

ing matter, entering into the thoracic duct, there combines with the chyle-globule, forming its external pellicle, the globule being, as it were, rolled up in it; and during the process of respiration the blood-globule is perfectly organised, being fully oxidised, and rendered fit for its office of maintaining animal heat.

This argument, which is analogous to the theory of Hewson, cannot be called hypothetical; it is deduced from facts, it is in accordance with them, and explains them. The excision of the spleen produces a development of fat because the chyle-globule has not undergone the necessary organisation. An enlarged spleen induces emaciation, from a contrary cause. Much theory has been expended on this subject; but no physiologist has yet given any satisfactory account of the matter. Remember, that I now confine attention simply to the lacteals.

Further, the nature of the chemical reactions on the nucleus of the red particle indicate its oleaginous character. Water causes it to change its form from a flattened elliptic to a spherical; acetic acid dissolves all the envelope, except a thin, delicate pellicle surrounding the nucleus; *alkalies alone* dissolve the nucleus. The reaction of alcohol cannot be determined. I know of nothing but oily matter that answers to these tests. These experiments were performed by Müller.

Respiration the Office of the Chyle-Globules.

During the course of my publications on typhus, I announced a new theory of the functions of the absorbent system. It may be in the memory of the readers of THE LANCET that Dr. Carpenter then laid claim to the priority of announcement of the same theory. The theory, as given by me, was to this effect, that the general lymphatic system converted oily matter into a compound of protein; the theory, as advocated by Dr. Carpenter included in this idea, not the oily matter, but the whole supposed waste reorganisable matter of the system, in which we materially differed. The only correspondence between us consisted in the expression of the general law. I have, however, since found that the palm of priority does not rest between Dr. Carpenter and myself; for, at the meeting of the British Association at Bristol, in October, 1836, Dr. Carson, of Liverpool, read a paper on absorption, in which he maintained that the lymphatics, as well as lacteals, absorbed *nutritious* matter. I have no particulars of the argument, but quote from a minute in the "British and Foreign Medical Review" for that year.*

The point on which the arguments of Dr. Carpenter turned was the existence of the

chyle-globules, and the probability of their conversion into blood-globules. This probability I have endeavoured to establish on substantial grounds, and have declared what I conceive to be the mode of the formation and transformation. The end of this metamorphosis, however, is not, I apprehend, nutrition, but respiration; a result different to that advocated by Dr. Carpenter. So much for the chyle-globules.

As to my original theory of the formation of albumen from oily matter in the systemic lymphatics, by the operation of chemico-vital agencies, I shall not discuss it at present, but defer it until I have concluded the subject of digestion as carried on in the abdominal organs.

ON THE
 ERRORS AND MISCHIEFS
 OF THE
 SOUND AND CATHETER,
 AND THE
 NATURE AND TREATMENT
 OF
 URINARY STRICTURE.

By T. WILKINSON KING, Esq., Surgeon.

*Strictures vary. The doctrine of variable disease illustrated by the history of senile prostatic difficulty. Opinions and cases. The tendency of disorders to subside spontaneously a basis principle in therapeutics.**

THE happy revolutions of the bodily functions which turn a fearfully disorganising erysipelas into a healthy granulating sore; the sweat or change of posture which subdues, as it were, by instant magic, an asthmatic paroxysm; the general glow of opium, or wine, that relieves a local pain; the work of days, which converts fever to convalescence; the products of digestion repairing a wasted body; the excretory depositions of the blood after the excesses of the table; the due disposal of the nutritive fluid to all parts, imposed by exercise, promoted by the mere lapse of time, or disturbed by partial efforts, cold, and indolence;—all these, I think, belong to the chief of the secondary laws of medical science.

The application of this law to explain the nature and treatment of stricture, without any great pretence to originality, will serve a double purpose.

That most diseases tend to spontaneous restoration is the theoretical principle assumed, and which I seek to illustrate by showing that it affects the history of stricture, and also the practical rules by which common urinary obstructions may reason-

* No. 4, p. 599.

* See also a general analysis, LANCET, Dec. 23, 1843, page 386.

ably be expected to be most readily and safely controlled.

It is absolutely the essential nature of ordinary difficult micturition to vary. Settled, slow evacuation of water is the obstruction of an irremediable cicatrix. Acute inflammatory stricture is a third and distinct variety. Admit these as fixed facts, and then the combinations of these states, and I am ready to admit, and even in part prepared, I think, to explain exceptions.

In former writings I have hinted that the senile affection of the prostate gland is a catarrhal hypertrophy, and analogous to many other affections of mucous organs. The importance of this fact in practice, and its value as a corroboration of the general theory of variable disorders, seem to me a sufficient reason for explaining my view of it somewhat more distinctly than I have hitherto done except to my pupils. It offers the additional advantage of explaining my views of the nature of common urethral obstruction.

The manifestations of the chronic enlargement of the prostate gland is seldom met with under the age of fifty. According to Sir Everard Home it is a rare occurrence for a man to arrive at eighty years of age without suffering more or less under disease of this part. "The more common causes (says he) of inflammation of the prostate gland are full living of every kind, inebriety, indulgence to excess with women, a confined state of the bowels, and exposure to the effects of cold; indeed, whatever increases the circulation of the blood about the genitals beyond the healthy standard may become a cause of inflammation in this gland, the blood-vessels of which lose their tone in the latter periods of life."—(On Diseases of the Prostate Gland, vol. i., p. 18, 19.) If we are to credit another statement, the disease occurs most frequently either in persons who have not used the genital organs so much as nature intended, or in others who have led a life of excess. (Wilson on the Urinary and Genital Organs, p. 332.) "It seems to me (says Mr. S. Cooper) better to confess that the etiology of this complaint is unknown. Nor are we rendered much wiser by conjectures about the effects of horse-exercise, or those of a retarded venous circulation in old subjects, in creating a tendency to the disease. I have known several persons afflicted who have led very sedentary lives."

To any one acquainted with the history of the variable, miscalled chronic, enlargement of the tonsil, and who has examined for himself the wide and thickened branches of the extreme air-tubes in old winter asthma, and the like, it will be easy to understand me when I call the old man's prostate catarrhal. And to reflect on the great number of radiating and branching mucous tubes which compose the prostate, and the possibility of its varying actively in its secretion and sangui-

neous injection, will seem, at least, to afford a probable account of its hypertrophy.

Gonorrhoea and stricture are not the least frequent causes of enlargements of the prostate, and point to chronic variable inflammation.

Struma of the prostate or of a lymphatic gland, is, I conceive, in the main, variable injection and hypertrophy, ending in simple death of a part, parts, or the whole. I cannot now digress to show that this is the essence of one great division of tubercle, but it is important to remark, that the prostatic enlargements are only late as to their serious and obstructive effect. I have met with the strumous affection much oftener than M. Louis, who may be said to have looked for it in those cases alone in which it was hardly to be expected. If it be but in part true, as Cooper, Home, and Brodie assure us, that enlargement of the prostate is proper to old age, it is certain that its final state, as well as its early stages, are not so often fatal. The mean age of serious prostatic difficulty I make to be under the sixty-fourth year; that of the fatal effects scarce a year later; and that of the admonitory effects a year or two earlier at least. Of course we cannot count the slighter cases that go on, even to the end, without any thought of applying for aid.

Some enlargement of the prostate is often met with after death, either singly or in connection with strictures, even before the fiftieth year. Out of thirteen fatal cases of males, taken indiscriminately above the age of sixty-five years, not one was found to have the true senile prostate as a marked affection. Two of them offered some prostatic difficulty in connection with urethral stricture, and one an example of malignant disease of the third lobe. In all, chronic diseases of various internal organs were prominent aggravations of decay; watery inflammations were very common, bronchitis frequent. These cases include all that were of the required age and the subjects of examination post mortem at Guy's Hospital, for a course of years.

We find the early stage of the enlarged prostate attended with a copious watery secretion, even less viscid, and scarcely more coloured or opaque, than the saliva of infants, the excess of which last I find is greatly, if not totally, dependent on cold. The similarity of the prostatic fluid to urine, and its being principally discharged, when in excess, at the time of micturition or defecation, may partly account for its variable production being little noticed. The more the circumstances of variable capillary action are borne in mind, in connection with chronic hypertrophy, whether of a limb, a hollow muscle, or a secretory organ, the more clearly and forcibly we shall see occasion to distinguish between what is acute, what is truly chronic, and what is variable

in disease. To study the subsidence of disorders, and even the quiescence of disorganisation, will also throw light on the precursory actions, whether in the prostate, the skin, the kidney, or the heart.

Sir B. Brodie remarks, that with old age "the prostate gland usually, I might, perhaps, say invariably, becomes increased in size. (P. 151.) The chronic enlargement of the prostate gland may be said to be a disease of a peculiar kind, having no exact resemblance to what we meet with in any other organ." He rather compares it to bronchocele. Again, "The prostatic enlargement of a man advanced in life cannot be remedied like that of a young man, any more than his grey hairs can be converted into black."

The evolution of the "third lobe" appears to be a very simple matter. A certain amount of glandular tumefaction distorts the urethra within the prostate, by raising the two ends of this portion of tube. The swelling of the posterior margin of the prostate produces a transverse ridge between the cavity of the bladder and its outlet. This ridge is the least part of the gland, which is strictly confined by a kind of tunica albuginea; it is free, therefore, to swell up, symmetrically or not, into the cavity of the bladder. The more partial hypertrophies of the prostate are still analogous to cases of old catarrh chiefly affecting one lung, or a part of one.

Suppose a hemisphere made up of radiating branching tubes, and these tubes all swelling simultaneously, the figure of the mass would be changed. Its plane surface would become a hollow cone. Thus we may explain the distortion of the urethra with the enlarged prostate, and even corroborate the idea of tubular catarrhal hypertrophy. This observation has no diminished force or value, when we study the partial and irregular enlargements of the chesnut-shaped gland.

I do not always impute obstruction to the third lobe, even when it is large. Examining this part, by removing only the fundus of the bladder (which I learned from Dr. W. Stroud), and dissecting all the exterior of the gland, may give different notions of the cause of obstruction. The gland may present into the bladder as a soft wide os tinæ, fissured vertically, and defective only above; either of the lateral lips may predominate, or the third lobe may be very much on one side. The first great and certain evil is compression of the urethra, and this may be the sole mischief. The second difficulty is loss of power in the bladder. The compensating muscular hypertrophy found with the stricture of adults is deficient in three out of four cases of prostatic delay, and often remarkably so. All the coats may simply yield to distention. The third evil is cystitis; it is,

perhaps, a serious complication in every second case only.

The fourth cause of danger is bad catheterism, and by no means the most infrequent. Sand in the ducts is common. All the chief desiderata are comprised in the medical management of the case.

The dilation of prostate-ducts, the excavation of cells in the gland, the mingling of such cells, to form a mere bag of reticulations, have all their analogies in the chronic effects of inflammation and obstruction in the air-tubes.

The common affection of the prostate does not become obstructive until considerably advanced. The secretion escapes with the urine, and thus its variable course is often little marked. I have elsewhere indicated the distinctions between the secretory and hypernutrient irritation.*

It is probable that some hypertrophy of the bladder is quite sufficient to overcome all prostatic obstruction, excepting that of the third lobe, and that of sudden and general injection of the enlarged gland, which is especially the case of a variable affection aggravated.

When careful inquiry is instituted in the case of an old man subject to urinary delays, it will every now and then appear that the first, or, perhaps, a recent sudden attack, is attributed to a checked perspiration, an unexpected change from warm to cold weather, or to the inconsiderate disuse of warm clothing; and often, under such circumstances, speedy and free recourse to opposite measures removes the increased injection and tumefaction of the prostate at once, and the case is, for the time, cured, though extremely liable to relapse. It is allowed on all hands, I think, that curative remedies avail little in cases of senile prostate, and I cannot but conclude that the cause has been too much overlooked.

Sir A. Cooper appears to have gone farther in regarding the disorder as necessary than even Sir B. Brodie. He speaks of it as the consequence of age, and not of disease; as a salutary change, designed to produce partial retention, at an age when, but for the prostate† incontinence of urine would almost constantly occur. "It makes the urine pass slower than natural; but this may be excused, when it is the means of preventing a continual wetting of the clothes." This is rather a peculiar instance of "final cause." The fact is, I conceive that chronic enlargement of the prostate, if it begin at all,

* See "Rudimentary Considerations on the Nature of Irritation," (nutrient, secretory, absorbent, and nervous,) and some fallacious instances in the "Medical Gazette," 1843.

† An argument, by the way, which points to the fact, that all nutrition may fail, not to say hypernutrition be absent as a natural course.

will be found to commence much earlier than is supposed, and than there is any occasion for in a remedial sense.

The plumpness and deep vascular hue of the prostate are very remarkable sometimes at forty years of age, but with strength rather than weakness of the bladder.

The account of the palliative treatment of enlarged prostate in its troublesome stages, plainly involves the fact of variable tumefaction. Gentle depletory plans and habits bring relief. Negligence, winter, or irregularities, induce relapse of injection, swelling, and obstruction. The pain in the glans, the numbness of the prepuce, the perinæal tension, the uneasiness in the loins, back of the thighs, and even the flattening of the fæces, may be found to vary.

The partial enlargement of the prostate seems, on the whole, to affect less elderly men, but they are still, evidently, of the nature of mucous-tube-hypertrophy.

One effect of enlargements of the prostate gland is to render its secretion extremely viscid and very abundant. This ropy mucus comes entirely from the inflamed prostate gland, as is proved, says Sir E. Home, "by its having been found, in one instance, with one extremity floating in the bladder in the dead body, while the other extremity appeared divided into small filaments, terminating in the orifices of the excretory ducts of the gland at the veru montanum. The quantity of secretion is observed to depend more upon the degree of irritation than the actual enlargement of the gland, and, as this increased secretion happens in cases of swelling of this part from strictures, where the body and lateral lobes are alone affected, it is inferred, that the disease of the middle lobe only contributes to this effect by keeping up a straining and disturbance of every part of the gland." (Home, p. 32.)

The subjoined abstract of Sir E. Home's cases of prostatic affection is intended to illustrate the opinion that the disease is chronic, variable, and catarrhal (humoral); that cold is a common cause of relapses and aggravations, sudden tumefactions and obstructions; and that gradual and spontaneous subsidings of the local impediments are naturally affected by a series of constitutional changes which science and prudence may facilitate.

Cases of Prostatic Enlargement involving the Third Lobule, treated by simply drawing off the Water.

Case 1 (p. 109).—Ætat. 68; had two winter attacks, one in April; cured in May.

Case 2 (p. 113).—Ætat. 75; retention; catheter. The same, ætat. 77; cured.

Case 3 (p. 115).—Ætat. 72; catheter thrice a day; well in two months. After two years a relapse; well in ten weeks. Two years more the same. Died of abdominal affection.

Case 4 (p. 117).—Ætat. 64; retention;

catheter; well in a month. After four years had a fatal attack out of town.

Case 5 (p. 132).—Ætat. 70; stricture fifty years; daily catheterism; cured.

Case 6 (p. 134).—Ætat. 53; stricture fourteen years; daily catheter; well in one month.

Case 7 (p. 136).—Ætat. 70; old stricture, dysuria, and obstructive mucus; one daily catheter; relapses from cold.

Case 8 (p. 139).—Ætat. 72; stricture fifty years; distressed till eighty.

Case 9 (p. 142).—Ætat. 70; stricture, old; daily catheterism.

Case 10 (p. 144).—Ætat. 48; stricture eighteen years; viscid mucus (*attacks by cold*); catheterism daily.

Case 11 (p. 148).—Ætat. 53; obstruction seven years; peritonitis; third lobe; death.

Case 12 (p. 150).—Ætat. 78; obstruction some years, with yellowish discharge; *varying*; lived two years.

Case 13 (p. 154).—Ætat. 70; irritations from *cold*; fatal abdominal affections; third lobe.

Case 14 (p. 157).—Ætat. 66; sudden obstruction (September 19). Spasms, *inflammatory*; laceration; death.

Case 15 (p. 164).—Ætat. 70; frequent micturition (October 18th, attack); laceration; death.

Case 16 (p. 168).—Ætat. 77; *a cold*; dysuria; catheter two months; with the *fourth* like attack dropsy and death.

Case 17 (p. 174).—Ætat. 65; catheter five years; fatal abdominal affection.

Case 18 (p. 211).—Ætat. 36; rectum-distress, relieved by hemlock; catheter. (*Lateral lobe affection.*)

Case 19 (p. 214).—Ætat. 36; rectum-distress, relieved by hemlock; *relapse* by cold or diet.

These examples do not require comment with reference to variability, although, with respect to other points, much remains to be desired. The following also bear out the inferences of catarrhal variability.

CASE.—Ætat. 53; much dependant on the catheter for five years; his urine contains *thready* mucus; large prostate felt per anum; a recent aggravation. Quiet and a steady course of remedies set him at his ease in *fourteen days*. In a few days more a sudden *relapse* and fresh need of the catheter. As he again recovered the instrument was only needed in the evening, after the exposure and repletion of the day. The repose, wasting, and warmth of the night made him free in the *morning*.

CASE.—Ætat. 65; *more or less* difficult micturition two years. A sudden relapse while under treatment, from cold; died typhoid.

CASE.—Ætat. 24; excesses and some supposed strain, followed by two years of urinary difficulties; then the repetition of the like causes produced complete retention.

No stricture. Catheters and a gentle course of restraint and remedies sent him away easy for the time.

CASE.—*Large Prostate*.—An intelligent, prudent, laborious countryman, ætat. 68, hale, youngish, and not wasted, has had frequent and uneasy micturition twenty years; no discharge or marked variability with season, but some aggravation with little excesses, he says. Now relieved by prostate-catheter, but none had ever been used before. On the whole he is easiest in the morning, after the comfort of bed, he says.

It is sometimes difficult to discover even the slightest indication of variability. The following may be regarded as a doubtful case:—

CASE.—*Retention of Urine from Prostatic Obstruction (?)*—July 8th, 1835. J. H., ætat. 57, by trade a shoemaker, of healthy but lean figure, and generally temperate; is a widower, with a family, and his business does not allow him meat daily. Twelve years ago he had an attack of lumbago, or pains in the loins and arms. He has since had occasional attacks of rheumatism, otherwise he has been always well. Twelve months back he was suddenly seized, after much stooping in the day, with stoppage of his urine. On attempting to pass it he had much straining and difficulty, and pain in the loins. He was relieved, after sixteen hours suffering, by the catheter, which made him bleed much; he was confined for a week, and his stream of urine was afterwards diminished in size a little. For four months he remained well, when he was again attacked, and again three months after that, each time being relieved by instruments. Three months ago he applied in the same state, but the affection had come on by dribbling, on trying to make water. The catheter was passed, and he was able to go to work the next day.

July 8. Was again suddenly seized at work, and was only able to pass a little water by drops; in a short time he again tried to make water, and, on failing, applied for aid. One o'clock, p.m. Was ordered a hot-bath, colocyth, magnesia, and salts. At nine o'clock, not having made any water, the catheter was passed, without much difficulty but not without some force. After this his micturition was free, and he left.

CASE.—Ætat. 24; after gonorrhœa, some dysuria two years; a slight *sticky discharge* in the morning. The urine now clear, with a *stringy* sediment. The left lobe felt, per rectum, to be enlarged. Frequent micturition, *occasionally preceded by a gummy discharge*. Medicines soon effected material relief.

When the vesical lining becomes the seat of acute inflammation, whether for the first time or in the way of relapse, the muscular coat, from an altered state of its nutrition, which is also inflammatory, or from excito-

motory agency (?), is liable to become excessively irritable, even with the smallest distention by urine within. This state, or the mildest affection of the kind, may be greatly aggravated by urethral obstruction, and with distress much straining augments all the evils. When the size and form of the tumour are such as to allow the greater part of the urine to pass, though with great effort, Sir Everard states that the symptoms may continue nearly the same for months, liable, however, to occasional aggravations from slight causes, and becoming more or less relieved when these are removed. Nay, he observes that the symptoms may even lessen, although the disease is not at all diminished, a circumstance which is ascribed to the muscular coats of the bladder having acquired greater strength and the internal membrane having lost, from habit, the sensibility which it possessed in the earlier stage.

All these are the especial indications of variable and catarrhal affections.

It is not easy to define irritable bladder; with us it means "inflamed muscular coat," a genuine case of spasm, aggravated by dilation and amenable to antiphlogistics. It is subject to relapses from general causes as well as local, and it may end in what is often spoken of as irritable bladder, namely, hard permanent contraction or settled stricture of the bladder itself. There is an analogous inflammatory tenesmus, and also a gastritis.

"The mucous membrane becomes affected with chronic inflammation, and it secretes a thick tenacious mucus that has an offensive ammoniacal smell. This complication adds greatly to the patient's sufferings and danger. Indeed, chronic inflammation of the mucous membrane of the bladder is one of the most frequent causes of death in neglected cases."*

I have elsewhere endeavoured to establish the peculiar characters of variable and steady chronic diseases. The latter should be devoid of all reparative acts, and dependant on a cause which is unchanging or fixed and augmenting. (See a Paper on Disorders which are variable, and on the practical inferences which are deducible from the character of changeableness. Guy's Hospital Reports, No. 11.)

With respect to the treatment of enlarged prostate on the foregoing principles, the causes of distinct relapse seem to be the same as those of the first gradual manifestation of difficulty, and they are, for a time, again and again obviated by the mere necessities of the patient, and cannot be neglected with impunity. All gentle excretory acts, as by any excretory remedies,† and some confinement of the patient, remove the

* Cooper's Dictionary.

† See a "Sketch of the Humoralism of Remedies" in a recent number of the "Provincial Medical Journal."—T. W. K. Dec. 23, 1843.

temporary inflammation, or rather allow the tumefaction to subside. Prudent and tonic habits both prevent recurrence and obviate the susceptibility of the body to be influenced by slight external disturbing causes, as cold. Warm clothing is often more than food to the aged. Warmth and abstinence remove the over-action which follows cold and repletion.

The catheter is here often indispensable, for a short time, at least, but there are no cases in which it is more liable to go wrong, and with the worst effects. It is by attention to remedies and exciting causes, that the instrument will be least often needed, and most safely employed.

There are cases of enlarged prostate, in which it seems almost impossible to pass an unyielding catheter into the bladder without a false passage. I have not yet found out how many times one enlarged prostate may be pierced by catheterism.

I shall next endeavour to show that the chief principles here brought forward have the same application to the circumstances of common strictures of the urethra.

Bedford-square, Jan. 1844.

CASE OF TALIPES EQUINUS CURED BY OPERATION.

To the Editor of THE LANCET.

SIR,—If you have a corner in your valuable periodical, may I claim insertion for the following case of talipes equinus, successfully cured after existing for seven years. I have enclosed it, not that there is anything particular in the case itself, but merely to draw attention to the very superior mode of treating distortions by dividing the tendons implicated, than by the long, painful, and uncertain mode of mechanical distention.

Mrs. Martin, of Newmarket, aged 46, about seven years since, after a violent attack of hysteria, with derangement of the spino-motory nervous system, was left with rigid contractions of the muscles at the back of the leg, which has existed ever since.

Dec. 5, 1843. The feet present the appearance indicated in fig. 1, with a slight turning in of the toes, as in "talipes varus," the tarsal and metatarsal bones forming almost a straight line with the legs. Mechanical apparatus had, from time to time, been applied without affecting the slightest benefit, and she appeared to have abandoned all idea of ever walking. Having operated in several cases of distortions, I did not scruple at once to recommend it in this, and the operation was readily acceded to on the day above mentioned. With the assistance of my friend, Mr. Millar, I freely divided both Achillis tendons, after the method of Stromeyer, with but slight pain or loss of blood. The tendons were found to be considerably enlarged and thickened, the feet were placed

in pasteboard splints, and on the third day gentle extension was applied, so that on the

Fig. 1.

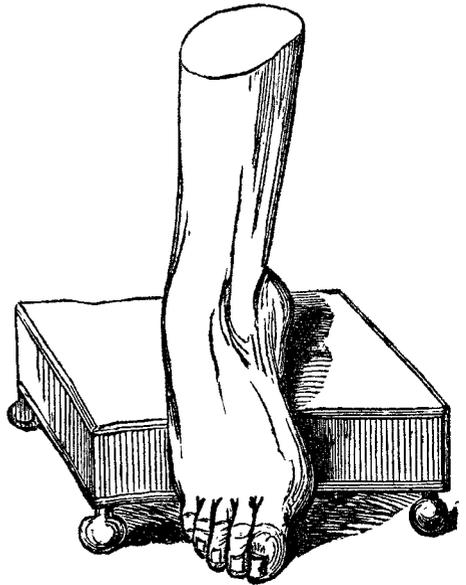


Fig. 2.



seventh day from the operation the feet were brought to right angles with the legs, and the patient was able to stand. It is scarcely necessary to recapitulate the daily rapid progress of the case, and I think it sufficient to state that, with the assistance of her husband's arm, five weeks after the operation, she walked to church, and has now so far improved that I feel convinced, in a very short time, when the muscles have recovered their tone, she will walk as well as she ever did in her life. I am, Sir, yours obliged,

F. PAGE,

Newmarket, Jan. 17, 1844.