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(26).

ON THE

PATHOLOGY OF ONE FORM

OF

ENCYSTED EMPYEMA.

BY

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THERE are certain differences to be observed in the products of inflammation of the same part in different individuals. Repeated observation on a very extended scale (a), has shown, that these differences may be grouped into classes characterised as much by the differences of the constitution of the patient as by those of the local morbid products. It is inferred that the constitutional are the causes of the local peculiarities. At least within certain limits.

I do not wish to enter generally into the discussion of these pathological principles. My opportunities of observation have given me nothing to add to the principles themselves, as they have been laid down for us by more than one pathologist (b) of our own country. I would only, as the nature of my opportunities has rather enabled me, endeavour to illustrate their practical application to particular subjects.

I have spoken, on another occasion (c), of the distinctions of this kind which may be traced in the varying form of loose fibrinous masses which are found in the valves of the heart in so many cases of valvular disease of this organ; and of what share the original elementary constitution of this deposited or exuded matter may have had in determining the occurrence of one or the other form. I would here, in the same way, trace the application of these pathological principles to inflammation of the pleura, and more particularly to one form of what is familiarly known as circumscribed or encysted empyema.

The subject requires but few introductory remarks. The changes which ordinary fibrinous exudation undergoes, and its ordinary appearance and properties, are well known. It is effused as a fluid which hardens and contracts, displaying a fibrous texture, from whence its name. Still, in course of time, it hardens and contracts more and more, till it assumes the form and properties of ordinary fibro-cellular tissue, and, under favourable circumstances, at last disappears altogether. But, sometimes, the same parts, whose ordinary inflammatory exudation is as above described, yield a fluid which, from the first, rather resembles pus than fibrin; and a serous cavity, under such circumstances, is filled with opaque, loose, curdy masses. Or, sometimes, though the matters exuded may differ but little in their more obvious characters, and on their first appearance, from ordinary fibrin, yet a more particular examination of their structure and their further progress brings into view some very essential differences. For they are, even in their most compact state, rather granular and friable than tough and fibrous, and their tendency is to soften rather than to harden and contract. And, as this ten-

(a) Rokitansky, Path. Anat. I. s. 495, *ad fin.*

(b) I believe that I need scarcely do more than mention the names of Mr. Paget and Dr. C. J. B. Williams. To Vogel's Pathology, by Dr. Day, and Hewson's Works, by Mr. Gulliver, in themselves, and for their references to other sources of information, I am likewise very much indebted.

(c) Gulstonian Lectures, *Med. Gaz.*, Vol. XLVII., Lecture II.

dency may take effect long after the masses have entered upon a comparatively independent state of existence, such effect would seem to depend on the development of integral properties, innate and inherent in the inflammatory products. Such, generally, are the changes which may ensue in the products of inflammatory fibrinous exudation of the ordinary and the abnormal form respectively.

Many names have been given to this ill-conditioned fibrin. The distinctions between healthy and unhealthy coagulable lymph seem, however, to be most appropriately expressed in terms of their microscopical or more obvious physical character respectively, as the fibrous and granular varieties of coagulable lymph. The granular or corpuscular variety corresponds to Rokitansky's cröupos and Dr. Williams's cacoplastic species.

In speaking thus generally, however briefly, of the secondary changes which inflammatory exudations undergo, it might seem necessary, at least, to allude to that variety of exudation which undergoes no further changes at all. With this we have a complete series,—the plastic, the cacoplastic, and that which undergoes no change for either good or bad, the aplastic. It is indeed necessary to mention this as a possible source of fallacy. For perhaps, in the following cases, the particular examples selected to illustrate the intermediate stages may really have been instances of a stationary and not of a progressive form of disease. Beyond this possible fallacy, which, however improbable, it is yet necessary to keep in mind, the existence of this form of exudation is beside the present question.

It appeared necessary to preface the following cases by these very general remarks on the intimate nature of the secondary processes. Few can doubt that, in examining into these processes, in studying the blood as much as the bloodvessels, and recognising independent properties inherent in organic products, modern pathology has made a most important step in advance of the past generation. Still, it is in our proofs and absolute knowledge, rather than in our views, that this great advance has been made. For one cannot read the remarks of those who have written on inflammation, without feeling that such expressions as the concoction of pus, and so on, were not unmeaning terms to them. Whatever theories may have been involved in this terminology in older times, and, in later times, whatever vague sense may have been generally attached to it, to the deeper thinkers, at least, it expressed the occurrence of that series of integral changes, in which they believed, with as firm conviction, and on grounds as sure (save the microscopic evidence) as we do at the present day.

The morbid appearances described in the narrative of the following cases are probably familiar to all. We are all probably well acquainted with those large gelatinous masses of fibrin which are found, at various periods after the occurrence of inflammation of the pleura, lying at the bottom of its otherwise obliterated cavity; and all who are in the habit of examining dead bodies have probably met with circumscribed collections of pus in the same situation. I think that I have met with both these appearances, and with what seem like intermediate conditions, sufficiently often, in a close succession and under similar circumstances enough to justify me in regarding them as the successive stages of one morbid process, and in presenting the three following cases as a series illustrative of the same. In other points of view, also, these cases were very interesting; but it has appeared better, for the sake of greater clearness and brevity, to suppress the notice of all particulars foreign to the present purpose.

Case 1.—A man, aged 28, the subject of discharge from the left ear, with severe cerebral symptoms, died of double pneumonia. On examination of the body, the pleura covering the upper lobes was found free on both sides, save an adhesion of recent fibrin on the axillary aspect of each lung. The right lower lobes were universally closely adherent by fibro-cellular tissue; and so was the left lower lobe also, except in the interlobar fissure, and in the angle between the diaphragm and the walls of the chest posteriorly. The interlobar fissure was occupied by a gelatinous-looking mass of fibrin, which had contracted scarcely any adhesion to the neighbouring surfaces. In the angle between the ribs and diaphragm lay a flattened cyst, containing about 15 oz. of a fetid, puriform fluid. The walls, thickest round the edge, were constituted by a compact layer of friable fibrin lined with adherent pus. The lung in the neighbourhood of the cyst had a

gelatinous appearance, from the infiltration of serous fluid; and the anatomical characters of pneumonia were lost at this point, ceasing at some lines' distance from the walls of the cyst, which were very firmly connected with both the visceral and parietal layers of the pleura. There were no tubercles in the lungs.

The morbid appearances in the following case supply an important link connecting the two stages of the morbid process under consideration described in that just detailed:—

Case 2.—A woman, aged 23 years, died of fever, twelve months after having received a blow on her side, to which accident she used always to refer the constant pain and cough which she had suffered ever since. On examination of the chest after death, the right pleura was found free; the left (the side of the injury) was universally adherent; in front, by loose, easily separable agglutination of the two pleural surfaces; behind, by a layer of fibro-cellular tissue, which was of uniform thickness and consistency throughout, except at the lower part: here it contained within its substance, nearer to the pulmonary than to the costal surface, a mass of gelatinous-looking fibrin, fully a quarter of an inch thick. This mass shaded off on the sides, gradually, into the substance of the false membrane in whose interior it lay; but was bounded by a tolerably distinct ring round its edges, at the line where the two layers off the false membrane diverged, as it were, or re-united to enclose it. It was of a flattened oval form, measuring about 4 by 3½ in., and crossed without entering the interlobar fissure. A few tubercles were scattered through the apex of the right lung.

If I am right in referring the masses found in the obliterated pleural cavities in both these cases to the same morbid process, they would stand in the following order:—In *Case* 1, in the mass of fibrin which occupied the interlobar fissure, we have an example of the earliest form of this series of morbid appearances. The mass had contracted scarcely any adhesions to the neighbouring parts; it was of almost uniform consistence, within and without alike; it had all the appearance of having been recently deposited; and, if we must assign it a date, it would seem most likely to have originated with the recent fatal attack of pneumonia. *Case* 2 takes up the history a little further on. After about a year had elapsed from the probable period of the deposition of the mass, we find that it had contracted adhesions, and become hard and tough on the surface, though within it still closely resembled the structure of the more recent product in the previous case. *Case* 1 takes up the history of the morbid changes again, after a long but uncertain interval. The mass, in the angle between the ribs and diaphragm, which illustrates this stage, now contained no longer a gelatinous fibrin in its interior, but a diffluent puriform matter, which waited only an opportunity to discharge itself. The case next following, where the discharge of the contents of the cyst was attended with fatal consequences, completes the history of the internal changes.

Case 3.—A man of middle age, of strumous constitution, working hard and living carelessly, had a severe attack of "inflammation of the left side." But he got apparently well, and so continued for about seven years. Then he began to fail; he suffered from cough, and had that peculiar appearance which we so often see in the subjects of aneurism of the arch of the aorta. Nothing, however, could be determined by repeated most careful examination, as suggested by this particular appearance, beyond comparative dulness and impermeability of the left side of the chest. He got rapidly worse. With the aggravation of the symptoms the case became more clear. Evidence was obtained of perforation of the lung; and he died, with the physical and other signs of partial pneumo-thorax of the left side.

Omitting the description of other changes not relating to the present subject, there appeared, on dissection, almost universal adhesion of the left pleura. The pulmonary and costal surfaces were closely united by dense, firm tissue, except for about a hand's-breadth over the lower lobe behind. To this extent the two layers were separated by a collection of thick, curdy, puriform fibrin. The sac communicated, through the substance of the lung, with a neighbouring bronchial tube, by a small, well-defined orifice. A very few small tubercles were scattered through the substance of the lungs.

In this case the more urgent feverish symptoms, and, indirectly, those leading to the fatal termination, appeared clearly referable to the pointing, so to say, of this collection in the pleura. Quoting it

as a very rare though very striking case, I need not fear lest I should be thought to overrate the probability of a similar occurrence. Such cases are very rarely met with thus painfully complete. And this one has not been cited to mark how severe the symptoms may be when they do occur, so much as to show for how long a time the process on which they depend may be delayed. For this delay is not more characteristic of such rare forms of disease than of the more ordinary cases, where the collection points externally, and, during life, can only by contingent physical signs, and by the previous history, be distinguished from a common subcutaneous abscess in the same situation.

To the anatomical history of the form of empyema, exemplified in the above cases, there is little to be added. The successive morbid appearances tell their own story very clearly. There are some points in its pathology, however, which (studying, in the same way, one case by the help of another) seem to be better illustrated by the details of the following case, drawn from a different form of the disease :—

Case 4.—A man, presenting nothing particular in his general condition to forbid the operation, underwent amputation of the thigh. Pleurisy set in on one side; and, after some days (as far as physical signs can be trusted), on the other also. On examination after death, the pleura, which, there was reason to suppose to have been first attacked, was found to be coated with fibrin of the ordinary character. The cavity of the opposite pleura contained curdy, puriform flakes, floating loose in turbid serum. As if it were not till the second pleurisy set in that the change in the patient's condition, revealed in the differing nature of these products, manifested itself.

Less striking illustrations are of daily occurrence in the contrast between the tough fibrin effused in the commencement of pleurisy or pericarditis, and the soft, puriform products of recrudescent inflammation which infiltrate the meshes of the older tissue; and other similar instances will readily suggest themselves. But, in cases of such a kind, the question of the influence of the earlier on the later organic products will recur. And it is only in observations like that just detailed, where the different products are separated, that such a fallacy can be excluded. Only so can we be assured, that the difference of the later product is not referrible to the fact of its having been eliminated on a surface of a different nature, on the membrane, namely, which has been formed upon the serous surface during the earlier period of the inflammation.(a)

Considering the usual state of the patients who present this modification of the ordinary process of inflammation, namely, that they are commonly such as have been exhausted by protracted disease, by severe surgical operations, or by parturition, that they are the class where we always fear the formation of aphthæ, or bed-sores; considering this, it is clear, that active inflammation of such a form involves, on all accounts, great present danger. And, if we look beyond this present danger to the cases where it has been surmounted or never threatened, still the future is not without grounds for apprehension even in these. We have to consider the remote effects of a morbid product of this nature having been thrown out in the deep-seated cavities of the body, and in the neighbourhood or even the substance of important organs. For there are dangers connected with its removal from such positions, and its removal is an event much more probable than the occurrence of the ordinary salutary changes in, or of absorption of, the exuded matters. And the lapse of time gives us no security against these contingent dangers, inasmuch as they are dependent on the inherent tendencies of the mass. Instance *Case* 3, above detailed.

There is another point involved in the pathology of this form of encysted empyema, which may be more clearly displayed by reference to quite a different class of cases. In those already detailed, the results of modification of the pro-

(a) There is no reason to question the commonly received opinion, that in the masses resulting from ordinary fibrinous exudation from serous surfaces, the outer layers (that is, those next the parent membrane) are formed first, and the inner layers by transudation through these. But, where the effused matters are incapable of organisation, this rule no longer applies. Thus, in croup, we may find the adventitious membrane which was first deposited raised from the parent surface by a layer of pus, which has subsequently formed beneath it, but which, from its want of a regular organisation, has been unable to traverse it. (See Gendrin's Histoire Anatomique des Inflammations, sec. 806.) It seems probable that the flakes of curdy fibrin which we find sometimes in inflamed serous cavities have been thrown off the parent surface in this way: and this is the best explanation of the little pits which we may often notice on the adventitious coats of the liver or spleen. (See also Hodgkin : Morbid Anatomy, Vol. I., pp. 52, 125.)

ucts of inflammation cannot well be pparated from those of an integral hange of the fibrin of the blood inde- endent of inflammation. The follow- g unusual case, however, supplies an lustration of this last occurrence in the ost simple and unequivocal form.

Case 5.—A poor, wretched, intempe- te man, who had struggled with dis- ase and want, in whom for the last four onths the sufferings had more particu- rly hinged on palpitation and pain in e epigastrium, came into St. Bartho- mew's to die, in June, 1848. He was n object of much curious interest during e time that he survived; but no one cceeded in completely unravelling all e physical signs of disease of the heart rough the pericardial friction sound y which they were masked.

On examination of the body after eath,—passing over other morbid ap- earances which have no connexion with e purpose for which the case is quoted, there was found to be very extensive sease of the vascular system. The orta was rigid from earthy deposit with theroma. From the right, and in front the aorta, sprung an aneurismal sac about two fluid ounces' capacity. his was filled with a dark, imperfectly minated coagulum, from which a thick, rplish, creamy fluid exuded on pres- re, and more of this fluid lay between e coagulum and the sac. About an nce of a similar fluid was contained in other sac, lying to the right, and rather front, of the pulmonary artery, and pparently, but not very distinctly, com- unicating with the aneurismal sac first ticed. The coagulum contained in is first sac was connected with the cent one found, as usual, in the aorta, means of a thick white fibrinous mass; d from this again there sprung a unded process, which, on section, was en to contain a thick fluid, similar to at usually observed in Laennec's glo- lar vegetations; to which morbid pro- ct, indeed, this larger process bore very exact resemblance.

The evidence of this case, in the par- ular point, appears to be very import- t. Here was a most unusual deviation m the ordinary condition of the fibrin aneurismal sacs. Removed from all rrounding vital agencies, as far as it is ssible for any substance still remaining the body, and retaining vitality, or at st resisting putrefaction, to be, the rin had undergone the same changes ich we have already traced in the in- terior of large fibrinous exudations in the pleura. And the cause of this in- tegral change was still more distinctly referred to the fibrin itself, rather than to any influence of the surrounding tis- sues, by the result of the examination of the more recent coagulum. For the fibrin just newly deposited displayed the same tendency to soften, and the same integral changes, as did that which had concreted long before into the laminæ of the coagulum in the aneurism.

This case is interesting, as bearing on another point of importance to the pre- sent subject. Thus, it appears, at first sight, very inconsistent with the definite tendencies argued to exist in nascent fibrinous exudation, that, in a mass believed to be of uniform constitution throughout, the outer layers should un- dergo the normal, and the inner layers the abnormal, series of changes. In the cases which are the proper subject of this paper, to obviate this apparent in- consistency, we may admit of a differ- ence of composition, and suppose the outer layers to have been formed first, before the peculiarities, constitutional or local, as the case might be, which deter- mined the nature of the later exuda- tion were called into action. But, in the case just detailed, we may trace these differences in the subsequent his- tory of the outer and inner layers re- spectively, under circumstances where it can be scarcely doubted that the mass was originally of the same composition throughout. On the evidence of cases of this kind, the law, (that is, the expression of general opinion,) that its future tendencies are immutably im- printed on the nascent product, is still admissible with the qualification, that these tendencies, when abnormal, are liable to be corrected by the neighbour- hood of healthy tissues; or, that they are more rapidly and characteristically dis- played in the parts furthest removed from such possibly corrective influences. I think, however, that we must not call such a qualification an inconsistency.

To recapitulate briefly, and in more general terms, what the above cases are intended to illustrate. The unusual pro- ducts of inflammation of serous mem- branes, which we recognise and know where to expect in acute disease, may be met with in the pleura (taking our illustrations from this part) in a chronic form. The fibrinous products originally effused remain, under such circum- stances, long undistinguishable from

ordinary fibrinous exudations, save in their indisposition to undergo the ordinary changes. But their peculiar properties are not lost, for all that they may have lain hid so long. The interior softens at last into a matter closely resembling pus; and the walls, even though they may have undergone the changes of ordinary fibrin, sometimes display their origin in their tendency to earthy degeneration. (a) As to the immediate causes of the softening; though we may dismiss the idea of the direct local agency of inflammation, yet it must be observed, that the three cases, (I. III. V.) cited as examples of this secondary softening, died of acute disease, if not of actual inflammation.

The subject of encysted empyema is not merely pathologically interesting. Clinically as well as anatomically, the distinction between general and partial pleurisy is important. I would, therefore, briefly, in conclusion, survey it from this point of view.

There can be few things more gratifying to a patient than to be at once delivered of the load of fluid which had oppressed his breathing, by the very simple operation of tapping his chest. The pain and danger of the operation are small beyond all proportion to the amount of relief conferred. And the quantity of fluid drawn off furnishes an answer which all are willing to accept, as to the propriety of the operation, had there been any doubt before. One feels almost ashamed of credit obtained on such easy terms as by tapping a chest distended with fluid.

But the case is wholly altered, when we have to deal with circumscribed, or encysted empyema. The distress of the patient under such circumstances is at least as great as in the case of general pleural effusion. For, though he may not suffer so much from general oppression of his breathing, yet the difference is more than made up, I suspect, by that very painful sensation which arises from the tension of parts. With all this urgent demand for relief, and evident distress and danger, there is the most extreme difficulty in determining both the exact nature of the lesion, and, what is of the greatest importance towards its removal, its exact seat. And after all these difficulties, there comes no such evident confirmation, from the amount of the products of the operation, that it was required. The presence of three or four ounces of pus would scarcely seem enough to produce all the constitutional symptoms of empyema. And the evacuation of so small a quantity is, at first sight, scarcely a sufficient explanation of the immediate relief to these urgent symptoms,—the turning point of a man's life. But from particular observation of these cases, there can be no reasonable doubt of the correctness of this conclusion. Nor, on the more general grounds of analogy, of the comparison, namely, of these cases with those where pus is tightly confined in other parts of the body, have we any reason to reject it.

Now, clearly, the fluid matters, in any case where these symptoms depend upon tension, must be confined by tissues of considerable strength, and so, almost necessarily, of considerable age. Recent soft fibrin could not resist such pressure. Though the matter might, indeed, be confined in a cyst of this nature at first, yet the case would soon become one of general recrudescent pleurisy, in consequence of the new fluid matter being forced into the meshes of the older, but still soft tissue. We must refer the state of parts which seems essential to the production of encysted pleurisy, in all the severity of its symptoms, to one of two pathological conditions. Either there must have been previous partial pleurisy, terminating in partial adhesion, and leaving the rest of the pleura untouched, and free to become the seat of a new attack of inflammation with effusion. Or else all the parts may have shared in the first attack of pleurisy, though this limited portion of the membrane, from whatever cause, has not become adherent. These appear to be the only two available explanations; for considering how very rare, not to say quite unknown an occurrence inflammation (a) of old tough connecting fibro-cellular tissue is, on general grounds, apart from the anatomical objections which examination of particular cases supplies, we may reject

(a) I have no unequivocal cases at command in proof of this statement. It rests mainly upon Rokitansky's expressed opinion, that fibrinous exudations which undergo earthy degeneration have been originally, if solid, of the granular (*cröupos*) form.—Path. Anat. Band. I. s. 270. Gendrin also observes, that earthy degeneration is most apt to occur in cases where the absorption of the fluid products, and the reparation of the other effects of inflammation has been tedious; in cases, judging from his description, very analogous to Rokitansky's *cröupos* class.—Hist. Anat. des Inflam. s. 250.

(a) As distinguished from purulent infiltration by gravitation.

inflammation of a limited portion of such connecting tissue as a common cause of encysted empyema. In choosing between these two explanations, the fact of the contents of pleural cysts being usually puriform (a) favours the latter,—namely, that of an incomplete adhesion between the two opposite surfaces to such an extent. Expressed in general terms: this form of encysted empyema seems to belong rather to pleurisy, where the extent of repair, rather than the extent of inflammation, has been limited.

Speaking of encysted empyema generally, of the cases where the obliteration of the pleural cavity has not been complete, but a cyst filled with puriform fluid remains:—there are no grounds for supposing that formidable symptoms are more likely to ensue in those where the disease has originated in the mode above described, than where it has resulted from the more ordinary processes. Nor it may be necessary to mention, that the proper subject of this paper is not the ordinary process by which encysted empyema is formed. Happily, the uncertainty of these abstract pathological questions has no relation to the question of treatment, when, at some remote period, if so it should be, these patients come under observation. For the rule is the same in all cases of obscure chest disease following pleurisy, however slight the symptoms of the original disease, however complete the recovery, and however long the interval, to examine most minutely the condition of the chest. We should look very anxiously after any signs of imperfect reparation, after anything which led us to suspect that the lung was not in close contact with the walls of the chest at any part, especially posteriorly, and in the lower part. And though very often such curious anxiety might be of little good to the patient, nor the information obtained available to direct any measures for his cure or even relief, yet, to solve one of these clinical problems now and then, so as to cure one patient who would otherwise have died, would be an ample reward for all the pains spent to no purpose on the rest.

If it were only that this subject is so obscure and so difficult, it would be very interesting as a pathological exercise, even though it were of no practical importance. But, in fact, encysted empyema constitutes a very anxious class of cases, (anxious for the very reason, that there may be so much to be done,) depending on our care, and accuracy, and decision. The doubts and difficulties which beset the diagnosis and treatment of pleural effusions are all concentrated here. Our pains in making out many cases will often give us only the sad assurance that they are hopelessly irremediable, and the less we do the better. But it is not always thus; all these cases are not to be left alone, after our pains spent in making them out. It is often, indeed, a very difficult task to discriminate those cases to which curative means are fairly applicable, and one requiring the highest skill and refinement in auscultation. But from these difficulties it is very satisfactory to turn to the recorded success of the results of surgical interference with cases of empyema, which, from the small amount evacuated, we may consider as encysted.

It would be idle to dwell on the treatment of this class of cases here. For the skill which should distinguish them during life could scarcely be divided from the knowledge of the general principles which should guide their treatment. And the particular indications of each case could not fail to display themselves in the searching examination on which alone their diagnosis could be founded.

(a) See on this point "Hodgkin's Morbid Anat.," Vol. I., p. 108, and Gendrin, Œuv. cit., sec. 165.

27.

POLYPUS

OF THE

URINARY BLADDER.

illiam Morgan, aged thirteen months, infant of sickly appearance, was admitted into Lucas Ward, under the care Mr. Stanley, on Saturday, the 22nd March, 1851.

Immediately beneath, and partially rrounding the umbilicus, is a firm tense elling, two or three inches in diaeter, but the limits are not well deeed. To the touch is conveyed that eculiar feeling of induration which so een precedes suppuration. It is evintly very tender, and the muscles are ccibly contracted when the abdomen ppressed. The pain is much increased all attempts to pass the urine, which erely dribbles away. It appears tolebly healthy, but is collected in small antities only, with considerable diffilty. The child is much emaciated, d seems very ill. The countenance expressive of great pain; the brows knit; face pale; skin dry and harsh; lse 96, small, somewhat sharp, but sily compressed; tongue red at the es and tip where the papillæ are prominent, and covered on the dorsum with hick, pale brown fur. The bowels act gularly.

The child has been ill for eight weeks. e mother first noticed that micturition used pain in the lower part of the abmen, and this was soon followed by an most constant desire to void the urine. uring these attempts the stream was equently interrupted, and after a momentary pause would again flow. The ild was making frequent attempts to sp the penis, as if to relieve some pain or uneasy sensation in that region. The body at this time was well nourished, and he appeared very healthy. The mother brought him to Mr. Stanley soon after these symptoms commenced, who, from their character, suspected that a stone might exist in the bladder. A sound was introduced, and a careful examination made, but no foreign body was detected. The surface of the bladder, however, felt rough and rugous, a peculiar but not uncommon sensation being conveyed through the instrument when passed over its interior, well known to those who have had frequent occasion to search the bladder for a suspected calculus. Since that time the child has been brought as an out-patient to the hospital, but notwithstanding various plans of treatment, no relief has been obtained. He has continued constantly to complain, screaming during a greater part of the night, and always when the urine is voided, apparently from violent attacks of pain in the abdomen. The mother declares that both flesh and strength are rapidly disappearing. The swelling about the umbilicus commenced a few days ago.

Mr. Stanley, now thinking that the bladder might be distended, introduced a catheter, but not more than two or three ounces of clear and healthy urine escaped.

No medicine was ordered, but a poultice composed of equal parts of bread and linseed meal was applied to the swelling, and the child was ordered milk diet.

March 24.—There is a blush of redness over the surface of the swelling which is not so tense, and upon careful manipulation an indistinct sense of fluctuation is perceptible. In other respects the child is much the same.

March 25.—The swelling is more red and prominent, and there is distinct fluctuation. Mr. Stanley punctured it with a lancet. Some turbid serous fluid first escaped, in which no urinous odour was detected, and this was followed by about two ounces of tolerably healthy pus. The application of poultices was continued as before.

March 28.—It was thought on the day after the opening had been made, that some urine escaped from it; there is now no doubt, for the greater portion of the urine passes into the poultice, and scarcely any by the natural channel. It occasionally flows almost in a stream from the aperture. The abdomen is softer and more tolerant of pressure. The tension of the swelling has considerably abated, and the surface is much paler. The condition of the child in other respects is not materially altered. He is, perhaps, more emaciated, and lies exhausted, with a pain-worn countenance, becoming more restless towards night.

April 2.—No change for the better has occurred. Mr. Stanley again passed a sound into the bladder; the rugous surface was still very perceptible.

April 3.—The child was removed from the hospital, and after lingering in a wretched state for a few days, died.(a)

Post-mortem Thirty Hours after Death.—The body was much emaciated. Upon opening the abdomen, an abscess was found between the posterior surface of the abdominal parietes and the peritonæum, extending from the umbilicus nearly down to the os pubis. The omentum was adherent to the posterior wall. The bladder, much contracted, lay behind the os pubis. A small papillary process projected from its upper surface, and to this point the cavity of the abscess was traced. Upon removing the bladder, and laying it open by a vertical incision through the anterior wall, a soft lobulated mass protruded; this was carefully examined, and proved to be a pedunculated growth from the inner surface, stretching transversely across the fundus of the bladder, immediately behind the apertures of the ureters, which were much dilated. This mass was attached at either side, but free in the centre, and was so situated that it might lie forward over the urethral orifice, or be propelled in that direction when attempts were made to void the urine, and thus obstruct the stream. Some portions of the tumour resembled lobules of common fat; others, being more translucent, appeared like clusters of hydatids; but the preparation is in the museum of the hospital, and its more prominent characters are well shown. In minute structure it closely resembles mucous membrane, being chiefly composed of the several elements of that tissue. Mr. Paget describes it as presenting "an interior substance, composed in part of very fine filamentous fibro-cellular tissue, and in much greater part of granular or dim homogeneous substance, with imbedded nuclei. Over these was an immense quantity of tesselated epithelium, with well-formed and large scales, like those of the mouth." "The epithelium was by far the most abundant constituent of the small lobes of the polypus." It is interesting to remark the character of the epithelium, of which so great a portion of this polypus is composed. It is decidedly tesselated; whereas the particles of the ordinary epithelium of the mucous membrane of the bladder approach more nearly to the spheroidal form.

The walls of the bladder are much thickened, both in their mucous and muscular coats, and the surface presented the rugous or columnar appearance, which was so plainly felt during life. The small papilla upon the upper surface of the bladder before mentioned, proved to be the remains of the urachus. A bristle could be passed from the summit downwards to some little distance, but without violence it would not enter the bladder, and all attempts to discover a communication between the cavity of that viscus and the abscess failed. There can be of course no question that the two communicate, as the urine continued to escape by that outlet up to the time of the child's death; but probably the aperture is very minute and perhaps valvular; and these facts, together with the peculiarity in the situation of its external orifice (in the apex of the small process projecting upwards) would sufficiently explain why no pus escaped

(a) The mother, who was carefully questioned on the point, declared that up to the time of the child's death, the urine flowed freely from the aperture at the umbilicus, and that, latterly, none escaped by the natural channel.

into the bladder. This small process was undoubtedly the remains of the urachus, for it was situated in that part of the bladder from which the urachus springs, and no other remains of this structure appeared; it was, moreover, perforated.

The right kidney, more especially its cortical portion, was considerably enlarged and congested. Its texture was altogether softer than natural and more easily lacerated. The ordinary section displayed one or two irregular patches in which suppuration had commenced. The left kidney was congested and slightly enlarged.

I have ventured to trouble you with the foregoing details on account of the many points of interest connected with the case. The more important of them may be briefly alluded to.

It is seldom that so complicated a series of symptoms occur during life, admitting of so complete an interpretation from an examination after death. The morbid growth obstructing the urethral orifice prevented the urine from escaping by the natural channel; and had the little patient been much older, no doubt severe symptoms of retention would have frequently supervened, but in this case, from the early age of the child, a most interesting and instructive method of relief resulted. The urachus had not yet become the mere fibrous cord we find it in after life; serving as a ligament to support the bladder. It is well known, that at the period of birth the urachus often remains tubular to a greater or less extent above the bladder; the metamorphosis of the allantois not being then fully completed. It is impossible to say how soon after birth this morbid growth was produced, and how early it became necessary to use unnatural muscular efforts to expel the urine. The contents of the bladder thus unduly pressed on, would be forced into the orifice of the imperfectly-closed urachus. The result is obvious; the canal is gradually re-opened upwards, under the constantly-acting and gradually-increasing pressure, and by-and bye reaches the neighbourhood of the umbilicus. Other consequences then ensue. The presence of urine in this unnatural situation is sufficient to account for the production of inflammation; an abscess forms,—is opened, and an artificial channel for the urine is established. The abscess extends in the tract of the urachus, towards the bladder; the urachus, thus surrounded, is gradually destroyed, the extremity communicating with the bladder alone remaining; and this contracts into the small eminence found after death. The urine, constantly escaping, would require only a minute outlet. It has been already remarked, that the communication between the cavity of the bladder and the abscess was not absolutely demonstrated after death; yet reason forbids us to doubt its existence.

Cases have been recorded in which the urachus has remained patent for a considerable period after birth. One remarkable case is related by Mr. Thomas Paget, in the Thirty-third Volume of the "Medico-Chirurgical Transactions," in which a stone was extracted from the bladder of a man forty years of age, through a widely-dilated urachus, by means of the finger introduced through the aperture at the umbilicus. Urine had escaped from the navel since the time of birth. The details of this case are very interesting.

It has been noticed that the ureters were dilated, and that the kidneys (the right most extensively) were diseased. Here is an excellent illustration of a well-known and important fact — disease of the kidneys the result of derangement in the urinary organs below.(a) It is interesting to trace this extension of mischief backwards in the genito-urinary tract. A stricture or other obstruction in the urethra leads sooner or later to a dilatation of the passage behind. The bladder is called upon to make undue efforts to expel its contents. The result is, an increased development of its muscular walls. The morbid change may happily terminate here; but often, if the cause be not removed, it still extends; the distended ureters yield and become dilated. The mischief passes upwards. Urine accumulates in the pelves and calyces of the kidneys. These organs are thus obstructed in the discharge of their important functions; they become dilated, or irritation, leading to inflammation and its consequences, ensues. Thus an impediment to the free discharge of the urine leads indirectly to renal disease. The same results may of course be induced from obstruction commencing in any intermediate part of the urinary canal. In the present case, it was seated in the

(a) See Brodie on the Urinary Organs; Christison, Library of Medicine, Vol. IV., p. 274, etc.

bladder, and the consequences were the same. It is almost impossible to reflect on these phenomena, without being forcibly reminded of what occurs elsewhere under similarly acting circumstances, viz., mechanical obstruction. The circulation is impeded at the aortic orifice from valvular disease. The left ventricle labours with increased force to overcome the obstacle, but it still exists. The left auricle and pulmonary veins yield to the undue pressure; the obstruction extends backwards to the lungs; the pulmonary capillaries become distended, and congestion ensues, which, if unrelieved, is soon followed by still more disastrous consequences. Nor is the mischief always arrested at the lungs; the circulation through the pulmonary artery is in its turn impeded, and the effects of the obstruction on the left side of the heart are at length also experienced in the right; dilatation results. Hypertrophy of the muscular coat of the bladder, like hypertrophy of the left ventricle of the heart, is in itself a conservative change, a natural resource for furnishing an additional supply of force necessary to meet the increased demand occasioned by the obstacle. This point, however, needs no further illustration; it is familiar knowledge.

The kidneys may be affected by the transmission of inflammation along the continuous mucous membrane, or perhaps by what has been termed, "sympathy of the different parts of the same continuous membrane." (Dr. Christison, in "Library of Medicine," Vol. IV., p. 274.)

Such cases as the present one are very rare. In the Pathological Museum of the College of Surgeons there are three specimens of polypus of the bladder, and in all of them the tumours are situated in the neighbourhood of the urethral orifice so as frequently to obstruct the flow of urine. They consist of "numerous lobulated, warty, or cauliflower-like polypus growths" (See Pathological Catalogue, Vol. IV. p. 87) from the mucous membrane, which appears to be continued over them. Most of them have narrow pedicles. The second specimen, presented by the late Mr. Crosse, of Norwich, is particularly interesting from the details connected with it. Probably other cases have been recorded, although not described under the name of "polypus." Such a case is related by Mr. Warner, "in which an excrescence growing from the inside of a young woman's bladder was successfully removed." (Warner's Cases in Surgery, 4th Edition, p. 303.) Ruysch also relates a case in which "excrescences" from the internal surface of the bladder were found. Sir B. Brodie alludes to a preparation of a bladder in Dr. William Hunter's Museum, "the inner membrane of which is in several parts elongated into laminæ or processes, each about a quarter of an inch in length. (Brodie on the Urinary Organs, 4th Edit., p. 132.)

Lastly, we cannot fail to observe how closely the symptoms in this case, especially at the commencement, resembled those caused by the presence of stone in the bladder. Nor is this surprising; the more striking symptoms of a vesical calculus are obviously due to the presence of a foreign body in the bladder; and in this way undoubtedly the polypus acted, irritating the internal surface, and frequently obstructing the urethral orifice. The negative evidence afforded by the sound—which was more than once introduced outweighed, of course, in the judgment of the surgeon, all the other symptoms. The soft and yielding texture of the tumour most probably prevented it from being detected by that instrument. Cases not uncommonly present themselves, in which all the symptoms of stone occur, sometimes even to the minutest details, and yet, notwithstanding, no stone exists. A sound is introduced, perhaps repeatedly, and no foreign body is detected; the symptoms are most probably dependent, either on an abnormal state of the urine, — an alteration in its chemical qualities, whereby it becomes unduly stimulating, —or on some morbid condition of the bladder itself. In such a light was the present case at first regarded. The extraordinary passage through which the urine ultimately escaped, rendered all who saw it extremely anxious to ascertain the exact condition of the parts after death, and then, for the first time, the primary cause of all the succeeding disasters became apparent.

28.

ON

CARBUNCULAR INFLAMMATION OF THE LIPS

AND

OTHER PARTS OF THE FACE.

THE disease which forms the subject of consideration in the following pages belongs to a class whose diffusion has been pretty steadily increasing in this country during the last five years.(a) Before that period, it seems to have appeared quite sporadically, and to have been amenable to ordinary treatment. Hence our medical literature offers but few original observations on the subject, the knowledge we possess respecting it being derived chiefly from continental authorities. Charbon and malignant pustule, indeed, — diseases with which French surgeons are so familiar,—present broad features of similarity to the affection which the accompanying cases are designed to illustrate; and, although some trifling differences exist between them, yet the resemblance of their distinctive characters is evidently so close as to compel us to include them in the same class, and to place them in the same pathological light.

It appears that French pathologists recognise two maladies which they attribute to the same poison, and denominate the "charbon," the other, "malignant pustule." I have transcribed briefly from a French author,(b) the following remarks concerning the peculiar characteristics of each. In charbon, constitutional symptoms precede the local tumour. The patient feels ill first, and does not find he has a swelling frequently till some days afterwards. Indeed, cases have occurred in which no external swelling presented itself, — a peculiar morbid and poisoned condition of the blood being the only indication of the existence of the disease. The tumour, when present, shows itself indifferently on any part of the body, whether exposed or covered, and appears to commence in the deep tissues, and to proceed through the more superficial. Its advent is announced by a burning pain; it is extensive from the outset, being both larger and more circumscribed than the tumour of malignant pustule, is bright red at the circumference, and black in the centre. It advances with rapidity, and the constitutional disturbance becomes hourly aggravated. Malignant pustule differs from the disease whose presence is denoted by the foregoing conditions, in many respects. It is produced by the inoculation of a poison on some of the uncovered parts of the body,—inoculation, indeed, of the same virus, which, having been received into the circulation in charbon, disorders the blood, but here acting locally, always on exposed surfaces, and selecting a spot where the continuity of the skin has undergone solution. In this affection, therefore, local inflammation and swelling precede the constitutional disorder, so that some days frequently elapse before the patient feels ill. The disease commences generally by a small vesicle, attended with slight itching; the superficial cutis at first is only affected, subsequently a yellow, seed-like tubercle forms, surrounded by a vesicular areola; the itching becomes more troublesome, and the affection extends in both width and depth, attacking first the superficial, and subsequently the deep tissues. Constitutional disturbance rarely sets in till

(a) *Vide Lancet*, August 29, 1852,—a communication from Mr. Hunt.
(b) Pathologie Extérne de M. V. de Cassis.

a slough has formed and the swelling become extensive. It is said, that the yellow, seed-like tubercle and vesicular areola are peculiar to malignant pustule, and that there is wide-spread hardness and swelling, but without crepitation, in the cellular tissue of the vicinity. The experiments of Rayer and Jemima seem to have demonstrated, that inoculation from the pustule will not re-produce the disease. Malignant pustule does not invariably begin with a vesicle: three cases are on record by Mr. Lawrence, in which no such appearance was observed; and M. Bourgeois, who has published in the fourth series of the "Archives Générales de Medicine" a very complete account of this disease, remarks, that, according to his experience, the vesicle is sometimes preceded by a solid pimple. Certainly, in the cases which I have collected, whose resemblance to malignant pustule was so close as almost to amount to identity, there were some in which no vesicular commencement could be made out. Indeed, most of the examples of carbuncular inflammation of the face which fell under my observation, commenced, as far as I could ascertain, by local mischief, upon which constitutional disturbance supervened; and I am, therefore, more disposed to regard them as cases analogous to those of malignant pustule, although poisonous inoculation could be rarely established, than as instances of that more terrible disease which is termed "charbon." Moreover, although the symptoms which marked the progress of the disease, were, in some cases, extremely severe and fatal in their terminations, yet reference to those related by French authors as examples of charbon, will clearly demonstrate the much more formidable nature of that affection, as exemplified in the rapidity of its progress, and in its almost invariable fatality. I select one well-marked instance of charbon narrated by M. Vidal de Cassis(a), as it may serve to show, that the disease which it so forcibly illustrates has not yet become familiar to the eyes of English practitioners.

When that gentleman was *interne* to the Hôtel-Dieu at Marseilles, he admitted, on a certain occasion, at 1 p.m., a man with a small dark and hard tumour on the chest. As the visiting surgeon was expected at three, it was thought better to leave the man till his arrival. By that time, however, the neck was so swollen as to be almost confounded with the chest. Large phlyctenæ were elevated over black patches of skin, which had formed around central spots of hardness; and these black patches were encircled by zones of vivid redness, beyond which the tissues were soft and puffy. His skin had a yellow, corpse-like appearance. Hiccough, suffocation, and coma, quickly supervened, and death took place within five hours after his admission. Similar instances are furnished in South's edition of "Chelius;" and in all the disease appears to have originated in a poisoned state of the blood, depending usually on the digestion of unhealthy food.

The cases subjoined are all examples of carbuncular inflammation attacking some part of the face, and, in most instances, the lips; it is, however, necessary to mention, that carbuncles and boils abounded simultaneously, both in the wards and among the out-patients of the hospital. But it is beside the purpose of this communication to enter into details respecting these affections, because, beyond an increased number of cases, and an increased severity of symptoms, their examples presented nothing unusual.

Case 1.—William Kirby, aged 20, a moderately stout man, of middle stature, was admitted into St. Bartholomew's Hospital, December 28, 1850, at one p.m., under the care of Mr. Lloyd, in the following state:—

His lower lip is enormously swollen; its red edge dark, discoloured, and livid in patches. Several pustules are scattered over the skin. The soft tissues of the chin and right cheek, as high up as the zygoma, are swollen, dusky, with extreme inflammation, and very tense. He complains of pain at the seat of disease, but his sufferings are far less severe than they were two days previously. His countenance is pale and anxious; skin hot and feverish; tongue moist and thickly coated with a whitish-brown fur; pulse 140, and of moderate power. Bowels relieved yesterday morning.

History.—He is employed in a linen-draper's shop; has a sound constitution, and is regular and temperate in his habits. Was quite well up to the 22nd (six days ago), when he noticed a small pimple in the middle of his lower lip; its itching worried him, and he scratched the head off. In the evening he smoked a cigar, which he believes to have been

(a) Pathologie Extérne.

had, for shortly after the lip became painful, and on the following morning began to swell. For three days the pain and swelling went on increasing, becoming at length extremely severe. Since that time, however, the pain has abated daily, although the swelling and tension of the lip have continued to augment. He has been under medical care for two days prior to his admission, but no treatment of importance seems to have been adopted. He is very tranquil, and does not seem to consider his condition dangerous.

Mr. Lloyd saw him about an hour subsequent to his admission, and, after inquiring into the circumstances of the case, said, that he felt inclined to regard it as a severe example of impetigo faciei, with diffuse cellular inflammation, although he had never before seen so virulent an instance of that disease. He prescribed

℞ Hirud. xxiv. parti affectæ; magnes. sulph. ʒj.; ant. pot. tart. gr. ½; aq. ʒxj. Fiat haust. tertiâ q. horâ sumendus. Calomelanos gr. ij.; jalapæ pulv. viij. Fiant duæ pilulæ statim sumendæ. Sodæ bibor. ʒss. ad Oj. aq. Ft. pro lot. sæpe utend.

8 p.m.—The application of the leeches has been followed by decided relief of pain and tension. His skin, however, continues hot, and he seems restless; pulse 128, sharp, but easily compressed; tongue unchanged; urine high coloured; bowels not relieved since admission. The lip and face have assumed a somewhat more dusky aspect.

Tinct. opii ♏xxv. horâ somni.

Dec. 29, a.m.—Feels better, but has scarcely slept. During the night his respiration became accelerated and catching, and this morning it is quick and laborious; small crepitation is audible at the base of the left lung; the pulse has greatly altered, and is now quick, feeble, and thready; the bowels have acted twice; the motions are loose, but natural in colour; the face is less swollen, but the lip presents a livid pallor, and the affected parts are more dusky than they were yesterday evening.

Ordered emp. canth. sterno. Hyd. c. cret.; pulv. ipec. co., aa. gr. ijss.; fiat pil. quartâ q. hor. sumend. Pt. haust.

Throughout the day he grew worse and worse, and at midnight his skin was cold, inelastic, and wet with perspiration; his pulse was scarcely perceptible, and he seemed nearly insensible to external impressions. He expired between one and two in the morning of the 30th. A *post-mortem* examination was refused.

Although this man was inclined to believe that he had poisoned his lip by smoking a bad cigar, and bringing it in contact with a surface already abraded, and although such an occurrence is quite possible, yet I conceive that the evidence of his own case, and the light afforded by succeeding ones, scarcely warrant us in receiving this explanation. But it is equally difficult to account for the disease by regarding it as the external manifestation of an unhealthy state of the blood, for how did the blood become unhealthy? A young man, of good constitutional powers, temperate in his habits, and accustomed to live well, became suddenly attacked with a peculiar inflammation of the lip, which acquired virulence, extended with rapidity, produced in three days widespread gangrene of cellular tissue, and in eight death,—and death, too, in a way that could leave no doubt of its resulting from the operation of a poison received into the blood. It is much to be regretted, that a *post-mortem* was not obtained, as the manner of death would then have been clearly manifest. The deficiency left by its absence is, however, in a great measure repaired by the revelations of the subsequent case. That the blood was poisoned, and that its contamination produced death is beyond dispute. How, then, did the poison enter the system? By absorption through the interior mucous tracts, or by inoculation of the external surface? Did the local inflammation precede the constitutional symptoms? I feel assured that it did, and it seems probable that the system became inoculated with a poison through the abraded surface on the lip, or, at all events, that the diseased structures of the lip formed the nidus from which it sprang. How the poison was produced, and from whence it came, it is impossible to say. Six days had elapsed from the commencement of the disease before the man applied at the hospital, which could scarcely have happened had the local condition been preceded by a constitutional taint; while, on the other hand, the period thus passed was sufficient to allow ample time for the inoculated virus to take full effect; first, to excite a specific inflammation; and next, by its absorption, to poison the blood. The inflammation, moreover, attacked one of the uncovered parts of the body,—a part certainly quite liable

to the inoculation of a poison. It will be seen, however, that, in many of the cases which follow, the disease began by a pustule, and in them no evidence to sustain the suspicion of inoculation can be educed.

Case 2.—James Collins, aged 36, a man of middle stature, and moderately stout, was admitted into St. Bartholomew's Hospital Feb. 3, 1851.

Both lips are much swollen, and covered, on their red edges, with pustules; the skin and cellular tissue are hard, tense, and in a state of phlegmonous inflammation, which appears to prevail more around the upper than the lower lip. The whole of the right cheek above the upper lip is inflamed, and much swollen; the right lower eyelid is puffy. His skin is warm and soft; tongue furred, but moist; pulse 144, sharp, but compressible. He complains of thirst and loss of appetite. The bowels have not acted for two days.

History.—He is a bone and ivory brush-maker, and is in the habit of handling brass wiring, which is often coated with verdigris. He drank hard in his youth, but has been temperate for the last eight years. Seven days ago a small pimple appeared on his lower lip, which, in shaving, he cut off. The next day the lip was stiff, swollen, and painful, and it has been gradually becoming more and more so ever since. For the last six days he has felt very unwell, and, during the last four, has suffered acutely. He has applied nothing but poultices to the lip. Believes that he may have poisoned it, as he has been accustomed to hold brass wire, covered with verdigris, in his mouth. Some of his fellow-workmen have at various times been laid up with poisoned wounds of their fingers, contracted while cleaning the bone with pumice stone and water. The water thus used, after standing a few hours, becomes putrid and smells offensively. Till quite lately he has been an out-patient under Dr. Jeaffreson, for rheumatism and pericarditis, the sequelæ of syphilis, which he contracted eight years ago.

Treatment.—Several incisions were made through the midst of the disease into the subcutaneous tissue of the lips, which exposed isolated infiltrations of pus in the cellular tissue. The whole face was directed to be kept covered with wet lint.

Liq. cinch. ℿx. 4tis horis. Morphiæ acet. gr. ¼ horâ somni. Beef tea Oij., wine ℥viij. daily.

10 p.m.—Feels somewhat better, and suffers less pain in the cheek; pulse 130, sharp, but with more volume; tongue dry and thickly furred. The morphia was administered four hours ago, but he has not slept yet.

Tinct. opii ℿxxx. statim.

February 4.—Apparently much better; passed a good night. The lower lip is less swollen, and presents an improved appearance; still, however, there is considerable inflammation of the upper lip and surrounding part of the cheek, though the right eyelid is less puffy, and the cheek itself certainly in a better state. His skin is warm and moist; pulse 100, with moderate power; tongue slightly furred; bowels relieved freely this morning by medicine.

Some more incisions were made into the upper lip. Brandy ℥iv., wine ℥iv. daily. The rest of the treatment to be continued.

5th.—Evidently worse. The inflammation has extended on the side of the nose; the right cheek is more swollen; the eyelid again puffy, and the upper lip in a high state of phlegmonous inflammation, not having been relieved by the last incisions. The condition of the lower lip is much improved; countenance pale and anxious; skin warm and soft; tongue dry and furred; pulse 120, sharp and failing. His respiration is loud and frequent, and small crepitation is audible behind in the lower lobes of both lungs. No morbid sounds could be detected in front. He has passed a restless night, and wandered a good deal; complains, however, of no particular pain. Has taken willingly all his food and stimulus.

Two incisions were made into the cheek by the side of the nose, which bled rather freely. Liq. cinch. to be discontinued: spt. æth. sulph. co. ℿxx.; liq. opii sed. ℿx. ex mist. camph. ℥j. 6tis horis. Continue diet and stimulus.

Towards night he seemed a little better; the improvement, however, was but transitory. The inflammation of the cheek went on unchecked, the tension was great, and the pain became again severe; this was in some degree relieved by an application of leeches. His vital powers, however, failed fast, and though supported by nourishment and stimulus, administered freely and frequently, he sank and died at 3 a.m., February 7.

Post-mortem Examination Two Hours after Death.—Body not emaciated.

Thorax.—There was very little fluid in the pleural sacs. The right pulmonary pleura was coated by recent layers of yellow fibrine, which peeled off readily. These layers did not seem of great extent, the effusion being chiefly confined to the surface of the lower lobe. On the left side there were old adhesions. The right lung presented, in its upper part, the grey appearance characteristic of old tubercle, and one or two cretaceous tubercles were found. The middle lobe was œdematous and congested; the inferior lobe was œdematous and congested from recent pneumonia, being indeed almost hepatized,—portions of it, however, did not sink in water. Purulent deposits, such as are found in secondary phlebitis, were discovered along the inferior edge of the middle lobe, and also along the corresponding border of the lower lobe: these were surrounded by a broad red margin of capillary phlebitis, which could not be confounded with the dark boundary of a pneumonica. The enclosed matter under the microscope, moreover, was evidently seen to be pus. Some few and faint patches of capillary phlebitis were also observed on the surface of this lung.

Besides old tubercles, one or two small pneumonicæ were present in the upper lobe of the left lung, and the whole of it was very œdematous. The lower lobe was completely hepatized in consequence of old disease, and portions of it sank in water. There were no purulent deposits in this lung.

The heart was healthy. The rigor mortis had commenced in the left ventricle.

Abdomen.—The liver seemed softer and paler than natural, but no purulent deposits were found in it. The kidneys, on being deprived of their capsule, presented a few small seed-like spots of pus, encircled by a narrow red margin. On making sections, larger deposits were found both in the cortical and tubular substance; and in the left kidney a large deposit had been formed at the junction of one of the pyramids with the cortical substance, from which dots of pus straggled out, and could be traced accompanying the tubuli uriniferi towards the calyx.

The spleen was pulpified like a fever spleen, but contained no deposits of pus.

One of the shoulder joints was examined and found healthy; indeed there was not evidence of purulent accumulation in any of the joints.

Though unfortunate in its termination, this case is in the highest degree interesting. It exhibits the full career and consequences of a malady whose path alone had been traced before. The disease appears to have begun as it began in the first case. There is, however, the same obscurity—an obscurity almost inevitable—respecting the early symptoms. In the present instance, there was perhaps till stronger evidence for poisonous inoculation; the patient was, moreover, a worse subject,—pursuing an unhealthy occupation, sparely nourished, and having a constitution shaken by former disease, and still suffering from its effects. From the progress of the case, it is tolerably clear that the system had become infected with the poison either previous to the admission of the patient, or very shortly afterwards. Vigorous measures were adopted,—incisions were freely practised, stimuli freely given. A temporary improvement resulted; but, in spite of all, the inflammation held on its steady course, the more unquenchable because fed continually by fresh fuel from within. It was not the mere spreading of the inflammation in the external parts, but the circulation of morbid blood, which kept alive the disease, and urged on to death that which might otherwise have yielded to treatment. It becomes, therefore, a question whether, after the first incisions have been manifestly unavailing, it is judicious to practise others.

Case 3.—Henry Simmonds, aged 22, was admitted August 7, 1851, under Mr. Stanley. Both lips are much swollen, hot, and indurated, and pustules are scattered sparingly over the inflamed surfaces. Tension and dusky redness, signs of the characteristic inflammation, exist in a marked degree, and extend to the chin, left cheek, and upper part of the neck. The left lower eyelid is discoloured and puffy, and the upper discoloured, but not swollen. He complains of great pain, which has deprived him of rest for many nights. His skin is cool and moist; tongue cannot be seen on account of the state of his lips; pulse 120, sharp and feeble; has no appetite, and is very weak.

History.—He is a retort-setter; has never been addicted to drink, and generally enjoys good health. Twelve days ago, he noticed a swelling under the right side of the chin, which was painful,

but gave him no alarm, as he believed it to be a common boil. For eight days it continued to increase; he then applied poultices, hoping to bring it to a head. The next day the swelling broke in two or three places; since which the inflammation has spread with rapidity, attended by a sharp, throbbing pain, which has prevented him from sleep for the last three nights.

Treatment.—Free incisions were made through the inflamed parts, deep enough to include the subcutaneous tissues, and sufficiently long to extend through the sloughing textures into the zone of inflammation beyond. The bleeding was free, and plugs of lint were applied to arrest it. Cellular tissue, dotted with isolated deposits of pus, appeared at the bottom of the wounds.

Ordered water-dressing to the face. Liq. cinch. ʒss. ex mist. camph. ʒi., 6tis horis. Beef-tea Oiss., wine ʒvj., brandy ʒiij. daily.

Relief from pain and tension quickly followed the measures adopted. In the evening the inflammation showed no evidence of extension; indeed, it had already considerably abated. As, however, much heat and hardness prevailed about the chin, an incision, about two inches in length, was made through the tissues in that part.

Ordered brandy, to be increased to ʒvj. daily, and an injection, consisting of beef-tea Oss., and brandy ʒj., to be administered; tinct. opii. ɱxxx. horâ somni.

The next day, August 8th, the man was manifestly better. He had slept well, and was nearly free from pain. The change in the condition of the diseased parts was astonishing; the hot indurated skin had become cool and soft, the swelling had much subsided, and the lint was moistened with a healthy discharge that began to exude from the wounds. His countenance had lost its anxiety, his pulse was decidedly firmer, and he appeared to have a fair and reasonable prospect of recovery.

He became convalescent from this date. It was found necessary to administer beef-tea and stimulants with a liberal hand, and to regulate the bowels by occasional aperients. A light bread and water poultice was kept constantly applied to the face.

Within a week after his admission, the wounds were healing by granulations, and the face regaining its natural aspect.

At the latter end of August he was discharged.

Case 4.—James Meagle, aged 20, admitted May 17, 1851. The left half of his upper lip is of a deep dusky red, and pustules are scattered over the surface. The lip feels hard and hot, and there is considerable inflammation of the surrounding substance of the cheek. The mischief seems, however, to be limited to the left side of the face. His tongue is clean; pulse 116, feeble; appetite good. Bowels relieved by medicine.

History.—He is a bricklayer's labourer, and has been accustomed to drink freely. Five days ago, a small pimple rose on his upper lip, which he picked off, and, shortly after, the lip became swollen, highly inflamed, and so painful, that he was quite unable to sleep. He says the pimple appeared without obvious cause, and he does not believe it was produced by the local action of a poison. He has applied poultices and fomentations to the inflamed parts, and has done nothing besides.

Treatment.—Three incisions were made into the diseased tissues, which exposed cellular tissue, infiltrated here and there with small collections of pus. A poultice was subsequently applied.

To take a saline draught every six hours, and a quarter of a grain of morphia at night. Broth diet, and four ounces of wine daily.

May 18.—Slept well. Suffers very much less pain. The swelling and inflammation of the lip have diminished considerably, and the hardness has also gone. Pulse 84, feeble.

This patient made a rapid recovery, and left the hospital on the 2nd of June.

Case 5.—James Francis applied at the surgery, June 5, 1851, with a prominent and inflamed swelling of the right corner of the mouth, implicating, in some degree, both lips. It was surrounded by the same extended hardness, and presented the same carbuncular appearance, as the cases which have been previously related. The swelling seemed to be extending downwards over the chin. His tongue was coated, but moist; pulse 92, of good volume; the bowels had not acted for two or three days. He complained of thirst, and loss of appetite.

History.—He was a butcher, and had drunk hard. Three days before admission, a small pimple appeared at the angle of his mouth, which he scratched away. Inflammation and swelling rapidly followed, and pain so

were as to deprive him of sleep for two nights. There was no history of poisonous contagion.

Treatment.—A crucial incision was made, and a bread poultice was applied. A saline draught was administered every six hours, and he was put on broth diet.

June 6.—Pain much abated; slept well; the cheek was far less inflamed, and softer; tongue less furred; pulse 85; bowels freely relieved.

The wounds discharged a little, but soon healed by granulations, and he left the hospital June 16, quite well.

Other cases similar to this occurred in the practice of the hospital about the same time; but, as all terminated favourably, and presented similar phenomena, it is unnecessary to enter into details respecting them. In the majority of instances the disease appeared to have originated spontaneously, manifesting itself in patients whose occupations and pursuits rendered the contagion of a poison improbable.

The five preceding reports relate to cases which occurred in 1850 and 1851; the next is of a later date, and its details are both remarkable and interesting, because they display strongly the intractable character of the disease, when, from not having been assailed with sufficient vigour at its commencement, it has proceeded to compromise the constitution. It is of importance to notice, that this case was among the first that indicated a return of the disease in 1852. During the two last months of 1851, examples of this pustular affection became more rare, and fewer cases in which it attacked the face presented themselves. In fact, the disease seems to have slumbered during the first quarter of the present year; but in the second, it awoke with the vigour of a giant, became prevalent, and in some instances fatal. The returns of the Registrar-General for this year exhibit a higher mortality from carbuncular diseases than those of any preceding one. There were seventeen deaths from this affection in the winter months alone, and it is not probable that the present season will show a much diminished catalogue. The case here recorded, however, is the only fatal one which the wards of St. Bartholomew's have furnished during the present year; and though since its occurrence a large number of patients have been admitted suffering from carbuncular inflammation of the face, in all the symptoms were mild, and yielded readily to treatment. Every patient that I questioned, described the affection as commencing in a purely local manner; not one had suffered constitutionally till some days after the first outbreak of the disease, and some experienced no impairment of health whatever.

Case 6.—Henry Fox, aged 19, was taken into St. Bartholomew's Hospital, June 17, 1852, under the following circumstances:—

There is well-marked carbuncular inflammation of the upper lip, chiefly limited to the left side, but apparent also on the prominence of the chin. The affected lip is swollen, tense, hot, and of a bright-red aspect, and similar conditions are manifested throughout the whole of the left cheek, involving even the lower eyelid. The inflammation seems to be rapidly extending itself to the right side of the face, and, indeed, has already attacked the upper lip almost to the right commissural angle. Nor are the lower lip or the tissues adjacent thereto in a sound state, for the chin is swollen, red, and tense, and the inflammation radiates from this point as from a centre. His skin is hot, soft, and perspiring; tongue moist and thinly furred; pulse 128, sharp, but with moderate power; appetite impaired; bowels relieved by medicine.

History.—He is a copper-founder, and exposed to the contact of copper-dust and verdigris; has a strong constitution and lives well. Five days ago a small boil formed on the left side of the upper lip, unpreceded by any uneasy sensations, or the slightest impairment of his health. The boil, however, enlarged rapidly, and became very painful, so that, on the 14th of June, he became an out-patient, under Mr. Wormald. That gentleman ordered him salines, and made a free incision along the red edge of the lip into the diseased parts. In spite of this treatment, however, the affection advanced with increased virulence. The pain and tension became intolerable; his appetite failed, and his general health began to suffer seriously. Nevertheless he did not seek medical advice till the 17th, when his state was to the last degree alarming. But the vivid redness of the inflammation, as contrasted with the dusky hue so often observed in similar cases, the vigour of his general health, the temperate habits and good constitution of the patient, afforded reasonable grounds for believ-

ing that, by decisive treatment, the disease might yet be subdued.

Free incisions, therefore, were made by Mr. Stanley through the whole thickness of the lip, on each side of the nose, and into the substance of the cheek, over the myrtiform depression; from the latter wound thick, pultaceous matter issued. The incisions into the lip divided both superior coronary arteries, and they bled so freely, that it was necessary to secure them by ligature. The man lost twenty-five ounces of blood in this way.

He was put on milk diet, and ordered a saline draught every four hours. Pulv. ipec. co gr. x. o. n. A bread and water poultice to the face.

18th.—The tension and swelling of the upper lip, and the inflammation in the vicinity, have diminished. The cellular tissue exposed by the incisions appears infiltrated with punctiform deposits of pus, and in a state of mortification; there has, however, been very little discharge from the wounds. But although in the lip the inflammation is less virulent, elsewhere it has extended on all sides. The left eyelids, the left side of the neck, and the right cheek, are affected and largely swollen; the lower lip is in a similar state. The bright redness which twelve hours before characterised the inflammation, has been replaced by a livid, dusky discoloration. Pulse 120, much feebler. The skin is hot and wet with perspiration. The tongue cannot be seen, but it feels moist. Bowels relieved scantily since admission.

The blood which was collected from the incisions made yesterday has formed a soft florid coagulum, which adheres to the sides of the vessel, and from which a small quantity of serum has separated. The urine is copious in quantity, neutral, and exhibits no crystals of oxalate of lime or other abnormal appearances when inspected by the microscope. Mr. Stanley, on seeing the patient, made small punctures in several parts of the cheek, which bled, but discharged no pus.

In the evening, brandy and water, with wine and beef-tea, were ordered to be given alternately at intervals, and ammon. sesquicarb. gr. iij. were added to each saline draught.

19th.—He has slept little, and is evidently worse. The whole of the face and the left side of the neck are extremely swollen, and in a high state of inflammation. He complains, moreover, of sharp, stabbing pain in the chest, but no pleural friction sound can be detected on either side. Pulse 152, sharp and powerless. Skin hot and freely perspiring. Takes all his nourishment.

An incision was made into the lower lip, from which a small quantity of pus issued. Ordered an enema of broth and arrowroot every four hours. Ammon. sesq. gr. iij., liq. cinch. ʒss., quartâ quâq. horâ. Opiates at bedtime. Wine, brandy, and beef-tea *ad libitum*.

20th.—Passed a wretched night, and was delirious. Is now sinking. Complains still of pain in the chest. Takes his nourishment freely by the mouth, but the enemata cannot be administered. Continue medicines and stimuli.

21st.—Delirious throughout the night. The face and neck are so tense and swollen that he can scarcely open his eyes. Pulse scarcely perceptible. Has not made any complaint of pain since yesterday, but is frequently seen to rub his side. Died at 5 a.m. on the 22nd.

Post-mortem Examination Sixteen Hours after Death, Weather Warm.—No cadaveric rigidity. The swelling of the diseased parts had much subsided, and, on dividing an indurated spot, cellular tissue in a solid, white, and brawny condition was exposed.

Pleurisy had existed almost to an equal extent on each side of the chest, the layers of serous membrane being united by opaque fibrinous effusion of recent formation, which was distributed laterally and posteriorly in a tolerably uniform manner. At the apex of the right lung, bands of lymph of older formation existed. Nearly half an ounce of pus was found confined in a sort of sac formed between the left mediastinal pleura and the pericardium. Deposits of pus, varying in size from a bean to a millet seed, and placed in the midst of a patch of darkly congested parenchyma, were disseminated through the structure of both lungs, apparently without regard to situation. The heart was healthy.

Nothing abnormal was discovered in the peritoneum or abdominal organs.

The internal jugular veins were free from disease. The blood, however, which flowed from the heart and great vessels was fluid and grumous, nor did it coagulate on exposure to the air.

For the particulars of this interesting case I am indebted to my friend Mr. Hutchinson.

The first and last of these cases are undoubtedly the worst of the series.

They present several features of resemblance to the recorded instances of malignant pustule. As in that affection, in the one we are contemplating, two periods might be recognised,—a period of inflammation attended with great pain, and a period of mortification with diminution and partial cessation of pain. For the first three days of his complaint (after which, I take it, the system at large became contaminated) William Kirby, the subject of the first report, suffered intensely from pain, continually increasing in severity. Afterwards the suffering became less severe, the inflammation had partially expended its powers, and passed on to mortification, but the disease was by no means quenched, for, while gangrene was advancing in the centre, the inflammation extended itself at the circumference of a circle, continually widening, and ultimately spread far and wide over the face and neck, receding from parts whose vitality had suffered, and from tissues struck with death.

The symptoms which marked the later stages of the malady, and preceded dissolution, in such instances as were fatal, would not be considered as distinctive of typhoid or any form of irritative fever. They formed a class *sui generis*, not indeed absolutely restricted to this particular disease, but met with in all cases in which the vital properties of the blood have been deeply interfered with. In cholera, in phlebitis, in death by slow asphyxia, they prevail, and it is worthy of observation in what respect they differ from the symptoms of other diseases in which the blood has been to all appearance less disordered, and in which the disorder manifests itself through other functions, and speaks with a different voice. High nervous irritation, low incessant delirium, eruptions of the skin, ulceration of the alimentary mucous tract, evidenced by a dry brown tongue and dejections dark, unformed, and often stained with blood, are conditions familiar to us in typhus and similar fevers. But in this affection, after the constitution is evidently fully involved, derangement of the nervous system and of the secretions stands far less prominently forward than derangement of the functions of nutrition. The blood seems tainted in its most vital part; its "life of life" is affected; its main use is destroyed, its main purpose interfered with; unable itself to assimilate, it is unable also to minister to the sound assimilation of the tissues. An unhealthy blastema is distributed through the organism. The result is degeneration and death of tissues, and death of such tissues apparently as occupy a middle or low position in the scale of organic formation. This, I imagine, is the true cause why the muscular and nervous systems are exempt, while the fatty and cellular are attacked; the former are more vital, more highly organized, and therefore possess a greater capability of resisting disease. It must not, however, be supposed, that these structures, though highly organised, enjoy an unimpaired exercise of vital vigour, while in tissues around and above them nutrition is arrested and destruction proceeding. Their nutrition must be at a standstill, most probably on a decline, and their inherent vitality and high organization alone protect them from the fate which other textures less exalted in the scale experience.

That it is possible for the disease to maintain itself as a local affection for some time, is evident from the case of Simmonds, who allowed twelve days to elapse from the outbreak of the affection before he sought relief at the hospital, and whose appearance was certainly not calculated to inspire sanguine expectations of his survival. Yet so completely did the inflammation melt away under the treatment, and so vigorously did the constitution rally its sinking powers, that it is difficult to believe that this was the same disease which proved so intractable in the preceding instances. In every instance in which the disease was seen at an early period, it was easily subdued. It is, however, a highly interesting circumstance in connexion with the epidemic prevalence of the malady, —a character which some have accorded to it,—that the earliest manifestations of its presence, both in this and the preceding year, were manifestations virulent and intractable, defying treatment, swift to death. This is a leading feature of epidemics. Cholera, influenza, and fever exemplify the statement; although, without doubt, there are causes, most frequently occult ones, which render the first blows of these giants doubly destructive, and subsequently weaken their powers.

The unusual prevalence of boils and carbuncles during the last two or three years, throughout the country, has attracted the notice of medical observers. In the *Medical Gazette* for March 7, 1851, there is the report of a lecture

delivered by Dr. Laycock in the Medical School of York, on what that gentleman calls the new epidemic exanthem. During the previous eighteen months, he had been struck with the number of boils prevalent among the patients and domestics of a large private asylum which he attended. He noticed particularly, that the disease was not confined to the patients, for even the children of the matron, as well as the servants and attendants, came in for their share. The robust suffered as well as the feeble. It does not seem that the disease was fatal in a single instance, or, indeed, more than troublesome to the majority. Dr. Laycock remarks, that he has met with numerous examples of the same malady, both in private and hospital practice, and he details eight cases to illustrate its varieties and forms. He appears to consider that the distribution of impure food may have contributed to the spread of the malady, but is more inclined to regard it as the effect of a contagious materies, originating in the first instance with brutes, and then transmitted from one individual to another, and not through the medium of the atmosphere. Dr. Laycock believes it, to use his own words, to be "strictly contagious." Nevertheless, in some of the cases he has related, constitutional disturbance appears to have preceded the local disease, and the boils manifested themselves not unfrequently on the covered parts of the body. Now, it is difficult to reconcile inoculation (for "strict contagion" amounts to inoculation) with these circumstances, and I am indisposed to believe that this disease is propagated from one human being to another by inoculation, either through a sound epidermis or by means of an abraded surface, because Dr. Laycock has brought forward no evidence to prove such transmission, and because it is directly opposed to the observations of Rayer and Jemima with reference to malignant pustule, a similar though more virulent affection. Neither can the disease in all instances have been transferred by animals, or by the meat and hides of animals, to man; for many examples of it have been met with in masons, plasterers, linendrapers, etc., persons whose vocations do not bring them into contact with the brute creation; and I am unaware that the butchers' meat sold in this country during the last three years has been at all inferior to that sold previously, or in any respect unhealthy. From a consideration of all the cases which are recorded in the journals, or have occurred during the last two years at the hospital, I think the disease may be attributed to three main causes—1st. The direct inoculation of a poison, animal or vegetable. 2nd. The inspiration of air tainted with such poisons. 3rd. Feeding on unhealthy food. The first is unquestionably an occasional source of the complaint; and the last, in a large and crowded city, where all kinds and qualities of meat are sold and eaten, is sure among the lower classes to be a more prolific cause than any other, and one, therefore, that appeals urgently for the most searching sanitary inspection. The influence excited by an unhealthy condition of the atmosphere is attested by Mr. Forster and Mr. Hunt, in the *Lancets* for the middle of April and May, 1851. Mr. Forster believes the taint may be traced to the dispersion of a miasmatic poison; and Mr. Hunt remarks, that a similar, though less extensive eruption followed the cholera of 1832. When it is remembered, however, that this is a disease which for the last four years has been steadily advancing, both as regards severity and general diffusion, in spite of every variation of wind and temperature, that during the last winter its fatality was quadrupled, and that at the present moment it is proceeding without a symptom of mitigation or a prospect of check, it will, I think, be manifest that in all probability something more than atmospheric contamination is concerned in the matter; and that, if not, the change is too refined in its nature to become palpable to our investigations.

An equally important and more practical inquiry is suggested by the question, whether these carbuncular affections of the lip begin as a constitutional or a local malady? Unfortunately, however, this is a question that cannot always be determined, as sometimes we do not encounter the disease till days after its outbreak, and the histories of all the cases which fall under our observation are necessarily to a certain extent ambiguous, while the evidence for inoculation is rarely clear enough to warrant us regarding it as proved, or entertaining more than strong suspicions respecting it. Being thus in the dark with reference to its outset in certain cases, and knowing for sure that vigorous local treatment, combined with constitu-

onal remedies, have in many instances roduced the happiest effects, I think we all do well, under doubtful circumances, to look upon these affections as mply local, and to treat them promptly ith local applications, incisions, and austics afterwards, if necessary, until e see clearly that the constitution is uffering from secondary disease, and uch treatment unavailing. After this, ersistence in local measures is a grave rror ; it is worse than ministering to a ymptom,—it is ministering to a whole isease, by demolishing the feeble bularks which oppose it. After the inisions have been made, it is of the utmost advantage to apply a strong caustic o the wounds. I have seen instances in hich nitrate of silver has been used ith unequivocal benefit; but lint, teeped in undilute nitric acid, and laced in the wounds, is by far the most fficacious remedy of this description rith which I am acquainted; it acts on he disease as it acts on sloughing hagedæna; by its application, the chaacter of the existing inflammation is hanged, and processes of greater igour, which advance with speed to a avourable termination, are substituted or the low, unyielding, and destructive inflammation which pervades the ffected tissues. Extreme repugnance to he use of this powerful caustic seems to ossess the minds of English surgeons, nd it was long before I could reconcile myself to its employment. I am coninced, however, that it saves the necesity of making manifold incisions, and consequently preserves the patient from loss of blood; that its application is not more painful than the incisions themselves, and the benefits resulting therefrom, in all cases, both slight and severe, are great and rapid. Leeches are often of service when pain and tension exist; but they should hardly ever be used when the system is low and the pulse sinking, and should always be used sparingly, as the object is not to abstract blood, but only to relieve suffering. The medical treatment apparently most beneficial, is such as was pursued in the majority of cases here detailed. It must, of course, be regulated by the powers of the pulse and the amount of existing depression. Strong beef-tea, nutritious broths, wine, and brandy; tonics, such as liq. cinch., combined with chlorate of potash,—a salt whose virtues are extolled by Dr. Latham as applicable to all diseases in which the blood is poisoned,—these remedies, judiciously administered and persevered with, will seldom fail to rally the constitution and restore the patient. As in fever, so here; our aim should be, not directly to cure the disease, but to support the patient during its continuance, to animate nature to the struggle, and enable her to throw off her antagonist. To borrow a simile from Dr. Watson,—although we cannot quell the storm, we may seize the helm, and steer the vessel safely through it. At present, we know of no remedy that disarms the carbuncular poison as mercury disarms the syphilitic.

TIGHT

GUTTERS.