the chances are at least equal that they will be present. This is probably a fortunate circumstance, and will account, in many cases, for the non-occurrence of collapse, and a favourable result in consequence. If every man's pleura were entirely free, I believe the mortality from wounded lung would be far greater than it is. It may not be unreasonable to suggest that the effusion of coagulable lymph in the pleura is partly a physiological process set up for the greater protection of the lung in case of injury. The retractility of the lung-tissue may also be interfered with by congestion or partial consolidation of the lung itself.

In the patient mentioned above the presence of emphysema, the favourable result of the case, and the probable absence of any previous mischief in the lung itself, point to the existence of a certain amount of adhesion, though this is not so frequent in young children as in adults.

The sudden cessation of the alarming symptoms in this and similar cases I think can be accounted for in the following manner:—It is well known that, in the process of healing by primary adhesion in any part of the body, lymph is thrown out with great rapidity. Sir J. Paget found the edges of a wound in a rabbit operated on for hare-lip united after forty-eight hours by lymph which had commenced to organise. He has also found the edges of an incision in an abscess united by lymph in seventeen hours, and frequently within twenty-four hours. It is known, too, that in this membrane, the pleura, coagulable lymph is secreted very quickly, having been found in cases of pleurisy to be organised in twenty-four hours. To cover a wound in the pleura the mere effusion of lymph is sufficient, without any attempt at organisation, and when the collapse of the lung is from any cause even slightly retarded, this may occur before any great amount of retraction has taken place. Any further escape of air is thus effectually prevented, and the two wounds in the pleura can heal at leisure. The air already in the pleural cavity and cellular tissue will gradually become absorbed, and, as it does so, the lung will resume its former state of expansion.

King's-road, S.W.

ON THE INFLUENCE OF THE ZYMOTIC POISONS UPON THE PUERPERAL CONDITION.

BY WM. STEWART, M.R.C.P. &c.

IN his admirable and instructive paper upon "Puerperal Septicæmia, and its relations, if any, with the poisons of the specific zymotic diseases," in THE LANCET, July 20th and 27th, 1878, Dr. Strange, speaking of the effects of zymotic infection upon the puerperal woman, says that "cases of zymotic disease usually run the same course in the puerperal state, if the patient survive, as they do in the ordinary patient." Prior to this he describes another class of cases which appear to owe their origin to the same cause, but which do not run the ordinary course of the zymotic affection, but die very rapidly in two or three days after presenting symptoms of an order that may be said to be neither like those of the zymotic affection on the one hand, nor like those of true puerperal septicæmia on the other. He does not, so far as I can gather from a careful perusal of his paper, offer any opinion or advance any theory in order to account for the momentous difference in the symptoms, course, and termination of the two kinds of the affection, although they arise apparently from the same original cause. I agree in the main with his description of the two kinds of the affection, and I would venture to suggest that the true explanation of the very fatal symptoms presented by the second class will be found in a theory first advanced by me in 1874. In it I propose that we should look upon these cases as being a compound of both the affections, having both the zymotic and the septic poisons circulating in the blood at the same time.

Supposing a woman receives the zymotic infection during her pregnancy, no matter at what period thereof, this poison circulating in the blood may determine the period of parturition, or, in other words, throw the patient into labour, as Dr. Strange ingeniously remarks, "by the reaction of the poison on the blood," or, perhaps, as I would suggest, by a conservative law of nature, in order to deliver the fœtus from the morbific influence. We have then the woman in the post-partum condition, with her blood and system thoroughly imbued with a zymotic poison, with all the secretions and excretions in an unhealthy and vitiated condition,—who can wonder that the lochial discharge should, under these conditions, undergo rapid septic putrefaction, and be immediately absorbed into the circulation before the open mouths of lymphatics and veins could be sealed by lymphic effusion?

In the beginning of 1874 I was very much surprised to find, in a case of idiopathic erysipelas of the head and face that I attended in a woman during the period of labour, that she recovered as well as if there was no poison in her system, and in order to account for the good recovery in this, as well as in other previously recorded cases, I was driven to the conclusion that an additional factor besides the zymotic poison was necessary in order to develop those symptoms which prove so rapidly fatal to some of these, and I advanced the following theory[1]:—"It appears to me that in those cases of confinement where the system is previously infected with a zymotic poison (whether this poison be that of erysipelas, scarlet fever, typhoid, or any other fever), another factor is required for the development of those symptoms which are naturally dreaded as the worst forms of puerperal fever. In my opinion, this additional factor is to be found in the decomposition of a retained clot of a shred of membrane, or of the lochial discharge itself, and the absorption into the system, at the placental or any abraded surface of the uterus, of the products of this decomposition. When this takes place there are then two poisons in the blood at the same time, and the most disastrous results speedily follow. This additional infection is all the more likely to occur when a specific zymotic poison already holds possession of the blood, vitiating and rendering unhealthy, and thus more liable to rapid decay, all the secretions and discharges of the body. In this manner, I think, an explanation may be found of the very serious consequences usually resulting from a puerperal woman being brought under the influence of any zymotic poison."

I was pleased to see that this theory was endorsed by so high an authority upon the subject of puerperal affections as Dr. E. J. Tilt, in the memorable discussion upon the "Relation of puerperal fever to the infective diseases" held in the following year (1875), at the Obstetrical Society, where he says, at the June meeting of that year:[2] "We know that all zymotic diseases—take scarlatina, for instance—cause the secretions of the human body to tend towards decomposition. When a puerperal woman is submitted to the influence of scarlet fever, it promotes the decomposition of all the secretions; so, if they be already rendered fetid by a portion of placenta, or blood-clot, or membrane of the womb, it renders them doubly fetid, it renders the poison more virulent, and that sufficiently explains the frequent fatal effect of zymotic influence on puerperal women."

The above quotation, I presume, was delivered extempore in the debate, and therefore is rather hazy in the middle part of it; but Dr. Tilt elaborates the idea more completely in a paper headed "The late Discussion on Puerperal Fever," and published in the *British Medical Journal* for Sept. 4th, 1875, exactly one year after my paper was published in the same journal, containing the same theory. He there divides the views he holds on the subject of puerperal fever generally under six different heads, and under Division 5 I find the following:—"That, as with other patients, so with puerperal women, when attacked by zymotic influence, the whole of their secretions may be vitiated; so that scarlatina, for instance, may poison the lochia, if it find them healthy, or intensify the virulence of the poison if it find them already made putrid by any of the causes previously enumerated."

Now Dr. Tilt says nothing of my having, the year previously, advanced the same theory, and almost in the same language; so I presume that he knew nothing of having been so completely anticipated in its enunciation.

[1] See Brit. Med. Jour., vol. ii. 1874, p. 305.
[2] See Obst. Trans., vol. xvii. for 1875, p. 207.

I do not know that I should have taken any notice of the matter (as it is only a theory after all), had it not been that the president of the Obstetrical Society for 1876 (Dr. Priestley), in his *résumé* of the debate on the subject, and Dr. Henry Gervis, on another occasion, referred to the theory as Dr. Tilt's.[3]

In addition to the symptoms pointed out by Dr. Strange in these rapidly fatal cases, I would mention diarrhœa as a very constant symptom, and I think in the cases where scarlet fever, measles, or small-pox is the zymotic poison, diarrhœa occurring shows that the system is brought under the influence of the septic poison as well, as I believe diarrhœa is a prominent symptom in all the purely septicæmic cases arising from the absorption of decomposing albuminous matter.

The fatality of cases of puerperal scarlatina, as stated by Professor Olshausen, is very greatly increased by the presence of diarrhœa.[4] He says: "There can be no doubt of the ominous significance of this complication, for out of fifty-eight cases in which there is no mention of diarrhœa, twelve died, while out of twenty-one with diarrhœa, fifteen died." To my mind the presence of the diarrhœa in these scarlatina cases (as it is not a usual symptom of the disease in a non-puerperal subject) is ominous, because it clearly indicates the absorption of the septic poison into the circulation, and thus accounts for the great increase in the fatality of cases where diarrhœa is present.

In conclusion, I would formulate the influence of zymotic poison upon the puerperal condition whenever it is brought to bear upon the patient, either before or immediately after parturition, in the following manner:—

1. In a great many cases it has no morbific influence whatever. In these cases there is no doubt that the patient has been previously the subject of zymotic disease, and is therefore protected in the usual manner from a second attack. I believe this has been recently pointed out by Dr. Hickinbotham (THE LANCET, June 1st, 1878). I have also, in common with him and other observers, repeatedly seen cases of puerperal women lying in the same bed with children affected with scarlet fever, without any harm arising from the exposure to the infection. On inquiry, I have found that these cases have been the subjects of a previous attack, and have therefore come to the conclusion that a previous attack of a zymotic disease is as perfect a protection to a puerperal as to a non-puerperal woman.

2. Simple cases of zymotic affection in puerperal women, in which the patient takes the zymotic affection, and passes through it in the ordinary manner, as if in the non-puerperal condition, and presents only the usual symptoms of the particular zymotic disease with which she is affected. In the production of this class of cases, I think the time at which the infection is brought to bear upon the patient is an important element in the case, for if the zymotic poison has been introduced to the patient so as to vitiate the secretions and discharges from the body *only after the open mouths of lymphatics and veins are closed with lymph*, then the septic poison, if generated by decomposition, is effectually excluded, and the simple zymotic disease runs its usual course. In these cases my theory is, that they continue simple, because kept free from septic absorption at any part of the genital apparatus.

3. Those cases which might come under the designation of "zymotic puerperal septicæmia," or "septo-zymotic puerperal fever," where the symptoms are of a mixed, and to a certain extent masked, character, owing to the presence of a double poison in the blood—(*a*) the zymotic introduced in the usual manner, and (*b*) the septic arising from the absorption of decomposing material at the utero-vaginal parts. These cases seem to be usually produced by the patient being, in the first instance, so severely affected with the zymotic poison as to determine the period of labour, probably in the manner that Dr. Strange has pointed out, and to which I have already referred. The condition of the blood poisoned by the zymotic, the vitiated state of the discharges, and the unprotected state of the lymphatics and veins against the admission of the septic influence immediately after the delivery has been brought about in this manner, along with the theory of the nature and production of this fatal class, have been, I think, already sufficiently adverted to and explained.

Barnsley.

[3] See pp. 38 and 174 of Obstet. Trans. for 1876.
[4] See Obstet. Journal, vol. iv., 1876-77, p. 364.

TREATMENT OF WOUNDS OF THE SUPERFICIAL PALMAR ARCH BY ACUPRESSURE.

BY EDWARD BELLAMY, F.R.C.S.,
SURGEON TO THE CHARING-CROSS HOSPITAL.

A PERUSAL of the various English works on surgery does not impress me that this simple method is practised as frequently as it might be. I record a case which occurred lately in my own practice. A lad, whilst cutting some toffee from a plate, cut his ulnar artery through, just at the point where it takes its bend towards the radial side of the palm (in the "line of fate"), and when brought to my house, was losing blood rapidly, per saltum, from a deep wound about an inch and a half long. I applied Esmarch's bandage, and endeavoured to find the bleeding points, but to no purpose. I then plugged the wound and bound the hand to a dorsal splint firmly, so as to get pressure on the vessel by means of the tension of the palmar fascia, and applied compresses over the trunks of the radial and ulnar vessels. He soon returned to me bleeding as profusely as before. I then determined on acupressure, and taking a stout harelip-pin, passed it through the tissues about half an inch from the edge of the cut, under the artery, and out again to a corresponding distance the other side of the wound, and placed the limb again on the splint. This had the effect of entirely stopping the bleeding; the needle was removed on the fourth day, and the entire wound had closed by the end of the week.

I am well aware of cases of a like nature being treated by passing a harelip-pin under the radial and ulnar at the wrist, but although it has been effectual, it is not without its dangers, and I contend that in cases of wound of the superficial palmar arch (and this is not the first I have treated similarly), acupressure at the point of injury should be resorted to at once.

As a matter of anatomical fact, the bloodvessels, as it were, cleave to the palmar fascia, even after a long escape of blood; and, with ordinary anatomical precision, and a knowledge of the possible contingencies of irregularities, should be secured. A double needle might be used in some cases, to make quite sure—one on either side of the division in the vessel.

I need hardly say that these few remarks apply more particularly to wounds involving the superficial arch, although the "deep" arch is topographically not so deep or so ungetatable by this method as might be imagined.

Wimpole-street, W.

TREATMENT OF SANGUINEOUS CEREBRAL APOPLEXY BY THE SUBCUTANEOUS INJECTION OF ERGOTINE.

BY N. S. FOSTER, M.B.

THE utility of the subcutaneous injection for the exhibition of the active principle of ergot on account of the rapidity and comparative certainty of its action has been most successfully demonstrated in cases of post-partum hæmorrhage. From the explanation given of its inducing the contraction of the smaller arteries, and from the facility of its administration, especially in cases where swallowing is at least very difficult, I was led to use it in cases of cerebral apoplexy and also of hæmoptysis. It is for the former that I am enabled more especially to suggest its use, and from the results I have seen believe it worthy of a more extended trial in that form of disease.

Cerebral apoplexy proper, pathologically speaking, is essentially effusion of blood caused by a rupture, generally of the smaller arteries of the brain, whether of the punctiform or of the massive varieties—which, indeed, are more accurately degrees of the same condition. Perhaps the commonest kind of disease leading to this result is the formation of minute miliary aneurisms, their subsequent rupture, and thence the usual train of symptoms.

At present I can record only two cases in which I followed out the plan of treatment.