accidental injury. The pain accompanying it was lancinating and intermittent. I ordered tincture of bark and ammonia and a fluid extract of the *Galium Aparine*. The tumour to be covered with ceratum plumbi and atropine. She continued this treatment, with the substitution only of tincture of serpentary for the tincture of bark, for a twelve-month. Jan. 30, 1861: the tumour had somewhat shrunk; the pain was decidedly less and less frequent, and the general health pretty good. Oct. 16: tumour remains quite quiet, although she has had a severe attack of bronchitis recently. November 17, 1862: tumour remains in a quiescent state. Continue the remedies. May 3, 1863: two months since some inflammation ensued in the tumour, and since that it has become more decidedly adherent to the skin, and there is a slight amount of serous discharge. The point of adhesion is covered with a scab the size of a shilling. General health good.

May 13, 1864: she says in a letter, 'I think, myself, I am going on much as I have done for the last year or two. I have occasionally for a week or ten days more pain than usual. The crust remains on the surface, and now and then there is a spot or two of blood. I constantly use the ointment.'

December 6: she came to town to see me, and I found the tumour, although considerably shrunk, had become adherent to the pectoral muscle, and the skin was ulcerated to the size of a florin; there was some slight hæmorrhage occasionally, and pain down the arm, but no axillary engorgement. She looks as well as

ever, and has not lost flesh. Ordered quinine and acid and a lotion of liquor plumbi and rose-water. January 12, 1865; has fallen recently and bruised the other (left) breast; no alteration in right breast. Continue the same treatment. I wished her to take cod-liver oil, but she was unable to do so. I heard, January 30, that no mischief was produced by the fall, and that the bruise had dispersed by means of poppy fermentations.

Eliza B., aged 46; married; one child; suckled, but not with the affected breast. Catamenia ceased a year ago. She is a thin, ill-nourished woman of excitable temperament. Father's sister died of phthisis, and her own sister has adenoid tumours. The disease began sixteen years ago as a small movable tumour in the right breast. When admitted to the Hospital, May 28, 1863, the tumour had become attached to the skin, and the nipple was drawn in. There was lancinating pain. She was ordered soap cerate with extract of belladonna, and hydrochloric acid with bark. This was alternated with quinine, tincture of iron, and cod-liver oil. The latter, however, could not be regularly taken from the nausea it produced. The tumour gradually increased, and in May 1864, the report says:—The whole breast has become hard and nodulated. There is an ulcer with indurated base beneath the nipple, the pain is severe and lancinating, and some axillary glands have become enlarged. In June, erysipelas set in and spread over the greater part of the right side. Spirit lotion was used, and it subsided in a few days; after this the ulcer was skinned over in the centre, and the induration was considerably diminished. At the latter part of July

she had another attack of erysipelas, after the subsidence of which the ulcer diminished, as well as the induration, and on September 1 the report is : Much improved in general health, ulcer skinned over. At this time she was taking iron. October 27 : another attack of erysipelas, wound opened afresh, enlarged glands in both axillæ, and tubercles are appearing around the wound. November 10 : erysipelas subsided. Is better. December 15 : tubercles increasing. January 5, 1865 : is getting weaker. After much persuasion she consented to become an in-patient in March. The right arm had become much swollen. The ulceration of the right breast was very extensive. The left breast had become scirrhus, and there were several tubercles scattered over the sternum, which had become ulcerated. After a short time there was a watery oozing from the arm, and the swelling considerably subsided. She soon began to improve in her general condition, and was again enabled to take the cod-liver oil ; after which the improvement was very marked. At the beginning of May the ulcers were nearly healed, and she was able to get out in the garden and take exercise. In June she was again well enough to leave the Hospital.

Sarah S., aged 64 ; married ; two children, suckled. Mother's sister died of cancer. Placid temperament, inclined to embonpoint. On her admission, March 13, 1862, the tumour had existed ten years, so that now it has been there for thirteen years. It began at the time the menses ceased. She was when admitted very anæmic and had arcus senilis. The tumour was in the left breast, of irregular shape, size of an orange. The

nipple was retracted, and from it exuded at times a sero-sanguineous fluid. There was an enlarged gland in the axilla. November 13 : disease quite stationary. April 23, 1863 : tumour increasing. Objects to operation. October 22 : tumour again quiet ; axillary gland smaller. May 26, 1864 : tumour still stationary. August 4 : cysts are more evident now, but the tumour is not any larger. General health improved. Is more ruddy. November 17 : tumour remains quiet. The principal treatment up to this time has been iron ; the tumour being covered with the usual lead or soap plaster. January 5, 1865 : tumour somewhat larger, but no pain. Tincture of iron and cod-liver oil.

Elizabeth C., aged 48 ; married ; no children. Catamenia ceased five years. A sister died of cancer. A tumour appeared in the left breast twelve years previous to her admission on September 29, 1864. It had then ulcerated deeply, and there was occasional hæmorrhage. Ordered the chlorate of potash lotion, tincture of iron as a styptic, and bark and hydrochloric acid. November 3 : better. January 5, 1865 : health improved ; no bleeding now ; ulcer clean and free from odour. Cod-liver oil and tincture of iron, and continue the chlorate of potash lotion.

Charlotte S., aged 55. Has scirrhus involving the whole of the right breast, with surrounding tubercles ; married ; eight children ; suckled them all. Catamenia ceased ten years ago. A tumour showed itself in the breast ten years since, and has continued gradually to increase. She has been under the care of Mr. Erichsen. Admitted as out-patient October 8, 1863, and ordered lead lotion with glycerine, and

hydrochloric acid with tincture of bark. Did not come again.

Sarah C., aged 72 ; three children ; married ; suckled. A tumour began to show itself in the left breast ten years ago, when Mr. Aston Key saw it, and advised operation, but she refused. Four years ago it ulcerated, and now upon admission, April 14, 1864, the whole of the breast is destroyed by ulceration, and there is frequent hæmorrhage. A lotion of oxide and chloride of zinc, with glycerine, was ordered, together with hydrochloric acid and tincture of bark. In November of the same year the breast was no worse, and the general health improved.

Harriet B., aged 49 ; married ; no children. Admitted January 1, 1863. Catamenia regular. Received a blow. Twelve years before admission a hard lump appeared in the left breast. It continued gradually to increase for some time, and then became stationary. More recently the tumour has wasted, together with the whole mamma ; and it is now adherent to the skin. She was put upon hydrochloric acid and bark. The lead lotion with glycerine was applied. She continued in attendance for five months, and the tumour having remained perfectly quiet up to that time, she did not think it necessary to attend any more.

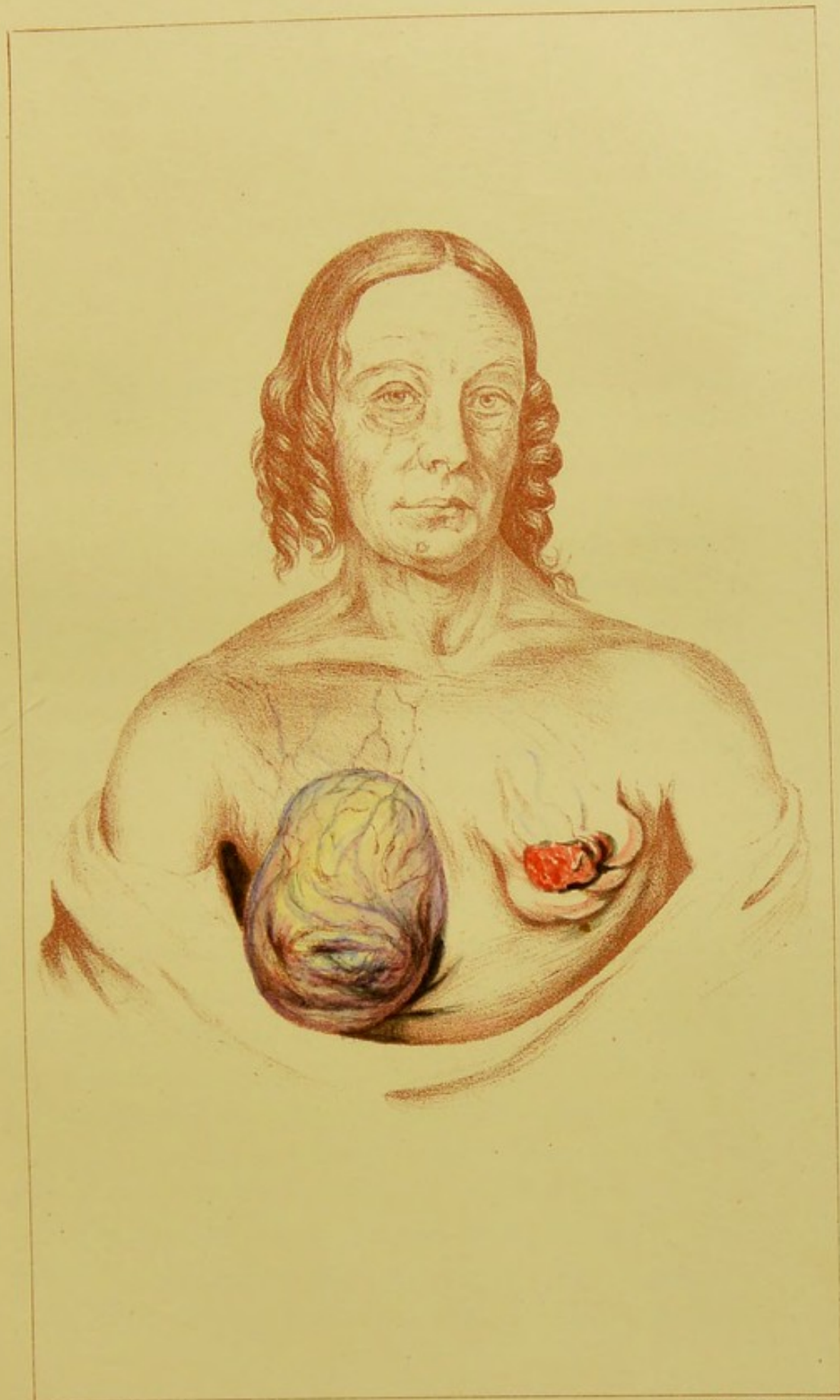
These are a few instances of arrest of scirrhus of the mamma by constitutional means, for ten, twelve, even sixteen years, and the patients are still living evidences of the conservative powers of nature, when properly supported by art, to stem the destructive influences of this malignant disease, and reduce it to a mere inert mass. I think I may venture to assert that even these

few cases, taken only from my own individual experience within the last two years, cannot be paralleled by any similar good results derived from the treatment by excision. Velpeau and others have recorded instances of cure by atrophy, and more recently Mr. Collis of Dublin has, in his useful work, added to the number. When my colleagues publish their experience, it will be further seen how much we may expect from this tendency to natural resolution, when fostered by appropriate support.

Scirrhus of the breast in man is a very uncommon affection, but when it does occur is governed by the same laws which characterise the disease in the female. Simple glandular swellings, induced probably by the rubbing of the brace or by a blow, may take place here, and be distinguished from scirrhus by the amount of induration which accompanies them. It is sufficient to remove the cause of irritation, and cover the swelling with a shielding plaster, to cause its absorption. When this rudimentary gland is the seat of real scirrhus, excision is generally resorted to, and, according to my experience, with even less favourable results than ensue in the other sex. To minds not governed by an idle unreasoning respect for routine authority, the quick return of the disease in the cicatrix will not be a matter of surprise. The male, unlike the female breast, has not that amount of loose fatty cellular tissue about it which is necessary in all amputations, to form a stump so pliable and elastic that the contraction which necessarily ensues during cicatrization shall not leave a tight ill-nourished covering. Unless the patient be unusually fat, the surgeon will

always find a difficulty in approximating the edges of the wound, made for the excision of a cancerous male breast. The consequence is, that the tight cicatrix, if obtained at all, soon takes on the cancerous action, and is quickly destroyed by ulceration. We have, then, the formation of surrounding tubercles, the extension of the disease to the pleura, effusion, and ultimately its fatal consequences.

The opportunities of observing this affection are happily so few, that it is impossible to say, positively, that constitutional treatment, combined with the local applications which are suitable to the stage of development of this tumour, will tend to prolong life more than excision; but arguing from analogy, from the difficulty in attaining a good cicatrix after operation, and from the results of the experience I have had in this matter, I should certainly advise such a patient to shun the knife, and still more the barbarous caustic. I have seen tonic treatment, and a shielding plaster, keep a cancer in a male breast in abeyance for years.





CHAPTER V.

THE TONGUE.

THE part next most frequently selected as the seat of cancer is the uterus, but as there is a special class of practitioners who devote themselves entirely to the study of the functions and disorders of this organ, I prefer, for the present at least, to leave the subject in such good hands ; and pass on to the contemplation of the diagnosis and treatment of cancer and its counterfeits as affecting the tongue—the organ which stands third in point of precedence, although certainly first in importance, considering the physiological uses which are put in jeopardy by any injury to this important member.

The diseases of the tongue, and its value as a pathological indicator, deserve the devotion of a special pathological enquiry. At one time I had intended to make this organ my peculiar study in the few moments of leisure afforded by an active professional life, but circumstances obliged me to enlarge the sphere of my observations ; and that which I have now to offer, is, I feel, but a skeleton of what might be done, if a whole professional existence could be devoted to this subject.

Putting aside altogether the medical aspects of the tongue, although of the very highest pathological importance, there are many lesions which come under

the notice of the surgeon, the correct diagnosis of which often makes or mars the reputation of the practitioner, and suffices either to cure the patient or to make his life miserable. To illustrate the latter remark, I will mention, *en passant*, a case which recently came under my care at the Hospital. A young man presented himself who had an ulcerated tongue. He had lost *all* his teeth, and as a consequence his appearance was that of an old man. He had been under thirteen different medical men, some of considerable surgical reputation, and each had persevered in directing his teeth to be extracted, under the idea that the tongue could not get well as long as it rubbed against them. When he came to me, the teeth, as I have said, were all gone, but the tongue, nevertheless, had not healed. It had been condemned as cancer. I shall have occasion to refer to this case again, and therefore I will only now say that it was at once apparent to me that a mistake had been made. It was not cancer, and it was thoroughly cured in one month by appropriate treatment. Of course it might have been so cured without the extraction of a single tooth, if the real nature of the disease had been, as it ought to have been, previously recognised.

I will offer no apology for inserting here a slight sketch of the anatomy of the tongue, as it often happens that in anatomical works the muscles and vessels and nerves are described in different chapters, and there is no little trouble in bringing the mind to bear at once upon all the parts of an organ, so as to appreciate thoroughly its pathology as well as its physiology.

The roughness of the tongue, by means of which we

tickle our palates, is produced by what are called papillæ, and these having different shapes and uses have received separate names.

The papillæ of the tongue are :—

The circumvallate, which are large nipple-shaped elevations at the posterior part of the tongue. These, deriving their nervous power from the glosso-pharyngeal nerve, are devoted to the sense of taste.

The fungiform are scattered over the sides and tip of the tongue, and on the dorsum in front of the circumvallate. They are implanted amongst the filiform, and are distinguished by their red vascular appearance. To these papillæ is attributed also the sense of taste.

The conical are scattered all over the tongue, and form a connecting link between the fungiform and the filiform. They are very numerous at the tip, and being there but slightly covered with the peculiar hairy prolongations of the filiform, are believed to be most especially endowed with the sense of touch.

The filiform cover the whole of the anterior two-thirds of the tongue, and constitute the fur: these processes are said to be true hairs, and only differ from other hairs in being short and imperfectly elaborated. These papillæ are called by Dr. Hyde Salter, 'protective' in distinction to the 'sentient' qualifications of the other papillæ. These filiform papillæ act as a clothing to the other papillæ, by their friction stimulate the others to their duties, and by their roughness impart a certain prehensile power, enabling the tongue to take hold of and move readily what is placed on it.

The *muscles* of the tongue are of three sorts, intrinsic, extrinsic, and accessory. They assist in the per-

formance of the functions of prehension, mastication, deglutition, and speech, and are necessary to the perfection of taste.

The intrinsic are the transverse lingual, vertical lingual, superior, lateral, and inferior lingual; these together give transverse, vertical, and longitudinal fibres, which are beautifully interlaced, and give all that extreme variety to the movement of the tongue.

The extrinsic muscles of the tongue are the palatoglossus, the stylo-glossus, the hyo-glossus, and genio-glossus, attaching the tongue to the soft palate, base of the skull, hyoid bone, and lower jaw, moving it upwards, downwards, backwards, and forwards. They enter into, and are combined in some degree with, the intrinsic muscles of the tongue.

The accessory muscles are those that move the os hyoides without being attached to the tongue, as whatever moves the hyoid bone must move the tongue which is fixed to it. They assist the extrinsic muscles in their action upon the tongue by fixing the hyoid bone. These muscles are the stylo-hyoid, the posterior and anterior belly of the digastricus, the mylo-hyoid, the genio-hyoid, and possibly some others.

The *epithelium* of the tongue very nearly approaches in character the cuticle of the skin, which it resembles in being of the scaly variety, in the amount to which it exists, and in its being divisible into a superficial and a deep layer, the former readily desquamating, the cells being flattened into scales, whilst the latter consists of more recent cells retaining their globular form.

The *vessels*.—These are the lingual, arising from the external carotid, and some small branches from the

inferior pharyngeal and palatine. The lingual divides into the sub-lingual and the ranine ; previously to this division it gives off two branches, the hyoid and the dorsalis-linguæ. The communication of the opposite sides of the tongue is not very free, but the ligature of one lingual does not stop hæmorrhage from that side of the tongue, the supply from the other being sufficient to keep it up.

The nerves are, two sentient, and one motor. The former are composed of the lingual branch of the fifth nerve, and the glosso-pharyngeal branch of the eighth nerve. The latter is the ninth or hypoglossal nerve. The lingual or gustatory is for the most part distributed to the mucous membrane of the anterior part of the tongue ; the glosso-pharyngeal to the mucous membrane of the posterior part of the tongue ; the hypoglossal or ninth nerve to the genio-glossus and other extrinsic muscles of the tongue.

The *glands* secrete mucus, and are situated chiefly beneath the mucous membrane of the posterior third of the dorsum of the tongue. A small group, however, will be found beneath the tip and along the edges. Their ducts open between the papillæ.

Considering the size of the organ, the lesions to which the tongue is liable are very numerous and very remarkable. Inflammation of the most severe character is an occasional, although happily not a frequent, occurrence. It is subject to paralysis, hypertrophy, atrophy, and the irregularity of control which produces stammering. At birth its frænum may be so prolonged as to prevent sucking, and it may be so entirely absent as to induce the opposite condition called 'tongue-swallowing.' It is the occasional seat of aphthæ, psoriasis,

eczema, and even ichthyosis ; whilst the formidable constitutional diseases, syphilis, tuberculosis, and cancer, are represented in the ulcers to which these systemic dyscrasias give origin.

Tempting as the subject is, I must, looking to the object of the present treatise, limit my observations to a differential diagnosis of the diseases of this organ which may by possibility be mistaken for cancer.

Idiopathic glossitis is a very rare disease, and comes on so suddenly that no one who knows anything of surgery would for an instant imagine that it had any connection with cancer. We have, therefore, nothing to do with the interesting history of this remarkable affection.

Hypertrophy, apart from syphilis, tuberculosis, and cancer, is sometimes observed in the tongue. When it is the result of an injury it is quickly absorbed, but as in the following case,* which was reported and ably

* Taken from the *Lancet*, November 29, 1856 :—

ROYAL FREE HOSPITAL.

Tumour of the tip of the tongue, existing sixteen years ; Ineffectual use of caustics ; Removal by ligature.

Under the care of Mr. Weeden Cooke.

A fortnight ago we reported a case of tumour of the tongue, removed by Mr. Wood at King's College, with success, wherein the disease was supposed to be non-congenital. To-day we give another instance, in which a growth of a totally different nature—most probably a hypertrophy of the muscular structure of the tongue itself—existed for sixteen years. A microscopic examination would have determined the most interesting feature of the case, its intimate structure. We believe, however, it was hypertrophy of the organ. This condition, without any tenderness or structural disease, generally depends upon an attack of acute inflammation, which may be completely overlooked as the cause producing it. Rokitansky considers hypertrophy in the voluntary system of muscles, to an extent that would be called morbid, and that would

commented upon at the time of operation, simple hypertrophy of old standing will not yield to any remedy but the ligature or the knife. It would not be easy, considering the history of such a case, to mistake this condition for cancer. The hardness is never so positive, and it does not proceed to ulceration, as, sooner or later, certainly happens in the more formidable disease. A hypertrophied papilla, the result of

essentially disturb the functions of the part, as extremely rare; he, however, excepts the tongue, and a few of the respiratory muscles alone. In studying hypertrophy of the tongue, our readers must recollect, that it may be limited to its muscular substance, to its mucous surface, or to its papillæ; the former variety, as has already been observed by Dr. Gross of Louisville (U.S.), although sometimes congenital, commonly appears sometime after birth, and is never then witnessed in adults, either without any assignable cause or as the result of glossitis. An histological feature of some interest, in the history of hypertrophied papillary muscles especially, is the dichotomous division of the primitive fasciculi, which, if carefully traced, are found to terminate in very slender branches; and very often may be seen an anastomosis of some of the muscular fibres, which are thus dichotomously divided.

Ann R., aged 28, a healthy young woman, has had a superabundant portion of tongue, the size of a filbert, with a broadish base attached to the tip of the tongue, for sixteen years. It distresses her very much. She has undergone much treatment for it in America, her native place, as well as in this country, to which she came expressly to get it cured. Caustics of various kinds have been employed, but only to distress her. Mr. Cooke proposed to remove it by ligature, to which she acceded. She was accordingly admitted into the Hospital; and on the 21st of January 1856, a needle was passed, carrying silk, through the centre of the base of the growth, which was isolated by tying the silk tightly on both sides of the needle. Perfect death of the part was produced, but from want of power in the patient, total separation did not ensue until after twelve days. The remaining ulcer healed kindly with use of a borax lotion, and two or three touches with nitrate of silver. She went out greatly pleased, with the intention of returning to her home in America. Save a weakly and somewhat hysterical condition, there was no evidence of disease in this patient; there was no scrofula or cancer; and from the exact resemblance of the excessive growth to the rest of the tongue, as well as from the ineffectual treatment by caustics, there was no room for doubt that this was nothing but an abnormal growth of the tissues of the tongue itself.

inflammation, will sometimes give much trouble and concern to the patient. Caustics may remove it for a time, but the induration returns. I have found it necessary to remove these little annoyances by excision, and in doing so it is desirable to pass a tenaculum under the base of the papilla, in order that it may be thoroughly excised.

Nævus of the tongue may, possibly, from its vascular appearance, suggest the idea of fungus hæmatodes. The age of the patient is of considerable importance in deciding the question. Is it not a remarkable circumstance that we never see nævus in persons who have advanced into middle life? Where it has not been cured by operation, it has gradually disappeared. I have had the opportunity of watching many instances of this curious fact. Fungus hæmatodes, although not exclusively a disease of advanced life, is generally so, and therefore, as a rule, whenever we see a vascular growth on the tongue, unaccompanied with induration or ulceration, in a young person, we may consider that it is an eccentricity of structure, and not the result of diseased action. If the nævus be troublesome, its removal by ligature is very easily effected.

Ranula, an occlusion of the ducts of the sublingual glands, occasionally attains such a size as to suggest the notion of cancer. I have seen a ranula, a drawing of which is amongst the pathological collection of the Cancer Hospital, which was as large as a cricket ball, and pushed the tongue out of the mouth, giving the patient a very unsightly appearance. She, however, objected to any operative interference, although of course it would have been of the simplest and generally

most successful character, but preferred to retain her peculiarly offensive aspect. Cancer not unfrequently makes its appearance beneath the tongue, but I am not aware of any instance in which it seemed to derive its commencement from a ranula.

Atrophy of the tongue, independent of constitutional disease, is occasionally seen, and it progresses in spite of all remedies, so that speech and ultimately the power of deglutition are destroyed, and the patient dies in a state of inanition. No one has discovered the pathological reason for this curious change, but it no doubt is connected with some alteration of the nervous supply, which as yet our senses are unable to detect. As a secondary consequence of syphilis, cancer, and tuberculosis, it will be seen presently that atrophy is a not uncommon event.

Thrush is too acute an infection to be mistaken for cancer, but psoriasis, eczema, and ichthyosis of the tongue are very often sent to the Cancer Hospital, both for diagnosis and for treatment. These are very troublesome diseases to manage, but they ought not to be any source of embarrassment in diagnosis. The induration which invariably accompanies cancer of the tongue is absent in these diseases of the integument, and it is only because they have seized upon this particular organ that any doubt arises as to the real nature of the affection. The mucous membrane of the tongue and lips and cheeks is unquestionably liable to all the ailments peculiar to the skin itself. I purpose giving some drawings of these diseases of the tongue, for the benefit of those who have not often the opportunity of contrasting them in the subjects themselves; and I venture

to hope, that, from the skill with which they have been executed by Mr. Christopher D'Alton they will be found amply sufficient guides in the very important diagnostic enquiry they are intended to assist; far superior, indeed, to any word-painting I could hope to achieve.

The alterations of structure produced in the tongue by the constitutional diseases now claim our attention; and here we have to acknowledge difficulties in diagnosis which may test the experience and abilities of the ablest amongst us, and which, in some cases, the effect of remedies only will unravel. Tuberculosis is rare, but it is not unknown, as a source of tongue disease. Syphilis, as is well known, is a common cause of ulcers, and tumours, and indurations of this organ. But, after all, cancer, epithelioma as it is called, is unhappily the disease which most frequently claims our attention in connection with this important member of the body. I am not sure that I have seen more than two cases of tuberculosis of the tongue. In both it began as an indurated pimple, and resulted in indurated ulcers, giving rise to sulci which scored the organ. One instance was that of a little girl aged eight, who came under my care at the Royal Free Hospital, the tip of whose tongue was indurated with two deep ulcers, scoring it longitudinally, and having elevated edges. There were enlarged glands in the neck, and the aspect was that of a strumous child. She remained for some little time under treatment without much benefit, and the parents growing impatient she was removed from the Hospital. The other case was that of a baker, who came under my care at the Cancer Hospital in 1852, the particulars

of which will be found recorded at the end of this chapter. It was a satisfactory instance of a cure of what appeared to be a most formidable disease, and although the means employed were various, I believe that the credit was due to the iron and the cod-liver oil, assisted finally by the tonic effect of sea air. Its resemblance to cancer was very marked. The induration and the ulcerated sulci are common to both diseases, and it was, in fact, after all only the results of treatment which confirmed the suspicion that it might be only a peculiar localisation of tuberculosis.

The ordinary superficial syphilitic ulcer of the tongue is too well known to be mistaken for cancer, but there are cases in which induration accompanies ulceration, and the latter assumes such a malignant form, that unless we are frequently seeing such case, a doubt may readily spring up as to the nature of the disease we are called upon to treat. Where such a doubt exists, the history of the case will generally tend to solve it, but it is not always so. The reluctance to confess in advanced life any early peccadilloes, or perhaps we may charitably say, a forgetfulness of the past, impedes our enquiries; and unless we have confidence in other means of diagnosis, we may be seriously misled, and lose the opportunity of effecting really remarkable cures. In all cases of ulceration of the tongue, after a minute enquiry into the history of the case, we should examine the whole skin and glands of the body personally. It may appear very unconnected and superfluous to the patient, but it is not so; and then if we fail to find any remains of syphilis, we have to decide by the appearance of the tongue itself which of the constitutional diseases

has invaded the organ. The drawings, which I offer for contrast will assist much in portraying the different aspects assumed by the tongue in these two diseases. It will be seen that, in syphilis, the ulcers and sulci invade the whole surface, and even sometimes extend to the under facet of the organ. There are exceptions to this rule, but they are rare, and when they do appear the further distinction as to induration will resolve any doubt. The induration of syphilis is of a modified character. Take the tongue between the index finger and thumb, and it will be found that there is a compressibility which has no parallel in cancer. Even the syphilitic tumours sometimes seen in the tongue, as in other muscles of the body, may be distinguished from an unbroken cancer of the tongue by the different sensation of hardness imparted to the finger and thumb. Moreover, these tumours generally appear in the centre of the organ, whilst cancer has its usual primary seat at one side. The pain is different in the two diseases. The pain of a syphilitic tongue is only that which is produced by contact with the teeth and with food. The pain of a cancerous tongue has, in addition, the occasional electric stab which is so characteristic of this disease in all parts of the body.

One of my drawings represents a very remarkable case of ichthyosis of the tongue in a man who has evidence of syphilis on his shins, and who has been a smoker. He has been under much and varied treatment at different hospitals, but with only temporary benefit. At times the whitened epithelium would peel off and the tongue assume for a time a healthy appearance, but it as surely became in a short time similarly affected,

3



2



1





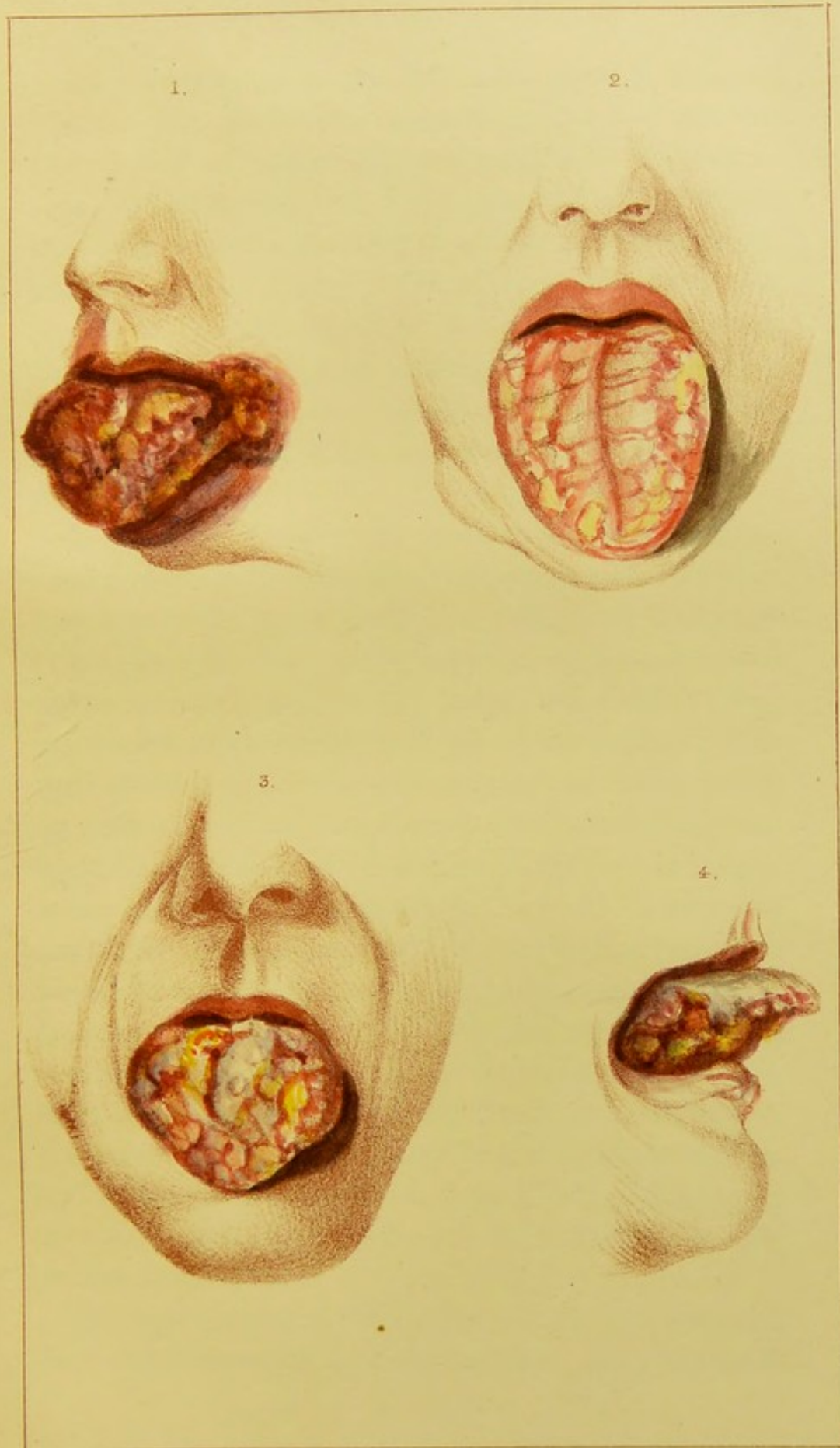
and the man grew weary of all treatment. Although still alive and able to pursue his occupation as a policeman, he is evidently wasting considerably, and will not much longer be able to do duty. This whitened epithelium extended sometimes to the lips and palate. Amongst the drawings of dermatologists, I have not seen any similar case pictured, but the following seems to bear a great family likeness to that I have thus cursorily described.

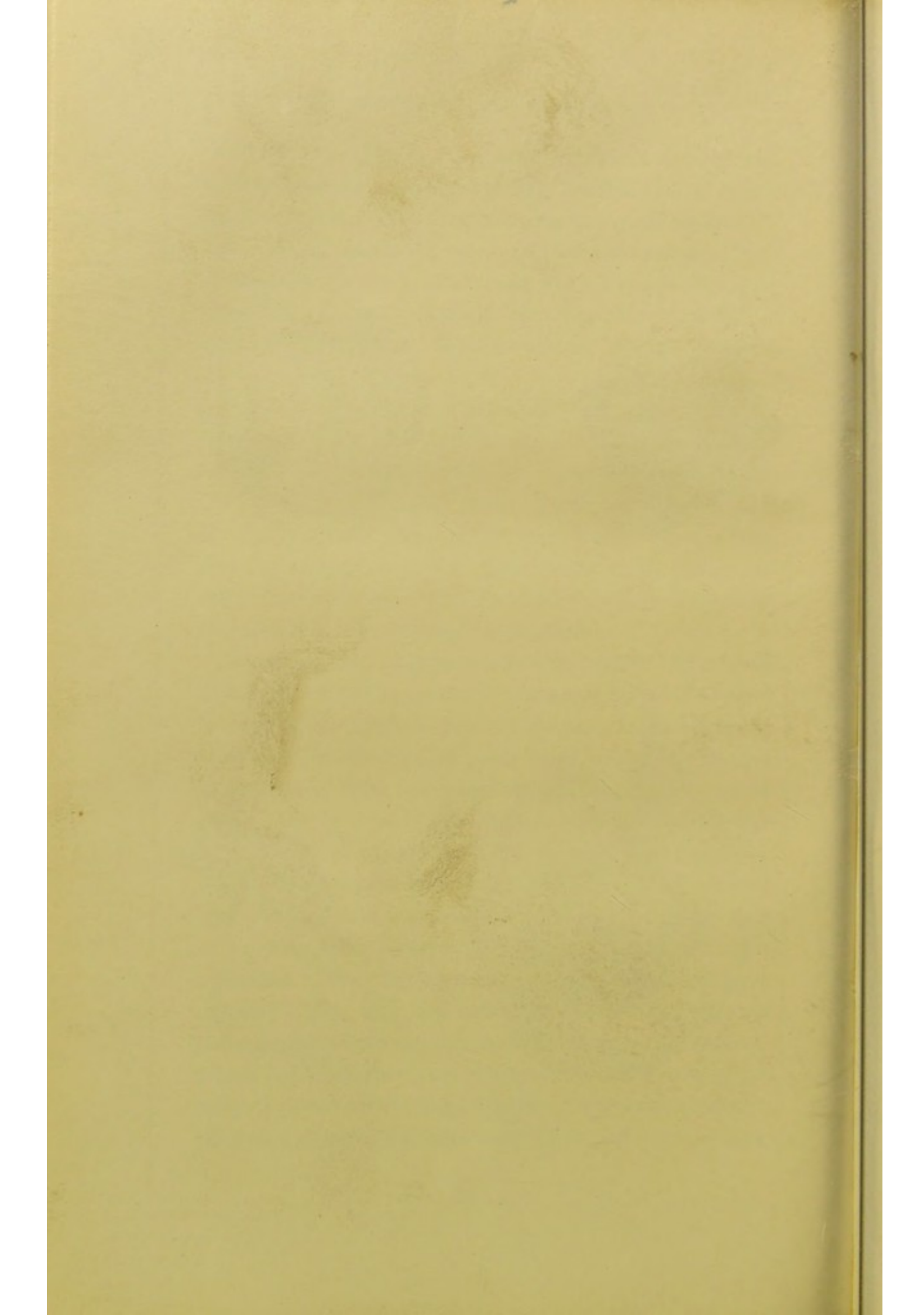
Dr. Neligan describes, in the number of the 'Dublin Quarterly Journal of Medical Science' for August 1862, a very remarkable and highly interesting case. The subject of it was a gentleman who presented himself for examination for life insurance, and the only feature worthy of notice (all else being perfectly healthy) was, that 'the tongue was singularly affected, the natural membrane covering it, and the inside of the cheeks, being changed into a thick white skin like a kid glove, and uneven on the surface.' Although the author had seen nothing like it before, and could give no opinion regarding it, he thought it well to advise an extra rate of five or seven years to be charged, 'the chief reason being that if any accident happened to the tongue in its abnormal state, cancer might result.' About four years and a half after this the patient accidentally bit his tongue; it became very sore, and he was in consequence unable to attend for examination for a further assurance which he was desirous of effecting, and the further history of the case is thus given:—It seems that, as the result of this bite, a small tubercle about the size of a pea formed on the edge of the tongue beneath the mucous membrane, its situation being on a level with the molar teeth. For this

he sought the advice of some of our eminent surgeons, who differed in opinion as to the necessity of an operation, the result being that he placed himself under the care of one of them, who treated the disease with caustic applications. After some time, however, hæmorrhage set in, necessitating an operation, which he survived only a few months, cancer having invaded the glands of the neck.

A case of ichthyosis of the tongue was brought under the notice of the Medico-Chirurgical Society in February 1865, by Mr. Hulke, and the comments upon it by Messrs. Birkett, Holmes Coote, Paget, and Moore, and by Dr. Stewart, who all quoted similar cases, show that the examples of this disease are more numerous than was expected. The connection with both cancer and syphilis was generally admitted.

Cancer of the tongue is generally classed as epithelioma, inasmuch as altered epithelial scales are found in large quantities in all microscopic examinations of specimens of this disease. My own impression is that in its attacks upon this member, the cancer has a much closer affinity to scirrhus than to epithelioma, for the reason that its commencement is always in the deep muscular substance of the organ, and not on the surface. The patient first perceives a hard lump on one side of his tongue. This extends, more or less, and then ulcerates. The ulceration is surrounded by very hard everted edges, and the induration at its base extends through the whole substance of the tongue. Sloughing, which is almost unknown in syphilis, is a frequent attendant upon cancer in this situation. Portions suddenly take on a sloughing action, and separate after a few days,





leaving a clean surface, which is much prone to hæmorrhage. The induration extends across the median line as well as posteriorly, and ultimately the whole organ is destroyed, as is shown in one of my drawings. Occasionally the tongue shrivels and wastes away without any ulceration. This has more nearly the aspect of epithelioma, but the effect is the same. Death ensues in a great measure from the inanition brought about by the inability to take that even extra nourishment which is necessary to combat the disease.

In all cases of cancer of the tongue that have proceeded to ulceration, infusoria,—vibriones, and sometimes members of the monad tribe,—will be found in the pus taken from the sore. This is not the case in cancerous ulcers of other parts of the body, and certainly they are not found in syphilitic ulcers of the tongue. This may afford a diagnostic clue in cases of doubt, and is altogether a curious phenomenon, which would be seized upon by the author of 'Vestiges of Creation' as a testimony in favour of that startling theory of spontaneous generation, the logical result of which, if established, would be to make 'Frankenstein' a possibly true story. It is now made out that intestinal worms, and even others that penetrate the muscles of the body, have their origin in the food we eat. It therefore needs no revolution of the laws of nature to account for the presence of these animalcules in a nidus which is peculiarly fitted for the reception and propagation of such universally distributed creatures.

Perhaps the worst form of cancer of the tongue is that which commences at the frænum. Its progress is

generally very quick. The ulceration extends through the muscles which connect the tongue with the hyoid and inferior maxillary bone, and these being largely supplied with arteries, much hæmorrhage ensues, and the system suffers from this serious waste. The sub-maxillary glands also become implicated in the disease, and these proceeding to suppuration reduce the powers of life, and greatly impede the ingestion of food.

Adhering to my text, that the restoration of diseased tissue to healthy structure is only to be brought about by nourishment, it will be readily understood that I look upon a diseased condition of the organ which stands at the portal of the digestive apparatus as one of the most serious misfortunes that can happen to man. There is no doubt that real cancer of the tongue is the most surely fatal of all diseases, simply because a patient so afflicted dreads the pain inflicted by taking the food which can alone sustain the powers of life. Applications and concentrated food and tonics may put off the evil day, but come it will in spite of all our efforts. The grand hope of the patient must be that it is not cancer he is suffering from; and I propose presently to give some few remarkable instances of cure of badly ulcerated tongues, which had from their long continuance caused the greatest despondency.

Before doing so, however, I will refer shortly to the question of operating upon the tongue in cancer. We have all heard of Mr. Syme's two cases of excision of the entire organ. It was a skilful and heroic proceeding, but the unfortunate patients died nevertheless. Mr. Nunneley of Leeds has since performed the same operation, and the patient lived, but in his case the

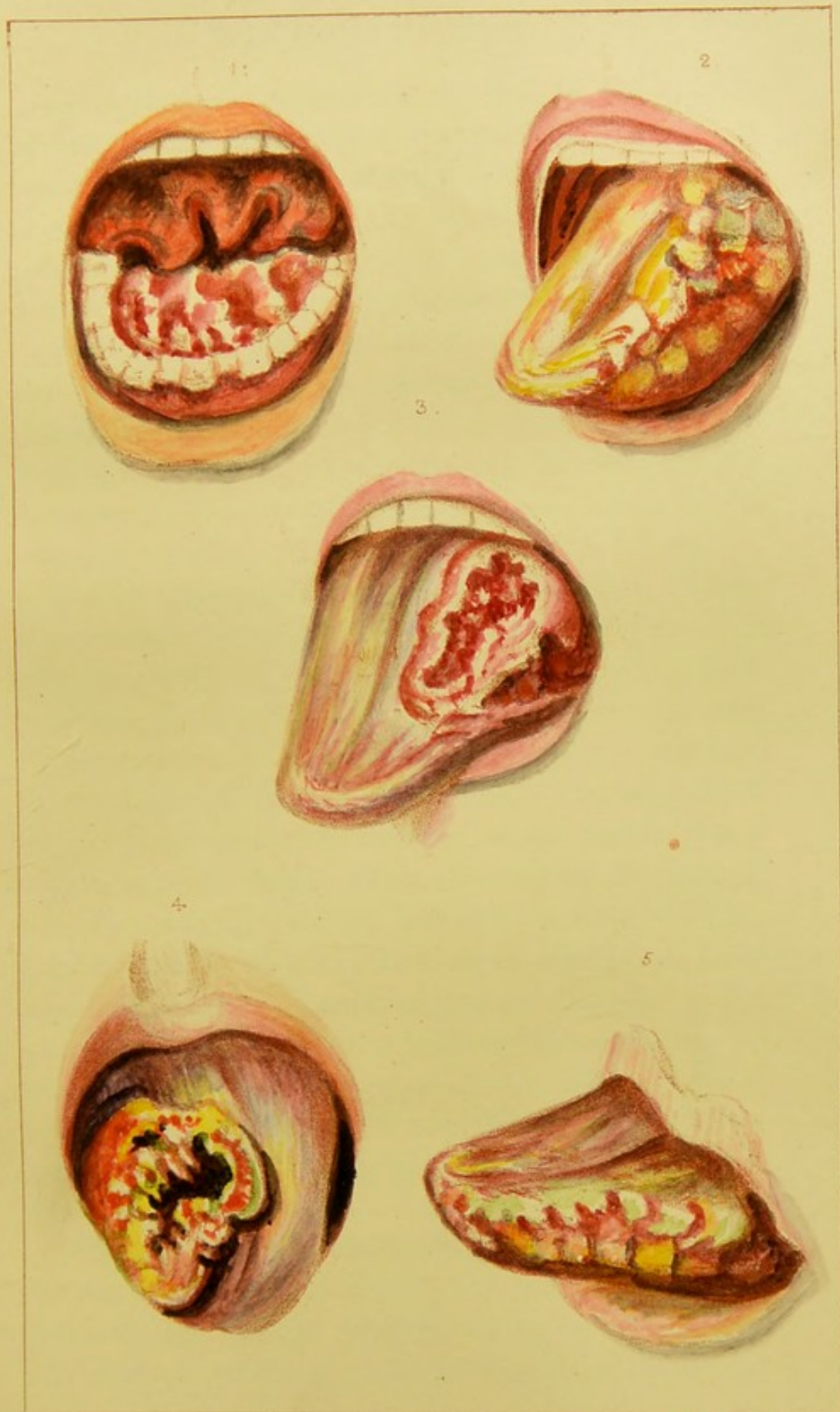
proof was by no means certain that the case was one of cancer at all. At any rate, he must have a strong love of life indeed who would submit to such an operation with so little prospect of a favourable result.* I have seen a recurrence of the disease so frequent and at so short an interval, after excision of even a portion of the tongue, that I think we are only justified in advising this proceeding when the isolation of the cancerous tumour is very complete, and situate in the free portion of the tongue. In that case we may hope that a delay may be obtained, and that such interval of repose may be utilised to nourish and invigorate the system by changes of climate, and by dietetic, therapeutic, and hygienic measures of such a nature as shall tend to restore the lost balance of supply and decay, and so possibly prevent the return of the disease. The method of performing this operation is of some importance. The *ecraseur* of Monsieur Chassignac was popular for a time, because it has the great merit of avoiding hæmorrhage, but from what I have seen of its effects in removing portions of the tongue, I am indisposed to its employment in this operation. The bruising of the adjacent parts is so great, that the whole organ not unfrequently sloughs, and the patient dies a miserable death, at a much earlier period than if he had been left alone. I have seen this result in cases operated on by surgeons of the very highest repute, and I find from Mr. Hutchinson's report in the 'Medical Times,' that

* In the *Lancet* of February 4, 1865, there is a report from Mr. Syme of another excision of the tongue performed by him, but as the report appeared a month only after the operation, we are in the dark as to its ultimate advantage.

patients so operated on have died of pyæmia not many weeks after the operation.

Whenever it is decided that an operation is desirable, the plan adopted by Dr. Humphrey and Mr. Bryant of Guy's Hospital is unquestionably the best. A needle carrying a stout thread is passed through the healthy tissues of the tongue quite clear of the disease. By means of this stout thread the tongue may be drawn well out of the mouth. The surgeon has thus full control over the part he wishes to excise, and whether it be by a transverse or by a triangular section, he is enabled to effect his object thoroughly and easily. The hæmorrhage is very considerable, but the vessels may be readily seized, owing to their large size and free flow. When this is effected, the incised parts have of course to be brought together by means of sutures; and even here the metal sutures may be used in preference to the old irritating silk things, which encourage suppuration, and fail in their object entirely, when the powers of life are low, and the healing process is consequently protracted. Perhaps, even in this operation, by some clever mechanical twisting of the needle, Dr. Simpson's second splendid original contribution to surgical practice may be utilised for checking the hæmorrhage, without having recourse to the ligature, which does more mischief in the excitation of suppuration than tongue can tell.

Mr. Hilton, some years ago, with the object of cutting off the chief nervous supply to the tongue, and so rendering a cancerous ulcer painless, divided and snipped off a portion of the gustatory nerve, as it lies upon the inner side of the ramus of the jaw, and passes from the





internal pterygoid muscle to the side of the tongue. Mr. Moore of the Middlesex Hospital has recently revived the same operation, and in three cases succeeded in destroying the sensation, but the disease nevertheless progressed, and the patient passed out of his cognition, so that there is no certain evidence of much benefit to be derived from this proceeding. One would expect that with the loss of the nervous supply, the natural disposition to slough would be increased, but I believe Mr. Moore says such was not the case in the instances he brought before the profession, in an interesting paper read at the Medico-Chirurgical Society.

The use of caustics in cancer of the tongue is of very questionable advantage, for no sooner have you by a painful process got rid of one indurated portion, than you find the neighbouring parts taking on the same action, and the extension of the disease is, I am convinced, hastened by this proceeding. The sulphate of copper, used either in solution or in crystal, has a marvellously beneficial effect in ulcers of the tongue, not of a cancerous nature, but, like all other irritating applications, it does mischief when applied to those ulcers which are of a really cancerous character. The same observation applies to nitric acid and the nitrate of silver. The actual cautery I have not ventured to apply to this organ, and of course the poisonous character of chloride of zinc, arsenic, &c. put them out of the question here.

The most cleansing and healing application in cancer of the tongue is undoubtedly the chlorate of potash lotion I have already specified, as being so useful for the same purposes in ulcerated cancer of the breast.

According to the tendencies of the patient, or the sensibility of the part, it may be used with or without the hydrochloric acid; and when there is no sloughing, it is not necessary to set free the chlorine by pouring the acid directly upon the salt.

The borax and glycerine lotion is also of service. It consists of two drachms of the biborate of soda, dissolved in a pint of water, to which two or three ounces of glycerine have been added.

These are the applications which will be found of most universal service, but they may be varied occasionally with other agents having somewhat similar effects; for we know that all remedies fail by long continuance. For instance, when there is hæmorrhage, a solution of the sulphate of iron, or of the perchloride of iron, may be advantageously employed. It is not necessary further to particularise the means indicated in this matter. Each practitioner has frequently his own special favourite, and there are many agents provided in the pharmacopœia to effect the same object.

Iron and cod-liver oil, hydrochloric acid, and tincture of bark, are the only useful internal remedies; but these avail little unless a due amount of food can be at the same time ingested. All kinds of methods must be resorted to for overcoming the difficulties of mastication and deglutition. Concentrated soups, minced meats, panada, eggs, milk and cream, everything that is nourishing, must be pressed into the service, and deglutition must be assisted by the use of a feeding-cup with a long spout, so that the suction power of the cheeks shall supplement the muscles of the pharynx and œsophagus. In extreme cases the stomach pump has

been used, but the distress produced is so great that patients seldom wish to have life prolonged at such a sacrifice. The same effect may be attained with less discomfort by injecting soups into the rectum. To prolong life gastrotomy even has been performed, but these surgical feats, however demonstrative of skilful daring on the part of the operator, have the very opposite effect to that for which they are undertaken. And, indeed, how can any other result be expected, considering that the body is already wasted by disease, and has not therefore that recuperative power which is necessary to heal the wounds made by the surgeon's knife?

I have omitted to make any mention here respecting the influence of smoking in the production of cancer of the tongue, because I have already referred to this subject in speaking of the causes of cancer. It is doubtless a determining although not an originating cause, and should be abandoned as injurious whenever the tongue becomes affected.

I now propose briefly to record a few cases which will have their principal use in drawing attention to the possible errors of diagnosis in affections of the tongue, and at the same time help, I trust, in facilitating a correction of the same.

James P., aged 32, gamekeeper in Yorkshire, was sent up to the Cancer Hospital by his master, and admitted under my care January 11, 1852. A small pimple came about three years previously on the centre of the tongue, and formed a hard substance, which ulcerated and healed after four months. Three months since the ulceration reappeared on the sides and dorsum

of the tongue, and notwithstanding much treatment increases. When he first came under my notice there was a wide streak of deep ulceration with a somewhat indurated base running down the centre of the tongue. The sides of the tongue were also ulcerated. The pain accompanying these ulcers was not severe. There were no indurated glands. No relations affected with cancer. Says he never had chancre or eruptions on the skin, but upon close examination of the whole body, I found a small node on the left shin. General health good. Ordered iodide of potassium and tincture of bark, with five grains of blue pill each night, and a chlorate of potash lotion with tincture of myrrh. January 15: induration lessened. Ulcers at side of tongue nearly healed. January 18: ulcer on centre of tongue less; those on the edges healed. Continue lotion and medicine, but omit the pills. January 28: ulceration and induration still further diminished. Able to take food much better. Node on shin nearly gone. Wishes to return home. To do so, continuing the treatment until quite well. Two years afterwards his master called at the Hospital to say J. P. had been quite well ever since he left the Hospital. January 1865: in a communication I have received recently from this patient, he tells me that he continues quite well.

Henry B., aged 37, baker, a spare man, of excitable temperament, was admitted an out-patient at the Cancer Hospital, under my care, July 14, 1864. He has no relations either cancerous or phthisical, and says he has never had syphilis. He has smoked, but not since the tongue became affected. Two years previous to admission the tongue became sore, and he has re-

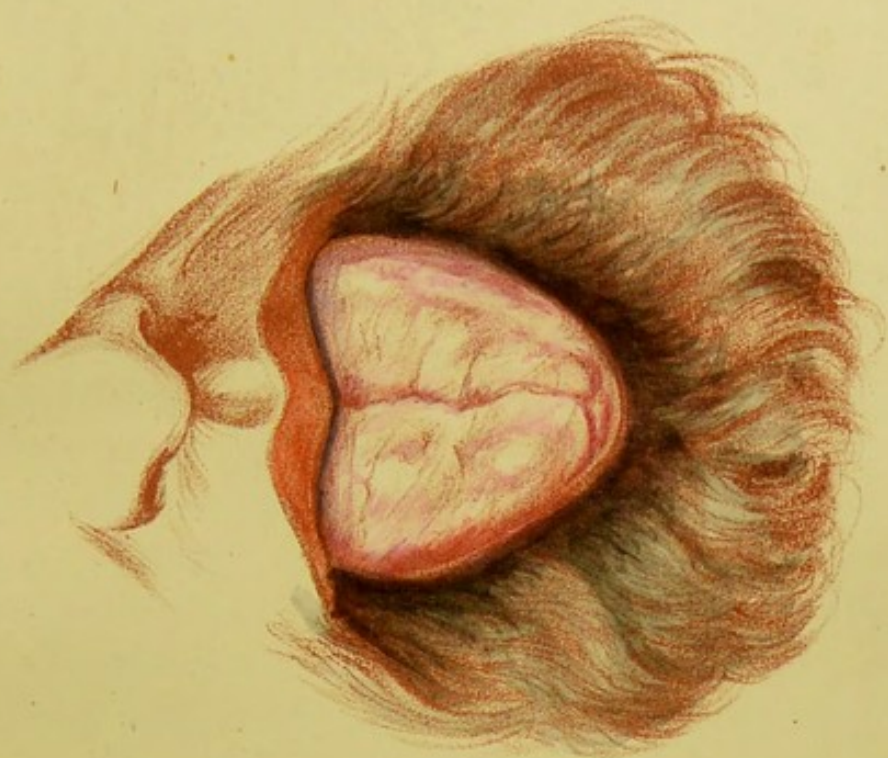
ceived much treatment for the same without benefit. He has been successively, he says, under the care of thirteen medical men, some of them hospital surgeons and physicians of eminence, and under their direction he has had every tooth in his head extracted. When seen by me, from the loss of his teeth, he had the appearance of an old man. The entire tongue was indurated, scored with deep fissures in the centre, and the epithelium destroyed, so that the surface was glazed. I could find no evidence of syphilis in any other part of the body, but from the character of the induration principally, I at once told him that his case was a curable one, and that he need not have lost a single tooth. I ordered him a borax-and-glycerine lotion, and a mixture containing iodide of potassium and iron. On the 28th of July the induration and the size of the tongue were much diminished.—Continue the same treatment. August 4, induration nearly gone, fissures healed.—Same lotion, hydrochloric acid and bark August 11, tongue quite well, fissures closed, induration gone. The papillæ of the tongue have reappeared, and it has in fact resumed a perfectly healthy aspect: general health excellent. Thus, in less than a month, was cured a disease which had baffled the efforts of numerous surgeons for two years, and deprived the poor fellow of all his teeth.

John K., aged 35 (admitted March 2, 1852), a pale man, of nervous temperament, had a sore-throat ten weeks since, and then first noticed an induration on the dorsum of the tongue. There is now considerable induration and hypertrophy, with a deep sulcus having ragged edges running down the centre. There is not

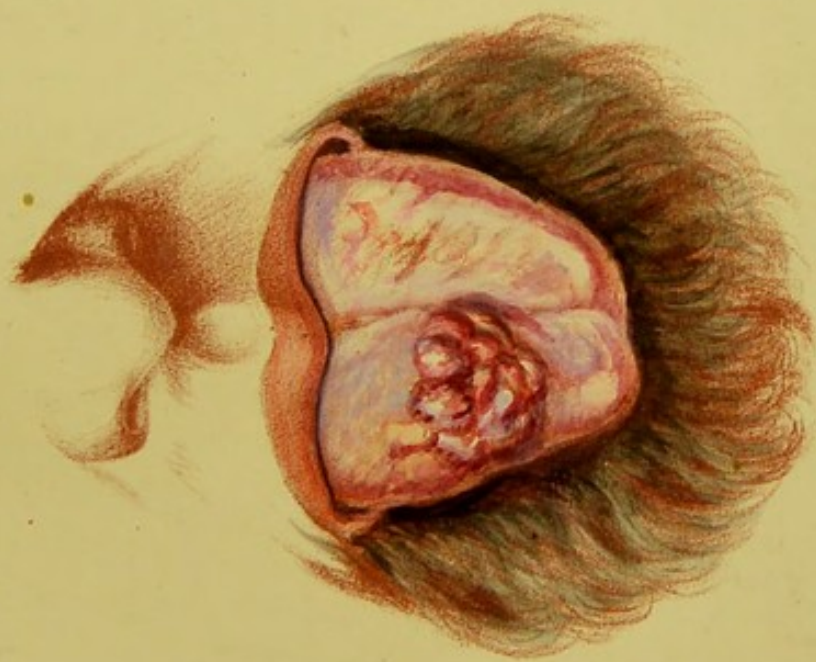
much pain attending it, and he eats fairly. Habits regular. Ordered *tinctura ferri mur.* m. xv. ter, and a lotion containing an ounce of the tincture of iron to a pint of water. The induration began to lessen in April, and on the 13th of May it was greatly diminished. On the 27th the cleft in centre of tongue was closed. He then neglected his remedies, and only attended at irregular intervals. In August of the same year the report is, 'No ulceration, but tongue still hypertrophied.' Ordered cod-liver oil. He appeared again in April 1853. There was still induration of the whole tongue, with sulci, not ulcerated. Ordered tincture of iron $\text{ʒi. liq. potassæ arsenitis ʒss. mxx. ter die}$, and cod-liver oil. In May some induration appeared in the cheek at the angle of the jaw, and on the palate as well as at the base of the tongue. Ordered *tinct. ferri mur.* ʒ jss. , *tinct. iodinii* $\text{ʒ ss. m. xx. ter die}$, with cod-liver oil. In July the hypertrophy of the tongue had disappeared, but there was some lingering of the same about the soft palate. August 22, tongue and palate quite well.—Omit the iodine, and continue the tincture of iron and oil. September 13, tongue and palate remain well; has a bad cough, but no physical signs of lung-disease.—Continue the iron and oil.—Go to seaside. February 14, 1854, has been at work at Portsmouth since last here; has gained flesh and feels quite well. Seen again October 31; mouth and tongue quite well.

James M., aged 36, a pale leucophlegmatic man, was admitted an out-patient at the Cancer Hospital, under my care, December 12, 1861. Has had an elevated granular ulceration of the right side of the anterior part of the tongue for two months; it covers

2



1





about the space of a shilling. There was some induration at the base of the ulcer, but not much. He does not smoke, has not injured the tongue in any way to his knowledge, has never had syphilis, nor are any of his relations cancerous. The general health was not good. He used the borax lotion, and took hydrochloric acid with bark for a month with some benefit. On the 9th of January 1862 I rubbed the ulcer with nitrate of silver, and continued the same treatment. On the 16th the lunar caustic was used again, and once a week until the 13th of February, when the granulations had entirely disappeared, and the tongue was quite well, as is shown in the second drawing of this case. The general health also had greatly improved.

I was unable to assign this case to any class amongst the skin or constitutional affections which obtain a locale in the tongue. Except for the absence of much induration, it at first looked more like cancer than anything else, and would probably have been excised by those whose surgical enthusiasm prevails over their medical instinct. It is a case, I think, which shows that when there is any appearance of deficiency in the powers of life, whatever may be the local lesion, we should attempt to correct that deficiency before attempting any operative proceedings upon the part itself; and in doing so we shall not unfrequently find, as in this case, that the local and the general malady are cured together.

CHAPTER VI.

THE LIPS AND FACE.

THE frequent selection of the lower lip for the localization of a cancerous diathesis in men is doubtless due to the practice of smoking. It has been already observed that tobacco-smoking cannot be accused of *producing* the disease, because thousands smoke and only the units have cancer. But when we remark how very rare is cancer of the lip in women, and how absolutely without exception, as far as my experience goes, this habit has prevailed with men so afflicted, it is impossible to resist the conclusion, that the determination of the disease to this particular part has been brought about by the local stimulus applied by means of the cigar or the pipe. I am not cognisant of a single case of cancer of the lip in a person who had not at some period of his life smoked. Other causes are referred to, —such as an accidental injury by striking the lip against the teeth; the frequent habit amongst packers and net-makers of holding twine between the teeth, and so making undue pressure on one part of the lip for a long period; the irritation of tartar in that unfortunately large class of persons who neglect the use of the tooth-brush; and lastly, the practice of wine-tasting, especially in Spain, where the new wines have a large quantity of

the tartrate of potash held in solution. All these causes, however, must be looked upon as agents only in the determination of the seat of a constitutional defect; and the treatment, to be of any permanent use, must be directed in this instance, no less than in all others, to the whole system as well as to the local mischief. Here, as elsewhere, the diagnosis of the disease is of the utmost practical importance. I have known many persons leading a miserable life, under the impression that they were suffering from cancer of the lip, when in fact the disease was of an entirely different character, and required only a properly-directed treatment to secure its dismissal. The lips are subject, like the tongue, to eczema, psoriasis, and ichthyosis, and the upper lip especially to sycosis and lupus. They are also occasionally the seat of small serous cysts, which only excision will remove. They are frequently ulcerated most severely in syphilitic patients, and I have even seen primary chancre on this part. Although a thick lip is said to indicate a tubercular constitution, I am not sure that I have ever seen disease purely the result of tuberculosis in this situation; but I can imagine it to be quite possible. Lastly, the lips are the seat of cancer, in that form generally known as epithelioma.

I have had under my care for the last two years a man who has had eczema of the lips and palate for fourteen years. He has been submitted to a variety of treatment, and before he came to me nearly all the local applications employed were of a caustic nature. He had never had syphilis, was not a smoker, and had no hereditary taint of any kind that he was aware of. The lips were swollen but not hard; they were extremely red,

and flakes of dried epithelium were constantly peeling off, leaving quite a raw granular surface. This condition extended to the inside of the cheeks and to the palate. He was unable to take solid food owing to the pain produced by mastication, and he was in a weakly state in consequence. Owing to the long continuance of this condition it was suggested to him that it might be cancer, and he accordingly came to the Cancer Hospital. It is not likely that any surgeon of experience would fail to recognise the nature of such a case at once; but it is necessary that the student should have these cases placed in juxtaposition, and I have therefore had a drawing taken of the above case, to show its distinctive features. The patient is not well, but so greatly improved that he is enabled to masticate comfortably, and the general health is now quite restored. The use of caustics doubtless aggravated the disease much. I have found the most useful applications to be phosphoric acid and glycerine, and borax lotion containing glycerine. He has taken arsenic and iron without any favourable result, but latterly chlorate of potash with hydrochloric acid and cod-liver oil have had a most marked beneficial effect, and there seems good reason yet to hope that he may be entirely cured of this troublesome malady. I have given this case insertion here under the impression that an illustration teaches far more than any theoretical description.

Psoriasis labialis is a recognised form of skin-disease mentioned by Willan and Rayer, and attributed by them to the habit of biting the lips. It appears generally as an inflamed crack in the centre of the lower lip, and is often very difficult to cure. Caustics





should certainly be avoided, as tending to irritate and aggravate the malady. It may be known from cancer by the absence of any great amount of induration. Ichthyosis of the lip has escaped the observation of dermatologists, but it nevertheless exists, and is, of all the non-malignant forms of disease affecting this part, the one which most frequently gives rise to question as to its cancerous or non-cancerous nature. A hard brawny scale, frequently circular but of varying shape, appears on the lower lip. It yields to no treatment, and frequently reappears after extirpation. It is quite uninfluenced by any constitutional remedies, and may continue for many years without really interfering with the health or the usual habits of life in any way. It is distinguished from cancer by its uniform brawny appearance, in contradistinction to the more warty aspect of epithelioma; and it, above all, has not that indurated base, which is a necessary and unvarying concomitant of the malignant growth. Ichthyosis of the lip is purely a local disease, and may be cured by excision. It returns again and again, but by slicing off the horny growth, either by means of a sharp scalpel or scissors, as often as it reappears, taking away at the same time a free quantity of the subjacent tissue, it will be found that after the second or third operation there will be no return of the disease. I have had many cases of this kind under my care, and such is the result of my experience: any attempt at cure by any other means is waste of time.

That frightful disease sycosis of the upper lip is too characteristic to be mistaken for cancer; but lupus exedens is, I expect, more frequently denominated cancer,

in this position, than is generally imagined. Perhaps it is not of much moment to distinguish carefully these diseases, inasmuch as the treatment would be the same for both. But the prognosis would be different. Lupus is a progressive eroding ulcer, even more destructive in its progress than cancer; but it is of slower growth, and does not ever give signs of secondary deposits, which may by affecting more vital organs rapidly destroy life. I have twice excised indurated ulcers of the upper lip, and have found the usual epithelial irregularities under the microscope; but the disease has returned in the cicatrix, and quickly put on the aspect it bore previous to excision. The common result of excision of an epithelial cancer of the lower lip is, either that the disease is abated for a lengthened period, or that the neighbouring glands are secondarily affected. It is most unusual to get a return of the disease in the cicatrix itself: it would seem, therefore, that the rare instances of an indurated ulcer on the upper lip are more nearly allied to lupus than to cancer. I have never seen the induration in these ulcers of the upper lip approach in severity that of the ulcers of the lower lip.

Cancer of the lip commences as a small hard nodule at the junction of the mucous membrane and the skin, most probably in one of the labial glands. It increases gradually and, unless excised, sends down a line of indurated tissue towards the junction of the lip with the jaw. It sometimes spreads along the margin of the lip, involving a large portion of it, and occasionally even (but that is generally as a secondary result following operation) the induration extends to the angle of the mouth, and passes upwards to the upper lip. In ex-



2





treme cases the whole of the lower lip and the integument of the chin become indurated and ulcerated, and eventually the jawbone itself is destroyed by the encroachment of the disease upon the periosteum.

Another form assumed by this disease is that of a warty growth, commencing on the skin, destroying its uniform texture, and replacing it by a hard granular tissue which secretes pus sparingly, and extends slowly over the whole of the integument of the lower jaw. This does not commonly result in scirrhus of the submaxillary glands, as is the case in the former variety, but in the gradual destruction of the parts by sloughing, and a persistent creeping onwards, until the inferior maxilla itself is dissolved by suppurative action.

This disease affects men generally at the end of middle life, but it is sometimes seen at an earlier period, and then it is that operations are most successful. Seeing how surely it progresses in spite of all local treatment, I am of opinion that whenever we get a case of this kind which offers a fair chance of thoroughly excising the whole of the indurated tissue, it should be done at any age; and on the contrary, whatever the age may be, if neighbouring glands which cannot safely be removed have become implicated in the disease, the operation should be abstained from as a sure hastener of the final catastrophe.

It has lately, especially by Mr. Collis of Dublin, been asserted that epithelioma is not cancer, and that it ought to be separated from the list of malignant diseases. I regret to be obliged to differ from a surgeon who has devoted so much attention and skill to this subject, but it is impossible to resist the conclusions

which result from experience ; and I think I am supported by others in the opinion, that although epithelioma is, by operation, put away for a much longer period than any other form of cancer, yet, with very rare exceptions, it will crop out again, and—either by infiltration of the neighbouring parts, or by transference to some vital organ—it will show that it is, after all, a constitutional dyscrasia, which cannot be got rid of by mere local eradication. Some great successes may happen now and then, and I will venture presently to record such an one, and to show by illustration the happy results obtained. On the other hand I know that these are rare events, which must not be made too much of. Besides seeing the return of the disease in the glands and neighbouring parts after operation, I have noted that, although there was no apparent return of the disease, the patient nevertheless died within a year or two of some undefined internal disease—which of course an optimist would say had no connection with the disease in the lip, but which, in the absence of a post-mortem examination, would, to the practised surgeon, be an indication of something more than a suspicion of a metastasis morbi.

In the tabular statement of nineteen operations for epithelial cancer of the lip performed by Dr. Humphry of Cambridge, given in the 'Medical Times' for January 19, 1861, these remarks are appended to five of the cases :—'No return of disease ; died of inflammation of bowels fifteen months after operation.' Operation July 1853—'No return of disease in September 1853, when he died in a fit.' Patient aged 66 ; operation September 1853—'No return of disease ; died of old age,





September 1858.' Patient aged 81; operation, March 1853—'No return of disease; died of old age, October 1859.' The other case was almost certainly lupus, and she died of cholera three years after the operation, with 'no return of the disease.' Four more of these cases died of a recurrence of the disease within eighteen months of the operation.

The description given of the nature of the disease in these cases is so meagre that the reader is unable to assure himself that it is epithelial cancer for which the operation was performed, although of course he has every confidence in the diagnostic acumen of Dr. Humphry, and therefore accepts them as such. The ten remaining cases then give us the satisfactory conclusion that no return of the disease had ensued for twelve, eleven, and ten years, in three of the cases, and that the average immunity from disease obtained in the whole ten exceeded five years. This confirms my own views and experience of operation in these cases; and I only will add that, in addition to removal of the local manifestation of the disease, whenever it can be done thoroughly, we are still called upon to repair the shaken fabric from within—to sustain, alter, and revivify the functions of life, so that the food taken may be assimilated into good blood, which shall cease to deposit anything but healthy material for the future. The means to this end are the same as those already named, when writing of the constitutional treatment to be pursued in cancer of the breast.

After trying every kind of local application suggested by experience or theoretical analogy for the reduction or absorption of cancer of the lip, I am unable to point to any one as effectual for this purpose. There is

around the cancer itself sometimes a species of induration which is capable of absorption, and will, under the influence of liquor plumbi and glycerine, be so reduced as to give hope of an entire removal ; but this expectation is never fulfilled, and we are thrown back upon excision by the knife or enucleation by caustic as the only means of removing for a time the local disease.

It is unnecessary to describe here the nature of the operation for this lesion. The V-shaped incision is well known to every surgeon and to most students, and is sufficiently set forth in every text-book of surgery. I would only say that if a particle of induration remains, it will assuredly reproach the operator by a quick return of the disease ; that the coronary arteries do not require any ligature, because they are sufficiently compressed, when, by means of the harelip needles and twisted suture, the divided portions are brought into apposition ; and further, that iron-wire is vastly superior to silk for the suture, inasmuch as it does not excite the suppuration which silk does, and the healing is consequently much facilitated. At the risk of appearing tautological, I would hazard one other remark upon these operations. Be quite sure that you *can* cut away *all* the induration, or you will do mischief instead of good. I might report many cases of 'successful removal' of cancerous lips, such as are frequently recorded in the weekly journals ; but, as I know very well, some other surgeon might write to tell me, such and such a person had been to him with a return of the disease after he had passed from my notice. I set no value on these temporary successes, and look upon them as compromises, which advancing knowledge will enable a wiser genera-

tion to discard, for a more radical and permanently successful treatment. So long as we continue to look upon this disease as a mere local defect, so long shall we fail to effect more than its temporary suspension. *Pari passu* with the operation, and long after, the constitutional treatment should be rigidly enforced. The good effect of this combined treatment is shown in the following case :—

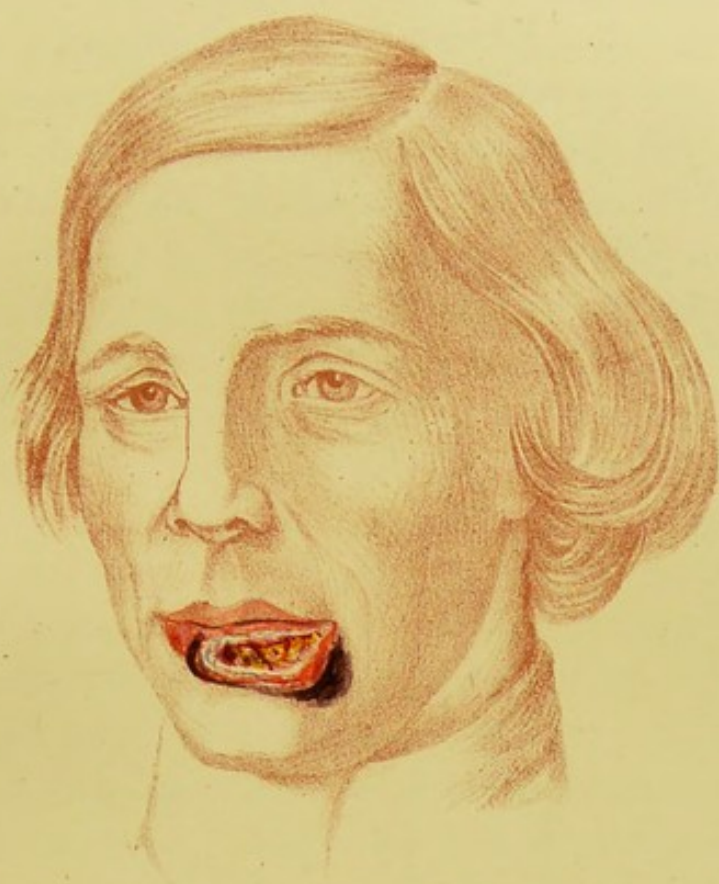
Henry N., aged 31, an agricultural labourer, much wasted, was admitted to the Hospital December 12, 1861. At that time the whole of the margin of the lower lip was indurated and ulcerated. It began two years previously, and had increased in spite of much treatment. He had been a smoker, and there was some hereditary cancerous taint. The drawing of this case shows very accurately his condition when first placed under treatment. He was directed to keep lint on the part, constantly moistened with equal parts of liquor plumbi and glycerine, and to take hydrochloric acid with tincture of bark—generous diet with stout. This was steadily pursued for four months, when the second drawing was taken, which shows how considerably the induration was reduced. The surface was healed except at a small point in a very hard round nodule in the centre of the lip. The same treatment was continued until July, when, finding that no further impression was made upon the hard piece in the centre, I excised it by the V-incision. The healing was complete in a few days, and he went home and to his work in excellent health. He came to show himself in August and November of that year, and in February, June, and October of 1863, and the lip remained per-

fectly well. During a great portion of that time he had taken regularly the acid and bark, and his general health, from having been poor and miserable, became quite re-established. He was, when last seen, a perfect specimen of a ruddy countryman. The third drawing was taken at one of these visits, to show how entirely the lip had recovered its natural condition.

The removal of an epithelial tumour from the lip may be effected by caustics; and those who prefer this method do so in the belief that the favoured agent of destruction has a special intelligent elective power, by means of which it destroys only the naughty parts, and leaves the good safe and untouched. To the many who are given to yield implicit obedience to authority, this may be a very comforting doctrine; but until it can be shown that chloride of zinc, arsenic, pernitrate of mercury, et cetera, do not act upon healthy tissue when denuded of its cuticular investment, I must beg leave to altogether deny the premises, and at the same time to very much question the validity of the practice. I know from early experience that chloride of zinc so used does sometimes become absorbed into the general system, and cause considerable constitutional disturbance.

It is only necessary to read Dr. Alfred S. Taylor's paper, in a recent number of 'Guy's Hospital Reports,' upon the history of the external use of arsenic, to be convinced of the dangers attending the application of this highly poisonous substance. The frequent accidents which have resulted from its employment are there detailed. No care can prevent them, and this alone demonstrates the futility of the dogma, that any

1



2





destructive substance can stop at and elect only the diseased tissue. The pernitrate of mercury also has been known to pass beyond its intended limits, and the patient has died poisoned by the medicine that was meant to heal.

If there were any truth in the assertion that these caustics have an elective power, there is still the objection that the process is long and very painful, and the scalpel performs the same operation in less than one minute. Under these circumstances no one, I think, could hesitate as to the choice he would make, seeing that, if necessary, the patient may be made oblivious by chloroform, or the part may be rendered insensible by ice.

Although I see no justification for the use of caustics when the knife can be employed, there are cases which do not admit of excision; and for these we may frequently do good service, and even obtain cicatrization by the gradual destruction of the exuberant growth, provided the general health be in a condition to reproduce the natural tissues, in lieu of the morbid structure which is displaced. The results of this proceeding are highly satisfactory: very extensive cancerous growths upon the lower lip and chin have been gradually destroyed by caustics, and a healthy cicatrix has been obtained. How long an immunity from this disease has been thus secured I am unable to say; but at any rate it is a considerable gain to have overcome even for a time the unsightly and ever-increasing outgrowth, and to have restored the patient to comfort and to the society of his friends. To my senior colleague is due great praise for originating the method of *gradually* effecting this destruction, and he has had much success in this proceeding.

The caustic which I most prefer is the manganese-cum-potassa made by Mr. Bastick of Brook Street. However much may be absorbed into the general system, it can do no harm, and there is therefore no possibility of an accident resulting from its use. It is not less efficient in its destructive power over animal and vegetable tissue than the other caustics already named, and is certainly superior in its efficiency as well as adaptability to sulphuric acid, nitric acid, chloride of antimony, or the potassa fusa. The manganese caustic acts so powerfully upon all carbonaceous matter, that it must not be mixed with anything but water. The best mode of application is to cover the parts with a piece of soap-plaster spread on leather, having in it a hole through which the part to be destroyed may protrude. Upon another smaller piece of the same plaster, slightly warmed, place as much manganese caustic as you have depth of tissue to get rid of. Pour a drop or two of water upon the manganese to make it adhere, but not enough to make it run, and then place it over the part and carefully secure it by a bandage. This should remain for twenty-four hours, after which the whole apparatus may be removed, and a carrot-poultice used to facilitate the separation of the slough, which will generally take place in a couple of days. I sometimes make a strong solution of this caustic—half manganese and half water—and paint the part once a day, of course with a glass brush, until it is destroyed.

The safety of this application is its great advantage, but it certainly in many cases also gives less pain than any other I have used. Its deodorizing qualities are marvellous.





Eroding ulcers attack the cheeks and eyelids and nose, but they are generally of a lupoid character, and it is beyond the scope of my present intentions to enter into that very important subject. True cancer, however, occasionally is seen on the cheek, and of that I have to offer an illustration or two.

John C. of Fulham, aged 56 ; tolerably healthy ; cut off a mole in shaving in 1859, after which an elevated ulcer appeared on the cheek over the malar bone. This was removed by ligature by Mr. W. Rae of Fulham, and it reappeared in three months. He was admitted an out-patient at the Cancer Hospital, January 9, 1862, when the appearance presented was an elevated vascular growth, the size of a crown-piece, but twice as thick, having an indurated base. I gave him bark and hydrochloric acid, and applied the manganese caustic. May 30 : tumour gone, surface healed. October 2 : slight return of tumour, size and shape of a percussion cap. The same treatment was employed which kept the disease in subjection, but when last seen, February 26, 1863, he had a severe attack of bronchitis, and did not again present himself at the Hospital.

James W., aged 45, admitted March 23, 1852, is a shoe-clicker, of pallid aspect and leucophlegmatic temperament. Has for two or three years felt pain in the left side of face, which he attributed to cold. About four years since two very small pieces of thin transparent bone came into the mouth from the nose, together with much purulent matter. The discharge soon ceased, and he had no further trouble until about nine months since, when the cheek over the zygomatic

arch began to swell, and then he applied to a surgeon. Six months since an exploratory incision was made in the expectation of finding caries of the superior maxilla. About this time a large abscess formed, which was opened, and much thick pus discharged. Poultices were used for a long time after this. Many surgical examinations took place. A fortnight ago he went into one of the Metropolitan Hospitals and had the advantage of the combined opinion of several eminent surgeons, amongst whom there was some difference as to the propriety of attempting the removal of the supposed seat of disease, namely, the superior maxilla; but it was ultimately decided that no operative procedure was justifiable. These several examinations somewhat inflamed the diseased mass, and produced much pain, to which he was not as a rule much subject; indeed, there was generally an extraordinary and happy absence of suffering. The tumour now occupies the whole of the left side of the face from the orbit which it encroaches upon to the inferior maxilla, and from the side of the nose to the ear. There are two open wounds with ragged edges made by the lancet for evacuating matter some time ago; one under the eye, the other at angle of jaw. The neighbouring glands are not enlarged. Bowels confined. Appetite not good—sleeps tolerably well. Pulse 126, very feeble; has been taking six glasses of wine daily. *Mist. cinchonæ cum opio*; castor oil (occasionally); carrot poultices.

March 27: some diminution of tumour, everted edges of tumour more clean and red, granulations not particularly superabundant. *Lotio zinci*.

April 7: a large abscess has formed at angle of jaw.

He is very much reduced. Opened abscess, from which two ounces of laudable pus was discharged. Continue the tonic and zinc lotion.

April 10 : abscess at angle of jaw discharges still ; there is fluid above the integument covering the hard palate of the left side ; upon probing the two openings in the cheek blood flows freely, and the probe does not reach any bone, but breaks through soft tissue ; debility increasing. Ordered quinine and iron, and acid.

May 24 : has been oscillating, now better and again worse. The enlargement of the face has gone on slowly with occasional bleedings. The palate is more bulged and the eye more encroached upon ; not much semi-purulent discharge from the openings in the cheek. Is much emaciated and unable to leave his bed ; sleepless, but not from pain ; appetite bad ; is now taking a soap and opium pill each night with large doses of quinine and ether.

June 16 : continues to get gradually weaker ; occasional hæmorrhages ; the whole of the side of the face is implicated in the enlargement extending from the temple to the lower jaw, encroaching upon the neck, and making the mouth wry, as well as pushing the nasal cartilages to the opposite side. Takes but slight nourishment, is much emaciated, and keeps his bed entirely.

July 4 : died on this day, having for a day or two previous suffered from sickness and suffocative obstruction owing to the discharge of blood down the throat from the back of the tumour. Except during and after the various examinations and probings by

surgeons under whose care he placed himself, the remarkable immunity from pain continued until his death.

Autopsy twenty-four hours after death. Body much emaciated, tumour apparently decreased (owing to the blood having receded from it). It extended from the top of the temporal fossa to beneath the lower jaw, and from the ear to the nose, pushing it and the mouth to the opposite side. An incision being made from the superior to the inferior portion of it, a brain-like mass was exposed nodulated on its surface, and having in its centre cavities containing dark, dirty, puriform semi-fluid matter; one of these opened into the pharynx. The whole of the superior maxillary bone as well as the malar were utterly annihilated, save a minute portion of the frontal process of the malar, which was, however, nearly detached from the os frontis. The lower portion of the orbit was entirely gone, and the edges of the orbital process of the os frontis had become ragged from the absorption. The palate bone was also gone, and most probably the basilar process of the occipital bone, inasmuch as a scalpel could be easily passed into the brain. The anterior edge of the ramus of the inferior maxilla of that side was roughened by absorption; no other part of that bone being affected. The opposite superior maxilla was intact, the zygomatic process of the temporal bone was unaffected by the disease. The vomer was also healthy, neither vessels nor nerves could be traced in the encephaloid mass into which these several bones and the surrounding tissues had been converted. Owing to ill health and the great heat of the weather, I did not pursue the examination into the internal organs.

These two cases illustrate well the relative amount of malignancy shown by epithelial and medullary cancers. The first is very amenable to surgical treatment, whilst the second pursues its course unchecked by any interference of art. Some terrible cases of melanosis of the scalp are portrayed in the drawings at the Cancer Hospital, which have been taken from patients in that institution. There is one especially, of a peculiarly shocking character, which seemed to take its origin from the dura mater, pass through the parietal bone of the right side, and extend itself in huge black masses over the os frontis, falling down ultimately over the eyes. As these cases are entirely beyond the reach of art, I do not propose to distress my readers by any further description of them.

CHAPTER VII.

THE GENITAL ORGANS.

THE sexes are about equally liable to cancer of the external parts of generation. Chimney-sweep's cancer of the penis and scrotum is a rare disease now, owing perhaps more to improved machinery than to the legislative changes which have endeavoured to put a limit to the system of climbing chimneys for the purpose of cleaning them ; but, nevertheless, cancer of the penis is unfortunately by no means an uncommon disease, and the wards of the Cancer Hospital are rarely without five or six such cases ; whilst private practice yields an occasional example amongst the richer classes.

The diagnosis of cancer in this region is generally sufficiently obvious to preclude any doubt, but I have met with persons having this disease who have been treated for syphilis ; and on the contrary, I have known a prepuce excised as cancerous, which turned out eventually to be syphilitic. Syphilis is the only affection which can by possibility be mistaken for cancer in this climate. The elephantiasis of the East is unknown here, as affecting this organ ; although the scrotum sometimes is seen very considerably hypertrophied. The induration of a Hunterian chancre compares certainly with that of epithelioma, the form of cancer to which the

penis is most commonly liable; but whilst the syphilitic ulcer is always defined, and elevated, and does not merge into the surrounding parts, the cancerous sore is less elevated, less defined, and does not present the same abrupt distinction between the affected and the non-affected parts. The presence or absence of enlarged glands in the groins, of an eruption on the skin, of sore throat, and the other concomitants of syphilitic contagion, will of course clench the conclusion to which we may arrive, from the evidence afforded by the characters of the ulcer itself. The situation of these ulcers is also some diagnostic guide, for although a chancre may attack any part of the penis, it is generally on the inner face of the prepuce, and on the glans itself, that it is seated; whilst epithelioma invariably chooses the external skin of the prepuce for its primary development.

Beginning as a small pea-like nodule in the loose tissue of the foreskin, epithelial cancer gradually extends its base, and will probably involve the whole circle of the prepuce in its characteristic induration. Supposing it to be unchecked by operation or by applications, the induration may extend to the body of the penis itself, and, the cavernous and spongy bodies may become a solid hard mass down to the root of the organ. In other cases the disease may confine itself to the prepuce and skin, and form huge unsightly crops of warty growth, which slough frequently, and after a time involve the glans in a similar destruction. Both forms are followed by enlargement of the inguinal glands, and it is generally owing to the exhaustion produced by the suppuration of these glands, assisted

perhaps by occasional hæmorrhages, that death eventually ensues.

The primary cause of the development of cancer in this position is of course a constitutional defect, but the secondary localizing cause may be a congenital phymosis, which by preventing the proper daily cleansing of the part, exposes it to irritation from the collection of glandular secretion beneath the prepuce. Given the constitutional predisposition, any accidental injury may also give rise to this disease. I am inclined to think it may also be developed in the seat of a syphilitic ulcer. There is a case mentioned in that very useful collection made by Mr. J. Hutchinson, and published in the 'Medical Times,' of a man who had epithelial cancer of the penis, following long-standing venereal disease of the organ, and who was also the subject of congenital phymosis. I have seen a very bad case of extensive epithelioma of the labia following a venereal ulcer.

The time of life at which the penis is thus affected corresponds with the period generally chosen for the development of epithelial cancers in other parts of the body. From forty-five to sixty is the most common age, but it is occasionally seen both earlier and later.*

As a local application in epithelial cancer of the pre-

* The soot-cancer to which the scrotum of sweeps is liable, has not come much under my notice except in its secondary results as an aggravated state of ulceration of the inguinal glands; when all that could be done was to support the patient, and use deodorizing applications to the parts. In only one instance have I had an opportunity of removing a soot-cancer from the scrotum, and not having heard of the patient afterwards, I am unable to say for how long the operation had freed him from the disease. In the 'Medical Times' of January 26, 1861, will be found a tabular statement of forty-four cases of soot-cancer collected by Mr. Hutchinson, and the results shown are most favourable to operation.

puce, nothing compares with the liquor plumbi and glycerine. An ounce of the former and two or three ounces of the latter in a pint of water, will, together with general tonic remedies and generous diet, keep in subjection the extension of the disease for a long period; so much so, indeed, as to make it doubtful whether life may not be prolonged as effectually by these means as by operation.

More decidedly than in the case of the lip would I protest against the use of caustics to this part. They give indescribable torture, and fail altogether in checking the progress of the disease. As soon as one portion is destroyed, the neighbouring part takes on the same action, and the extension is infinitely more rapid than if left entirely to itself. When the prepuce only is affected I should be disposed to remove it by the knife, trusting to the liquor plumbi and glycerine to keep in check any return of the induration or warty growth. If the body of the penis be attacked I would remove it by the knife, not by the *écraseur*, which is a clumsy instrument of torture, and does much mischief by leaving the stump in a bruised and congested condition, from which it recovers with difficulty. In advising amputation, however, it must always be ascertained that it is possible to remove the whole of the indurated portion, for otherwise the object of the operation—prolongation of life—will be frustrated. Unfortunately in the majority of these cases the induration extends throughout the organ, and can be traced down to the crura. From the rapid recurrence of the disease after operation, seen in so many instances amongst the patients who come ultimately to the Cancer Hospital, I am induced to think

that the absolute isolation of the diseased part is not sufficiently insisted upon by surgeons in general previous to undertaking this operation : recovery takes place very readily, and the case is probably reported in the journals, but the surgeon rarely has the opportunity of knowing how long or how short is the immunity from suffering he has obtained for his patient. Of the thirty-five cases of amputation of the penis collected by Mr. Hutchinson, one remained well a month after he left the hospital, and another died of hæmoptysis some months after the operation. There is no further history of the other thirty-three cases. Mr. Sibley gives thirty-four months as the average duration of life when no operation has been done. If we were to take the cases of return of the disease after amputation, at other hospitals, seen at the Cancer Hospital, a very unfavourable comparison with this statement would result. But it may be truly said that these are the bad cases, and as it is impossible to find out what proportion they bear to the good cases, it is evident that it would be unfair and illogical to quote them as illustrating the bad effects of the operation generally ; but they may warn us that the enucleation, when undertaken, must be very perfect, and that if it be altogether abstained from, it is quite probable that the patient may live equally as long, although perhaps in greater discomfort.

Having had the opportunity of watching the progress of a case of this kind for more than two years, I think it may be instructive to give an outline of its varying phases.

A gentleman, aged 62, of irritable temperament, but generally healthy, and having no hereditary predis-

position to cancer, found a small sore on the external face of the prepuce, in April 1861. He attributed it to an accidental scratch. He consulted a surgeon who told him it was 'Pseudo-syphilis,' and treated it with mercury both internally and externally for four months. The sore not having healed he applied to me in August of the same year, when I found a sloughing ulcer the size of a shilling, having an indurated base, on the prepuce; and the whole body of the penis, as far as it could be traced, was hard and incompressible. There was no doubt about the nature of the case, and, owing to the extension of the disease throughout the organ, amputation was of course out of the question. Many fluctuations took place in the course of the two years and three months he lived from this time. The prepuce was very gradually destroyed by occasional sloughing. Then for some time the disease was quiet, but presently the glans penis sloughed bit by bit, and ultimately the whole organ down to the pubis. Then the scrotum became ulcerated, and the glands in the right groin enlarged; but for three months before death the whole of the ulceration had healed, and there was scarcely any trouble with the parts themselves. He gradually wasted and lost appetite, and died exhausted on the 19th of November, 1863. The treatment was entirely of a tonic character, principally bark and hydrochloric acid; and locally many things were tried, but that which was apparently most useful was the oxide of zinc and glycerine and the liquor plumbi and glycerine. Anything which gave the least pain was rejected at once, and evidently did harm. There was no severe pain in this instance, and very little inconvenience except that

produced when the part was dressed and cleansed, and when passing urine.

A very sad combination of disease is that of cancer of the penis with scrotal hernia. After a time it becomes impossible to continue the use of the truss, and then as a consequence the bowel protrudes very largely and the patient is unable to get about. Under these circumstances it becomes a necessity that he should remain constantly in the recumbent position.

When the testicle is the seat of cancer, it is almost invariably of the encephaloid form, and is most commonly observed in young children. The other stages of life however are not exempt, and it would seem that by the retention of this gland within the abdomen it becomes the more apt to take on cancerous action. The commencement of the disease is generally attributed to some injury, and no doubt the election of this special locality for its development is due to some such exciting cause. The rarity of any enlargement of the testis in childhood narrows the diagnostic enquiry as to the nature of such a case, when presented to our view. I have never met with hypertrophy following common inflammation, such as is seen in the adult; neither have I ever seen tuberculosis of this organ in little boys, but hæmatocele as the result of injury has come under my notice, and we sometimes see cases of congenital hydrocele; but it ought not to be possible for any surgeon to confound either of these cases with cancer. In hydrocele, the elasticity of the tumour, and of course its transparency, are sufficiently marked to point out the nature of the case; whilst in hæmatocele, the suddenness of its appearance, and the tense condition of the tumour, with

the great pain attending it, distinguish it from the comparatively slow-growing, almost painless encephaloid disease. In all the cases of this nature which I have observed in children, there has been a melanotic deposit; and I am inclined to think that such is generally the case. If so, this dark hue is another and very valuable guide in the differential diagnosis of these affections. In the adult, however, this pigmentary deposit is rarely seen. The testis becomes a mass of soft brain-like substance, growing to a considerable size, and after a time pushing a fungous growth through the ulcerated scrotum.

It does not proceed to suppuration, as is the case in tuberculosis, and occasionally as the result of common inflammation of the testicle. Neither does it resemble the hypertrophic condition seen in syphilitic subjects. The syphilitic testicle would more nearly resemble scirrhus, although the hardness is not so decided; and I am not myself sure that the testicle is ever the subject of scirrhus cancer. If it were, its great weight would in all probability, in addition to its extreme hardness, distinguish it from syphilis. But the history of the case, diplomatically obtained, without exciting the secretive disposition of the patient, ought to be sufficient to decide this question.

In advising operation for the removal of a cancerous testicle, we must be guided entirely by the extent of the disease. If there be any induration of the spermatic cord, or any enlargement of the inguinal glands, the removal of the testis will be quickly followed by rapid development of the disease in these parts; and it will extend itself to the glands within the pelvis and

abdomen more quickly than if the testis had been allowed to remain as a receptacle for the unhealthy deposit. By operation in such a case we should lose also the possible chance of attaining that atrophic action which sometimes ensues in cancerous glands when no operation has been done, and which is practically a cure of the disease.

If, however, the *tactus eruditus* of the surgeon can detect no prolongation of the disease in the cord, nor any enlargement of the inguinal glands, it will, in the majority of cases, be good practice to excise the testicle, and trust to the vivifying influences of suitable climate, generous diet, and the tonics which are specially agreeable to the individual patient, to enable his constitution to resist the further creation of this abnormal growth. Even the melanotic cancer of childhood may be checked for two or three years by operation, and I am much disposed to think that if the administration of cod-liver oil and iron were followed up for a considerable period, the cancerous dyscrasia might be altogether overcome. The local applications which succeed the best in these cases are, liquor plumbi and glycerine when the skin is intact; and the chlorate of potash lotion when the tumour has become fungoid. Hæmorrhages must of course be controlled by the tincture or solution of the perchloride of iron.

The external parts of generation in the female are also liable to cancer, and great is the suffering which results, owing to the difficulty of shielding the affected parts from the constant irritation produced by the passage of the urine. If the patient has the resolution to learn for herself and to practise catheterization upon

all occasions, much of her misery may be prevented ; but practically I find very few who have the determination to overcome the little manipulative difficulty which at first attends this simple operation.

The labia majora and the clitoris are the parts generally attacked, but the former much more frequently than the latter. An epithelial ulcer with an indurated base and ragged edges forms on the inner side of one labium. It may be readily excised, but it grows again and extends through the labium to the neighbouring parts ; or the return may be in the inguinal glands, and these after a time suppurate, and probably the leg swells considerably from venous obstruction. Death ultimately ensues from exhaustion. This form of epithelioma might perhaps be mistaken for an indurated chancre, but it is generally so much larger, and has come on so much more gradually, that even supposing the absence of any other characteristic constitutional symptoms, I cannot very well conceive the possibility of confounding these different diseases. There are, however, cases of warty epithelioma affecting these parts which do at first puzzle even experienced surgeons, and have not hitherto been described. There is scarcely any appreciable difference at the commencement, between this affection and the well-known venereal warts. Perhaps there is more brawny induration about the cancerous warts, and they do not present that filamentous termination which is often seen in the venereal wart. There is also a base of indurated tissue which is much more evident in cancerous than in venereal warts. But the most decided diagnostic fact is, that whilst caustics will to a certainty get rid of the venereal affection,

scarcely any impression is made on the cancerous growth, inasmuch as it reappears almost as soon as the slough has been thrown off. This warty epithelioma invades the whole pudendum, extends to the groin and to the nates, and is kept in check only by generous diet, rest, and cold water—even iced—to the part. It is possible that, if it were recognized when the whole of the disease could be cut away, we might by so doing obtain that amount of immunity which attends operations for epithelial cancer in other parts of the body.

Cases of cancer of the vulva are generally so far advanced when seen by the surgeon, that he has rarely an opportunity of excising the diseased part, with much hope of benefit. Mr. Hutchinson has collected thirteen cases of cancer affecting these parts which have been treated by operation, and by some lucky chance three of these have a history subsequent to the operation. Mr. Smith of Leeds excised the clitoris and nymphæ of a woman aged forty-six, from which she recovered. The disease returned quickly (a few months) and was again excised, but recurred a third time before the wound healed. A woman aged seventy-one was operated on at Bradford for cancer in the right labium, existing six months. It returned in three months in the opposite labium, and the glands becoming enlarged, and her health failing, no further operation was proposed. A woman aged fifty was operated on by Mr. Hutchinson himself. Both labia and clitoris were affected, and there was a large mass in the left groin. It had existed one year. The whole of the disease, including the mass in the groin, was dissected away. She recovered well, but the disease returned in the cicatrix

within two months of the operation ; of this she died about six months later. There is also a case, reported in the same number of the 'Medical Times' from which I have taken the above, operated on by Mr. Ward at the London Hospital.

Mrs. P., a very stout, florid, and healthy-looking woman, aged forty-two, was under Mr. Ward's care in July last on account of a small ulcerated epithelial cancer of the left labium. The sore was situated near the junction of the greater with the lesser labium, and was surrounded by a warty induration presenting a very characteristic appearance. The woman stated that it had existed about six months, and had caused a good deal of shooting pain. She knew of no history of cancer having ever occurred among her relatives. She did not consider that she had lost her health since the appearance of the sore. She was married, had borne two children, and her menstruation still continued quite regular. On July 11, Mr. Ward excised the diseased part. There were at the time no glands noticeably enlarged in either groin. The wound healed well, and she left the hospital in about a month. She was readmitted on September 11, on account of enlarged glands in both groins. In the left groin there was a good deal of inflammation and swelling, threatening abscess, and the exact state of the glands could not be ascertained, but in the right there were several isolated and hardened glands of considerable size. The scar in the vulva was perfectly sound. On being questioned, the woman said she thought she had felt a pricking pain in the groin within a fortnight of the operation. She had not thought it worth mentioning. She has still the appear-

ance of good health, but has slightly lost flesh during the last month.

This case is of much practical importance as illustrating the rapidity with which the glands sometimes become involved in cases of epithelial cancer. As we have seen, the primary disease was excised within six months of its first appearance, and yet within three months after the operation, we have the lymphatic glands in both groins so extensively implicated as to put the case beyond the hope of further interference. It must be remembered that the patient is very fat, and that it is consequently possible that glands in a slight state of enlargement may have existed at the time of operation, which could not have escaped observation had the patient been thinner.

An equally instructive case is given in the 'Medical Times' of November 3, 1860 :—

E. H., aged fifty, a tall, stout woman, of lymphatic temperament, was admitted into the York County Hospital in May 1849, under the care of the late Mr. H. Russell. The clitoris and commissure of the labia minora were involved in a warty and florid growth of epithelial cancer, about the size of a crown-piece. The disease had commenced about four months before her admission, and had latterly been attended by severe pricking pain. The urethra was not involved, and the inguinal glands were not enlarged. The hymen was perfect, and extended so far forwards that the opening into the vagina only admitted a full-sized catheter. The woman had been a housekeeper in a nobleman's family, and had lived comfortably.

After a week or two spent in preliminary treatment, in the hope of improving her general health, Mr. Russell

excised the diseased part, leaving the wound to heal by granulation. She left the hospital with a sound cicatrix on July 28, six weeks after the operation.

On November 23, information was received that she was suffering from shooting pain in the cicatrix. She was readmitted a month later, when a large cancerous ulcer was found to exist. She was much out of health, and the glands in the groin were swollen. The disease now rapidly advanced, and she died a few months later—about fifteen or sixteen months from the commencement of the disease, and ten from the date of operation.

Although the reappearance of the disease in these cases was so rapid, it does not follow that such is the invariable result, for we find in Dr. Tanner's useful collection of cases of cancer of the female sexual organs that in one case at least, in which he operated, the patient was freed from the disease for three years. Elizabeth D., aged 25; married; had one child five years ago, born dead after a bad labour. Admitted February 15, 1850. Had epithelial cancer of the labia minora or nymphæ. The labia majora are healthy; but the lesser labia are enlarged into three warty-looking masses, each rather larger than a hen's egg. Two of these masses are on the left side of the vulva and one on the right. She states that the disease began soon after the birth of the child. On the 25th February he removed the growths, excising every trace of the disease. The copious hæmorrhage which followed the use of the knife was checked by the application of seven or eight ligatures and pressure. By the 9th March she had recovered, without a single unfavourable symptom.

On the 24th March, 1853, this woman again came

under Dr. Tanner's care, the disease having returned in the labia majora. These parts then formed two large oedematous warty-looking masses, each labium being about the size of the open hand, but much thicker. In consequence of her aversion to any operation, trial was made of the effects of intense cold, by the systematic use of a mixture of ice and salt in a bladder. As no benefit was derived from this treatment, she left the hospital, and was not seen again after the 30th May.

It may seem a curious circumstance, but it is nevertheless true, according to my experience, that the young and the old offer better examples of the arrest of epithelial cancer generally by operation, than do those who have only just passed the climax of life; and I believe it was because of the youth of the last-mentioned patient that the disease was slower in its development, and the operation gave a much longer immunity from the disease, than in the other cases.

The palliative treatment of this affection should consist of the same supporting tonic medicines and food, previously advised, whilst the local applications should be of a sedative shielding character, taking care, if possible, by the use of the catheter, to avoid the irritation set up by micturition. The preparations of zinc and lead, and perhaps occasionally a weak solution of corrosive sublimate of mercury, or, if necessary for deodorizing purposes, a solution of permanganate of potash, are the applications most generally useful. Any caustic gives intense suffering when applied to this part, and does not afford results which justify the surgeon in putting his patient to so much torture. In fact, I doubt whether the disease is not in most cases accelerated, when so treated.

CHAPTER VIII.

THE ARM AND HAND.

THE selection of these parts for the development of epithelial cancer is more curious than rare. I have seen several instances in both sexes, and many are recorded in the reports of hospital practice. This peculiar localization is doubtless due to some injury, for I have generally observed it amongst laundresses and agricultural labourers; both occupations involving the exposure of the hands and arms to irritating substances. Occasionally its origin has been attributed to the picking of a wart. The induration which accompanies the ulcer, its slow growth, and the little impression made upon it by any remedial application, are generally sufficient to distinguish epithelioma from any other ulcer in these parts. Boils and carbuncles have none of the brawny hardness of this form of cancer, but I have seen a low form of phlegmonous inflammation on the back of the hand mistaken for cancer, and treated with caustics, even by a hospital surgeon of considerable repute in London. A few notes of this case may be instructive.

William S., aged sixty-nine, a publican, came under my care September 1, 1864. There was a large deep sloughing ulcer on the dorsum of the right hand,

exposing the extensor muscles and tendons. The surrounding integument was thickened, and had a dusky-red hue. He had been two months under treatment, and the sloughing ulcer was extending. The treatment had been caustics and linseed poultices. I ordered him a carrot poultice three times a day, and a tonic, with generous diet. September 8: ulcer clean now, with healthy granulations. September 15: ulcer remarkably diminished and quite clean. September 22: ulcer quite healed. Is well in every respect. The cleansing and stimulating qualities of the carrot are perhaps scarcely sufficiently appreciated in all foul indolent ulcers.

Epithelial cancer of the arm or hand generally takes place in advanced life, is slow of growth, does not give much pain, and only affects the general health when it is accompanied with suppuration. If it is observed early, before it has attained attachments to the periosteum, it may be wise to excise the part only; but if it cannot be freely moved over the bone, amputation is the most conservative treatment. In 1852 I amputated the fore-arm of an agricultural labourer from Essex, who was sixty-eight years of age, on account of an epithelial cancer of the hand, which began two years previously as a warty scale upon the thumb. When he came under my care I found the thumb and fore-finger separating by ulceration, and the disease extending across the whole of the back of the hand. The patient was very weak and had a red glazed tongue, with a disposition to diarrhoea. He was evidently dying from exhaustion produced by the suppuration. Under chloroform I removed this source of vital drainage, and

notwithstanding an attack of phlebitis he recovered and went home seven weeks after the operation with the stump quite healed, and his general health re-established. A microscopic examination of the hand exhibited epithelial scales and cells having nuclei and nucleoli in various irregular shapes. The old man came to town to see me a month after his return, and exhibited a ruddy agricultural aspect, quite refreshing to look at. Although there was occasional pain in the stump, this man resumed his labour, and for five years afterwards I continued to hear from time to time that he was well, and had no return of the disease. I have had other cases, not so satisfactory as this; and others who have refused operation, and have died certainly much earlier and in greater distress than those who have been operated on, regretting that they had not yielded in time to the advice which would have prolonged their days. There are six cases given in Mr. Jonathan Hutchinson's clinical report on Epithelial Cancer, but, as usual, without any history subsequent to the recovery from the operation, except in one instance: that was a case under Mr. Paget's care.

A man aged 62: had been accustomed to set stoves. Cancer of the back of the hand began eighteen months before as a painful wart. Amputation through the fore-arm was performed in July 1852, and the patient died two years and a half after the amputation of bronchitis. There was, however, at the time an open cancer in his axilla. Three of the six cases were submitted to amputation. One under Mr. Teale, at Leeds, suffered excision and removal of the first and second fingers, and in the other two cases the ulcer only was

excised. We cannot gather from these cases any rule of action, owing to the absence of any history of the results of the operations; but I think it will be generally allowed, that the rules for excision or amputation given above are well founded.

I would add, however, the observation, that whereas excision cannot be done too quickly after the disease is recognized, amputation need not be performed until the patient is beginning to fail in general health, as the glands are not readily implicated. I have an old man now under my care who has had an ulcer of this kind for five years, and it still remains in a quiescent state. I do not counsel any trials with caustic to remove this ulcer, because I know how worse than useless they are; but oxide of zinc and glycerine, liquor plumbi and glycerine, the ceratum calaminæ, carbonate of lime lotion, and other soothing sedative applications, may be employed with good effect in retarding the progress of the disease; whilst in all cases constitutional support is of the greatest value. Cod-liver oil, hydrochloric acid, iron, bark, whatever may be found most suitable to the individual, should be employed, together with a liberal diet, and free exposure to a bracing atmosphere.

CHAPTER IX.

THE EYE.

THIS important organ is unfortunately the seat of cancer in its most malignant form, and at all ages. Children of two and three years old have encephaloid cancer of the eye, which runs a rapid course, and in old people the same disease with the addition of a melanotic deposit affects this organ.

The early diagnosis of cancer of the eye is beset with some difficulties, for the first appearance of a tubercular deposit on the retina has the same yellow hue which is afforded by the cancerous affection, and in both it takes a lobulated form, which is overspread with enlarged vessels ramifying in various directions. As the growth increases the pupil dilates, and the eyeball itself begins to be more prominent, although not apparently altered; and there is little, if any, pain. Gradually the lens becomes opaque, thus obscuring the view of the morbid growth. All the textures now increase in vascularity, the whole globe is enlarged, the cornea becomes dim, and the sclerotic, instead of being tense and glistening, is soft and pulpy, and bulges at one or more points. At this stage pain becomes a more prominent symptom, until the globe bursts, emitting its fluid contents, and usually the lens also; and

this is accompanied with great relief to the patient. Even thus far ophthalmic surgeons tell us that it is difficult to say whether the disease be tubercular or cancerous, but in several cases of cancer I have watched, a certain dark pigment has always shown itself when the eye had become so disorganised, and the sequel of such cases has shown that it was a diagnostic indication which may be looked upon as decisive.

‘The after progress of the disease,’ says that experienced surgeon Mr. James Dixon, of the Ophthalmic Hospital, ‘soon affords proof of its real nature. If it be scrofulous, a long-continued discharge takes place from the opening, and then the coats of the globe gradually collapse, and ultimately form a pale soft nodule, puckered here and there into deep fissures, and frequently presenting some shrunken remnant of almost transparent cornea. If, however, the disease be encephaloid, a soft, pulpy, vascular fungus soon sprouts forth from the opening which had given vent to the humours of the globe, and rapidly enlarges, having all the well-marked characters of an open cancer. The profuse fetid discharge dries here and there upon the surface of the tumour, so as to give it almost the appearance of a piece of sponge; and the separation of these crusts is attended with more or less hæmorrhage. Eventually the patient dies, either from malignant deposits in the viscera, or from the drain which the tumour occasions, and the repeated attacks of bleeding from its substance.’

The propriety of operating in these cases is so doubtful, that I think it should always be left entirely to the decision of the patient, if of years of discretion,

after he has been informed of the rapidity with which the disease commonly returns in the cavity of the orbit. According to my experience, three months rarely elapse after an operation before the fungous growth reappears; and, although the outward appearance is perhaps less terrible than when no excision has taken place, the deposits in the brain are more extensive, and life is more quickly put out. The operation is not attended with any immediate danger, and for a time, ease is obtained. This is, I think, all we can tell our patients as regards operation. On the other hand, if the tumour be left alone, and the system be supported by tonics and generous diet, the disease will go on increasing, it is true, and there will be much suffering and much disfigurement, but life will be prolonged perhaps for some years. I have seen such a patient live four years after the first appearance of the disease. Mr. Dixon mentions the case of a child aged 8, not operated on, who lived three years and a half. He thinks, however, that 'there are exceptional cases in which the encephaloid deposit is so completely unconnected with the optic nerve itself, and confined within the limits of the eyeball, that removal of the latter may free the patient from all the encephaloid deposit which, up to that time, has been developed in the system.' The insidious nature of this serious affection of the eye makes it necessary that we should have the earliest information of its onset, and fortunately we can now, by means of the ophthalmoscope, examine without any inconvenience the interior of the globe of the eye, as readily as we can through the telescope contemplate the ring of Saturn or the moons of Jupiter. Thus these exceptional cases ought to be diagnosed at

an earlier period than was formerly possible, and the patient may be offered the possible chance of escape which an operation under such circumstances affords.

The possibility of delaying the progress of encephaloma in this position by caustics is very questionable. I have seen only one case where the fungous growth did not reappear in a month or two after the original tumour had been thus destroyed. Generally the disease progresses inwards, as rapidly almost as the caustic destroys the outward manifestation ; and moreover the hæmorrhage, which follows the separation of the slough, diminishes the powers of life, and consequently increases the fatal tendency of the disease. Even the perchloride of iron, that form of caustic which would seem most indicated in this instance, owing to its powerful hæmostyptic qualities, fails in checking the hæmorrhagic tendency.

CHAPTER X.

THE RECTUM.

THAT the terminal six or eight inches of the intestinal tube should be more liable to cancer than any other portion of this extensive cylinder, is probably due to the presence of that great plexus of veins which exists around and in the immediate neighbourhood of this gut, and to the many causes of interrupted circulation in them which the habits and the requirements of civilization afford. I suppose that piles, and fistula, and fissure of the anus, next to the specific diseases, are the most frequent of all the ailments for which the surgeon is consulted; and when we remember that epithelial cancer selects those parts which have been submitted to some irritating influence, it need be no matter of surprise that the rectum is more frequently the seat of this disease than the œsophagus, or the stomach, or the duodenum, or the small and large intestines. That the cæcum should be not infrequently affected, may be attributed to the mechanical structure of the part, which permits of lodgments of substances that, by detention, act as foreign bodies, and set up that irritation which determines the localization of the cancerous dyscrasia.

Fistula, and fissure of the anus, are too well known to be mistaken for cancer in this part; but as the latter

disease sometimes exhibits itself in the form of a round mass protruding from the external opening, I have seen such an affection treated occasionally as though it were a simple hæmorrhoidal tumour. The diagnostic distinction mainly lies in the degree of hardness which attends these tumours. Besides its extreme incompressibility, cancer is less turgid than the hæmorrhoid; it has also a more extended base, which generally may be traced some distance up the gut. In the female this is best made out by an examination per vaginam. When cancer commences high up in the rectum, the diagnosis between it and stricture, not of a malignant character, requires some careful study. If it be within reach of the finger, the uneven surface of the cancer, and perhaps its disposition to bleed when touched, will distinguish it from the more smooth and tough feel of the strictured bowel. The illuminating mirror of the endoscope, recently perfected and brought into practical use by Dr. Cruise of Dublin, may also be employed with the speculum; and thus we may *view* parts beyond the reach of the finger, and decide by the smooth or ragged appearance of the affection, and by the amount of vascularity, which is heightened in cancer and diminished in stricture, which of these diseases is present. The importance of a correct diagnosis in this instance cannot be too highly estimated, because the treatment by bougie, which is so effective in simple stricture, must of necessity be most injurious and extremely painful in cancer. Although it is the epithelial form which is generally seen in this situation, and perhaps it always commences as such: cases of encephaloid cancer of the rectum have come under my notice; in the former case

the patient having for some time felt an uneasiness in defæcation, begins to observe some blood in the stools. Cancer being rarely suspected, he takes sulphur, and confection of pepper, and cholagogues, but to no useful purpose ; and at last a digital examination of the bowel is made, when it is found either that the tube is blocked by an exuberant growth of an irregular form, or that the finger passes into an ulcer with raised and indurated edges ; or, as has been already observed, there is a hard mass protruding from the verge of the anus, pear-shaped like a pile, but much harder, and having, unlike the hæmorrhoid, an indurated base extending up the gut.

Cancer assumes the encephaloid form in this situation in persons of weak health, and especially in those who have a tubercular diathesis. It often begins as an epithelial growth, which soon fungates, and becomes a very large vascular tumour protruding through the anal sphincter.

The purely surgical treatment of either of these cases is by no means satisfactory. Even when the parts can be apparently entirely excised or ligatured, experience shows that the return of the disease is very rapid, and with few exceptions the recurrence is marked by greater malignancy.

In the female a fistulous opening between the rectum and vagina is not an uncommon result in the later stages of cancer of the rectum. The indurated condition of the parts will show at once that those ingenious operations which are so successful in the ordinary recto-vaginal fistula, and do so much credit to the surgical ability of the present time, cannot be of any avail here ; simply because there is no reparative power in the

tissue which would form the seat of the operation. In the male we more rarely see a fistulous communication established between the rectum and the bladder, and for the same reason, any operative interference is equally out of question here. As in all other operations for the removal of cancer, when such a proceeding is contemplated, it must be possible to excise the whole of the diseased tissue, or we do mischief instead of good to our patient. Surgeons in general practice have larger opportunities of observing the early stages of disease, than those who are consulted only when the disease is pronounced; and it is to these gentlemen we must look for discovering and diagnosing the nature of the affection, at a time when it admits of excision. No doubt many valuable lives may be prolonged for a considerable period, by removing an epithelial cancer from the rectum before it has extended beyond the safe reach of the knife.

Encephaloid disease of the rectum very frequently dates its commencement from some operation for piles. It grows to a very large size, and is a source of very great misery to the patient. We have, as is usual in this form of cancer, frequent hæmorrhages, which are necessarily encouraged and aggravated by the painful act of defæcation. A good nurse will obviate much of this difficulty by a free injection of cold water night and morning. Although the return of this growth after any operative interference is generally quick, it is justifiable in some instances to advise the removal, in order that the patient may enjoy even a short interval of repose. If it be possible to put a ligature round the base of the tumour, that is the most eligible mode of

proceeding, because it is unattended with any hæmorrhage; and perhaps even the *écraseur* may be used in such a case. If the base of the tumour be too considerable to admit of either of these methods, it may be attacked by the permanganate of potash, or the chloride of zinc, provided it be possible to limit the action of these caustics to the tumour only. As a local application to epithelial ulcers within the rectum, I have found nothing afford so much relief as an injection containing a drachm of sulphate of copper to a pint of water. I have on several occasions been able to send persons about their usual avocations, after having occupied their beds for months, by prescribing for them this lotion; accompanied of course with the tonic treatment, and generous diet, requisite in all cases of cancer. In later stages of this complaint, when it becomes necessary to assuage pain by opiates, it will be found that the suppository is not well borne. Its introduction is attended with pain, and its presence is a source of discomfort. The point of a small glass tube which is attached to an elastic bottle may always be introduced without any inconvenience, and by this means a teaspoonful of liquid holding the requisite amount of opium or morphia in solution may be injected, and will act efficiently; whilst a larger quantity of fluid would be returned, before it had performed the work it was intended to do.

CHAPTER XI.

INTERNAL ORGANS.

IN order to give a complete account of the differential diagnosis of cancer in its attacks upon the viscera, and other internal structures of the human body, it would be necessary to write a treatise on most of the diseases to which these parts are liable. Besides the standard works of Watson and Copland, in which will be found ample instructions for the diagnosis and treatment of these disorders, there are special works upon the diseases affecting the different organs, by physicians of distinction and repute, which will necessarily be consulted in all questions of doubt or difficulty. Dr. Budd on the Liver, Dr. Brinton on the Stomach, give full details of the symptoms which characterize the progress of cancer in these organs; and quite recently my colleague, Dr. Cockle, has published a monogram on Intra-thoracic Cancer; whilst Dr. Mackenzie Bacon has done the same service for Primary Cancer of the Brain.

The uterus has engaged the attention of a host of able writers, but I know of no work whose pages may be more advantageously consulted on this matter than the chapter on malignant disease in the comprehensive work of Dr. David Davis, the former distinguished Professor of Midwifery in the University of London.

That cancer does arise primarily in these organs, and in fact in every part of the body, is sufficiently demonstrated by post-mortem results. But except in the case of the uterus, the liver, and the stomach, it is a rare event; and is perhaps in the majority of cases only suspected during life. Dr. Fuller has recorded a case of primary cancer of the heart, which was not diagnosed during life.

Dr. Peacock, the learned President of the Pathological Society, very recently exhibited specimens to illustrate the forms of carcinomatous deposit in the heart, and it will be seen that there are no symptoms of sufficient distinctness to enable the physician to diagnose this affection.

The first set of specimens were removed from the body of a man, aged 19, a patient of Dr. Peacock's at the Victoria Park Hospital for Diseases of the Chest. He was first taken with symptoms of disorder of the liver and digestive organs, to which succeeded dyspnœa, cough, and expectoration and signs of consolidation on the left side of the chest. The heart was slightly displaced to the right side, the pulse was quick and feeble, and there was œdema of the trunk and extremities. He survived for about nine months. The lungs contained minute masses of deposit, which to the naked eye closely resembled tubercle, but proved on microscopic examination to be carcinomatous. The bronchial glands also were extensively cancerous, and the heart was entirely enveloped in a thick medullary deposit, which pressed upon the large vessels at the base and on the auricles. There were also deposits in the liver, spleen, and mesenteric glands, and the aggregate plates

in the lower part of the small intestines displayed small masses of cancer, and were in places ulcerated, resembling very closely tuberculous deposits and ulcers. The whole displayed the usual characters of encephaloid. The second specimen was a heart removed from a female, 19 years of age, a patient of Dr. Ward's at the Victoria Park Hospital. The symptoms were similar to those in the former cases, and the patient lived six months. There was a large medullary sarcomatous mass at the root of the lung, with interspersed deposits in other parts of the left lung, which had in places ulcerated forming numerous small cavities. The mass at the root of the lung had pressed upon the pericardium, and within that membrane there were tumours surrounding and involving the vena cava descendens and right auricle and the pulmonary veins and left auricle. The glands near the stomach and duodenum were also affected, but the other organs in the body were free from disease. Dr. Peacock remarked that carcinomatous deposits were generally regarded as of very rare occurrence in the substance of the heart, and the opinion was certainly correct so far as primary deposits are concerned. There were, however, a considerable number of cases on record in which the heart was found to be cancerous in connection with similar diseases in other parts of the system. He found fourteen or fifteen such instances recorded in the Transactions of the Society; four cases had occurred at the Victoria Park Hospital within the last two or three years; and altogether he had had little difficulty in collecting upwards of forty cases of the kind from different sources. Of these cases, however, it appeared very doubtful

whether more than one or two could be regarded as instances of primary cancer of the heart, though in the reports of several no mention was made of the existence of similar disease in any other part of the system. The other cases might be classed into three sets:—1st, those in which the disease arose, probably nearly simultaneously, in the heart and in the lungs or adjacent parts of the body; 2ndly, those in which the disease originated in the bronchial or mediastinal glands, and involved, more or less extensively, the heart; and 3rdly, those in which the disease first appeared in some distant part of the system—the eye, axilla, mamma, abdominal organs, or testicle, &c.—and deposits subsequently occurred in some part of the heart. Of these the case which he first named was an example of the first form, and the other afforded an instance of the second. Of the third form a considerable number of the recorded cases were examples. Of the kinds of cancerous disease which affected the heart, by far the most common was encephaloid; melanosis occurred in a few instances, and four or five were stated to have been examples of scirrhus: but in reference to some of the last cases the information was very imperfect. It does not appear that there are generally any symptoms which specially characterise the occurrence of carcinomatous deposits in the heart. If the disease is so situated as to interfere with the vessels entering or proceeding from the heart, or with the action of the valves, they, of course, produce decided symptoms. In some instances, by pressure on the pericardium, they give rise to pericarditis, of which the signs may be recognised during life, but in other cases there are no indications

of cardiac disease, and the deposits are only detected on post-mortem examination.

Specimens of cancer of the lung,* and of the

* Dr. Andrew Clark has recently shown that cancer of the lung may be diagnosed, in its advanced stage at least, by means of a microscopic examination of the sputa. The case he gives in the volume of Clinical Lectures and Reports of the London Hospital for 1864 is so instructive, that I will venture to extract it.

‘This was the case of a tailor fifty-nine years of age, whom I saw, with Dr. Theophilus Thompson, at the Brompton Hospital in 1857.

‘For three years the man had been out of health. For two he had had symptoms of pulmonary disease. And just before I saw him he had begun to lose flesh rapidly, and to suffer from exhausting night-sweats.

‘At the time of my visit the chief points of the case were as follows: dulness and flattening of right side in front; diminished vocal resonance; few moist rhonchi about the circumference of the dulness; cough with prune-juice expectoration; a few moist rhonchi in various parts of left lung, but no dulness; a quick and feeble circulation; a wasted body; dull leaden eyes; a wan face and worn expression.

‘The case was involved in much obscurity, and it was in the hope of clearing it away that I was requested to examine the expectoration, which I did.

‘I procured by preference the evening expectoration, as more likely than the morning to come direct and unmixed from the seat of the disease, spread it out upon a clean white plate, selected the opaque white particles present, and submitted them one after another to microscopic examination, till I discovered the structural peculiarities for which I sought.

‘In one of the specimens of expectoration I found,—1. Fragments of the elastic areolæ of the air-vesicles; 2. Cells of the most irregular and varied forms, with contained secondary cells, or vesicular nuclei; 3. Free vesicular nuclei; 4. Granule cells in great abundance; 5. Blood discs in heaps; and 6. Long nucleated fibres.

‘From the presence of the fragments of elastic areolæ I inferred disintegration of lung; from the great variety of cell forms, in conditions showing the triumph of mere growth over development, I inferred the existence of cancer; from the size and structure of the cells, encephaloid cancer; and from the abundance of granule cells and little heaps of blood discs, I predicted its speedy extension. In a few weeks the man died from the effects of hæmoptysis, and I had the opportunity of being present at the post-mortem examination. The case turned out to be one of primary infiltrated encephaloid cancer of the right lung. Cancerous deposits were found in the bronchial glands, but in no other part of the body. The left lung was extremely congested, and the air-tubes were

brain, are occasionally exhibited at the Pathological Society, as curiosities which have been discovered at the autopsy ; and if we consider how nearly the symptoms attending hypertrophy and tuberculosis resemble those which are produced by the development of cancer, it is not surprising, when the latter disease attacks primarily any organ which by reason of its position we cannot subject to manipulation, that the early detection of its nature is rarely effected.

The peculiar hardness of a cancerous deposit in the os uteri is so characteristic, that in almost every instance the first touch with the index-finger proclaims the nature of the case. The circumscribed hardness of a cancerous nodule on the surface of the liver can be felt, but when the deposit is imbedded, as is often the case, in the substance of the gland, sickness, constipation, stabbing pains, and jaundice, together with some enlargement of the organ, constitute the diagnostic signs. Cancer of the stomach is located either as an epithelial ulcer at the great curvature, or at the pylorus, where, by scirrhus deposit in the substance of the gut, the calibre of the tube is so narrowed, that—as in the parallel condition produced by the same cause operating on the œsophagus—the passage of the food is delayed,

loaded with mucus. It was the condition of this lung which added so greatly to the obscurity which surrounded the case during life. The lung is preserved in the London Hospital Museum. I need scarcely repeat that I did not base my diagnosis of cancer upon the presence of any particular form of cell in the expectoration. I based it upon the concurrence in one growth of a great variety of cell forms not referable to one type ; cell forms which exhibited signs of unusual reproductive activity in containing secondary cells, vesicular nuclei, vacuoles or reproductive spaces, and floated in an albuminous juice rich in granule cells, hyaline globules, and free fat.'

and finally so obstructed, that it has to be ejected an hour or two after it is taken. When the cancer is situate at the œsophageal extremity of the stomach, the intolerance of food is shown at once, and the greater part of that which is taken, even though it be of a fluid consistence, is vomited immediately. The urgency of this symptom is generally sufficiently characteristic, but sometimes we may, by careful manipulation, detect the induration which occasionally is very considerable. The kidneys are rarely the seat of cancer, which is fortunate, considering how liable they are to so many other structural and functional disorders. A microscopic examination of the urine does, however, occasionally reveal the débris of encephaloid disease in this position.

Those little capsules, which seem to have scarcely any function, but which nevertheless, when diseased, give origin to so much constitutional disturbance as to have obtained considerable nosological distinction, do give examples of even primary cancer. The bronzing of the skin, which first attracted Dr. Addison's attention in connection with alterations of structure in these little bodies, does accompany cancer of the supra-renal capsules; but, as has been well shown by Dr. Greenhow, in some papers published in the 'Lancet' in April 1865, this discoloration of the skin is by no means pathognomonic of cancer, as it accompanies other diseased conditions of these apparently insignificant parts.

The bladder has been already referred to as participating, by contiguity, in the cancerous affections of the rectum and uterus. It is also occasionally a primary seat of the disease, and in such case, the cause not

only of much suffering to the patient, but of some diagnostic difficulties. These may be overcome by an exhaustive negative enquiry. The symptoms being frequent desire to pass water, which contains mucus, and in the advanced stage muco-purulent flocculi, and occasionally blood; whilst the microscope shows broken-up epithelial scales, and even occasionally complete nucleated cells of irregular shape. There is considerable pain at times of a lancinating character, and much general disturbance; thirst, loss of appetite, often an abnormally red tongue, and sleeplessness. These symptoms may, however, be the result of stone in the bladder or kidney, of a neglected stricture, even of prostatic disease; and when they are presented to us for diagnosis, the usual exploration of the bladder by the sound will be the first proceeding suggested. We shall thus ascertain the presence or absence of stricture, of enlarged prostate, and of calculus within the bladder; and we shall most probably at the same time find that the patient suffers much from this exploration, and that it is followed by hæmorrhage, so that although the examination of the bladder must be efficient, it should be performed with extreme gentleness.

Our next proceeding will be digital examination per anum, by which means we shall ascertain more positively if there be any enlargement of the prostate; and in all probability, in the event of its being cancer in the bladder, we shall be able to detect thickening of the walls of that viscus, and there will be pain on pressure. Having thus proved the absence of stone in the bladder, of stricture of the urethra, and of

disease of the prostate, we have to enquire if there be a calculus impacted in the kidney. In this disease the pain is perhaps more severe than it is in cancer, but it is much more paroxysmal. A patient with stone in the kidney may be comparatively well for months together, and then he has a sudden attack of acute suffering, nearly always referred to the region of one kidney, not of both; and he is compelled to remain in the recumbent position until the paroxysm ceases. He at first passes a very little clear urine; it then becomes clouded, and ultimately dark red, as the paroxysm passes off. In many cases blood passes for two or three days, and then the patient is relieved altogether of his symptoms. The microscope in this case will show an abundance of tubular casts, from the uriniferous tubes of the kidney, and very generally crystals of oxalate of lime. I have not referred to cystitis, either in its acute or chronic forms, because the symptoms which are presented could not by possibility be confounded with those which characterize cancer of the bladder. Dr. Cruise says that the endoscope will show the condition of the interior of the bladder.

The spleen is an organ which does not often engage the attention of the surgeon, but we do see every now and then cases of enlargement of this peculiar structure which embarrass the pathologist, and suggest the probability of cancerous infiltration. I have, however, never seen a case of cancer of the spleen, although called upon on several occasions to give an opinion as to the nature of an enlargement in this region. Chronic hypertrophy of this organ is not a very uncommon disease. It attains a very large size, and sometimes

destroys the patient ; but the post-mortem examinations, as far as my experience extends, never disclose any of those white patches of scirrhus which are so often seen in the liver ; nor, notwithstanding the highly vascular character of the spleen, does it even become the seat of encephaloid cancer. This enormous chronic enlargement seems to be merely a hypertrophic growth, dependent upon derangement of the digestive functions in a tubercular diathesis ; and it may generally be remedied by the iodides or bromides of iron and potassium, assisted by cod-liver oil.

Cancer of the pancreas is one of those rare post-mortem discoveries which attract the attention of the curious in pathological societies. As long as the disease is confined to this gland only, it does not affect life, because the pancreas, although a useful adjuvant, is not an indispensable part of the human machine ; and as a consequence, its functions may be interrupted without causing much disturbance to the general health. The form it assumes in this position is that of scirrhus cancer, and it may grow to a considerable size, when the disease may possibly be diagnosed in a thin person ; but as it gives little trouble, I believe that this affection is rarely recognized during life.

The ovary, considering the importance of its functions, and the consequent exposure to exciting influences, is less liable to cancer than might be expected. It does not however escape, and when thus affected its anatomical structure determines in most cases the kind of cancer. We have the ovisacs or graafian vesicles swelled out into cysts whose walls are like scirrhus, or we have them converted into those bags of

gelatiniform substance, which have obtained the name of colloid. We see also here those proliferous cystic growths, classed by some authors among the non-malignant tumours, but which are, I believe, true cancer. It appears, from the results of operation, that the diagnosis of these tumours from the simple cystic formations is very difficult; and also, that very unfavourable results have ensued whenever the ovarian tumour which has been removed proved to be cancerous. I would refer my readers to the works of Mr. Baker Brown and Mr. Spencer Wells as the experienced authorities upon this question; with just this remark, that I have now under my care three cases of ovarian disease, which, from the great weight of the tumour and the absence of any sense of fluctuation, I am disposed to look upon as cancer; and all these persons have lived in tolerable health and comfort, with scarcely any increase of size, for many years.

The omentum is sometimes the seat of colloid cancer. It attains to a great size, and causes considerable disturbance to the functions of digestion. A very remarkable case of this nature was under the care of my colleague, Dr. O'Connor, at the Royal Free Hospital; and the specimen, after being exhibited at the Pathological Society, was, I believe, deposited in the Museum of the Middlesex Hospital. It is not to be expected that this disease, so obscured from our senses of sight and touch, can be detected in its early stage. It is, in fact, only when it begins to affect the digestive functions that the attention of the patient even is directed to the seat of mischief; for in loose tissues the growth of cancer proceeds for some time without

giving rise to pain, and it is only when, by its increasing size and weight, it presses upon parts having a good nervous supply that this symptom arouses attention, and gives occasion for investigation into its cause.

In all our diagnostic enquiries respecting tumours and growths within the abdomen, we must be guided more by the constitutional symptoms than by the manipulation, which, from the nature of the parts, is necessarily imperfect. Whenever these tumours have advanced so far that they can be felt as abnormal growths, there is disturbance of the digestive functions, accompanied with more or less emaciation, and generally a dusky jaundiced skin. Simple tumours do not produce these symptoms, although they may be the seat of considerable pain. In the case of a lady under the care of my friend Dr. Pollock, of the Consumption Hospital, I was requested to give an opinion as to the nature of a tumour in the right hypochondriac region, which was the cause of intense suffering. He gave me a history of the case, but concealed any opinion of his own, or of others who had been consulted in the matter. It was a movable hard tumour the size of a cricket-ball, seated just beneath the right side of the liver. Not painful on pressure. There was no hereditary tendency to cancer. The pain was intermittent, but the paroxysms were almost intolerable. Noting the absence of the dusky jaundiced skin, and of any appearance of cachexia, notwithstanding all the pain she was suffering, I gave it as my opinion that it was a fibrous tumour which had enclosed in its substance some nervous filaments; and I was happy to find that Dr. Pollock had formed the same opinion.

Whenever the viscera become the seat of secondary cancer, or, as Mr. Fergusson objects to that term, whenever cancer attacks these organs at a period subsequent to the appearance of the disease in any external part, it will be of course much more readily recognized; because the surgeon knows how frequent are these further manifestations of the constitutional character of the disease, and he is consequently on the watch to meet them, if they may be met, by appropriate treatment. The whole glandular system is prone to exhibit a tendency to take on the cancerous action, but perhaps the largest gland in the body, the liver, besides its liability to the primary affection, is more frequently affected as a sequence to operations for the removal of scirrhus of the mamma, than any other part of the body. The probable reason of this election is, that in this country the important functions of the liver get deranged very generally towards the end of middle life, and thus it is rendered an apt receptacle for the deposition of diseased molecules. I have seen extension of cancer inwards from the mamma through the intercostal muscles to the pleura and pericardium, and the lung itself does occasionally become diseased in this manner; but more commonly cancer of the lung has an independent origin, and may or may not be associated with a similar affection of the breast. Hydrothorax is a very usual result in these cases, and when there is much dyspnœa from this cause, tapping affords considerable relief for a time. This pleuritic effusion should always be suspected and looked for whenever the patient is unable to lie down with ease; and although some will refuse to undergo even this slight operation, it should always

be offered as a sure means of relieving a most distressing symptom.

With regard to the medicinal treatment of all these internal cancers, I would urge the great value of cod-liver oil, in conjunction with hydrochloric acid, or some preparation of iron. I have been astonished at the beneficial results obtained, even in very advanced cases, by a persistence in the use of this remedy. I have now under my care a man who was rapidly falling into the cachectic condition, consequent on a very evident cancer of the liver. Since taking the oil, which he has done for four months, the sickness and pain are considerably diminished; he can take food with appetite, and the tumour is lessened. In an interesting case of cancer of the bladder, a very marked improvement is quite traceable to cod-liver oil and hydrochloric acid with bark. The patient was a pale, thin, married woman, aged thirty. An aunt had died of cancer of the breast. The pubic region was occupied by a hard tumour, painful on pressure, and there was some induration of the inguinal glands. The vaginal examination showed that the bladder was one hard mass, the induration extending nearly to the meatus urinarius. She required to pass water every half-hour. Menstruation was regular, but excessive, and very painful; and she had much leucorrhœa. Coition was also very painful. No children. She had been ill for fifteen months, and was becoming so weak that she could walk only a few yards with the greatest difficulty. She first came under my care May 19, 1864; I then ordered cold bathing with the view of checking the leucorrhœa and the excessive catamenial flow, directing her to stop the latter by this

means after it had continued three days. She was to take bark and hydrochloric acid. In time the leucorrhœa was got rid of, and the menorrhagia lessened. She was now able to walk a little. I then sent her to the sea-side for a month, and she returned greatly improved, able to walk some miles. The tumour diminished; coitus not painful now. To take cod-liver oil and the same bark and acid, and apply a supporting plaster over the pubic region. September 29: much general improvement, able to retain the urine some hours. She continued this treatment through the winter, and was able to do her household duties with moderate comfort, except at the menstrual periods.

She is now, May 1865, comparatively well, although the indurated condition of the whole bladder is still apparent. The urine did not afford any microscopic evidence of the nucleated irregular cells usually found in the secretions from organs affected with cancer; but I think this may be accounted for, as it is evidently a case of scirrhus, not of epithelioma, and at present is not throwing off any detritus from the mucous surface of the bladder. The hereditary tendency to cancer, the extreme induration, and the glandular enlargements, seem to me incompatible with any other diagnosis.

The same treatment will be found most serviceable in cancer of the uterus and ovaries. The discharges which accompany cancer of the uterus rob the blood of its red particles; so that iron, and especially the red oxide, is generally the most useful medicine to accompany the cod-liver oil.

Whilst we are thus improving the general condition from within, it is necessary to check the local destructive

outflow of vital fluids ; and for this purpose many astringent applications are used. I have not failed to employ everything that has any sort of reputation, including the actual cautery ; and the result of my investigations is, that the chloride of zinc and the sulphate of copper deserve the most approval. My usual prescription is forty grains of the zinc, or sixty grains of the copper, to the pint of water ; and this answers the purpose in most cases. It would seem that it is not an astringent or styptic we want in these cases, but a stimulating lotion, which heals the ulcerated part as it does when the same application is made to a foul ulcer on the leg.

In cancer of the lungs, cod-liver oil would in all probability be given ; but I see no reason why it should not be tried also in cancer of the stomach. The nausea which accompanies this affection is owing to mechanical causes, not to that reflex action which is induced by an offence to the sense of taste ; for in fact there is often a craving for food in these cases, and it is swallowed with avidity, although it be ejected in a very short time. When the elements of nutrition cannot be retained in the system, it is of course almost a hopeless task to attempt the healing of an ulcer in this position ; but seeing how much good is done in the almost equally severe cases of cancer of the liver and of the uterus, I should not despair of obtaining some respite even in this instance.

A generous diet, easy of assimilation and often varied, is a necessary accompaniment to all treatment in internal as well as external cancer. Those patients who are enabled to take bottled stout derive much

benefit from it. The sleep which is thus obtained is much more tranquil and restorative than that effected by any kind of soporific medicine. For more tender stomachs the sparkling wines of France, and perhaps those recently introduced from Austria, afford the best means of gently stimulating the digestive function, which is always defective in action whenever the individual from any cause does not undergo a certain amount of daily muscular exercise.

LONDON

PRINTED BY SPOTTISWOODE AND CO.

NEW-STREET SQUARE

COMPLETION OF HOLMES'S SURGERY.

The Work now complete in 4 vols. 8vo. price £4 13s. cloth.

A SYSTEM OF SURGERY, THEORETICAL AND PRACTICAL,

IN TREATISES BY VARIOUS AUTHORS.

Edited by T. HOLMES, M.A. Cantab.

Surgeon to the Hospital for Sick Children and Assistant-Surgeon to St. George's Hospital.

VOL. I. *General Pathology*, price 21s.

VOL. II. *Local Injuries: Gun-shot Wounds, Injuries of the Head, Back, Face, Neck, Chest, Abdomen, Pelvis, of the Upper and Lower Extremities, and Diseases of the Eye*, 21s.

VOL. III. *Operative Surgery: Diseases of the Organs of Circulation, Locomotion, &c.*, price 21s.

VOL. IV. *Diseases of the Organs of Digestion, of the Genito-Urinary System, and of the Breast, Thyroid Gland, and Skin; with APPENDIX and GENERAL INDEX*, price 30s

'WITH this imposing volume is completed a great work, which will certainly for a long time have no rival of its class in our literature. It is a cyclopaedia of surgery of the most complete and extensive character; and we may justly state that its design and execution do great honour to those concerned. It is highly satisfactory to be able to say that this important work has been carried through with great judgment and liberality; that it has been completed with unusual punctuality and promptitude; and that the large number and high standing of the Authors selected for the various monographs render this System, what it no doubt was intended to be, representative of the actual state of surgical science and art in our country.'

LANCET [first notice].

'THE comprehensive and important work now before us has just been completed in four large volumes, each containing near upon a thousand pages. The *System of Surgery* represents very thoroughly all modern knowledge upon matters connected with the Art and Science of Surgery,—the essays being contributed by men of recognised professional position, for the most part enjoying peculiar opportunities of becoming practically conversant with the subjects allotted to them. . . . We have reviewed this work at some length, for it occupies a first place in the professional literature of the day. Considered as a whole, it has more than fulfilled the original promises of the prospectus. A *System of Surgery* it is not; nor would the title be applicable unless the requirements of the mere beginner, as well as of the qualified practitioner, were considered. But it is something far more valuable. It is a *LIBRARY OF SURGERY* for the guidance or assurance of men who need such a book of trustworthy reference in their daily work. As the most complete publication on Surgery extant, it will furnish to the ubiquitous British surgeon a safe counsellor and guide in all those emergencies which equally tax his skill, whether the patient be civilised or savage; for the quaint motto of the almost defunct Society of Apothecaries, *Opifer per orbem dicor*, has come to be an absolute truism as concerns our surgeons, who are now sown broadcast over the world.'

SATURDAY REVIEW.

'THE System of Surgery by various Authors will remain as a record of the state of Scientific Surgery in England at the present day, of which the profession has reason to be proud. Many of our most eminent surgeons have been associated in the work. In not a few cases the essays have been written by men who have devoted special attention to the subjects of which they treat, and who have earned for themselves European reputations. As a work of reference, these volumes will be found of the utmost value. The subjects they contain are co-extensive with the whole range of surgery, including the affections of the skin, the diseases of the eye and of the ear, and other topics which are sometimes omitted in surgical treatises. No small credit is due to the Editor, Mr. HOLMES, not only for the able articles he has himself contributed, but also for having brought the work to a successful issue, notwithstanding the difficulty, which at times must have been very considerable, of getting a number of busy men to co-operate, and to fulfil their literary engagements amid the press of their professional avocations.'

MEDICO-CHIRURGICAL REVIEW.

'WE must not conclude without noticing the essays of Dr. HARLEY on *Apnoea*, Mr. CROFT on *Surgical Fever*, and Mr. COOTE and Mr. WORDSWORTH on *Surgical Instruments*, of which we should have been glad to write deserved words of praise, but the volume is so choked with matter that it is impossible to attempt to digest it rapidly. The four volumes remain a monument to the surgical genius of our day. The great majority of metropolitan surgeons of eminence and proved ability are represented in them; and for many years to come whoever wishes to know the most authoritative words of English surgical science on most subjects in the domain of surgery, must turn to these pages to read what is there set forth. . . . Taken as a whole, it is the most important surgical work which has ever issued from the English press. It is a great honour to a surgeon, comparatively young as is Mr. HOLMES, to have been entrusted with the editing of so great a work; but now that it is completed, it is only fair to say that he has executed the difficult task with ability, fidelity, and judgment. His own personal contributions are of a high order, and both in choice of authors and arrangement of subjects there seems rarely any fault to find.'

LANCET [second notice].

London: LONGMANS, GREEN, and CO. Paternoster Row.

SIR BENJAMIN BRODIE'S WORKS.

Just published, complete in Three Volumes, large type, pp. 2,078, with Medallion and Facsimile, price 42s.

THE WORKS OF SIR B. C. BRODIE,

BART. D.C.L. &c.

Late Serjeant-Surgeon to the Queen and President of the Royal Society.

COLLECTED AND ARRANGED

BY CHARLES HAWKINS,

Fellow of the Royal College of Surgeons of England.

OPINIONS of the PRESS.

'NOTHING in the Autobiography, or the criticism of others, can afford the same opportunity of knowing what this great surgeon was, as this collected edition of his works. Here we may trace the development of his mind, and, passing on from paper to paper, work to work, see how diligent he was in observation, cautious and sound in reasoning, and understand something of the secret workings of head and hand that laid the foundation of the fortune and success of one of the most distinguished members of the medical profession of the present century. . . . Sir BENJAMIN BRODIE is a proof that the most splendid careers as surgeons in this country, and the other countries of Europe, have been made by those men who have studied the scientific principles of their art.' ATHENÆUM.

'THESE writings must live, not only because of the shrewdness and sagacity shown in judging of general facts, but because of their richness in cases. This was Sir BENJAMIN'S stronghold. He was not a great reader of books, but he lived in the personal observation of facts in the hospital or elsewhere, and every page of his professional writings teems with cases which can never cease to be valuable as illustrative of great points in the diagnosis and treatment of diseases. Whether as an easily available record of the careful observations of a long life, or as enabling us to take a complete view of a medical career so honourable and useful, or as assisting us to refer back to wise and sagacious generalisations on disease and its treatment,—we hail with satisfaction the works of Sir BENJAMIN BRODIE, as a collection of great interest and of sterling value.' LANCET.

'It is only in a very limited sense that the works of a great surgeon, as of a great soldier, are to be found in his writings. His chief work is to be found in his life, and happily Sir BENJAMIN has left a short autobiography which is sure to become popular and to perpetuate his fame. We are sadly in want of short autobiographies like those of GIBBON and HUME, and are rather oppressed with long stories of men's lives encumbered with loads of correspondence. Amid this plethora it is pleasant to come upon the life of such a man as BRODIE, told with all needful detail in the space of less than 120 pages. An autobiography, when it is well done in such a small compass, is a boon to mankind. For mere interest, we cannot have too many of such histories to pick and choose from; but just now they would be particularly valuable as helping to correct the inordinate tediousness of biography. . . . The story of success is of never-failing attraction, and Sir BENJAMIN BRODIE was eminently successful. His success too was of a kind which affects us personally, because it was not astonishing. There may have been surgeons of greater genius than he, but no surgeon that we can name ever possessed in combination so many of the qualities which command and insure success. He was eminent not only in the practice of his art, but also in advancing the science upon which that practice proceeds; he was a good scholar; he wrote well; he spoke well; his tact was perfect; he was a man of the world and of society; he made a great fortune; he had troops of enthusiastic friends; and he had the delight of knowing that no man of his time had more than he contributed to the relief of human suffering.'

The TIMES.

AUTOBIOGRAPHY of SIR B. C. BRODIE, Bart. as prefixed to the above collective Edition of his Writings, printed from the Author's Materials left in MS. Fcp. price 4s. 6d.

'ANY parent who accompanies his son to town cannot do better than give him, as a parting present, the *Autobiography of Sir Benjamin Brodie*. Let the youth see the touching simplicity with which that great man gives the record of his own career, step by step—the modesty, the diligence, the thoroughness. BRODIE was two years studying anatomy and chemistry before he entered St. George's Hospital. . . . No body of teachers more zealous and self-devoted exists than the anatomical teachers in the various British Schools. Here, again, we refer to the *Autobiography*. Anatomy as a science was unknown to the last generation. Hence a man may be a most accomplished and experienced surgeon; for in that practical branch of his art he is continually learning; and, as Sir B. BRODIE says, a well-informed and experienced surgeon cannot be a bad examiner in surgery. . . . The student who does not waste his health in dissipation, nor yet in forced and unnatural midnight studies; who cultivates the friendship of the best amongst his fellow students; who gains the notice of his teachers by diligence, and who keeps his eyes open and his fingers employed, learning by objects more than from books; and who uses the natural faculties of shrewdness and observation, is sure to find an opening, and to get on well in time. As the best preparation, we again say, work hard at Anatomy during your first winter, and read the *Autobiography of Sir Benjamin Brodie*.' MEDICAL TIMES and GAZETTE, Sept. 1865, Address to Students.

London: LONGMANS, GREEN, and CO. Paternoster Row.

GENERAL LIST OF WORKS

PUBLISHED BY

Messrs. LONGMANS, GREEN, READER, and DYER.

ARTS, MANUFACTURES, &c.....	12	MISCELLANEOUS and POPULAR META-	
ASTRONOMY, METEOROLOGY, POPULAR		PHYSICAL WORKS.....	6
GEOGRAPHY, &c.	7	MUSICAL PUBLICATIONS	11
BIOGRAPHY AND MEMOIRS	3	NATURAL HISTORY and POPULAR	
CHEMISTRY, MEDICINE, SURGERY, and		SCIENCE.....	7
the ALLIED SCIENCES	9	POETRY and THE DRAMA.....	17
COMMERCE, NAVIGATION, and MERCAN-		RELIGIOUS AND MORAL WORKS	13
TILE AFFAIRS	19	RURAL SPORTS, &c.....	18
CRITICISM, PHILOLOGY, &c.....	4	TRAVELS, VOYAGES, &c.	15
FINE ARTS and ILLUSTRATED EDITIONS	11	WORKS OF FICTION	16
HISTORICAL WORKS.....	1	WORKS OF UTILITY and GENERAL	
INDEX	21—24	INFORMATION	19
KNOWLEDGE for the YOUNG	20		

Historical Works.

Lord Macaulay's Works. Complete and uniform Library Edition. Edited by his Sister, Lady TREVELYAN. 8 vols. 8vo. with Portrait, price £5 5s. cloth, or £8 8s. bound in tree-calf by Rivière.

The History of England from the Fall of Wolsey to the Death of Elizabeth. By JAMES ANTHONY FROUDE, M.A. late Fellow of Exeter College, Oxford. VOLS. I. to X. in 8vo. price £7 2s. cloth.

VOLS. I. to IV. the Reign of Henry VIII. Third Edition, 54s.

VOLS. V. and VI. the Reigns of Edward VI. and Mary. Second Edition, 28s.

VOLS. VII. & VIII. the Reign of Elizabeth. VOLS. I. & II. Fourth Edition, 28s.

VOLS. IX. and X. the Reign of Elizabeth. VOLS. III. and IV. 32s.

The History of England from the Accession of James II. By Lord MACAULAY.

LIBRARY EDITION, 5 vols. 8vo. £4.

CABINET EDITION, 8 vols. post 8vo. 48s.

PEOPLE'S EDITION, 4 vols. crown 8vo. 16s.

Revolutions in English History.

By ROBERT VAUGHAN, D.D. 3 vols. 8vo. 45s.

VOL. I. Revolutions of Race, 15s.

VOL. II. Revolutions in Religion, 15s.

VOL. III. Revolutions in Government, 15s.

An Essay on the History of the English Government and Constitution, from the Reign of Henry VII. to the Present Time. By JOHN EARL RUSSELL. Fourth Edition, revised. Crown 8vo. 6s.

The History of England during the Reign of George the Third. By the Right Hon. W. N. MASSEY. Cabinet Edition, 4 vols. post 8vo. 24s.

The Constitutional History of England, since the Accession of George III. 1760—1860. By Sir THOMAS ERSKINE MAY, K.C.B. Second Edit. 2 vols. 8vo. 38s.

Brodie's Constitutional History of the British Empire from the Accession of Charles I. to the Restoration. Second Edition. 3 vols. 8vo. 36s.

Historical Studies. I. On Precursors of the French Revolution; II. Studies from the History of the Seventeenth Century; III. Leisure Hours of a Tourist. By HERMAN MERIVALE, M.A. 8vo. 12s. 6d.

Lectures on the History of England. By WILLIAM LONGMAN. VOL. I. from the Earliest Times to the Death of King Edward II. with 6 Maps, a coloured Plate, and 53 Woodcuts. 8vo. 15s.

History of Civilization in England and France, Spain and Scotland. By HENRY THOMAS BUCKLE. Fifth Edition of the entire work, complete in 3 vols. crown 8vo. price 24s. cloth; or 42s. bound in tree-calf by Rivière.

The History of India, from the Earliest Period to the close of Lord Dalhousie's Administration. By JOHN CLARK MARSHMAN. 3 vols. crown 8vo.

[Nearly ready.]

Democracy in America. By ALEXIS DE TOCQUEVILLE. Translated by HENRY REEVE, with an Introductory Notice by the Translator. 2 vols. 8vo. 21s.

The Spanish Conquest in America, and its Relation to the History of Slavery and to the Government of Colonies. By ARTHUR HELPS. 4 vols. 8vo. £3. VOLS. I. & II. 28s. VOLS. III. & IV. 16s. each.

History of the Reformation in Europe in the Time of Calvin. By J. H. MERLE D'AUBIGNÉ, D.D. VOLS. I. and II. 8vo. 28s. VOL. III. 12s. and VOL. IV. price 16s. VOL. V. in the press.

Library History of France, in 5 vols. 8vo. By EYRE EVANS CROWE. VOL. I. 14s. VOL. II. 15s. VOL. III. 18s. VOL. IV. 18s.

Lectures on the History of France. By the late Sir JAMES STEPHEN, LL.D. 2 vols. 8vo. 24s.

The History of Greece. By C. THIRLWALL, D.D. Lord Bishop of St. David's. 8 vols. fcp. with Vignette-titles, 28s.

The Tale of the Great Persian War, from the Histories of Herodotus. By GEORGE W. COX, M.A. late Scholar of Trin. Coll. Oxon. Fcp. 7s. 6d.

Greek History from Themistocles to Alexander, in a Series of Lives from Plutarch. Revised and arranged by A. H. CLOUGH. Fcp. with 44 Woodcuts, 6s.

Critical History of the Language and Literature of Ancient Greece. By WILLIAM MURE, of Caldwell. 5 vols. 8vo. £3 9s.

History of the Literature of Ancient Greece. By Professor K. O. MÜLLER. Translated by the Right Hon. Sir GEORGE CORNEWALL LEWIS, Bart. and by J. W. DONALDSON, D.D. 3 vols. 8vo. 36s.

History of the City of Rome from its Foundation to the Sixteenth Century of the Christian Era. By THOMAS H. DYER, LL.D. 8vo. with 2 Maps, 15s.

History of the Romans under the Empire. By CHARLES MERIVALE, B.D. Chaplain to the Speaker. Cabinet Edition, with Maps, complete in 8 vols. post 8vo. 48s.

The Fall of the Roman Republic: a Short History of the Last Century of the Commonwealth. By the same Author. 12mo. 7s. 6d.

The Conversion of the Roman Empire; the Boyle Lectures for the year 1864, delivered at the Chapel Royal, Whitehall. By the same. 2nd Edition. 8vo. 8s. 6d.

The Conversion of the Northern Nations; the Boyle Lectures for 1865. By the same Author. 8vo. 8s. 6d.

Critical and Historical Essays contributed to the *Edinburgh Review*. By the Right Hon. Lord MACAULAY.

LIBRARY EDITION, 3 vols. 8vo. 36s.

CABINET EDITION, 4 vols. post 8vo. 24s.

TRAVELLER'S EDITION, in 1 vol. 21s.

POCKET EDITION, 3 vols. fcp. 21s.

PEOPLE'S EDITION, 2 vols. crown 8vo. 8s.

History of the Rise and Influence of the Spirit of Rationalism in Europe. By W. E. H. LECKY, M.A. Third Edition. 2 vols. 8vo. 25s.

The History of Philosophy, from Thales to the Present Day. By GEORGE HENRY LEWES. Third Edition, partly rewritten and greatly enlarged. In 2 vols. VOL. I. *Ancient Philosophy*; VOL. II. *Modern Philosophy*. [Nearly ready.]

History of the Inductive Sciences. By WILLIAM WHEWELL, D.D. F.R.S. late Master of Trin. Coll. Cantab. Third Edition. 3 vols. crown 8vo. 24s.

Egypt's Place in Universal History; an Historical Investigation. By C. C. J. BUNSEN, D.D. Translated by C. H. COTTRELL, M.A. With many Illustrations. 4 vols. 8vo. £5 8s. VOL. V. is nearly ready, completing the work.

Maunder's Historical Treasury; comprising a General Introductory Outline of Universal History, and a Series of Separate Histories. Fcp. 10s.

Historical and Chronological Encyclopædia, presenting in a brief and convenient form Chronological Notices of all the Great Events of Universal History. By B. B. WOODWARD, F.S.A. Librarian to the Queen. [In the press.]

History of the Christian Church, from the Ascension of Christ to the Conversion of Constantine. By E. BURTON, D.D. late Regius Prof. of Divinity in the University of Oxford. Eighth Edition. Fcp. 3s. 6d.

Sketch of the History of the Church of England to the Revolution of 1688. By the Right Rev. T. V. SHORT, D.D. Lord Bishop of St. Asaph. Seventh Edition. Crown 8vo. 10s. 6d.

History of the Early Church, from the First Preaching of the Gospel to the Council of Nicaea, A.D. 325. By the Author of 'Amy Herbert.' Fcp. 4s. 6d.

History of Wesleyan Methodism. By GEORGE SMITH, F.A.S. Fourth Edition, with numerous Portraits. 3 vols. crown 8vo. 7s. each.

The English Reformation. By F. C. MASSINGBERD, M.A. Chancellor of Lincoln. Fourth Edit. revised. Fcp. 7s. 6d.

Biography and Memoirs.

Life and Correspondence of Richard Whately, D.D. late Archbishop of Dublin. By E. JANE WHATELY, Author of 'English Synonymes.' With 2 Portraits. 2 vols. 8vo. 28s.

Extracts of the Journals and Correspondence of Miss Berry, from the Year 1783 to 1852. Edited by Lady THERESA LEWIS. Second Edition, with 3 Portraits. 3 vols. 8vo. 42s.

The Diary of the Right Hon. William Windham, M.P. From 1783 to 1809. Edited by Mrs. H. BARING. 8vo. 18s.

Life of the Duke of Wellington. By the Rev. G. R. GLEIG, M.A. Popular Edition, carefully revised; with copious Additions. Crown 8vo. with Portrait, 5s.

Life of the Duke of Wellington, partly from M. BRIALMONT, partly from Original Documents (Intermediate Edition). By Rev. G. R. GLEIG, M.A. 8vo. with Portrait, 15s.

Brialmont and Gleig's Life of the Duke of Wellington (the Parent Work). 4 vols. 8vo. with Illustrations, £2 14s.

Life of Robert Stephenson, F.R.S. By J. C. JEAFFRESON, Barrister-at-Law; and WILLIAM POLE, F.R.S. Member of the Institution of Civil Engineers. With 2 Portraits and 17 Illustrations on Steel and Wood. 2 vols. 8vo. 32s.

History of my Religious Opinions. By J. H. NEWMAN, D.D. Being the Substance of Apologia pro Vita Sua. Post 8vo. 6s.

Father Mathew: a Biography. By JOHN FRANCIS MAGUIRE, M.P. Popular Edition, with Portrait. Crown 8vo. 3s. 6d.

Rome; its Rulers and its Institutions. By the same Author. New Edition in preparation.

Letters and Life of Francis Bacon, including all his Occasional Works. Collected and edited, with a Commentary, by J. SPEDDING, Trin. Coll. Cantab. Vols. I. and II. 8vo. 24s.

Some Account of the Life and Opinions of a Fifth-Monarchy Man, chiefly extracted from the Writings of JOHN ROGERS, preacher. Edited by the Rev. EDWARD ROGERS, M.A. Student of Christ Church, Oxford. Crown 4to.

[Nearly ready.]

Life of Amelia Wilhelmina Sieveking, from the German. Edited, with the Author's sanction, by CATHERINE WINKWORTH. Post 8vo. with Portrait, 12s.

Mozart's Letters (1769-1791), translated from the Collection of Dr. LUDWIG NOHL by Lady WALLACE. 2 vols. post 8vo. with Portrait and Facsimile, 18s.

Beethoven's Letters (1790-1826), from the Two Collections of Drs. NOHL and VON KÜCHEL. Translated by Lady WALLACE. 2 vols. post 8vo. Portrait, 18s.

Felix Mendelssohn's Letters from Italy and Switzerland, and Letters from 1833 to 1847, translated by Lady WALLACE. With Portrait. 2 vols. crown 8vo. 5s. each.

Recollections of the late William Wilberforce, M.P. for the County of York during nearly 30 Years. By J. S. HARFORD, F.R.S. Second Edition. Post 8vo. 7s.

Memoirs of Sir Henry Havelock, K.C.B. By JOHN CLARK MARSHMAN. Second Edition. 8vo. with Portrait, 12s. 6d.

Essays in Ecclesiastical Biography. By the Right Hon. Sir J. STEPHEN, LL.D. Fourth Edition. 8vo. 14s.

Biographies of Distinguished Scientific Men. By FRANÇOIS ARAGO. Translated by Admiral W. H. SMYTH, F.R.S. the Rev. B. POWELL, M.A. and R. GRANT, M.A. 8vo. 18s.

Vicissitudes of Families. By Sir BERNARD BURKE, Ulster King of Arms. FIRST, SECOND, and THIRD SERIES. 3 vols. crown 8vo. 12s. 6d. each.

Maunder's Biographical Treasury. Thirteenth Edition, reconstructed and partly rewritten, with above 1,000 additional Memoirs, by W. L. R. CATES. Fcp. 10s. 6d.

Criticism, Philosophy, Polity, &c.

The Institutes of Justinian; with English Introduction, Translation, and Notes. By T. C. SANDARS, M.A. Barrister-at-Law. Third Edition. 8vo. 15s.

The Ethics of Aristotle with Essays and Notes. By Sir A. GRANT, Bart. M.A. LL.D. Director of Public Instruction in the Bombay Presidency. Second Edition, revised and completed. 2 vols. 8vo. price 28s.

On Representative Government. By JOHN STUART MILL, M.P. Third Edition. 8vo. 9s. crown 8vo. 2s.

On Liberty. By the same Author. Third Edition. Post 8vo. 7s. 6d. crown 8vo. 1s. 4d.

Principles of Political Economy. By the same. Sixth Edition. 2 vols. 8vo. 30s. or in 1 vol. crown 8vo. 5s.

System of Logic, Ratiocinative and Inductive. By the same. Sixth Edition. 2 vols. 8vo. 25s.

Utilitarianism. By the same. 2d Edit. 8vo. 5s.

Dissertations and Discussions. By the same Author. 2 vols. 8vo. 24s.

Examination of Sir W. Hamilton's Philosophy, and of the Principal Philosophical Questions discussed in his Writings. By the same. Second Edition. 8vo. 14s.

The Elements of Political Economy. By HENRY DUNNING MACLEOD, M.A. Barrister-at-Law. 8vo. 16s.

A Dictionary of Political Economy; Biographical, Bibliographical, Historical, and Practical. By the same Author. Vol. I. royal 8vo. 30s.

Lord Bacon's Works, collected and edited by R. L. ELLIS, M.A. J. SPEDDING, M.A. and D. D. HEATH. VOLS. I. to V. *Philosophical Works*, 5 vols. 8vo. £4 6s. VOLS. VI. and VII. *Literary and Professional Works*, 2 vols. £1 16s.

Bacon's Essays, with Annotations. By R. WHATELY, D.D. late Archbishop of Dublin. Sixth Edition. 8vo. 10s. 6d.

Elements of Logic. By R. WHATELY, D.D. late Archbishop of Dublin. Ninth Edition. 8vo. 10s. 6d. crown 8vo. 4s. 6d.

Elements of Rhetoric. By the same Author. Seventh Edition. 8vo. 10s. 6d. crown 8vo. 4s. 6d.

English Synonymes. Edited by Archbishop WHATELY. 5th Edition. Fcp. 3s.

Miscellaneous Remains from the Common-place Book of RICHARD WHATELY, D.D. late Archbishop of Dublin. Edited by E. JANE WHATELY. Post 8vo. 7s. 6d.

Essays on the Administrations of Great Britain from 1783 to 1830. By the Right Hon.^d Sir G. C. LEWIS, Bart. Edited by the Right Hon. Sir E. HEAD, Bart. 8vo. with Portrait, 15s.

By the same Author.

Inquiry into the Credibility of the Early Roman History, 2 vols. 30s.

On the Methods of Observation and Reasoning in Politics, 2 vols. 28s.

Irish Disturbances and Irish Church Question, 12s.

Remarks on the Use and Abuse of some Political Terms, 9s.

The Fables of Babrius, Greek Text with Latin Notes, PART I. 5s. 6d. PART II. 3s. 6d.

An Outline of the Necessary Laws of Thought: a Treatise on Pure and Applied Logic. By the Most Rev. W. THOMSON, D.D. Archbishop of York. Crown 8vo. 5s. 6d.

The Elements of Logic. By THOMAS SHEDDEN, M.A. of St. Peter's Coll. Cantab. 12mo. 4s. 6d.

Analysis of Mr. Mill's System of Logic. By W. STEBBING, M.A. Second Edition. 12mo. 3s. 6d.

The Election of Representatives, Parliamentary and Municipal; a Treatise. By THOMAS HARE, Barrister-at-Law. Third Edition, with Additions. Crown 8vo. 6s.

Speeches on Parliamentary Reform. By the Right Hon. B. DISRAELI, M.P. Chancellor of the Exchequer. 1 vol. 8vo. [Nearly ready.]

Speeches of the Right Hon. Lord MACAULAY, corrected by Himself. Library Edition, 8vo. 12s. People's Edition, crown 8vo. 3s. 6d.

Lord Macaulay's Speeches on Parliamentary Reform in 1831 and 1832. 16mo. 1s.

A Dictionary of the English Language. By R. G. LATHAM, M.A. M.D. F.R.S. Founded on the Dictionary of Dr. S. JOHNSON, as edited by the Rev. H. J. TODD, with numerous Emendations and Additions. Publishing in 36 Parts, price 3s. 6d. each, to form 2 vols. 4to. VOL. I. in Two Parts, now ready.

Thesaurus of English Words and Phrases, classified and arranged so as to facilitate the Expression of Ideas, and assist in Literary Composition. By P. M. ROGET, M.D. 18th Edition, crown 8vo. 10s. 6d.

Lectures on the Science of Language, delivered at the Royal Institution. By MAX MÜLLER, M.A. Taylorian Professor in the University of Oxford. FIRST SERIES, Fifth Edition, 12s. SECOND SERIES, 18s.

Chapters on Language. By F. W. FARRAR, M.A. F.R.S. late Fellow of Trin. Coll. Cambridge. Crown 8vo. 8s. 6d.

The Debater; a Series of Complete Debates, Outlines of Debates, and Questions for Discussion. By F. ROWTON. Fcp. 6s.

A Course of English Reading, adapted to every taste and capacity; or, How and What to Read. By the Rev. J. PYCROFT, B.A. Fourth Edition, fcp. 5s.

Manual of English Literature, Historical and Critical: with a Chapter on English Metres. By THOMAS ARNOLD, M.A. Second Edition. Crown 8vo. 7s. 6d.

Southey's Doctor, complete in One Volume. Edited by the Rev. J. W. WARTER, B.D. Square crown 8vo. 12s. 6d.

Historical and Critical Commentary on the Old Testament; with a New Translation. By M. M. KALISCH, Ph. D. VOL. I. *Genesis*, 8vo. 18s. or adapted for the General Reader, 12s. VOL. II. *Exodus*, 15s. or adapted for the General Reader, 12s.

A Hebrew Grammar, with Exercises. By the same. PART I. *Outlines with Exercises*, 8vo. 12s. 6d. KEY, 5s. PART II. *Exceptional Forms and Constructions*, 12s. 6d.

A Latin-English Dictionary. By J. T. WHITE, D.D. of Corpus Christi College, and J. E. RIDDLE, M.A. of St. Edmund Hall, Oxford. Imp. 8vo. pp. 2,128, price 42s.

A New Latin-English Dictionary, abridged from the larger work of *White and Riddle* (as above), by J. T. WHITE, D.D. Joint-Author. 8vo. pp. 1,048, price 18s.

The Junior Scholar's Latin-English Dictionary, abridged from the larger works of *White and Riddle* (as above), by J. T. WHITE, D.D. surviving Joint-Author. Square 12mo. pp. 662, price 7s. 6d.

An English-Greek Lexicon, containing all the Greek Words used by Writers of good authority. By C. D. YONGE, B.A. Fifth Edition. 4to. 21s.

Mr. Yonge's New Lexicon, English and Greek, abridged from his larger work (as above). Square 12mo. 8s. 6d.

A Greek-English Lexicon. Compiled by H. G. LIDDELL, D.D. Dean of Christ Church, and R. SCOTT, D.D. Master of Balliol. Fifth Edition, crown 4to. 31s. 6d.

A Lexicon, Greek and English, abridged from LIDDELL and SCOTT's *Greek-English Lexicon*. Eleventh Edition, square 12mo. 7s. 6d.

A Sanskrit-English Dictionary, The Sanskrit words printed both in the original Devanagari and in Roman letters; with References to the Best Editions of Sanskrit Authors, and with Etymologies and Comparisons of Cognate Words chiefly in Greek, Latin, Gothic, and Anglo-Saxon. Compiled by T. BENFEY. 8vo. 52s. 6d.

A Practical Dictionary of the French and English Languages. By L. CONTANSEAU. 11th Edition, post 8vo. 10s. 6d.

Contanseau's Pocket Dictionary, French and English, abridged from the above by the Author. New Edition. 18mo. price 3s. 6d.

New Practical Dictionary of the German Language; German-English, and English-German. By the Rev. W. L. BLACKLEY, M.A., and Dr. CARL MARTIN FRIEDLÄNDER. Post 8vo. 14s.

Miscellaneous Works and Popular Metaphysics.

Recreations of a Country Parson.

By A. K. H. B. FIRST SERIES, with 41 Woodcut Illustrations from Designs by R. T. Pritchett. Crown 8vo. 12s. 6d.

Recreations of a Country Parson. SECOND SERIES. Crown 8vo. 8s. 6d.

The Commonplace Philosopher in Town and Country. By the same Author. Crown 8vo. 3s. 6d.

Leisure Hours in Town; Essays Consolatory, Æsthetic, Moral, Social, and Domestic. By the same. Crown 8vo. 3s. 6d.

The Autumn Holidays of a Country Parson; Essays contributed to *Fraser's Magazine* and to *Good Words*. By the same. Crown 8vo. 3s. 6d.

The Graver Thoughts of a Country Parson. SECOND SERIES. By the same. Crown 8vo. 3s. 6d.

Critical Essays of a Country Parson, selected from Essays contributed to *Fraser's Magazine*. By the same. Post 8vo. 9s.

Sunday Afternoons at the Parish Church of a University City. By the same. Crown 8vo. 3s. 6d.

A Campaigner at Home. By SHIRLEY, Author of 'Thalatta' and 'Nugæ Criticæ.' Post 8vo. with Vignette, 7s. 6d.

Studies in Parliament: a Series of Sketches of Leading Politicians. By R. H. HURTON. (Reprinted from the *Pall Mall Gazette*.) Crown 8vo. 4s. 6d.

Lord Macaulay's Miscellaneous Writings.

LIBRARY EDITION, 2 vols. 8vo. Portrait, 21s.

PEOPLE'S EDITION, 1 vol. crown 8vo. 4s. 6d.

The Rev. Sydney Smith's Miscellaneous Works; including his Contributions to the *Edinburgh Review*. People's Edition, 2 vols. crown 8vo. 8s.

Elementary Sketches of Moral Philosophy, delivered at the Royal Institution. By the same Author. Fcp. 6s.

The Wit and Wisdom of the Rev. SYDNEY SMITH: a Selection of the most memorable Passages in his Writings and Conversation. 16mo. 5s.

Epigrams, Ancient and Modern: Humorous, Witty, Satirical, Moral, and Panegyric. Edited by Rev. JOHN BOOTH, B.A. Cambridge. Second Edition, revised and enlarged. Fcp. 7s. 6d.

The Folk-Lore of the Northern

Counties of England and the Borders. By WILLIAM HENDERSON. With an Appendix on Household Stories by the Rev. S. BARING-GOULD. Crown 8vo. with Coloured Frontispiece, 9s. 6d.

From Matter to Spirit: the Result of Ten Years' Experience in Spirit Manifestations. By SOPHIA E. DE MORGAN. With a Preface by Professor DE MORGAN. Post 8vo. 8s. 6d.

Essays selected from Contributions to the *Edinburgh Review*. By HENRY ROGERS. Second Edition. 3 vols. fcp. 21s.

Reason and Faith, their Claims and Conflicts. By the same Author. New Edition, revised and extended, and accompanied by several other Essays, on related subjects. Crown 8vo. 6s. 6d.

The Eclipse of Faith; or, a Visit to a Religious Sceptic. By the same Author. Eleventh Edition. Fcp. 5s.

Defence of the Eclipse of Faith, by its Author. Third Edition. Fcp. 3s. 6d.

Selections from the Correspondence of R. E. H. Greyson. By the same Author. Third Edition. Crown 8vo. 7s. 6d.

Fulleriana, or the Wisdom and Wit of THOMAS FULLER, with Essay on his Life and Genius. By the same Author. 16mo. 2s. 6d.

Occasional Essays. By CHANDOS WREN HOSKYN, Author of 'Talpa, or the Chronicles of a Clay Farm,' &c. 16mo. 5s. 6d.

An Essay on Human Nature; showing the Necessity of a Divine Revelation for the Perfect Development of Man's Capacities. By HENRY S. BOASE, M.D. F.R.S. and G.S. 8vo. 12s.

The Philosophy of Nature; a Systematic Treatise on the Causes and Laws of Natural Phenomena. By the same Author. 8vo. 12s.

The Secret of Hegel: being the Hegelian System in Origin, Principle, Form, and Matter. By JAMES HUTCHISON STIRLING. 2 vols. 8vo. 28s.

An Introduction to Mental Philosophy, on the Inductive Method. By J. D. MORELL, M.A. LL.D. 8vo. 12s.

Elements of Psychology, containing the Analysis of the Intellectual Powers. By the same Author. Post 8vo. 7s. 6d.

Sight and Touch: an Attempt to Disprove the Received (or Berkeleian) Theory of Vision. By THOMAS K. ABBOTT, M.A. Fellow and Tutor of Trin. Coll. Dublin. 8vo. with 21 Woodcuts, 5s. 6d.

The Senses and the Intellect. By ALEXANDER BAIN, M.A. Prof. of Logic in the Univ. of Aberdeen. Second Edition. 8vo. 15s.

The Emotions and the Will, by the same Author. 8vo. 15s.

On the Study of Character, including an Estimate of Phrenology. By the same Author. 8vo. 9s.

Time and Space: a Metaphysical Essay. By SHADWORTH H. HODGSON. 8vo. pp. 588, price 16s.

The Way to Rest: Results from a Life-search after Religious Truth. By R. VAUGHAN, D.D. Crown 8vo. 7s. 6d.

Hours with the Mystics: a Contribution to the History of Religious Opinion. By ROBERT ALFRED VAUGHAN, B.A. Second Edition. 2 vols. crown 8vo. 12s.

The Philosophy of Necessity; or, Natural Law as applicable to Mental, Moral, and Social Science. By CHARLES BRAY. Second Edition. 8vo. 9s.

The Education of the Feelings and Affections. By the same Author. Third Edition. 8vo. 3s. 6d.

On Force, its Mental and Moral Correlates. By the same Author. 8vo. 5s.

Christianity and Common Sense. By Sir WILLOUGHBY JONES, Bart. M.A. Trin. Coll. Cantab. 8vo. 6s.

Astronomy, Meteorology, Popular Geography, &c.

Outlines of Astronomy. By Sir J. F. W. HERSCHEL, Bart. M.A. Eighth Edition, revised; with Plates and Woodcuts. 8vo. 18s.

Arago's Popular Astronomy. Translated by Admiral W. H. SMYTH, F.R.S. and R. GRANT, M.A. With 25 Plates and 358 Woodcuts. 2 vols. 8vo. £2 5s.

Saturn and its System. By RICHARD A. PROCTOR, B.A. late Scholar of St. John's Coll. Camb. and King's Coll. London. 8vo. with 14 Plates, 14s.

The Handbook of the Stars. By the same Author. Square fcp. 8vo. with 3 Maps. price 5s.

Celestial Objects for Common Telescopes. By T. W. WEBB, M.A. F.R.A.S. With Map of the Moon, and Woodcuts. 16mo. 7s.

A General Dictionary of Geography, Descriptive, Physical, Statistical, and Historical; forming a complete Gazetteer of the World. By A. KEITH JOHNSTON, F.R.S.E. 8vo. 31s. 6d.

M'Culloch's Dictionary, Geographical, Statistical, and Historical, of the various Countries, Places, and principal Natural Objects in the World. Revised Edition, with the Statistical Information throughout brought up to the latest returns. By FREDERICK MARTIN. 4 vols. 8vo. with coloured Maps, £4 4s.

A Manual of Geography, Physical, Industrial, and Political. By W. HUGHES, F.R.G.S. Prof. of Geog. in King's Coll. and in Queen's Coll. Lond. With 6 Maps. Fcp. 7s. 6d.

Hawaii: the Past, Present, and Future of its Island-Kingdom: an Historical Account of the Sandwich Islands. By MANLEY HOPKINS, Hawaiian Consul-General, &c. Second Edition, revised and continued; with Portrait, Map, and 8 other Illustrations. Post 8vo. 12s. 6d.

Maunder's Treasury of Geography, Physical, Historical, Descriptive, and Political. Edited by W. HUGHES, F.R.G.S. With 7 Maps and 16 Plates. Fcp. 10s. 6d.

Physical Geography for Schools and General Readers. By M. F. MAURY, LL.D. Fcp. with 2 Charts, 2s. 6d.

Natural History and Popular Science.

The Elements of Physics or Natural Philosophy. By NEIL ARNOTT, M.D. F.R.S. Physician Extraordinary to the Queen. Sixth Edition, rewritten and completed. 2 Parts, 8vo. 21s.

Volcanos, the Character of their Phenomena, their Share in the Structure and Composition of the Surface of the Globe, &c. By G. POULETT SCROPE, M.P. F.R.S. Second Edition. 8vo. with Illustrations, 15s.

Rocks Classified and Described.

By BERNHARD VON COTTA. An English Edition, by P. H. LAWRENCE (with English, German, and French Synonyms), revised by the Author. Post 8vo. 14s.

* * Lithology, or a Classified Synopsis of the Names of Rocks and Minerals, also by Mr. LAWRENCE, adapted to the above work, may be had, price 5s. or printed on one side only (interpaginated blank), for use in Cabinets, price 7s.

Sound: a Course of Six Lectures delivered at the Royal Institution of Great Britain. By Professor JOHN TYNDALL, LL.D. F.R.S. 1 vol. crown 8vo.

[Nearly ready.]

Heat Considered as a Mode of Motion. By Professor JOHN TYNDALL, LL.D. F.R.S. Second Edition. Crown 8vo. with Woodcuts, 12s. 6d.

A Treatise on Electricity, in Theory and Practice. By A. DE LA RIVE, Prof. in the Academy of Geneva. Translated by C. V. WALKER, F.R.S. 3 vols. 8vo. with Woodcuts, £3 13s.

The Correlation of Physical Forces. By W. R. GROVE, Q.C. V.P.R.S. Fifth Edition, revised by the Author, and augmented by a Discourse on Continuity. 8vo.

Manual of Geology. By S. HAUGHTON, M.D. F.R.S. Fellow of Trin. Coll. and Prof. of Geol. in the Univ. of Dublin. Second Edition, with 66 Woodcuts. Fcp. 7s. 6d.

A Guide to Geology. By J. PHILLIPS, M.A. Prof. of Geol. in the Univ. of Oxford. Fifth Edition. Fcp. 4s.

A Glossary of Mineralogy. By H. W. BRISTOW, F.G.S. of the Geological Survey of Great Britain. With 486 Figures. Crown 8vo. 12s.

The Elements: an Investigation of the Forces which determine the Position and Movements of the Ocean and Atmosphere. By WILLIAM LEIGHTON JORDAN. Vol. I. royal 8vo. with 13 maps, price 8s.

Phillips's Elementary Introduction to Mineralogy, re-edited by H. J. BROOKE, F.R.S. and W. H. MILLER, F.G.S. Post 8vo. with Woodcuts, 18s.

Van Der Hoeven's Handbook of Zoology. Translated from the Second Dutch Edition by the Rev. W. CLARK, M.D. F.R.S. 2 vols. 8vo. with 24 Plates of Figures, 60s.

The Comparative Anatomy and Physiology of the Vertebrate Animals. By RICHARD OWEN, F.R.S. D.C.L. 3 vols. 8vo. with upwards of 1,200 Woodcuts. Vols. I. and II. price 21s. each, now ready. Vol. III. in the Spring.

The First Man and His Place in Creation, considered on the Principles of Common Sense from a Christian Point of View; with an Appendix on the Negro. By GEORGE MOORE, M.D. M.R.C.P.L. &c. Post 8vo. 8s. 6d.

The Lake Dwellings of Switzerland and other Parts of Europe. By Dr. F. KELLER, President of the Antiquarian Association of Zürich. Translated and arranged by J. E. LEE, F.S.A. F.G.S. Author of 'Isca Silurum.' With several Woodcuts and nearly 100 Plates of Figures. Royal 8vo. 31s. 6d.

Homes without Hands: a Description of the Habitations of Animals, classed according to their Principle of Construction. By Rev. J. G. WOOD, M.A. F.L.S. With about 140 Vignettes on Wood (20 full size of page). Second Edition. 8vo. 21s.

The Harmonies of Nature and Unity of Creation. By Dr. G. HARTWIG, 8vo. with numerous Illustrations, 18s.

The Sea and its Living Wonders. By the same Author. Third Edition, enlarged. 8vo. with many Illustrations, 21s.

The Tropical World. By the same Author. With 8 Chromoxylographs and 172 Woodcuts. 8vo. 21s.

Manual of Corals and Sea Jellies. By J. R. GREENE, B.A. Edited by J. A. GALBRAITH, M.A. and S. HAUGHTON, M.D. Fcp. with 39 Woodcuts, 5s.

Manual of Sponges and Animalculæ; with a General Introduction on the Principles of Zoology. By the same Author and Editors. Fcp. with 16 Woodcuts, 2s.

Manual of the Metalloids. By J. APJOHN, M.D. F.R.S. and the same Editors. 2nd Edition. Fcp. with 38 Woodcuts, 7s. 6d.

Sketches of the Natural History of Ceylon. By Sir J. EMERSON TENNENT, K.C.S. LL.D. With 82 Wood Engravings. Post 8vo. 12s. 6d.

Ceylon. By the same Author. 5th Edition; with Maps, &c. and 90 Wood Engravings. 2 vols. 8vo. £2 10s.

The Wild Elephant, its Structure and Habits, with the Method of Taking and Training it in Ceylon. By the same Author. Fcp. 8vo. with Illustrations.

A Familiar History of Birds.

By E. STANLEY, D.D. late Lord Bishop of Norwich. Fcp. with Woodcuts, 3s. 6d.

Kirby and Spence's Introduction

to Entomology, or Elements of the Natural History of Insects. Crown 8vo. 5s.

Maunder's Treasury of Natural

History, or Popular Dictionary of Zoology. Revised and corrected by T. S. COBBOLD, M.D. Fcp. with 900 Woodcuts, 10s.

The Elements of Botany for

Families and Schools. Tenth Edition, revised by THOMAS MOORE, F.L.S. Fcp. with 154 Woodcuts, 2s. 6d.

The Treasury of Botany, or

Popular Dictionary of the Vegetable Kingdom; with which is incorporated a Glossary of Botanical Terms. Edited by J. LINDLEY, F.R.S. and T. MOORE, F.L.S. assisted by eminent Contributors. Pp. 1,274, with 274 Woodcuts and 20 Steel Plates. 2 Parts, fcp. 20s.

The British Flora; comprising the

Phænogamous or Flowering Plants and the Ferns. By Sir W. J. HOOKER, K.H. and G. A. WALKER-ARNOTT, LL.D. 12mo. with 12 Plates, 14s. or coloured, 21s.

The Rose Amateur's Guide.

By THOMAS RIVERS. New Edition. Fcp. 4s.

The Indoor Gardener.

By Miss MALING. Fcp. with Frontispiece, 5s.

Loudon's Encyclopædia of Plants;

comprising the Specific Character, Description, Culture, History, &c. of all the Plants found in Great Britain. With upwards of 12,000 Woodcuts. 8vo. 42s.

Loudon's Encyclopædia of Trees and

Shrubs; containing the Hardy Trees and Shrubs of Great Britain scientifically and popularly described. With 2,000 Woodcuts. 8vo. 50s.

Bryologia Britannica; containing

the Mosses of Great Britain and Ireland, arranged and described. By W. WILSON. 8vo. with 61 Plates, 42s. or coloured, £4 4s.

Maunder's Scientific and Lite-

rary Treasury; a Popular Encyclopædia of Science, Literature, and Art. New Edition, thoroughly revised and in great part rewritten, with above 1,000 new articles, by J. Y. JOHNSON, Corr. M.Z.S. Fcp. 10s. 6d.

A Dictionary of Science, Litera-

ture, and Art. Fourth Edition, re-edited by the late W. T. BRANDE (the Author) and GEORGE W. COX, M.A. 3 vols. medium 8vo. price 63s. cloth.

Essays on Scientific and other

subjects, contributed to Reviews. By Sir H. HOLLAND, Bart. M.D. Second Edition. 8vo. 14s.

Essays from the Edinburgh and

Quarterly Reviews; with Addresses and other Pieces. By Sir J. F. W. HERSCHEL, Bart. M.A. 8vo. 18s.

*Chemistry, Medicine, Surgery, and the Allied Sciences.***A Dictionary of Chemistry and**

the Allied Branches of other Sciences. By HENRY WATTS, F.C.S. assisted by eminent Contributors. 5 vols. medium 8vo. in course of publication in Parts. VOL. I. 31s. 6d. VOL. II. 26s. VOL. III. 31s. 6d. and VOL. IV. 24s. are now ready.

A Handbook of Volumetrical

Analysis. By ROBERT H. SCOTT, M.A. T.C.D. Post 8vo. 4s. 6d.

Elements of Chemistry, Theore-

tical and Practical. By WILLIAM A. MILLER, M.D. LL.D. F.R.S. F.G.S. Professor of Chemistry, King's College, London. 3 vols. 8vo. £2 13s. PART I. CHEMICAL PHYSICS, Third Edition, 12s. PART II. INORGANIC CHEMISTRY, 21s. PART III. ORGANIC CHEMISTRY, Third Edition, 24s.

A Manual of Chemistry, De-

scriptive and Theoretical. By WILLIAM ODLING, M.B. F.R.S. PART I. 8vo. 9s.

A Course of Practical Chemistry, for the

use of Medical Students. By the same Author. Second Edition, with 70 new Woodcuts. Crown 8vo. 7s. 6d.

Lectures on Animal Chemistry Delivered

at the Royal College of Physicians in 1865. By the same Author. Crown 8vo. 4s. 6d.

The Toxicologist's Guide: a New

Manual on Poisons, giving the Best Methods to be pursued for the Detection of Poisons. By J. HORSLEY, F.C.S. Analytical Chemist. Post 8vo. 3s. 6d.

The Diagnosis and Treatment of the Diseases of Women; including the Diagnosis of Pregnancy. By GRAILY HEWITT, M.D. &c. New Edition, with Woodcut Illustrations, in the press.

Lectures on the Diseases of Infancy and Childhood. By CHARLES WEST, M.D. &c. 5th Edition, revised and enlarged. 8vo. 16s.

Exposition of the Signs and Symptoms of Pregnancy; with other Papers on subjects connected with Midwifery. By W. F. MONTGOMERY, M.A. M.D. M.R.I.A. 8vo. with Illustrations, 25s.

A System of Surgery, Theoretical and Practical, in Treatises by Various Authors. Edited by T. HOLMES, M.A. Cantab. Assistant-Surgeon to St. George's Hospital. 4 vols. 8vo. £4 13s.

Vol. I. General Pathology, 21s.

Vol. II. Local Injuries: Gun-shot Wounds, Injuries of the Head, Back, Face, Neck, Chest, Abdomen, Pelvis, of the Upper and Lower Extremities, and Diseases of the Eye. 21s.

Vol. III. Operative Surgery. Diseases of the Organs of Circulation, Locomotion, &c. 21s.

Vol. IV. Diseases of the Organs of Digestion, of the Genito-Urinary System, and of the Breast, Thyroid Gland, and Skin; with APPENDIX and GENERAL INDEX. 30s.

Lectures on the Principles and Practice of Physic. By THOMAS WATSON, M.D. Physician-Extraordinary to the Queen. Fourth Edition. 2 vols. 8vo. 34s.

Lectures on Surgical Pathology. By J. PAGET, F.R.S. Surgeon-Extraordinary to the Queen. Edited by W. TURNER, M.B. 8vo. with 117 Woodcuts, 21s.

A Treatise on the Continued Fevers of Great Britain. By C. MURCHISON, M.D. Senior Physician to the London Fever Hospital. 8vo. with coloured Plates, 18s.

Anatomy, Descriptive and Surgical. By HENRY GRAY, F.R.S. With 410 Wood Engravings from Dissections. Fourth Edition, by T. HOLMES, M.A. Cantab. Royal 8vo. 28s.

The Cyclopædia of Anatomy and Physiology. Edited by the late R. B. TODD, M.D. F.R.S. Assisted by nearly all the most eminent cultivators of Physiological Science of the present age. 5 vols. 8vo. with 2,853 Woodcuts, £6 6s.

Physiological Anatomy and Physiology of Man. By the late R. B. TODD, M.D. F.R.S. and W. BOWMAN, F.R.S. of King's College. With numerous Illustrations. Vol. II. 8vo. 25s.

Vol. I. New Edition by Dr. LIONEL S. BEALE, F.R.S. in course of publication; Part I. with 8 Plates, 7s. 6d.

Histological Demonstrations; a Guide to the Microscopical Examination of the Animal Tissues in Health and Disease, for the use of the Medical and Veterinary Professions. By G. HARLEY, M.D. F.R.S. Prof. in Univ. Coll. London; and G. T. BROWN, M.R.C.V.S. Professor of Veterinary Medicine, and one of the Inspecting Officers in the Cattle Plague Department of the Privy Council. Post 8vo. with 223 Woodcuts, 12s.

A Dictionary of Practical Medicine. By J. COPLAND, M.D. F.R.S. Abridged from the larger work by the Author, assisted by J. C. COPLAND, M.R.C.S. and throughout brought down to the present state of Medical Science. Pp. 1,560, in 8vo. price 36s.

The Works of Sir B. C. Brodie, Bart. collected and arranged by CHARLES HAWKINS, F.R.C.S.E. 3 vols. 8vo. with Medallion and Facsimile, 48s.

Autobiography of Sir B. C. Brodie, Bart. printed from the Author's materials left in MS. Second Edition. Fcp. 4s. 6d.

A Manual of Materia Medica and Therapeutics, abridged from Dr. PEREIRA's *Elements* by F. J. FARRE, M.D. assisted by R. BENTLEY, M.R.C.S. and by R. WARINGTON, F.R.S. 1 vol. 8vo. with 90 Woodcuts, 21s.

Dr. Pereira's Elements of Materia Medica and Therapeutics, Third Edition, by A. S. TAYLOR, M.D. and G. O. REES, M.D. 3 vols. 8vo. with Woodcuts, £3 15s.

Thomson's Conspectus of the British Pharmacopœia. Twenty-fourth Edition, corrected and made conformable throughout to the New Pharmacopœia of the General Council of Medical Education. By E. LLOYD BIRKETT, M.D. 18mo. 5s. 6d.

Manual of the Domestic Practice of Medicine. By W. B. KESTEVEN, F.R.C.S.E. Second Edition, thoroughly revised, with Additions. Fcp. 5s.

Sea-Air and Sea-Bathing for Children and Invalids. By WILLIAM STRANGE, M.D. Fcp. 8s.

The Restoration of Health; or, the Application of the Laws of Hygiene to the Recovery of Health: a Manual for the Invalid, and a Guide in the Sick Room. By W. STRANGE, M.D. Fcp. 6s.

Manual for the Classification, Training, and Education of the Feeble-Minded, Imbecile, and Idiotic. By P. MARTIN DUNCAN, M.B. and WILLIAM MILLARD. Crown 8vo. 5s.

The Fine Arts, and Illustrated Editions.

The Life of Man Symbolised by the Months of the Year in their Seasons and Phases; with Passages selected from Ancient and Modern Authors. By RICHARD PIGOT. Accompanied by a Series of 25 full-page Illustrations and numerous Marginal Devices, Decorative Initial Letters, and Tailpieces, engraved on Wood from Original Designs by JOHN LEIGHTON, F.S.A. 4to. 42s.

The New Testament, illustrated with Wood Engravings after the Early Masters, chiefly of the Italian School. Crown 4to. 63s. cloth, gilt top; or £5 5s. morocco.

Lyra Germanica; Hymns for the Sundays and Chief Festivals of the Christian Year. Translated by CATHERINE WINKWORTH; 125 Illustrations on Wood drawn by J. LEIGHTON, F.S.A. Fcp. 4to 21s.

Cats' and Farlie's Moral Emblems; with Aphorisms, Adages, and Proverbs of all Nations: comprising 121 Illustrations on Wood by J. LEIGHTON, F.S.A. with an appropriate Text by R. PIGOT. Imperial 8vo. 31s. 6d.

Shakspeare's Sentiments and Similes printed in Black and Gold, and illuminated in the Missal style by HENRY NOEL HUMPHREYS. In massive covers, containing the Medallion and Cypher of Shakspeare. Square post 8vo. 21s.

Half-Hour Lectures on the History and Practice of the Fine and Ornamental Arts. By W. B. SCOTT. Second Edition. Crown 8vo. with 50 Woodcut Illustrations, 8s. 6d.

The History of Our Lord, as exemplified in Works of Art. By Mrs. JAMESON and Lady EASTLAKE. Being the concluding Series of 'Sacred and Legendary Art.' Second Edition, with 13 Etchings and 281 Woodcuts. 2 vols. square crown 8vo. 42s.

Mrs. Jameson's Legends of the Saints and Martyrs. Fourth Edition, with 19 Etchings and 187 Woodcuts. 2 vols. 31s. 6d.

Mrs. Jameson's Legends of the Monastic Orders. Third Edition, with 11 Etchings and 88 Woodcuts. 1 vol. 21s.

Mrs. Jameson's Legends of the Madonna. Third Edition, with 27 Etchings and 165 Woodcuts. 1 vol. 21s.

Musical Publications.

An Introduction to the Study of National Music; Comprising Researches into Popular Songs, Traditions, and Customs. By CARL ENGEL, Author of 'The Music of the most Ancient Nations.' With Frontispiece and numerous Musical Illustrations. 8vo. 16s.

Six Lectures on Harmony. Delivered at the Royal Institution of Great Britain before Easter 1867. By G. A. MACFARREN. 8vo. [In the press.]

Lectures on the History of Modern Music, delivered at the Royal Institution. By JOHN HULLAH. FIRST COURSE, with Chronological Tables, post 8vo. 6s. 6d. SECOND COURSE, the Transition Period, with 26 Specimens, 8vo. 16s.

Sacred Music for Family Use; A Selection of Pieces for One, Two, or more Voices, from the best Composers, Foreign and English. Edited by JOHN HULLAH. 1 vol. music folio, 21s. half bound.

Hullah's Part Music, Sacred and Secular, for Soprano, Alto, Tenor, and Bass. New Edition, with Pianoforte Accompaniments, in course of publication in Monthly Numbers, each number in Score, with Pianoforte Accompaniment, price 1s. and in separate Parts (Soprano, Alto, Tenor, and Bass), uniform with the Score in size, but in larger type, price 3d. each Part. Each Series (Sacred and Secular) to be completed in 12 Numbers, forming a Volume, in imperial 8vo.

Arts, Manufactures, &c.

Drawing from Nature; a Series of Progressive Instructions in Sketching, from Elementary Studies to Finished Views, with Examples from Switzerland and the Pyrenees. By GEORGE BARNARD, Professor of Drawing at Rugby School. With 18 Lithographic Plates and 108 Wood Engravings. Imp. 8vo. 25s.

Gwilt's Encyclopædia of Architecture. New Edition, revised, with alterations and considerable Additions, by WYATT PAPWORTH. With above 350 New Engravings and Diagrams on Wood by O. JEWITT, and upwards of 100 other Woodcuts. 8vo. [Nearly ready.]

Tuscan Sculptors, their Lives, Works, and Times. With 45 Etchings and 28 Woodcuts from Original Drawings and Photographs. By CHARLES C. PERKINS. 2 vols. imp. 8vo. 63s.

The Grammar of Heraldry: containing a Description of all the Principal Charges used in Armory, the Signification of Heraldic Terms, and the Rules to be observed in Blazoning and Marshalling. By JOHN E. CUSSANS. Fcp. with 196 Woodcuts, 4s. 6d.

The Engineer's Handbook; explaining the Principles which should guide the young Engineer in the Construction of Machinery. By C. S. LOWNDES. Post 8vo. 5s.

The Elements of Mechanism. By T. M. GOODEVE, M.A. Prof. of Mechanics at the R. M. Acad. Woolwich. Second Edition, with 217 Woodcuts. Post 8vo. 6s. 6d.

Ure's Dictionary of Arts, Manufactures, and Mines. Re-written and enlarged by ROBERT HUNT, F.R.S., assisted by numerous Contributors eminent in Science and the Arts. With 2,000 Woodcuts. 3 vols. 8vo. [Nearly ready.]

Treatise on Mills and Millwork. By W. FAIRBAIRN, C.E. F.R.S. With 18 Plates and 322 Woodcuts. 2 vols. 8vo. 32s.

Useful Information for Engineers. By the same Author. FIRST, SECOND, and THIRD SERIES, with many Plates and Woodcuts. 3 vols. crown 8vo. 10s. 6d. each.

The Application of Cast and Wrought Iron to Building Purposes. By the same Author. Third Edition, with 6 Plates and 118 Woodcuts. 8vo. 16s.

Iron Ship Building, its History and Progress, as comprised in a Series of Experimental Researches on the Laws of Strain; the Strengths, Forms, and other conditions of the Material; and an Inquiry into the Present and Prospective State of the Navy, including the Experimental Results on the Resisting Powers of Armour Plates and Shot at High Velocities. By W. FAIRBAIRN, C.E. F.R.S. With 4 Plates and 130 Woodcuts, 8vo. 18s.

Encyclopædia of Civil Engineering, Historical, Theoretical, and Practical. By E. CRESY, C.E. With above 3,000 Woodcuts. 8vo. 42s.

The Practical Mechanic's Journal: An Illustrated Record of Mechanical and Engineering Science, and Epitome of Patent Inventions. 4to. price 1s. monthly.

The Practical Draughtsman's Book of Industrial Design. By W. JOHNSON, Assoc. Inst. C.E. With many hundred Illustrations. 4to. 28s. 6d.

The Patentee's Manual: a Treatise on the Law and Practice of Letters Patent for the use of Patentees and Inventors. By J. and J. H. JOHNSON. Post 8vo. 7s. 6d.

The Artisan Club's Treatise on the Steam Engine, in its various Applications to Mines, Mills, Steam Navigation, Railways, and Agriculture. By J. BOURNE, C.E. Seventh Edition; with 37 Plates and 546 Woodcuts. 4to. 42s.

A Treatise on the Screw Propeller, Screw Vessels, and Screw Engines, as adapted for purposes of Peace and War; illustrated by many Plates and Woodcuts. By the same Author. New and enlarged Edition in course of publication in 24 Parts, royal 4to. 2s. 6d. each.

Catechism of the Steam Engine, in its various Applications to Mines, Mills, Steam Navigation, Railways, and Agriculture. By J. BOURNE, C.E. With 199 Woodcuts. Fcp. 9s. The INTRODUCTION of 'Recent Improvements' may be had separately, with 110 Woodcuts, price 3s. 6d.

Handbook of the Steam Engine, by the same Author, forming a KEY to the Catechism of the Steam Engine, with 67 Woodcuts. Fcp. 9s.

The Art of Perfumery ; the History and Theory of Odours, and the Methods of Extracting the Aromas of Plants. By Dr. PIESSE, F.C.S. Third Edition, with 58 Woodcuts. Crown 8vo. 10s. 6d.

Chemical, Natural, and Physical Magic, for Juveniles during the Holidays. By the same Author. Third Edition, enlarged with 38 Woodcuts. Fcp. 6s.

Talpa ; or, the Chronicles of a Clay Farm. By C. W. HOSKYNs, Esq. With 24 Woodcuts from Designs by G. CRUIKSHANK. Sixth Edition. 16mo. 5s. 6d.

History of Windsor Great Park and Windsor Forest. By WILLIAM MENZIES, Resident Deputy Surveyor. With 2 Maps and 20 Photographs. Imp. folio, £8 8s.

Loudon's Encyclopædia of Agriculture : Comprising the Laying-out, Improvement, and Management of Landed Property, and the Cultivation and Economy of the Productions of Agriculture. With 1,100 Woodcuts. 8vo. 31s. 6d.

Loudon's Encyclopædia of Gardening : Comprising the Theory and Practice of Horticulture, Floriculture, Arboriculture, and Landscape Gardening. With 1,000 Woodcuts. 8vo. 31s. 6d.

Loudon's Encyclopædia of Cottage, Farm, and Villa Architecture and Furniture. With more than 2,000 Woodcuts. 8vo. 42s.

Bayldon's Art of Valuing Rents and Tillages, and Claims of Tenants upon Quitting Farms, both at Michaelmas and Lady-Day. Eighth Edition, revised by J. C. MORTON. 8vo. 10s. 6d.

Religious and Moral Works.

An Exposition of the 39 Articles, Historical and Doctrinal. By E. HAROLD BROWNE, D.D. Lord Bishop of Ely. Seventh Edition. 8vo. 16s.

The Pentateuch and the Elohistie Psalms, in Reply to Bishop Colenso. By the same. Second Edition. 8vo. 2s.

Examination-Questions on Bishop Browne's Exposition of the Articles. By the Rev. J. GORLE, M.A. Fcp. 3s. 6d.

The Acts of the Apostles ; with a Commentary, and Practical and Devotional Suggestions for Readers and Students of the English Bible. By the Rev. F. C. COOK, M.A., Canon of Exeter, &c. New Edition; 8vo. 12s. 6d.

The Life and Epistles of St. Paul. By W. J. CONYBEARE, M.A. late Fellow of Trin. Coll. Cantab. and J. S. HOWSON, D.D. Principal of Liverpool Coll.

LIBRARY EDITION, with all the Original Illustrations, Maps, Landscapes on Steel, Woodcuts, &c. 2 vols. 4to. 48s.

INTERMEDIATE EDITION, with a Selection of Maps, Plates, and Woodcuts. 2 vols. square crown 8vo. 31s. 6d.

PEOPLE'S EDITION, revised and condensed, with 46 Illustrations and Maps. 2 vols. crown 8vo. 12s.

The Voyage and Shipwreck of St. Paul ; with Dissertations on the Ships and Navigation of the Ancients. By JAMES SMITH, F.R.S. Crown 8vo. Charts, 10s. 6d.

Fasti Sacri, or a Key to the Chronology of the New Testament ; comprising an Historical Harmony of the Four Gospels, and Chronological Tables generally from B.C. 70 to A.D. 70 : with a Preliminary Dissertation and other Aids. By THOMAS LEWIN, M.A. F.S.A. Imp. 8vo. 42s.

A Critical and Grammatical Commentary on St. Paul's Epistles. By C. J. ELLICOTT, D.D. Lord Bishop of Gloucester and Bristol. 8vo.

Galatians, Third Edition, 8s. 6d.

Ephesians, Third Edition, 8s. 6d.

Pastoral Epistles, Third Edition, 10s. 6d.

Philippians, Colossians, and Philemon, Third Edition, 10s. 6d.

Thessalonians, Second Edition, 7s. 6d.

Historical Lectures on the Life of Our Lord Jesus Christ : being the Hulsean Lectures for 1859. By the same Author. Fourth Edition. 8vo. 10s. 6d.

The Destiny of the Creature ; and other Sermons preached before the University of Cambridge. By the same. Post 8vo. 5s.

The Broad and the Narrow Way ; Two Sermons preached before the University of Cambridge. By the same. Crown 8vo. 2s.

The Greek Testament ; with Notes, Grammatical and Exegetical. By the Rev. W. WEBSTER, M.A. and the Rev. W. F. WILKINSON, M.A. 2 vols. 8vo. £2 4s.

VOL. I. the Gospels and Acts, 20s.

VOL. II. the Epistles and Apocalypse, 24s.

Rev. T. H. Horne's Introduction to the Critical Study and Knowledge of the Holy Scriptures. Eleventh Edition, corrected, and extended under careful Editorial revision. With 4 Maps and 22 Woodcuts and Facsimiles. 4 vols. 8vo. £3 13s. 6d.

Rev. T. H. Horne's Compendious Introduction to the Study of the Bible, being an Analysis of the larger work by the same Author. Re-edited by the Rev. JOHN AYRE, M.A. With Maps, &c. Post 8vo. 9s.

The Treasury of Bible Knowledge; being a Dictionary of the Books, Persons, Places, Events, and other Matters of which mention is made in Holy Scripture; intended to establish its Authority and illustrate its Contents. By Rev. J. AYRE, M.A. With Maps, 15 Plates, and numerous Woodcuts. Fcp. 10s. 6d.

Every-day Scripture Difficulties explained and illustrated. By J. E. PRESCOTT, M.A. VOL. I. *Matthew and Mark*; VOL. II. *Luke and John*. 2 vols. 8vo. 9s. each.

The Pentateuch and Book of Joshua Critically Examined. By the Right Rev. J. W. COLENSO, D.D. Lord Bishop of Natal. People's Edition, in 1 vol. crown 8vo. 6s. or in 5 Parts, 1s. each.

The Pentateuch and Book of Joshua Critically Examined. By Prof. A. KUENEN, of Leyden. Translated from the Dutch, and edited with Notes, by the Right Rev. J. W. COLENSO, D.D. Bishop of Natal. 8vo. 8s. 6d.

The Church and the World: Essays on Questions of the Day. By various Writers. Edited by Rev. ORBY SHIPLEY, M.A. Second Edition, revised. 8vo. 15s.

The Formation of Christendom. PART I. By T. W. ALLIES. 8vo. 12s.

Christendom's Divisions; a Philosophical Sketch of the Divisions of the Christian Family in East and West. By EDMUND S. FFOULKES, formerly Fellow and Tutor of Jesus Coll. Oxford. Post 8vo. 7s. 6d.

Christendom's Divisions, Part II. *Greeks and Latins*, being a History of their Dissentions and Overtures for Peace down to the Reformation. By the same Author. [Nearly ready.]

The Life of Christ, an Eclectic Gospel, from the Old and New Testaments, arranged on a New Principle, with Analytical Tables, &c. By CHARLES DE LA PRYME, M.A. Revised Edition. 8vo. 5s.

The Hidden Wisdom of Christ and the Key of Knowledge; or, History of the Apocrypha. By ERNEST DE BUNSEN. 2 vols. 8vo. 28s.

The Temporal Mission of the Holy Ghost; or, Reason and Revelation. By the Most Rev. Archbishop MANNING. Second Edition. Crown 8vo. 8s. 6d.

Essays on Religion and Literature. Edited by the Most Rev. Archbishop MANNING. 8vo. 10s. 6d.

Essays and Reviews. By the Rev. W. TEMPLE, D.D. the Rev. R. WILLIAMS, B.D. the Rev. B. POWELL, M.A. the Rev. H. B. WILSON, B.D. C. W. GOODWIN, M.A. the Rev. M. PATTISON, B.D. and the Rev. B. JOWETT, M.A. 12th Edition. Fcp. 5s.

Mosheim's Ecclesiastical History. MURDOCK and SOAMES's Translation and Notes, re-edited by the Rev. W. STUBBS, M.A. 3 vols. 8vo. 45s.

Bishop Jeremy Taylor's Entire Works: With Life by BISHOP HEBER. Revised and corrected by the Rev. C. P. EDEN, 10 vols. £5 5s.

Passing Thoughts on Religion. By the Author of 'Amy Herbert.' New Edition. Fcp. 5s.

Thoughts for the Holy Week, for Young Persons. By the same Author. Third Edition. Fcp. 8vo. 2s.

Self-examination before Confirmation. By the same Author. 32mo. 1s. 6d.

Readings for a Month Preparatory to Confirmation from Writers of the Early and English Church. By the same. Fcp. 4s.

Readings for Every Day in Lent, compiled from the Writings of Bishop JEREMY TAYLOR. By the same. Fcp. 5s.

Preparation for the Holy Communion; the Devotions chiefly from the works of JEREMY TAYLOR. By the same. 32mo. 3s.

Principles of Education drawn from Nature and Revelation, and Applied to Female Education in the Upper Classes. By the same. 2 vols. fcp. 12s. 6d.

The Wife's Manual; or, Prayers, Thoughts, and Songs on Several Occasions of a Matron's Life. By the Rev. W. CALVERT, M.A. Crown 8vo. 10s. 6d.

Lyra Domestica; Christian Songs for Domestic Edification. Translated from the *Psalter and Harp* of C. J. P. SPITTA, and from other sources, by RICHARD MASSIE. FIRST and SECOND SERIES, fcp. 4s. 6d. each.

Spiritual Songs for the Sundays and Holidays throughout the Year. By J. S. B. MONSELL, LL.D. Vicar of Egham. Fourth Edition. Fcp. 4s. 6d.

The Beatitudes: Abasement before God: Sorrow for Sin; Meekness of Spirit; Desire for Holiness; Gentleness; Purity of Heart; the Peace-makers; Sufferings for Christ. By the same. Third Edition. Fcp. 8s. 6d.

Lyra Sacra; Hymns, Ancient and Modern, Odes, and Fragments of Sacred Poetry. Edited by the Rev. B. W. SAVILE, M.A. Third Edition, enlarged. Fcp. 5s.

Lyra Germanica, translated from the German by Miss C. WINKWORTH. FIRST SERIES, Hymns for the Sundays and Chief Festivals; SECOND SERIES, the Christian Life. Fcp. 3s. 6d. each SERIES.

Hymns from *Lyra Germanica*, 18mo. 1s.

The Chorale Book for England; a complete Hymn-Book in accordance with the Services and Festivals of the Church of England: the Hymns translated by Miss C. WINKWORTH; the Tunes arranged by Prof. W. S. BENNETT and OTTO GOLDSCHMIDT. Fcp. 4to. 12s. 6d.

Congregational Edition. Fcp. 2s.

Lyra Eucharistica; Hymns and Verses on the Holy Communion, Ancient and Modern; with other Poems. Edited by the Rev. ORBY SHIPLEY, M.A. Second Edition. Fcp. 7s. 6d.

Lyra Messianica; Hymns and Verses on the Life of Christ, Ancient and Modern; with other Poems. By the same Editor. Second Edition, enlarged. Fcp. 7s. 6d.

Lyra Mystica; Hymns and Verses on Sacred Subjects, Ancient and Modern. By the same Editor. Fcp. 7s. 6d.

The Catholic Doctrine of the Atonement; an Historical Inquiry into its Development in the Church: with an Introduction on the Principle of Theological Developments. By H. N. OXENHAM, M.A. formerly Scholar of Balliol College, Oxford. 8vo. 8s. 6d.

From Sunday to Sunday; an Attempt to consider familiarly the Weekday Life and Labours of a Country Clergyman. By R. GEE, M.A. Fcp. 5s.

Our Sermons: an Attempt to consider familiarly, but reverently, the Preacher's Work in the present day. By the same Author. Fcp. 6s.

Paley's Moral Philosophy, with Annotations. By RICHARD WHATELY, D.D. late Archbishop of Dublin. 8vo. 7s.

Travels, Voyages, &c.

Ice Caves of France and Switzerland; a narrative of Subterranean Exploration. By the Rev. G. F. BROWNE, M.A. Fellow and Assistant-Tutor of St. Catherine's Coll. Cambridge, M.A.C. With 11 Woodcuts. Square crown 8vo. 12s. 6d.

Village Life in Switzerland. By SOPHIA D. DELMARD. Post 8vo. 9s. 6d.

How we Spent the Summer; or, a Voyage en Zigzag in Switzerland and Tyrol with some Members of the ALPINE CLUB. From the Sketch-Book of one of the Party. Third Edition, re-drawn. In oblong 4to. with about 300 Illustrations, 15s.

Beaten Tracks; or, Pen and Pencil Sketches in Italy. By the Authoress of 'A Voyage en Zigzag.' With 42 Plates, containing about 200 Sketches from Drawings made on the Spot. 8vo. 16s.

Map of the Chain of Mont Blanc, from an actual Survey in 1863—1864. By A. ADAMS-REILLY, F.R.G.S. M.A.C. Published under the Authority of the Alpine Club. In Chromolithography on extra stout drawing-paper 28in. x 17in. price 10s. or mounted on canvas in a folding case, 12s. 6d.

Transylvania, its Products and its People. By CHARLES BONER. With 5 Maps and 43 Illustrations on Wood and in Chromolithography. 8vo. 21s.

Explorations in South-west Africa, from Walvisch Bay to Lake Ngami and the Victoria Falls. By THOMAS BAINES, F.R.G.S. 8vo. with Maps and Illustrations, 21s.

Vancouver Island and British Columbia; their History, Resources, and Prospects. By MATTHEW MACFIE, F.R.G.S. With Maps and Illustrations. 8vo. 18s.

History of Discovery in our Australasian Colonies, Australia, Tasmania, and New Zealand, from the Earliest Date to the Present Day. By WILLIAM HOWITT. With 3 Maps of the Recent Explorations from Official Sources. 2 vols. 8vo. 20s.

The Capital of the Tycoon; a Narrative of a 3 Years' Residence in Japan. By Sir RUTHERFORD ALCOCK, K.C.B. 2 vols. 8vo. with numerous Illustrations, 42s.

Florence, the New Capital of Italy. By C. R. WELD. With several Engravings on Wood, from Drawings by the Author. Post 8vo.

The Dolomite Mountains. Excursions through Tyrol, Carinthia, Carniola, and Friuli in 1861, 1862, and 1863. By J. GILBERT and G. C. CHURCHILL, F.R.G.S. With numerous Illustrations. Square crown 8vo. 21s.

A Lady's Tour Round Monte Rosa; including Visits to the Italian Valleys. With Map and Illustrations. Post 8vo. 14s.

Guide to the Pyrenees, for the use of Mountaineers. By CHARLES PACKE. With Maps, &c. and Appendix. Fcp. 6s.

A Guide to Spain. By H. O'SHEA. Post 8vo. with Travelling Map, 15s.

Christopher Columbus; his Life, Voyages, and Discoveries. Revised Edition, with 4 Woodcuts. 18mo. 2s. 6d.

Captain James Cook; his Life, Voyages, and Discoveries. Revised Edition, with numerous Woodcuts. 18mo. 2s. 6d.

The Alpine Guide. By JOHN BALL, M.R.I.A. late President of the Alpine Club. Post 8vo. with Maps and other Illustrations.

Guide to the Eastern Alps. [Just ready.

Guide to the Western Alps, including Mont Blanc, Monte Rosa, Zermatt, &c. price 7s. 6d.

Guide to the Oberland and all Switzerland, excepting the Neighbourhood of Monte Rosa and the Great St. Bernard; with Lombardy and the adjoining portion of Tyrol. 7s. 6d.

Humboldt's Travels and Discoveries in South America. Third Edition, with numerous Woodcuts. 18mo. 2s. 6d.

Narratives of Shipwrecks of the Royal Navy between 1793 and 1857, compiled from Official Documents in the Admiralty by W. O. S. GILLY; with a Preface by W. S. GILLY, D.D. 3d Edition, fcp. 5s.

A Week at the Land's End. By J. T. BLIGHT; assisted by E. H. RODD, R. Q. COUCH, and J. RALFS. With Map and 96 Woodcuts. Fcp. 6s. 6d.

Visits to Remarkable Places: Old Halls, Battle-Fields, and Scenes illustrative of Striking Passages in English History and Poetry. By WILLIAM HOWITT. 2 vols. square crown 8vo. with Wood Engravings, 25s.

The Rural Life of England. By the same Author. With Woodcuts by Bewick and Williams. Medium 8vo. 12s. 6d.

Works of Fiction.

Atherstone Priory. By L. N. COMYN. 2 vols. post 8vo. 21s.

Ellice: a Tale. By the same. Post 8vo. 9s. 6d.

Stories and Tales by the Author of 'Amy Herbert,' uniform Edition, each Tale or Story complete in a single volume.

AMY HERBERT, 2s. 6d. KATHARINE ASHTON, 3s. 6d.

GERTRUDE, 2s. 6d. MARGARET PERCIVAL, 5s.

EARL'S DAUGHTER, 2s. 6d. LANETON PARSONAGE, 4s. 6d.

EXPERIENCE OF LIFE, 2s. 6d. URSULA, 4s. 6d.

CLEVE HALL, 3s. 6d. IVORS, 3s. 6d.

A Glimpse of the World. By the Author of 'Amy Herbert.' Fcp. 7s. 6d.

The Six Sisters of the Valleys: an Historical Romance. By W. BRAMLEY-MOORE, M.A. Incumbent of Gerrard's Cross, Bucks. Fourth Edition, with 14 Illustrations. Crown 8vo. 5s.

Gallus; or, Roman Scenes of the Time of Augustus: with Notes and Excursuses illustrative of the Manners and Customs of the Ancient Romans. From the German of Prof. BECKER. New Edit. Post 8vo. 7s. 6d.

Charicles; a Tale illustrative of Private Life among the Ancient Greeks: with Notes and Excursuses. From the German of Prof. BECKER. New Edition, Post 8vo. 7s. 6d.

Icelandic Legends. Collected by JON. ARNASON. Selected and Translated from the Icelandic by GEORGE E. J. POWELL and E. MAGNUSSON. SECOND SERIES, with Notes and an Introductory Essay on the Origin and Genius of the Icelandic Folk-Lore, and 3 Illustrations on Wood. Crown 8vo. 21s.

The Warden : a Novel. By ANTHONY TROLLOPE, Crown 8vo. 2s. 6d.

Barchester Towers : a Sequel to 'The Warden.' By the same Author. Crown 8vo. 3s. 6d.

Tales from Greek Mythology. By GEORGE W. COX, M.A. late Scholar of Trin. Coll. Oxon. Second Edition. Square 16mo. 3s. 6d.

Tales of the Gods and Heroes. By the same Author. Second Edition. Fcp. 5s.

Tales of Thebes and Argos. By the same Author. Fcp. 4s. 6d.

The Gladiators : a Tale of Rome and Judæa. By G. J. WHYTE MELVILLE. Crown 8vo. 5s.

Digby Grand, an Autobiography. By the same Author. 1 vol. 5s.

Kate Coventry, an Autobiography. By the same. 1 vol. 5s.

General Bounce, or the Lady and the Locusts. By the same. 1 vol. 5s.

Holmby House, a Tale of Old Northamptonshire. 1 vol. 5s.

Good for Nothing, or All Down Hill. By the same. 1 vol. 6s.

The Queen's Maries, a Romance of Holyrood. By the same. 1 vol. 6s.

The Interpreter, a Tale of the War. By the same Author. 1 vol. 5s.

Poetry and The Drama.

Goethe's Second Faust. Translated by JOHN ANSTER, LL.D. M.R.I.A. Regius Professor of Civil Law in the University of Dublin. Post 8vo. 15s.

Tasso's Jerusalem Delivered, translated into English Verse by Sir J. KINGSTON JAMES, Kt. M.A. 2 vols. fcp. with Facsimile, 14s.

Poetical Works of John Edmund Reade; with final Revision and Additions. 3 vols. fcp. 18s. or each vol. separately, 6s.

Moore's Poetical Works, Cheapest Editions complete in 1 vol. including the Autobiographical Prefaces and Author's last Notes, which are still copyright. Crown 8vo. ruby type, with Portrait, 6s. or People's Edition, in larger type, 12s. 6d.

Moore's Poetical Works, as above, Library Edition, medium 8vo. with Portrait and Vignette, 14s. or in 10 vols. fcp. 3s. 6d. each.

Moore's Lalla Rookh, Tenniel's Edition, with 68 Wood Engravings from Original Drawings and other Illustrations. Fcp. 4to. 21s.

Moore's Irish Melodies, MacLise's Edition, with 161 Steel Plates from Original Drawings. Super-royal 8vo. 31s. 6d.

Miniature Edition of Moore's Irish Melodies, with MacLise's Illustrations, (as above) reduced in Lithography. Imp. 16mo. 10s. 6d.

Southey's Poetical Works, with the Author's last Corrections and copyright Additions. Library Edition, in 1 vol. medium 8vo. with Portrait and Vignette, 14s. or in 10 vols. fcp. 3s. 6d. each.

Lays of Ancient Rome ; with *Ivry* and the *Armada*. By the Right Hon. LORD MACAULAY. 16mo. 4s. 6d.

Lord Macaulay's Lays of Ancient Rome. With 90 Illustrations on Wood, Original and from the Antique, from Drawings by G. SCHARF. Fcp. 4to. 21s.

Miniature Edition of Lord Macaulay's Lays of Ancient Rome, with Scharf's Illustrations (as above) reduced in Lithography. Imp. 16mo. 10s. 6d.

Poems. By JEAN INGELOW. Twelfth Edition. Fcp. 8vo. 5s.

Poems by Jean Ingelow. A New Edition, with nearly 100 Illustrations by Eminent Artists, engraved on Wood by the Brothers DALZIEL. Fcp. 4to. 21s.

Poetical Works of Letitia Elizabeth Landon (L.E.L.) 2 vols. 16mo. 10s.

Playtime with the Poets : a Selection of the best English Poetry for the use of Children. By a LADY. Crown 8vo. 5s.

Bowdler's Family Shakspeare, cheaper Genuine Edition, complete in 1 vol. large type, with 36 Woodcut Illustrations, price 14s. or, with the same ILLUSTRATIONS, in 6 pocket vols. 3s. 6d. each.

Arundines Cami, sive Musarum Cantabrigiensium Lusus Canori. Collegit atque edidit H. DRURY. M.A. Editio Sexta, curavit H. J. HODGSON, M.A. Crown 8vo. price 7s. 6d.

The Æneid of Virgil Translated into English Verse. By JOHN CONINGTON, M.A. Corpus Professor of Latin in the University of Oxford. Crown 8vo. 9s.

The Iliad of Homer Translated into Blank Verse. By ICHABOD CHARLES WRIGHT, M.A. late Fellow of Magdalen Coll. Oxon. 2 vols. crown 8vo. 21s.

The Iliad of Homer in English Hexameter Verse. By J. HENRY DART, M.A. of Exeter College, Oxford; Author of 'The Exile of St. Helena, Newdigate, 1838.' Square crown 8vo. price 21s. cloth.

Dante's Divine Comedy, translated in English Terza Rima by JOHN DAYMAN, M.A. [With the Italian Text, after Brunetti, interpaged.] 8vo. 21s.

Rural Sports, &c.

Encyclopædia of Rural Sports; a Complete Account, Historical, Practical, and Descriptive, of Hunting, Shooting, Fishing, Racing, &c. By D. P. BLAINE. With above 600 Woodcuts (20 from Designs by JOHN LEECH). 8vo. 42s.

Notes on Rifle Shooting. By Captain HEATON, Adjutant of the Third Manchester Rifle Volunteer Corps. Fcp. 2s. 6d.

Col. Hawker's Instructions to Young Sportsmen in all that relates to Guns and Shooting. Revised by the Author's Son. Square crown 8vo. with Illustrations. 18s.

The Rifle, its Theory and Practice. By ARTHUR WALKER (79th Highlanders), Staff, Hythe and Fleetwood Schools of Musketry. Second Edition. Crown 8vo. with 125 Woodcuts, 5s.

The Dead Shot, or Sportsman's Complete Guide; a Treatise on the Use of the Gun, Dog-breaking, Pigeon-shooting, &c. By MARKSMAN. Fcp. with Plates, 5s.

Hints on Shooting, Fishing, &c. both on Sea and Land and in the Fresh and Saltwater Lochs of Scotland. By C. IDLE, Esq. Second Edition. Fcp. 6s.

A Book on Angling: being a Complete Work on every branch of Angling practised in Great Britain. By FRANCIS FRANCIS. With numerous Explanatory Plates, coloured and plain, and the largest and most reliable List of Salmon Flies ever published. Post 8vo.

The Art of Fishing on the Principle of Avoiding Cruelty: being a brief Treatise on the Most Merciful Methods of Capturing Fish; describing certain approved Rules in Fishing, used during 60 Years' Practice. By the Rev. O. RAYMOND, LL.B. Fcp. 8vo.

Handbook of Angling: Teaching Fly-fishing, Trolling, Bottom-fishing, Salmon-fishing; with the Natural History of River Fish, and the best modes of Catching them. By EPHEMERA. Fcp. Woodcuts, 5s.

The Fly-Fisher's Entomology. By ALFRED RONALDS. With coloured Representations of the Natural and Artificial Insect. Sixth Edition; with 20 coloured Plates. 8vo. 14s.

The Cricket Field; or, the History and the Science of the Game of Cricket. By JAMES PYCROFT, B.A. 4th Edition. Fcp. 5s.

The Cricket Tutor; a Treatise exclusively Practical. By the same. 18mo. 1s.

Cricketana. By the same Author. With 7 Portraits of Cricketers. Fcp. 5s.

Youatt on the Horse. Revised and enlarged by W. WATSON, M.R.C.V.S. 8vo. with numerous Woodcuts, 12s. 6d.

Youatt on the Dog. (By the same Author.) 8vo. with numerous Woodcuts, 6s.

The Horse-Trainer's and Sportsman's Guide: with Considerations on the Duties of Grooms, on Purchasing Blood Stock, and on Veterinary Examination. By DIGBY COLLINS. Post 8vo. 6s.

Blaine's Veterinary Art: a Treatise on the Anatomy, Physiology, and Curative Treatment of the Diseases of the Horse, Neat Cattle, and Sheep. Seventh Edition, revised and enlarged by C. STEEL, M.R.C.V.S.L. 8vo. with Plates and Woodcuts, 18s.

On Drill and Manœuvres of Cavalry, combined with Horse Artillery. By Major-Gen. MICHAEL W. SMITH, C.B. commanding the Poonah Division of the Bombay Army. 8vo. 12s. 6d.

The Horse's Foot, and how to keep it Sound. By W. MILES, Esq. 9th Edition, with Illustrations. Imp. 8vo. 12s. 6d.

A Plain Treatise on Horse-shoeing. By the same Author. Post 8vo. with Illustrations, 2s. 6d.

Stables and Stable Fittings. By the same. Imp. 8vo. with 13 Plates, 15s.

Remarks on Horses' Teeth, addressed to Purchasers. By the same. Post 8vo. 1s. 6d.

The Dog in Health and Disease. By STONEHENGE. With 70 Wood Engravings. New Edition. Square crown 8vo. 10s. 6d.

The Greyhound. By the same Author. Revised Edition, with 24 Portraits of Greyhounds. Square crown 8vo. 21s.

The Ox, his Diseases and their Treatment; with an Essay on Parturition in the Cow. By J. R. DOBSON, M.R.C.V.S. Crown 8vo. with Illustrations, 7s. 6d.

Commerce, Navigation, and Mercantile Affairs.

The Commercial Handbook of France; Furnishing a detailed and comprehensive account of the Trade, Manufactures, Industry, and Commerce of France at the Present Time. By FREDERICK MARTIN. With Maps and Plans, including a Coloured Map showing the Seats of the Principal Industries. Crown 8vo.

Banking, Currency, and the Exchanges: a Practical Treatise. By ARTHUR CRUMP, Bank Manager, formerly of the Bank of England. Post 8vo. 6s.

The Theory and Practice of Banking. By HENRY DUNNING MACLEOD, M.A. Barrister-at-Law. Second Edition, entirely remodelled. 2 vols. 8vo. 30s.

A Dictionary, Practical, Theoretical, and Historical, of Commerce and Commercial Navigation. By J. R. MC CULLOCH. New Edition in preparation.

Practical Guide for British Shipmasters to United States Ports. By PIERRE-REPONT EDWARDS, Her Britannic Majesty's Vice-Consul at New York. Post 8vo. 8s. 6d.

A Manual for Naval Cadets. By J. M'NEIL BOYD, late Captain R.N. Third Edition; with 240 Woodcuts, and 11 coloured Plates. Post 8vo. 12s. 6d.

The Law of Nations Considered as Independent Political Communities. By TRAVERS TWISS, D.C.L. Regius Professor of Civil Law in the University of Oxford. 2 vols. 8vo. 30s. or separately, PART I. *Peace*, 12s. PART II. *War*, 18s.

A Nautical Dictionary, defining the Technical Language relative to the Building and Equipment of Sailing Vessels and Steamers, &c. By ARTHUR YOUNG. Second Edition; with Plates and 150 Woodcuts. 8vo. 18s.

Works of Utility and General Information.

Modern Cookery for Private Families, reduced to a System of Easy Practice in a Series of carefully-tested Receipts. By ELIZA ACTON. Newly revised and enlarged; with 8 Plates, Figures, and 150 Woodcuts. Fcp. 7s. 6d.

On Food and its Digestion; an Introduction to Dietetics. By W. BRINTON, M.D. Physician to St. Thomas's Hospital, &c. With 48 Woodcuts. Post 8vo. 12s.

Wine, the Vine, and the Cellar. By THOMAS G. SHAW. Second Edition, revised and enlarged, with Frontispiece and 31 Illustrations on Wood. 8vo. 16s.

A Practical Treatise on Brewing; with Formulæ for Public Brewers, and Instructions for Private Families. By W. BLACK. Fifth Edition. 8vo. 10s. 6d.

How to Brew Good Beer: a complete Guide to the Art of Brewing Ale, Bitter Ale, Table Ale, Brown Stout, Porter, and Table Beer. By JOHN PITT. Revised Edition. Fcp. 4s. 6d.

The Billiard Book. By Captain CRAWLEY, Author of 'Billiards, its Theory and Practice,' &c. With nearly 100 Diagrams on Steel and Wood. 8vo. 21s.

Whist, What to Lead. By CAM. Third Edition. 32mo. 1s.

Short Whist. By MAJOR A. The Sixteenth Edition, revised, with an Essay on the Theory of the Modern Scientific Game by PROF. P. Fcp. 3s. 6d.

Two Hundred Chess Problems, composed by F. HEALEY, including the Problems to which the Prizes were awarded by the Committees of the Era, the Manchester, the Birmingham, and the Bristol Chess Problem Tournaments; accompanied by the SOLUTIONS. Crown 8vo. with 200 Diagrams, 5s.

The Cabinet Lawyer; a Popular Digest of the Laws of England, Civil, Criminal, and Constitutional. 22nd Edition, entirely recomposed, and brought down by the AUTHOR to the close of the Parliamentary Session of 1866. Fcp. 10s. 6d.

The Philosophy of Health; or, an Exposition of the Physiological and Sanitary Conditions conducive to Human Longevity and Happiness. By SOUTHWOOD SMITH, M.D. Eleventh Edition, revised and enlarged; with 113 Woodcuts. 8vo. 15s.

Hints to Mothers on the Management of their Health during the Period of Pregnancy and in the Lying-in Room. By T. BULL, M.D. Fcp. 5s.

The Maternal Management of Children in Health and Disease. By the same Author. Fcp. 5s.

Notes on Hospitals. By FLORENCE NIGHTINGALE. Third Edition, enlarged; with 13 Plans. Post 4to. 18s.

The Executor's Guide. By J. C. HUDSON. Enlarged Edition, revised by the Author, with reference to the latest reported Cases and Acts of Parliament. Fcp. 6s.

Hudson's Plain Directions for Making Wills. Fcp. 2s. 6d.

The Law relating to Benefit Building Societies; with Practical Observations on the Act and all the Cases decided thereon, also a Form of Rules and Forms of Mortgages. By W. TIDD PRATT, Barrister. 2nd Edition. Fcp. 3s. 6d.

C. M. Willich's Popular Tables for Ascertaining the Value of Lifehold, Leasehold, and Church Property, Renewal Fines, &c.; the Public Funds; Annual Average Price and Interest on Consols from 1731 to 1861; Chemical, Geographical, Astronomical, Trigonometrical Tables, &c. Post 8vo. 10s.

Thomson's Tables of Interest, at Three, Four, Four and a Half, and Five per Cent., from One Pound to Ten Thousand and from 1 to 365 Days. 12mo. 3s. 6d.

Maunder's Treasury of Knowledge and Library of Reference: comprising an English Dictionary and Grammar, Universal Gazetteer, Classical Dictionary, Chronology, Law Dictionary, Synopsis of the Peerage, useful Tables, &c. Fcp. 10s. 6d.

Knowledge for the Young.

The Stepping Stone to Knowledge: Containing upwards of 700 Questions and Answers on Miscellaneous Subjects, adapted to the capacity of Infant Minds. By a MOTHER. 18mo. price 1s.

The Stepping Stone to Geography: Containing several Hundred Questions and Answers on Geographical Subjects. 18mo. 1s.

The Stepping Stone to English History: Containing several Hundred Questions and Answers on the History of England. 1s.

The Stepping Stone to Bible Knowledge: Containing several Hundred Questions and Answers on the Old and New Testaments. 18mo. 1s.

The Stepping Stone to Biography: Containing several Hundred Questions and Answers on the Lives of Eminent Men and Women. 18mo. 1s.

Second Series of the Stepping Stone to Knowledge: containing upwards of Eight Hundred Questions and Answers on Miscellaneous Subjects not contained in the FIRST SERIES. 18mo. 1s.

The Stepping Stone to French Pronunciation and Conversation: Containing several Hundred Questions and Answers. By Mr. P. SADLER. 18mo. 1s.

The Stepping Stone to English Grammar: containing several Hundred Questions and Answers on English Grammar. By Mr. P. SADLER. 18mo. 1s.

The Stepping Stone to Natural History: VERTEBRATE OR BACKBONED ANIMALS. PART I. *Mammalia*; PART II. *Birds, Reptiles, Fishes*. 18mo. 1s. each Part.

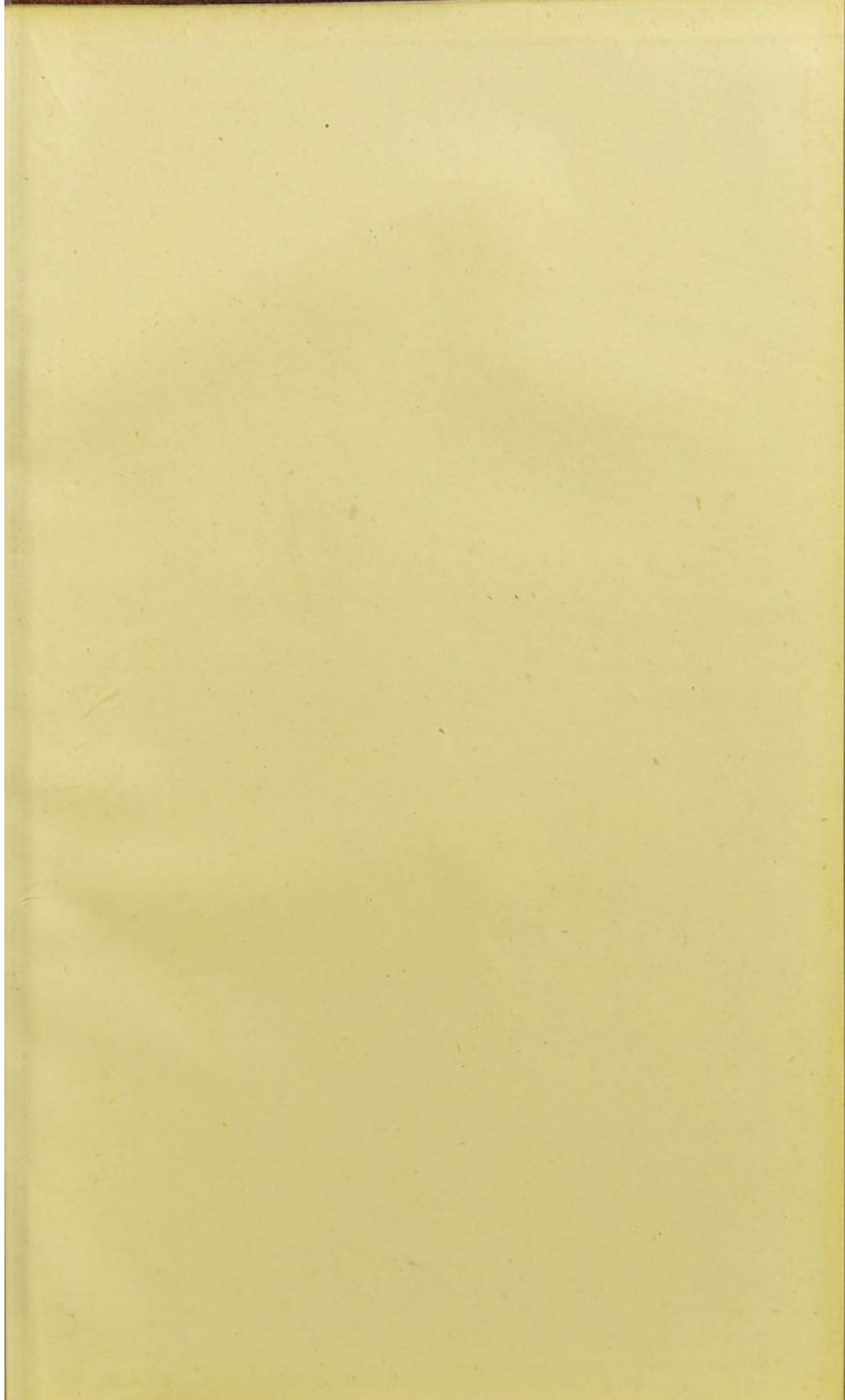
INDEX.

ABBOTT on Sight and Touch	7	BRODIE's (Sir C. B.) Works.....	10
ACTON's Modern Cookery	19	———— Autobiography.....	10
ALCOCK's Residence in Japan.....	16	BROWNE's Ice Caves of France and Switzer-	
ALLIES on Formation of Christianity	14	land	15
Alpine Guide (The)	16	———— Exposition 39 Articles	13
APJOHN's Manual of the Metalloids.....	8	———— Pentateuch	13
ARAGO's Biographies of Scientific Men	4	BUCKLE's History of Civilization	2
———— Popular Astronomy	7	BULL's Hints to Mothers.....	20
ARNOLD's Manual of English Literature....	5	———— Maternal Management of Children..	20
ARNOTT's Elements of Physics	7	BUNSEN's Ancient Egypt.....	2
Arundines Cami	18	BUNSEN on Apocrypha.....	14
Atherstone Priory	16	BURKE's Vicissitudes of Families.....	4
Autumn Holidays of a Country Parson	6	BURTON's Christian Church	3
AYRE's Treasury of Bible Knowledge	14		
		Cabinet Lawyer.....	20
BACON's Essays, by WHATELY	4	CALVERT's Wife's Manual	14
———— Life and Letters, by SPEDDING....	3	Campaigner at Home.....	6
———— Works.....	4	CATS and FARLIE's Moral Emblems.....	11
BAIN on the Emotions and Will.....	7	Chorale Book for England	15
———— on the Senses and Intellect.....	7	CLOUGH's Lives from Plutarch	2
———— on the Study of Character	7	COLENZO (Bishop) on Pentateuch and Book	
BAINES's Explorations in S.W. Africa	15	of Joshua.....	14
BALL's Guide to the Central Alps.....	12	COLLINS's Horse Trainer's Guide.....	18
———— Guide to the Western Alps	12	COLUMBUS's Voyages.....	16
———— Guide to the Eastern Alps	16	Commonplace Philosopher in Town and	
BARNARD's Drawing from Nature	12	Country	6
BAYLDON's Rents and Tillages.....	13	CONINGTON's Translation of Virgil's <i>Æneid</i>	18
Beaten Tracks	15	CONTANSEAU's Two French and English	
BECKER's <i>Charicles</i> and <i>Gallus</i>	16	Dictionaries	5
BEETHOVEN's Letters	3	CONYBEARE and HOWSON's Life and Epistles	
BENFEY's Sanskrit-English Dictionary	5	of St. Paul	13
BERRY's Journals	3	COOK's Acts of the Apostles.....	13
BLACK's Treatise on Brewing.....	19	———— Voyages	16
BLACKLEY and FRIEDLANDER's German		COPLAND's Dictionary of Practical Medicine	10
and English Dictionary.....	5	Cox's Tales of the Great Persian War	2
BLAINE's Rural Sports.....	18	———— Tales from Greek Mythology.....	17
———— Veterinary Art.....	18	———— Tales of the Gods and Heroes.....	17
BLIGHT's Week at the Land's End	16	———— Tales of Thebes and Argos	17
BOASE's Essay on Human Nature	6	CRAWLEY's Billiard Book	19
———— Philosophy of Nature	6	CRESY's Encyclopædia of Civil Engineering	11
BONER's Transylvania	15	Critical Essays of a Country Parson.....	6
BOOTH's Epigrams.....	6	CROWE's History of France.....	2
BOURNE on Screw Propeller	12	CRUMP on Banking, &c.	19
BOURNE's Catechism of the Steam Engine..	12	CUSSANS's Grammar of Heraldry.....	12
———— Handbook of Steam Engine	12		
———— Treatise on the Steam Engine....	12	DART's Iliad of Homer	18
BOWDLER's Family SHAKSPEARE.....	18	D'AUBIGNÉ's History of the Reformation in	
BOYD's Manual for Naval Cadets	19	the time of CALVIN	2
BRAMLEY-MOORE's Six Sisters of the Valleys	16	DAYMAN's Dante's Divina Commedia.....	18
BRANDE's Dictionary of Science, Literature,		Dead Shot (The), by MARKSMAN	18
and Art	9	DE LA RIVE's Treatise on Electricity	8
BRAY's (C.) Education of the Feelings.....	7	DELMARD's Village Life in Switzerland....	15
———— Philosophy of Necessity.....	7	DE LA PRYME's Life of Christ	14
———— On Force.....	7	DE MORGAN on Matter and Spirit	6
BRINTON on Food and Digestion	19	DE TOCQUEVILLE's Democracy in America	2
BRISTOW's Glossary of Mineralogy	8	DISRAELI's Speeches on Reform	5
BRODIE's Constitutional History	1	DOBSON on the Ox	19

DUNCAN and MILLARD on Classification, &c. of the Idiotic.....	11	HOOKE and WALKER-ARNOTT's British Flora.....	9
DYER's City of Rome.....	2	HOPKINS's Hawaii.....	7
EDWARDS's Shipmaster's Guide.....	19	HORNE's Introduction to the Scriptures....	14
Elements of Botany.....	9	—— Compendium of the Scriptures ..	14
Ellice, a Tale.....	16	HORSLEY's Manual of Poisons.....	9
ELLICOTT's Broad and Narrow Way.....	13	HOSKYN's Occasional Essays.....	6
—— Commentary on Ephesians.....	13	—— Talpa.....	18
—— Destiny of the Creature.....	13	How we Spent the Summer.....	15
—— Lectures on Life of Christ.....	13	HOWITT's Australian Discovery.....	16
—— Commentary on Galatians.....	13	—— Rural Life of England.....	16
—— Pastoral Epist.....	13	—— Visits to Remarkable Places.....	16
—— Philippians, &c.....	13	HUDSON's Directions for Making Wills....	20
—— Thessalonians.....	13	—— Executor's Guide.....	20
ENGEL's Introduction to National Music ..	11	HUGHES's (W.) Manual of Geography.....	7
Essays and Reviews.....	14	HULLAH's History of Modern Music.....	11
—— on Religion and Literature, edited by		—— Transition Musical Lectures.....	11
MANNING.....	13	—— Part Music.....	11
FAIRBAIRN's Application of Cast and Wrought Iron to Building.....	12	—— Sacred Music.....	11
—— Information for Engineers ..	12	HUMBOLDT's Travels in South America....	16
—— Treatise on Mills & Millwork.....	12	HUMPHREYS' Sentiments of Shakspeare... 11	
FAIRBAIRN on Iron Ship Building.....	11	HUTTON's Studies in Parliament.....	6
FARRAR's Chapters on Language.....	5	Hymns from <i>Lyra Germanica</i>	14
FFOULKES's Christendom's Divisions.....	14	INGELOW's Poems.....	17
FRANCIS's Fishing Book.....	18	Icelandic Legends, SECOND SERIES.....	17
FROUDE's History of England.....	1	IDLE's Hints on Shooting.....	18
GEE's Our Sermons.....	15	JAMESON's Legends of the Saints and Mar- tyrs.....	11
—— Sunday to Sunday.....	15	—— Legends of the Madonna.....	11
GILBERT and CHURCHILL's Dolomite Moun- tains.....	16	—— Legends of the Monastic Orders.....	11
GILLY's Shipwrecks of the Navy.....	16	JAMESON and EASTLAKE's History of Our Lord.....	11
GOETHE's Second Faust, by Anster.....	17	JOHNSON's Patentee's Manual.....	12
GOODEVE's Elements of Mechanism.....	12	—— Practical Draughtsman.....	12
GORLE's Questions on BROWNE's Exposition of the 39 Articles.....	13	JOHNSTON's Gazetteer, or General Geo- graphical Dictionary.....	7
GRANT's Ethics of Aristotle.....	4	JONES's Christianity and Common Sense ..	7
Graver Thoughts of a Country Parson.....	6	JORDAN's Elements.....	8
GRAY's Anatomy.....	10	KALISCH's Commentary on the Bible.....	5
GREENE's Corals and Sea Jellies.....	8	—— Hebrew Grammar.....	5
—— Sponges and Animalculæ.....	8	KELLER's Lake Dwellings of Switzerland ..	8
GROVE on Correlation of Physical Forces ..	8	KESTEVEN's Domestic Medicine.....	10
GWILT's Encyclopædia of Architecture....	12	KIRBY and SPENCE's Entomology.....	9
Handbook of Angling, by EPHEMERA.....	18	KUENEN on Pentateuch and Joshua.....	14
HARE on Election of Representatives.....	5	Lady's Tour round Monte Rosa.....	16
HARLEY and BROWN's Histological Demon- strations.....	10	LANDON's (L. E. L.) Poetical Works.....	17
HARTWIG's Harmonies of Nature.....	8	LATHAM's English Dictionary.....	5
—— Sea and its Living Wonders....	8	LAWRENCE on Rocks.....	8
—— Tropical World.....	8	LECKY's History of Rationalism.....	2
HAUGHTON's Manual of Geology.....	8	Leisure Hours in Town.....	6
HAWKER's Instructions to Young Sports- men.....	18	LEWES's Biographical History of Philosophy	2
HEATON's Notes on Rifle Shooting.....	18	LEWIN's Fasti Sacri.....	13
HEALEY's Chess Problems.....	20	LEWIS on Early Roman History.....	4
HELPS's Spanish Conquest in America....	2	—— on Irish Disturbances.....	4
HENDERSON's Folk-Lore.....	6	—— on Observation and Reasoning in Politics.....	4
HERSCHEL's Essays from Reviews.....	9	—— on Political Terms.....	4
—— Outlines of Astronomy.....	7	LEWIS's Essays on Administrations.....	4
HEWITT on the Diseases of Women.....	10	—— Fables of BABRIUS.....	4
HODGSON's Time and Space.....	7	LIDDELL and SCOTT's Greek-English Lexicon	5
HOLLAND's Essays on Scientific Subjects ..	9	—— Abridged ditto.....	5
HOLMES's System of Surgery.....	10	Life of Man Symbolised.....	11
		LINDLEY and MOORE's Treasury of Botany	9

LONGMAN'S Lectures on History of England	1	MILLER'S Elements of Chemistry	9
LOUDON'S Encyclopædia of Agriculture	13	MONSELL'S Spiritual Songs	15
— Gardening	13	— Beatitudes	15
— Plants	9	MONTGOMERY on Pregnancy	10
— Trees and Shrubs	9	MOORE'S Irish Melodies	11, 17
— Cottage, Farm, and Villa Architecture	13	— Lalla Rookh	17
LOWNDES'S Engineer's Handbook	12	— Journal and Correspondence	3
LYRA DOMESTICA	14	— Poetical Works	17
— Eucharistica	15	— (Dr. G.) First Man	8
— Germanica	11, 15	MORELL'S Elements of Psychology	6
— Messianica	15	— Mental Philosophy	6
— Mystica	15	MOSHEIM'S Ecclesiastical History	14
— Sacra	15	MOZART'S Letters	3
		MÜLLER'S (Max) Lectures on the Science of Language	5
		— (K. O.) Literature of Ancient Greece	2
MACAULAY'S (Lord) Essays	2	MURCHISON on Continued Fevers	10
— History of England	1	MURE'S Language and Literature of Greece	2
— Lays of Ancient Rome	17		
— Miscellaneous Writings	6	New Testament illustrated with Wood Engravings from the Old Masters	11
— Speeches	5	NEWMAN'S History of his Religious Opinions	3
— Works	1	NIGHTINGALE'S Notes on Hospitals	20
MACFARREN'S Lectures on Harmony	11		
MACLEOD'S Elements of Political Economy	4	ODLING'S Animal Chemistry	9
— Dictionary of Political Economy	4	— Course of Practical Chemistry	9
— Theory and Practice of Banking	19	— Manual of Chemistry	9
McCULLOCH'S Dictionary of Commerce	18	O'SHEA'S Guide to Spain	16
— Geographical Dictionary	7	OWEN'S Comparative Anatomy and Physiology of Vertebrate Animals	8
MACFIE'S Vancouver Island	15	OXENHAM on Atonement	15
MAGUIRE'S Life of Father Mathew	3		
— Rome and its Rulers	3	PACKE'S Guide to the Pyrenees	16
MALING'S Indoor Gardener	9	PAGET'S Lectures on Surgical Pathology	10
MANNING on Holy Ghost	14	PEREIRA'S Elements of Materia Medica	10
MARSHMAN'S History of India	2	— Manual of Materia Medica	10
— Life of Havelock	3	PERKINS'S Tuscan Sculptors	12
MARTIN'S Commercial Handbook of France	19	PHILLIPS'S Guide to Geology	8
MASSEY'S History of England	1	— Introduction to Mineralogy	8
MASSINGBERD'S History of the Reformation	3	PIESSE'S Art of Perfumery	13
MAUNDER'S Biographical Treasury	4	— Chemical, Natural, and Physical Magic	13
— Geographical Treasury	7	PITT on Brewing	19
— Historical Treasury	2	Playtime with the Poets	17
— Scientific and Literary Treasury	9	Practical Mechanic's Journal	12
— Treasury of Knowledge	20	PRATT'S Law of Building Societies	20
— Treasury of Natural History	9	PRESCOTT'S Scripture Difficulties	14
MAURY'S Physical Geography	7	PROCTOR'S Handbook of the Stars	7
MAY'S Constitutional History of England	1	— Saturn	7
MELVILLE'S Digby Grand	17	PYCROFT'S Course of English Reading	5
— General Bounce	17	— Cricket Field	18
— Gladiators	17	— Cricket Tutor	18
— Good for Nothing	17	— Cricketana	18
— Holmby House	17		
— Interpreter	17	RAYMOND on Fishing without Cruelty	18
— Kate Coventry	17	READER'S Poetical Works	17
— Queen's Maries	17	Recreations of a Country Parson	6
MENDELSSOHN'S Letters	3	REILLY'S Map of Mont Blanc	15
MENZIES' Windsor Great Park	13	RIVERS'S Rose Amateur's Guide	9
MERIVALE'S (H.) Historical Studies	1		
— (C.) Fall of the Roman Republic	2		
— Romans under the Empire	2		
— Boyle Lectures	2		
MILES on Horse's Foot and Horse Shoeing	19		
— on Horses' Teeth and Stables	19		
MILL on Liberty	4		
— on Representative Government	4		
— on Utilitarianism	4		
MILL'S Dissertations and Discussions	4		
— Political Economy	4		
— System of Logic	4		
— Hamilton's Philosophy	4		

ROGERS's Correspondence of Greyson.....	6	TASSO's Jerusalem, by JAMES.....	17
— Eclipse of Faith.....	6	TAYLOR's (Jeremy) Works, edited by EDEN	14
— Defence of ditto	6	TENNENT's Ceylon	8
— Essays from the <i>Edinburgh Review</i> ..	6	— Natural History of Ceylon	8
— Fulleriana	6	— Wild Elephant.....	8
— Reason and Faith.....	6	THIRLWALL's History of Greece	2
— (E.) Fifth-Monarchy Man	3	THOMSON's (Archbishop) Laws of Thought	4
ROGET's Thesaurus of English Words and		— (J.) Tables of Interest	20
Phrases	5	— Conspectus, by BIRKETT.....	10
RONALDS's Fly-Fisher's Entomology	18	TODD's Cyclopædia of Anatomy and Physio-	
ROWTON's Debater.....	5	logy	10
RUSSELL on Government and Constitution .	1	— and BOWMAN's Anatomy and Phy-	
		siology of Man	10
SANDARS's Justinian's Institutes.....	4	TROLLOPE's Barchester Towers	17
SCOTT's Handbook of Volumetrical Analysis	9	— Warden	17
— Lectures on the Fine Arts.....	11	TWISS's Law of Nations	19
SCROPE on Volcanos	7	TYNDALL's Lectures on Heat.....	8
SEWELL's Amy Herbert.....	16	— Lectures on Sound.....	8
— Cleve Hall	16		
— Earl's Daughter.....	16	URE's Dictionary of Arts, Manufactures, and	
— Experience of Life	16	Mines	12
— Gertrude	16		
— Glimpse of the World.....	16	VAN DER HOEVEN's Handbook of Zoology	8
— History of the Early Church.....	3	VAUGHAN's (R.) Revolutions in English	
— Ivers	16	History	1
— Katharine Ashton.....	16	— (R. A.) Hours with the Mystics	7
— Laneton Parsonage	16	— Way to Rest.....	7
— Margaret Percival	16		
— Passing Thoughts on Religion....	14	WALKER on the Rifle.....	18
— Preparation for Communion.....	14	WATSON's Principles and Practice of Physic	10
— Principles of Education.....	14	WATTS's Dictionary of Chemistry.....	9
— Readings for Confirmation	14	WEBB's Objects for Common Telescopes ..	7
— Readings for Lent.....	14	WEBSTER & WILKINSON's Greek Testament	13
— Examination for Confirmation ..	14	WELD's Florence.....	16
— Stories and Tales	16	WELLINGTON's Life, by BRIALMONT and	
— Thoughts for the Holy Week.....	14	GLEIG	3
— Ursula	16	— by GLEIG	3
SHAW's Work on Wine	19	WEST on Children's Diseases	9
SHEDDEN's Elements of Logic	4	WHATELY's English Synonyms	4
SHIPLEY's Church and the World	14	— Life and Correspondence.....	3
Short Whist	20	— Logic	4
SHORT's Church History	3	— Remains.....	4
SIEVEKING's (AMELIA) Life, by WINK-		— Rhetoric	4
WORTH	3	— Paley's Moral Philosophy	15
SMITH's (SOUTHWOOD) Philosophy of Health	20	WHEWELL's History of the Inductive Sci-	
— (J.) Paul's Voyage and Shipwreck	13	ences.....	2
— (G.) Wesleyan Methodism	3	Whist, what to lead, by CAM	20
— (SYDNEY) Miscellaneous Works ..	6	WHITE and RIDDLE's Latin-English Dic-	
— Moral Philosophy	6	tionaries	5
— Wit and Wisdom	6	WILBERFORCE (W.) Recollections of, by	
SMITH on Cavalry Drill and Manœuvres....	18	HARFORD	3
SOUTHEY's (Doctory)	5	WILLICH's Popular Tables	20
— Poetical Works.....	17	WILSON's Bryologia Britannica.....	9
STANLEY's History of British Birds.....	9	WINDHAM's Diary.....	3
STEBBING's Analysis of MILL's Logic.....	5	WOOD's Homes without Hands	8
STEPHEN's Essays in Ecclesiastical Bio-		WOODWARD's Historical and Chronological	
graphy	4	Encyclopædia	2
— Lectures on History of France	2	WRIGHT's Homer's Iliad.....	18
STEPHENSON's Life, by JEAFFRESON and			
POLE.....	3	YONGE's English-Greek Lexicon	5
Stepping-Stone (The) to Knowledge, &c. ..	20	— Abridged ditto	5
STIRLING's Secret of Hegel	6	YOUNG's Nautical Dictionary	19
STONEHENGE on the Dog.....	19	YOUATT on the Dog	18
— on the Greyhound	19	— on the Horse	18
STRANGE on Sea Air.....	10		
— Restoration of Health	11		
Sunday Afternoons at the Parish Church....	6		





apt

